

VEGETABLE COLLECTION CENTRES IN BADULLA AND MONERAGALA DISTRICTS: IMPACTS AND LESSONS

**Ruvini Vidanapathirana
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HECTOR KOBBEKADUWA AGRARIAN RESEARCH AND TRAINING INSTITUTE

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FOREWORD

The Dry Zone Livelihood Support and Partnership Programme (DZLiSPP) is implemented by the Ministry of Agriculture with the objective of achieving sustainable increase in income and to improve the living standards of the poor households in four districts; namely, Anuradhapura, Kurunegala, Badulla and Moneragala. The overall project scope has six components and the marketing and enterprise development is the fifth component. The marketing component of the Dry Zone Livelihood Partnership Programme (DZLiSPP) is aimed at solving the marketing issues such as uncertainty and unpredictability of agricultural products and seasonal fluctuations of prices that discourage prices in harvesting. Hence, one of the approaches of DZLiSPP was to build links with the producer and the buyers and they have established two vegetable collection centers at Wangiyakumbura and Ruwalwela as a public-private partnership programme with Cargills PLC.

The partnership is expected to help increase the farm gate price for farmers, better market access, reduce the involvement of intermediaries, and provide training facilities for farmers thereby improving their standards of living. Further, the farmers are benefited by the welfare fund. The benefits for the company are to access quality farm produce, facilitate direct purchase and reduce transaction cost. The purpose of this study is to examine the viability of establishing collection centers and to make recommendations that incorporate lessons learnt from these collection centers.

I congratulate the research team for successfully undertaking this study and hope the findings and recommendations would be useful for the policy makers and other stakeholders in the agri-food supply chain.

E.M. Abhayaratne
Director

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EXECUTIVE SUMMARY

The marketing component of the Dry Zone Livelihood Partnership Programme (DZLiSPP) is aimed at solving the marketing issues such as uncertainty and unpredictability of agricultural products and seasonal fluctuations of prices that discourage prices in harvesting. Hence, one of the approaches of DZLiSPP was to build links with the producer and the buyers and they have established two vegetable collection centers at Wangiyakumbura and Ruwalwela as a public-private partnership programme with Cargills PLC. This partnership is expected to help increase the farm gate price for farmers, better market access, reduce the involvement of intermediaries, and provide training facilities for farmers thereby improving their standards of living. Further, the farmers are benefited by the welfare fund. The benefits of the company are to access quality farm produce, facilitate direct purchase and reduce transaction cost. Both these collection centers have been established recently about less than a year. Economic and financial viability of a project can be assessed only after a certain period of time. Therefore, in this study the achievements of the project objectives were assessed on short and medium run basis. In the evaluation of collection centers it is important to use the lessons from past experience. These provide valuable insights to support the effort within a local context and in identifying the possible pitfalls.

The overall objective of this study was to evaluate the usefulness of vegetable collecting centers for beneficiaries and effectiveness of their operational mechanism. Quantitative as well as qualitative data were collected using semi-structured questionnaires, key informant interviews, focus group discussions and secondary data. A total of 80 beneficiaries (20 percent of the beneficiaries from each collection center) were interviewed from the two locations. At the same time, 80 non-beneficiaries of the project were selected randomly. In Wangiyakumbura area, the farmers who supply vegetables to Bogahakumbura wholesale market, Bandarawela wholesale market, Keppetipola Dedicated Economic Center and Colombo Manning market were interviewed as non-beneficiaries. In Ruwalwela area, the farmers who supply vegetables to Dambagallapola and Mariarawapola were selected as non-beneficiaries.

Though, the project target was 500-750 beneficiaries in Wangiyakumbura collection center and 800-1000 beneficiaries in Ruwalwela collection center, only 200-250 farmers benefited from each collection center up to now. A provision of Rs.5mn and Rs.2.7mn had been made by the DZLiSPP for Wangiyakumbura and Ruwalwela collection centers respectively, while Rs.7.2mn had been contributed by the Cargills PLC for both collection centers. On the total expenditure, the average cost of establishing Wangiyakumbura and Ruwalwela collection centers was Rs.8.6mn and

Rs.6.3mn respectively. Cargills PLC has to bear all the operational costs (electricity, water, telephone bills and salaries of the staff) of each collection center.

The aim of the steering committee is to supervise the activities of each collection center. For every kilo of vegetable purchased by the collection centers, Cargills has to contribute 50 cents for the welfare fund. However, there is no fund allocated or maintained as the welfare fund so far. Hence, none of the beneficiaries have received benefits from the welfare fund. Up to May, 2012, the Wangiyakumbura collection center has purchased a total of 639,918 kg of vegetables (Sep, 2011 to May, 2012) and the Ruwalwela collection center has purchased 227,317kg of vegetables (Jan, 2012 to May, 2012). Therefore, the welfare fund should be Rs.319,959/= and Rs.113,658/= for both collection centers respectively. Cargills PLC intends to provide services from the total collection of the fund after one year of establishment of each collection center. Most of the beneficiaries were not aware of the welfare fund and if such programme exists, they are interested in it.

This partnership is able to help increase the farm gate price for farmers, better market access and reduce involvement of intermediaries. The producers become more knowledgeable about the market and less at the mercy of market forces. For the producer, the mere availability of an additional market outlet may be an advantage, allowing greater flexibility and enabling him to spread his risk wider. Further, the farmers' capacity for quality production has improved. There are positive and negative impacts on farmers in this partnership programme. Positive impacts are; provision of an assured market, reduction of price risk, non involvement of middlemen, non existence of illegal deductions, opportunities to receive a higher price, reduced transport cost, credibility and reliability in terms of payments. Negative impacts are; procurement of limited quantities, high quality standards demanded by purchasers resulting in rejection, difficulty in obtaining orders regularly and non receipt of benefits/services.

Both collection centers are well located with enough space and equipped with essential facilities for a collection center. However, both collection centers do not have water facilities. At present, each collection center procures only around 2,500-3,000kg of vegetables per day and they do not utilize the total capacity of the collection center.

According to the agreement between DZLiSPP and Cargills PLC, collection center is responsible in collecting vegetables, advising farmers to cultivate, supply of seeds when needed, providing daily prices of vegetables. However, this study found that no collection center provided those services to farmers.

For the sustainability of these two collection centers, regular supervision is essential. Effective functioning of the welfare fund is prominent among them. However, currently it is unsatisfactory. Therefore, there is a need to maintain its transparency

as it will encourage the farmers and the steering committee members to maintain the welfare fund and the activities of the collection centers effectively and thereby this model will survive longer. As the committee has to supervise the activities of these collection centers in order to ensure that collection centers pay a higher price compared to other markets, collection centers should provide daily prices of each item to the Divisional Secretariat or the committees of the respective areas.

At present, the quantity purchase is limited compared to other markets and both collection centers have more capacity to absorb more than that and hence, the quantity purchase should be increased. Else, the additional space could be provided to be utilized as a collection center for exporters (Wangiyakumbura).

Collection centers should provide services according to the agreement and Cargills needs to do more if they are keen on expanding operations. This would involve recruiting more technically-trained staff, improving farm advisory services and designing specific educational programmes on quality production.

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CHAPTER ONE

Introduction



1.1 Background of the Project

The Dry Zone Livelihood Support and Partnership Programme (DZLiSPP) is implemented by the Ministry of Agriculture with the objective of achieving sustainable increase in income and to improve the living standards of the poor households in the programme area for the period of seven years (from December 2005 to December 2012), with an estimated cost of US \$ 25.7 mn (Rs. 2,827 million). The Programme is implemented in 44 Divisional areas in the dry zone and in four districts; namely, Anuradhapura, Kurunegala, Badulla and Moneragala. The IFAD programme is in line with the development concept of agricultural policies in the country. The overall project scope has six components and marketing and enterprise development is the fifth component.

Seasonal and inter volatility of prices are widely recognized as some of the main features of agricultural markets in Sri Lanka. Marketing systems are undergoing rapid transformation. Consumers are more demanding in terms of quality and safety. To cater to the demand, some changes have to be introduced in the marketing chain. More coordination and understanding between the producer and the buyers and other market participants in the marketing chain is highly important in making quality products. Hence, one of the approaches of DZLiSPP was to building of linkages with the producers and the buyers.

Establishment of collection centers fall into the category of market-related infrastructure supported by the marketing fund which is a sub-component of the Marketing and Micro-enterprise Development component. It was decided to establish two collecting centers in the rural areas of the Badulla and Moneragala districts. These two districts are the largest vegetable producing areas in the country. Most of the farmers in the Madulla DS division of the Moneragala district and WelimadaDS division of the Badulla district earn their living from vegetable cultivation. Farmers in Welimada area have to sell their vegetables to Keppetipola DEC, Bandarawela and Bogahakumbura wholesale markets or to a *pola* in the area and the farmers in Madulla area have to sell vegetables to Dambagalla and Mariarawa weekly *pola* in the area. As these market places are located far away, farmers have to travel long distances if they are to sell the products directly. Therefore, most of the time they sell the products through intermediaries. Farmers in the above two districts receive low prices for their products in the existing marketing system. Small holder farmers face difficulties in accessing markets.

The DZLiSPP Project decided to obtain the assistance of a reputed private sector agency to set up vegetable collection centers. Supermarkets radically change food supply and producer-retailer relations through new procurement practices.

Supermarkets have increasingly become stronger players in fruit and vegetable retailing. They are particularly concerned with the need to secure a steady flow of quality products which meet the attributes required by their demanding consumers. Modern supply chain management in the fruit and vegetable distribution sector necessarily calls for improved efficiency in transactions between producers and their buyers. Supply chains developed by the supermarkets are well coordinated chains: a very different approach to marketing fresh fruit and vegetable as compared with the fragmented supply chains in the traditional market. The private supermarket chains in the country are on a rapid expansion in urban and rural areas. It was only about five years ago the supermarkets in Sri Lanka widely expanded all over areas outside the Colombo city limits.

Cargills Ceylon PLC is one of the leading supermarket chains in the country and they have six vegetable collection centers in Nuwara Eliya, Bandarawela, Hanguanketha, Thambuththegama, Thanamanwila and Norochhole to procure vegetables directly from farmers. The establishment of a formal outgrower system and collecting centres at the village level by supermarkets is a new phenomenon in Sri Lanka's agricultural marketing system. The system reflects a well-coordinated effort by private entrepreneurs to improve their supply chains and to ensure quality products and supply continuity. At the collecting centers, vegetables are inspected, sorted and graded. At the same time, value added activities such as cutting and trimming are done. The Cargills has a distribution center at Wattala. From collecting centers at major producing areas, the vegetables are funneled to the distribution center for delivery to retail outlets. Direct purchase from the farmers, permits more rapid movement of produce from the farm. The supermarkets are competing to adopt a range of management strategies to offer superior quality products, a wider choice, reduced wastage, greater value for money and shorter and more effective supply chains.

As Cargills company has been in operation in these two districts during the last 10 years it was decided to establish a public-private partnership programme with Cargills. DZLiSPP project constructed the buildings under the marketing fund of the project. The collecting centers are operated and managed by the Cargills. They contribute 50 cents per each kilo they purchase for the welfare fund for the benefit of farmers and their children (eg: health, scholarship etc). The overall supervision is done by the committees appointed by the Divisional Secretaries of the respective areas. These committees consist of the DS, representatives of farmer organizations, project monitoring officers of DZLiSPP, DO (Divisional Officer – Agrarian Services) and AI (Agricultural Instructors) of the provincial agricultural department.

Expected Functions of the collection center

Earlier, the collection center was responsible for collecting vegetables, advising for farmers on cultivating, supplying of seeds when needed, providing daily prices of vegetables.

Expected Benefits from the Collection centers

1. Higher price for farmers
2. Improving the quality of the products
3. Provide knowledge to farmers on post-harvest technology, grading of vegetables etc.
4. Increase competitiveness in marketing
5. Year-round production plan
6. Providing benefits to farmers through a welfare fund (scholarship for students, distress loans, insurance etc)

Expected Functions of the Cargills

1. Operation and maintenance of the collection center
2. Pay at least 25% higher price than the COP and 15% higher price than the prices of the existing markets of the area.
3. Guide farmers to do year-round cultivation with the assistance of a qualified agricultural officer.
4. To create a welfare fund for the benefit of farmers and their children (eg. Health, scholarships etc), the company contributes 50 cents per kilogram purchased from the center.
5. Display of daily vegetable prices and provide seed materials when necessary.

Functions of the steering committee

1. Overall supervision
2. Meet monthly or quarterly

The partnership is expected to help increase the farmgate price for farmers, better market access, reduce the involvement of intermediaries, and provide training facilities for farmers thereby improving their standards of living. Further, the farmers are benefited by the welfare fund. The benefits for the company are to access quality farm produce, facilitate direct purchase and reduce transaction cost. Therefore, it is important to evaluate whether this investment generates benefits to reach overall objective of the programme and to find out whether these investments are effective and efficient or whether there are more effective alternatives than those. The purpose of this study is to examine the viability of establishing collection centers and to make recommendations that incorporate the lessons learnt from these collection centers.

1.2 Objective of the Evaluation

Main Objective:

To evaluate the usefulness of vegetable collecting centers to beneficiaries and effectiveness of their operational mechanism.

Specific Objectives:

- I. To study existing operational mechanisms
- II. To evaluate the usefulness of vegetable collecting centers to beneficiaries
- III. To ascertain cost effectiveness of vegetable collection centers

1.3 Methodology

1.3.1 Research Design

A field survey was conducted in the Welimada DS division of the Badulla district and Madulla DS division of the Moneragala district where the two collecting centers are located. Quantitative as well as qualitative data were collected using semi-structured questionnaires, key informant interviews, focus group discussions and secondary data.

1.3.2 Sample Selection

Targeted beneficiaries were 500-750 in Welimada DS division and 800 in Madulla DS division. However, according to the registered farmers' list maintained at Wangiyakumbura and Ruwalwella collecting centers, there were 200-250 farmers attached to each collection center. Hence, about 20 percent of the beneficiaries from each collection center were selected randomly as the sample of beneficiaries. Hence, a total of 80 beneficiaries were interviewed from the two locations. At the same time the sample of non-beneficiaries was selected randomly according to the farmers' list in DO office of the study areas. Hence, a total of 80 non-beneficiaries were interviewed from the two locations.

Table 1.1: Selection of Samples

Collecting Centre	Total Number of Beneficiaries	Sample of Beneficiaries (20%)	Sample of non-beneficiaries	Total Sample
Wangiyakumbura	200-225	40	40	80
Ruwalwella	200-250	40	40	80
Total	400-475	80	80	160

Source:

1.3.3 Data Collection

Objective I: To study the existing operational mechanisms

Key informant interviews and focus group discussions were conducted with the following stakeholders involved in the implementation and operation of the collection centers to understand the existing operational mechanisms and to identify strengths, weaknesses, constraints and challenges during the implementation of the project. For key informant interviews 3 separate interview guidelines were used for

DPMO officers, officers of the collection center and officers of the Cargills head office.

Table 1.2: List of Officers Interviewed

Key Informant Interviews	
Badulla	Moneragala
DPMO Staff Officers	DPMO Staff Officers
Marketing Officer	Marketing Officer
Project Monitoring Officer	Field facilitating officer
Marketing Facilitating Officer	
Officers of Cargills Collection Center	Officers of Cargills Collection Center
In charge of the collection center	In charge of the collection center
Cargills PLC	Cargills PLC
Deputy General Manager – Agri-business Division	Unit Head – Agri-business Division

Interview guidelines included the following information from the above three groups.

DPMO Staff Officers:

- Cost components for the construction
- Details of agreement
- Plan of the collection center
- Sustainability

Officers of the collection centers

- Number of Registered farmers
- Time period of procurement
- Grading, sorting, packing methods and standards used
- Method of payment
- Total capacity of the collection center
- Amount of vegetables handled/day
- Training programmes offer to farmers
- Operation and maintenance cost/month

Officers of Cargills PLC

- Contribution for the construction of collection center
- Training programmes offer to farmers
- Operation and maintenance cost/month
- Contribution to the welfare fund

Focus group discussions were conducted with the members of the two steering committees of Wangiyakumbura and Ruwalwela collection centers as given in the Table 1.3.

An interview guideline was used to collect the following information from the two steering committees.

- Role of committee members
- Number of meetings conducted
- Collection and maintenance of the welfare fund
- Constitutions

Table 1.3: List of Officers Interviewed in Focus Group Discussions

Steering Committees			
Wangiyakumbura	No. of Persons	Ruwalwela	No. of Persons
Divisional Secretary - Welimada	1	Representatives of Farmers Organizations	
Project Monitoring Officer (IFAD)	1	- Ruwalwela	3
DO	2	- Thalkotayaya	2
- Boralanda		- Panguwa	2
- Bogahakumbura		- Deliwa	2
AI	2	- Koratiya	1
- Boralanda		- Baduluwela	1
- Bogahakumbura			
Farmer leaders of the Farmer Organizations	7	DO - Madulla	1
- Wangiyakumbura		ARPA (Agricultural Research and Production Assistant)	2
- Alawathugoda		- Ruwalwela	
- Bibilegamuwa		- Deliwa	
- Helayalkumbura			
- Olugama			
- Kandepuhulpola			
- Bogahakumbura			
Total	13		14

Objective II: To assess the impact of vegetable collection centres

A total of 80 beneficiaries and 80 non-beneficiaries were interviewed using questionnaires from the two locations. In Wangiyakumbura area, the farmers who supply vegetables to Bogahakumbura wholesale market, Bandarawela wholesale market, Keppetipola Dedicated Economic center and Colombo Manning market were interviewed as non-beneficiaries. In Ruwalwella area, the farmers who supply vegetables to Dambagallapola and Mariarawapola were selected as non-beneficiaries. Two separate questionnaires were administered to get information from beneficiaries and non-beneficiaries.

Major information collected through questionnaires were amount of vegetables sold to collection centre and other market places, percentage of price increase compared to cost of production/kg, benefits obtained from the welfare fund, training received from the company, advice received for cultivation, farmers view on collecting centers and constraints faced by the farmers.

To assess the impact of vegetable collection center to other markets in the surrounding areas, the key informant interviews were conducted with the traders of the following markets.

- Bandarawela wholesale market
- Keppetipola Dedicated Economic Center
- Bogahakumbura wholesale market
- Dambagallapola
- Mariarawapola

Objective III: To ascertain cost effectiveness of vegetable collection centers

For this analysis, the secondary data maintained by the two collecting centers, Cargills head Office, Colombo and the documents at the DPU of the two districts were collected. The following cost components were obtained.

Cost components

1. Cost incurred by the IFAD Project and the Cargills company for construction of the building
2. Cost of operations and maintenance per month (salaries of the staff, electricity and water bills, transport cost)

Benefits

1. Higher producer price for farmers
 - Types of vegetables and total quantity of each of them sold in a particular period.
 - Price paid by the collecting centres for each type of vegetables/day during that particular period.
 - Producer prices of each type of vegetables sold in other market places of the area in a particular period.
2. Contribution fund by the Cargills
The quantity of vegetables purchased by the Cargills was collected to calculate the welfare fund.

1.4 Methods of Data Analysis

As the study involves both quantitative and qualitative aspects, the analysis of data was carried out using triangulation methods. The univariate and bivariate tables and simple statistics (Mean, Median etc.) were used for the analysis of quantitative data, whilst qualitative methods such as case analysis, content analysis and classification analysis were used for qualitative data analysis.

CHAPTER TWO

Present Status of the Vegetable Collection Centers and Other Major Markets in Badulla and Moneragala Districts

2.1 Introduction

This chapter explains the present situation of the collection centers. Further it describes the other major markets situated around the two collection centers. Wangiyakumbura and Ruwalwela collection centers are located in Welimada DS division of the Badulla district and Madulla DS division of the Moneragala district which are the largest vegetable producing areas of the country. In Welimada DS division, there are 64 GN divisions consisting nearly 30,000 farmers cultivating about 1200 acres. In Madulla DS division there are 36 GN divisions.

2.2 Present Status of the Vegetable Collection Centers

2.2.1 Wangiyakumbura Collection Center

The Wangiyakumbura collection center is located in the Welimada DS division of the Badulla district. Mainly farmers of Boralanda and Bogahakumbura DO divisions supply vegetables to the collection center. There are 25 farmer organizations in Boralanda DO division and 14 farmer organizations in Bogahakumbura DO division. There are 5,200 farmer families in Boralanda DO division and 4,265 farmer families in Bogahakumbura DO division.

Green beans, butter beans, potato, tomato, capsicum, carrot, bell pepper, red cabbage, salad cucumber, avocado and green chillies are the major items collected the Wangiyakumbura collection center. The collection center started its operations on 17th September, 2011. It is open daily except on poya day from 8 a.m. to 2 p.m. Farmers have to bring their vegetables during that time and from the collection center vegetables are taken to Colombo between 1.30-2.30p.m. They use one freezer truck to transport vegetables from Wangiyakumbura and Bandarawela collection centers to Colombo (Wattala distribution center). Farmers have to contact the officer in-charge of the collection center on the previous day between 1 p.m. to 3 p.m. to get an order. Farmers supply the required quantity to the collection center using their own or hired vehicles. There are one in-charge officer and 6 assistants attached to the collection center for procurement and delivering of vegetables. Cleaning, sorting, grading and packing are carried out at the collection center by the assistants attached to the collection center, according to the standards. Farmers have to wait until those activities are over and the rejected vegetables are returned to them. They have to make necessary arrangements to sell such items to another market.

2.2.1.1 Other Major Markets in the Surrounding Areas of the Welimada DS Division

Bogahakumbura wholesale market, Keppetipola Dedicated Economic center and Bandarawela wholesale markets are the other major markets in the area to where majority of the farmers sell their vegetables. Farmers and collectors in the Welimada area can sell their vegetables to these markets. From these markets vegetables are distributed to several other economic centers, other wholesale and retail markets in the country and to the Colombo Manning market.

Bogahakumbura Wholesale Market:

The distance to this market from Boralanda area is 5km. Nearly 80,000kg of vegetables are supplied per day to Bogahakumbura wholesale market. Both farmers and collectors bring vegetables to this market. This market is open daily from 8 a.m. – 3p.m. From this market the bulk of the vegetables are distributed to the Colombo Manning market, the Katugastota wholesale market and Kegalle markets.

Keppetipola DEC and Bandarawela Wholesale Market:

The distance to Keppetipola DEC from Boralanda is 15km, while the distance to Bandarawela wholesale market is 16km. Around 150,000-250,000kg of vegetables is supplied to these markets per day. Bandarawela wholesale market opens daily from 10 a.m. – 8 p.m. Keppetipola Dedicated Economic Center is open daily from 9 a.m. – 8 p.m. From these two markets vegetables are distributed to other economic centers such as Dambulla, Weyangoda and Welisara and to other markets in the Southern Province (Galle, Matara, Kalutara, Tissamaharama, Aluthgama etc) and to Colombo Manning market.

2.2.2 Ruwalwela Collection Center

Ruwalwela collection center is located in the Madulla DS division of the Moneragala district. In Madulla DS division, there are 45 farmer organizations and farmers of 7 farmer organizations supply vegetables to Ruwalwela collection center. In the area, the vegetables and fruits procurement was done temporarily from March 2011 by the Cargills PLC. The establishment of the present collection center was initiated through the “*Dayata Kirula programme*” held in Buttala, 2011 on a special requisition made by the Presidential Secretariat, the construction of the new collection center was initiated by the DZLiSPP. The collection center started its operations on 26th January, 2012. It is open 6 days per week from 7 a.m. to 2 p.m. except on Sundays. Nearly 250 farmers supply vegetables regularly to the collection center. Farmers have to bring their vegetables during that time and from the collection center vegetables are taken to Colombo between 1.30 p.m. - 2.30 p.m. *Thibbatu*, pumpkin, manioc, *keselmuwa* (banana inflorescence), lime, water melon, maize, seeni banana, kolikuttu banana and papaw are the major items procured by the collection center. There are 1 officer and 2 assistants attached to the collection center for procurement and delivering of vegetables. Cleaning, sorting, grading and packing are carried out at the collection center by the assistants attached to the collection center according to the standards. Farmers have to wait until those

activities are over and the rejected vegetables are returned to them. They have to make necessary arrangements to sell such items to another market.

2.2.2.1 Other Major Markets in the Surrounding Areas of the Madulla DS Division

Dambagalla and Mariarawapola are the other major markets for the farmers in the Madulla area. Dambagallapola functions from 2 a.m. – 10 a.m. only on Wednesdays and Saturdays and Mariarawapola functions from 3 a.m. – 10 a.m. on Tuesdays. Hence, the farmers are unable to sell their products throughout the week and most of the times they tend to sell their vegetables to collectors due to transport problems. In Ruwalwela area, most of the farmers sell maize, pumpkin and water melon to collectors and lime, banana and other types of vegetables are sold to Mariarawa and Dambagallapola. In these two *polas*, the farmers themselves practice selling of vegetables. Buyers come from different parts of the country as given in the figure below. From these two markets buyers from Akkaraipattu, Samanthurai, Kalmunei, Amapara, Negombo, Kandy, Galle, Tissamaharama, Colombo Manning market purchase vegetables.

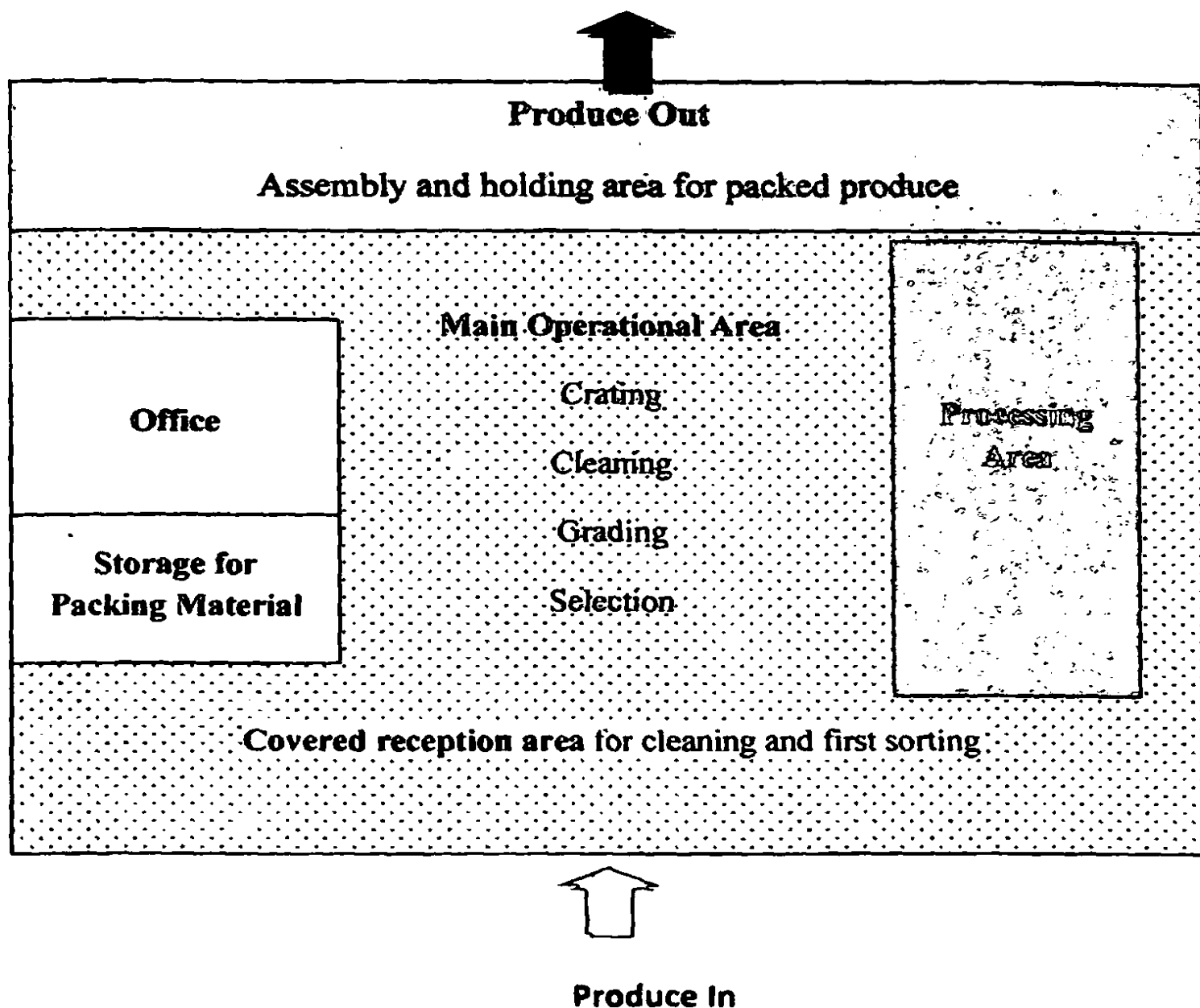
2.3 Physical and Financial Progress of the Collection Centers.

Physical and financial progress of the project is carried out by district offices regularly. Therefore, the secondary data on the progress is available. In addition, the study team also conducted key informant interviews with the relevant officers and other stakeholders on the aspect of project implementation to learn about the progress and impediments experienced while implementing various project activities.

2.3.1 Physical Progress of the Collection Centers

Wangiyakumbura Collection Center:

The DZLiSP project in 2009 initiated the idea of constructing the vegetable collection center in the Wangiyakumbura area of the Welimada. For the construction of the building 100 perches land was given by the Divisional Secretary, Welimada. Permission was obtained on 30/06/2010. Therefore, the ownership of the building is under the Divisional Secretariat. For the construction of the collection center approval of the Divisional Agricultural Committee was given on 30th June 2010. Approval from the Cargills was given on 31st May, 2010 and the Board approval of the DZLiSPP was given on 26/07/2011. The construction of the collection center was started on 3/01/2011 and the construction work was finished by September, 2011. The collection center was open on 17/09/2011.



Source: DPMU, Badulla

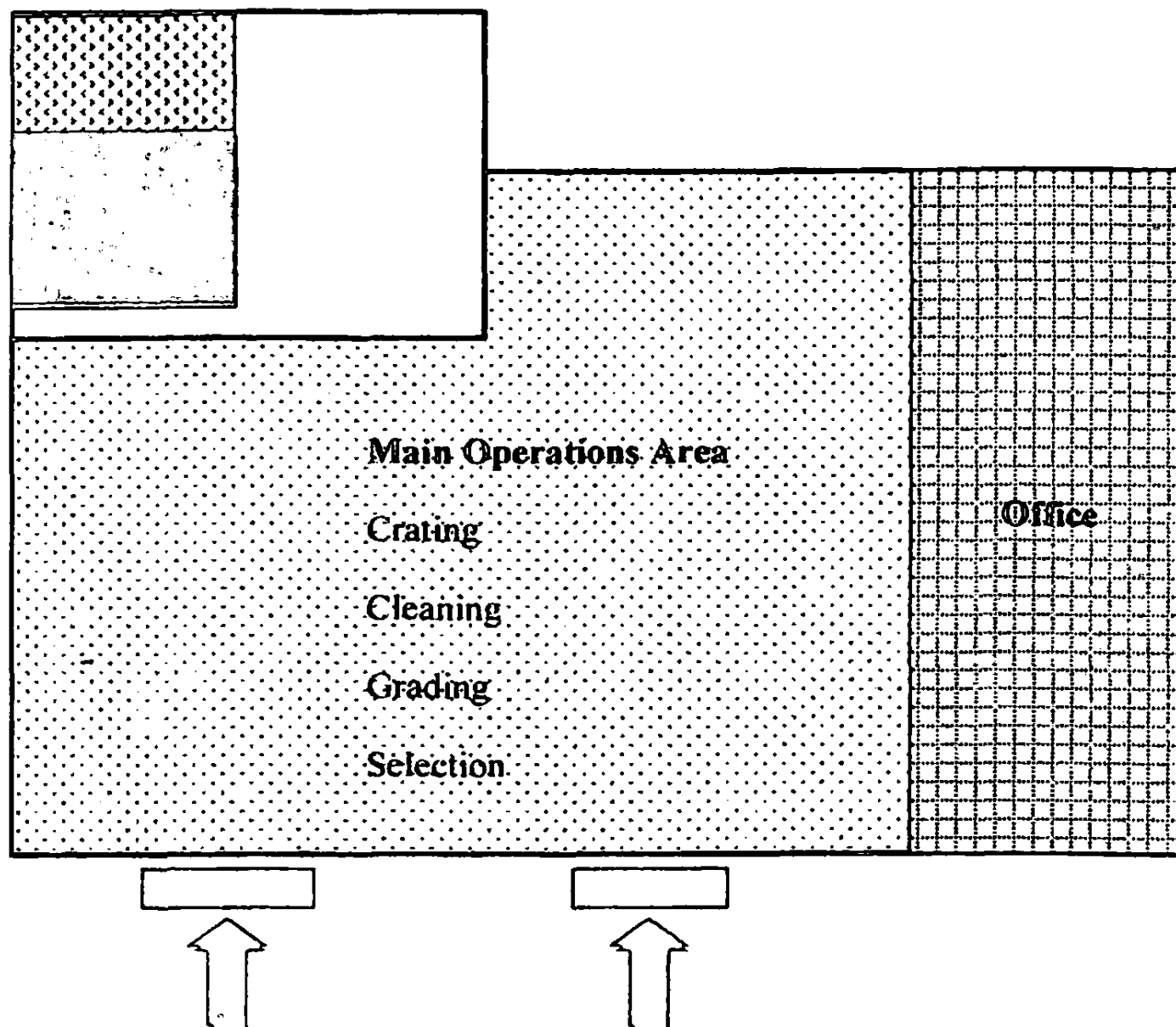
Figure 2.1: Floor Plan of the Wangiyakumbura Collection Center

The total space of the collection center was 54' X 63'. There is a large space available for cleaning, sorting, grading and packing of vegetables. In addition to the operation area, there are separate areas for the office and storage for packing materials. Electricity and telephone facilities are available in the collection center. However, water facilities are still not available.

Ruwalwela Collection Center:

For the construction of the building 10 perches land was given by a farmer in the area. At present, the ownership of the building is vested in the Divisional Secretariat. The total space of the collection center is 55' X 20'. The space available for cleaning, sorting, grading and packing of vegetables is 39' X 18'. The Ruwalwela collection center has lesser space compared to Wangiyakumbura collection center. In addition to the operational area, there are separate areas for the office and storage for

packing materials. Electricity and water facilities are not available for the collection center and only telephone facilities are available at present.



Source: DPMU, Moneragala

Figure 2.2: Floor Plan of the Ruwalwela Collection Center

The Collection Centre should be established in a proper location to support farmers' group with a better infrastructure with storage, weighing machine and other space for administration work. Collection Centre should be located near the farmers pocket area where all agriculture produce can be easily transported but it should be in a nearby road heads. Hence, both collection centers are well located with enough space and equipped with essential facilities for a collection center.

Table 2.1: Achievements of Beneficiaries (up to May 2012)

Item	Wangiyakumbura Collection Center	Ruwalwela Collection Center	Total
No. of target beneficiaries	500-750	800-1000	1300-1750
No. of beneficiaries	200-225	200-250	400-475
% of beneficiaries from the target	26%-40%	25%-30%	26%-35%

Source: DPMU Office Badulla and Moneragala

The target beneficiaries for Wangiyakumbura collection centers are around 500-750 and for the Ruwalwela collection center is around 800-1000. The achievement as of end of May, 2012 for two collection centers was 200-225 with 26%-40% and 200-250 with 25%-30% for Wangiyakumbura and Ruwalwela respectively (table 2.1).

2.3.2 Financial Progress of the Collection Centers

The financial progress of the construction of the collection centers as reported by the DPMU and Cargills PLC as of May, 2012 is indicated below in table 2.2 and table 2.3. The estimated cost for the construction of building of the Wangiyakumbura collection center was Rs.3.5 million by the DZLiSPP. However, it costs Rs.5 million to complete the construction. The cost for Cargills PLC was Rs.3.625 million. The highest cost component for the Cargills was for the reefer truck. However, at present they hire reefer trucks which cost Rs.48/= per 1km. Other cost for the construction incurred by Cargills was around Rs.0.6 million. Hence, a total of Rs.8.6 million was allocated by the DZLiSPP and Cargills for the construction of the Wangiyakumbura collection center. The estimated cost for the construction of building for Ruwalwela collection center was Rs.1.5 million by the DZLiSPP. However, they had to incur Rs.2.7 million to complete the construction.

Table 2.2: Estimated Cost Sharing for the Establishment of Vegetable Collection Center (Wangiyakumbura)

Item	DZLiSPP		Cost Incurred by Cargills (Rs.)
	Targeted Cost (Rs.)	Actual Cost (Rs.)	
Crates			300,000
Furniture			100,000
Computer, printer, modem, inverter			100,000
Fax/phone			50,000
Reefer truck			3,000,000
Weighing scale			75,000
Vegetable washer	350,000		
Building including power/water supply	3,000,000	4,047,425	
Sorting tables	100,000	100,000	
Drying fans	50,000	50,000	
Land			
Extra cost		618,986	
Total	3,500,000	5,000,000	3,625,000

Source: DPMU, Badulla

Table 2.3: Estimated Cost Sharing for the Establishment of the Vegetable Collection Center (Ruwalwela)

Item	DZLiSPP		Cost Incurred by Cargills (Rs.)
	Targeted Cost (Rs.)	Actual Cost (Rs.)	
Crates			300,000
Furniture			100,000
Computer, printer, modem, inverter			100,000
Fax/phone			50,000
Reefer truck			3,000,000
Weighing scale			75,000
Building	1,500,000	2,700,000	
Extra cost			
Total	1,500,000	2,700,000	3,625,000

Source: DPMU, Moneragala

As a summary, a provision of Rs.5m and Rs.2.7m had been made by the DZLiSPP for Wangiyakumbura and Ruwalwela collection centers respectively, while Rs.7.2m had been contributed by the Cargills PLC for both collection centers. On the total expenditure, the average cost of establishing Wangiyakumbura and Ruwalwela collection centers was Rs.8.6m and Rs.6.3m respectively.

CHAPTER THREE

Existing Operational Mechanisms of the Collection Centers and the Steering Committee

3.1 Introduction

Though the emergence of supermarkets is significant in Sri Lanka, the quantity of vegetables moving along these supermarket supply chains is comparatively insignificant compared to quantities moved in traditional chains. Specially, in relation to fresh vegetable retailing, supermarket share in Sri Lanka is far behind that of the other product categories. Only about 5 percent of the vegetable production moves along the supermarket channels. For the collection of vegetables, Cargills PLC has vegetable collection centers in major producing areas. This chapter describes the operation and maintenance of the Wangiyakumbura and Ruwalwela collection centers established by the DZLiSP and operational mechanism of the two steering committees of each collection center.

3.2 Procurement of Vegetables by Wangiyakumbura and Ruwalwela Collection Centers

The procurement practices, or collection of practices, establish, in turn, a general framework for the development of commercial relationships between supermarkets and their suppliers, including farmers. Vegetables procurement requires high frequency, constant delivery and stable quality. Delivery arrangements between growers and supermarkets are usually based on easily observable output characteristics (i.e. volume, size, colour) but also include detailed specifications for product handling and delivery (i.e. input applications, packaging, etc). Quality control is of a specific nature in the case of fresh vegetables. The buyers regularly face problems in monitoring the freshness. In order to guarantee reliable supply, retailers search for sustainable partnerships with producers that reduce such information and screening costs and reinforce mutual trust amongst chain agents(Chen, *et al*, 2005).

For the procurement of vegetables and fruits the Cargills supermarket chain has collection centers in the major producing areas; Nuwara Eliya, Bandarawela, Thambuththegama, Thanamanwila, Norochhole and Hanguranketha. In addition to these with the DZLiSP project they have started two other collection centers in Wangiyakumbura (Welimada) and Ruwalwela (Moneragala).

Wangiyakumbura and Ruwalwela collection centers procure vegetables directly from farmers. Around 200 farmers in Wangiyakumbura, Boghakumbura, Boralanda, Helayalkumbura, Alawathugoda, Kandepuhulpola, Kadupullanda, Idamegama and Rahangala GN divisions supply vegetables to Wangiyakumbura collection center, while around 200 to 250 farmers in Ruwalwela, Watawanagama, Panguwa, Deliwa and Thalkotayaya GN divisions supply vegetables to Ruwalwela collection center.

Wangiyakumbura collection center opens daily except on poya days from 8 a.m. to 2 p.m., while the Ruwalwela collection center opens 6 days per week except on Sundays and Poya days from 7 a.m. to 2 p.m.

The retail outlets prepare their orders for the following day based on the previous day's sale. At the end of the day, all outlets report to their distribution center about their vegetable demands (quantities and varieties) for the following day. After DCs summary and integration of these demand numbers, they inform their suppliers or collecting centres about what they have to supply. Farmers have to get an order on the previous day between 1 to 3 p.m. by contacting the officer in-charge of these collection centers through phone. Farmers supply vegetables in the morning and they have to make arrangements to transport them to the collecting centers. Cleaning, sorting, grading and packing are carried out at the collecting centers by the assistants attached to the collecting centers. The quality parameters actually adopted are mostly related to the physical attributes of the produce such as size, colour, texture and non-existence of pest and disease attacks. Farmers have to wait until those activities are over and the rejected vegetables are returned to them. The selected vegetables are loaded into standard crates belonging to supermarkets.

3.3 Distribution of Vegetables from the Wangiyakumbura and Ruwalwela Collection Centers to Colombo

Poor transportation and packaging is a major cause for the high wastage reported in Sri Lanka's fresh fruit and vegetable marketing system. As a consequence, most supermarkets have developed an alternative practice of using refrigerated trucks and plastic crates for packing. Under the conventional system, fruit and vegetables were packed in gunny bags and transported in ordinary lorries. The vegetables collected at the Wangiyakumbura and Ruwalwela collection centers are packed in reusable plastic crates and transported directly to the supermarket warehouse in Colombo by a transport operator using refrigerated vehicles. For cost efficiency, the supermarket outsources the transport. Cargills supermarket chain uses 2 hired reefer trucks to transport these vegetables from collection centers to Colombo. Trucks leave the collecting centers between 1.30p.m. and 3p.m. and reach Colombo between 6p.m. and 12p.m. The process, although more expensive than the conventional system, reduces wastage, maintains quality and provides growers with a higher net farmgate price. At the distribution centers workers sort out the bulk vegetables. Cleaning and grading are not taken place at the distribution center. Vegetable are de-allotted and transported to the retail outlets in Colombo and suburbs either in freezer trucks or non-freezer trucks. For other outlets, vegetables are dispatched directly on the way to Colombo from collecting centers. Most of the outlets receive the required amount of vegetables they need in the morning of the following day of delivery.

Direct purchase from farmers permits more rapid movement of produce from farm to collecting retail outlets, enabling supermarkets, to sell fresh produce. It was observed that time gaps between collecting from farmers field to sending to outlets is less than 24 hrs.

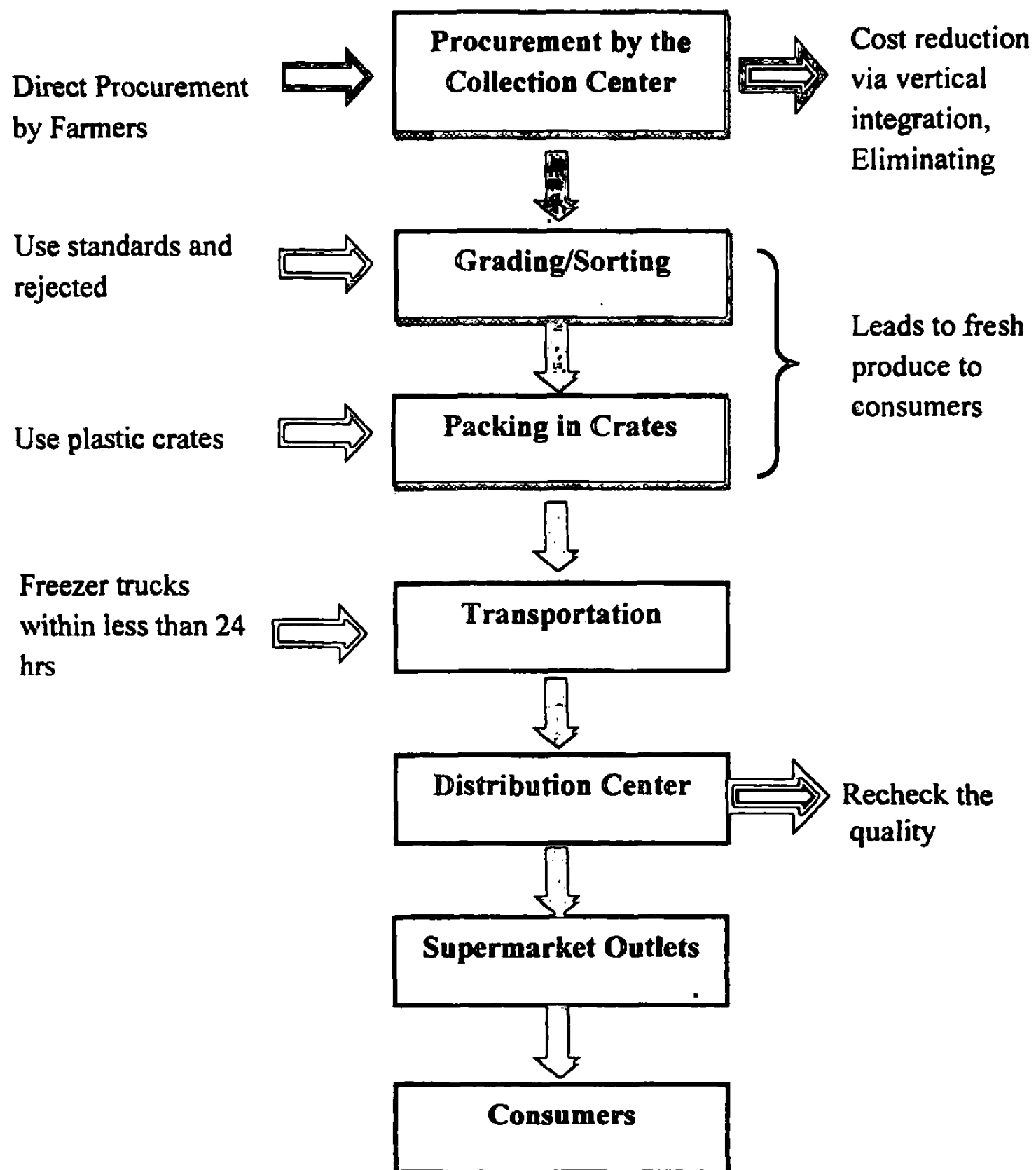


Figure 3.1: Supply Chain Process of Vegetables Sold through Supermarkets (Cargills PLC)

Table 3.1: Procurement Details of the Collection Centers

Collection Center	Average Daily Procurement		Number of Farmers Selling their Produce (daily average)	
	Other days	Weekends	Other days	Weekends
WCC	2,000-2,500kg	3,000kg	40	60
RCC	2,500kg	4,500-5,000kg	40	50

Source: Survey Data (May to June, 2012)

3.4 Operation and Maintenance of the Collection Centers

Operation and maintenance of the collection centers are done by the Cargills PLC. They have appointed an officer in-charge to each collection center. In addition to that there are assistants for cleaning, grading, sorting and packing of vegetables. In Wangiyakumbura collection center there are 6 assistants and in Ruwalwela collection center, there are 3 assistants. The officers' in-charge has to keep records of the quantity of vegetables purchased each day and the prices paid for the farmers. Prices are set according to the market prices other major markets in the area. Cargills PLC has to bear the entire operational cost (electricity, water, telephone bills and salaries of the staff) of each collection center. Farmers have to supply vegetables in the morning from 8a.m. to 1p.m. Cleaning, sorting, grading and packing are carried out at the collection center in front of farmers and vegetables which are not up to the required standards are returned to the farmers. Farmers are paid cash on the day itself or on the following day.

3.5 Existing Operation of the Steering Committees

The aim of the steering committee is to supervise the activities of each collection center. In order to achieve this, the committee has to interact with farmers and the purchasing company. Steering committees comprise of farmer representatives of each DS division and the government officers of the area. Table 3.2 explains all the members of the two steering committees in Wangiyakumbura and Ruwalwela collection centers.

For the supervision of the Wangiyakumbura collection center, the steering committee was appointed on 3rd April, 2012. Welimada DS is the chairman of the steering committee of the Wangiyakumbura collection center. The committee has met only twice time up to end of July, 2012. As the representative of the Cargills was not aware of the earlier agreements of the collecting center with the DZLiSP project, the committee was not able to finalize the act yet. One of the functions of the collecting center of Wangiyakumbura is to maintain the welfare fund contributed by the Cargills for every one kilo of vegetable purchased. However, still there is no collection of such fund and the committee is expecting feedback from the Cargills Company.

As the committee has to supervise the activities of the collection center, they requested to provide the purchased prices of all the items collected daily in order to assure the collecting center pays a higher price compared to other markets of the Welimada area. However, so far the collecting center has not provided price data to Welimada DS.

Table 3.2: Committee Members of the Two Collection Centers

Steering Committees	
Wangiyakumbura	Ruwalwela
Divisional Secretary - Welimada	Representatives of Farmers Organizations - Ruwalwela- 3 representatives - Thalkotayaya – 2 representatives - Panguwa – 2 representatives - Deliwa – 2 representatives - Koratiya – 1 representative - Baduluwela – 1 representative
Project Monitoring Officer (IFAD)	
Divisional Officers (Agrarian Services Centers) - Boralanda - Bogahakumbura	
Provincial Agricultural Department Assistant Director Agriculture (Keppetipola) Agricultural Instructors - Boralanda - Bogahakumbura	
Farmer leaders of the Farmer Organizations - Wangiyakumbura - Alawathugoda - Bibilegamuwa - Helayalkumbura - Olugama - Kandepuhulpola - Bogahakumbura	DO - Madulla
	ARPA (Agricultural Research and Production Assistant) - Ruwalwela - Deliwa

3.6 Collection and Maintenance of the Welfare Fund

For every kilo of vegetables purchased at the collection centers, Cargills has to contribute 50 cents for the Welfare Fund. Though, the Wangiyakumbura collection center is operated for the last 8 months, so far there is no collection of such fund. In order to provide these benefits for beneficiaries, registration of the farmers attached to collection centers is important.

According to the key officers of the Cargills PLC, they have not given any kind of services as mentioned in the agreement for the farmers of respective areas. They intend to provide services from the total collection of the fund after one year of establishment of each collection center. They are willing to intervene the problem in the areas concerned without discrimination. In that case, the entire farming community in the area will be benefited.

3.7 Sustainability of the Collection Centers

For the sustainability of these two collection centers, regular supervision is essential. Further, the steering committee should meet as scheduled to make decisions. For these meetings there should be a representative from Cargills PLC. However, high

attrition of the staff indicates that the sustainability of the Project activities are at a risk unless the ownership and responsibility of the initiated activities are smoothly transferred to line departments before winding up project activities.

Sustainability of the collection centers depends on several conditions. Effective functioning of the welfare fund is prominent among them. However, currently it is unsatisfactory. Therefore, there is a need to maintain its transparency as it will the farmers and the steering committee members to maintain the welfare fund and the activities of the collection centers effectively, thereby this model will survive longer.

CHAPTER FOUR

Impact of Vegetable Collection Centers to the Beneficiaries

4.1 Introduction

Under the DZLiSPP project they have built two collecting centers as a public-private partnership with Cargills PLC which is a leading supermarket chain in the country. This partnership is expected to help increase the farmgate price for farmers, better market access, reduce the involvement of intermediaries and provide training facilities for farmers thereby improving the standards of living. Further, the farmers are benefited by the welfare fund. This chapter describes the farmers' view on collecting centers and its implications on beneficiaries compared to non-beneficiaries.

4.2 Socio-economic Features of the Farmers who Supply Vegetables to Collection Centers and Other Markets

The tables 4.1, 4.2 and 4.3 explain the socio-economic features of the beneficiaries who supply to Wangiyakumbura and Ruwalwela collection centers and non-beneficiaries who supply to other markets in Welimada and Madulla areas. As given in the table 4.1, there is no significant difference between the ages of the farmers who supply vegetables to collection centers of supermarkets and other markets in Welimada and Madulla.

Table 4.1: Age of the Farmers

Age of the Sample (Years)	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other markets ¹	RCC	Other markets ²
20-30	6	13	5	8
20-40	26	18	23	30
40-50	40	24	40	38
50-60	28	45	32	24
Total	100	100	100	100

Note: ¹ – Farmers supply to Keppetipola DEC, Bogahakumbura and Bandarawela wholesale markets

² – Farmers supply to Dambagalla and Mariarawapola

Source: Survey Data (May and June, 2012)

Monthly income of the sample in the study areas is given in the table 4.2. Both farmer groups supplying to Wangiyakumbura collection center (40 percent) and other markets in the Welimada area (42 percent) were in the monthly income range of Rs.20,000 to Rs.50,000 and there was no significant difference of the income range between two groups of farmers. Further, the majority of farmers supply to Ruwalwela collection center (28 percent) and other markets in the Madulla area (39 percent) were in the income range of Rs.10,000 to Rs.15,000.

In a case study in South African countries, Emonger and Kirston (2009), found that farmers who supplied vegetables to supermarkets had a significantly higher income than those who supplied to conventional markets.

Table 4.2: Distribution of the Monthly Income of the Farmers Supplying to Collection Centers and Other Markets

Monthly Income (Rs.)	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other markets	RCC	Other markets
< 10,000	9	11	20	11
10,000-15,000	23	18	27	38
15,000-20,000	17	13	25	16
20,000-25,000	11	16	13	11
25,000-50,000	40	42	15	24
Total	100	100	100	100

Source: Survey Data (May and June, 2012)

Table 4.3 illustrates data on the cultivated extents of vegetables in 2011/12 *maha* season by the sample farmers. Higher percentages of farmers linked with Wangiyakumbura collection center (51 percent) have cultivated more than 2 acres. However, the farmers supplying to other markets (50 percent) in the Welimada area has cultivated 0.5-1.5 acres. This indicates that the farm size of the farmers supplying to supermarkets is on average much larger than the conventional channel farmers. However, there was no such difference between both groups of farmers in the Madulla area. The farmers linked with Ruwalwela collection center (63 percent) have cultivated 0.5-1.5 acres. Neven and Reardon (2006), in a study in Kenya found that supermarket-channel farms are on average much larger, in overall farm size than conventional farms.

Table 4.3: Distribution of Farmers by Farm-size (2011/12 *maha* Season)

Range of Cultivated Extent (acres)	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other markets	RCC	Other markets
<0.5	0	18	5	0
0.5 - 1.0	9	26	25	5
1.0 - 1.5	26	24	38	14
1.5 - 2.0	14	16	12	43
>2	51	16	20	38
Total	100	100	100	100

Source: Survey Data (May and June, 2012)

4.3 Supply of Vegetables to the Collection Centers

Table 4.4 illustrates that about 35 percent of farmers attached to WCC sold only 30-50 percent of their total production to collection center as the quantity purchased by the collection center was very limited compared to other markets. Farmers sell rest of their production to other markets in the area. However, about 54 percent farmers supplying to RCC were able to sell 50-90 percent of their production to the collection center as the Cargills PLC purchase their requirement of most of the traditional types of items from this collection center.

Table 4.4: Quantity of Vegetables Supplied to the Collection Centers as a Percentage of the Total Production

Quantity of Vegetables sold as a % of Total Production	WCC (% of Farmers)	RCC (% of Farmers)
10%	20	3
10 - 30%	19	8
30 - 50%	35	20
50 - 70%	9	28
70 - 90%	9	26
100%	8	15
	100	100

Source: Survey Data (May to June, 2012)

4.4 Marketing of Vegetables

4.4.1 Reasons for Selecting Collection Centers and Other Markets

As given in the table 4.5, a majority of beneficiaries (78 percent of farmers supply to WCC and 66 percent of farmers supply to RCC) reported that the higher producer price, easy way of selling and credibility were the key reasons for selling to collection center. Majority of the farmers (42 percent) supplying to other markets in the Welimada area reported that credibility is the major reason for selecting their marketing channel while 40 percent of farmers supply to other markets in the Madulla area reported convenience of selling is the major reason for selecting their marketing channels with low transaction costs and low market risks. Further, with the establishment of Economic centers in the Keppetipola area and wholesale markets in Bandarawela and Bogahakumbura, most of the farmers started selling their vegetables to those markets as it was easy to transact with those markets. In traditional marketing systems, farmers often receive loans from the traders during the production period on the understanding that they will sell to those traders in the harvesting time. Further, 39 percent of the conventional farmers in Welimada and 15 percent of the conventional farmers in Madulla reported that they had selected their marketing channel due to the absence of other marketing channels.

Table 4.5: Reasons for Selecting Collection Centers and Other Markets

Reasons	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other Markets	RCC	Other Markets
High producer price	33	15	23	8
Easy way of selling	28	2	22	40
Credibility	17	42	21	6
Receive advice for cultivation	-	-	-	5
Receive training by the company	1	-	1	-
Reduce transport cost	11	-	17	12
Receive money quickly	9	-	14	2
Supply inputs and credits	-	-	-	12
As no alternative market place	1	39	1	15

Note: Column totals do not add up to 100 due to multiple responses.

Source: Survey Data (May to June, 2012)

As the collection centers purchase less than 50-70% of the farmers' produce, the farmers supplying to collection centers have to sell rest of the produce to other markets in the area. As shown in the table 4.6, in Wangiyakumbura area, the majority of the farmers (39 percent) supplying to Wangiyakumbura collection center sold vegetables to Bogahakumbura wholesale market. About 26 percent and 18 percent of the farmers sold to Keppetipola DEC and Bandarawela wholesale market respectively. In Madulla area, Ruwalwela collection center purchases more vegetables compared to Wangiyakumbura collection center. The majority of the farmers (82 percent) supplying to Ruwalwela collection center sold their vegetables to Mariarawa and Dambagalla *pola*.

Table 4.6: Other Markets Where the Farmers Supply Vegetables other than to Collection Centers

Type of market	WCC (% of Farmers)	RCC (% of Farmers)
Keppetipola DEC	26	-
Bogahakumbura Wholesale Market	39	-
Bandarawela wholesale market	18	-
Weekly <i>pola</i>	-	82
Mobile Collectors	-	18
Colombo Maning Market	17	-
Total	100	100

Source: Survey Data (May to June, 2012)

4.4.2 Rejection of Vegetables by the Collection Centers

When selling vegetables the collection of supermarkets expect certain standards. Therefore, the farmers have to sell according to those standards demanded by them. Since quality is the most important attribute for supermarkets, sorting and grading are done by classifying the products according to specific requirements (standards). There are no standards related to sanitary condition, chemical residues or traceability. Even appearance wise standards are particularly difficult to meet. The supermarkets have adopted a policy of buying reasonably good quality vegetables, but well within the limits of what is already offered in the overall market. Hence, they have had little or no impact at all in terms of stimulating technical change at the farm level.

Standards which were to follow by them were: Vegetables should be free of pest and diseases, free of damages, have precise shape and colour, precise weight and volume and should be at correct maturity stage. Normally collection centers reject vegetables which are not up to their required standards. Majority of farmers (58 percent supplies to WCC) who supply vegetables to Wangiyakumbura collection center reported that nearly 5-10 percent of vegetables offered was rejected. Further, 35 percent of farmers supplying to Ruwalwela collection center reported that it was less than 5 percent. Further, about 17 percent farmers supplying to Wangiyakumbura and about 20 percent farmers supplying to Madulla collection centers reported that there was no rejection at the collection centers at present. With the experience gained by the farmers about the required quality demanded by the supermarkets, farmers sorted vegetables at the field before sending to the collection centers and this resulted in lower rejection rate at both collection centers. When the amount of rejection is high, the farmers have to devise other ways to the rejected products. As the majority of the farmers do not sell their total production to supermarkets, they sell the rejected vegetables mixed with their rest of the produce. If the amount of rejection is low they do not sell them through another channel but throw away or sometime leave them at the collecting center itself.

Table 4.7: Percentage of Vegetables Rejected out of the Vegetables offered to the Collection Centers

Percentage of Rejection	WCC (% of Farmers)	RCC (% of Farmers)
No rejection	17	20
< 5%	30	35
5-10%	35	20
10-15%	6	15
15-20%	6	10
>20%	6	0
Total	100	100

Source: Survey Data (May to June, 2012)

4.4.3 Harvesting and Selling of Vegetables

Table 4.8 indicates the stage of harvesting and stage of selling by all the sample farmers within the geographical areas under consideration. Majority of the farmers (60 percent) supply to Wangiyakumbura collection center harvest their crops in the morning of the day of selling while the 70 percent of farmers supplying to other markets harvest their products in the evening of the day prior to selling. Stage of harvesting and selling varies according to the type of vegetables. Farmers supply to Wangiyakumbura collection center tends to harvest more perishable types of vegetables in the morning of the day of selling. This indicates that the majority of the supermarket farmers consider the quality and the freshness of the vegetables. Hence, they always try to sell their vegetables soon after harvesting. Meanwhile, the majority of farmers (66 percent) who supply vegetables to Ruwalwela collection center and 95 percent of farmers who supply to other markets in the Madulla area harvest vegetables in the evening of the day prior to selling and sold in the following morning as most of their supply items are not highly perishable as upcountry vegetables and farmers' fields are located far away to their homes and roads, take time to carry them.

Table 4.8: Stage of Harvesting and Stage of Selling

Stage of Harvesting and Stage of Selling	Welimada (%)		Madulla (%)	
	Collection center	Other markets	Collection center	Other markets
1. Stage of harvesting				
- Day prior to selling	40	70	66	95
- Day of selling (morning)	60	30	34	5
2. Stage of Selling				
- Day of harvesting	60	30	66	5
- Day after harvesting	40	70	34	95

Source: Survey Data (May to June, 2012)

4.4.4 Distance to the Collection Center and Other Markets

The following table indicates that around 82 percent farmers in Wangiyakumbura and 78 percent farmers in Ruwalwela bring their vegetables to the collecting centers from a distance of less than 6km. It means most of the sample farmers can transport their vegetables easily and quickly to the collecting centers and they also can minimize the losses of vegetables when transporting. If producers are scattered and infrastructure is weak, collection costs tend to be high. Hence, collection centers of supermarkets tend to procure from farmers close to the collecting centers.

The distances to the other markets available for Wangiyakumbura farmers are higher compared to distance to the collection center. The distance to Keppetipola DEC and Bandarawela wholesale market is 16km and 15km respectively and the distance to

Bogahakumbura wholesale market is 3km. Similarly, the distance to Dambagallapola is 6km from the Ruwalwela area.

However, Boselie, *et al*, (2003), in case studies with the experiences of Hortico (Zimbabwe), Thai Fresh United (Thailand), Homegrown (Kenya), TOPS (Thailand) and Alice (South Africa) have reported that a geographically dispersed base of small producers can be an effective risk-spreading strategy for supermarket suppliers and/or can afford greater flexibility in the procurement of relatively small quantities of products that meet specific and exacting standards. For example, Homegrown in Kenya, obtain their requirement from small producers in a number of areas in order to manage the risk of not fulfilling a supermarket order due to crop failure because of inclement weather or pest infestation.

Table 4.9: Distance to the Collecting Centers of Supermarkets

Distance (km)	WCC (% of Farmers)	RCC (% of Farmers)
< 1	11	40
1 – 2	34	20
2 – 4	37	18
4 – 6	18	10
6 – 8	0	4
8 – 10	0	3
> 10	0	5
Total	100	100

Source: Survey Data (May to June, 2012)

4.4.5 Method of Transport to the Collection Center

The table 4.10 and table 4.11 indicate the method of transport used by the farmers supply to collection centers and other markets of the respective areas. Majority of the farmers in Wangiyakumbura (66 percent) and Ruwalwela (58 percent) use three wheelers to transport vegetables as the quantity of vegetables transported was low and the distance to the collecting center was less than 5km. On the other hand, the majority of the farmers supplying to other markets in Wangiyakumbura area (71 percent) use hired lorries, whereas the farmers who supply to other markets (*pola*) in the Madulla area use two wheel tractors to transport vegetables.

Table 4.10: Method of Transport Used by Farmers Supplying to Collection Centers

Mode of Transport	WCC (% of Farmers)		RCC (% of Farmers)	
	Own	Hired	Own	Hired
Two wheel tractors	11	11	3	35
Three wheelers	26	46	15	45
Motorbikes	10	-	15	3
Cycles	-	-	10	-
Lorry	3	31	-	-
Van	-	-	8	15
Bus	-	-	-	20

Note: Column totals do not add up to 100 due to multiple responses.

Source: Survey Data (May to June, 2012)

Table 4.11: Method of Transport Used by the Farmers Supply to Other Markets

Mode of transport	WCC (% of Farmers)		RCC (% of Farmers)	
	Own	Hired	Own	Hired
Two wheel tractors	-	5	3	35
Three wheelers	5	11	14	27
Motorbikes	-	-	14	3
Cycles	-	-	8	-
Lorry	2	71	-	27
Van	-	3	-	11
Bus	-	3	-	16

Note: Column totals do not add up to 100 due to multiple responses.

Source: Survey Data (May to June, 2012)

4.4.6 Method of Selling

Supermarkets are generally considered reliable with respect to their terms of payment, although there is a time interval between delivery and payment, which contrasts with the norms of traditional markets (Boselie, *et al*, 2003).

This study found that 97 percent of farmers who supply to Wangiyakumbura collection center and 70 percent of farmers supplying to Ruwalwela collection center sell their vegetables on spot cash. About 40 percent of farmers supplying to other markets in the Welimada area received their cash later. However, majority of the farmers supply vegetables to other markets (87 percent) in the Madulla area obtained cash on the same day of selling as they sell vegetables by themselves in the *pola*.

Table 4.12: Method of Payment by the Farmers Supplying to Collection Centers and Other Markets

Method of Payment	Welimada(% of Farmers)		Madulla (% of Farmers)	
	WCC	Other Markets	RCC	Other Markets
By cash on the same day	97	60	70	87
Obtaining cash later	3	40	30	13

Source: Survey Data (May to June, 2012)

4.4.7 Time Taken to Receive Cash

Supermarkets are generally considered reliable with respect to their terms of payment, although there is a period of time between delivery and payment, which contrasts with the norms of traditional markets. The majority of farmers who supply to Wangiyakumbura collection center (97 percent) revealed that they received cash for their supplies on the same day of selling while it was 63 percent at Ruwalwela collection center. Similar to that 62 percent of farmers supply to other markets in the Welimada area received cash on the same day. Most of the stocks purchased in the Bogahakumbura market are sent to the Colombo Manning market and most of the time farmers received their payment later. About 33 percent of farmers supplying to other markets in the Welimada area received payment within 5 days of selling. In Madulla area as farmers themselves do selling at *Mariarawa pola* and *Dambagalla pola*, majority of them (87 percent) were able to receive money on the same day. Table 4.13 illustrates the above results.

Table 4.13: Time Taken to Receive Cash

Way of selling	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other	RCC	Other
Received on the same day of selling	97	62	63	87
< 2 Days	3	11	30	-
<5 Days	-	20	7	2
<10 days	-	6	-	6
<15 Days	-	-	-	3
15 Days or mores	-	1	-	2
Total	100	100	100	100

Source: Survey Data (May to June, 2012)

4.4.8 Farmers' Satisfaction with the Amount of Money they received

Table 4.14 indicates the number of farmers satisfied about the amount of money they received. All the farmers supplying vegetables to collection centers are satisfied with the amount of money they received, while the majority of farmers supplying to other markets in the Wangiyakumbura area (73 percent) and Ruwalwela area (90 percent) are also satisfied.

Table 4.14: Farmers Satisfaction with the Amount of Money they received

Whether Satisfied or not	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other	RCC	Other
Yes	100	73	100	90
No	0	27	0	10
Total	100	100	100	100

Source: Survey Data (May to June, 2012)

4.5 Benefits/Services Received by the Farmers

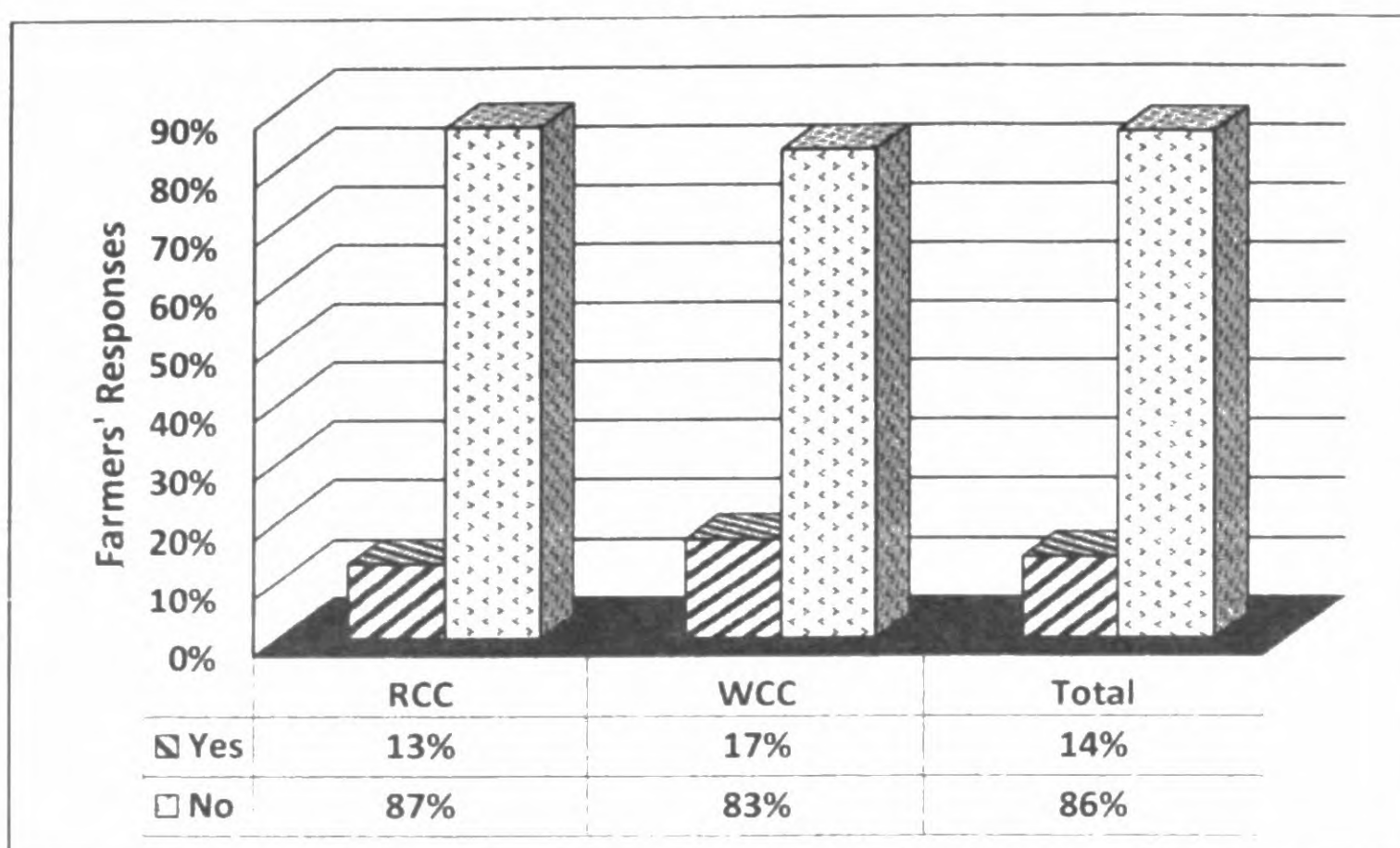
Boselie, *et al*, (2003), in case studies with the experiences of Hortico supermarket chain (Zimbabwe), Thai Fresh United supermarket chain (Thailand), Homegrown supermarket chain (Kenya), TOPS supermarket chain (Thailand) and Alice supermarket chain (South Africa) have found that, supply chains often provide producers with assistance and inputs to meet their requirements within the context of weak public infrastructure.

In Indonesia, it was reported that the vendors supply quality seeds, technology and other inputs necessary to fulfill supermarkets' requirements. They train farmers to achieve the required standards. Some of them also link the farmers with financial institutions and facilitate credit availability to farmers. The vendor sets harvesting schedule with the farmers and procures vegetables according to grading and standards agreed upon between the vendor and the farmer.

However, this study reveals that, a notable proportion (86 percent) of the farmers did not receive any benefits from the collection centers other than a higher producer prices. Only 14 percent of farmers supplying to collection centers reported that they received some benefits from the supermarkets (figure 4.1).

Among the farmers supplying to collection center and receiving benefits from the center, 80 percent linked with Wangiyakumbura reported that they received market information from the collection center and 80 percent of farmers linked with Ruwalwela collection center said they received consultancy.

Further, none of the farmers had received training from the collection centers.



Source: Survey Data (May to June, 2012)

Figure 4.1: Farmers' Responses on Benefits received from the Collection Centers

Table 4.15: Types of Benefits or Services received by the Collection Center and Other Markets

Benefits/Services	Welimada (% of Farmers)		Madulla (% of Farmers)	
	WCC	Other Markets	RCC	Other Markets
Supply of Seeds	-	12	-	44
Supply of Fertilizer	-	8	-	-
Supply of Agrochemicals	-	6	-	22
Consultancy	20	8	80	-
Crop loans through bank	-	4	-	12
Crop insurance	-	-	-	-
Market Information	80	62	20	22
Total	100	100	100	100

Source: Survey Data (May to June, 2012)

4.5.1 Benefits/Services Received by the Farmers from the Welfare Fund

The farmers supplying to collection centers had not received any services from the welfare fund so far. According to the key officers of the Cargills PLC, they also revealed that they have not given any kind of services as mentioned in the agreement to the farmers of respective areas. They intend to provide services from the total collection of the fund after a year of establishment of each collection center. They are also willing to intervene in a problem in the areas. In that case, the entire farming community in the area will benefit.

4.5.2 Farmers' View Regarding the Welfare Fund

Most of the beneficiaries of the collection centers (90 percent in WCC and 85 percent in RCC) were not aware of the welfare fund and if such programme is available, they are interested in that.

Table 4.16: Farmers' Awareness of the Welfare Fund

Farmers' Awareness	WCC (% of Farmers)	RCC (% of Farmers)
Yes	10	15
No	90	85
Total	100	100

Source: Survey Data (May to June, 2012)

4.6 Advantages for the Farmers Linked with the Collection Center

Majority of the farmers supplying to both collection centers reported that receiving higher producer prices, reducing transport cost and increased efficiency are the major advantages for farmers linked with the collection centers of supermarkets.

Table 4.17: Advantages for Farmers Linked with the Collection Centers

Advantages	WCC (% of Farmers)	RCC (% of Farmers)
Received high and a reasonable price	45	9
Reduced transport cost	21	31
Able to supply quality products to the market	2	14
Receive payments without delay	8	4
Convenience	6	4
Able to sell even small quantities	3	1
Efficiency is high	10	32
Credibility	5	5
Total	100	100

Source: Survey Data (May to June, 2012)

4.7 Problems Encountered by Farmers Linked with the Collection Centers

It is discovered in the study that the farmers had to face problems when selling vegetables to collection centers of supermarkets and these are indicated in the table 4.18. Majority of the farmers supplying to the collection centers (33 percent) highlighted that as supermarkets order a limited amount of vegetables at a time, they have to find out other source to sell the balance produce and the amount of purchase is not adequate when the production is high. About 25 percent of the farmers pointed out that it is difficult to get an order from the collection centers. Other major problems highlighted by the farmers were (20 percent) selection of vegetables and rejection of vegetables (14 percent) even with slight defects by the collection centers.

Table 4.18: Problems faced by the Farmers

Problems	Percentage of Farmers
Unable to sell a large quantity at a time	33
Difficult to obtain an order	25
Rigorous selection of vegetables	20
Rejection of vegetables	14
Difficult to find another market to sell the rejected items	8
Total	100

Source: Survey Data (May to June, 2012)

4.8 Views of Farmers Supply Vegetables to Other Markets

As given in the table 4.19, 82 percent of farmers in Welimada area were aware about the collecting center, while the majority of farmers (67 percent) in Madulla area were not aware regarding the Ruwalwela collection center.

Table 4.19: Farmers' Awareness about the Collection Center

Awareness	Welimada (% of Farmers)	Madulla (% of Farmers)
Yes	82	33
No	18	67

Source: Survey Data (May to June, 2012)

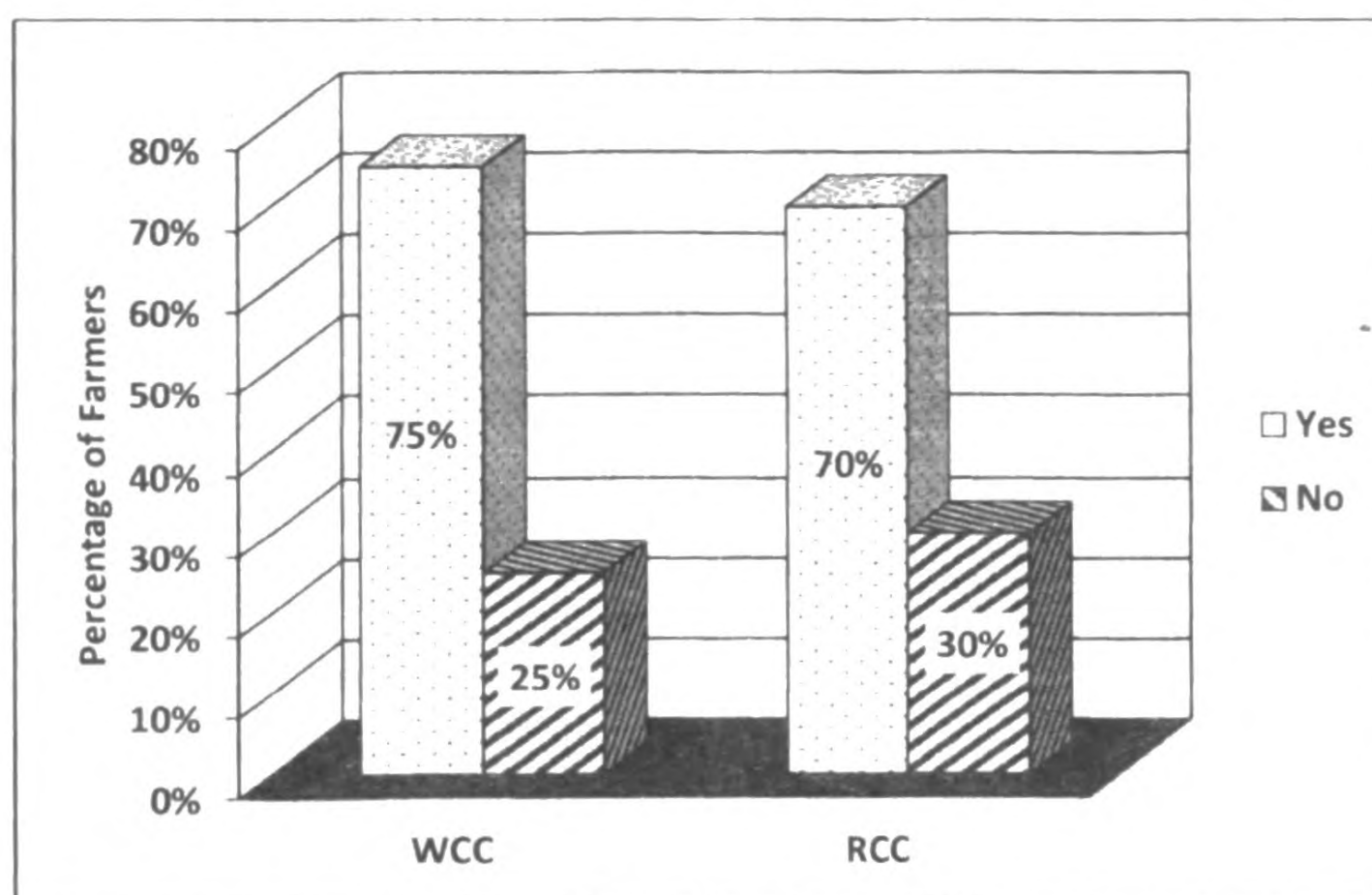
According to the farmers' view those who are not supplying vegetables to both collection centers pointed out that the major reasons of not supplying to those collection centers were unable to sell large quantities at a time and difficult to obtain an order.

Table 4.20: Reasons of not supplying to the Collection Center

Reasons	Welimada (% of Farmers)	Madulla (% of Farmers)
Unable to sell large quantities at a time	35	25
Difficult to obtain an order	30	32
Rejection of vegetables	15	20
Farmers have to bear the transport cost	15	15
Long distance	5	8
Total	100	100

Source: Survey Data (May to June, 2012)

However, most of the non-beneficiaries are willing to supply vegetables to collection centers in future.



Source: Survey Data (May to June, 2012)

Figure 4.2: Willingness of Farmers to Supply Vegetables to the Collection Center in Future

CHAPTER FIVE

Cost Effectiveness of the Vegetable Collection Centers

5.1 Introduction

Cost-effectiveness analysis refers to the consideration of decision alternatives in which both their costs and consequences are taken into account in a systematic way.

5.2 Cost Incurred by DZLiSPP and Cargills

As given in the table 5.1, the initial cost incurred by DZLiSPP project was Rs.7.7mn for both collection centers and Cargills PLC incurred Rs.7.2mn. Both collection centers are managed by the Cargills PLC and they have to bear all the operational cost.

Table 5.1: Cost Associated with Collection Centers

Type of Cost	Cost Component	Wangiyakumbura		Ruwalwela	
		DZLiSPP (Rs.)	Cargills (Rs.)	DZLiSPP (Rs.)	Cargills (Rs.)
Initial Cost	Building construction	4,800,000		2,700,000	
	Office equipment	150,000	325,000		325,000
	Packaging equipment		300,000		300,000
	Other		3,000,000		3,000,000
Sub-total		5,000,000	3,625,000	2,700,000	3,625,000
Monthly Operational Cost	Salaries of the staff				
	- In-charge		17,000		24,000
	- Assistants		11500 * 6 (69,000)		16,000 * 2 450 * 25 (43,250)
	Electricity		2,000		-
	Water		-		-
	Telephone		1,800		1,000- 1,200
Transport Cost (Rs.48/= per km)			280 * 48 * 30 (403,200)		347 * 48 * 25 (416,400)
Sub-total			493,000		484,750

Source: DPMU – Badulla & Moneragala and Cargills PLC

For Wangiyakumbura collection center, the monthly operational cost is Rs.493,000 and for Ruwalwela collection center it is Rs.484,750. The highest cost component is for transport cost which is around Rs.400,000 per month for each collection center. Cargills PLC use 2 hired reefer trucks to transport vegetables from collection centers to the distribution center in Colombo. They charge Rs.48 per kilometer.

5.3 Percentage of Price Increase Compared to Other Markets

Table 5.2 and 5.3 illustrate the prices received by farmers supplying to collection center and other markets for the same categories of vegetables. As illustrated in the table 5.2, the prices received by farmers linked to the collection centers for each type of produce except for orange, baby jak and maize are much higher than the prices received for the same items supplied by farmers linked to other markets in Madulla area. On average, farmers who supply to Ruwalwela collection center received a price that is 51 percent higher than the other markets in the Madulla area. Hence, the benefits for farmers linked with the Ruwalwela collection center was Rs.570,142 in May. However, during the same period, the farmers supplying to Wangiyakumbura collection center received 10 percent lower price on average compared to other markets in the area. In May, generally the prices of vegetables are high. According to the collection center, they pay higher price to farmers during peak supply period when the market prices drop down. Hence, when compared the prices received by Wangiyakumbura farmers in March, 2012 they received 17 percent higher price on average compared to farmers supply to other markets in the Welimada area.

It was observed that the price offered to the farmers by the collection centers of supermarkets is higher than that is offered by the conventional vegetable supply chains in Welimada and Madulla areas. The supermarket purchases only vegetables of superior quality and they have to compete with conventional vegetable supply chains. Therefore, it is essential that the price offered by the supermarket be higher than the price offered by the conventional supply chains in order to stimulate the farmers to sell their harvest to the supermarket.

Table 5.2: Average Prices (Rs/kg) Received by Farmers Supplying to Ruwalwela Collection Center and to Other Markets in Madulla Area (May, 2012)

Vegetable	Ruwalwela Collection Center 1	Other Markets 2	$\frac{1}{2} \times 100$ %
Lime	70.50	45.00	156.67
Seenikesel	23.20	15.67	148.09
Keselmuwa	15.00	10.00	150.00
Ash Plantain	23.60	12.00	196.67
Pumpkin	12.80	11.00	116.36
Thibbatu	100.00	68.00	147.06
Manioc	22.00	16.67	131.97
Water melon	13.00	10.00	130.00
Papaw	27.50	15.00	183.33
Orange	8.97	21.00	42.72
Baby jack	15.00	20.00	75.00
Maize	8.00	25.00	32.00
Average			151.12

Source: Survey Data in May, 2012

Table 5.3: Average Prices (Rs/kg) Received by Farmers Supplying to Wangiyakumbura Collection Center and to Other Markets in Welimada Area (May, 2012)

Vegetable	May, 2012			March, 2012		
	Wangiyakumbura Collection Center 1	Other Markets 2	½*100 %	Wangiyakumbura Collection Center 1	Other Markets 2	½*100 %
Green beans	59.18	77.06	76.80	39.63	33.28	119.09
Tomato	83.16	93.94	92.79	11.29	8.94	126.27
Carrot	47.38	43.25	109.56	38.83	31.75	122.31
Capsicum	86.62	113.94	76.02	78.46	71.78	109.31
Green chillies	62.10	66.75	93.03	40.00	34.06	117.43
Average			89.64			117.06

Source: Survey Data in May, 2012

5.4 Collection of the Welfare Fund

For each kilo of vegetables purchased by a collection center, Cargills PLC contributes 50 cents for the welfare fund. As given in the table 5.4, Wangiyakumbura collection center has purchased a total of 639,918kg of vegetables up to now (from Sep, 2011 to May, 2012). Therefore, the amount of the welfare fund should be Rs.319,959 by the end of May, 2012. According to key officers of Cargills PLC they expect to purchase 1000mt for one year from each collection center according to the demand. As the demand for fresh produce from the supermarkets does not change much, the company does not expect to increase the quantity purchased by the collection centers. If they purchase 1000mt per year, the contribution to the welfare fund will be Rs.500,000 after one year.

Table 5.4: Quantity and Value of Vegetables Purchased by the Wangiyakumbura Collection Center from Sep, 2011 to May, 2012

Month	Value (Rs.)	Quantity (kg)
SEP-2011	3,012,860/=	48,054
OCT-2011	9,895,359/=	149,003
NOV-2011	5,327,488/=	68,576
DEC-2011	3,637,457/=	40,068
JAN-2012	3,673,948/=	40,195
FEB-2012	3,942,433/=	83,877
MAR-2012	5,385,316/=	111,299
APR-2012	2,953,418/=	51,432
MAY-2012	3,934,574/=	47,413
Total	41,762,854/=	639,919
Amount of the welfare fund		Rs.319,959/=

Source: Cargills PLC

As given in the table 5.5, the Ruwalwela collection center has purchased a total of 227,317kg of vegetables up to now (from Jan, 2012 to May, 2012). Therefore, the amount of the welfare fund should be Rs.113,658 by the end of May, 2012.

Table 5.5: Quantity and Value of Vegetables Purchased by the Ruwalwela Collection Center from Jan, 2011 to May, 2012

Month	Value (Rs.)	Quantity (kg)
JAN-2012	900,746/=	24,260
FEB-2012	974,428/=	34,032
MAR-2012	1,325,632/=	53,434
APR-2012	1,748,044/=	55,623
MAY-2012	1,988,321/=	59,968
Total	6,937,171/=	227,317
Amount of the welfare fund		Rs.113,658/=

Source: Cargills PLC

5.5 Benefits Received from the Welfare fund

So far, there is no fund allocated or maintained as the welfare fund. Hence, none of the beneficiaries have received benefits from the welfare fund. According to the officers of Cargills PLC, after one year progress of each collection center they expect Rs.1 million allocations for the welfare fund.

Similar to the public-private partnership with Cargills PLC and IFAD, Cargills PLC with World Vision has established two vegetable collecting centers in Manpuri, Puttalam and Thanamalvila linking up small scale farmer associations with Cargills to sell their harvest. The Gangeyaya Farmers Association, the main farmer association supplying vegetables to the collecting center in Thanamalvila receives 50 cents from Cargills for every kilo of vegetables processed, which is channeled to a special community welfare fund. It commenced in April 2008 at Gangayaya. This fund is used to provide scholarships to needy children from the community, provide resources for learning and advancement and to meet basic community infrastructure needs such as utility connections, community centres, libraries etc. Cargills (Ceylon) PLC through its farmer community development fund contributed Rs.1.278 million to the community. Annually, the funds are utilized for scholarships and projects that would develop the quality of life of this community.

5.6 Financial Analysis

Cost benefit analysis was carried out only to Ruwalwela collection center for the month of May. As the farmers received high prices for their products compared to other markets in the area, the net benefit for farmers was calculated for a month. For this calculation daily quantity purchased, prices paid by the collection center for each item and daily prices for each item in the other market areas were used. As the daily quantities purchased for the total period (Jan. to May) by the Ruwalwela collection center were not available, the cost benefit analysis could not be calculated

for the entire period of operation. Similarly, as the daily quantity purchased and prices paid by the Wangiyakumbura collection center were not available, the cost benefit analysis could not be calculated for the Wangiyakumbura collection center. Hence, the Net benefit for farmers by selling vegetables to Ruwalwela collection center was calculated as follows;

$$\text{Benefit/month} = \sum_{i=1}^n Q_i (P_c - P_n) + Q_2 (P_c - P_n) + \dots + Q_n (P_c - P_n)$$

I = Types of vegetables (lime, seeni banana, *keselmuwa*, ambul banana, orange, ash plantain, baby jak, pumpkin, *thibbatu*, maize, manioc, water melon, sweet potato and papaw)

Q = Quantity of each type of vegetables purchased per day

P_c = Price paid by the collection for each type of vegetables

P_n = Prices for the same varieties in the other markets in the area

Hence, the benefits for farmers linked with the Ruwalwela collection center was Rs.570,142 in May (Annex 1).

CHAPTER SIX

Conclusions and Recommendations

6.1 Introduction

The marketing component of the DZLiSPP project is aimed at solving the marketing issues such as uncertainty and unpredictability of agricultural products and seasonal fluctuations of prices that discourage prices in harvesting. Hence, one of the approaches of DZLiSPP was to build linkages with the producer and the buyers and they have established two vegetables collection centers at Wangiyakumbura and Ruwalwela as a public-private partnership programme with Cargills PLC. This partnership is expected to help increase the farmgate price for farmers, better market access, reduce the involvement of intermediaries, and provide training facilities for farmers thereby improving their standards of living. Further, the farmers are benefit from the welfare fund. The benefits for the company are to access quality farm produce, facilitate direct purchase and reduce transaction cost. Both these collection centers have been established recently about less than a year. Economic and financial viability of a project can be assessed only after a certain period of time. Therefore, in this study the achievements of the project objectives were assessed on the basis of short and medium terms. In the evaluation of collection centers it is important to use the lessons from past experiences. These provide valuable insights to the ongoing within a local context and in identifying possible pitfalls. The findings of the study and the recommendations for future interventions are summarized in this chapter.

6.2 General Observations

Direct purchase from the farmers permits more rapid movement of produce from the farm. Supermarkets are competing to adopt a range of management strategies to offer superior quality products, a wider choice, reduced wastage, greater value for money and shorter and more effective supply chains.

Collection centers should be located near the farmers pocket area where all agricultural produce can easily be transported. Both collection centers are well located with enough space and equipped with essential facilities for a collection center.

At present both collection centers procure only around 2,500 -3,000kg of vegetables per day by each centre and they do not utilize the total capacity of the collection center. Wangiyakumbura collection center has a large space even to absorb 10,000-12,000kg per day and Ruwalwela collection center has space to absorb 6,000-9,000kg per day.

About 82 percent farmers in Wangiyakumbura and 78 percent farmers in Ruwalwela bring vegetables to the collection centers from a distance less than 5km. It means

most of the sample farmers can transport their vegetables easily and faster to the collection centers and they also can minimize the losses of vegetables when transporting.

Up to May, 2012, the Wangiyakumbura collection center had purchased a total of 639,918kg of vegetables (Sep, 2011 to May, 2012) and the Ruwalwela collection center had purchased 227,317kg of vegetables (Jan, 2012 to May, 2012). Therefore, the amount of the welfare fund should be Rs.319,959 and Rs.113,658 for both collection centers respectively. Cargills PLC expects to purchase 1000mt for one year from each collection center according to the demand. As the demand for the fresh produce from the supermarkets does not change much, the company purchases only the required quantity. If they purchase 1000mt annually the contribution to the welfare fund is Rs.500,000 per year for one collection center. However, there is no fund allocated or maintained as the welfare fund so far. Hence, none of the beneficiaries has received benefits from the welfare fund.

Though, the project target was 500-750 beneficiaries in Wangiyakumbura collection center and 800-1000 beneficiaries in Ruwalwela collection center, only 200 and 250 farmers benefited from both collection centers respectively up to now.

About 78 percent of farmers supplying to Wangiyakumbura collection center and 66 percent farmers supplying to Ruwalwela collection center had selected collection centers to sell their vegetables due to higher producer price, convenience of selling and credibility.

Most of the beneficiaries were not aware of the welfare fund and if such programme is available, they are interested to be part of.

Majority of the farmers supplying to both collection centers reported that receiving higher prices, reducing transport cost and increase in efficiency are the major advantages for farmers linked with the collection centers of supermarkets.

Though the Wangiyakumbura collection center was established 7 months ago, the steering committee was appointed recently and only two meetings were conducted. However, the steering committee for Ruwalwela collection center was established within 2 months of opening of the collection center and they have conducted 2 meetings a month. However, still there is no collection of the welfare fund by both collection centers and the committees are expecting feedback from the Cargills Company. Further, the committees did not receive the daily prices of the vegetables collected by each collection centers. As the committee has to supervise the activities of the collection center, they needed the purchasing prices of all the items collected daily to ensure that the collecting center pays a higher price compared to other markets.

6.2.1 Positive Impacts

Majority of the farmers linked with collection centers are satisfied with the prices they received and they were paid on the day of selling. This shows that collecting centers are reliable with respect to their terms of payment.

In Madulla area, as the other markets (Dambagalla and Mariarawapola) function only 3 days (Wednesday, Saturday and Tuesday) per week, the farmers linked with the Ruwalwela collection center have better advantage of supplying vegetables 6 days per week.

On average farmers supplying to Ruwalwela collection center received a higher price which is 50 percent higher than the other markets in the Madulla area (In May, 2012). Hence, the benefits for farmers linked with the Ruwalwela collection center was Rs.570,142 in May. However, during the same period, the farmers supplying to Wangiyakumbura collection center received 10 percent lower price on average compared to other markets in the area. In May, generally the prices of vegetables are high. According to collection centers, they pay higher price for farmers during peak supply period when the market prices drop. Hence, when compared the prices received by Wangiyakumbura farmers received 17 percent higher price on average in March, 2012 compared to farmers supply to other markets in the Welimada area within the same period.

6.2.2 Negative Impacts

Majority of farmers who sell vegetables to the collection center is not able to sell the total production to the collection center as they purchase a limited amount according to the requirement. About 35 percent farmers linked to Wangiyakumbura collecting center sold only 30-50% of their total production while 54 percent of farmers linked to Ruwalwela collection center sold 50-90% of their production to the collection center. However, with the establishment of Wangiyakumbura collection center farmers cultivating expensive types of vegetables and poly-tunneled vegetables (bell pepper, salad cucumber, red cabbage, celery, beef tomato etc) were able to sell 90-100% of their production to Wangiyakumbura collection center. Similarly, farmers who cultivate lime, *keslemuwa*, *thibbatu*, baby jak and the like were also able to sell 90-100% of their production to Ruwalwela collection center.

The collection centers reject vegetables which are not up to the required standards. Standards which were to follow by them were; vegetables should be free of pest and disease attacks, free of damages, have precise shape and colour, precise weight and volume and should be at correct maturity stage. About 58 percent farmers supply to Wangiyakumbura collection center reported that nearly 5-10% of vegetables were rejected each time. Further, 35 percent farmers supplying to Ruwalwela collection center reported that it was less than 5%. When the amount of rejection is high the farmers have to look for other ways to sell the rejected products. With the experience gained about the required quality demanded by the supermarkets,

farmers sort out vegetables at the field before sending to the collection center and this resulted in lower rejection rate at both collection centers.

According to the agreement between DZLiSPP and Cargills PLC, the collection center is responsible of collecting vegetables, given advice to farmers to cultivate, supply seeds when needed and, providing daily prices of vegetables. However, this study found that none of the collection centers provided those services to farmers. At the beginning of the project, Cargills PLC promised to appoint a qualified agricultural officer to each collection center to assist farmers to facilitate year-round cultivation. However, such activities were not undertaken so far. Moreover, the daily market prices of vegetables were not displayed at the collection center and farmers didn't receive assistance for input supply etc. According to the agreement, the collection centers have to provide knowledge for farmers on post-harvest technology, grading of vegetables and provide training facilities for farmers linked with collection centers. However, notable proportion of (87.5 percent) beneficiaries has not received any benefits from the collection center other than a higher producer price. Further, none of the farmers had received training from the collection centers.

6.3 Conclusions

This partnership is able to help increase the farmgate price for farmers, better market access and reduce involvement of intermediaries. The producers become more knowledgeable about the market and are less at the mercy of market forces. For the producer, the mere availability of an additional market outlet may be an advantage, making possible greater flexibility and enabling him to spread his risk wider.

Farmers' capacity for quality production has improved. However, so far only a few farmers in the Welimada and Madulla areas have benefited. As the collection centers procure less quantity the farmers still continue to depend on other markets.

There are positive and negative impacts for farmers with this partnership programme. Positive impacts are; provide assured market, reduce price risk, no middlemen, no illegal deductions, receive higher price, reduce transport cost, credibility and reliable in terms of payments. Negative impacts are; procurement of limited quantities, high quality standards demanded by them resulting in rejection, difficult to get an order and no benefits/services.

Cargills supermarket chain is able to access quality products, continuity of supply and direct purchase from the farmers permitting more rapid movement of produce from the farm.

6.4 Recommendations

Sustainability of a vegetable collection center depends on several conditions. Effective functioning of the welfare fund is significant among them. However, currently it is unsatisfactory. Therefore, it needs to maintain its transparency as it

will encourage the farmers and the activities of the collection centers will be effective, thereby this model will survive longer. Hence, for steering committees the active involvement of an officer of Cargills PLC is essential since their contribution was low so far. They should contribute to this fund monthly for an account of the committee.

As the committee has to supervise the activities of these collection centers in order to ensure that the collection centers pay a higher price compared to other markets, collection centers should provide daily prices of each item to the DS/or the committees of respective areas.

At present, the quantity purchased is limited compared to other markets and both collection centers have greater capacity to absorb larger quantities. Therefore, the quantity purchased should be increased. If not, the additional space could be provided to be utilized as a collection center for exporters (Wangiyakumbura).

At the collection centers, it is important to keep the records of beneficiaries.

Collection centers should provide services according to the agreement and Cargills needs to do more if they are keen on expanding operations. This would involve recruiting more technically-trained staff, improving farm advisory services and designing specific educational programmes on quality production.

Farmers are willing to supply to these collection centers in future and hence, there is a scope for possible improvement.

For both collection centers, water facilities are not available and to Ruwalwela collection center, electricity facilities are not available. Therefore, such facilities should be provided by the IFAD project or by Cargills PLC.

Public authorities must provide a policy environment that promotes mutually beneficial partnerships between supermarkets and small producers and a legal framework that protects the economic interests of the parties. They also have a role in the development of infrastructure which meets the needs of small producers operating within the supermarket supply chains, particularly whilst the private sector capacity develops.

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Appendix 1:

Daily Purchased Quantity (kg), Price Paid by the Collection Center and Prices Prevailed at the Other Markets in May (Ruwalwela Collection Center)

Types of Vegetables	1/5/2012			2/5/2012			3/5/2012			4/5/2012			6/5/2012			7/5/2012		
	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP
Lime	540	50	40	500	55	40	195	55	40	348	60	40	255	60	40	226	60	40
Seeni kesel	412	25	10	343	25	10	348	25	10	463	25	10	405	25	12	346	25	10
Keselmuwa	166	15	10	135	15	10	191	15	10	225	15	10	189	15	10	140	15	10
Embul banana	8	35	10							10	35	10	14.5	35	10	9	35	10
Orange	17	70	20	12.5	70	20	20	70	20							5	70	15
Ash plantain	22.5	24	10	5.5	24	10	21	24	10	7	24	10	30	24	10			
Baby jak	62	15	20	40	15	20	9	15	20	119	15	20	56	15	20	53	15	20
Pumpkin	948	12	10	1531	12	10	1750	12	10	1920	12	10				89	12	10
Thibbatu	8	100	65	16	100	65	4	100	60				2	100	65			
Maize	150	8		200	8		223	8					168	8		115	8	
Manioc	235	22	15	60	22	15	52	22	15	73	22					52	22	15
Water melon	898	13	10	356	13	10	1189	13	10	1585	13	10	809	13	10			
Sweet potato	37.5	35	15							44	35	15	20	35	15			
Papaw																		

Source: Survey Data

Quantity and CP (Price paid by the Collection Center) – Ruwalwela Collection Center

NP (Prices prevailed at Dambagallapola)

Appendix 1 (Contd.):

Daily Purchased Quantity (kg), Price Paid by the Collection Center and Prices Prevailed at the Other Markets in May (Ruwalwela Collection Center)

Types of Vegetables	8/5/2012			9/5/2012			10/5/2012			11/5/2012			12/5/2012			14/5/2012			
	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	
Lime	695	70	40				695	70	40										
Seenikesel	420	25	12	389	25	15	420	25	12	389	25	15	420	25	12	389	25	15	15
Keselmuwa	150	15	10	82	15	10	150	15	10	82	15	10	150	15	10	82	15	10	10
Embul																			
banana	43	35	10	45	35	15	43	35	10	45	35	15	43	35	10	45	35	15	15
Orange																			
Ash plantain				65	24	15				65	24	15				65	24	15	15
Baby jak	57.5	15	20	52	15	20	57.5	15	20	52	15	20	57.5	15	20	52	15	20	20
Pumpkin	41	12	10	1618	12	10	41	12	10	1618	12	10	41	12	10	1618	12	10	10
Thibbatu	38	100	60	17	100	70	38	100	60	17	100	70	38	100	60	17	100	70	70
Maize	188	8		142	8		188	8		142	8		188	8		142	8		
Manioc	64	22	20	77	22	20	64	22	20	77	22	20	64	22	20	77	22	20	20
Water melon	204	13	10	1013	13	10	204	13	10	1013	13	10	204	13	10	1013	13	10	10
Sweet potato	5	35	15	42.5	35	15	5	35	15	42.5	35	15	5	35	15	42.5	35	15	15
Papaw	56	30	20	15	30	20	56	30	20	15	30	20	56	30	20	15	30	20	20

Source: Survey Data

Quantity and CP (Price paid by the Collection Center) – Ruwalwela Collection Center

NP (Prices prevailed at Dambagallapola)

Appendix 1 (Contd.):

Daily Purchased Quantity (kg), Price Paid by the Collection Center and Prices Prevailed at the Other Markets in May (Ruwalwela Collection Center)

Types of Vegetables	15/5/2012			16/5/2012			17/5/2012			18/5/2012			19/5/2012			20/5/2012		
	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP
Lime	489	70	40	451	70	40	489	70	40	451	70	40	489	70	40	451	70	40
Seenikesel	427	25	15	380	25	12	427	25	15	380	25	12	427	25	15	380	25	12
Keselmuwa	367	15	10	125	15	10	367	15	10	125	15	10	367	15	10	125	15	10
Embul banana	16.5	35	15				16.5	35	15				16.5	35	15			
Orange	7	70	25	2.5	70	15	7	70	25	2.5	70	15	7	70	25	2.5	70	15
Ash plantain	13.5	24	15	20.5	24	15	13.5	24	15	20.5	24	15	13.5	24	15	20.5	24	15
Baby jak	73	15	20	52	15	20	73	15	20	52	15	20	73	15	20	52	15	20
Pumpkin	37.8	12	10	280	12	10	37.8	12	10	280	12	10	37.8	12	10	280	12	10
Thibbatu	21	100	70	6	100	65	21	100	70	6	100	65	21	100	70	6	100	65
Maize	166	8		50	8		166	8		50	8		166	8		50	8	
Manioc	74.5	22	15	60	22	15	74.5	22	15	60	22	15	74.5	22	15	60	22	15
Water melon				726	13	10				726	13	10				726	13	10
Sweet potato	64	35	15	10	35	10	64	35	15	10	35	10	64	35	15	10	35	10
Papaw	149	25	15				149	25	15				149	25	15			

Source: Survey Data

Quantity and CP (Price paid by the Collection Center) – Ruwalwela Collection Center

NP (Prices prevailed at Dambagallapola)

Appendix 1 (Contd.):

Daily Purchased Quantity (kg), Price Paid by the Collection Center and Prices Prevailed at the Other Markets in May (Ruwalwela Collection Center)

Types of Vegetables	22/5/2012			23/5/2012			24/5/2012			25/5/2012			26/5/2012			28/5/2012		
	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP
Lime	605	80	60	630	80	50	605	80	60	630	80	50	605	80	60	630	80	50
Seenikesel	409	20	12	346	20	12	409	20	12	346	20	12	409	20	12	346	20	12
Keselmuwa	272	15	10	69	15	10	272	15	10	69	15	10	272	15	10	69	15	10
Embul																		
banana	29	35	15				29	35	15				29	35	15			
Orange	9	70	25				9	70	25				9	70	25			
Ash plantain	36	24	15	34	22	15	36	24	15	34	22	15	36	24	15	34	22	15
Baby jak	55	15	20	51	15	20	55	15	20	51	15	20	55	15	20	51	15	20
Pumpkin	1246	12	10	197	16	15	1246	12	10	197	16	15	1246	12	10	197	16	15
Thibbatu	58	100	70	45	100	75	58	100	70	45	100	75	58	100	70	45	100	75
Maize																		
Manioc	38	22	15				38	22	15				38	22	15			
Water melon																		
Sweet potato	15	35	15				15	35	15				15	35	15			
Papaw	5.5	25	20				5.5	25	20				5.5	25	20			

Source: Survey Data

Quantity and CP (Price paid by the Collection Center) – Ruwalwela Collection Center
NP (Prices prevailed at Dambagallapola)

Appendix 1 (Contd.):

Daily Purchased Quantity (kg), Price Paid by the Collection Center and Prices Prevailed at the Other Markets in May (Ruwalwela Collection Center)

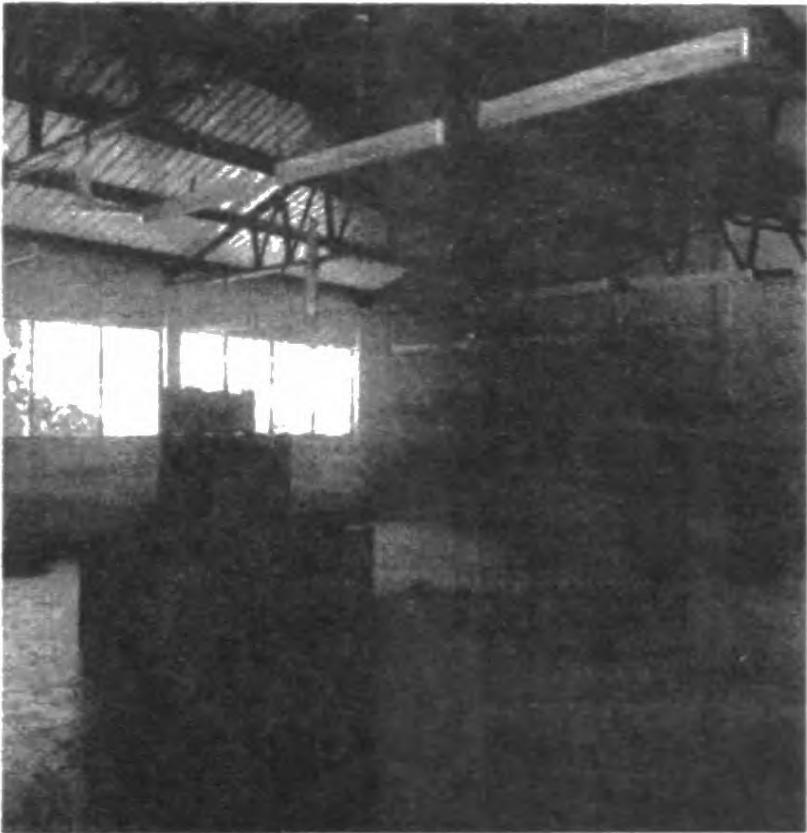
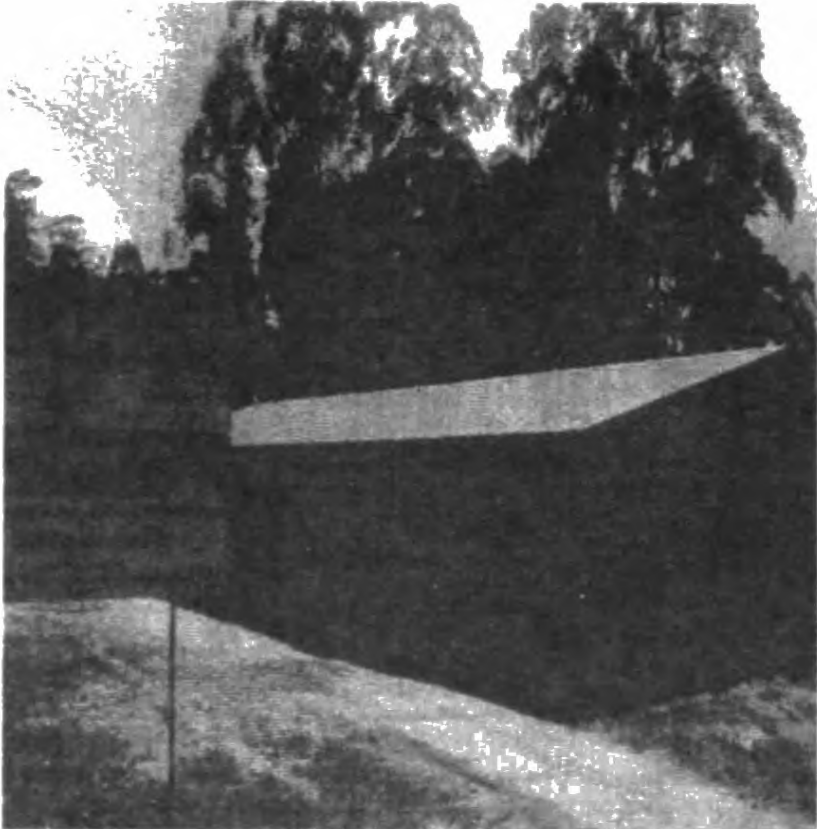
Types of Vegetables	29/5/2012			30/5/2012			31/5/2012		
	Qty	CP	NP	Qty	CP	NP	Qty	CP	NP
Lime	698	80	50	698	80	50	698	80	50
Seenikesel	366	20	15	366	20	15	366	20	15
Keselmuwa	280	15	10	280	15	10	280	15	10
Embul banana	26	35	15	26	35	15	26	35	15
Orange									
Ash plantain	16.5	22	10	16.5	22	10	16.5	22	10
Baby jack	23	15	20	23	15	20	23	15	20
Pumpkin	76	16	15	76	16	15	76	16	15
Thibbatu	30.5	100	75	30.5	100	75	30.5	100	75
Maize									
Manioc	43	22	20	43	22	20	43	22	20
Water melon									
Sweet potato									
Papaw									

Source: Survey Data

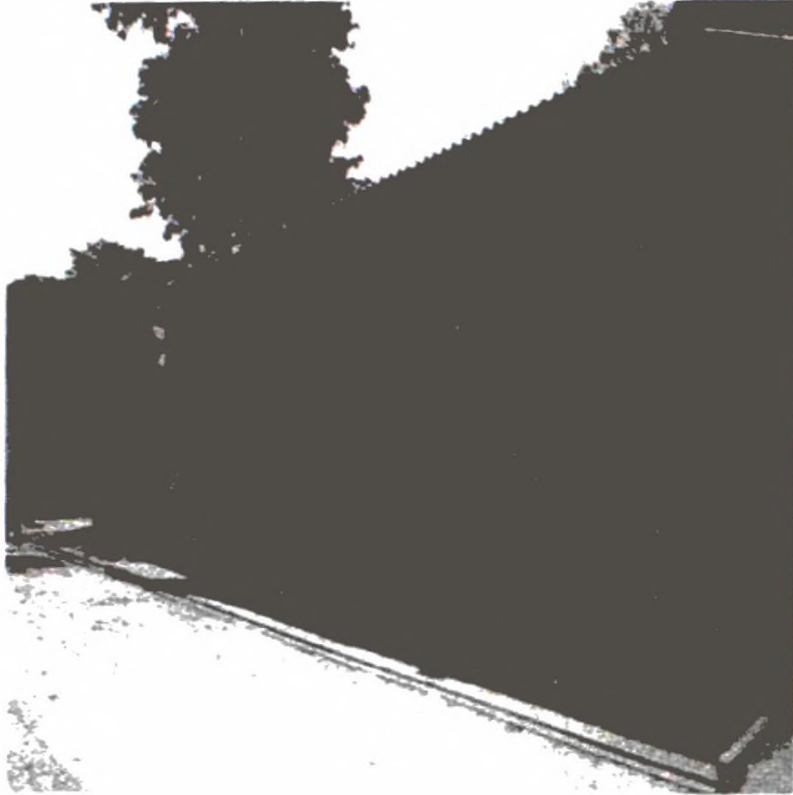
Quantity and CP (Price paid by the Collection Center) – Ruwalwela Collection Center

NP (Prices prevailed at Dambagallapola)

Appendix 2: Images of Wangiyakumbura Collection Center



Appendix 3: Images of Ruwalwela Collection Center



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