

Adopting the Farmer Field School Approach in the Dry Zone Livelihood Support and Partnership Programme

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FOREWORD

Programme evaluation is one among many other academic involvement of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI). In 2012, on the request of the Ministry of Agriculture HARTI undertook ten evaluation studies on the Dry Zone Livelihood Support and Partnership Programme (DZLiSSP). Under this particular assignment, it was expected to assess the ‘success of Farmer Field School (FFS) approach as an extension tool in promoting upland agriculture in the dry zone’.

This report opens up a detailed discussion on the fundamentals of farmer field school approach and the programme strategies employed to achieve the stipulated objectives and to sustain them. It exposes the fact that the DZLiSPP during the course of programme implementation has deviated from employing the proposed group-based experiential learning tool constructed on the principle that ‘adults learn best from experience’. Given this background the authors re-emphasize the importance of considering the practicability of projects and programmes granted to the country particularly under the international loan schemes.

I congratulate the research team who undertook this important academic exercise.

**Haputhanthri Dharmasena
Director**

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We are greatly thankful to Mr. Haputhanthri Dharmasena, Director, Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) for his guidance and leading role in this academic institution in presenting our research findings to the stakeholders as a research report. The most part of the tribute goes to Mr. Lalith Kantha Jayasekara, the former Director of HARTI, for encouraging and facilitating to undertake this task among many other academic duties undertaken by the research team during the respective academic year.

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We also extend our appreciation to the staff of the Agricultural Resources Management Division, Statistical and Data Processing Division and HARTI Administration.

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EXECUTIVE SUMMARY

Dry Zone Livelihood Support and Partnership Programme (DZLiSPP) was implemented aiming at increasing the land use intensity and productivity of un-irrigable uplands of 80,000 poor households in the dry zone of Sri Lanka. The extension approach proposed in this programme was Farmer Field School (FFS) approach. The Ministry of agriculture assigned the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) to assess the FFS approach as an extension tool in promoting rain-fed upland farming in the dry zone. Given the fact that the extension approach employed in the programme is different from the prototype FFS approach the HARTI proposed to assess this modified version with the aim to draw lessons and experience from the same. As per the field experience it was realized that the farmer groups formed for the implementation of the programme has primarily functioned for group credit mobilization and as reported there was hardly any continuous learning by farmer groups on agricultural practices as in FFS approach. Therefore this assessment proposed to assess institutional, technical and financial sustainability of village level farmer societies formed for the purpose of programme implementation and to draw lessons and experience on whether it is successful strategy in promoting rain-fed upland farming in the dry zone of Sri Lanka. The research population consisted of 72 societies and the key means of data collection was Focus Group Discussions (FGDs) held with the members of these societies. The analysis was further extended by conducting a farmer survey from 125 members who participated in FGDs. Target populations was selected through randomized sampling technique which consisted of 86 percent farmers involved in the cultivation of various crops and the rest 14 percent involved in other activities such as bee keeping, mushroom cultivation, big onion seed production and seed potato production.

One of the key activities involved in the upland agriculture development component was institutionalization of village level farmer groups and diverting technical and financial support for upland agricultural activities through this institution. Direction by the divisional programme facilitators and a revolving fund offered to the farmers groups to be used as seed money were among other integral components of the programme. The programme had achieved 87 percent progress through implementing 2550 societies as of May 2012. Average membership of a society was 20 and the majority of the societies (77%) were characterized by participation of both sexes and with predominately women participation (54%) and women in leadership (56%). Women were supposed to perform well in both

secretarial and financial activities. Increased participation of women in the societies was merely a representation of the household as both men and women in the household were responsible for farming activities. Joining of new members to the societies has been severely restricted so as to ensure the membership at a manageable level. Thus membership had remained unchanged in the large majority of societies (73%). Capacity building of office bearers which was not a decisive factor for the success of the societies remained at a relatively low level (44%) for various reasons. This stressed the fact that forming societies for various reasons and being members and/or office bearers was not a novel concept or a practice to the farmers who have had ample experience in similar activities for a long time.

Farmer societies implemented through the programme demonstrated varied level of success and according to the categorization by the programme 24% of them had shown satisfactory performances. Such well-functioning societies had met regularly, discussed issues and problems, largely financial matters and collected membership fees. Best practices adopted had encouraged increased farmer participation and repayment of loans.

Several factors - high social capital, empowering leadership and capable facilitators - had determined the success of this farmer groups as village level societies. Accountability of members and group cohesiveness were among the beneficial factors behind the functionality of revolving fund, a key indicator that demonstrated the success of the society. Empowering and trustworthy leadership was another factor of success. The majority of societies (72%) were led by such capable leaders. Valued role of divisional programme facilitator who directed farmers in group activities was often crucial towards the success of the society. Despite all the above factors, the existence of the society was ultimately determined by the success of the agricultural activities performed by the farmer groups as it has been an incentive for repayment of loans and thereby proper functioning of revolving fund.

It was commonly experienced that group action by farmers had been discouraged due to crop failures as a result of irregular weather conditions and/or damages from wild animals. The programme facilitators were responsible for implementing a certain number of new societies during each cultivation season and therefore they had no sufficient time for close monitoring of the activities of the societies implemented in the previous seasons. They were in a hurry to achieve the seasonal targets assigned to

them within a large area up to 40 grama niladhari divisions in some instances. They also had problems of using their own vehicles and were dissatisfied with the fuel allowance. Political interferences, influential behavior of some officers elected as office bearers in the societies, difficulties in gathering farmers who were involved in other programme interventions were among the other challenges for the proper functioning of the societies. All these factors individually or collectively constrained the success of the societies.

In financial terms the programme had shown a progress of 92 percent in regard to the formation of societies as of May 2012. The one-time grant provided to the societies and farmers varied by the number of members in societies and the agricultural activities for which the seed money is spent. The average cost amounted was expected to be revolved as a measure for existence of the society. The majority of societies (44%) had operated one loan round whereas 30 percent had succeeded in operating three or four loan rounds. Farmers have derived advantages from the revolving fund in two ways. Whilst it had enhanced the ability to obtain high quality/high yielding inputs such as seeds for commencement of cultivation activities in the proper time they have also benefited from collective purchase of seeds at a low cost. Among the financial benefits derived from societies were growth of revolving fund and thereby increase in individual loan amount. Flexible interest rates resulted in a growth in loan amount and revolving fund at a varied rate, the average of which was reported as Rs.18607/society (19%) and Rs.1718/farmer (47%).

However, the overall process of spending one time grants had resulted in several weaknesses. When assistance was extended in kind by providing seeds/planting material the process was less transparent thus giving a bad impression to the programme. In-kind assistance was considered as a grant and farmers never felt the need to repay. Lapses in communication regarding the need for revolving the fund had led to non-functioning of revolving fund in some societies for lack of income due to marketing problems, crop failures and purposive ignorance. Some field level officers had discouraged farmers to repay loans.

Regular accounting is an important factor that demonstrates the success of societies. However, the office bearers had to face several challenges in this process. Regular accountings in societies has constrained due to poor transportation and road facilities and threats from wild elephants that restricted frequent visits to the financial institutions. However, the treasurers had properly maintained records. Varied practices had been

adopted to ensure loan repayment. However, only 30 percent societies had adhered to the programme requirement that two guarantors should be involved in issuing each loan. Considerable percentage of societies (37%) had not adopted clear procedures on this matter. Important lessons that can be drawn from this situation are; need for providing clear instructions at the beginning of any programme implementation, farmer reluctance towards repayment procedures and importance of maintaining transparency while pursuing financial transactions with the farming community and minimizing procedural weaknesses in programme implementation.

Key activities accomplished by the programme in terms of technology transfer were; (a) introduction of crops which have not been cultivated by the farmers residing in the area or introduction of new varieties of already cultivated crops (44% farmers) and (b) conducting farmer education programmes for almost all the participants aiming at improving their knowledge and skills on recommended planting methods. Predominant farmer education method had been training and the majority had undergone one to three training programmes. Of the 90 percent farmers who had undergone training, 46 percent were satisfied with the knowledge they received. Seventy six percent (76%) farmers including the above 46% sought further knowledge on various aspects.

Major effects of technical assistance extended by the programme were area expansion, improved farmer awareness and adoption of technologies. The extent cultivated was increased among 22 percent farmers. However the assessment by means of Cropping Intensity Index (CII) was constrained due to reduction in area cultivated as a result of adverse weather conditions which prevailed in study locations. New crops/varieties were adopted by 34 percent project participants out of the total of 35% who were introduced new crops/varieties. The majority (76%) of farmers were well aware of the new crop production practices and 66 percent farmers had entirely adopted such technologies. In addition, self-sufficiency in seeds and planting materials (ginger and turmeric) and intensification of farming systems through shifting from traditional mixed farming systems to commercial mono cropping were other valuable technical benefits of the programme.

Farmer extension linkages had also been strengthened to a certain degree due to this programme both in terms of ability to contact agricultural instructors by farmers and frequency of farm visits by agricultural instructors. Accessing remote areas by the programme was another

important aspect. However infrequent farm visits by agricultural instructors remained at 61%. Those who did not services of the agricultural instructor at their farms remained thirteen percent (13%). Accordingly around 74% farmers experienced inadequate farm visits by agricultural instructors.

The study found that the programme had shown positive effects on knowledge, adoption, productivity and household affairs. Impact assessment was especially constrained due to; scarcity of appropriate technologies transferred through societies, prolonged drought conditions that resulted in non-cultivation and crop losses, dealing with attribution issues and linking cause and effect quantitatively.

As envisaged, the programme has well failed to properly sustain the large majority of societies. However the well-functioning societies were eager to grow and sustain. In order to ensure the sustainability of the programme initiatives were put in place to gather village level societies under district umbrella organization called district federations. By handing over the responsibility of societies to agriculture instructors it was expected to ensure continuous knowledge flow to the farming community. Though this process would ensure the financial stability of the societies, it is doubtful how far this will be practicable for the agricultural instructors to hold the responsibility of a large number of societies and to continue the dissemination of technical knowledge to the farmers given the large range of duties and area assigned to them.

There were differences in arrangements as well as resource allocation for sustainability programme across districts whilst expected outcomes seemed to have faded. Therefore it is too early to conclude whether formation of federations is an appropriate alternative for sustaining farmer societies.

Even through the disbursement process of revolving fund had encountered certain weaknesses the societies could be recognized as micro-credit institutions that encouraged farmers for upland cultivation activities. As they have performed as village level centers for receiving technologies it seems to be a successful approach for technology dissemination relating to upland cultivation. The FFS approach is organized in such a manner that the participants are not the objects of training but they are able to use their experience as the subject of training. In the DZLiSPP approach this fundamental aspect has been omitted by integrating a large training component. Accordingly farmers have lost the opportunity for learning

from experience whilst the societies they had established had merely become a ‘crop based society’ or crop societies as termed by the project beneficiaries.

Based on finding of this study, the following conclusions were drawn and recommendations are given. Crop societies implemented by the programme had functioned as micro-credit institutions that induced farmers to involve in upland crop production though several weaknesses are encountered in the process. These institutions had performed as village level centers for dissemination of technologies to the end users. According to DZLiSPP the approach employed in the programme implementation is a modified version of FFS. As per many study indicators the so called modified approach is successful as a means of technology transfer for the promotion of upland agricultural activities. However farmers had not experienced novelty in the learning process so that FFSs had merely become crop societies – *Boga Samithi* - that followed conventional farmer education methods. DZLiSPP succeeded in linking the services of line agencies and thereby strengthened farmer-extension links to a certain level through an external agent at an added cost. Such linkages too seemed inadequate to ensure continuous learning by farmers that ensure bottom up change envisaged through FFS approach. Despite resource constraints the formal extension service too utilized similar approaches and benefited positively with no/less additional cost but largely in the paddy sector. Therefore the attempt made by the DZLiSPP cannot be entirely credited as a better means of modifying the FFS approach. Further the short term and long term benefits acquired by the farming community through the project approach cannot be defined as the outputs/outcome of FFS approach that enhance farmers’ problem solving ability. The important lesson that can be drawn from this effort is the importance of organizing upland farmers through crop based societies and directing them towards improvement of production and productivity of upland crops by providing assistance both in financial (cash or kind) and technical terms.

Given the context that group extension approaches are effective in terms of farmer coverage, the study recommends that revolving fund and close monitoring of farmer groups involved in upland crop production can be incorporated into the formal extension system in the country. The existence of farmer societies is important to ensure the continuity of technical knowledge flow to the farming community. Therefore financial sustainability of crop societies is a must. They should be encouraged by introducing proper mechanisms such as credit schemes to make them

financially stable. The proposed mechanism for handing over of overall responsibility of farmer societies to agriculture instructors is recommended as appropriate mechanism for the existence of these societies. To achieve this, resource requirement should be fulfilled, particularly by appointing agriculture instructors to maintain frequent contacts with the farmer societies in order to ensure continuity of technical knowledge flow to the farming community. Further steps should be taken to popularize this group approach among the farming community by promoting farmer groups as contact points for diverting variety of state sponsored inputs and activities in order to ensure a spread effect among the farming community.

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ABBREVIATIONS

AI	- Agricultural Instructor
ARPA	- Agricultural Research and Production Assistant
ASC	- Agrarian Services Centre
CII	- Cropping Intensity Index
DFF	- Divisional Farmer Federation
DPF	- Divisional Programme Facilitator
DSD	- Divisional Secretariat Division
DZLiSPP	- Dry Zone Livelihood Support and Partnership Programme
FAO	- Food and Agriculture Organization
FFS	- Farmer Field School
FGD	- Focus Group Discussions
GN	- Grama Niladhari
GND	- Grama Niladhari Division
ICT	- Information and Communication Technology
IFAD	- International Fund for Agricultural Development
IPM	- Integrated Pest Management
KII	- Key Informant Interview
MoA	- Ministry of Agriculture
NPCU	- National Programme Coordinating Unit
PMU	- Programme Monitoring Unit
RF	- Revolving Fund
SN	- Samurdhi Niyamaka
SPSS	- Statistical Package for the Social Sciences
UAC	- Upland Agriculture Component

CHAPTER ONE

Introduction

1.1 Background

The Dry Zone Livelihood Support and Partnership Programme (DZLiSPP) is a seven year developmental exercise targeting agricultural development in poverty stricken dry zone areas in Kurunegala, Anuradhapura, Moneragala and Badulla districts in Sri Lanka. Comprising of five major developmental components, the programme aimed at improving the income avenues and living standards of 80,000 poor households in the project area. Rain-fed Upland Agricultural Development and Integration with Livestock Production Systems is one of the key developmental components of the DZLiSPP. Often termed as ‘upland agriculture’, this component had been designed to address the problem of low productivity of rain-fed upland crops resulting due to limitations of technical advice and scarcity of new seed varieties. It was aimed at increasing the land use intensity and productivity of un-irrigable uplands of beneficiary farm households through participatory extension tools and Farmer Field School (FFS) approach. The Ministry of Agriculture (MoA) assigned Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) to assess the FFS approach as an extension tool in promoting rain-fed upland farming with the aim to draw DZLiSPP experience and lessons that would help policy making in the agricultural extension system in the country. The FFS approach applied during the course of project implementation was a one which is different from its prototype model. Hence the HARTI proposed to assess this modified FFS approach.

1.2 Upland Agricultural Development Component

The upland agriculture component (UAC) of the DZLiSPP aimed at improved and increased use of rain-fed lands by 45,000 poor households living in the project area. Bridging the gender gap in rural development was another prime concern thus 50 percent of the project beneficiaries were supposed to be women. To achieve the programme activities it was planned to implement 2550 FFSs with a total allocation of Rs.351mn.

Promotion of dry zone rain-fed upland farming is a must for the agricultural development in the country for the reasons of availability of a large extent of arable land with fertile soils, dry climate that boost crop

productivity and sparse availability of farming population with limited access to off farm employment. It is arguable whether the attention paid to irrigated paddy cultivation and resource constraints both at national and local levels has deserted the dry zone upland agriculture development in the country, particularly in terms of providing inputs and services such as fertilizer and extension. Given this context upland crops yield less which can be attributed to problems of receiving technical advice and scarcity of new seed varieties (National Programme Coordinating Unit, DZLiSPP). Among the many objectives the DZLiSPP has emerged to address the issues of rain-fed upland farming due to motivation by previous findings in the dry zone projects which demonstrated the viability and potentials of technologies and methodologies for upland agriculture development. The strategic move of the DZLiSPP was to institutionalize and sustain support to upland farming and for further development of appropriate extension services. The FFS was the extension tool which was to be used to mobilize farmers to increasingly involve in upland farming under the technical and financial assistance from the DZLiSPP. However as detailed out in the chapter 2 it was realized during the field survey that the farmer groups formed for the implementation of project activities were predominantly functioning for group credit utilization rather than to perform as a farmer field school. It was hardly reported continuous learning on agricultural practices as in prototype FFS approach. Farmer groups were based on the predominant agricultural activity they involved in and in many cases it was crop production. This has led the farmer groups to name their group with the crop name, for instance, *Ratakadju Samithiya*, Cowpea *Samithiya*. Therefore they were village level societies based on the production of a particular crop and therefore from this point onwards the village level farmer groups formed under DZLiSPP are termed as ‘societies’ instead of FFSs.

1.3 Objectives

Originally the main objective of this study was to evaluate the success of FFS approach as an extension tool in promoting rain-fed agriculture in the dry zone areas of Sri Lanka. Given the above differing situation the ‘FFS approach’ in the above phrase was changed to ‘modified FFS approach’ and then to ‘societies’. Accordingly the final specific objectives of this study were;

- To analyze institutional, financial and technical aspects of village level societies.
- To evaluate the sustainability of the strategy adopted by the DZLiSPP to promote rain-fed upland agriculture.

- To draw lessons from the implementation of the above strategy and make recommendations useful for further improvement of rain-fed upland agriculture in the country.

1.4 Study Methods

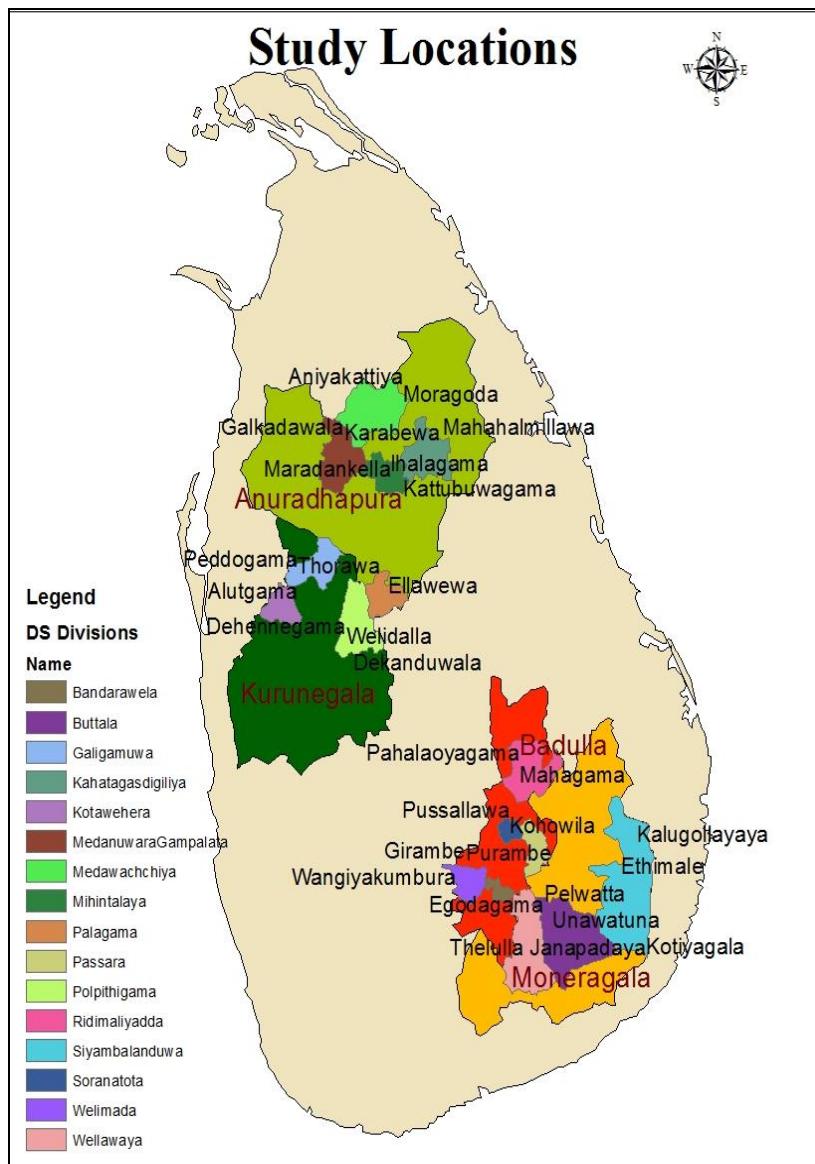
This study was based on both primary and secondary data gathered through different methods of data collection as detailed below.

1.4.1 Selection of Study Locations and Samples

The study locations represented all four districts (Badulla, Kurunegala, Moneragala and Anuradhapura) where the programme had been implemented (Figure 1.1). The entire project area was managed by fifteen Programme Monitoring Units (PMUs) and each unit comprised of several Divisional Secretariat Divisions (DSDs). One DSD was selected to represent each PMU and eight to ten percent of *Grama Niladhari* Divisions (GNDs) from the selected DSDs were randomly selected as study locations. The total number of GNDs selected was 52. Whenever there were more than one society in the selected villages, data was collected from all or most of them. Thus the total number of societies chosen for data collection was 72 and the sample demonstrated an ample representation of the temporal variation of programme implementation (Appendix 1.1).

The following procedure was adopted during the selection of sample beneficiaries. It was planned to select two beneficiaries from each selected society however, the number varied in some instances. The greater the farmer participation in the society the higher the number of farmers who were willing to face the interview to share their experiences. In such instances more than two farmers were selected for the sample. However in most instances the number of farmers were limited to two from each society and the total sample size was 125. The farmer selection process ensured representation of both sexes as well as both type of beneficiaries; i.e. ordinary members and office bearers. When the society represented the members from a single sex, the stratification was made only between office bearers and ordinary members and one farmer from each stratum was selected randomly. When it is represented by farmers of both sexes, the first choice was made randomly. Considering the sex of the selected farmer and his/her membership status in the society, another farmer was selected to represent the opposite sex and the other membership status. An exception was made only in the case of Buttala DSD where only office bearers represented the sample because they had organized a meeting for

the purpose of cluster formation on the field day allocated for the data collection from this particular study location due to the last stage of the project implementation. The Table 1.2 illustrates the distribution of the sample societies and the beneficiaries across districts.



Source: HARTI Survey Data, 2012

Figure1.1: Study Locations

Table 1.1: Distribution of Societies and Farmers by Study Locations

Kurunegala District					
PMU	DSD	GND	No socie-ties	Crops	No. Farmers
Galgamuwa	Galgamuwa	Ihala-Palukendawa	1	Orange	2
		Ganediwulwewa	1	Maize	2
		Thorawa	3	Ground Nut	2
		MahaThorawa	1	Ground Nut	2
		Peddogama	2	Maize Banana	1
Kotawehera	Kotawehera	Aluthgama	2	Banana Orange	4
		Dehennegama	2	Ground Nut	5
		Sirisethagama	1	Green gram	2
Mahawa	Polpithi-gama	Welidalla	1	Ground Nut	2
		Keralan-kadawala	2	Maize Banana	4
		Dekanduwala	2	Papaw Ground Nut	5
Sub Total 1a	3	11	18	Sub Total 2a	31
Badulla District					
PMU	DSD	GND	No socie-ties	Crops	No. Farmers
Mahiyangana	Rideema-liyadda	Mahagama	3	Maize	3
		Pahala Oyagama	1	Maize	2
Soranathota	Soranathota	Soranathota	1	Pine apple	2
		Kosgolla	2	Chili Mushroom	4
		Kohowila	2	Turmeric	4
		Pussallawa	1	Pineapple	1
Welimada	Welimada	Wangiya Kumbura	3	Bee keeping Seed Potato	5
		Girambe	1	Seed Potato	2
		Puranwela	1	Anthurium	2
Passara	Passara	Paramahankada	1	Ginger	2
		Bibilegama	2	Ginger Banana	2
		Udagama	1	Seed Paddy	0
		Miriyabedda	1	Banana	2

Bandarawela	Bandarawela	Makulella	1	Bell pepper	2
		Darahitawanagoda	1	Bee - Keeping	2
		Obadawella	1	Bee - Keeping	2
		Egodagama	1	Banana	0
Sub Total 1b	5	17	24	Sub Total 2b	37

Anuradhapura District

PMU	DSD	GND	No socie-ties	Crops	No. Farmers
Kekirawa	Palagala	Ellawawa	1	Vegetables	2
		Moreththegama	2	Soya bean	4
		Ulpathagama	1	Black gram	2
Medawach-chiya	Medawach-chiya	Thammanna-Elawaka	1	Maize	2
		Moragoda	2	B'onion	4
		Aniyakattiya	1	B'Onion	2
Thirappane	Mihinthale	Kattubuwagama	1	Green chili	2
		Ihalagama	2	Green chili	3
		Maradankalla	1	Cowpea	1
Kahatagas-digiliya	Kahatagasdigiliya	Kokmaduwa	1	B'onion	2
		Kahatagasdigiliya	1	Black gram	2
		Ambagahawewa	1	B'onion	2
		Mahahalmillewa	1	Maize	2
Anuradhapura	MedaNuwaragam-palatha	Alaya-paththuwa	1	Black gram	1
		Karabewa	1	Maize	0
		Galkadawala	1	B'onion	0
Sub Total 1c	5	16	19	Sub Total 2c	33

Moneragala District

PMU	DSD	GND	No socie-ties	Crops	No. Farmers
Siyambalan-duwa	Siyambalan-duwa	Watththegama	2	Maize	2
		Kalugollayaya	2	Maize	2
		Ethimale	1	Maize	4
		Kotiyagala	2	Maize	3
Thanamalwila	Wellawaya	Thelullu Jana-padaya	1	Red onion	6
	Buththala	Unawatuna	1	Maize	2
		Pelwatta	1	Ground-nut	2

		Minipuragama	1	Maize	1
Sub Total 1d	2	8	11	Sub Total 2d	24
Total	15	52	72		125

Source: HARTI Field Survey, 2012

1.4.2 Data Collection Methods

Several data collection methods were employed in this study including review of relevant documents, Focus Group Discussions (FGDs), questionnaire survey of members of crop societies and Key Informant Interviews.

FGDs was the key means of data collection employed. The discussions were held with groups of society members who were gathered at a common place or a residence of a member. A semi-structured questionnaire was administered to gather data and information pertaining to each society. These group discussions provided an opportunity for the members to share challenges they faced and experiences they gained while working as a group under the society. The ultimate goal of this exercise was to draw lessons from the experience of the project approach through brainstorming among the members.

A farmer survey was carried out in order to supplement the information gathered through FGDs administering semi structured questionnaire to gather information pertaining to assessment indicators detailed under the section 1.5. Data from divisional programme facilitators (DPFs) were gathered using a semi structured questionnaire. The sample farmers also demonstrated a reasonable representation of temporal variation of the commencement of societies as per the Appendix 1.2. Important socio-economic characteristics of the sample farmers are presented in the Appendix 1.3.

Key Informant Interviews (KIs) (face to face/telephone) were conducted with the key informants of the DZLiSPP and key extension personnel in the agricultural extension system when and where ever possible. The key personnel included; (a). District Programme Manager and the Agronomist at district level, (C). Provincial Directors of Agriculture in the project districts (D). Divisional Programme Facilitators (All DPFs in the selected DSDs of Kurunegala, Badulla and Anuradhapura and one DPF from Moneragala (most of the DPFs had left the programme at the time of the survey) and agricultural instructors in the areas where the sample survey was conducted.

1.5 Data Analysis and Different Aspects Assessed

Data were analyzed through uni-variate and bi-variate analytical techniques using SPSS. The institutional aspects of the project approach were examined in terms of process and methodology adopted the role of DPFs in the implementation of societies with challenges posed, best practices adopted leadership, membership and women representativeness, capacity building of office bearers, functionality, physical progress and performances of societies. Financial aspects were assessed through financial allocation targets, progress and account details of societies, loan disbursement and repayment, best practices in financial management, non/functionality of revolving fund, cost per farmer, unit cost of project activity (society), number of guarantors/loan, rate of interest, adherence to rules in issuing loans, follow up measures adopted, loan repayment rate and growth of revolving fund and loan amount.

Technical aspects were examined through types of farmer education programmes, farmers participation in training programmes, knowledge improvement, crops/varieties introduced, extent cultivated, technologies adopted, improvements in existing technologies, net return from crop production, cropping intensity index, improvement in farmer-AI linkages, use of increased income on various aspects such as improvement in housing conditions and facilities, children's education, consumption and saving. An attempt was made to understand the sustainability aspects of societies through investigating the ability to federate, farmer federations established, society and links to other service agencies (marketing etc.) and transferring the responsibility of societies to line agencies.

1.6 The Report

In addition to this introductory chapter, the report consists of seven chapters. The chapter two provides a description of societies and its application in the DZLiSPP with an overview of project approach. Institutional, financial and technical aspects of societies are analyzed in the chapters three, four and five respectively. Chapter six deals with the sustainability aspects of societies and the final chapter provides conclusions and recommendations.

CHAPTER TWO

Farmer Field School Approach and Its Application in DZLiSPP

2.1 Farmer Field Schools: An Overview

The Farmer Field School (FFS) is a group-based experiential learning process constructed on the principle that ‘adults learn best from experience’. FFSs consist of groups of people with a common interest, who get together on a regular basis to study the agro-ecology of their farming systems. It is particularly suited and specifically developed for field studies, where hands-on management skills and conceptual understanding is required. The activities involve simple experiments, regular field observations and group analysis. The knowledge gained from these activities enables farmers to make their own locally-specific decisions about crop management practices versus generalized recommendations made via learning from conventional extension methods. The FFS is seen as an appropriate extension tool for the countries where there is a shortage of extension staff.

FFSs were first used in Indonesia in 1989 on integrated pest management (IPM) and was designed and managed by the Food and Agriculture Organization (FAO). The concepts and methods that have been brought together through the FFS approach vary from agro-ecology and experiential education to community development. In Sri Lanka FFSs were first started in 1995 to help farmers adopt IPM practices in their rice fields. According to Arnoud and Deborah (2008) FFS approach is characterized by several key elements as detailed below.

- 1. The Group:** The group consists of a group of people with common interest who form the core of the farmer field school. The group may be a new or existing one of men or women or both. Even though it is not intended to continue FFS after the period of study, which is at most a crop cycle, some FFS are created as long term organization.
- 2. Facilitator:** Farmer field schools need a technically competent facilitator to lead members towards getting involved in hands-on learning on the selected subject. Advantages of choosing programme facilitator from the same farming community are many; facilitate better than extension staff as they know the community, area and its members well, speak a similar language,

are recognized by members as colleagues, require less transport and other financial support than formal extension officers, can operate more independently (and therefore cheaply), and are outside formal hierarchical structures. Facilitators need training; season-long training to learn facilitation skills, to grow crops with their own hands, and develop management skills such as fund-raising and development of local programmes, computer literacy for preparing local training materials, budgets and project proposals.

3. **Common Field:** A common field is the teacher that provides most of the learning materials for the group. Farmers are usually much more comfortable in field situations than in classrooms. In most cases, communities can provide a study site with a shaded area for follow-up discussions.
4. **Curriculum:** The FFS curriculum follows the natural cycle of the subject concerned; crop, animal, soil etc. for example, the cycle may be “seed to seed” or “egg to egg”. Accordingly this approach covers all aspects of the concerned subject in parallel with what is happening in the FFS member’s field so that the lessons learned can be applied directly. No lectures involved and all activities are based on experiential (learning-by-doing), participatory, hands-on work. Each activity has a procedure for action, observation, analysis and decision-making. The emphasis is not only on “how” but also on “why”. Experience has shown that structured, hands-on activities provide a sound basis for continued innovation and local adaptation, after the FFS itself has been completed
5. **The Programme Leader:** Most FFS programmes exist within a larger programme. It is essential to have a good programme leader who can support the training of facilitators, get materials organized for the field, solve problems in participatory ways and nurture field staff facilitators. This person needs to keep a close watch on the FFSs for potential technical or human relations problems. They are also the persons likely to be responsible for monitoring and evaluation. The programme leader must be a good leader and an empowering person. He or she is the key to successful programme development and needs support and training to develop the necessary skills.

- 6. Financing:** FFSs need financing to support the group learning activities. The greater the distance that facilitators need to travel to get to the field, the higher the cost of transport. It is required to minimize the transportation cost. In FFS programmes training is a key recurrent component, which takes up a large portion of the budget.

The implementation of projects using the FFS approach lead to a deeper understanding of the problem and its causes and it has brought about many advantages and development benefits; reduced use of pesticides (www.pan-uk.org/pestnews/Issue/pn61/pn61p14.htm)*, improved sustainability of crop yields and empowerment of farmers (en.wikipedia.org/wiki), increased income, improved housing conditions, paying school fees, buying new clothes, contributing to church and social funds and improvement in family food security, increased yields and reduced pesticide use (<http://www.pan-uk.org/pestnews/Issue/pn61/pn61p3.htm>)*. The FFS approach plays an important role in serving as a platform for human capacity building and empowerment (DZLISPP). It has proven that integrated pest management using FFS approach in the country as well as overseas is cost effective (<http://www.pan-uk.org/pestnews/Issue/pn61/pn61p3.htm>)*. FFS approach has stimulated continued learning, and that it strengthened social and political skills, which apparently prompted a range of local activities, relationships and policies related to improved agro-ecosystem management.

Sources validate the difficulty for Cost-benefit Analysis of FFSs largely due to wide range of benefits (from yield increases and savings of input use to wider consequences of farmers getting organized) and costs (from expenses involved in running field schools to wider costs of training extension staff) as well as huge variation in the value of individual factors. The conceptual and methodological problems associated with assessing the impact of IPM field schools have resulted in disagreements among experts about the advantages of this intervention.

2.2 The Proposed Participatory Approach for Upland Agriculture Development under the DZLiSPP

The DZLiSPP proposed a participatory extension approach led by FFSs to institutionalize and sustain support to rain-fed farming in the project area. The strategy underlying FFS at the field level involved establishment of farmers groups with common interest with a view to bring them together

and to synergize their interests and to move towards a common goal of self development (DZLiSPP, Undated).

As per the project appraisal report the intended procedure was to (a). Obtain experienced technical assistance from countries in the region, with expertise in the methodology of participatory extension and farmer managed FFSs, (b). Participatory assessment of priority constraints in upland farming and identification of potential solutions which are interested by school members providing due attention to interest of women (at least 50%) by service providers¹, (c) development of a school piloting programme and training curriculum by the same service providers, (d). Training of agricultural instructors (Agriculture instructors) in the participatory approach and FFSs, (e). Conducting FFSs with support from the Agriculture instructors and, (f) Support to farmers undertaking the own school (DZLISPP). However, due to various difficulties encountered at the initial stages of programme implementation the DZLISPP has made some modifications to the implementation programme of FFSs.

2.3 A Modified Version

The said service provider model has been put into practice at the initial stage of the programme implementation, however, the slow progress achieved led to modification of the participatory approach applied in the DZLISPP. It had several modifications from both the original concept and what was intended in the project appraisal report as detailed below. Four main components that were present in the modified project strategy were; the group, programme facilitator, revolving fund and technology transfer process. In the absence of a common field and a curriculum as described under the section 2.1 it had become a sort of micro credit society particularly for fund disbursement.

- 1. The Group:** The DZLISPP had helped the farmers to form organized groups each with about 20 members who prefer to cultivate one crop or to perform an activity like bee keeping. It had envisaged increased participation of women in the societies. This farmer group also differed from the prototype model of FFS as it was required to form a society with office bearers, to register as a formal institution and to deal with a formal financial institution through maintaining an account.

¹ It was proposed to obtain the services for the participatory assessment and technical expertise from universities, private firms, and public line agencies or from farmer groups.

2. **Facilitator:** A cadre of officials called Divisional Programme Facilitators (DPFs) holding an agricultural diploma or a degree had been appointed in each DS division to take over the responsibility of programme implementation at the grass root level. They had been provided with necessary training on FFS approach and other technical training to refresh their knowledge. The formation and the operation of the society was overseen by the DPF and had mobilized farmer groups in the selected villages to form societies.
3. **Revolving Fund (RF):** With a view to facilitate the process, the project had provided the farmers an initial grant as cultivation loans required for their production related activities. The grant was intended to function as a revolving fund.
4. **Technology Transfer:** The DPFs linked farmer groups with Agricultural Instructors (Agriculture instructors) to provide technical assistance for the production of the selected crops/activities.

During the project period it was planned to establish 2550 societies in 1077 poverty stricken GNDs in 44 DSDs in the dry zone areas of programme districts managed by 15 PMUs as per the Table 2.1.

Table 2.1: Geographical Coverage by the Programme

District	Number of DSDs	Number of PMUs	Number of GNDs
Anuradhapura	15	5	384
Kurunegala	8	3	185
Badulla	15	5	426
Moneragala	6	2	86
Total	44	15	1077

Source: DZLiSPP of MOA, 2012

The key activity of the upland agriculture component was to implement a village level institutional set up termed as FFSs in the selected GNDs that functions as a centre for channeling financial and technical assistance to the farmers. The third chapter has been allocated to analyze these institutions implemented by the DZLiSSP.

CHAPTER THREE

Institutional Aspects of Village Level Societies

3.1 Introduction

Farmer group is a prerequisite in FFSs. The cohesiveness of group members throughout the crop cycle leads to success of the learning process. Hence, learning group dynamics of such farmer groups is vital for understanding the success of the particular intervention that promotes the FFS approach. The modified version of societies implemented by the DZLiSPP had thus encouraged institutionalization of farmer groups at the village level and had diverted both technical and financial support for upland agricultural activities through this institution. This chapter analyzes the progress of implementation, functionality and performance of this newly formed village level institutions.

3.2 Appointment and Training of Divisional Programme Facilitators

Well-informed and skilled human resource is a must for the success of any programme intervention. To be a successful facilitator, one must have skills in managing participatory, discovery-based learning as well as technical knowledge to guide the groups' learning and action process (Luther et al., 2005). The DZLiSPP had appointed DPFs in each DSD to provide guidance and direction and to coordinate the technical assistance to the members of the societies. The greater proportion of the DPFs comprised of young agriculture diploma holders. This qualified young cadre had been an added advantage to the programme as they have been successful in winning the recognition among the farming community owing to their technical exposure. In particular their services were highly valued by the farming communities in remote areas in the project districts that were not accessed by formal extension personnel until the initiatives by the DZLiSPP. Working in the programme had in turn become a great opportunity for DPFs to gather field experience in the agriculture sector in the country.

The role within the programme was very clear to field facilitators. They had their working time spent on the activities relating to both crop production and dairy farming. They had undergone an in-service training (Table 3.1) which covered various aspects of programme implementation. According to the data gathered from 14 DPFs the training period varied

from 2-5 days and they had been undertaken by relevant institutions/resource personnel, for instance, field crop research and development centers, dairy farms in respective areas and Central Bank. Attention had been paid to training on area specific field crop production, for instance, big onion seed production in Anuradhapura, and seed potato production in Badulla.

Table 3.1: Types of Training Programmes Participated by Divisional Programme Facilitators

Type of Training	Number of DPFs Participated (%)
Field Crop Production	10 (71%)
Social Mobilization	5 (36%)
Dairy Management	3 (21%)
Accounting	2 (14%)
FFS Implementation	2 (14%)
Micro Enterprise Development	1 (7%)
Marketing/Post Harvest Technology	2 (14%)

Source: HARTI Survey Data, 2012

Most of the DPFs were satisfied with the support extended by the programme by providing training to fulfill their duties. Use of their own transport at an inadequate support for fuel was a burden for them to cover the large area under their purview. Some of them perceived that they could have given more contribution if they had undergone further training on new technologies for field crop production to further their technical capacity and training on social mobilization to enhance their personnel skills that help deal with the farming community.

3.3 The Role of Divisional Programme Facilitators

Formation of societies was the key function of DPFs. Every DPF had a set target for the formation of societies in each season for which they had identified farmer groups in three ways.

1. At the initial stages of the programme implementation participatory assessments were conducted in the project villages to prioritize farmer needs. When the farmers prioritized the need

for technologies and methodologies for upland crop production, the DFPs had formed the societies.

2. At the later stages of the programme implementation, there had been requests from the GND level officials such as Grama Niladhari (GN), Samurdhi Niyamaka (SN) and Agriculture Research and Production Assistant (ARPA) to implement societies in the respective GNDs at the Divisional Agricultural Committee held at the Divisional Secretariats. The DPF had identified farmer groups through such GN level officers.
3. There had also been requests from interested farmer groups who were aware of the benefits derived from the societies already implemented in the same village or in adjoining villages. The DPF had directly dealt with such farmer groups.



DPF visiting a farmer field site
Anuradhapura



Meeting of DPF and Farmers –
Bandarawela

As a first step, the DPF visits the group of farmers identified through the above means. In some instances officers in the PMU and the GN level officers accompany the DPF. Mostly the place of meeting had been a residence of a progressive farmer. The first meeting is for the awareness creation where the DPF describes the process of formation of the society from the point of registration and the issues and problems in each stage which can be faced by the farmers. Accordingly, the farmers are instructed to form a society, appoint office bearers, decide the membership fee and form the society. Then the technology needs of farmer group are identified. Need for increased women's participation is also emphasized.

At a second stage, a society is formed by the farmers either in the presence or absence of the DPF. An account is opened in a financial institution convenient for them with the collection of membership fee. The DPF prepares an estimate for the cultivation of the crop chosen by the members in complying with the programme guideline that Rs. 3500 is allocated per farmer. Accordingly the extent of cultivation by a society member is decided. The extent cultivated by a farmer differs from crop to crop. The financial assistance for the society is provided by means of a cheque and it is deposited in the account. It is called seed money. The presence of three main office bearers is essential for each withdrawal. The seed money is largely used to purchase seeds/planting material and for other purposes such as fertilizer if and when adequate.

The third stage is for technology transfer. The DPF makes arrangements to conduct technical sessions to the farmer group. The resource person is mostly the AI in the area. Sometimes Agriculture instructors are hired from other AI ranges as well. Farmers undergo training on recommended cultural practices in relation to production of the selected crops. The place of meeting is mostly at a residence of a member when lecture type sessions are conducted. Method demonstration is also carried out when and where necessary.

The best situation reported on technology transfer process involved;

- Introduction of crops which have not been cultivated by the farmers residing in the area or introduction of new varieties of already cultivated crops.
- Method demonstration of recommended cultural practices such as planting methods, spacing, fertilization and harvesting of newly introduced crops and varieties.
- Arrangement of additional education programmes such as field visits and distribution of leaflets.

The challenges faced by the DPFs while trying to achieve the set targets included;

- Limited time to monitor the activities of societies formed during the previous seasons.
- Difficulty for gathering farmers for meetings for many reasons, e.g. Loss of farmer interest when crops are destroyed by wild elephants and adverse weather conditions, farmers' involvement in other activities promoted by other organizations and line agencies.

- Influential behavior of some officers in societies who needed to give membership only to their friends.
- Political interference and weaknesses of village level officers who discouraged the farmers to repay loans.
- Attitudinal constraints - difficult to direct farmers towards adopting new crop production practices.

3.4 Membership of Societies

The society is a social capital run by both men and women. The programme envisaged action by such farmer groups of around 20 members. As per the DZLiSPP the programme has been able to sustain the average membership at 21 however average it amounts to 20 members as per the focus group discussions. One fourth of the societies met consisted of 20 members each. Variation found in the membership of societies across districts is presented in the Table 3.2.



FGD with Male Participants
Anuradhapura



FGD with Female Participants
Anuradhapura

Table 3.2: Membership of Societies by Districts

District	No. of Members	
	Minimum	Maximum
Kurunegala	09	37
Badulla	15	30
Anuradhapura	13	30
Moneragala	10	26

Source: HARTI Survey Data, 2012

In regard to growth of membership, it was seen that the membership had not been changed in the large majority of societies (73%). Twenty percent societies reported decrease of membership and the rest seven percent reported a growth in membership from three to eight members with an exception of 24 members joining to a society in Kurunegala district. The members were of the opinion that the functionality of revolving fund is a must for the success of the society for which the membership should be limited. Thus joining of new members had been restricted. With time, active societies had reached a certain level of stability after leaving out those who were not good both terms of in attendance and repayment of loans.



FGDs at Badulla

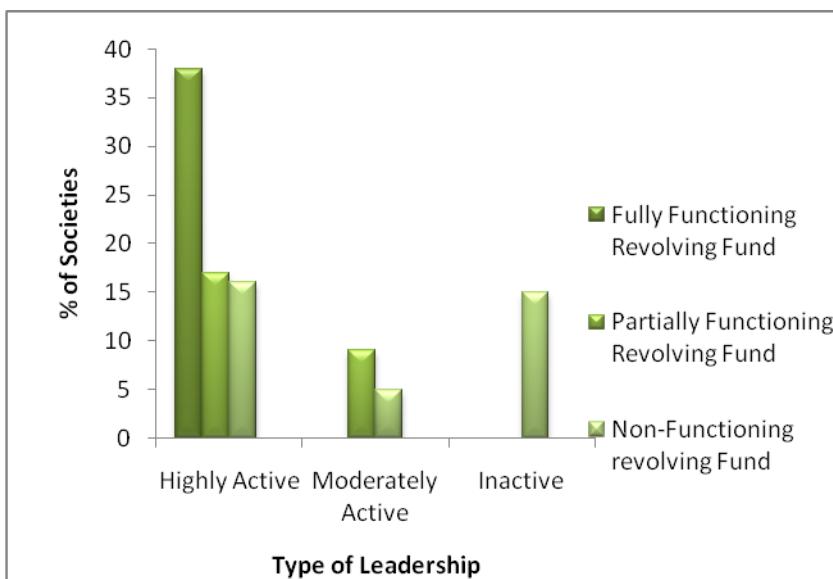


3.5 Leadership

All the societies had appointed three main office bearers namely president, secretary and the treasurer and the majority (69%) had filled vice president and vice secretary posts as well. No association was

observed between the number of office bearers per society and the total number of members in a society.

Leadership is one among few critical factors for the success of any organization. When it was inquired from farmers about their leadership a wide range of ideas were expressed. Broadly categorized into three groups, leadership was characterized by; (a). Very active, transparent leadership having the capacity to move forward the society (72%), (b).Transparent leadership but moderately active (14%) and (c) Inactive leadership (14%). The data in the Figure 3.1 leads to understanding that the leadership has contributed towards proper functioning of the revolving fund (RF).



Source: HARTI Survey Data, 2012

Figure 3.1: Functionality of Revolving Fund by Type of Leadership

3.6 Women Participation in Societies



Women Participation in Societies



A Woman Farmer in her Big Onion Nursery

Inclusion of women into development stream was a precondition of the DZLiSPP. The DPFs had communicated this message to the farming community during the formation of societies. According to the project staff the programme had achieved 45 percent participation (Table 3.3).

Table 3.3: Distribution of Membership in Societies by Sex

District	Members by Sex		Total Membership
	Male	Female	
Anuradhapura	6456 (49%)	6751 (51%)	13207
Kurunegala	5598 (61%)	3531 (39%)	9129
Badulla	7912 (57%)	6000 (43%)	13912
Moneragala	5851 (56%)	4608 (44%)	10459
Total	25817	20890	46707

Source: DZLiSPP of MOA, 2012

The total membership of 72 societies was 1451 consisting of 785 women and 666 men thus the distribution of membership in selected societies by sex was 54 percent women and 46 percent men. The average participation of men and women in societies amounted to eleven and nine members

per society respectively. The societies were of five types in terms of sex representation as shown in the Table 3.4.

One notable point which was also evident during the FGDs was that there was an increased trend of women's participation in societies to represent their household. This could be recognized as the increased community role of women amongst the triple role that women play within the household; (a) Productive role (b) Reproductive Role and (c) community Role. This had resulted due to the fact that the opportunity cost of participation in the meetings by male members was higher due to their involvement in off-farm income earning activities.

Table 3.4: Types of Societies by Sex Distribution

Type of Society	% of Societies
Female Majority	42%
Male Majority	34%
Female Only	15%
Male Only	7%
Equal Sex	1%

Source: HARTI Survey Data, 2012

Male participation predominated when the male household members were full time farmers and when they were hardly involved in off-farm income generating activities on part time basis. As evident from the FGDs, involvement of women in societies seemed rather a representation of the household as per the general trend of improved community role of women. When it comes to farming activities, it was the job of both men and women in the family for generations.

3.7 Women Leaders

In terms of leadership women in general had received more opportunities (56% positions) to hold office bearer positions (Table 3.5). It is noteworthy to point out that women predominated in gender stereotype positions such as secretarial activities. There was also a reputed perception within the rural community that women are good in financial control so that they should bear the treasurer positions. However, there was a partiality when it comes to key decision making position of the society – the post of president there were more men than women. This was more apparent in

the sex distribution of presidents in the societies where both sexes did participate (Figure 3.2). The data pertaining to societies with the participation of both sexes shows that there have been more opportunities more men not only in male majority societies but also in female majority societies. This situation led to question whether there is a real inclusion of women into agricultural decision making process.

Table 3.5: Sex Distribution among Office Bearers

Office Bearer	Male		Female	
	Number	%	Number	%
President	41	57	31	43
Secretary	26	36	46	64
Treasurer	33	46	39	54
Total	90	44	116	56

Source: HARTI Survey Data, 2012

3.8 Capacity Building of Office Bearers

The programme envisaged capacity building of office bearers on several matters relating to implementation of societies. Included were organizational and financial management, organizing technical training to members to improve the bargaining power of societies while dealing with commercial activities/marketing and input purchasing. As revealed through the FGDs, office bearers in 44 percent societies had received the training. Among the reasons for poor rate of officer training were; poor functionality of societies frequent change of programme staff especially the DPF as frequently reported from Badulla and Moneragala districts, the failure of office bearers to participate in the officer training programmes due to personnel reasons and lack of opportunity received by office bearers who were newly appointed for the societies formed in 2012 Yala season.

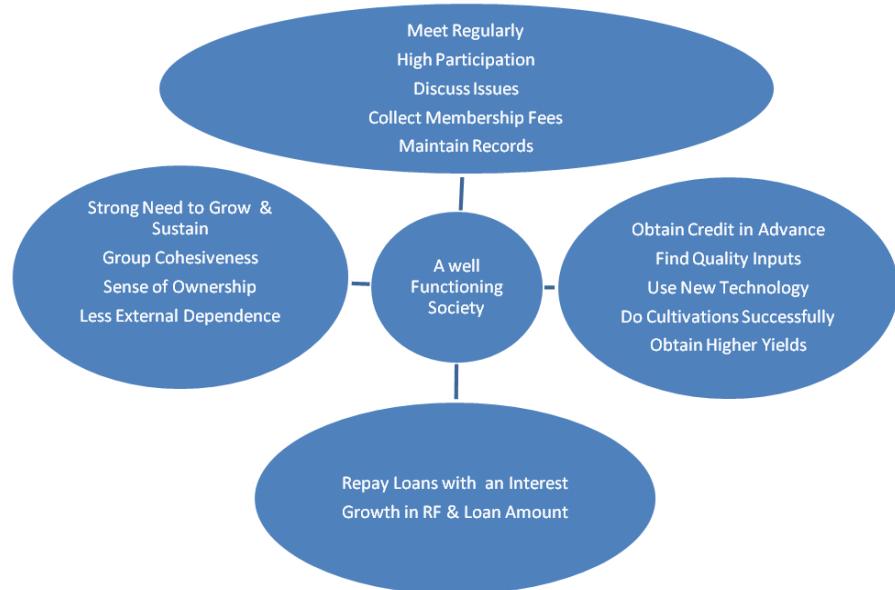
Trained office bearers of the societies were satisfied with the training received for general management of the societal activities. Even those untrained did not claim any difficulties in managing activities of the society as for most of them it was not the first time of similar activities. Many office bearers held similar positions in other societies in the village. Exposure within and outside the programme had helped them to maintain the societal activities to a manageable level.

3.9 The Operation of Societies

The name of the societies formed under the programme in general consisted of three to five words and in some instances the members hardly recalled the name. Generally, the society was called by its crop name, for instance, '*Ratakadju Samithiya, Badairingu Samithiya*' etc. Well functioning societies had met regularly to collect membership fees and to discuss issues and problems, largely the financial matters. The chart 3.1 is a schematic representation of the characteristics of a well functioning society. A fine of Rs. 25/= was imposed for an un-informed absenteeism and it was a best practice adopted by some societies to ensure the farmer participation.

The revolving fund of these societies were issued to the members at the beginning of the cultivation season and recollected with an interest at the end of the season (see under financial aspects for more details). The well functioning societies met on regular basis as agreed by the members i.e. monthly, once in two or three months or seasonally whereas some societies had not met after the first season of loan disbursement and they were inactive. These societies formed by a formal village level farmer group had several advantages; it had ensured cohesiveness among the farmers who got together for a common purpose. The group had enjoyed the advantages of becoming an institution such as sense of ownership, collective action and need to grow and sustain.

Chart 3.1: Schematic Representation of a Well Functioning Society



3.10 Physical Progress and Performances of Societies

The progress of implementation of societies during the initial years of programme implementation fell far below the expected level due to practical constraints in realizing the proposed FFS approach. The modified strategy adopted in the DZLiSPP had achieved a physical progress of 89 percent through implementation of project activities in 2260 societies against the targeted 2550 as of May 2012 (Table 3.6). According to the project staff 94 societies (22%) had been implemented against the targeted 435 societies for the year in the year 2012.

Table 3.6: Physical Progress of Societies Implemented by May 2012

District	Target	Achieved	%
Anuradhapura	800	638	80
Kurunegala	500	482	96
Badulla	750	648	86
Moneragala	500	492	98
Total	2550	2260	87

Source: DZLiSPP of MOA, 2012.

At the end, the DZLiSPP had categorized the active societies based on organizational strength, agriculture development activities and the functionality of the revolving fund and membership fund. A total of 1801 societies (375 (21%) from Kurunegala, 548 (30%) from Badulla, 386 (21%) from Anuradhapura and 492 (27%) from Moneragala) had been subject to categorization into five grades based on the total scores received for the said criterion as per the Table 3.7.

Table 3.7: Categories of Societies

Description	Category of Societies				
	Very Good A	Satisfactory B	Moderate C	Unsatisfactory D	Poor E
Total Score	>75	60<-75	45<-60	25<-45	<25

Source: DZLiSPP of MOA, 2012.

The said categorization seemed to be a complex one that involved three main criterion each having sub criterion as described below.

Main Criterion
➤ Organizational Strength

- Years of operation
- Record keeping
- Holding meetings and transparency
- Collective action
- Links with other Institutions

➤ Agricultural Development

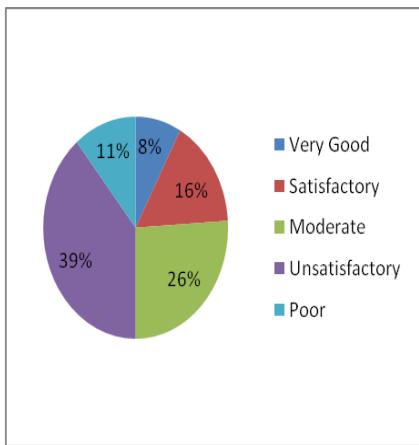
- Participation in training
- Increase in extent cultivated
- Links with other institutions
- Increase in yield
- Willingness to Undertake new Programmes

➤ Revolving Fund and Membership Fee

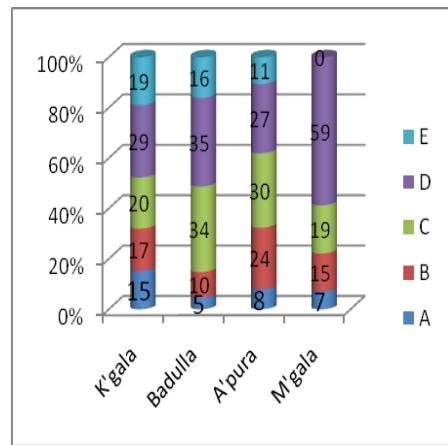
- Success in the collection of membership fee
- Growth of revolving fund

- Implementation of credit programmes by the society
- Involvement in marketing activities
- Value addition
- Future plans and suggestions.

Figure 3.2 illustrates the overall distribution of said categories of societies within the programme as a whole and within the districts respectively. As per Figure 3.3 Kurunegala predominates for the category of very good societies whereas poor category societies was in Moneragala. The DZLiSPP was satisfied with its overall achievement of 50 percent societies which came under A, B and C categories and expected that these societies would gather round their sustainability programme.



Source: DZLiSPP of MOA, 2012.



Source: DZLiSPP of MOA, 2012.

Figure 3.2: Distribution of Societies Figure 3.3: Distribution of Categories of Societies by Districts

According to DPFs A and B categories are good in sustaining the RF. On performance basis, the ultimate achievement of societies amounted eight percent in very good category, and sixteen percent with satisfactory performances. Therefore the overall achievement of DZLiSPP in terms of societies with satisfactory performances amounted to 24 percent. The financial and sustainability aspects of these societies are detailed in the fourth and sixth chapters of this report.

CHAPTER FOUR

Financial Aspects of Village Level Societies

4.1 Introduction

Financing motivates group action by farmers. The DZLiSPP has provided a one-time grant for the village level societies to be utilized as 'seed money' for upland agricultural activities. It was envisaged that this grant needs to be built as a revolving fund for the existence of these societies. This chapter analyses the structure and performance of the revolving fund of these societies.

4.2 DZLiSPP Contribution to Revolving Fund

According to the sample survey the programme contribution per society varied across districts (Table 4.1) depending on the number of members in each society and the activity to be undertaken. The large variation in Kurunegala district was due to increased membership in some societies upto 37 members. Accordingly the individual loan amount had also varied across districts (Table 4.1). The assistance had been extended either in cash for obtaining seeds/planting material or other production inputs or in kind such as seeds or planting materials.

Table 4.1: Variation in Programme Contribution and Loan Amount

District	Programme Contribution to Societies (Rs)		Initial Individual Loan Amount (Rs)	
	Minimum	Maximum	Minimum	Maximum
Kurunegala	35000	214500	2520	6000
Badulla	44660	81500	2000	3500
Anuradhapura	53000	72500	2600	6100
Moneragala	66000	90000	2500	3400

Source: HARTI Survey Data, 2012

4.3 Accounting in Societies

The treasurer was responsible for regular accounting in societies. It was observed that they have fulfilled this requirement by maintaining records themselves. However the extent to which the transactions had been made

with the respective financial institution was not satisfactory. In some instances there were treasurers who had money in hand. It does not mean that they are dishonest but it had been due to inconvenience for them to make frequent visits to the linked financial institution when they were not situated in the village i. e. Bank of Ceylon and Regional Development Bank. In the villages with no/less transport facilities, poor roads, and threats from wild elephants, the movement of people were extremely restricted. Therefore some societies had chosen Samurdhi Bank for easy access.

4.4 Loan Disbursement and Repayment

The study was evident that the number of loan rounds which were already disposed by the societies varied from one to eight. The majority of societies had operated only one loan round whereas there were around 30 percent societies which had succeeded in operating three or four loan rounds (Table 4.2).

Table 4.2: Number of Loan Rounds Issued by Societies

No. Loan Rounds	No. of Societies in				Overall	
	Kurunegala	Badulla	Anuradhapura	Moneragala		
	No.	No.	No.	No.	No.	%
1	8	18	3	2	31	44
2	4	3	3	5	15	21
3	2	3	4	3	12	17
4	1	0	8	0	9	13
5	2	0	0	0	2	3
6	1	0	0	0	1	1
8	0	0	1	0	1	1
Total	18	24	19	10	71	100

Source: HARTI Survey Data, 2012.

In some districts support has been extended in cash and the farmers knew the exact value of the grant given to them. Some farmers had no clear idea of value of the loan given to them in some locations of Badulla district as they were given assistance in kind. There was the intention that if money was given it had to be re-paid but the support in kind was not necessary as it had been considered a grant. In some locations assistance had been granted in kind with the involvement of DPFs.

It was the general practice that the one-time grant offered to the society is disbursed among the members equally at the beginning of each cultivation season. The best practices that encouraged the productive use and the growth of fund observed in different localities were;

- The allocation of entire fund only among those who do cultivation in the particular season so that non-users allocation is also utilized for cultivation purposes.
- Collective agreement to use the fund more productively in which the farmer group divide into two groups and each group utilize the entire fund every other season.
- The fund in general revolves once a year as most of the societies do cultivation only in the *maha* season, however, some societies who utilized the fund twice a year had plans to increase the number of loan rounds per year by having quarterly meetings.
- The RF brought about many advantages to the farmer groups.
- Enhanced the ability to obtain required inputs such as seeds and fertilizers for on time commencement on cultivation activities.
- Ensured purchase of high quality and high yielding seeds/planting material at the early stage of the season which are scarce at the later stages. For this societies had met in advance and allocated money for their members.
- Collective purchase of inputs at reduced cost.

In order to assure repayment of loans varied practices had been adopted across districts. According to the data in the Table 4.3, societies in Anuradhapura had demonstrated uniformity in the procedure adopted while adhering to programme requirement.

Table 4.3: Type of Guarantee Sought for Issuing Loans

Type of Guaranty	No. of Societies in				Total	
	Kurunegala	Badulla	Anuradhapura	Moneragala	No.	%
2 Guarantors	1	0	19	0	20	29
3 Guarantors	1	0	0	0	1	1
No Guarantors	10	7	0	9	26	37
Sign on a Stamp	6	17	0	0	23	33
Total	18	24	19	9	70	100

Source: HARTI Survey Data, 2012

The programme requirement was to have two guarantors in issuing each loan. However the data shows that only 30 percent societies have adhered to programme requirement. A considerable percentage (37%) had not adopted clear procedures on this matter.

Repayment of loan was made at the end of the cultivation season with or without an interest. The rate of interest was decided by the members on their convenience and pay back from the income of the previous harvest. As reported the rate of interest varied by society irrespective of the loan amount. It ranged from Rs. 50/= to Rs. 500/= in Kurunegala, 0.2% to 5% or Rs. 500/= in Badulla, 0.1% to 5% or Rs.500/= in Anuradhapura and Rs. 100/= to Rs.800/= in Moneragala. The flexibility thus allowed had resulted in the growth of fund at varied rates.

4.5 Functionality of Revolving Fund

The societies were grouped into three main categories based on the functionality of the revolving fund. The sample included all three categories; (a) 28 societies with fully functioning RF (39%), (b) 19 societies with partially functioning RF (26%) and (c) 25 societies with non-functioning RF (35%). In partially functioning societies some members had made repayments except few those who had not participated in the meetings or had not made repayments due to lack of interest, purposive ignorance or for unknown reasons to other members. The reasons for non-functioning of revolving fund varied across districts (Table 4.4).

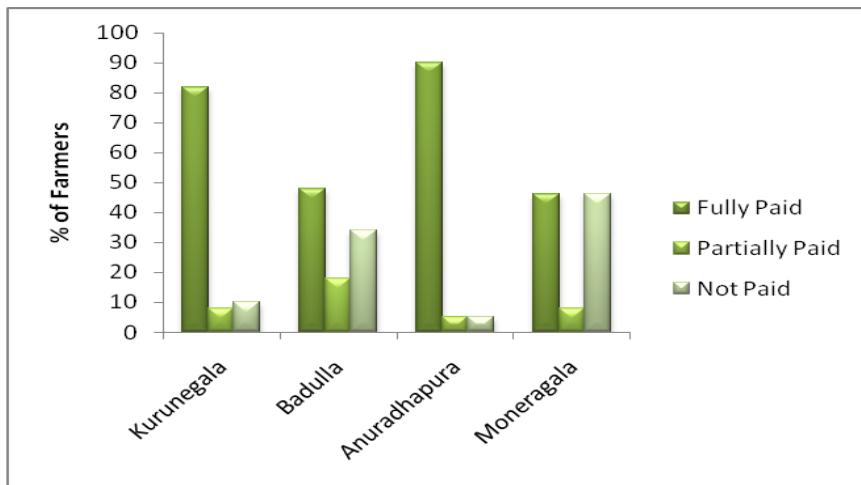
Table 4.4: Reasons for Non-functionality of Revolving Fund

Reason	No. of Farmers	% of Farmers*
1. Lack of produce marketing due to poor prices	24	55
2. Crop failures due to adverse weather conditions	10	23
3. 1 + Poor selection of farmers	07	16
4. Communication Failures	02	05

* Out of the total number of societies with non-functioning societies = 43

Source: HARTI Survey Data, 2012

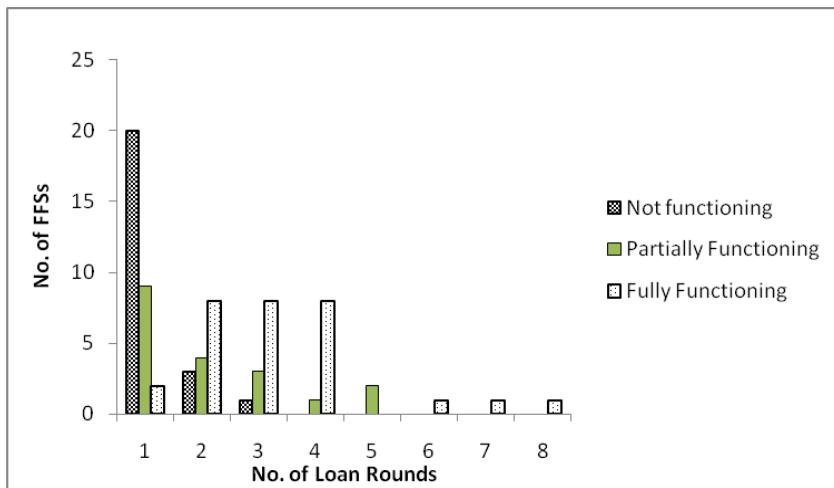
The key reason for non-repayment of loan was lack of income due to not selling the produce as a result of poor prices which prevailed in the study locations, particularly for maize farmers in Badulla and Moneragala districts. Loss of farmer interest due to crop failures predominated in Kurunegala and Anurdhapura districts both due to heavy rains which prevailed during 2010/11 maha season followed by prolonged drought conditions to date. In addition inappropriate selection of farmers whose only aim had been to obtain something from the programme resulted in non-functioning of societies. Lapses in communication at the initial stages of programme implementation had also hampered the functionality of RF as evident from Badulla district which had been corrected later. According to some programme officials there would not have been adequate farmer participation if the farmers had prior knowledge of the need for revolving the fund. It was observed that the leadership of some societies were highly influential and encouraging in repayment of loans among its members. Loan repayment rate as a percentage of farmers was; 68 percent fully paid, 10 percent partially paid and 22 percent not paid. The distribution of farmers by degree of loan repayment by districts is presented in the Figure 4.1 whereby Kurunegala and Anuradhapura district demonstrates better performances. Financial difficulties accompanied by crop failures and poor income fetched by less producer prices were among the key reasons for non-repayment of loans common to all study locations (50% farmers). Among other location specific reasons were; lack of awareness on the need for repayment for revolving the fund and farmers reluctant to sell the produce due to poor prices which prevailed for maize particularly in Moneragala district at the time of survey.



Source: HARTI Survey Data, 2012

Figure 4.1: Degree of Repayment of Loans by Districts

It was also revealed that violent incidences were reported when the members were asked to repay the loan. The number of loan rounds was an indicator for functionality of revolving fund. The Figure 4.2 indicates the link between the two variables leading to conclude that some societies have sustained longer through revolving the fund for several seasons.



Source: HARTI Survey Data, 2012.

Figure 4.2: Number of Loan Rounds by Functionality of Revolving Fund

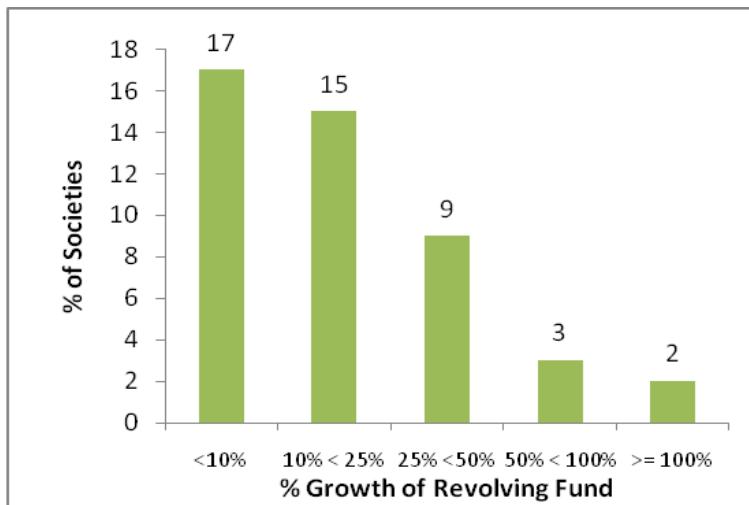
4.6 Growth of Revolving Fund and Loan Amount

Growth of revolving fund was a key outcome of the implementation of societies. This had shown a positive effect on the loan amount as well. Whilst 66 percent (40) sample societies had revolved the fund for more than two times (from two to eight times) the growth of fund ranged from Rs.400/- to Rs.125800/- . The varied rate of growth of fund had resulted due to varied rate of interests imposed, the number of loan rounds operated and the loan default rate. The Table 4.5 illustrates the details pertaining to growth of revolving fund. As per Figure 4.3 the majority of societies had achieved a less than 25 percent growth in the RF across districts.

Table 4.5: Growth of Revolving Fund

Description	Kurunegala	Badulla	Anuradhapura	Moneragala
No. Societies with Growing RF Growth	13	11	16	6
RF Growth				
<10%	2	9	3	3
10% < 25%	8	-	5	2
25% < 50%	3	1	4	1
50% < 100%	-	1	2	-
100% & above	-	-	2	-
Growth of RF (Rs)	1300 to 37711	500 to 30000	400 to 125800	1000 to 30000
Average Growth	8%	6.5%	42%	12%

Source: HARTI Survey Data, 2012.



Source: HARRTI Survey Data, 2012

Figure 4.3: Overall Distribution of Societies by Rate of Growth in Revolving Fund

The growth of individual loan amount ranged from Rs. 100/- to Rs.6750/- with an average growth of 47 percent as presented in the Table 4.6. The reasons for the varied rates in the growth of individual loan amount were similar to that of the growth of RF.

Table 4.6: Growth of Loan Amount

Description	Kurune-gala	Badulla	Anuradha-pura	Monara-gala	Overall
No Societies with Growing amount of Loan	7	3	16	8	34
Growth of Loan Amount(Rs)	500 to 2000	500 to 1000	400 to 6750	100 to 600	100 to 6750
Average Growth	17%	21%	90%	11%	47%

Source: HARRTI Survey Data, 2012

4.7 Financial Progress of Societies

As of May 2012, the project had shown a financial progress of 92 percent through investing Rs.323mn. against the target of Rs. 351mn. The financial progress of upland agriculture component in terms of districts is presented in the Table 4.7 (DZLiSPP, 2012).

Table 4.7: Financial Progress of Implementation of Societies by Districts

District	Cumulative Progress up to May 2011) (Rs. mn)		
	Target	Progress	%
Anuradapura	107	97.7	91
Kurunegala	81	75	93
Badulla	100	82	82
Moneragala	62	58.1	94
Total	350	323	92

Source: DZLiSPP of MOA, 2012

Table 4.8 and Table 4.9 illustrate further details on financial aspect of societies respectively as reported by the DZLiSPP and as estimated based on the data collected during the field survey. The data demonstrates a significant difference in investment as cost per farmer and cost per society.

Table 4.8: Expenditure for Implementation of Societies as Reported by the DZLiSPP

District	Anuradha pura	Kurune gala	Badulla	Monara gala	Total
No. Societies (A)	626	442	648	480	2196
No. Farmers (B)	13207	9129	13912	10459	46707
No. Farmers/Society (C)=(B)/(A)	21	21	21	22	21
Total Cost (Rs.mn) (D)	43.37	25.9	39	29.39	137.53
Cost/Society (Rs) (E)=(D)/(A)	69281	58597	60185	61229	62627
Cost per Farmer (Rs) (F)=(D)/(B)	3284	2838	2803	2810	2944

Source: DZLiSPP of MOA, 2012.

Table 4.9: Expenditure for Implementation of Societies as Estimated from Survey Data

District	Anuradha pura	Kurune gala	Badulla	Monara gala	Total
No. Societies (A)	19	17	24	9	69
No. Farmers (B)	383	337	516	237	1473
No. Farmers/Society (C)=(B)/(A)	20	19	21	22	21
Total Cost (Rs.mn) (D)	1328100	1528174	1424710	714300	4995284
Cost/Society (Rs) (E)=(D)/(A)	69900	89893	59363	79367	72395**
Cost per Farmer (Rs) (F)=(D)/(B)	3468	4535	2761	3014	3391**

Source: HARTI Field Survey, 2012

Overall the societies demonstrated a certain progress in financial terms. The financial sustainability aspects of societies will be discussed in the Chapter Six.

CHAPTER FIVE

Technical Aspects of Village Level Societies

5.1 Introduction

FFS is a group extension method where a group of farmers involve in a learning experience as in other group extension methods such as demonstrations, training programmes and field days. The adapted version of FFS in the DZLiSPP had attempted to ensure transfer of technology through linking the farmer and the extension personnel through the formation of village level institutions with the involvement by a DPF appointed for each DSD. This chapter is an attempt to analyze the nature and performance of technical knowledge flow that was supposed to be ensured through the modified FFS approach and resultant effects.

The framework for analyzing the technical effects and effects were derived from the information revealed through FGDs and literature survey of project documents. The FGDs revealed that the benefits of societies were many fold; knowledge improvement of farmers on new crops/varieties and crop production methodologies, increased income, adoption of new technologies and methodologies, timely availability of quality inputs, changed cropping systems, increased extent of cultivation, strengthened farmer extension linkages, new marketing opportunities (bee honey products), self sufficiency in planting materials (ginger and turmeric). An attempt has been made in this chapter to quantify the said effects based on the data gathered through the sample survey.

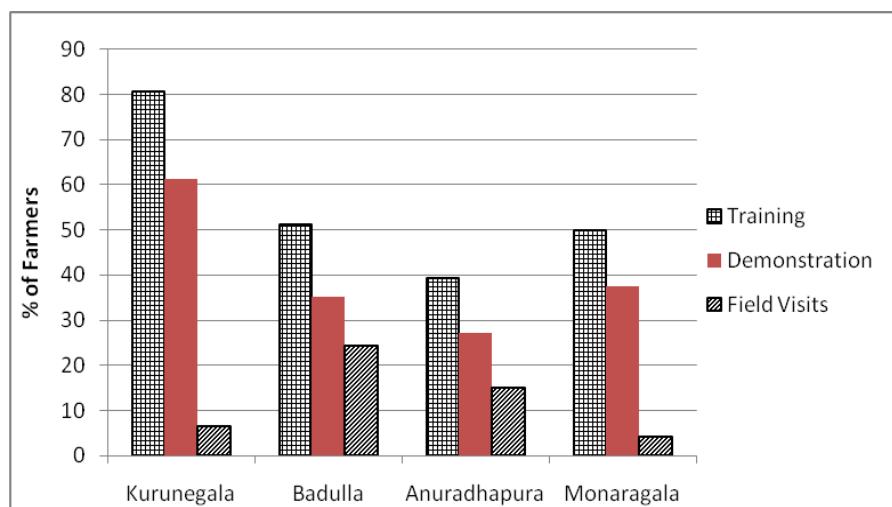
5.2 Programme Inputs and Activities

5.2.1 Education of Farmers

Education of farmers on upland farming activities was a key objective to be achieved through the societies. The society, within the technology transfer process, had performed as the centre for channeling the technology to the end users at the grass root level. As per the large majority of FGDs (76%) farmers had been aware of how to cultivate in a standard manner as a result of variety of group education methods organized and/or conducted by the DZLiSPP. Included were lecture type training programmes on recommended cultural practices, method demonstration on the cultivation of new crops/varieties or new activities introduced and field visits made to

Mahailluppallama and Seethaeliya farms, with particular reference to big onion and seed potatoes production respectively.

Figure 5.1 illustrates farmer participation in different types of farmer education methods. Accordingly, the predominant farmer education method was training programmes in all districts. Kurunegala showed the highest performances in conducting demonstrations. An increased percentage of farmers had received the chance for field visits in Badulla district. The presence of government farms in respective locations had been an added advantage to organize field visits. Many societies also sought opportunities for field visits.



Source: HARTI Survey Data, 2012

Figure 5.1: Farmer Participation in Distinct Farmer Education Programmes

The above education methods had contributed to improve farmer knowledge and how farmers interpreted this difference was that 'earlier we did in our own way, but we now know how to do cultivation in a standard manner'. Among the variety of new cultural practices disseminated in relation to crop production were construction of poly tunnels, preparation of culture media for hydroponics, recommended fertilization, correct spacing, pest and disease control, bed preparation, using correct seed rates, digging holes and management of new plants in banana cultivation, proper time for crop harvesting, control of soil erosion, water management, nursery management, self seed production and compost production. Farmers involved in bee keeping had been educated

on the identification of distinct types of bees in a colony, separation of colonies, removal of bee hives, ensuring safety during the extraction of honey, extraction of honey without removing bee hives, provision of additional food for bees and arresting new colonies. Knowledge regarding mushroom cultivation included selection of a proper place, construction of culture house, preparation and sterilization of culture bags and seed establishment. Kurunegala predominates in terms of farmer participation in distinct education programmes.

As revealed from the sample survey 90 percent farmers had undergone training under the programme. The number of training programmes participated by most of the farmers ranged from one to three with regard to all districts. In some districts farmers had participated in ten training programmes. The Table 5.1 indicates the overall distribution of farmers by the number of training programmes participated.

Table 5.1: Number of Training Programmes Participated by Farmers

No. Training Programmes Participated by Farmers	No. Farmers	% Farmers
1 Programme	16	13
2 Programme	35	28
3 Programme	24	19
4 & Above	37	30
Not Participated	13	10
Total	125	100

Source: HARTI Survey Data, 2012

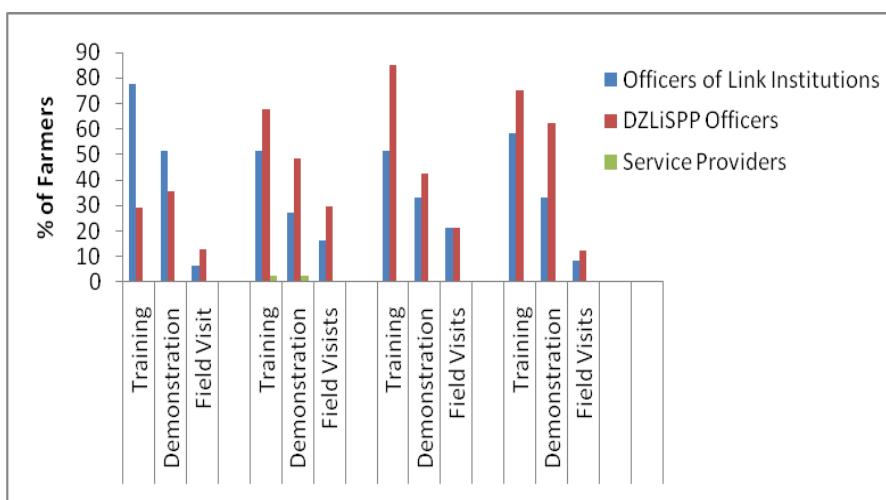
Farmers were questioned about the adequacy of knowledge received through the training programmes to carry out the intended activities. As perceived by 46 percent of the farmers the knowledge they received is sufficient for the cultivation of the crop/carry out the activity introduced by the programme as per the data presented in the Table 5.2. Kurunegala demonstrates satisfactory performances. Apart from that 76 percent farmers including the above 46 percent sought further knowledge on various aspects such as new varieties/technologies (34% farmers), (post harvest practices 6%) and marketing knowledge (4%).

Table 5.2: Farmer Perception on Adequacy of Knowledge Received through Training

Description	% of Farmers Stated Knowledge Received is Adequate	% of Farmers Stated Knowledge Received is Inadequate
Kurunegala	77	23
Badulla	30	70
Anuradhapura	39	64
Moneragala	42	58
Overall	46	54

Source: HARTI Survey Data, 2012

The varied contribution to conduct/organize farmer education programmes are presented in the Figure 5.2 where the participation of extension personnel from link institutions such as the Department of Agriculture predominates in Kurunegala district. The data provides insights into varied degree of attention paid to ensure technology transfer process through linking relevant institutions across districts.



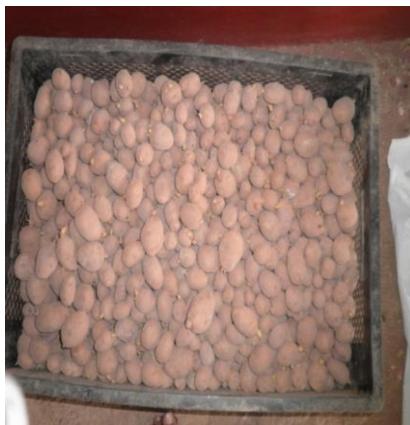
*From the farmers who rightly recognized the trainer

Source: HARTI Survey Data, 2012

Figure 5.2: Varied Contribution for Farmer Education Programmes

5.2.2 Technology Transfer

The programme had made substantial efforts to transfer new technologies and cultural practices/techniques through the above education methods. The technology transfer process was characterized by introduction of new crops/varieties and/or new cultural practices or both. Some of the crops and varieties had not been cultivated by the farmers who were residing in remote areas of the dry zone. Thus it had improved the diversity of the farming systems particularly in the villages with lack of/less access to formal extension services which caused due to weak infrastructure that limits accessibility, threats of wild animals and areas affected with war. Previous programme reviews revealed that the DZLiSPP had attempted to introduce too many crops at the initial stages of programme implementation but recent focus had been towards few crops that could make a tangible difference in the farming systems in respective area. Accordingly the most prominent crops and varieties popularized in different locations are presented in the Table 5.3.



G1 Seed potato – Welimada



Big Onion Seeds - Anuradhapura

Table 5.3: Prominent Crops/Varieties and Activities Introduced by the Programme across Districts

District	Crops/Varieties/Activities
Kurunegala	Banana (Cavendish), Oranges (Bibile sweet), Ground nut (Tissa), Maize (Pacific), Papaw (Red lady), Green gram
Badulla	Maize (Pacific), Pineapple (Mauritius), Ginger, Turmeric, Banana (ambun), Seed Potato Production and Multiplication
Anuradhapura	Maize (Pacific), Chili, Big Onion Seed production, Soya Bean, Black Gram, Cowpea, Sesame
Moneragala	Maize (Pacific), Ground nut (Tissa), Chilli, Red onion

Source: HARTI Survey Data, 2012.

As per the survey data, Kurunegala district predominated in introducing new crops or varieties followed by Badulla district (Table 5.4). It was found that fruit crop varieties of banana and papaw and grain varieties of 'Pacific' maize variety and 'Tissa' ground nut variety were among the new varieties introduced. Among the new crops introduced were pineapple, ginger and turmeric as reported from Badulla district. In the introduction of new crops or varieties the programme had taken steps to further popularize various crops and varieties which were never grown by them but they had been grown by other farmers in the same locations.

Sample survey revealed that 86 percent involved in the cultivation of various crops and the rest 14 percent involved in other activities such as bee keeping, mushroom cultivation, big onion seed production and seed potato production. Of the farmers who involved in crop production activities 44 percent farmers had been introduced new crops and varieties, however it was 35 percent from the overall sample. The rest of the farmers had cultivated crops or varieties which were in use before the programme intervention (Table 5.4).

Table 5.4: Distribution of Farmers who had been Introduced New Crops/Varieties by Districts

District	No. of Farmers New Crops Introduced ¹	% of Farmers who had been Introduced New Crops or Varieties ²
Kurunegala	8	87
Badulla	35	43
Anuradhapura	25	0
Moneragala	12	4
Overall	80	35

Source¹: DZLiSPP of MOA, 2011

Source²: HARTI Survey Data, 2012

With regard to transfer of knowledge on new cultural practices for crop production and other activities the programme had covered almost all the sample farmers through one way or other means of educating them as previously described.

5.3 Programme Outputs and Effects

5.3.1 Improved Farmer Awareness and Adoption of New Technologies

A key output of technical assistance extended by the programme was improved farmer awareness and adoption of technologies. The Table 5.5 shows that 34 percent project participants had adopted to new crops and varieties introduced by the programme.

**Table 5.5: Distribution of Farmers who have Adapted to New Crops/
Varieties by Districts**

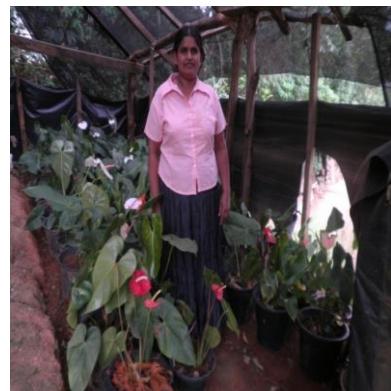
Description	% of Farmers Adopted New Crops/ Varieties
Kurunegala	81
Badulla	43
Anuradhapura	0
Moneragala	4
Overall	34

Source: HARTI Survey Data, 2012

Kurunegala district predominated in terms of introducing new crops and varieties. As evident from discussions with respective DPFs in other two districts, introduction of new crops/varieties had been constrained due to unfavorable weather conditions which prevailed in the selected study locations from the respective districts.



Red Onion Field - Moneragala



Anthurium Nursery – Kappetipola



“Ambun” Cultivation – Badulla



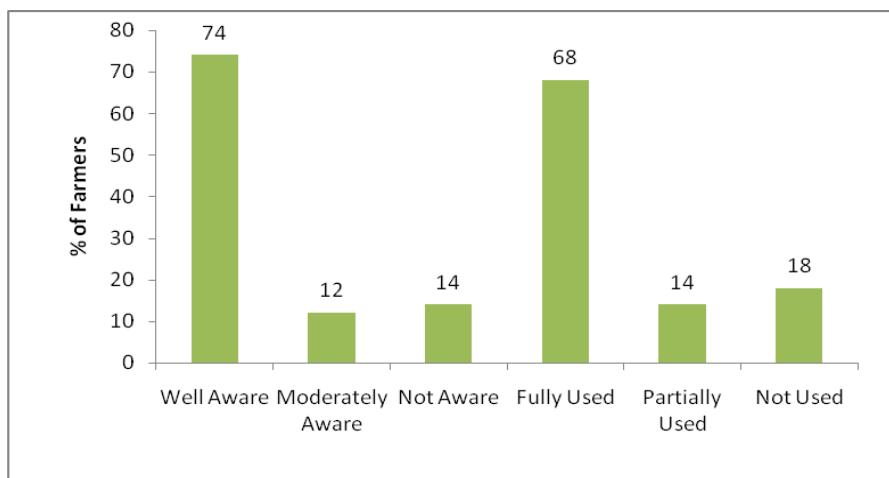
Bee Keeping – Bandarawela

As per Figure 5.3 around 3/4 of the beneficiaries were well aware of the new cultural practices, seed production techniques or other important techniques relating to bee-keeping and mushroom cultivation introduced by the programme. Data also indicated that around 2/3 of the sample farmers had adapted to such technologies. This means that they had practiced almost all the new techniques involved in agriculture, bee keeping and mushroom cultivation as detailed under section 5.2.1. As a result of technology transfer, farmers had benefited in several ways; (a). Self sufficiency in seeds and planting materials (ginger and turmeric),

(b).Intensification of farms through shifting from traditional mixed farming to commercial mono cropping.



G1 Seed Potato Farmers – Keppetipola



Source: HARTI Survey Data, 2012

**Figure 5.3: Awareness and Adoption of New Cultural Practices/
Techniques by Farmers**



Equipment Used for Fumigation
in Beekeeping



Centrifugal Machine for Extraction of
Honey

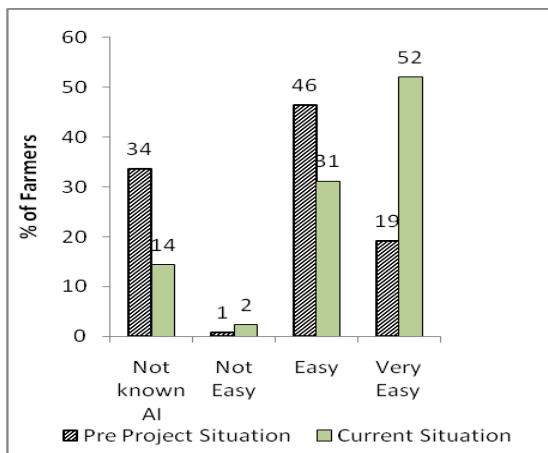
5.3.2 Improvement in Farmer-AI Linkages

An attempt was made to differentiate the nature of links between farmers and extension staff - the agriculture instructor - between pre project situation and the current situation by means of two indicators; (a). Ability to contact Agriculture instructors when required and (b). Farm visits by Agriculture instructors, preconditions that ensure success of two-way communication process.

There was an improvement in the ability to contact the AI by farmers when compared to the pre project situation. As perceived by over 52 percent farmers they can more easily contact Agriculture instructors when required (Figure 5.4) which is an increase from nineteen percent farmers in pre project situation to 52 percent farmers at present. The percentage of farmers who did not know the AI before the programme had decreased to fourteen percent from 34 percent with an overall shift towards more farmers being able to easily contact the AI. This was a result of increased farmer participation in various farmer education programmes from training and demonstrations at field level through which farmers had to be acquainted with the Agriculture Instructors thus in turn farmers gained confidence to contact them.

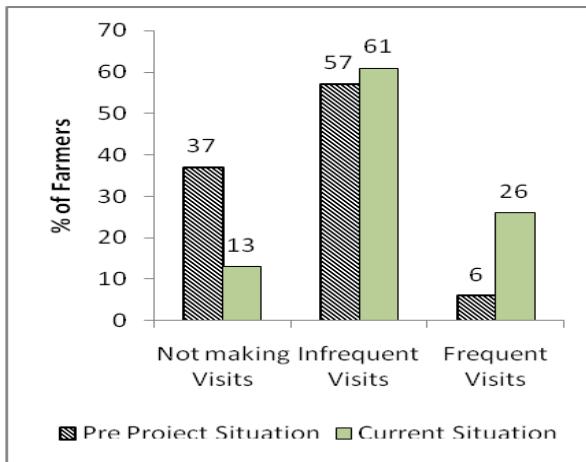
As perceived by 55 percent of the sample farmers the frequency of farm visits by Agriculture Instructors had remained unchanged between pre project and the current situation whereas two percent farmers stated a decrease in frequency of farm visits by Agriculture Instructors. The rest 43 percent stated that there was an improvement in farm visits. The

percentage of farmers who stated that AI never visited farms had reduced from 37 percent to thirteen percent whereas the percentage of farmers who stated that the AI visited farms at least once or more than once a season had increased from six percent to 26 percent from pre project situation to current situation (Figure 5.4).



Source: HARTI Survey Data, 2012

Figure 5.4: Ability to Contact Agricultural Instructors by Farmers



Source: HARTI Survey Data, 2012

Figure 5.5: Frequency of Farm Visits by Agricultural Instructors

When the degree of farm visits by Agriculture instructors (Figure 5.5) was analysed there still exist 61 percent farmers who experienced infrequent visits by the Agriculture Instructors, which was sometimes once a year at the seasonal meeting held for *maha* season paddy cultivation. There were thirteen percent farmers who had never got Agriculture Instructors service at their farms. Overall, there was a limitation in farm visits to $\frac{3}{4}$ of the sample farmers by Agriculture Instructors even after programme implementation for some reasons. Thus the question is whether the current rate of farm visits by Agriculture Instructors is adequate to ensure continuous learning by farmers as envisaged through the FFS approach. Strong farmer-AI linkage is a precondition for a bottom up change that is intended in FFS approach.

5.3.3 Area Expansion

As indicated in the DZLiSPP annual report (2011) the programme had surpassed the targeted extent of cultivation which is 16000ac. The added extent of cultivation amounted to 4225ac. Thus the total extent of cultivation was 16924ac. This was an achievement of 102 percent as of the targeted extent (Table 5.6).

Table 5.6: Cultivated Extent

District	Target area (ac)	Existed area (ac)	New area cultivated during last 5 years(ac)	Total area (ac)	% Achieved	No. Beneficiaries
Anuradhapura	5000	2958	1042	4000	80	3296
Kuruneglala	3100	2488	421	2909	94	2596
Badulla	5500	5379	814	6193	112	8070
Moneragala	3000	1874	1948	3822	127	2767
Total	16600	12699	4225	16924	102	16735

Source: DZLiSPP of MOA, 2011.

As per the data in the Table 5.6 there was some 33 percent increase in the extent cultivated by the farmers. The programme had promoted crop production activities among 86 percent of sample farmers (108). From them 22 percent farmers (24 farmers) stated that the cultivated area increased to programme intervention. Hence, an attempt was made to assess the area expansion achieved through the programme by means of

Cropping Intensity Index (CII) by considering utilization of uplands for the cultivation of seasonal crops which was one of the key activities for in the promotion of rain-fed upland agriculture.

The data indicated a slight decrease in CII for pre programme and the current situation with regard to utilization of uplands for the production of upland crops during *maha* season. As revealed from both the FGDs and farmer survey, the dry weather conditions which prevailed for a long time had constrained upland cultivation activities particularly in Kurunegala and Anuradhapura districts. Aside from the fact that the programme provided both financial and technical assistance to the farmers, adverse weather conditions coupled with other socio-economic limitations of farmers had constrained the area expansion in upland agriculture activities.

5.3.4 Crop Productivity and Income

As revealed from both the FGDs and sample survey an improvement in crop productivity was evident as a result of changed practices; (a). Use of new varieties, (b). Shift from mixed cropping to mono-cropping and (c). Adoption of recommended cultural practices i.e. regular spacing, land preparation, fertilization. Through the cultivation of 'Tissa' ground nut variety using recommended cultural practices farmers in Kurunegala had obtained an average yield increase from 186kg/ac under mixed cropping system to 1500kg/ac under mono-cropping system. In Moneragala district the reported yield increase was from 1578kg/ac to 2050kg/ac, around 30 percent increase by employing only recommended cultural practices. The Table 5.7 to 5.10 present cost and returns data pertaining to cultivation of selected crops in study locations. Accordingly farmers had benefited from upland crop production. One notable point is that there was a marked increase in cost of labour due to increased use of exchange labour from societies. Exchanged labour was not reported as an efficient means of using labour as farmers do work leisurely.

Table 5.7: Per Acre Costs and Returns of Selected Upland Crops cultivated in Kurunegala District (2011/12 Maha Season)

Description	Ground Nut	Maize	Green Gram
Length of Crop Cycle (Months)	3.5	3.0	1.5
Land Preparation (without own labour)	11,466.67	2,800.00	4,900.00
Seeds	6,826.67	3,301.67	1,760.00
Fertilizer	220.00	357.78	1,023.33
Other	9,000.00	1,316.67	1,333.33
Labour	55,900.00	22,575.00	10,100.00
Total Cost per-Acre (Actual Private Cost)	27,366.67	7,776.11	9,016.67
Total Cost per-Acre (Include Opportunity Cost)	83,266.67	30,351.11	19,116.67
Total Revenue (Rs)	49,833.33	80,866.00	29,600.00
Net Revenue (Rs)	28,596.67	73,089.89	24,845.00

Source: HARTI Survey Data, 2012.



Sesame Harvest – Anuradhapura



Sesame Harvest - Anuradhapura

Table 5.8: Per Acre Costs and Returns of Selected Upland Crops Cultivated in Moneragala District (2011/12 Maha Season)

Description	Ground Nuts	Maize	Red Onion
Length of Crop Cycle (Months)	4.5	6.0	2.8
Land Preparation (without own labour)	14,000.00	10,000.00	25,800.00
Seeds	5,250.00	3,800.00	60,000.00
Fertilizer	120.00	2,880.00	16,910.00
Other	21,550.00	1875.00	119,800.00
Labour	19,200.00	13000.00	33,800.00
Total Cost per-Acre (Actual Private Cost)	40,860.00	22,535.00	222,510.00
Total Cost per-Acre (Include Opportunity Cost)	60,060.00	35,535.00	256,310.00
Total Revenue (Rs)	103,500.00	33,750.00	560,000.00
Net Revenue (Rs)	62,640.00	11,215.00	337,490.00

Source: HARTI Survey Data, 2012

Table 5.9: Per Acre Costs and Returns of Selected Upland Crops Cultivated in Anuradhapura District (2011/12 Maha Season)

Description	Maize	Gingelly	B Onion
Length of Crop Cycle Months)	3.0	3.0	4.5
Land Preparation (without own labour)	8,763.36	3,958.33	18,000.00
Seeds	3,668.44	730.00	20,000.00
Fertilizer	1,374.26	468.33	518.00
Other	2,174.31	1,966.67	12,100.00
Labour	8,579.61	5,282.29	34,800.00
Total Cost per-Acre (Actual Private)	25,980.38	6,889.17	50,618.00
Total Cost per-Acre (Include Opportunity Cost)	34,559.99	12,171.46	85,418.00
Total Revenue (Rs)	39,910.88	37,593.75	251,800.00
Net Revenue (Rs)	13,930.50	30,214.86	201,182.00

Source: HARTI Survey Data, 2012

Table 5.10: Per Acre Costs and Returns of Selected Upland Crops Cultivated in Badulla District (2011/12 Maha Season)

Description	Ginger	Turmeric
Extent (ac)	0.08	0.13
Length of Crop Cycle (Months)	8	12
Land Preparation (without own labour)		
Seeds	2,850.00	2,000.00
Fertilizer	285.00	40.00
Other	143.33	
Labour	7,433.33	3,833.33
Total Cost per-Acre (Actual Private)	3,278.33	2,040.00
Total Cost per-Acre (Include Opportunity Cost)	10,711.67	5,873.33
Total Revenue (Rs)	7,543.33	6,100.00
Net Revenue (Rs)	4,265.00	4,060.00

Source: HARTI Survey Data, 2012

5.3.5 Household Effects

It was revealed from the survey that programme beneficiaries had utilized the income received from the upland crop production for several purposes. The Table 5.11 indicates the percentage distribution of members of societies who utilized crop income for various activities.

Table 5.11: Percentage Distribution of Participants Who Utilized Income from Upland Agriculture for Household Purposes

Progress	% of Respondents
Improved Housing Conditions and Facilities	22
Consumption	18
Purchase of Assets	17
Investment in Income Generating activities	10
Children's Education	10
Payments –Loans/Insurance	7
Redemption of Gold/Household Items	5
Savings	5

Source: HARTI Survey Data, 2012.

The income from upland agricultural activities has been spent on various household purposes by 72 percent respondents. Improvement of housing conditions such as tiling of the floor, cementing, plastering of walls, colour washing, construction of new rooms and improvements in housing facilities such as water, sanitary, communication and electricity were reported as the priority areas of investment of crop income. Apart from that purchase of essential agricultural equipment such as water pumps, repayment of loans and redemption of gold and other household items were among the tangible gains due to programme.

CHAPTER SIX

Sustainability of Village Level Societies

6.1 Introduction

Finally the DZLiSPP largely focused on sustainability of societies as envisaged by the previous project missions. It was revealed that distinct strategies that were identified to ensure sustainability of societies across districts were in progress. From the foregoing discussion in the last three chapters, it was understood that institutional, financial and technical aspects of societies are inter-related and the sustainability of these three fold aspects seemed to be the three pillars of overall sustainability of societies. Beginning with a brief description on various sustainability strategies adopted in different districts this chapter discusses the sustainability aspects of societies.

6.2 Strategies for Sustaining Societies

As per the DPM in Anuradhapura, formation of federations at Agrarian Services Centre (ASC) level has been completed and an attempt is made to link state sponsored ‘Bhagya’ credit scheme to these federations. It was expected that each federation requires building a collective fund which is subject to be managed by a board of directors. The DZLiSPP is supposed to finance the federation with an equal amount of cash. In the handing over process, AI and DO hold the responsibility of ASC level federations. Members can fulfill their financial needs through the federation. Finally ASC level federations will be grouped under an umbrella organization called District Federation. The programme has a strong expectation that the technical knowledge flow will be ensured through the role of Agriculture Instructors.

As reported from Kurunegala district the federations are built at AI range level due to problems which arose in handing over of responsibilities of federations to the Agriculture Instructors when there is more than one AI in an ASC. The federation is represented by three main office bearers in each society. A director board is appointed for the federation from representatives. AI holds the overall responsibility of District Federation and village level societies. Initially A, B and C categories of societies will be called upon for the federation. An improvement programme for D and E category are in progress. In Badulla district federations were proposed to

build with regard to different types of crops. The list of divisional farmer federations in Moneragala district is given below and the sustainability measures adopted and expected outcomes are presented in the Table 6.1.

1. Siyambalanduwa Divisional Farmer Federation [39 societies]
2. Ethimale Divisional Farmer Federation [24 societies]
3. Madulla Divisional Farmer Federation [32 societies]
4. Thellulla Divisional Farmer Federation [20 societies]
5. Tanamalville Divisional Farmer Federation [14 societies]

Table 6.1: Measures Proposed for Sustainability of Societies

Measures	Expected Outcome
1. Appointment of community facilitators	Institutional sustainability, paid position to the DPF , after the project CF will be appointed as manager
2. Registration & office for DPF	Institutional sustainability
3. Linking of some existing activities of marketing component to DPF	Technological and financial sustainability
4. Formation of new societies through DPF	Technical and financial sustainability
5. Introducing of Farm Business School training with AI s	Promote AI s intervention, technical sustainability
6. Membership fee	Financial sustainability
7. Financial assistance to acquire new machinery for former societies via DPF	Technical, institutional and financial sustainability
8. Market linking	Financial and technical sustainability
9. Exposure visits with AI s	Promote AI s intervention, institutional and technical sustainability

Source: Moneragala District Office of the DZLiSPP, 2012

An information and marketing center has already been established at Siyambalanduwa and for the Thelulla the construction for the building has been completed.



Building for Information and Marketing Centre at Thelulla in Moneragala District.

6.3 **Essentials for Sustaining Societies**

Farmer group is an essential element of the project approach in the DZLiSPP. The beginning of societies is an outcome of a participatory assessment by the programme and the farmers or on the sole request by the farmers. This demonstrates the fact that formation of societies is a demand driven concept. It has been further proven by the immense requests made by the farmers to join the societies and/or to form new societies in their villages. Therefore it is no doubt that there has been a distinctive motivation for farmers to gather around another society among the plethora of institutions functioning at village level.

Given the circumstances, what could be the motivation behind the formation of societies by the farmers? From the stand point of DZLiSPP, technology transfer was the primary objective of farming societies and a one-time grant was offered to encourage the adoption of technologies disseminated. From the farmers stand point, they were encouraged to gather around a society for having financial assistance or technical knowledge or both.

Initially the programme introduced new crops/varieties and know-how to the farmers groups. The foregoing discussion in the last three chapters revealed how far these technical and financial objectives have been accomplished by the farmer groups and to what extent these societies have been sustained. It was revealed that the societies demonstrated very good (A) and satisfactory (B) performances are good in functionality of revolving fund as well. They were also active in crop production activities. However 3/4 of societies (76 percent included to C, D and E categories) have demonstrated poor status of stability despite almost all the farmer groups benefited from one way or both. This points to the fact that the technical and financial inputs extended by the programme have not been adequately contributed to sustain societies as anticipated. As revealed from some study locations, either farmers have not been given new technologies and/or the financial grants has not been a great support for them due to high cost of cultivation of crops.

This leads one to conclude that though farmer societies are essential for the group extension method, financial stability is a must for the existence of the society and thereby for the overall sustainability of societies. However everything depends on the success of crop production activities.

When one considers the future existence of these farmer groups, there are several important aspects that require attention to be paid. The well-functioning societies are eager to grow and sustain. Therefore it is the obligation of the programme to provide guidance to these farmer groups to chart the path for their future existence. Ensuring some sort of arrangement as a monitoring mechanism is essential for financial stability of societies. It should also be understood that 'why' these farmer groups need to further sustain and then 'how' to motivate them to sustain as a village level institution.

Federation or cluster formation is the proposed strategy by the DZLiSPP to sustain societies. At federation level farmer expectations may become bigger and therefore attention should be paid to address such needs of farmers. Most farmer groups prioritized water scarcity, threats from wild elephants and other animals, high cost of production and produce marketing as the main constraining factors for upland agriculture development in study location. Technological needs were least prioritized. Even though technological solutions are embedded in many of the above priority issues they have to be recognized and addressed by responsible authorities. Therefore any attempt to sustain federations require due

attention paid to providing appropriate solutions to the complex dilemma comprising aforesaid issues for upland agriculture development in the country.

Such a sustainability programme may contain direct or indirect alternatives to the farmer problems. Perhaps, it may contain;

- A direct flow of technical knowledge that involve marked reduction in cost of production of crops cultivated by farmers,
- Credit schemes to enhance farmers' investment capacity that ensure availability, accessibility and affordability for farm implements, machinery and infrastructure development for efficient land and water management, storage and post harvest processing;
- Solutions to avoid crop failures due to animals;
- Mechanisms that ensure information flow that enhances the bargaining power of farmer groups on producer prices.

The study provides evidence on how potato producers are motivated to sustain their societies aiming at self sufficiency in seed potato production which could lead to drastic reduction in the cost for seed potatoes. Hence, there exist a stronger need to propose sustainability programmes incorporating appropriate strategies that contend with burning issues relating to upland agriculture in the country.

CHAPTER SEVEN

Conclusions and Policy Implications

7.1 Introduction

The entire success of the upland agriculture component of DZLiSPP programme centered on the village level farmer societies because these societies became integral components in the proposed extension approach by the programme. However, it needs to be mentioned that farmer societies had achieved an overall success rate of 24 percent in terms of functionality of revolving fund which is the key motive for farmers to gather around a society. There were location specific variations in the performances of farmer societies as well. However the objective of this chapter is not to highlight the weaknesses of the programme. Through learning from successes instead of failures this chapter tries to derive some useful lessons that help improve upland agriculture and the present extension approach in the country. Therefore it should not be considered that this conclusion is misleading by the greater success of the minority of societies into thinking that the strategy adopted to promote rain-fed upland agriculture in the country is a success.

7.2 Institutional Aspects of Farmer Societies

Empowering leadership, motivated membership, workable strategy towards achieving goals, and a strong resource/financial basis are vital elements of a successful institution. Successful societies of the DZLiSPP demonstrated that they had inspiring leadership to a certain extent which could move their societies forward by encouraging the members. The membership too had ensured their commitment through increased participation and repayment of loans. The increased participation of women in societies seemed to have a representation of the household. No evidence was available to support the fact that new women farmers emerged as a result of programme intervention. Aside from the low rate of officer training, it was not a serious matter of concern by the members of the societies. The one-time grant was an incentive for them to try out new technologies introduced by programme. A key activity involved in these societies was issuing of loans at the right time and recovery of loans with an interest for the investment as seed money during the next season. Such farmer groups demonstrated a sense of ownership of their societies, need to grow and sustain. However, most of the societies were

constrained by lack of proper strategies to achieve a further growth of their societies except for a handful of societies that sought means of shifting towards profitable ventures and marketing options. Divisional field facilitators had provided a vital contribution to operate these societies by providing necessary guidance and making arrangements for extending technical support.

As revealed from the survey well functioning societies had the capacity to ensure necessary conditions for ensuring the technical knowledge flow to the farming community. However, their existence was in danger in the absence of a promising arrangement to provide necessary guidance and supervision at the end of the project. The role of DPF was so valued by the farmers that their status within the farming community was in par with that of the Agriculture Instructors. Therefore the withdrawal of DPF was considered as an intolerable loss of appalling lost to the farmers. The replacement of DPF by Agriculture Research and Production Assistants (ARPA) as proposed by the programme staff in some locations will not be an acceptable alternative to the farming community except in handful of occasions where ARPAs had extended their fullest corporation for the group action by farmers. Group action will be subject to a certain control through handing over of overall responsibility to agriculture instructors and/or divisional officers at the termination of the project. However, it would predominantly be a way of ensuring financial sustainability of societies but doubts remain whether it will ensure an efficient technical knowledge flow to the farming community due to multiplicity of duties assigned to agricultural instructors and the large coverage of farm families/area assigned to them.

7.3 Financial Aspects of Farmer Societies

From the financial stand point, some societies had demonstrated good performances by completing a maximum of eight loan rounds whereas on average 30 percent societies had completed three-four loan rounds. Farmer group discussions confirmed the fact that well functioning farmer groups had the strong feeling of ownership of the society and need to grow the revolving fund and thereby the individual loan amount. In addition to this, adherence to rules and best practices adopted to sustain the revolving fund support the fact that there exists a strong financial motive for farmers to sustain their societies. Such indicators fall short with regard to societies with inactive funds. Variability in one-time grant, poor accounting measures and lack of uniformity in imposing loan guaranty demonstrated the immaturity of societies even as micro-credit institutions.

Well functioning societies demonstrated 100 percent loan repayment rate and the members benefited from several loan rounds. Most of them were of the opinion that the involvement of the agriculture instructor was a good opportunity for them to strengthen link with this officer. Others sought independent action by the farmer group on financial matters. Unpleasant experience gained through agriculture corporatives and farmer pension scheme led to farmers to be disappointed in similar interventions/schemes. They were unwilling to accept any outside control over the fund they had built with time and effort. Therefore fair action and transparency should be integral parts of proposed federations. On average one federation would comprise of 20 societies with around 400 farmers. Therefore, it will be a considerable challenge for the federations to treat the members equitably with the limited resources available. On the other hand the opportunity cost of farmer participation in federations will be a key determinant of the success of federations. Therefore proposed federations to be sustainable there should have the capacity for providing acceptable solutions to pressing problems that hinder the rain-fed upland agriculture in the study locations.

7.4 Technical Aspects of Farmer Societies

Technical aspects become the most important part of upland development component of the DZLiSPP as it was envisaged to increase the productivity through disseminating knowledge to the farming communities. The programme demonstrated high performances with regard to a number of assessment indicators relating to technical knowledge flow through the farmer societies including farmer participation in distinct education methods including training programmes, acquiring knowledge, adoption of technologies, intensification of farm plots, improvement in farmer-AI linkages and other social effects which are characteristic to a well performing extension approach. In some locations Agriculture Instructors have worked with well organized farmer societies and it was a support for them to approach the farming community, to identify new farmer groups who had no prior contacts with Agriculture Instructors and for dissemination of technologies. Some farmers perceived that it was a valuable opportunity for them to strengthen links with respective Agriculture Instructors. Thus the conditions that ensure two-way communication between farmers and agriculture instructors had been set up through the farmer societies to a certain extent. However one could realize from the failure of ¼ of societies that the majority of societies have not supported to sustain continuous flow of knowledge dissemination longer. Given this context the approach adopted by DZLiSSP has been

successful only as one time technology flow. Therefore existence of farmer groups beyond this initial point seems to be uncertain unless overall sustainability of societies is ensured in institutional, financial and technical terms.

DPFs have faced similar challenges as Agriculture Instructors while performing their duties. Time constraints in covering the duties in an extensive area while achieving seasonal targets for forming new societies has affected the DPFs involvement in monitoring of the societies formed during the previous seasons. These are the common problems yet to be resolved in the formal extension service too. Given this circumstances it is doubtful whether handing over of responsibility of crop societies/federations to the Agriculture Instructors will be an effective model for building the required technical capacity of the farming community for the development of rain-fed upland agriculture in the dry zone areas of the country.

7.5 Sustainability of Societies

Even though in the DZLiSPP the necessary conditions were ensured for functioning of societies only $\frac{1}{4}$ societies sustained well. Therefore handing over of overall responsibility of societies to Agriculture Instructors with the consent of the farmers will be an appropriate strategy to ensure the existence of societies. As a response the farmers may try to sustain these societies at least for financial purposes. Once there is an organized farmer group at the village level it will be convenient for the Agriculture Instructors to disseminate information and technologies through these societies efficiently than through an individual approach. This will also be an alternative solution for both the shortage of the Agriculture Instructors and in the extension service to reduce their stipulated coverage.

When it refers to federation level farmers have to bear an increased opportunity cost. The greater the cost the higher the level of farmer expectations. Therefore, at federation level attention should be paid to solving key issues in rain-fed upland agriculture sector in the country as detailed out in the chapter six. Otherwise it is doubtful whether there is an adequate motivation for farmers to maintain a separate institution as a federation. For instance, the seed potato production programme in Badulla district is likely to be sustained since the farmer problem of high cost of seed potato cultivation - has been addressed. Therefore the sustenance of the federations may depend on the extent to which the wider scale farmer problems are arrested. Promotion of ICT related

activities as proposed in Moneragala district appears to be a potential area of success to the extent which the federation will contribute to enhance the bargaining capacity of farmers through providing information on the production and marketing of mainly grown crops. Except for the above, it is too early to conclude whether federations are a sustainable alternative as always there are district wise differences in arrangements as well as resource allocation for these federations.

7.6 Conclusions and Recommendations

Based on the above, the following conclusions were drawn and recommendations are given. The village level societies implemented by the DZLiSPP had functioned as basic micro-credit institutions that induced farmers to involve in rain-fed upland agricultural activities through several weaknesses were encountered in the process for disbursement of one-time grant. According to DZLiSPP the extension approach employed in the programme implementation was termed as a modified version of farmer field schools. As per many study indicators the so called approach has been successful as a means of technology transfer for the promotion of upland agricultural activities. In general, farmer field schools are organized in a manner in which participants are not the objects of training but are able to use their experience as the subject of training. The DZLiSPP has omitted the above fundamental aspect of FFS approach while integrating a training component to the programme. Therefore farmers had not experienced novelty in the learning process so that FFSs had merely become societies based on prominent agriculture activities done by farmers termed as – *boga samithi*. The project largely followed conventional farmer education methods. These societies had performed as village level centers for dissemination of technologies to the farmers to a certain extent. DZLiSPP succeeded in linking the services of line agencies and thereby strengthened farmer - extension links to a certain level through an external agent at an added cost. Such linkages too seemed inadequate to ensure continuous learning by farmers that ensure bottom up change envisaged through FFS approach. Despite resource constraints the formal extension service too utilized similar approaches and benefited positively with no/less additional cost but this was largely in the paddy sector. The experience and lessons learned through this intervention would be useful for the stakeholders involved in the promotion of rain-fed upland agriculture, however the approach employed by the DZLiSPP cannot be credited as an advance means of modifying the FFS approach. The variety of outputs and effects achieved are results of a strategy

employed to developing problem solving and innovation skills of farmers. The study makes the following recommendations.

1. Theoretically, group extension approaches are effective in terms of farmer coverage and in many other aspects. Given the present context that human resource is a key constraint in the process for technology transfer to the farming community in the country it is recommended that positive aspects of the approach employed by the DZLiSPP farmer societies, revolving fund, close monitoring) be incorporated into the formal technology transfer process among other group communication methods that are in practice
2. Well functioning farmer societies is an essential part in group extension approaches whereas financial sustainability is a must for the existence of such societies. Therefore farmer societies should be encouraged by introducing proper financing mechanisms such as credit schemes that ensure growth of the fund of the societies and to sustain them. The proposed mechanism for handing over of overall responsibility of farmer societies to Agriculture Instructors is recommended as appropriate mechanism for the existence of these societies at least for several seasons.
3. Human resource requirements should be ensured, particularly by appointing Agriculture instructors to maintain frequent contacts with the farmer societies to ensure continuity of technical knowledge flow to the farming community.
4. Steps should be taken to popularize this group approach among the farming community. For this it is recommended that the farmer societies should be considered as contact points for diverting variety of inputs and activities sponsored by the state ministries, departments and institutions but not limited to private sector involvements. This will ensure the dispersal effect of this strategy among the farming community.

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Appendix 1.1: Distribution of Sample Societies by Season Commenced

Season	2007 Yala	2008 Yala	2008/09 Maha	2009 Yala	2009/10 Maha	2010 Yala	2010/11 Maha	2011 Yala	2011/12 Maha
No. of Societies	1	5	6	4	10	7	20	8	11
%	1	7	8	7	14	10	27	11	15

Source: HARTI Survey Data, 2012

Appendix 1.2: Temporal Variation of Sample Farmers

Season	2007/08 Maha	2008 Yala	2008/09 Maha	2009 Yala	2009/10 Maha	2010 Yala	2010/11 Maha	2011 Yala	2011/12 Maha
No. of Farmers	2	5	13	8	22	17	24	15	19
%	2	4	10	6	18	14	19	12	15

Source: HARTI Survey Data, 2012

Appendix 1.3: Socio-Demographic Characteristics of the Respondents

Socio-demographic Characteristic	% of Respondents	
Sex Distribution		
Male		52%
Female		48%
Status of Membership		
Ordinary Members		54%
Office Bearers		46%
Average Family Size		44%
Project Participation		
Crop Society only		79%
Both Crop & Dairy Society		2%
Crop Society & Irrigation		0.8%
Crop Society & Marketing		4%
Crop Society & Organic Farming		0.8%
Crop Society & Infrastructure		12%
Crop Society, Marketing & Infrastructure		0.8%
Marital Status of Beneficiary		
Married		93%
Unmarried		6%
Divorced		1%
Educational Status of Beneficiaries	Female	Male
Illiterate	2%	-
1-5 years	9%	10%
6 years – up to O/L	52%	67%
Passed O/L	20%	15%
Passed A/L	14%	5%
Degree/Diploma	3%	3%
Main Occupation	Female	Male
Full time farming	15%	77%
Part time farming	71%	-
Other	14%	23%

Source: HARTI Survey Data, 2012

Appendix 5.1: Progress Made due to Income from Upland Agriculture

Progress	% of Farmers				
	Kurunegala	Badulla	Anurdhapura	Moneragala	Overall
Consumption	26	8	24	13	18
Savings	-	3	3	17	5
Investment in Income Generating activities	13	8	15	4	10
Purchase of Assets	16	14	24	13	17
Improved Housing Conditions and Facilities	29	16	27	17	22
Redemption of Gold/Household Items	-	11	6	-	5
Payments – Loans/Insurance	3	8	9	8	7
Children's Education	10	11	9	13	10

Source: HARTI Survey Data, 2012