

Farm Management in Agricultural Extension

Case Study of Sri Lanka

N.F.C. Ranaweera¹

Agriculture continues to play a dominant role in the economy of Sri Lanka, generating approximately 20 percent of the Gross Domestic Product (GDP). However, its relative importance in the economy and the labor force in Agriculture have decreased over time. Table 1.0

While this main economic phenomena is noted, the population structure of the country indicates that 72.2 percent of the population continues to be rural, mainly agricultural in nature Table 2.0. The economy still continues to be directly or indirectly influenced by the agriculture sector and opportunities and potential for expansion of the economy lies within this sector.

Basic Approach to Agricultural Production

The historical thrust in agricultural production in the Food Crop Sector was towards “self sufficiency.” The strategy had a two pronged approach. Food self sufficiency was one for the purpose of food security and second, was to save valuable foreign exchange spent on food imports. This was achieved through a the implementation of a number of non-tariff barriers such as licensing, imports only during off-season as well as high tariffs.

Food Production

Sri Lanka’s staple food is Rice and paddy production improved over time as reflected in Table 3.0 The production of the major Other Field Crops is presented in table 4.0. The main crops are chillies, onions, and maize and selected horticultural crops such as potatoes. Here too protection measures were adopted for these main “economic” and “political sensitive crops”. It will be observed that while paddy production has been quite steady over time the production of other crops have shown a significant drop in the last few years. This is a reflection of the market situation, in view of the lowering of tariffs and the elimination of non tariff barriers as regards these crops.

Delivery of Extension Services to Farmers

Role of agricultural extension in agricultural development encompasses three dimensions, namely educational, communicational and problem solving. Agricultural extension is an on-going process of communicating useful information to farmers and assisting them to

¹ Additional Secretary, Ministry of Agriculture and Lands, Sri Lanka

acquire the necessary knowledge, skills and attitudes to effectively utilize the information or technology to improve their farming methods and techniques, to increase production and income with a view to changing their behavior and attitudes for betterment of their livelihood and lifting the social and educational levels of the farming community.

Agricultural Extension services has traditionally been the responsibility of the government even prior to independence. The importance of the agricultural sector in the over all development of the economy and the fact that a large segment of the population was directly involved in farming may have necessitated the need for direct government intervention in agricultural extension. Agriculture extension to farmers is the prime responsibility of the Department of Agriculture. Other institutions involved at various levels are the Department of Export Agriculture, Agricultural Development Authority, Agrarian Services Department, Hector Kobbekaduwa Agrarian Research & Training and more recently the Institute and Post Harvest Technology Institute.

The agricultural sector in Sri Lanka was predominantly export oriented, and was only at the middle of the century that attention was paid on the domestic food crops sector, emphasizing more on the self-sufficiency of basic food items. This led to the development of an agricultural extension system in Sri Lanka. While maintaining an advisory service for the Plantation Crops run by the commercial entrepreneur type farmers, the state addressed the needs of the domestic food and other crops, which are, cultivated by a majority of the subsistence type farmers. These farmers operated not only food crops, but livestock, plantation and other export crops as well as in their farmland. All the agricultural needs of these commodities were served by a single purpose extension worker (Krushikarma Vyapti Sevaka – KVS) at village level and by an Agricultural Instructor (AI) at divisional level, attached to Department of Agriculture. In the early 1960s the Department of Agriculture appointed Divisional Agricultural Officers to supervise the agricultural extension programs and with a view to strengthen the supervisory capacities of the extension programs, District Agricultural Extension Officers (DAEOs) were appointed.

From the early 1970's their mandate had been changed from the variety of crop and livestock commodities to only crops handled by the Department of Agriculture. Department of Animal Production and Health served the requirements of the livestock sector through its cadre of Livestock Development Instructor (LDI) that are equivalent to agricultural instructors (AI). The perennial crops such as spices and condiments were handled by the Department of Export Agriculture through the Extension Officer (EO) who is also equivalent to an AI. Similarly, there are Instructors for Tea, Rubber and coconut equivalent to an AI. The extension approach also was refined in the Department of Agriculture with time where emphasis was laid more on farmer training, skill development, attitudinal changes, and farmer-extension-research linkages. The extension workers of the non-DOA agencies concentrated more on delivery of material and subsidies than pure extension work.

This situation continued for a number of years until the Work Bank initiated the Agricultural Extension and adaptive Research Project, where the extension system

initiated the 'Contact Farmer ' concept. The program established in the 1980s, basically approached the extenuation philosophy through a program of identifying a “contact” farmer who was contacted on a weekly basis with specific messages to be given to him regarding the cropping practices that will emerge in the coming fortnight. The messages were delivered on a crop basis. It was assumed that this “contact farmer” will in turn pass on the messages to the other farmers in his vicinity. After single season experience in this program, it was observed that the contact farmer did not pass on too much information and hence the strategy was changed to the extenuation worker passing on messages to a group of farmers. The program popularly known as “Training and Visit “system had mixed degree of success and it is difficult to assess the impact as such.

The system is workable if adequate technologies are being generated from research for the purpose of informing farmers. In the Maha season where paddy is grown extensively this approach had its merits because of the large number of paddy varieties with different age classes that were being produced in the agro ecological zones. However, during the Yala season this situation became different particularly in the Dry zone with low technology information for other field crops. Consequently the program was concluded in the mid 1990s.

As a continuation the World Bank funded the Second Agricultural Extension Project. The strategy was to introduce a farmer-centered farming-system based integrated extension system throughout the country. It made an effort to strengthen the extension system by promoting the Integrated Agricultural Extension approach. This paved the way for four agencies operating in the non-plantation sector, namely the Department of Agriculture, Department of Animal Health and Production, The Department of Export Agriculture and the Coconut Cultivation Board to come together in order to use their field extension staff efficiently through sharing of work of each other. At the planning stage of the project it was understood that the Field Extension Workers of the four agencies together take, cover the total farming population through a group approach. The expectation was to use the already reduced field extension staff as a critical mass in order to improve the already depleted extension services. Participatory approach, bottom-up holistic approach, joint work planning, field visits and joint operations were emphasized in this process. However, the extension workers of these four agencies were to still maintain their subject specialty with regard to the mandated commodities of those agencies. Integrated Agricultural Extension was expected to lead to more sustainable, environmental friendly production scenarios.

The methodology for this extenuation program was to prepare Provincial Integrated Agricultural Extension Plans (PIAEPP) with the active participation of all related officers at appropriate levels and the farming community represented through Farmer Organizations. It attempted to integrate the extension efforts of the National and Provincial departments of Agriculture and Animal Production and Health, Export Agriculture and the Coconut Cultivation Board and thus give a farming systems perspective to agricultural extension.

As a precursor to the activities, extension workers worked in teams undertook a problem census, which was to identify the major problems facing the farmers in a particular locality. A major issue that arose was that most of the problems identified in the census were not related to agricultural extension or production constraints. Rather they were institutional issues such as availability of water, repairing of bunds, lack of proper farm roads, lack of credit and availability of seeds and planting material. Since most of these problems were beyond the realm of the extension workers it became a non-issue for agricultural extension.

This strategy was introduced from 1993 to 1998 with the aim of achieving equity in extension services provided by the above agencies taking into consideration of the need to maximize the limited financial, physical and human resources within them. After several years of operation the experiences showed that the collaborative holistic approach did not materialize with the desired outcome due to following reasons.

- i. Different agencies work under different Ministries and each of them have their own mandate, responsibilities, targets and work plans. These cannot be deviated for any reason, as the supervising line Ministries and Ministries of Planning, finance and Plan Implementation would not compromise on under achievements if any, due to the adoption of IAES.
- ii. Often the joint programs received a passive support by Supervisory Officers at various levels although the Field Level Extension Workers were involved actively in implementing various aspects of IAES.

Sri Lanka suffered from the lack of coherent policy on Agricultural extension defining the respective roles of the national and provincial agencies, weak research-extension linkages together with poor inter and intra agency linkages compound by the absence of pro active dialogues between the provinces and the center line agencies and Ministries may be traced as the main weakness in the present system. Extension in many instances failed to consciously support a production program. Farmer participation in the preparation and implementation of the extension programs were weak. Extension continued to be viewed as the total responsibility of the Government and no effort made to divest some of the extension activities to the non-governmental sector i.e. the Private Sector, NGO etc. Extension promoted by the Government has by and large ignored the aspect of commercializing and giving an economic perspective to production.

The livelihood of majority of subsistent farmers is in the non-plantation sector. Over the years, they had hardly changed their farming systems and practices and it is rather unlikely that there will be major shift in such practices, simply because they were based on empirical experiences and natural human responses. As previously mentioned, they practice crop and livestock husbandry in mixed farming system, which for them is a single entity. It is not of much concern to them whether these subjects are handled by different state agencies, as long as the necessary services are provided adequately in time. The more the number of officers visit them without providing adequate service, the higher the confusion and rejection of the system by them. This fact alone reflects that it

is more desirable if only one extension worker interact with the farmers, in order to attend to their needs.

Training in agricultural extenuation

The Department of Agriculture is the largest organization dealing with agricultural training. It conducts training program through six Inservice Training Institutes and at district training centers. The training programs are mainly on five crop production, post harvest technology, women in agriculture, management training and farmer training (through exact meanings are ambiguous). **Table.6.0**

Use of farm management specifications and details in agricultural Extension

In view of crop orientation where agricultural extension is concerned the specifics on farm management per se is lacking. Farmers are advised on crop basis and not on farming systems approach. Farm management basically assumes that there is management of resources of farm towards the potential for maximum income. The basics of farm management are lacking in the extension program of the field crop sector. Actual training on Farm Management as a business enterprise is minimal. The importance of this area of training is also apparently not fully realized by the institutions as depicted by ambiguous classifications.

The main problem faced by farmers is two folds. At national level there is no distinct marketing process for commercial level producers. If there is a separate and identifiable market process only for commercial level producers, then the producers can produce the required quantities at required quality standards. An assured price tied up with this system will enhance the agriculture sector development and make it competitive at national and international markets. What is prevailing by and large is one common marketing process where produce of all types, qualities and quantities are collected and one price is paid without any discrimination. High quality produce is sorted at bulk breaking stage towards end of marketing process without any pre-planned contribution for the producer. This in the short run increases profits of the wholesaler at end of marketing chain, but not the producer at the beginning. This system survives at low levels of national production, in terms of quantity and quality as well as subsistence type but not at commercial competitive levels. Thus farmers who want to get into commercial level of production, or 'business farmers' need a support of a 'dedicated' line of market channel and not a common system.

The other primary need of the business type of farmer is a complete information system, a good component of which is the business advisory system and business management training. The information needed should be fully integrated, in the sense covering not only demand for the product, but also possible prices, quantities required, quantities other producers will produce, future forecasts from the produce side, and technologies to produce a quality product at low cost from the production side. Often the discipline wise training programs are organized for agronomy based technologies. Business communities organize seminars on few key business oriented topics. The business

farmer is left to put together this incomplete set of training to formulate his own business management. This is also partially possible only if he attends all the different training's and seminars organized by different institutions.

The real need is to expose the business farmer to a complete advisory system through regular visits on total formulation of the enterprise. The training programs on agronomy and marketing should be supplementary, but well pre-planned as an integral of the regular visits on business formulation. The present system of agricultural advises and sporadic training programs by state sector and seminars by private sector are thus not holistic, but segregated. Holistic type of advisory services plus business training programs will produce commercial oriented farmers who are responsive to costs and profits, agreed quantities and qualities.

All of the above discussion focuses on the issue that at no time was the role of Farm Management considered in the extenuation activities. This type of management training system should be linked at the bottom end with a commercial oriented specialized marketing service suggested earlier. Such a national program will develop the agricultural sector to a primarily commercial oriented sector instead of remaining as a primarily subsistence sector with partial commercial orientation.

Farm Record Keeping -

There is no organized farm record keeping amongst farmers on a large scale. The experience has been only in specific programs undertaken with specific objectives of crop records of activities of farmers. This is apparent in the case of studies undertaken by the Department of Agriculture as well as similar studies undertaken by the Agrarian Research and Training Institute. In these studies what is attempted is to keep as close records as possible of income and expenses with the idea of developing farm projects. This too lacks farm management perspective.

Sustainability of Farm Record Keeping -

Since farm record keeping is not being done on an island-wide scale or on a regular basis on panel data, it is not possible to have a comparative analysis of such data. Even here data is gathered from small samples probably from the same district or agro ecological environment. However, this does not provide adequate basis for comparative analysis. As such the sustainability of this system cannot be evaluated.

Farm Management Business Advisory Service.

As discussed the entire concept of Farm Management has not been included in the extenuation activity. However, recently under the Perennial Crop Development project concluded in 1995 and the 2nd phase of this Project which is now implemented with Asian Development Bank assistance, selected farmers are provided farm management advice on farm business mode.

The Second Perennial Crop Development Project has the objective to develop (at least a part of the) perennial crop sector to commercial level. Thus in addition to providing concessionary agricultural credit, it also assists the investor with a business plan which includes the basic farm plan, costs and returns over a period of 10-15 years, net profits with cost benefit ratios to judge the investment/returns rate, internal rate of returns to compare with alternative investment portfolios and debt recovery ratio to check the credit worthiness of the investment. This is followed by advisory services on management but mainly on technical applications. Under the privatization of the Project it is envisaged to improve the advisory services to real business management level, where client will be advised not only on say pests and diseases, but also on reduction of costs, storage, advance contracting, national and international trade, quality control etc.

The training programs conducted by Project are still conventional. They are based on resource persons for specialized subjects, field visits and in some instances hands on training for farmers where necessary, as in the case of peeling of cinnamon. In case of postharvest processing training, the Project has conducted several demonstrations on processing of fruits for the trainees to get a first hand experience on end product. Arranging potential investors to visit existing enterprises is a problem, as the existing entrepreneurs will not tolerate new comers to the industry as well as sharing of knowledge. However in most of the postharvest processing investments promoted by the Project, the Project staff has an input in jointly designing the enterprise and on technically assisting on equipment, test running and advise while in operation. Owners of such entrepreneurs are more business oriented than ordinary farmers did; hence they also obtain the additional advice from other institutions such as Department of Agriculture, Universities, CISIR and private organizations.

The real need is to identify farmers/investors having the business oriented traits, give them a holistic advisory service coupled with training on total farm management and to tie up the production with a commercial oriented marketing process.

From a farm management point of view the project undertakes the following activities.

Facilitation of agricultural credit

- i. Initial screening of credit application based on project guidelines such as mandated crops, technology application (subsistence Vs. Commercial), level of investment, income sources and asset ownership for credit worthiness and other suitable indicators are investigated.
- ii. Field inspection of site of investment, such as cultivation land, site for post harvesting facility, site for marketing facility to access its suitability of the proposed venture.
- iii. Technically discuss with the prospective client a suitable plan of investment based on FPO technical knowledge, suitability of site of investment and preferences of the investor, such as a suitable farm plan, suitable capacity processing complex or marketing complex.

- iv. Help determine the cash flow analysis to calculate the profitability of the enterprise in terms of net returns, net present worth, interest rate of returns and debt cover ratio as well as to determine the maximum level of eligible credit, installment wise leading plan and pay back plan.
- v. Forward the credit based investment proposal to the Bank of choice of the client.

Agricultural advisory services

- vi. Visit the credit client on a regular basis and assist him technically with agricultural advice such as on cropping patterns, irrigation, fertilizer, pest and disease, harvesting and marketing as well as on maintenance of standards in processing activities.
- vii. Link the client with other technical institutions when needed advice is beyond the capacity of the officer.

Recommendations for future activities in Farm Management within an extension focus

The future approach to extension should essentially address the need to integrate farming through a farming systems approach, which will desirably lead to sustainable agriculture. In this regard integrating the basic principles of Farm management should be kept in mind. Considering the holistic nature of the farm activities, the following strategy is suggested to be applied uniformly countrywide

- i. Stress the importance of animal/livestock component and mutual benefits in increasing Crop and Livestock yields and productivity.
- ii. Use a holistic approach to farmer problem solving, and integrated farming through farming systems approach.
- iii. National objectives and farmer aspirations need to be merged and harmonized and the participatory approach in problem identification and solving emphasized.
- iv. Commercially oriented modern, highly intensive agriculture (including livestock) need to be emphasized and the farm family income as the basic norm in recommending farming systems to individual family.
- v. The Extension Services needs to be refined to provide for the promotion of all aspects related to integrated farming through farming systems. It should emphasize on bringing about the desirable attitudinal changes for the farming community.
- vi. The extension delivery system to be primarily channeled through the group approach as opposed to individual contacts and thus makes the service more cost effective.

Table 1.0

Share of Agriculture in GDP and Employment in Sri Lanka

Year	% GDP	% Employment
1990	23.2	44.7
1993	20.9	43.7
1994	20.5	34.6
1995	20.0	36.8
1996	18.4	37.3
1997	17.3	36.7
1998	16.8	36.0

Source: Central Bank of Sri Lanka – Annual Report

Table 2.0

Population Distribution in Sri Lanka

	Percent
Urban	21.5
Rural	72.2
Estate	6.3

Source: Census and Statistics Department - 1996

Table 3.0 - EXTENT AND PRODUCTION OF PADDY

Year	Extent (Hectare)	Production Eqv.Rice (Mt)
1993	834,261	2,570,170
1994	929,621	2,683,690
1995	915,021	2,809,890
1996	748,745	2,061,520
1997	729,810	2,239,370
1998	848,264	2,692,335

Source : Department of Census and Statistics

Table 4.0 - EXTENT(HA) AND PRODUCTION (MT) OF OTHER FIELD CROPS

Year	Maize		Potato		Red Onion		Big. Onion	
	Ext.	Prod.	Ext.	Prod.	Ext.	Prod.	Ext.	Prod.
1984	32881	37670	5959	68254	3867	36680	243	3249
1985	33061	43656	7119	88955	5585	41684	335	3184
1986	31202	40701	7299	82482	6615	57147	481	3806
1987	34665	41679	6949	81042	16814	55667	416	2723
1988	36813	38603	7247	87535	7490	59154	575	4222
1989	29107	30578	7016	83471	9100	71836	780	5365
1990	32070	33188	7888	87205	7655	57672	1528	15338
1991	28565	33493	6384	66737	6023	41630	1447	14046
1992	27721	28803	7135	78562	7624	53696	2392	27842
1993	32594	32551	6986	78136	6763	47548	2574	22838
1994	31497	31678	7209	79393	6959	48234	3760	34727
1995	35938	34836	7428	81657	6993	48392	3687	29719
1996	30895	32963	7925	100755	6584	43938	2662	19367
1997	25796	25689	6469	66484	6451	44799	2956	24138
1998	29790	33874	2327	25899	5661	38049	1415	17444

Source : Department of Census and Statistics

Table 5.0**IMPORTS AND VALUE OF SELECTED AGRICULTURAL COMMODITIES**

Year	Chillies		Red Onion		B-Onion		Potatoes		Total
	Qty. (Mt)	Rs. MN	Qty. (Mt)	Rs. MN.	Qty. (Mt)	Rs. mn.	Qty. (Mt)	Rs. mn.	Rs. mn.
1993	934	53	-	-	34,229	391	-	-	644
1994	8,346	300	2,814	44	47,400	530	7,849	90	966
1995	11,282	536	1,010	10	77,459	862	11,957	161	1,569
1996	9,937	634	4,389	69	90,008	1,009	25,740	410	2,122
1997	13,269	588	3,117	60	119,317	1,312	108,375	1,301	2,261
1998	16,044	864	2,476	50	100,363	1,686	117,319	1,632	4,232

Source: Custom Returns

TABLE 6. SUMMARY OF TRAINING PROGRAMMES, 1ST QTR, DOA,

SUBJECT	#OF PROGRAMMES	# OF PARTICIPANTS
CROP PRODN	75	2395
POSTHARVEST TECHN.	03	80
WOMEN IN AGRICULTURE	--	--
MANAGEMENT TRAINING	16	466
FARMER TRAINING	25	646