THE PRIVATIZATION OF EXTENSION SERVICES IN THE NON-PLANTATION AGRICULTURAL SECTOR IN SRI LANKA : SCOPE AND LIMITATIONS

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FOREWORD

The extension services in the Non-plantation Agricultural (NPS) in Sri Lanka appear to be unsatisfactory largely because the state sector lacks the necessary finances and facilities to provide an efficient extension system as a public service. As an alternative, therefore, a system was looked at where the user would pay for the extension services provided, as a matter of public policy.

Accordingly, this institute undertook a study to examine the possibility to introduce a user pay system. This study has revealed that the current extension set up in the selected farming systems was characterized by private, public, Non-governmental and community agencies, all of whom provided extension services and offered the farmers a wider choice of information.

Private sector involvement in providing extension services would largely depend on its interest in agricultural enterprises, and most of all, the economics of this involvement. Other factors would include the attitude of the private sector to the farming community, consistency in public policy, improved technology, access to information, and availability of an appropriate infrastructure.

Coordination among the different sources of extension through a NPS technology processing center, effective farmer education policy, trained staff at field level, coordination through Govi Sevana Niyamaka, improved mass media coverage, measures to motivate private sector intervention in agriculture, increased attention to address specific categories of farmers and their needs, improved research extension linkage and implementation of cost recovery systems that involve public and private sectors, the one complementing the other are also important for the success of a such a system.

My sincere thanks goes to the research team consisting of Mrs. P.R. Weerakkody, Mrs. Sharmini Kusum Kumara, and Mr. R.M.G.K.B. Ratnayake, Senior Research Officers.

Professor M.O.A. de Zoysa
Director.

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Authors.

EXECUTIVE SUMMARY

The extension services in the Non-Plantation Agriculture Sector (NPS) in Sri Lanka appear to be unsatisfactory largely because the state sector lacks the necessary finance and facilities to provide an efficient extension system as a public service. As an alternative, therefore, a system was looked at where the user would pay for the extension services provided, as a matter of public policy.

Accordingly, Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) began a study in 2000 to examine the possibility of introducing a system where the user pays for the service. The study which was completed in 2001 had four major objectives: to review the current organization of the extension services and the role of the different agencies; to examine the factors both positive and negative, that have a bearing on private sector participation; to assess the possible social and economic implications of privatizing the extension sector, and finally, to suggest areas for policy formulation.

The method of study included a field survey conducted in two selected farming systems in the NPS, potato farming in the hill country and B'onion growing in the dry zone; discussions with field level extension staff; interviews with large private sector extension outfits likely to contribute to the scheme, as well as a review of the existing literature on the question.

The study revealed that the current extension set up in the selected farming systems was characterized by private, public, Non Governmental Organizations (NGOs) and community agencies, all of whom provided extension services and offered the farmers a wider choice of information. A variety of methods were in use in disseminating information – contacts with individual farmers by extension officers, demonstrations and farmer training programmes, and the use of both electronic and print media of mass communication.

Private sector involvement in providing extension services would depend largely in its interest in agricultural enterprises, and most of all, the economics of this involvement. Other factors would include, the attitude of the private sector to the farm community, lack of consistency in public policy, and the difficulty of accessing such information. To these must also be added technology improvement, farmer innovativeness, information technology and the availability of an appropriate infrastructure.

The significant problems and issues facing farmers were;

1) A lack-of co-ordination between the different extension agencies.
2) The problem of choosing the best solutions to farming situations.
3) Lack of competence and limited involvement by extension staff.
4) Farmer unwillingness to accept the concept of privatization and the inability to pay.
5) Less attention paid to general farmer education.
6) Poor access to agricultural programmes over the mass media by farmers.
7) Less attention paid to farmers' views and their solutions to problems.
8) Little interest show by the private sector in extension activity.

Co-ordination among the different sources of extension through a technology processing center, effective farmer education policy to educate all farmers, and trained staff at the field level are important for the success of this system. Other contributing factors could /would be field co-ordination through Govi Sevana Niyamakas (GSNs), improved mass media coverage, measures to motivate private sector intervention in agriculture, and increased attention to address specific categories of farmers and their needs. Also proposed are tax reliefs and public sector support for intensive research, improved research extension linkage, and implementation of cost recovery systems that involve public and private sector involvement, the one complementing the other.

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CHAPTER ONE

Introduction

1.1 Background to the Study

Privatization, which is broadly defined as the transfer of ownership of resources and responsibility for provision of services from the public sector to the private sector (James & Upton, 1995) has become an integral part of the economic reforms introduced to Sri Lanka in the late 70's. During the last two decades, efforts of privatization were seen not only in the industrial sector but also in the agriculture sector, which till then was the largest contributor to the GNP. The plantation agriculture sector was subject to these reforms since the inception of the privatization programme. But, in the Non- Plantation Sector (NPS), it was only recently that this concept has been introduced. Reforms in the NPS have taken several forms, some of which are: transfer of ownership of several state farms such as Pelwehera and Hanguranketa to the private sector and the reducing of overall cost of supporting services to the agriculture sector; and the closing down of the Department of Marketing and the Paddy Marketing Board. However, it appears that the privatization efforts in the NPS have been confined to only a few instances.

Even though these reforms are operative in certain cases the state still plays a large role in the NPS such as in the provision of subsidies and extension services to the farmer. In addition the state also faces various difficulties in enforcing these reforms, as greater extent of farmlands in the NPS is operated by either small or medium scale operators.

Changes, which occurred in the extension sector, like the decentralization of extension responsibilities to provincial councils and the implementation and withdrawal of project-based extension programmes became significant land marks in the history of extension services during the previous three decades. Despite large funding and theoretically well formulated programmes, these efforts fell below expectations resulting a poorer quality of extension services provided. This situation coupled with increased financial difficulties in providing free agricultural supporting services prompted a search for alternatives to the current unsatisfactory situation in the extension sector. The initial signs of extension privatization are to be found in the policy document compiled by the National Development Council (NDC). The National Policy Framework (NPF) of the Ministry of Agriculture also points to the same issue. Recognizing the existing weaknesses of the current extension setup, the NPF (1995) states that technology availability is not a sufficient condition for successful adoption of innovations by farmers. The NDC (1996) states that, current state of the agricultural extension system reflects significant inefficiencies, the system is currently in disarray and is not sufficiently geared to increase the productivity of farmers or to provide to the demands for an emerging commercial agriculture.

Among the more important recommendations made in both documents, a demand driven, extension service responsive to farmer needs, a strengthened integrated arrangement with mass media involvement, facilitation of research extension linkage and the development of a specialist extension service are seen to be the remedy for the ailing NPS. A privatized paid- for extension service has been seen as a viable alternative.

1.2 The Research Problem

First hand experience, both positive and negative is available on the privatization of the plantation agriculture sector of Sri Lanka. However, despite policy orientation towards extension in the NPS, private sector interest and involvement were lacking in this sector. In 1999, the Perennial Crops Sector initiated a project (see Chapter 2) to privatize the advisory services only covering the crops, which come under the purview of a project.

The three crop categories included are fruits, export crops and floriculture, which exclude any seasonal crops categorized under the NPS. Therefore, despite existing weaknesses in the current extension set up, exploring the possibilities of extension privatization in the NPS has been left alone. Accordingly, the Agricultural Environmental and Resource Management Division (AERMD) of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) conducted this study during the 2000/ 2001 period in order to explore the possibilities of putting in place a privatized extension system in the NPS.

1.3 Main Objective of the Study

The main objective of this study is to investigate and assess factors which would induce the private sector to participate in extension services in the NPS, to study the potential possibilities of such a move and the socio-economic consequences to the farming community as a result of private sector intervention.

1.4 Specific Objectives of the Study

- To review the current extension organization and the role played by different extension agencies in the NPS;
- To review the existing incentives and constraints that influence private sector participation in extension;
- To assess the likely social and economic impact of extension privatization, and
- To highlight policy areas to be addressed by the government to provide effective and efficient extension by taking into account the changing socio-economic and institutional circumstances in the NPS.

1.5 The Scope of the Study

Due to limitation of finance and with the time available, it was not possible to cover all the farming systems and therefore the study was restricted to a few selected farming systems.

Based on the above, two farming systems were chosen, the criterion of selection being the ability of the farmer to afford the option of private extension services. It was assumed that the high value farming systems like B'Onion and Potato are better able to afford this payment compared to other farming systems in the NPS. Therefore, the field survey was based on two commercial oriented farming systems, namely potato based up country vegetable farming system (PFS) and the B'Onion based dry zone vegetable farming system (BFS).

1.6. The Method of the Study

The method of data collection for the study included several approaches, a field survey in the NPS, in-depth discussions with field level extension personnel, interviews with potential private sector commercial companies having large extension arms and a literature survey.

The field Survey

The field survey was conducted based on a questionnaire and data were collected from farmers involved in the cultivation of B'Onion and potatoes. The reference period for data collection was Yala 1999 for B'Onion and year 1999 for potato since there was no marked variation in the seasonality of production.

Selection of study locations

Badulla is the major potato-producing district in the country contributing 56% of the total production and 60% of the extent cultivated (HARTI Agricultural Commodity Review, 1998). Of the 14 Divisional Secretariats (DS) in the Badulla district Welimada DS was selected as the study location due to its highest contribution, 59% of the total production of potato in the District. A random sample of 74 potato producers were interviewed covering all Agrarian Services Centers (ASC) namely Keppetipola, Dambawinna, Boralanda and Thennekumbura in the Welimada DS.

To study the B'Onion farming system, Matale district, which is one of the two major B'Onion producing areas in the country, was selected. While Matale district comprises of 11 DSs, Dambulla DS since it provides the highest district total in terms of both production and extent cultivated, was chosen as the study location. A random sample of 78 B'Onion producers representing Dambulla and Kimbissa Agrarian Services Centres were interviewed for the field survey in BFS. Depending on the available financial resources an attempt was made to interview a maximum number of farmers from both locations. Farmer selection was based on the producer lists provided by the Divisional Officers in respective ASCs. Accordingly the total sample size was 152.

Among the field level representatives with whom the discussions were held were field level extension representatives playing extension roles such as agricultural instructors, divisional officers, Agricultural Research and Production Assistants (*Govi Sevana Niyamakas)* and private sector field marketing representatives. In order to assess the supply aspects of privatized extension, data and information were collected from several private sector companies like Anglo-Fert LTD, Aitken Spence Development (Pvt) Ltd., Mackwoods Ltd., A. Baur & Co. LTD, AGRIWORLD (PTE) LTD, Unipower (Pvt) LTD, Heychem Ltd and Ceylon Agro Development (Pvt) Ltd., MA's Tropical Food Processing (Pvt.) Ltd., Environmental and Management Lanka (Pvt.) Ltd., and CIC Fertilizers (Pvt.) Ltd., all of whom are already equipped with large extension arms having sufficient capacity to be involved in such ventures.

1.7 Organization of the Report

This report consists of six chapters. The second chapter presents the theory and practice of the concept of privatization in extension in Sri Lanka and the world. Socio-economic and production parameters of selected farming systems are presented in Chapter 3. While Chapter 4 describes the current extension activities in study locations, determinants for private sector participation in user-pay extension are reviewed in Chapter 5. The final chapter concludes the report making appropriate policy recommendations with regard to the extension scenario in the NPS.

CHAPTER TWO

Privatization: Theory and Practice

2.1 Introduction

Financial crises and the sluggish growth of the economies of many developing countries have led to a fundamental rethinking of the role of government in economic growth since the early 1980's. This shift from public to private sector as the engine of growth was also due to a number of other factors, poor management leading to losses of nationalized enterprises while the private sector showed greater productivity and efficiency, regulatory bodies reducing rather than increasing competition, and modern communication exposing industries to competition. What now dominates the thinking of the most developing countries is the concept of privatization/private sector involvement, as policy makers believe that markets are more efficient allocators of resources than governments.

Privatization is understood differently in various situations. In general, it is the withdrawal of the state sector from the production of goods and services, while in broader terms privatization is the application of market forces to a country's economy.

In this chapter a review of literature dealing with the theory and practice of the privatization concept in Sri Lanka and the World is presented.

2.2 Privatisation in Sri Lanka

As pointed out by Kelegama (1993) the fundamental goal of privatisation in developing countries should be to provide better consumer services, encourage foreign participation while reducing state's subsidies to unprofitable enterprises. These should/could be reached by improving management and efficiency of workforce/ labour, increasing productivity and growth and modernising enterprises and inducing technology transfer. Another important aspect for any successful privatisation programme is a need for a macro economic policy which is conducive to private led-growth, with a well developed capital and labour market, and also a good institutional leadership, appropriate legal framework and tax structure.

After the liberalised economic policies of the late 70's, privatisation initiatives could be seen in all sectors of the Sri Lankan economy, which include agriculture, industry and the services sectors. Plantations in the agriculture sector, public enterprises in the industrial sector and bus transport sub sector in the services sector are some of the examples, which were subjected to this process.

2.3 Agricultural Extension and Privatisation

2.3.1 History of Agricultural Extension

The extension service evolved over time from around the late 19th century. Responsibility was initially given to the Government agents who had neither the training nor the time to develop this work. But with the development of the Ceylon Agricultural Society in 1904 and the establishment of the Department of Agriculture (DOA) in 1912 there were serious attempts to resuscitate agriculture. What started as a three-division department with Agricultural Officers (AOs) and Agricultural Instructors (AIs) (field level worker) who had contact with the farmer, the department gradually expanded in number and size

over the years. The government played a major role in the provision of agricultural extension only after independence. With the government attention focused on increasing rice production by increasing the acreage under the then prevailing colonization programmes, there was a call for a more adequate and efficient transfer of technology to the farmers. Since the DOA did/could not live up to this challenge, in 1952 a Department of Food Production was set up under the Ministry of Agriculture. With the recruitment of around 500 Food Production Overseers whose designation was later changed to *Krushikarma Vyaptha Sevaka* (KVS) there arose a cadre of extension workers under the AI. This was how the KVS's had direct contact with the farmers.

There were changes in the approach to extension from 1955, for example farmer demonstration plots were designed and called "method and result" demonstrations; also one saw the beginning of the yaya scheme of seed production. There were also a few changes which took place in the organizational structure in the late 1950's such as, the Divisional Agricultural Officer grade being changed to the District Agricultural Extension Officer (DAEO), the formation of the Plant Protection Service and an Unit for Land and Water Use. With emphasis being placed on the promotion of subsidiary food crops a newer approach was seen in extension. Agriculture extension centers were developed in rural areas giving easier access to the farmer for technical advice or purchase of inputs.

Then in the 1970's there was the creation of the Agricultural Productivity Centers (APC) in every AGA division, which was a significant organizational development to help in the provision of services to the farmers. The APC housed all agencies serving the farmers such as the Agrarian Services Department, the Bank Etc. These were renamed as Agricultural Services Centers and there were around 500 such centers set up in the country. Along with this in 1964's a separate unit/division was set up for Extension.

With the recognition that extension was a very important aspect of agricultural development more in-service training centers were also opened in the country. An annual Implementation Programme was started in 1965, which planned the production programme for important crops. Each DAEO had a large staff ranging from 6-17 AI and 20-138 KVSs depending on the prospective agricultural potential. Each AI had to cover around 3000ha of paddy, which meant 3000-6000 farm families while each KVS had between 1000-1500 families. There were 1090 KVSs working in the country. Though the extension system had improved through the years there were many shortfalls due to a number of reasons, the major ones being the lack of transport for the KVSs, and too many functions given to the AIs and the DAEOs. Also coupled with this was the lack of communication of the research done by the department to the farmers, and the farmer's problems not being sufficiently researched.

In the 1980's under the Agricultural Extension and Adaptive Research Project (funded by the World Bank) the extension service was re-organized. The main focus of the project was the Training and Visit (T&V) system, where extension worker met with a group of farmers every two weeks. This system had some initial success and proved to be productive system as seen in the increase in rice production and other field crops in the early 1980's (Sivayogathan, C and Wirasinghe, S, 1992). However with the termination of the project and other administrative changes, the extension delivery system became varied and uncoordinated. This came about with the 13th amendment to the constitution in mid 1989, and devolution of power and functions from the central government to Provincial Councils. Like all other functions the DOA extension functions were devolved to the Provincial Councils. This then led to a mixed outcome in promoting policy-related integration of national programmes of agricultural development. Along with this there was the transfer of 2300 KVSs to Grama Nildahris (GNs) under the Ministry of Adminstration. This cutting off immediate links between the farmers and extension leading to the virtual break down in the extension service. The number of GN divisions increased from 4500 to 14750 by the absorption of KVSs, cultivation officers and other special service officers. (Sivayogathan, C and Wirasinghe, S., 1992). In addition to other duties assigned to them the GNs were also required to carry out agricultural extension duties.

The economic liberalization reforms in the 1977 paved the way for private sector involvement in the agricultural sector. This began with the increasing involvement of large companies in the export of agricultural produce such as exotic vegetables. This led to small farmers growing their produce to become contract farmers. Under a contract signed between the companies and the farmers, seeds and agrochemicals were the main inputs provided to the farmers. In addition to the inputs provided to the farmers, extension services were supplied by a trained extension officer who was on the payroll of the company (Dharmalingam and Weerakkody, 1994). This was given as a complete package, which was deducted at the time of buying of the produce, and was mainly seen in crops such as sugar cane, tobacco and later in gherkin and other exotic vegetables. This was the first instance of an extension service being supplied to small holders by the private sector. This system still prevails for certain types of export vegetables grown in the country.

In the 1990's a major extension project funded by the World Bank was the Second Agriculture Extension Project (SAEP). Of the total allocation to the agriculture sector from the government 16.6% amounting to Rs. 510 Mn was allocated to the SAEP for the year 1993 to 1998. In addition to the major projects there have been other sources, which have provided similar services to a smaller extent, such as the non-state and semi state sector agencies like research organizations, universities and non-governmental organizations. The basic objective of all these extension systems has been the transfer of agricultural technology and related information to enhance the productive capacity of the farmer. This has been through the offering of advice, helping farmers analyze problems and identifying opportunities, sharing information, supporting group formation and facilitating collective action. Consequent to the withdrawal of the World Bank from the SAEP there was an under supply of this essential service for the acceleration of agricultural development. A grade of village level extension officers was appointed, the Agriculture Research and Productivity Assistants (ARPA) or Govisevana Niyamaka, at each Grama Sevaka (GS) Division. But due to the lack of proper qualifications and agricultural knowledge on the part of these officials there are several weaknesses in the working of the extension system. Both the NDC and the NPF state that the current agricultural extension system is not geared to increasing the productivity of farmers nor catering to their needs.

2.3.2 Extension Privatization Initiatives

Export Crop Development Sector

The only sector where agricultural extention has been privatized is in the perennial crop sector. The Second Perennial Crop Development Project funded by the Asian Development Bank, which commenced in 1998, is to continue for 6 years till 2004. This project aims at providing commercial advisory services and sustainable credit to promote the commercialization of the perennial crop farming systems.

The main activities of the project are:

- Implementation of an Agricultural Credit Scheme and a related farm advisory, marketing and technical service, to develop the perennial crop sector.
- Provision of financial assistance to relevant government institutions, to support availability of quality seeds and planting material.
- Provision of financial assistance to conduct research in the perennial crop sector.

SPCDP has been in operation since 1998, in 17 districts of Sri Lanka excluding the North and East. It is a follow-on project of the First Perennial Crop Development Project. The Project ends in Year 2004.

The present system of extension in the minor export crop sector is a supply driven institutional advisory service which is not equipped to provide the business aspect, planning and support that commercial farmers require. Interest in private sector participation was found among 30 companies. Interested

companies can be broadly classified as Sellers of Inputs, Buyers of Outputs, and advisory companies. These companies will be able to provide services in a more direct form.

The project was to be based on the following pattern:

- The establishment of three clusters of districts primarily based on crop specialization, e.g. Cluster1. (Puttalam/Anuradhapura/Kurunegala) – fruits: Cluster 2 (Galle/Matara) – low country spices; and Cluster 3, (Matale/Kandy/Kegalle) – up country species.
- Cluster (1) would be contracted to one company as in model 1, in open competition between the three types of companies.
- One district in cluster (2) and (3) would be contracted to a buyer company.
- The advisory group and sellers' group would be assured of at least one contract in either cluster (2) or (3).
- Whatever the type of company contracted, all services would be offered for all crops.
- In addition, one contract would be commissioned for floriculture (crop basis) to operate project-wise alongside general services offered by the PMO or other contractor.

At the time of writing this report contracts had been signed with 3 chosen companies and the work has commenced in the following areas.

i. *MA's Tropical Food Processing (Pvt.) Ltd.* - for fruits and spices in Matale district.

Though the company had signed the contract in April 2001 and work has progressed the company found this venture commercially nonviable. Therefore at present this venture is been restructured. The company has two extension officers who are graduates covering 11 DS divisions in the Matale district. There are 23000 farmers of which only 1800 farmers are registered with the company. Of those registered, the company has attended to only 200 farmers. These 200 farmers require services for obtaining loans from banks. For obtaining these loans the farmers has to pay the company Rs.1000/= of which Rs. 250/ = is paid in advance and Rs.750/= at the time completion of the proposal. In addition another 2% of the loan is deducted from the farmer. No extension or technical advice has been given to any of the farmers, as the company believes that they do not have the needed technical knowledge or the capacity to deliver such services.

ii. *Environmental & Management Lanka (Pvt.) Ltd.* - for flowers and foliage in Gampaha, Colombo, Kalutara, Kandy, Matale, Puttalam, Kurunegala, Kegalle and Nuwara Eliya districts.

The contract for the project was signed in February 2001 and to date the company has a list of 300 clients of which 200 have requested for help with project proposal preperation to obtain bank loans. Of these 200 around 100 farmers have requested for technical advice which is given by the company at a cost of Rs.250/= per visit. The company employs three extension officers to cover the nine districts. The company also plans to form an association of floriculturists for the district from which technical advice would be given to its members.

iii. *CIC Fertilizers (Pvt.) Ltd.* - for fruits and spices in Gampaha, Kurunegala, Puttalam and Kegalle districts.

Since signing the contract in February 2001, 991 farmers have been directly promoted by CIC under this project with an additional 334 farmers obtaining services from the company. Of a total of 1325, 995 farmers have requested for loans of whom 640 farmers have at present (to date) received their loans. The loans are given on the basis of up to Rs.2 million, of which 2% of the approved value is given to the company (CIC) as charges for services rendered and for loans of over Rs. 2 million, 0.25% on the additional amount is deducted by the banks and given to the company. Payments are deducted at the time of releasing the first instalment and sent to CIC by banks from where the loans are issued. The

cadre of extension officers employed by CIC are 5 field managers, 3 field executives who are graduates of agriculture plus a Director and Operations manager with management experience. The company finds the commercialisation of extension a viable enterprise which they hope to expand in the future.

Non Plantation Sector

The need for the privatisation of extension in the NPS originated from the policy documents pertaining to this sector, which sought to induce efficiency and budgetary management as the primary goal. The perceived difference of the extension privatisation initiative from all other privatisation efforts is that the provision of extension service is a 100% subsidised service or in other words, a public good provided by the state sector.

2.3.3 Extension: A Public Good

Public goods have two characteristics. They are *non-rival* and *non-exclusive*. A good is non-rival if for any given level of production the marginal cost of providing it to an additional consumer is zero. Goods are non-exclusive if people cannot be excluded from consuming it. As a consequence it is difficult or impossible to charge people for using non-exclusive goods (William et al., 1993).

In the supply of extension, once some information has been disseminated to the farming community, both the cost of using that information by an additional farmer is zero and adoption by other farmers cannot be avoided. Thus extension is a public good having both non-rival and non-exclusive qualities. Often the public sector produces public goods because they are the only group that can finance such endeavours. General taxes and government debt or grants are the only means of financing them. To maximise social welfare a government will undertake the production of any public good whose social benefit is greater than its social cost. It is strongly believed that the provision of extension service has both short-term effects and long-term impacts on the agricultural development of a country. Under this scenario provision of extension has long been the state sector responsibility in most of the countries through-out the world.

Efficiency and Public Goods

Due to non-exclusive nature people can receive the benefits whether or not they pay for the service or good. With public goods the presence of '*free riders*' makes it impossible for markets to provide goods efficiently, and the provision of public goods in most cases are market failures. Therefore additional benefits could not be derived from the provision of public goods such as extension on a private basis, and must be subsidised or provided by governments if it is to be produced efficiently. Therefore the role of government should be, to provide extension publicly where the government should do cost-benefit analysis to decide how much should be paid for this service since they are using scarce resources (Robert et. al. 1992). Moreover, any public good will be produced up to the point where the marginal social benefit of the good is equal to its marginal cost.

Possibilities to Convert Public Goods to Private Goods.

Characteristics of all goods and services are primarily based on the principles of rivalry and excludability and largely vary between these two extremes. While generic type of extension as discussed above has public good characteristics, some goods are both rival and exclusive. In economic classification of goods and services these come under the category of *private goods*. Also some goods which are rival but non-exclusive are referred to *common pool goods*. At the same time some goods are non-rival but exclusive which are termed as *toll goods*. The following figure illustrates some examples from agricultural information which included the above four categories.

Economic classification of Agricultural Information

Narrative	Non-exclusive	Exclusive
Non-rival	Public goods Mass Communication of pure agricultural information	Toll goods Soil testing service, poly-tunnel technology
Rival	Common pool Goods Long term self pollinated seeds Bio diversity	Private goods GM technology Hybrid seeds, machinery Chemicals

Accordingly, the degree of rival and excludable qualities inherited to distinct agricultural information and technologies vary depending on the variables such as simplicity, novelty, origin, significance, value, communication methods involved in the process of disseminating them. Therefore possibility of converting public goods to private goods is also a factor which is determined by the above variables. However, based on the principle that the higher the rival and excludable qualities of the information the more the returns from supplying them privately, an extension privatisation programme could optimise its results in two ways. Identification of proper mechanisms, which could enhance rival and excludable qualities of information and technologies, is one of the options. The other option is the provision of information and technologies which posses rival and excludable qualities only for the demanding farmer groups who could contribute to protect their qualities while obtaining maximum benefits from the technologies and information.

2.4 Public Extension Alternatives

A World Bank evaluation of all extension projects already completed, show that 90% have experienced recurrent-cost funding problems, while 70% are not sustainable. Also that in 84% projects, research extension linkages are inadequate and over 50% have demonstrated an entrenched top down approach in developing recommendations (World Bank 1994 b). It was then realized by both the banks and most governments that the public sector had reached its limit and extension services needed the support of the private sector, though not its total substitution in most parts of the world.

Extension in agriculture in the present day requires a 'pluralistic' service drawing on a variety of different bodies all with different strengths and objectives (Carney D 1998). It was argued in various reports that the most single important thing in extension is control by the beneficiaries (Antholt, 1991). While others argued that decentralization of services is a way of gradual transfer of responsibility from the public sector to the private sector. The transformation of the management of extension from purely a state sector management to a non-state sector management through different approaches was seen to be the need of the hour. In most developed countries extension has been completely privatized while in other developing countries one can see new contractual arrangements. Though in many countries there is still a need for public sector participation, various other actors in the field are NGO's, seed companies, fertiliser and pesticide distributors, farmer organisations and agro processing firms. Varying types of arrangements exist between a solely public extension system and a solely private one. Several types of private firms currently undertake agricultural extension activities, these include agro-processing firms, input suppliers, farmers associations, media companies and consulting firms.

Worldwide agro-processing and marketing firms provide agricultural extension services as an in-built part of contract growing schemes to their farmers as a means of reducing risk to their supply. Farmers are supplied with information on new techniques and technologies to increase output, reduce post-harvest losses and improve quality, consistency, and timeliness of output. Then there are the input suppliers (e.g. seeds, agricultural chemicals, farm equipment) who have traditionally included agricultural extension in their marketing strategies. However, they only provide information pertaining exclusively

to the use of their respective products, for instance CIC and Baurs in Sri Lanka. The NGOs have also taken an active participation in this sector, frequently focussing on areas that have been neglected or serviced inadequately by the government. This system has shown success which could be their community-based focus and operation on a small scale.

The following are some examples from across the world of a range of institutes involved in agri-extension service. In Pakistan, the Aga Khan Foundation, an NGO, is involved in rural development projects, involving both technology transfer and the training of farmer representatives to become specialists. The farmers' association of the Tobacco Producers' and Commercial Cotton Growers of Zimbabwe, Anand Milk Union Ltd. in India are examples of well organized farmer associations which combine functions of extension along with other functions of research, input and credit supply (Umali, and Schwartz, 1994). Also Private Consulting Firms have operated for many years in developed countries, such as Chemonics, Harza International engaging in international technology transfer demands mainly from large and medium commercial firms. Their operations are largely sustained by the extension demands of medium and large commercial firms for more specialized technologies. In countries of South America, such as Argentina and Uruguay consulting firms conduct research from which information and technology are sold to clients. In Asia most of these consulting firms deal mainly with the plantation sector. In several Latin American and Caribbean countries, non profit organizations have formed the agricultural development foundation which substitutes for public institutions, strengthening selected existing public programmes, or support science related activities in areas not included in public programmes (e.g. non-traditional export crops, facilitating technology transfer from the international science community).

2.5 Privatization Experience of Other Countries

The experience of different countries given below illustrate the numerous steps/ stages that exist between the public and private sector extension system in their respective countries. These range from a total substitution of the public sector to varying stages between public and private sector.

In developing countries where most farmers are at subsistence level instead of a single system both the private and public sector are involved together in delivering extension services to farmers. Given below are some country's experiences of the various systems introduced by governments to improve extension services to their users.

In certain regions of Ecuador extension agents *sharecrop with the farmers* who are generally small semi -commercialized farmers. Extension agents supply the inputs and technical advice for new technologies while the farmer provides the land and labour. The sharecropped field is seen as a demonstration plot where farmers can actually see the benefits of adopting the improved technology.

Chile and Uruguay and other South American countries have replaced public technical assistance to farmers with private services. A system also exists where there is a partnership of both the private and public systems working together. The Agricultural Development Institute (INDAP) an agency within the Ministry of Agriculture introduced a pilot technical assistance programme using *subsidized private consulting services*. This programme, which reached a large number of small-scale farmers, was funded by the government and privately run by private technology transfer firms that are certified by the institute. Small farmers are grouped according to assets, the poorest being given a scheme that has more social emphasis while the better-off farmers are given a more market oriented scheme. Firms do not provide supplies but focus only on technology transfer.

In China along with the national extension system which employs Farmer Technicians to work at the village level there is the system of *contract extension* that has been introduced from late 70's in some provinces. Agro-Technical Extension Centers (ATECs) operate all the way from the national to the township level, technical services and inputs being provided to the farmer or a group of farmers. The

extension stations/centers are compensated by the farmers with, typically, 20 percent of the value of the crop above the agreed target. If the harvest is below target due to poor technical recommendations or non-supply of timely inputs, the contracted workers are held accountable.

In Costa Rica an *Extension Voucher Pilot Programme* operates where small-scale farmers are organized in groups and private technical assistance is given to qualified small and medium-scale producers. The programme consists of packages of vouchers varying according to the type of farmer and level of technology. Farmers trade vouchers for individual and group technical assistance delivered by private extensionists. Farmers are categorized according to whether they require, high or low-intensity technical assistance. On completion of the project, beneficiaries of the voucher programme are expected to continue only with private technical assistance.

The Aga Khan Rural Support Programme (AKRSP) is an example of a *non-governmental organization's* rural development initiative. The programme involves the organization of grass-roots village organizations (VO), which promote commercial endeavours. This is done through the transfer of new techniques and technologies to farmers. AKRSP uses both its own and line agency staff as extension agents. Much of the farmer training is done by training members to become VO managers, leaders, and plant and animal production specialists. Membership in the VO depends on the size of the interest group and the homogeneity of the agro-ecological area. After a village organization is established, a close working relationship is established with the AKRSP staff.

In developed countries like Denmark, the Government is heavily involved in training and in adaptive research. The Danish extension service operates under *management committees* that are administered by farmers. There is one national development centre and about one hundred local ones. Advisors from the Danish Agricultural Advisory Centre support the local extension agents. The extension agents' work is planned by farmers elected to the committees. A law defines the role of extension and makes sure its agents are impartial and not beholden to commercial interests. An agent charges the latter by the hour for each visit to their household. Information and advice given by phone are free. There are no governmental subsidies to either co-operatives or private enterprises for getting advice from extension.

In the Netherlands there is a *fifty fifty system* which operates where farmers contribute 50% towards extension service and government, the other 50%. Since the beginning of 1993, farmers have had to pay for an increasing share of the extension services, by annual increments of 5 percent until their share reaches 50 percent in 2003. Farmers' contribution will, in future be 15 percent from a general tax based on the size of each farm, 15 percent from direct contributions for services, and 20 percent from taxes and levies on farm produce. Dutch farmers finance 50% of the costs of experimental stations farms through various levies and other mechanisms. Initial findings suggest that farmers are more selective when seeking advice for which they pay. Finally, the privatisation of the public services has provoked various initiatives by farmers, who have organised extension stipulating their own conditions.

In Sweden agricultural extension activities are carried out through a wide range of organizations, the main one being the National Board of Agriculture. Farmers' co-operatives and private commercial firms employ increasing numbers of people trained in agriculture to serve as *consultants to farmers.* Some rural communities employ their own extension agents. Additionally, the public radio and television networks offer educational and informative programmes aimed at farmers.

In Germany extension services are decentralized to the provinces. There are different approaches to extension, Farmer's self help groups, and Extension agents, or a mixture of both self-help groups and extension agents. In the early 90s, there were some 3,000 odd agents supported by the public sector. In addition to public extension, some 2,760 private advisers belonged to various professional groups, farmers associations, unions, training centres and private firms. To ensure high standards, farmers are advised to retain the services of those extension agents that are certified by the German society for Agriculture. Advice from public extension remains "free" to farmers.

CHAPTER THREE

Socio-economic and Production Parameters of Farming Systems

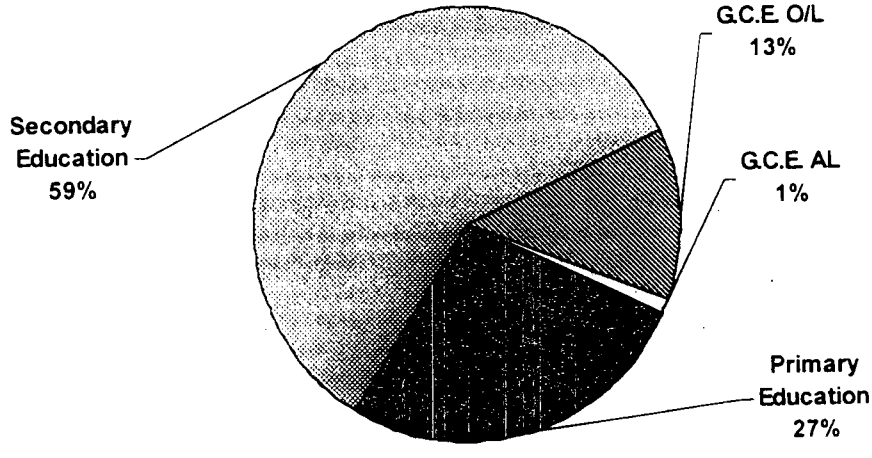
This chapter briefly discusses the socio-economic characteristics such as family composition, income sources, income levels, education and land ownership of selected households. It also describes production parameters including land use, credit use, yield, income and marketing of produce and other factors related to these parameters. The data collected from the sample survey is utilised to have an understanding of the socio-economic and production background of the sample farmers. The householder of each family who is referred to as the farmer in this discussion was the respondent for the questionnaire.

3.1 B'onion Farming System (BFS)

3.1.1 Demographic Characteristics of the Sample

Total population of the 78 farm families from the Dambulla Divisional Secretariat was 329. The family size ranged from 1 to 7 with a 4.2 average. In the sample of the 78 householders, 77 respondents were male householders with only one female householder. While 95% of these householders were married, others were unmarried males. The main occupation of 72 (92%) respondents was farming. Among the rest, farming was a secondary source of income.

Chart 3.1 : Education Levels of Farmers -BFS



Source : Survey Data, 2000

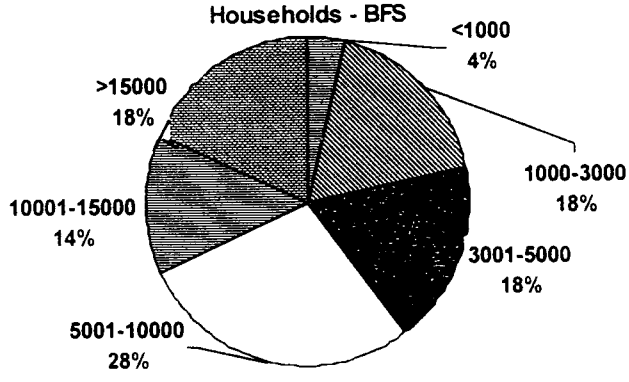
As indicated in the Chart 3.1 the majority (59%) of farmers in BFS have been educated up to secondary level and another 27% have attended primary schools. Of the rest, 13% have passed G.C.E. O\L (General Certificate of Examination – Ordinary Level), and only one farmer has a G.C.E. A\L (General Certificate of Examination – Advance Level) qualification. Age distribution of farmers indicates that the majority of B'onion cultivators are below 50 years of age accounting for 78% which also includes 11% respondents below 30 years of age.

3.1.2 Family Income

For the estimation of family income, all sources of income from both primary and secondary occupations of all family members were considered. The monthly family income estimated based on seasonal family income (Chart 3.2) shows, income derived from B'onion cultivation provides the largest contribution to family income. While one should take into account the reluctance of farmers to state their actual income most information given could be deemed as approximations. The highest proportion of households (28%) receives a monthly income ranging between Rs.5000/= to Rs.10000/=. The Chart 3.2 indicates the distribution of monthly family income among the farm families in BFS. The monthly income category of Rs.15000/= and above includes a 1% of farm households who are getting a monthly income of more than Rs.50000/=. The highest income reported was Rs.76500/=.

From the data one can see that the monthly income levels of farming families are significantly higher. But, this is due to contribution provided at the end of the B'Onion harvest. While this is only the gross monthly income since cash crops are cultivated using credit, both in cash and kind, a considerable portion of this income has to be allocated for credit repayment.

Chart 3.2: Monthly Family Income (Rs.) of Sample Households - BFS



Source: Survey Data, 2000

3.1.3 Land Use

Data on year round land use (Chart 3.3) by the sample farmers in 1999 reveal that there is a total of 207 land parcels recorded in the BFS, 73% are high lands and the rest 27% are paddy lands. Of the total acreage of 302 acres, 237 acres (78%) are distributed under high land while paddy land accounts for 65Ac. (22%).

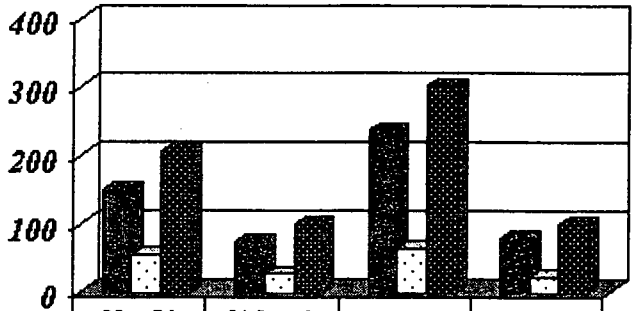
The majority of high lands and paddy lands can be categorised under three holding patterns, namely single ownership, joint ownership and leased in lands, the cumulative figures of which account for 87% of the total high land area and 81% of the total paddy land area. The rest 13% of the high land area is under various holding patterns such as encroachment, mortgaged in, permit holders and the cultivation of lands belonging to the Dambulla temple. The rest of paddy lands (19%) are cultivated either under *Ande* system or mortgaged in or lands taken on permit.

3.1.4 Credit Use

Of the total B'onion farmers, 78% have utilised 98 loans taken from various sources. Of the loans taken 27% have been issued by State banks such as People's Bank and Bank of Ceylon. Apart from these two main sources other financial sources such as the Kandurata Development Bank, Co-operative Credit

Society (SANASA), Co-operative Rural Bank, Hatton National Bank, Commercial Bank and Rural Development Bank have also disbursed loans to farmers in the village. The farmers obtain credit facilities from banks and other institutions, with whom they have frequent contacts. Farmers also believe that getting loans from institutions in which they have accounts prove to be easier. While state banks are more popular for the provision of cultivation loans in B'onion areas, SANASA is another popular source to the farmers due to the closeness of this bank, and since it is the only bank which provides loans for temple land holders. Also another significant number of farmers have borrowed from moneylenders. An interesting feature with regard to issue of these loans is that they are given once the farmers sign a contract, stating that they are willing to sell the farm produce to the same lender. Mostly these loans are given in kind, such as fertiliser, seeds and other agro-chemicals. Farmers also obtain loans from their relatives and neighbours, as they believe these transactions are easier, distance being negligible and due to lower of interest rates.

Chart 3.3 : Land Use Data -BFS



	No. Of Parcels	% Land Parcels	Acreage	% Acreage
High Lands	151	73	237	78
Paddy Lands	56	27	65	22
Total	207	100	302	100

Source: Survey Data, 2000.

There exist several constraints, which influence farmers' preference for getting loans from a particular lending source. While the problem of lack of collateral, either personal or assets, is a major constraint, some institutions require state sector employees as personal collateral. There are some farmers who do not have their own assets such as lands, which then raise the question of collateral. Another major constraint confronted by farmers is non-provision of loans to those who have not completed repayment of past loans. Farmers have also stated that the lack of farmer identity cards or any other certification to guarantee their status as a farmer has become a problem for getting loans. The long processing time has been another constraint for obtaining loans, which then causes delayed cultivation.

Apart from the above reasons farmers do not wish to take loans due to risks involved in farming. Also some farm families, having other sources of income have no interest in getting loans from any source.

3.1.5 Yield and Income

During the 1999 Yala season 63% of sample farmers were not satisfied with the yield they obtained. The B'Onion yield among the sample farmers in this particular season ranged from 300 Kg/Ac to 10000 Kg/Ac. The mode of the sample is 6000Kg/Ac but the average of the sample of 4800Kg/Ac is less than the district average of 5600Kg/Ac in Yala 1999. Drastic reduction in yield over the last several years has been reported due to occurrence of pest and diseases, which are a result of unfavourable weather pattern, as stated by 67% of farmers. Non-availability of quality seeds has also been another major

constraint to obtaining higher yields. Some farmers view that continuous cultivation of B'onion in the same plot of land has led to the decline in soil fertility and sub standard fertilisers have failed to rejuvenate these infertile soils resulting in continuous reduction in yield. Farmers who experienced fewer incidences of pest and diseases, and have managed to obtain quality seeds and adopted proper cultural practices including timely planting have been able to get satisfactory yields.

Of the total sample, 94% (73) farmers are not satisfied with the income they earned for the year 1999. Poor yields coupled with B'Onion imports during harvesting season, are the major causes for low prices, which have led to drastic reduction in cash crop income to the farming community. During the past season, 54% of farmers stored B'onion harvest hoping that prices may increase but a considerable portion was lost both due to dehydration and wastage during the long storage period. This has also caused a decrease in income from B'Onion farming. Another reason cited by farmers, as a reason for low income is the method of grading the state sector employs, when purchasing the harvest. The small bulbs due to poor quality seeds when graded at the time of selling result in farmers receiving low prices. But, the farmers who have sold their produce soon after harvesting have been able to obtain a satisfactory price, as prices prevailing at that time were much higher than what prevailed at the later end of the season.

3.1.6 Marketing

The time of selling of produce mainly depends on the price prevailing at the market. Many farmers do not sell the produce soon after harvest unless the market price is reasonable. Of the sample farmers, only 9% have sold the total harvest shortly after harvesting, as they believed prices might not increase. The rest had stored the produce speculating on higher prices at a later date. During the storage period farmers tend to sell the produce, at intervals depending on their various needs such as loan repayment and consumption. Some farmers sell in order to avoid loss of weight due to dehydration and wastage. Accordingly, the number of times of sales of produce varies; 60.5% farmers sold produce 2 to 4 times while the rest of the sample sold the harvest throughout a period ranging from 5 to 20 times.

The majority of farmers (82%) sold their B'onion produce at the recently established Dambulla Economic Centre, which is the main marketing centre for the farmers in the area. Other sources, which purchase produce, are collectors, Co-operative Wholesale Establishment (C.W.E) and buyers in the Dambulla town. A small percentage of farmers (6%) still send their produce to the Colombo Bazaar. Before the establishment of the economic centre, domestic collectors and buyers at the Dambulla market limited their purchase of produce to within the Dambulla area. With the introduction of the economic centre, produce is brought to Dambulla from surrounding areas. Currently the centre is a distribution point both for locally produced as well as for imported vegetables including B'onion.

According to the farmers, the economic centre has advantages as well as disadvantages. The expansion of market has provided them with a choice of buyers at the close proximity, and this has led to a reduction in the duration of marketing. As the economic centre is systematically arranged, when compared to the shops in the Dambulla town that was the previous selling point for farmers, one could get a cursory glance of the availability of products at the market, which is an advantage to both buyers and sellers. Farmers stated that the prevailing low prices were due to several reasons. During the harvesting season, prices decrease as supply increases. The situation worsens when imports flood the local market during the same period. In addition the commission system operating at the economic centre also affected farmer income. At the time of survey there were three commission rates operating at the Dambulla economic centre as per the chart below.

Price of 1 Kg of Produce Sold	Rate of Commission (Rs./kg)
Below Rs.10.00	Rs.0.50
Between Rs.10.00 and Rs.30.00	Rs.1.00
Above Rs.30.00	Rs.2.00

Source: Survey Data, 2000.

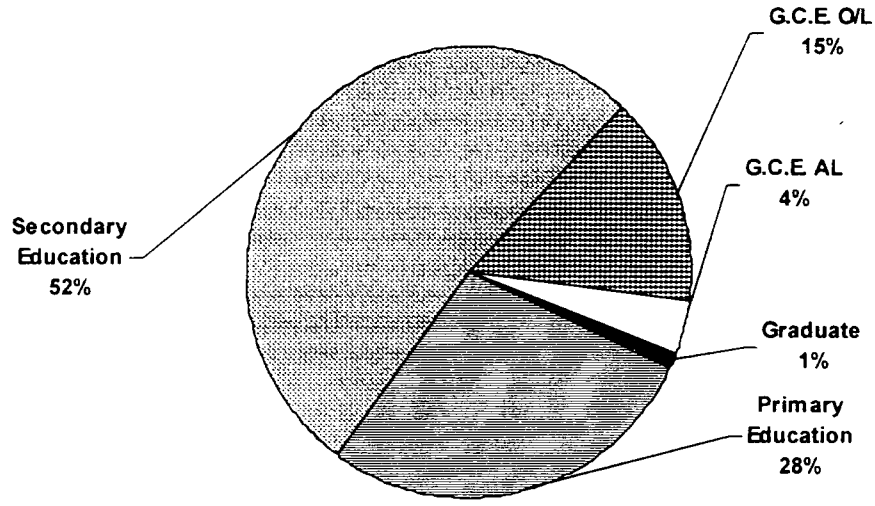
This commission is the major benefit the trader can derive from his involvement in the market procedure. Both the market trader and the producer can obtain a higher income from either increased sales or when higher prices prevail. However, since the commission is mandatory for the market trader, he does not need to pay attention to higher prices but rather increase the extent of sales through reducing prices after confidential negotiations with the buyer. This largely happens when the prices are between Rs. 10.00/Kg and Rs. 30.00/Kg. Because the trader receives his one rupee commission for any product within this particular range he tries to sell a larger extent of products by reducing prices whereby the farmer receives a lower income. While most of the vegetable prices are in this range, most farmers lose their income due to irregularities in the economic centre. All these reasons have contributed to the reduction in producer prices for local products. Another problem, which arises in the economic centre is that at certain times farmers have to wait for several days to sell their products as well as to obtain money from the buyers, which is costly in terms of time and money to the farmers. C.W.E also follows a system of intensive grading of B'Onion in order to maintain their standards. A farmer who has a B'Onion harvest comprising of a large extent of small bulbs generally gets a low price thereby reducing his income.

3.2 Potato Farming System (PFS)

3.2.1 Demographic Characteristics of the Sample

The 74 farm families chosen from the Welimada Divisional secretariat make up a total population of 337. The family size ranges from 2 to 7 with an average family size of 4.5. Of the 74 Potato householders in PFS, 73 respondents are male householders and the other one is a female householder. While 93% of them are married, others are unmarried males below 33 years of age. The main occupation of 64 (86%) respondents is farming. As for the rest, farming is a secondary source of income. The majority of farmers in PFS who had an education of either secondary levels or primary levels are 52% and 28% respectively (Chart 3.4). All educated above secondary levels were below 50 years of age. Analysis on age distribution among farmers indicates that the majority of B'onion cultivators are below 50 years of age accounting for 66% which also includes 7% respondents below 30 years of age.

Chart 3.4 : Education Levels of Farmers -PFS

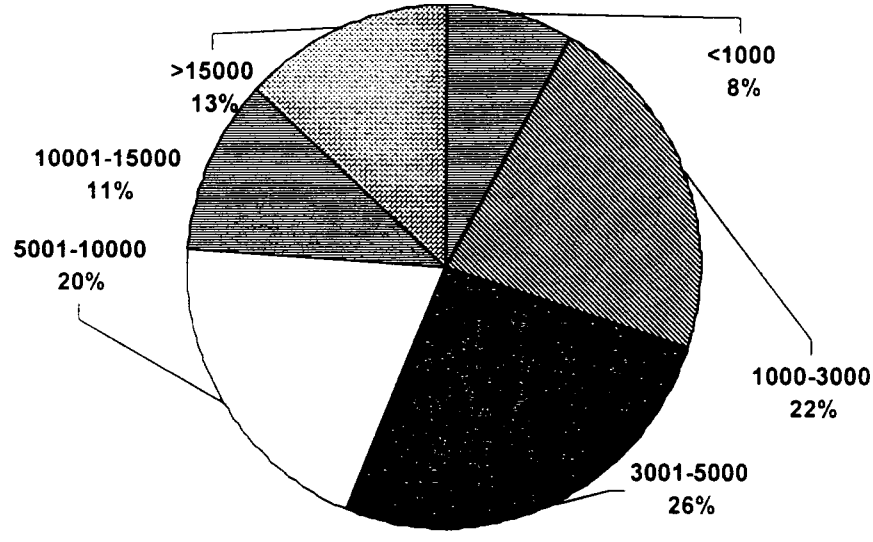


Source: Survey Data, 2000

3.2.2 Family Income

Similar techniques were used for the estimation of monthly family income levels as in the case of BFS (Chart 3.5). Accordingly, the prominent income category among the sample households is from Rs.3001/= to Rs.5000/= per month. Further the majority of households have monthly incomes of between Rs.3001/= to Rs.10,000/=. The income category of Rs.15000/= and above also includes 4% who earn a monthly income of more than Rs.50000/=.

Chart 3.5 : Monthly Family Income (Rs.) of Sample Households - PFS



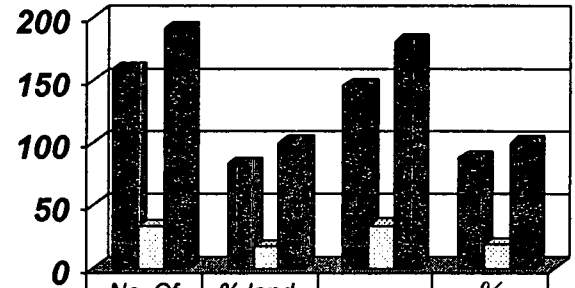
Source: Survey Data, 2000

3.2.3 Land Use

Data on year round land use (Chart 3.6) in 1999 in the PFS reveal that out of a total of 191 land parcels recorded in the PFS, 82.7% are highlands and the rest 17.3% are paddy lands. The total acreage of 180Ac distributed under highland and paddy land account for 146Ac (89%) and 34Ac (19%) respectively.

The majority of high lands and paddy lands are distributed among three holding patterns namely single ownership, joint ownership and leased in, and the cumulative figures of which account for 85% of the total highland area and 94.5% of the total paddy land area. The rest, 15% of the highland area is under different holding patterns such as encroachment, mortgaged in, taken *Ande*, permits and Swarnabumi deed-holders. And the rest 5.5% of paddy lands are cultivated either under *Ande* system or on permit lands.

Chart 3.6 : Land Use Data -PFS



	No. Of Parcels	% land Parcels	Acreage	% Acreage
High Lands	158	82.7	146	88
Paddy lands	33	17.3	34	19
Total	191	100	180	100

Source: Survey Data, 2000.

3.2.4 Credit Use

Out of the total number of Potato farmers, 65% have utilised 80 loans taken from various lending sources for the cultivation of potato during year 1999 of which the majority of 46% were issued by state banks like the Bank of Ceylon and the People's Bank. Village lenders and Co-operative Rural bank are the two main sources, which have markedly contributed to the provision of cultivation loans for 21% and 9% of the farmers in the BFS. Apart from these, the Kandurata Development Bank, Co-operative Credit Society (SANASA), Hatton National Bank, Rural Development Bank, Agrarian Services Centre and lenders in the Colombo Bazaar, have also provided credit. There is a contract between farmers and lenders in the village and the Colombo Bazaar to sell farm produce to them. These loans given by village lenders are mostly in kind such as fertiliser, seeds and other agro-chemicals. Also 1% of farmers get loans from their relatives and another 1% from neighbours for the sake of convenience proximity and due to lower interest rates or no interest at all.

The constraints faced by the PFS farmers in obtaining credit are similar to that of BFS farmers though the two locations of cultivation are far apart. Lack of collateral, delays in processing loans, defaulters on loans and lack of farmer identification cards are some of those problems.

3.2.5 Yield and Income

The sample farmers have been able to obtain a potato yield ranging from 400Kg/Ac to 9600Kg/Ac during the 1999 Yala season. The average yield of the sample farmers accounts for 3417Kg/Ac, which is less than that of the district average of 4250Kg/Ac (Department of Agriculture, 1999). Therefore, the majority of the sample farmers (78%) whose yield level lies below this average figure were not satisfied with the yield they obtained from potato cultivation. This can be traced to several reasons; non availability of quality seeds, and pest and disease outbreaks mainly due to unfavourable weather condition as stated by 31% of farmers. Continuous cultivation of potato in the same plot of land has led to decline in soil fertility, which has become a major threat environmentally to the land. Soil erosion as most of the potato fields are on hilly terrace slope has led to vast quantities of soil being washed into the reservoir downstream causing siltation. Another reason that was pointed out by the farmers is the use of sub standard fertilisers, which has failed to rejuvenate these infertile soils resulting in unsatisfactory levels of yield. Lack of an advisory service has also been recognised as a constraint for achieving yield targets.

Of the total sample, 95% farmers were not satisfied with the income they received. Poor yields coupled with potato imports during harvesting season, are the major reasons for low prices, which have led to drastic reduction in cash crop income to the farming community. Another reason largely contributing to low income is grading when state sector purchases the produce. Comparatively, potatoes can be stored for a long period. Therefore, if the farmer expects any speculative benefits there is no need to keep the crop un-harvested like in B'onions. However, of the sample 36% of farmers sold the total harvest at once while another 36% farmers sold their harvest in two lots. Uncertainties in prices, low extent of harvest and dehydration and wastage during storage are the reasons for the sale shortly after harvesting. As in the case of B'onion, the potato price is lower during the harvesting season.

3.2.6 Marketing

Unlike B'onion, marketing of potato is characterised by sales at limited times ranging from 1 to 3. As in the case of B'onion, potato farmers also consider producer prices at the time of selling and many farmers in the sample have sold the produce shortly after harvest as the market price was reasonable. Farmers (49%) sell their produce at the close-by markets such as Keppetipola and Welimada and the Colombo Bazaar under the commission system. Collectors and C.W.E contribute to a lesser extent.

Farmers expect many advantages from the proposed Keppetipola economic centre, which was under construction at the time of the survey. Farmers expect a producer price of Rs. 35.00 since the cost of production is Rs. 28.00/Kg according to their own estimates. Also they hoped for less intervention by middlemen, less waste of time due to market expansion, reduced transport cost, ready cash for products and increased competition due to many buyers. Majority of farmers (61%) do not see any shortcomings, but some of them are aware of the weaknesses in the Dambulla economic centre such as the irregularities, which occur due to the commission system, corruption by traders and low prices. Low producer price is the major problem currently faced by potato farmers. Apart from this, stiff commission, excessive transport costs and lack of ready cash are the problems associated with the Colombo Bazaar procedure.

CHAPTER FOUR

Performances of Extension Set-up in Selected Farming Systems

4.1 Introduction

The transfer of knowledge and technology generated through the national research system to end users, the farmers, through field level representatives is generally known as extension. The Department of Agriculture (DOA) was responsible for this service free of charge as a mandatory requirement for agricultural development in NPS through out the last century. As previously discussed this extension service was largely supply driven and was both inefficient and costly.

In addition to the well-known extension service provided by the state sector, a number of other sources involved in agricultural activities gave extension advice at the grass root level. They provided a significant contribution in the provision of knowledge and information that have greatly enhanced the smooth operation of farming systems. These extension activities included dissemination of information ranging from exchange of ordinary ideas about day-to-day farming activities to substantial discussions with regard to overall farming systems. In this study, therefore extension activities refer to all types of contributions that enhance the awareness and knowledge of the farming community. In all these contributions, a flow of information to the farming community was maintained through a variety of communication methods ranging from the use of mass media to group methods and individual contacts through field level representatives. The field level representatives involved in dealing with the farming community are referred to as extension informants, in this study.

This chapter refers to the distinct sources of extension, modes of information dissemination, and role and performances of extension informants from different sources found in the current extension set up of selected farming systems.

4.2 Sources of Extension

The extension services in the selected farming systems were provided by both public and private agencies. Based on certain characteristics, four main sectors of extension from these agencies could be identified.

Private Sector

Profit maximizing private sector organizations aimed at product and service promotions were categorized under the private sector. Agro-industrial firms dealing in the areas of fertilizer, agro-chemicals and farm implements appeared to be playing a major role in the private sector. Many of these organizations consisted of 20 to 30 personnel, experienced at various levels from management to field level who were involved in the provision of extension. Most of these field level sales agents were Agriculture Diploma holders who had undergone technical training sessions given by the DOA and the Sri Lanka Crop Protection Association (SLCPA). As revealed during the survey, 50 % of their time was allocated to work with the farmers and the rest of the time with dealers who had direct contact with the farmers at the village level. Therefore, sales agents and input dealers had become prominent extension informants who represented the private sector.

Institutions providing services such as banking and insurance also came under this category. But, their limited involvement at the field level did not show a marked contribution towards farmer extension. The extension service provided by these organizations was also involved in supply driven service due to their product promotion objectives.

Non Governmental Organizations (NGOs)

The involvement of NGOs was mainly seen through the participatory modes of extension. NGOs mostly had their selected areas for promotion such as organic farming and environmental protection. AGENT in BFS and Sweden Co-operative in PFS were NGOs which provide occasional extension service to the farmers in the study location. Therefore, the service provided by them was also related to these areas thus showing a supply driven mode of extension.

Community Sources of Extension

The important contribution provided by the individuals and organizations of the farming community such as farmer organizations, farmer companies and neighboring farmers was referred to as the community sector for the purpose of this study. Rangiri Dambulu Farmer Company was one farmer company, which was functioning in the BFS at the time of survey. There were also many farmer organizations involved in the provision of information that were required by the farming community. While this service had demand driven features, the horizontal diffusion of information occurring due to this farmer-to-farmer extension seemed to be the most effective mode of extension in the absence of an efficient agents of extension.

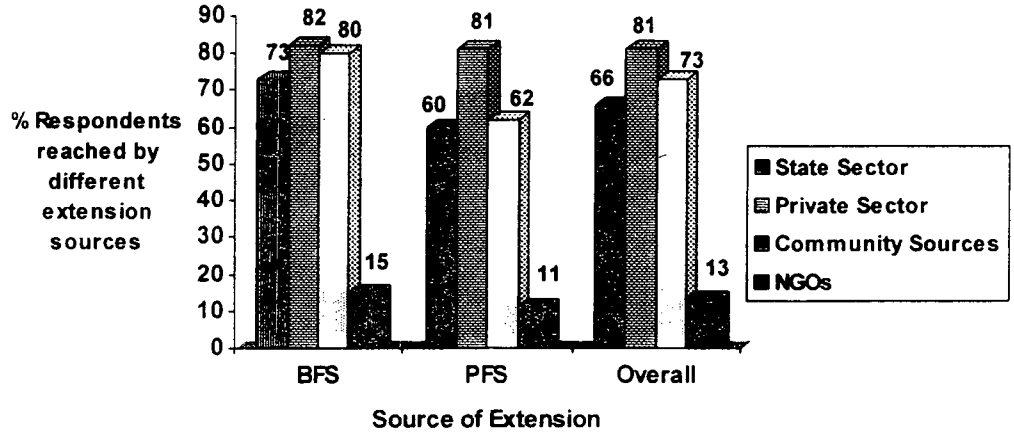
State (Public) Sector

State promoted service oriented representations came under the category of state sector where the prominent extension informants were Agricultural Instructors (AI), Divisional Officers (DO) and Govi Sevana Niyamakas (GSN) who recently were designated as Agricultural Research and Production Assistants(ARPA). A research driven mode of extension was largely applicable to the service rendered through public sector institutions such as the DOA, research institutions and universities.

Chart 4.1 shows the extension coverage by four different sources in two farming systems. The awareness of the farming community about extension informants and their contribution to extension through existed level of contacts between the two parties was referred to as the extension coverage. The private sector was the main source of information for 81% of the farm households in both farming systems.

While the community sector was a substantial contributor accounting for 73%, in the state sector the extension coverage accounted for only 66%. The NGO sector with only 13% could be recognized as another contributor to extension activities in the agricultural sector.

Chart 4.1: Extension Coverage by Source of Extension



Source: Survey Data, 2000.

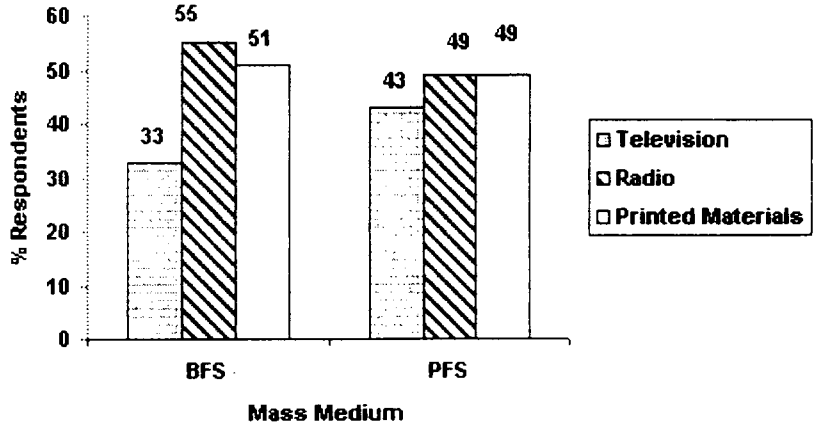
4.3 Modes of Communication

For the transfer of information and technological know-how, several key modes of communication seemed to be used by each extension sector. Three main communication methods to enhance farmers' awareness and knowledge were:

(a). Mass media,
(b). Conducting of training programmes, and
(c). Extension informants.

4.3.1 Mass Media

Chart 4.2: Use of Mass Media by Farming Community



Source: Survey Data, 2000.

In general, contribution from mass media to enhance knowledge and awareness among the farming community appeared to be insignificant. Even though information technology has reached new heights, its contribution towards the development of agriculture through extension in Sri Lanka was not satisfactory. As shown in Chart 4.2, only around 50% of the sample of the farming community, were exposed to any kind of mass media.

Regional radio broadcasts mostly by the state sector and printed materials available from private sector were the two sources of mass media to which some farmers were exposed. Even though the DOA had a variety of printed materials including booklets and leaflets, these had not found their way to the farmers, as there was a lack of satisfactory distribution by the DOA. Farmers rarely obtained knowledge and information through reading relevant materials available except for the information received through advertisements carried out by the private sector. Systematic watching of television programmes regarding agriculture was not common among farm households.

Within the farming community the lack of utilization of mass media was due to several reasons. The time constraint was one of the major limiting factors in the use of mass media for information as indicated in Chart 4.3.

Chart 4.3 (a): Reasons for Not Using Mass Media -BFS

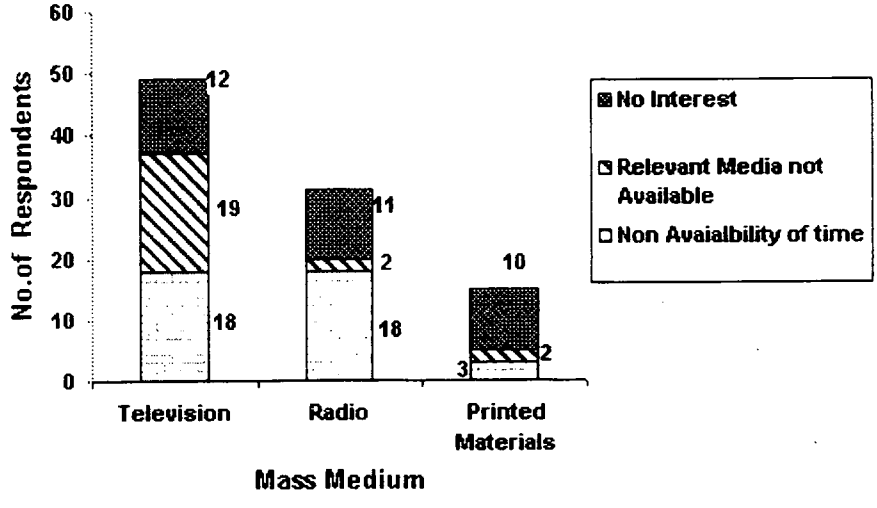
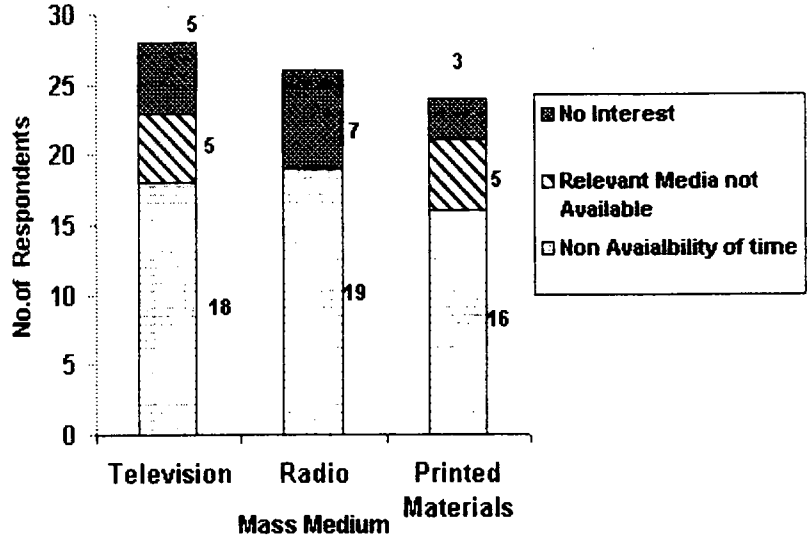


Chart 4.3(b): Reasons for Not Using Mass Media -PFS



Source: Survey Data, 2000.

Another factor was the absence of media such as radio and television in most farm households. Also according to some farmers the content of agricultural programmes aired were neither useful nor practicable for the farming systems, which therefore had lessened interest for them. Other factors were the timing of agricultural programmes. As farming had a schedule of operations which had to be completed at the required time, the present timing of agricultural television programmes was not suitable for farmers' viewing. During cultivation season often after a hard day's work the leisure time available was spent on watching entertainment programmes rather than educational programmes.

Usefulness of Mass Media

Depending on the nature and the degree of listening/viewing farmers had rated the usefulness of mass media sources. Chart 4.4 indicates the results. The radio had been repeatedly rated as the most influential mass media source at the time of survey. This was mainly because one could both listen to the radio and do some other work in the meantime. One could conclude that there still existed considerable opportunities for the utilization of mass media for the transfer of technological know-how and information related to agriculture by all sectors that were involved in extension.

Chart 4.4(a): Evaluation of Usefulness of Mass Media-BFS

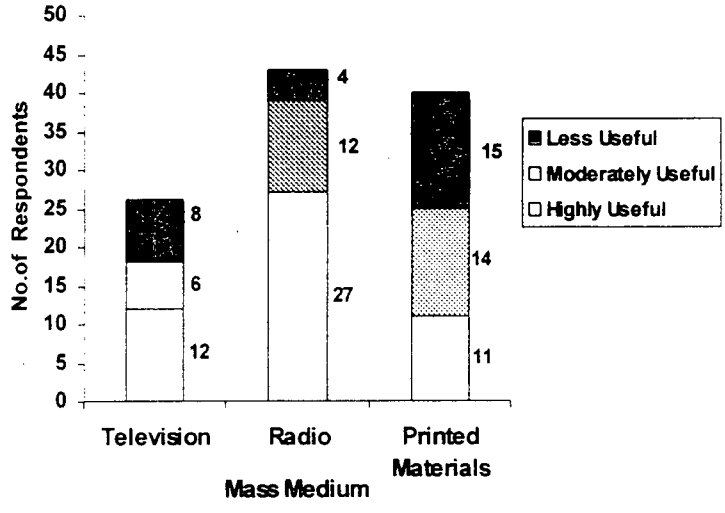
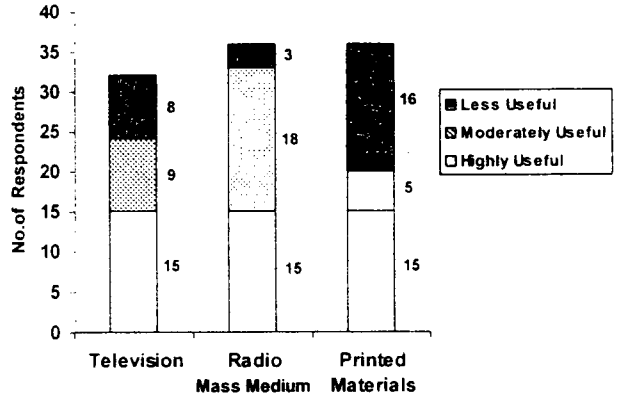


Chart 4.4(b): Evaluation of Usefulness of Mass Media-PFS



Source: Survey data, 2000

4.3.2 Conducting of Training Programmes

Training programmes indicated the efforts made by the extension services to transfer knowledge and information to farmers. As Chart 4.5 indicates, training opportunities received by farmers in BFS was higher accounting for 43 farmers when compared to 8 farmers in the case of PFS. The increased involvement of the Department of Agriculture to introduce true seed production technology was the reason behind the increased farmer participation in training programmes in the BFS. Among the farmers the negative aspects of the training programmes had been; (1).Unequal distribution of training programmes among the farming community and unfair choice of participants (2).Repetition of the same training programme by different sources and (3).Lack of variety of training programmes by the various organizations.

Chart 4.5(a): Farmers' Participation in Training Programs -BFS

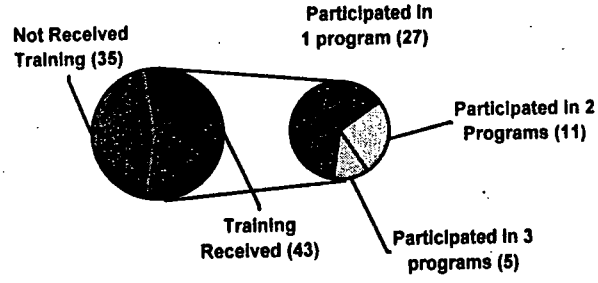
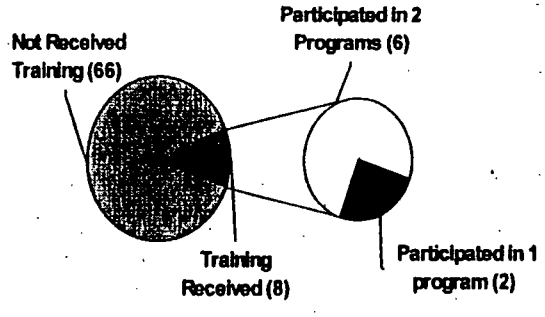


Chart 4.5(b): Farmers' Participation in Training Programs -PFS



Source: Survey Data. 2000.

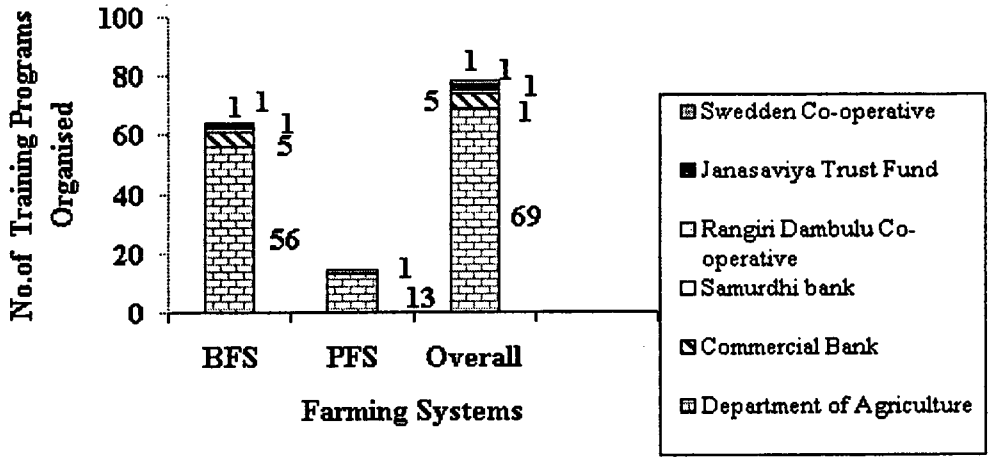
Types of Training Programmes

Table 4.1 provides information on the variety of programmes conducted. A few years ago to provide an alternative solution for the problem of lack of quality seeds, the DOA introduced the technique for true seed production for B'onion. Due to this the involvement of DOA in BFS was higher than in PFS. Another innovation was nursery management that was introduced to farmers alongside the true seed programme in BFS. Apart from this, a considerable number of training programmes had been conducted both in the field of general agriculture and special cultural practices such as pest and disease control, pesticide use, construction of agro-wells, use of straight fertilizer, soil management and seed potato storage. As rated by the participants, many of the training opportunities received by the farmers in both farming systems were innovations and, therefore, were utilized in their farming systems. The cost of innovation and non-cultivation of a particular crop were the reasons for non-utilization of the knowledge received in the rest of the training programmes.

Organization of Training Programmes

As Chart 4.6 indicates, the training opportunities for farmers was provided mainly by the Department of Agriculture. Of the total of 78 programmes, the DOA had conducted 69 (88%) of the training programmes. Due to increased interest towards B'onion cultivation among farmers the Commercial Bank, Samurdi Bank, Rangiri Dambulu Co-operative and Janasaviya Trust Fund were other organizations which had been involved in training programmes for BFS. In contrast in the PFS, except for the involvement by the DOA, the Sweden co-operative, an NGO, was the only other organization which conducted training in PFS for these farmers.

Chart 4.6: Organization of Training Programs



Source: Survey Data, 2000.

Table 4.1: Types of Training Programmes

Training Programmes	BFS		PFS		Overall	
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%
True seed production	36	56.2	3	21.4	39	50.0
Nursery management	8	12.5	1	7.1	9	11.5
General Agric. Practices	8	12.5	8	57.1	16	20.5
Pesticide use	5	7.8	-	-	5	6.4
Pest and Disease Control	3	4.7	1	7.1	4	5.1
Use of Straight Fertilizer	2	3.1	-	-	2	2.6
Agro-well Construction	1	1.6	-	-	1	1.3
Soil management	1	1.6	-	-	1	1.3
Seed potato storage	-	-	1	7.1	1	1.3
Total	64	100.0	14	99.8	78	100.0

Source: Survey Data, 2000.

4.3.3 Role of Extension Informants

Table 4.2: Contribution from Extension Informants by Farming Systems

Extension Informant	Farming System				Overall	
	BFS		PFS			
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%
Farmers	68	87.2	61	82.4	129	84.9
Input Dealer	58	74.4	55	74.3	113	74.3
Agricultural Instructor	63	80.8	36	48.7	99	65.1
Sales Agents	43	55.1	18	24.3	61	40.1
Farmer Organizations	42	53.9	20	27.0	62	40.8
Bank Officers	25	32.1	1	1.4	26	17.1
Govi Niyamaka	12	15.4	28	37.8	40	26.3
Divisional Officer	9	11.5	14	18.9	23	15.1
Farmer Company	6	7.7	2	2.7	8	5.3
NGOs	-	-	9	12.2	9	5.9
Insurance Officers	4	5.1	-	-	4	2.6
Other*	5	6.4	4	5.4	9	5.9

* Representations from research institutions and universities

** Percentage out of the total number of farmers in each farming system.

Source: Survey Data, 2000.

Table 4.2 provides an insight into the variety of extension informants dealing with extension activities at the grass root level. The number of farmers who have had dealings with various extension informants to obtain their service are indicated from the data. Analysis on the contribution from individual extension informants indicated that the farmer-to-farmer extension played an important role in extension at the time of survey. In most cases farmers depended primarily on the knowledge of progressive farmers in the area for their information needs. As revealed during the survey, neighbouring farmers were the main source of information for 87% of the farm households in the BFS and 82% of the farm households in PFS. This horizontal diffusion of information within the farming community based on both farmer

experience and occasional experimentation done by farmers seemed to be effective in to a certain extent.

The second most important extension informant with regard to both farming systems was the input dealer, who in most cases, was the village merchant who provided a variety of services including marketing of inputs, purchasing farm products, providing credit and at times helping farmers with their consumption needs. The input dealer was available at hand and provided a variety of agricultural inputs, which were the two important reasons for the popularity of the dealers.

Agricultural Instructors (AIs) were third in line of importance with regard to information needs in both farming systems. Lack of sufficient number of officers and frequent farmer gatherings, limited involvement by officers in field activities and need for attending to non-extension activities had contributed to diminish the extension afforded by AIs. The contribution from AI was low in the PFS when compared to BFS. Besides less movement of AI in the PFS due to the hilly terrain and the cold weather in PFS, restricted frequent farm visits by extension informants.

The above data provide a clear picture about the extension activities at the grass root level. In a given Agrarian Services Center there was a minimum of one AI responsible for the provision of extension. The farmers' order of preference for seeking information with regard to agriculture was primarily from neighboring farmers, input dealers and then from AIs.

Apart from the above three-dominant extension informants, there were also some other informants who represented various sectors, institutions and organizations. Sales agents who had been employed by agro-chemical firms were also involved in the transfer of agricultural knowledge and information while they promoted their own products. These agents were mostly Agriculture Diploma holders and they used a variety of teaching methods such as demonstrations, discussions, video films and printed materials during the process of information dissemination. According to the data, the contribution from sales agents in PFS was not significant as in the case of BFS due to several reasons. One reason was the close or/and more frequent contacts between input dealers and farmers than any other extension informant in PFS who were mostly outsiders. The terrain of the land in PFS also contributed to a certain extent, as it is on hilly terrain where accessibility was difficult, which discouraged agents from going to the farmers. But the most significant reason was a decreasing interest in potato cultivation due to import of potato and, therefore, the decreasing demand for agro-chemicals. Farmer organizations were also an important source of information in both farming systems.

With the appointment of Govi Sevana Niyamakas (GSNs), the expectation of the farmers was that agricultural assistance would be closer at hand. It was envisaged that GSNs would: (1). prepare crop plans for the area and direct farmers and allocate land area to be cultivated according to the plan (2). provide accurate statistics to the government on the production of each crop in advance so as to ensure the control at imports (3). disseminate agricultural information and coordinate all agricultural activities between farming community and the agrarian center. Some farmers were dissatisfied with the services of GSNs as they left that they did not have the required experience or academic qualifications to advise on agricultural related matters. This was because most of the GSNs were political appointees. However, in some cases there was evidence of the vast contribution with regard to dissemination of knowledge by GSNs in some study locations, for example Hewana Kumbura in Keppetipola.

The degree of involvement of bank officers and insurance officers varied according to the situation prevailed in the two farming systems. While the destabilized potato economy had negatively influenced the availability of services such as credit and insurance for farmers in PFS, the situation was not so in the case of BFS at the time of field survey. A contribution to the extension activities in two farming systems was seen from the emerging farmer companies, NGOs and direct involvement from regional and national research stations such as the Maha Illuppallama Field Crop Research Station, Kahagolla Research Station and the Hector Kobbekaduwa Agrarian Research and Training Institute.

4.4 Performance Evaluation of Extension Informants

Table 4.3 indicates how farmers had prioritized the importance of extension service rendered by the prominent six extension informants at the village level. Farmers recognized the importance of a particular extension service primarily based on three distinct considerations. One important feature that was expected from a particular extension informant was to be approachable both in terms of association and proximity. Trustworthiness or reliability of the service had been an another important determinant. Due to high risks and uncertainties associated with agricultural enterprises which could lead to crop failures, timeliness was a very important aspect of the service.

A more in-depth analysis on the prioritization of the importance of service provided by extension informants raised several key issues. Neighboring farmers in both cases were considered as the most decisive extension informant in their farming activities by 68% of farm households in BFS and 72% of farm households in PFS. The cumulative values for the second and third priorities for neighboring farmers accounted for 25% for BFS and 22% for PFS. Therefore, on an average it could be concluded that the horizontal diffusion of information within the farming community had a considerable significance in the extension set-up in both farming systems. But in the case of AIs, only 24% and 28% farmers respectively from BFS and PFS had preferred the service of AIs. Apart from that, the preference of the vast majority for AI's service had been dispersed beyond second priority, the cumulative value for which accounted for 76% and 72% for BFS and PFS respectively. It was evident from the above data that many farmers considered that AI's service was highly essential for their farming activities, though it could not be prioritized on the basis of above considerations.

Table 4.3: Prioritisation of the Importance of the Services Provided by Extension Informants

	Responses Received from the farmers									
	Priority basis distribution of responses								Total responses	
	Priority 1		Priority 2		Priority 3		Priority 4			
	BFS	PFS	BFS	PFS	BFS	PFS	BFS	PFS	BFS	PFS
Neighbouring farmers	46	44	13	12	4	1	5	4	68	61
	(68)	(72)	(19)	(20)	(6)	(2)	(7)	(6)	(87.2)*	(82.4)*
Agriculture Instructors	15	10	11	11	14	8	23	7	63	36
	(24)	(28)	(17)	(31)	(22)	(22)	(37)	(19)	(80.8)*	(48.6)*
Input dealers	5	11	18	24	11	11	24	9	58	55
	(9)	(20)	(31)	(44)	(19)	(20)	(41)	(16)	(74.4)*	(74.3)*
Sales agents	5	1	11	6	8	2	19	11	43	20
	(12)	(5)	(26)	(30)	(19)	(10)	(44)	(55)	(55.1)*	(27)*
Farmer Organizations	-	3	1	5	-	8	11	12	12	28
Govi Sevana Niyamaka	-	(11)	(8)	(18)	-	(29)	(92)	(42)	(15.4)*	(37.8)*

Source: Survey Data, 2000.

Figures in brackets indicate percentages

* Percentage out of the total number of farmers in each farming system.

With regard to input dealers, though their involvement was currently essential, a very small minority had given their first preference for the service rendered by them. Further, the importance of input dealer was higher in PFS than in BFS. A similar situation was seen even in the case of sales agents and farmer organizations. But, in the case of GSN's involvement, an increased importance was seen in the PFS than in BFS due to increased involvement by some GSNs in the PFS.

CHAPTER FIVE

Determinants of Private Sector Participation In User-Pay Extension

5.1 Introduction

In an effort to identify the determinants of private sector participation in user-pay extension, the senior management of several private sector organizations were interviewed. Most of these organizations were primarily dealers of agro-chemicals that were already involved in extension activities and could be potential contributors for user-pay extension. The senior management of most of these organisations were aware of the idea of the extension privatisation. Long discussions held with them and information received through other study methods revealed some negative issues or constraints which hinder their involvement in user-pay extension. Information also provided some evidence on positive points or potentials for their participation.

The following discussion elaborates both the above mentioned aspects that have had an influence on the process of extension privatisation.

5.2 Determinants of Private Sector Participation

5.2.1 Economic Nature of Agricultural Information

According to the understanding of the private sector organisations, extension work is twofold; farmer extension and product extension. Discussions held with the private sector revealed that there existed similarities between the above terms and the categories of agricultural information discussed in chapter two.

Accordingly, farmer extension was to disseminate pure agricultural information having public good nature i.e. rice cultivation techniques, which were familiar to most of the farmers. Because of the public good character of this general or pure agricultural information, its delivery would have to remain with either the NGO, public sector or community responsibility since private firms would find it unprofitable.

Product extension was to disseminate information embodied in agricultural technologies having private good nature for instance protected agriculture under polytunnels. Due to increased rivalry and excludability, this information provided an adequate economic incentives for the private sector participation, which was product extension according to their understanding.

Even though a difference was not seen between farmer extension and product extension, it basically pointed to the existence of a variation in the economic nature of agricultural information. There seemed to be a mutual relationship between the two types of extension work and dependency on each other for an effective farmer education process. Decreasing state intervention in the recent past in the farmer education process had caused the private sector to face an unpleasant state of affairs during product extension. Lack of farmer extension at the grass root level affected the farmer absorptive capacity of innovations leading to negative implications on product extension. However, though, the private sector appreciated the importance of farmer extension, they did not intend taking over this service since it was not profitable.

5.2.2 Returns from Agricultural Enterprises

In some instances, returns from overall agricultural enterprises became significant regardless of the nature of agricultural information disseminated. When there was the assurance of promising returns from the overall investment this had become an incentive to the private entities to be involved in that venture.

The private sector had often shown interest in participating only in selected agricultural enterprises that were large-scale profitable operations. Besides a marked involvement in the input delivery, a growing interest towards some cropping systems such as seed paddy production appeared to be priority areas of the private sector. As revealed by the interviewed private sector participants, the seed paddy industry was seen as a promising enterprise since the DOA supplied only approximately 8% of the national requirement. At the time of survey the CIC had been involved in seed paddy production at recently purchased Pelwehera seed farm.

An out-grower system of cultivation appeared to be another promising area where the private sector had shown a marked interest. In spite of some socio-economic and environmental issues, tobacco and gherkin cultivation during early 90's provided experiences of the growth of contract farming system in the country.

In both these instances, extension was provided to the farmers as a single input or as a component of a package of inputs with no direct charges for the service. In contract farming the supply of extension was given with the package of inputs, where the firms had indirectly benefited, providing an efficient alternative for the supply of extension.

It was obvious therefore that faced with promising returns from a particular agricultural enterprise the private sector would take up extension responsibilities regardless of direct benefits from the provision of extension services.

5.2.3 Attitudinal Aspects

Private Sectors' Point of View (Willingness to Supply User-Pay Extension Service)

For several years sales agents and village input dealers have had dealing at the grass root level. But, the private sector had failed to develop and maintain a healthy relationship with the farming community due to several reasons. Compared to the responsible service provided by the public sector field representative (the AI), the private sector lacked permanently responsible personnel due to frequent changes of its representatives. Also corruption by field representatives and occasional failures of the demonstrations conducted were added disadvantages contributing to the mistrust towards the private sector. Due to above factors the private sector felt that despite knowledge, information and other benefits provided by them through the promotional work, farmers were reluctant to give their support for demonstrations and extension programmes. Therefore, as a result they sometimes failed to achieve set targets even in product extension. The private sector believed that the state sector received an immense acceptance within the farming community. Given the situation, the private sector was reluctant to invest in agricultural enterprises.

Farmers' Point of View

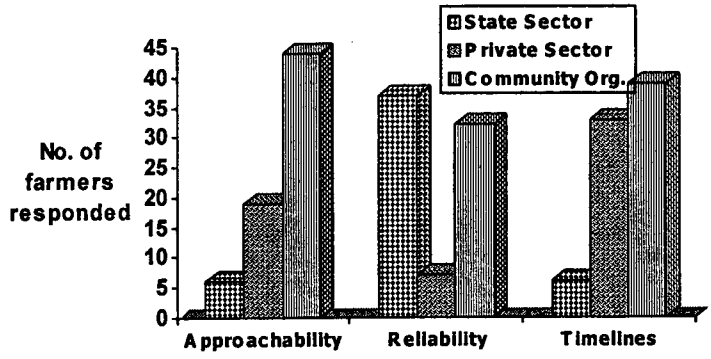
Similarly the farming community had some general comments on the private sector. To the farmers the public sector was better due to its service orientation compared to profit orientation of the private sector. In addition to this, there was a general distrust against the concepts of privatisation, multinationals, globalisation and the World Bank which influenced the farming community to reject the user-pay extension. Also, some farmers were of the opinion that they would have to abandon agriculture in the

near future if freely available agricultural inputs such as water and extension were also subject to taxation which would result in only the wealthy being able to afford agriculture. Since the majority of the population including most of the farmers were used to welfare measures, which was the main policy direction the state sector employed after independence, they expected that the state sector should continue in the provision of these subsidies. This led to the lack of an acceptance among the farming community of private sector as an extension agent. But, on the other hand, there were farmers who believed that if accurate information is disseminated and the product market is established the agriculture sector could be improved under a user-pay extension set up.

This situation has been further proved by the data collected from sample farmers at the field survey. The Chart 5.1 provides a qualitative analysis of different sources of extension functioning within the farmers' reach where the total number of responses varied as some farmers failed to provide clear answers. In this analysis approachability, reliability and timeliness of the service were considered vital and essential qualities in extension services based on which, the degree of preference of farmers for different sources of extension varied. The Chart further indicates that the state sector has a broad acceptance among the farming community due to its reliability. But, the busy schedule of the public sector officials and their extended coverage had led to poor access to them and their unavailability at times when information was required.

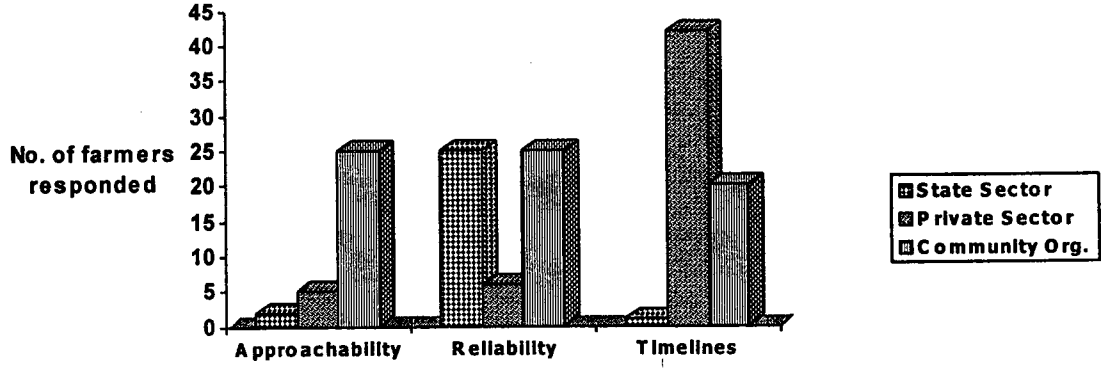
But, in the case of the private sector, reliability was rated last, though a timely and approachable service was provided. For farmers to consider the private sector as a reliable source of extension, there would be a need for a more consistent and trusted relationship between the farmer and the agent.

Chart 5.1(a): Qualitative Analysis of Extension Services by Farmers - BFS



Source: Survey Data, 2000

Chart 5.1(b): Qualitative Analysis of Extension Services by Farmers - PFS



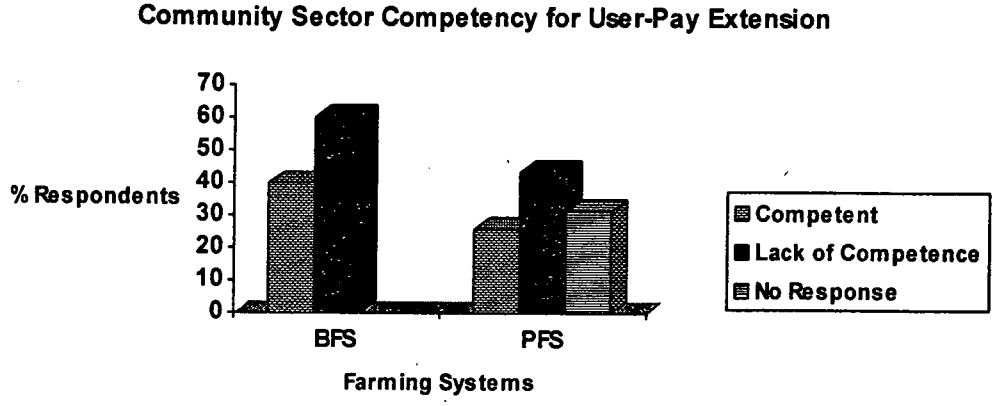
Source: Survey Data, 2000

Qualitative Analysis of Extension Services by Farmers

The community sector had more acceptance in an overall sense. This led one to conclude that the service provided by the community sector had been the most effective service which catered to the information needs of the farming community. Moreover it proved that the farming community could bear more extension responsibilities in the absence of an efficient extension service and also that there existed opportunities for a demand driven concept of extension.

Depending on the above appraisal, farmers estimated the competence of different sources of extension to be involved in the user-pay extension systems. Chart 5.2 indicates the results of the appraisal.

Chart 5.2: Competency of Extension Sources for Implementing User-pay Extension Service by Different Sources of Extension



Source : Survey Data, 2000

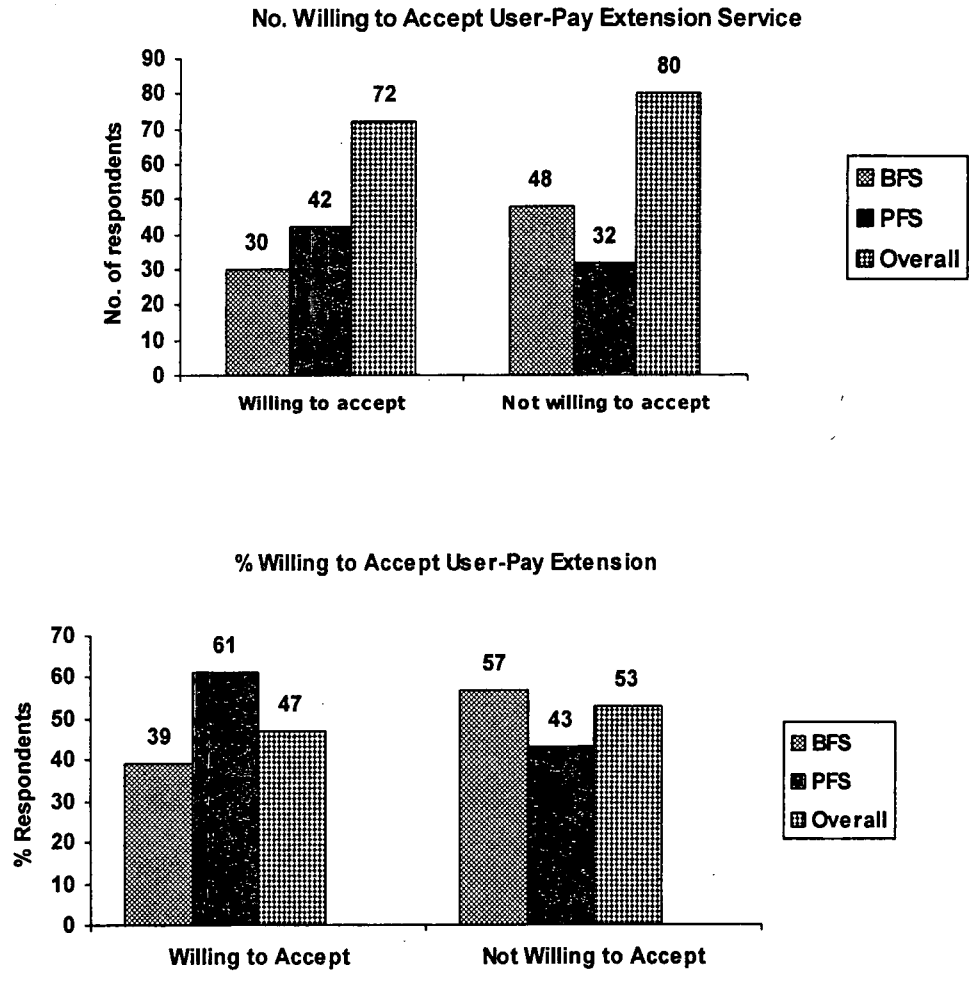
Farmers in both areas believed that it was the state sector that was more competent to undertake a private extension set-up. Despite sporadic and inefficient involvement by the state sector, farmers considered it as a more reliable service. In the case of private sector, a considerable percentage of farmers appreciated timely and active service provided by the private sector. However, profit concerns and unreliability of the private sector appeared to be reasons for lack of performance in this sector. Some farmers said that private extension could be an incentive for the participation of rural youth in agriculture, and that the community sector had the competence to be involved in such ventures. But, several constraints such as lack of experiences, weak functioning of co-operatives under the open economic environment, political influence and corruption in community organisations could led to problems in community participation in private extension.

Willingness to Accept (WTA) User-Pay Extension Service

Experience that farmers gained through a lifetime of dealing with different sources of extension had resulted in positive or negative attitudes about different sources of extension. As a result, the degree to which the private sector was accepted differed from farmer to farmer, especially between BFS and PFS farmers. Though 57% in the PFS was willing to accept user-pay extension, percentage in the BFS was only 39% (Chart 5.3). The most obvious reason for this difference was in the degree of involvement by informants from the different sources of extension in the two farming systems. They were of the opinion that the state sector should never give up the responsibility of extension service since privatisation

would be an additional burden to the poor farmers. Also, as the private sector considered profit as the main aim of providing any service, the quality of the service would take second place thus leading to deterioration of the NPS.

Chart 5.3: Willingness to Accept User-Pay Extension Service



Source: Survey Data, 2000

As discussed in chapter four, the predominant role played by private sector in the PFS could be the most plausible reason for this situation. In contrast, an increased involvement by the state sector in the BFS had resulted in increased confidence and thereby increased preference for a state led extension among the majority of farmers in BFS. Therefore, the current extent of involvement by different sources of extension within the farming communities appeared to be a decisive factor in the demand for commercial extension.

5.2.4 Farmers' Affordability – Willingness to Pay (WTP)

Farmers' ability to pay was the most critical factor, which determines farmers' acceptance towards user-pay extension service. As discussed in chapter four, household income levels of most farm households varied depending on several factors: scale of cultivation, value of crops and other income generating activities. But, an analysis of income levels showed that a considerable portion of household earnings had to be allocated for loan repayment. Therefore, in certain instances what remained was not sufficient for other essential needs such as education, domestic need, health and cultivation for the next

season. The farmers thus became debtors and a vicious cycle of debt began. As a result financial sources experienced a poor recovery of loans. In general this scenario raised the question of whether farmers could pay for extension services. In addition to this, experiences also showed that it was very difficult to identify a relationship between the levels of income and willingness to pay due to the reasons of WTA.

Preferred Payment Systems

It was also important to mention that some farmers, besides showing interest in the subject of user-pay extension, were more interested in discussing the issue of privatisation. Farmers questioned the various aspects of the system such as the method of payment, extent of payment and way or place of payment for private extension. When questioned on their ability to pay (Table 5.1), the most acceptable method of payment was at the end of the season either in cash or kind with regard to both farming systems. A simple minority was capable of making payments in different ways such as monthly in cash or kind, whenever they obtained the service, annually in kind or as decided by the farmer organisation, if extension was provided through farmer organisations.

Table 5.1: Preferred Payment Systems

Payment System	BFS		PFS		Overall	
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%
End of the season in cash or kind	26	33.3	29	39.2	55	36.2
Monthly in cash	2	2.6	9	12.2	11	7.2
At end of the service	-	-	3	4.1	3	2.0
As decided by the FO	1	1.3	-	-	1	0.7
Pay by anyway	-	-	1	1.4	1	0.7
Annually in kind	-	-	1	1.4	1	0.7
Sub Total	29	37.2	43	58.2	72	47.4
Never obtain the service	10	12.8	11	14.8	21	13.8
No Responses	39	50.0	20	27.0	59	38.8
Total	78	100.0	74	100.0	152	100.0

Source: Survey Data, 2000.

Therefore, the most effective way of charging farmers was at the end of a season, if a need arose for compulsory payments. Another interesting point, which was revealed in Table 5.1, was that a considerable number of farmers in both farming systems did not want to avail themselves of the services. This was not totally because of the question of affordability of services to farmers but due to negative attitudes towards the privatisation concept among the farming community.

5.2.5 Public Sector Inconsistency in regard to Policy Environment (Policy Constraints)

Lack of Motivation to Undertaking Extension Activities

From the private sectors' point of view, privatisation did not appear to be a feasible option and it was the state sector that had a growing interest in promoting this concept. However, besides the policy directions with regard to privatising extension, there had been no concrete efforts to motivate the private sector to become practically involved in the subject. The stability and the degree of commercialisation of agriculture sector was instead governed by the changing price levels, monetary policies and exchange rates. Despite recent efforts towards commercialisation of the agriculture sector by promoting exports, decline in incomes, due to price fluctuations had bought about an apathy among the farming sector of the country. All these factors were disincentives rather than a motivation for the private sector intervention

in agriculture. Therefore, until farming becomes a commercial and profitable enterprise, the private sector is not interested in investing in agriculture extension.

Lack of a Farmer Education Policy

Lack of clear education policy for farmer education had also caused a breakdown in the farmer education process. There was a need for this to be handled by an institution which is either private or public. Study observations reveal that farmers had a great choice of information due to co-existence of a number of extension sources. However, this situation in most instances had led to confusion among the farming community with regard to choice of the most feasible solution to their farming problems. In this connection, there was a need for a particular organisational set-up that would enable farmers, easy access to information and support and rational selection of information at the same time. In other words need for a Technology Processing Centre (TPC) at the village level could be seen as essential. But, if the state sector fails in providing this service, an independent body has to be involved full-time in farmer extension. According to commercial companies, Sri Lanka Crop Protection Association (SLCPA) which was already involved in certain areas of extension could be a potential contributor. As suggested by them, registered farmers under this particular institutional set-up could pay an affordable amount of money which would enable them to be eligible to obtain required training year round. But, under the prevailing economic conditions, the practicability of such an alternative appeared to be a problem since farming was considered less profitable in the current context.

5.2.6 Demand for Extension

Current Extension Needs in Farming Systems

An assessment on current extension needs in the two farming systems revealed that selection and utilisation of seeds, crop protection and crop nutrition were the areas where demand for extension exists.

According to the data presented in the Table 5.2, selection of quality seeds was a difficult process since a large number of dealers at the market promote different varieties of which the quality could be assessed only at the end of the cultivation season. The selection of quality seeds and seed production and new nursery management techniques in the process of seed production were among the extension needs that had been mentioned by the farmers in both farming systems. Also crop protection measures including pesticide use for pest and disease control and crop nutrition related information such as use of fertiliser and soil testing were priority areas among extension needs. Seeds, fertiliser application and pest and disease control being the costly components of the farm budget, farmers had expressed views that these would be the areas where information was essential, so that they could reduce their cost of production. In addition to this, information related to marketing, credit and harvesting and new technology related to all other aspects of farming had been recognised by farmers as important areas which could enhance the productivity of their farming systems.

However, the most important fact was how much of this willingness would there be under a user-pay extension system. Farmers were expected to answer taking into account a system of user-pay extension. Most of their current information needs contained a private good nature, which were already catered to by various sources of extension. Agro-industrial firms dealing in planting materials, agro-chemicals, fertiliser, farm implements and accessories were involved in a more or less complementary role in providing most of these information needs depending on the extent of information currently available with them. Therefore, the existing demand for extension in both farming systems failed to further stimulate private sector intervention in extension.

Table 5.2: Current Extension Needs of Farming Systems

Extension Need	BFS		PFS		Overall	
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%
Pest and disease control	42	32.6	13	17.1	55	25.6
Selection of quality seeds	32	24.8	22	28.9	54	25.1
Use of fertiliser	10	7.8	13	17.1	23	10.7
Soil testing	10	7.8	12	15.8	22	10.2
Use of pesticides	14	10.8	4	5.3	28	13.0
Seed production	6	4.6	3	3.9	9	4.2
New technology	6	4.6	7	9.2	13	6.0
Marketing	5	3.9	1	1.3	6	2.8
Credit	2	1.5	-	-	2	0.9
New nursery management techniques	1	0.8	-	-	1	0.5
Harvesting	1	0.8	-	-	1	0.5
Reducing cost of production	-	-	1	1.3	1	0.5
Total Responses	129	100.0	76	99.9	215	100.0

Source: Survey Data, 2000

5.2.7 Availability of Publicly Generated Technologies and Access to them by the Private Sector

Availability of specified and advanced information was another prerequisite for private sector participation in extension. This raised the question whether private sector possessed a wealth of information that enables their undertaking of the overall extension set-up. As revealed during the study, the private sector was only equipped with information sufficient for the current selective role played by them in the product related extension but not to the extent that would support their overall participation in extension. Nevertheless there appeared to be two ways of obtaining information, either through investment in knowledge and technology generation or finding easy access to publicly generated knowledge and technologies. Constraints, which prevented the private sector involvement in cash-crop production were market instability, poor prices, low value, small scale of operation and high post harvest losses. This had contributed to lack of interest towards further investment in technology generation in these areas. While the involvement of the private sector in research and technology generation was far behind the state sector, their limited involvement was seen in the areas related to goods and services where they were involved.

The state sector has had a wealth of information generated through the national research network including departments, universities and research institutions. However, in the absence of an efficient extension set-up to disseminate this information to the end users, one possible alternative would be to make information available to the interested parties including private sector, NGOs and community participants. A suggestion arising from the discussions was subcontracting or subsidising of publicly generated technologies to the private sector as an incentive to private sector participation. This could be an efficient alternative to bridge the gap between technology generation and utilisation, providing subsidies to the potential extension delivers of information at reasonable rates which could bring about successful results in the agrarian sector. One such example could be derived from the PFS. One of the major problems in this farming system was high cost of production where the seed cost accounted for 52% of the total cost of production. The research station at Kahagolla, under the special seed potato production program, had taken steps to import seeds and to distribute them after multiplication among farmers on contract basis for large-scale multiplication. As discussed in the Chapter 2, Second Perennial Crop

Development Project had taken steps towards a kind of sub contracting in the advisory services in this particular area.

5.2.8 Information Technology (IT)

In-depth attention has been paid to existing communication methods in Chapter Four according to which economic and community aspects of the use of communication methods have been discussed. Even though there exits a large potential to make use of IT for the promotion of extension service there were many drawbacks in the current use. However, the prevailing opportunities in the same area appeared to be an added advantage to attract the private sector into the extension service.

5.2.9 Farmers' Innovativeness

Farmer preparedness to adopt innovations was another factor, which had an impact on the user-pay extension service. As revealed during the survey, farmer innovativeness appeared to be considerably high due to increased rates of adoption of new technologies by farmers in both farming systems. From data of training programs, one could deduce that farmers (76%) had made use of these technologies despite labour intensive and weather prone nature of these innovations, eg. B'Onion true seed production. Two major considerations that prevented the adoption of certain technologies were less applicability to existing farming situations and the cost of innovation. These factors would be critical to the private sector if they considered the launching of a user-pay extension service.

5.2.10 Availability of Appropriate Infrastructure

The situation of infrastructure development in a particular farming area is considered an important incentive for the private sector participation in extension. For instance, the purchase of the Pelwehera seed farm by CIC had been due to the availability of land in large extents, storage facilities for seed paddy and fertiliser, farm-buildings and irrigation facilities. Among the other incentives, the development of alternative markets e.g. Dambulla Economic Centre, and transport facilities had a significant influence on the process.

CHAPTER SIX

Conclusions and Recommendations

Provision of extension to the NPS still continues to be the responsibility of the public sector in Sri Lanka. Financial difficulties the state sector faces in the provision of extension as a public service and the inefficiency of the service provided at present has resulted in an unsatisfactory extension set-up. Accordingly, in the search for alternative approaches for the provision of extension services privatization has been suggested as a matter of policy.

Accordingly, HARTI conducted this study to explore the feasibility of the privatization of the extension service where four specific objectives were to be researched. The study had four major objectives: to review the current organization of the extension services and the role of the different agencies; to examine the factors both positive and negative, that have a bearing on private sector participation; to assess the possible social and economic implications of privatizing the extension sector, and finally, to suggest areas for policy formulation.

In reviewing the current state of the extension organization and the role played by different extension agencies several key issues could be identified. The current extension set-up in the two selected farming systems is characterized by the coexistence of public, private, NGOs and community sources and thus diversity of the provision of extension services has given the farmer a greater choice. Public sources contributed 66.4%, private sources 81.5%, NGO's 13.1% and community sources 73% of the extension coverage in the locations studied.

The nature of the service rendered by the different sources took varying forms. The private sector disseminated information pertaining to their own products. NGOs and other voluntary organizations intervened through participatory approaches, but only in selected areas i.e. organic farming, which came under the purview of that particular organization. While farmer to farmer extension by community organizations had made a large contribution, the service rendered through public sector extension institutions was mostly research driven.

Both private and public sources of extension were involved in the dissemination of information through a variety of communication methods, which include individual, group and mass methods. Radio, television and printed materials were used of which radio was the most far reaching and pervasive. The commonly found group communication method available to farming communities took the form of training programs. In the study locations it was the Department of Agriculture that organized the largest percentage (88%) of training programs. Farmers' participation in training programs varied from 55% in BFS to 11% in PFS.

A variety of extension informants representing the four extension agencies were functioning at the grass root level with varying degrees of efficiency. According to the farmers' evaluation the six prominent extension informants were neighboring farmers, input dealers, Agricultural Instructors, sales agents, farmer organizations and Govi Sevana Niyamakas.

The extent and nature of involvement by extension informants in their approach at the grass root level had been a decisive factor which ensured greater acceptance and increased trust among the farming community towards that particular source of extension. Timeliness, reliability and availability of the service rendered by extension informants contributed to the efficiency of the extension source, and on

the basis of which the users chose the more efficient sources of extension. Accordingly the private sector in PFS and the public sector in BFS had become more acceptable to the majority of the farming population.

The second objective was to review the existing incentives and problems that affect private sector participation in extension. Several important lessons could be drawn from the literature survey, with regard to varied efforts at privatization of extension both from the developed and developing countries. Applicability of any particular system would have to take into account the socio-economic conditions of our farming society with their diverse farming conditions, as well as the prevailing political environment in the country.

The initiatives taken by the Second Perennial Crop Development project to subcontract advisory services in three major crop areas and the current performance of those initiatives, did not permit us to reach any definite conclusions on the advisability of introducing user-pay extension systems in the NPS.

It was apparent that many socio- economic and institutional aspects have to be considered if user-pay extension efforts are to be launched successfully.

The nature of agricultural information varies depending on the principles of rivalry and excludability. Thus private sector interest in the provision of information with public good nature which are both non-rival and non-excludable appeared to be insignificant. This had resulted in private sector supply of information with a private good nature.

Private sector involvement had been limited to current selective roles in input industries and cropping systems (such as paddy) which were widely distributed in the country, coupled with promising returns and better access to infrastructure facilities. This proves that if returns from overall agricultural enterprises are assured, the private sector will be involved in extension activities regardless of direct benefits from extension, despite the limited opportunities available.

Evidence showed that the private sector has had a poor relationship with the farming community due to frequent changes of field officers, corruption and the occasional failures of demonstrations. Apart from that, most farmers on principle objected to the idea of privatization due to attitudes arising from the prevailing socioeconomic situation and the cultural attitudes of rural society. This was proved by the majority (53%) of farmers who were not willing to accept the user-pay extension option.

While the lack of or inaccessibility to agricultural information was not the vital issue for the farmers, the ever increasing cost of production, cost of living and decreasing farm productivity and thereby farm incomes had created disenchantment towards agriculture among the farmers. Due to all of these reasons poor farmer incomes have become a block on the road to privatization.

While the private sector lacked sufficient information that ensures their overall participation in extension, they were neither interested in technology generation due to unfavorable environment which existed in the NPS nor had they access to publicly generated technologies and information. Also the existing demands for extension in both farming systems was not sufficient to attract private sector intervention in agriculture.

Among the considerations that favoured private sector intervention were farmers' keenness in gaining knowledge and the adoption of innovations, improved information technology and gradual improvement in infrastructure.

Thirdly, an attempt was made to identify the likely impact on the lives of farmers after a user-pay set-up of extension. Though quantitative estimations were not available in this regard, farmers generally agreed that only the well-off could benefit while the majority of the poor farmers would lose their main livelihood

leading them to become landless and unemployed. The majority of the farmers (53%) did not wish to accept the user-pay extension system. Some were of the opinion that they had the necessary knowledge while some farmers thought that they could benefit more if an efficient user-pay set-up is introduced.

However, as an agricultural country, Sri Lanka has several crucial issues to be addressed through an efficient extension system both at macro level and micro level. Towards this end, both the identification of weaknesses in the current extension set-up and means of strengthening the system are essential. At the same time an attempt should be made to learn useful lessons that can be drawn from the worldwide application of user-pay extension systems such as the voucher systems. Finally a public led private extension set-up that has the private sector and users taking more extension responsibilities should be encouraged to achieve differing agricultural objectives and to serve diverse farmer groups.

In terms of the fourth study objective, a summary of risks and constraints identified related to each study objective is presented and recommendations needed for risk management set out.

Risks/constraints	Recommendation
1. The number of extension agents providing a service has given farmers greater choice of sources of information to support their farming activities. But as some farmers lack sufficient knowledge they are at a loss to choose the most appropriate answers to the problems and situations at the field level.	Some degree of co-ordination should be encouraged among extension agencies through a technology processing point, an institutional set-up equipped with physical and human resources that give farmers the best choice of information.This particular independent body whether public or private should provide year-round training for member farmers at an affordable rate. Membership should be assured through a special procedure, which ensures access to knowledge and information by all farmers irrespective of socio- economic or any other circumstances.
2. An indifferent attitude and lack of interest among the farming community towards extension due to: Less attention paid to demand driven mode of extension in the current extension setup.The non provision of suitable recommendations for diverse farming situations.Extension efforts in most cases having failed to yield notable improvements in existing farming systems through innovations. Attention should be paid to increasing farmer awareness of the important contribution extension makes to the development of agriculture. Extension programs should address specific categories of farmers and their needs and support farmer organizations and farmer to farmer extension.	
3. Though mass media seem to be a powerful tool for the exchange of views and sharing of information within the rural community, its wider use by both extension sources is limited due to high costs.	The need to increase the use of mass media at a relatively low cost.

Risks/constraints	Recommendation
4. Less use of mass media by the farming communities due to problems of timing, accessibility and relevance of information.	In order to achieve affective mass media coverage:Farmers' views and solutions to their problems and situations should be considered during the dissemination of information to farmers.Radio should be used to promote farmer to farmer extension.Problems of timing and the relevance of the message to rural communities should be properly addressed.
5. Utilization of knowledge disseminated through training programs is restricted by: Unequal opportunities received by farmers. Repetition of programs by various extension sources. Lack of variety of programs.	Training programs should be specifically target oriented demand driven.Proper selection of trainees for training programs.Introduction of cost effective innovations.Farmer training programs should be so organized as to get a feedback to cater to diverse needs at the grass root level.
6. Most of the private sources of extension are not trusted by farmers due to lack of responsible representatives at the field level.	Private sector extension should be carried out by efficient, secure and responsible persons at the field level.
7. Contribution from public sector extension informants is constrained largely due to: Poor coverage by AI's due to time constraints and location difficulties. Poor agricultural knowledge of GSNs. Non-extensional roles assigned to both groups. Lack of coordination between the two groups of officials.	For further strengthening of public sector extension set-up;Increased extension tasks to both groups(GSNs and AIs). Improve the competence of GSNs' through training.A trained field staff should be available for information needs irrespective of time and location specific difficulties and incentives for field staff.Reassignment of GSN's under the AI"s supervision and better coordination between farmer and the source of extension at the village level.
8. Private sector involvement in overall extension responsibilities is constrained by the public good nature of other agricultural information.	Public sector to take the responsibility of general extension in a cost-effective manner.
9. Limited interest and intervention of private sector in agriculture due to:Limited availability of and access to resources such as land, water and infrastructure. Lack of motivation from public sector to ensure favourable conditions such as stable monetary policies, price levels and exchange rates that effect the agriculture sector; Current stagnation in the NPS.	Motivate private sector investment in agriculture through increased access to agricultural resources and infrastructure development, and conducive monetary policies and tax relief.
10. Farmers reluctance accept user-pay extension systems.	Convincing efforts by the public sector to promote the concept of user-pay extension and to adopt more transparent procedures under a proper institutional set-up at the stage of implementation.

11. Financial difficulties of the majority of the farmers.	Proper selection of affordable farmer categories for user-pay systems.
12. Private sector lacks sufficient information that is required to cater to the diverse needs of farming systems and they are neither interested in technology generation due to unfavorable situation in the NPS nor have access to publicly generated technologies and information.	Tax relief and public sector support for capital intensive research.Subsidizing of research results to interested parties in order to ensure efficient dissemination.Improved research-extension linkage to ensure expansion of the current coverage by the private sector.
13. Though the provision of extension through public sector present difficulties as far as efficiency and financial aspects are concerned, an entire user-pay system does not prove to be feasible in the absence of private entities to undertake the challenge.	Encourage a public led private extension setup inducing the private sector and users to take more extension responsibilities.Implementation of cost recovery systems in the public sector and extension voucher program on pilot basis in selected areas.

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