

Production and Marketing of Other Field Crops: A Review

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FOREWORD

The cereals such as finger millet, maize and sorghum, pulses like green gram, cowpea, black gram and kollu and yams such as manioc, sweet potato, innala and different types of local yams were popular among farmers. This multi cropping system helped a lot to small farmers for their subsistence and for earning an additional income. Therefore, the cereals, pulses and local yams assured the food security of the rural sector. The small farmers mainly in the dry zone cultivate cereals and pulses as rain fed crops in the highlands. About a few decades ago many crops were introduced in the country as cash crops. These field crops are chillies, big onion, red onion, potato, cowpea, green gram, black gram, groundnut, gingelly and maize. Under the liberalization of economy in 1977 the farmers tried to practice commercial farming system instead of subsistence farming system. Since then production of other field crops has drastically decreased due to many reasons. To satisfy the consumer needs and demand of the agribusiness/processing industry most of these commodities have been imported. The increasing trend of imports showed that there is a demand for quality produce.

The production of other field crops has declined considerably during last two decades and to accomplish the demand wheat grain and wheat flour and some of the cereals and pulses have been imported considerably. The foreign expenditure for this sector has also increased while decreasing the farm income as well as food security nutritionally. Hence this study was conducted to ascertain the reasons of declining the cultivation of these crops and study the marketing problems in this sector.

The study reveals that cultivated extent of most of the crops had declined. Maize cultivation has increased sharply as a result of Forward Contracts made by the private companies and as a result farmers cultivate maize as a mono crop. Therefore food commodities such as green gram, cowpea and finger millet are scarce in the farm households. The private sector is engaged in seed industry but new improved varieties of pulses and cereals were not available with them. The private sector has faced problems related to import of those seeds due to the rules and regulations imposed by the government and also due to the procedural delays. Farmers are willing to cultivate high value crops such as green gram, cowpea, big onion and black gram and they were facing problems in finding good quality seeds. Therefore attention should be paid for research and extension service to supply better quality seeds. The imports showed that the demand has increased especially in the urban areas. The support should be given to the local farmers to improve the quality of these products because they are not aware of the Sri Lanka standards.

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Mr. Lalith Kantha Jayasekara
Director

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EXECUTIVE SUMMARY

The cultivated extent and production of other field crops has declined considerably during the last two decades and to fill the vacuum wheat grain and wheat flour and some of the cereals and pulses have been imported considerably. The foreign expenditure on imports has also increased and the farm incomes as well as levels of food security have decreased. Hence this study was conducted in order to ascertain the reasons for the decline of the cultivation of other field crops and to find out whether marketing problems have affected this decline.

The study has confirmed that cultivated extent of most of the other field crops had declined. Only due to various government sector programmes some of these crops have been cultivated by the farmers. Both big onion and potato cultivation was protected by import tariffs. Maize cultivation has increased sharply as a result of Forward Contracts made by the private companies. Therefore farmers cultivate maize as a mono crop. Food commodities such as green gram, cowpea and finger millet are scarce in the farm households. The private sector is engaged in seed industry but new improved varieties of pulses and cereals were not available with them. The private sector has faced problems related to import of those seeds due to the rules and regulations imposed by the government and also the procedural delays.

The main problem faced by the farmers is non availability of good quality seeds. They have experienced that imported commodities have good demand compared to their products. But they are willing to cultivate high value crops such as green gram, cowpea, big onion and black gram and therefore attention should be paid for research and extension service to supply better quality seeds.

The cropping pattern has changed because farmers are market oriented. They shift from one crop to another according to the shifting market prices. To meet the gap between domestic supply and demand most of these commodities have been imported. The quality of the imported items is very high. The demand has increased for imports to meet the requirements of urban consumers as well as processors. Support should be given to the local farmers to improve the quality of their products and make them aware of the Sri Lanka standards.

Farmers cultivate new crops due to many reasons such as higher yield, higher price, easy cultivation, low cost and low pest attacks. The cultivation of other field crops has decreased due to many reasons such as yield decrease, increased vulnerability to pests and diseases, low producer prices, lack of quality seeds and lack of capital.

The producer's share of retail price for big onion and red onion was about 65 – 70 percent while that of many of the other commodities was about 50-60 percent. Compared to the investment period this is reasonable. Main problem is that the farmers cannot compete with the quality of the imported commodities. The system of price interventions for important other food crops must continue in the short run with special attention given to the needs of the society. The prices should provide incentives for quality and efficiency. When the protective measures are taken special attention should be placed on surplus generating areas as well as on quality concerns of farmers.

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ABBREVIATIONS

WTO	World Trade Organization
IPS	Institute of Policy Studies
MFPAD	Marketing Food Policy and Agribusiness Division
HARTI	Hector Kobbekaduwa Agrarian Research and Training Institute
CWE	Cooperative Wholesale Establishment
WHO	World Health Organization
FAO	Food and Agriculture Organization

CHAPTER ONE

Introduction

1.1 Background

Though the Sri Lankan staple food continued to be rice, both the urban and rural sector people in the past cultivated cereals, pulses and yams as substitute food as well as to obtain an additional income. The rural people used to utilize one of those substitutes as a main food for their breakfast. Such substitute food provided the basic nutrients needed for a healthy living. The cereals such as finger millet, maize and sorghum, pulses like green gram, cowpea, black gram and kollu and yams such as manioc, sweet potato and innala were also used as a substitute for rice or main meal. Multi cropping system helped the farmers consistently for sustenance and for earning an additional income. Therefore, the cereals, pulses and local yams assured the food security of the rural sector.

Since independence successive governments had given priority for paddy cultivation and provided incentives to achieve self-sufficiency goal. The National Policy Framework (NPF) prepared by the Ministry of Agriculture and Lands in 1995 selected priority areas to improve the economic performance of the non plantation agricultural sector. The selected priority areas were (a) provision of high quality seeds and planting materials, (b) streamlining the agricultural extension services and (c) assisting an integrated approach by private sector and non governmental organizations in developing the agricultural sector. The government support also was provided to achieve the objectives. The National Policy Framework did not focus on a long term vision for this sector considering the future changes in policy environments such as globalization and regional trading arrangements (Gunawardena & Somaratne: 1999).

In the national agricultural Policy framework of 2003-2010 and Mahinda Chinthana, a ten year horizon development framework 2006 -2016, also gave special preference to the paddy sector. This measure has badly affected the other field crop sector and as a result the extent cultivated and local production of other field crops have declined considerably. However it should be noted that special preference has been given to crops such as big onion, potatoes and chillies in the Mahinda Chinthana ten year horizon development framework 2006 -2016 which says,

“With the emphasis on the promotion of the domestic food production, Subsidiary food crop sector also benefited from government investment on irrigation schemes, subsidized inputs, concessionary bank credits and tariff protection or import restrictions aimed at maintaining domestic market prices above competitive world prices. The imposition Rs.20.00/kg on big onion, Rs.30.00/kg on chillies and Rs.20.00/kg on potato has resulted in a price advantage for the local farmers.”

The small farmers mainly in the dry zone cultivate cereals and pulses as rain fed crops in the highlands. About a few decades ago many other crops were introduced to the country as cash crops. The field crops are chillies, big onion, red onion, potato, cowpea, green

gram, black gram, groundnut, gingerly and maize. Under the liberalization of economy in 1977 the farmers tried to practice commercial farming system instead of subsistence farming system. As a result, the consumers were able to purchase some quality products at cheaper prices. On the other hand, production of some of the field crops has drastically decreased due to many reasons. To satisfy the consumer needs and demand of the agribusiness/processing industry most of these commodities have been imported. The increasing trend of imports has shown that there is a demand for quality products.

The local farmers were unable to produce many of these crops to compete with the imports because of the low productivity and poor quality. The Department of Agriculture produced new improved varieties of other field crops and those are not sufficient to meet the requirement. The extension programmes for the expansion of cultivation and the improvement of quality of these crops were unable to bring the expected results. The processing and post harvest technologies were introduced by the Institute of Post Harvest Technology. But still the cultivation of pulses has not increased. There is a demand for high yielding varieties of other field crops. Private sector seed companies import quality seeds of some of the field crops such as big onion, potato, chillies and maize.

The policymakers emphasized the importance of this sector from time to time. But attention has been changed according to the policies of governing parties at a particular time. Therefore it was decided that an analysis should be done according to the state policy interventions under each regime. Domestic production of other field crop development programme was essential to enhance farm income as well as food security. The programs were implemented in the past two decades to encourage local food consumption through providing lunch for school children. But these programs were not successful due to various reasons. Most of the local farmers do not consider the consumer need and the international standard of these crops. Hence they cannot compete with the imported items. At present demand for most of these crops is met by imports. This has adversely affected agricultural development. Therefore, it is needed to enhance domestic production programs for this sector to satisfy the demand and consequently increase the farm income by using neglected resources.

1.2 Problem

The production of other field crops has declined considerably during the last two decades. On the other hand to accomplish the demand, wheat grain and flour and some of the cereals and pulses have been imported considerably. The foreign expenditure for this sector has also increased while decreasing the farm income, food security as well as nutritional status of the consumers. Some of the imported food items can be cultivated in the country in the yala season in land where paddy is not cultivated at a low cost.

1.3 Objectives

The major objective of the study is to ascertain the reasons for the decline of the cultivation of other field crops and study the marketing problems in this sector. The other objectives are:

1. To review the past trends and present situation of the production and demand
2. To study the potential for expansion of production
3. To find out the constraints for expansion of quality products
4. To understand food insecurity in the agrarian sector
5. To study the farmers' adaptation to new technologies in cultivation, processing and marketing
6. To analyze the market margins
7. To suggest policy measures for the development of the other field crop sector.

1.4 Methodology

For this survey, cereals, pulses, oil seeds, cash crops and yams were selected as other field crops. Crops such as finger millet, maize, green gram, black gram, cowpea, soy bean, gingerly, groundnut, chillies, big onion, red onion, potato, manioc, sweet potato and innala were considered as other field crops.

Primary data was collected by using a questionnaire survey. The Rapid Appraisal Technique was used to collect data and information from market participants, key informants in the field level and officials of the relevant departments and authorities. Primary data was collected during yala 2007 and maha 2007/08. The secondary data was helped in analyzing the production trends and marketing margins of other field crops.

10 districts were selected to collect information by analyzing the secondary data on the extent and production. These are Anuradhapura, Kurunegala, Moneragala, Hambantota, Badulla, Nuwara Eliya, Gampaha, Matale, Ratnapura and Puttalam. At least two crops were selected in each district and about 60 farmers in each district were chosen from two agrarian development centre areas according to the extent cultivated. In each agrarian development centre area two Grama Niladhari divisions were selected under the same criteria. Accordingly 646 farmers were included for the sample. During the period of the field survey due to unavoidable circumstances researchers were unable to visit the selected ASC areas in Moneragala district.

Based on the multi stage sampling technique ASCs, G N Divisions and the farmers were selected for the sample survey. The selection of the highest cultivated areas was by using the available lists in the Agrarian Service Centres and the discussions with the relevant field level officers such as Divisional Officers and Agricultural Instructors. The list available with the AR&PA was used to select the farmers randomly. The detailed table is as follows.

Table 1: Selected Districts for the Sample Survey

District	Maize	Black gram	Gingelly	Cowpea	Green gram	Soya bean	Red Onion	Big onion	Chillies	Potato	Groundnut	Manioc	Sweet potato	Innala
Anuradhapura	*	*	*											
Ampara	*			*										
Mahaweli H						*								
Matale								*					*	
Puttalam							*		*		*			
Hambantota			*		*									
Kurunegala					*									*
Gampaha												*		
Nuwara Eliya										*				
Badulla	*									*				
Ratnapura													*	*
Moneragala		*	*		*									

Table 2: Detailed Sample Frame

Districts	ASCs	G.N Divisions	No. of Farmers	Total No. of Farmers
Anuradhapura	Galenbindunuwewa	Kudagalenbindunuwewa	33	66
	Elayapaththuwa	Ehatuwewa	33	
Ampara	Mahaoya	Bedirakka	29	60
	Padiyathalawa	Keerawana	31	
Mahaweli H	Madatugama	Pallegama	26	59
	Galnewa	Midellewa	33	
Matale	Dambulla	Wewalawewa	24	48
	Dambulla	Athuparayaya	24	
Puttalam	Palakuda	Eththale	33	65
	Anamaduwa	wedaththa	32	
Hambantota	Weerawila	Mihindupura	31	62
	Bandagiriya	Kaliyapura	31	
Kurunegala	Rambe	Pothuwila	33	64
	Kobeigane	Hathalawa	31	
Gampaha	Weke	Diyawala	20	42
	Urapola	Bopegama	22	
Nuwara Eliya	Kandapola	Jayalankagama	19	49
	NuwaraEliya	Meepilimana	30	
Badulla	Keppetipola	Girambe	32	63
	Redeemaliyadda	Kirigallanda	31	
Ratnapura	Ambewila	Badullegama	31	58
	Godakawela	Koanpitiya	27	
Moneragala	Buttala	Gonagan Ara	21	44
	Athimale	Kotiyagala	23	

CHAPTER TWO

Review of Major Policies on Other Field Crops Sector

2.1 Introduction

Sri Lanka's per capita Gross Domestic Product (GDP) grew by 2.3% between 1965 and 1977, while the rate for other low-income Asian countries was 1.4 percent and for the East Asian countries was at 5.4 percent. It was in this context of low growth, particularly in comparison with East Asia, that the government favored economic and trade liberalization to foster economic development. With socio-political acceptance of this policy framework, the economy has been liberalized in many stages over the last 30 years commencing from 1977. According to the data available with the Department of Census and Statistics, the agriculture sector is still a significant determinant of national GDP and of provincial GDP because this sector still employs more than 35% of total labour force at national level.

Non-plantation agriculture is the major economic activity that provides livelihood for over 60 percent of population in Sri Lanka. The food crops covered in non-plantation agricultural sector in Sri Lanka is rice, Other Field Crops (OFC) and vegetables which mainly focus on domestic consumption and concerned with production and selling. In the other field crops sector, majority of crops have been neglected during the past 30 years. Hence the cultivated extents, production and yields as well as prices have declined sharply.

Other Field Crops (OFCs) is also called subsidiary food crops that refer to a range of annual field crops other than rice. These include coarse grains (maize, sorghum, finger millet), pulses (green gram, black gram, cowpea), oilseeds (gingely, groundnut, soybean), condiments (chillies, onions, ginger, turmeric), roots and tubers (potatoes, sweet potatoes, manioc) and vegetables. These crops are cultivated in about 100,000 ha in a season (*maha* and *yala*) depending on the weather. This sub-sector is important in producing a variety of food items which takes a strategic place in the national food security.

Considering the rural poverty and nutritional status of the country these low cost and high nutritional value crops prove the importance of the domestic agriculture. Though scientists have found out that there are nutritional values of these crops, most of the people in the country are unaware of this. On the other hand very little improvement of varieties has been taken place. The following table shows the importance of these crops.

Table 2.1: Proximate Principles, Minerals and Vitamins of Selected Other Field Crops (Values are per 100g. of edible portion)

Name of Food Stuff	Moisture (g)	Energy (kcal)	Proteins (g)	Fats (g)	Carbohydrates (g)	Calcium (mg)	phosphorus (mg)	Iron (mg)	Carotene (mcg)	Vitamin C (mg)
Maize (<i>whole</i>)	12.0	363	10	4.5	71	12	-	2.5	-	-
Maize Meal	12.0	362	9.5	4	72	12	-	2.5	-	-
Red onion	84.3	59	1.8	0.1	12.6	40	60	1.2	15	2
Big onion	86.6	50	1.2	0.1	11.1	47	50	0.7	-	11
Potato	74.7	97	1.6	0.1	22.6	10	540	0.7	24	17
Chilly (<i>green</i>)	85.7	29	2.9	0.6	3.0	30	80	1.2	175	111
Chilly (<i>hot, Dried</i>)	8.0	291	15.0	11.0	33.0	150	-	9.0	300	10
Green gram (<i>whole</i>)	10.4	334	24.0	1.3	56.7	124	326	7.3	94	-
Green gram (<i>split</i>)	10.1	348	24.5	1.2	59.9	75	405	8.5	49	-
Black gram	10.9	347	24.0	1.4	59.6	154	385	9.1	38	-
Cowpea	13.4	323	24.1	1.0	54.5	77	414	5.9	12	-
Gingely seed	5.3	563	18.3	43.3	25.0	1450	570	10.5	60	-
Groundnut (<i>dry</i>)	3.0	567	25.3	40.1	26.1	90	350	2.8	37	-
Soya bean	8.1	432	43.2	19.5	20.9	240	690	11.5	426	-
Finger Millet	12.0	363	10.0	4.5	71	12	2.5	350	130	2
Manioc	59.4	157	0.7	0.2	38.1	50	40	0.9	-	25
Sweet potato	68.5	120	1.2	0.3	28.2	46	50	0.8	6	24

Source: World Health Foundation of Sri Lanka, 1979

Before 1977 these crops were important for national food security because the economy was closed. As a result the cultivated extent and the production have shown a significant increase. Sri Lanka stepped on an extensive economic liberalization process in 1977. The first round of reform measures covered most aspects of economic policy, including trade policy. As a result, since 1978 the subsidiary food crop sector of Sri Lanka has experienced a noticeable transition compared to the period of 1970-77. A significant "second wave" of liberalization reforms took place in 1990. In 1994, when the WTO Agreement was signed the economic environment was already fairly liberal because the private sector was identified as the main "engine of growth".

This chapter aims to describe the major policies on non-plantation agriculture from 1970 to 2007; analyze the diversification of non plantation crops by examining the trends in cultivated area, production, yield, and prices of selected subsidiary food crops and to examine the external lessons of this sector by analyzing trends in imports and exports. After examining the trends of area cultivated, production, yield, prices, imports and exports the analysis was divided under different political regimes because policies have changed according to the vision of the successive governments. Therefore analysis was done as follows; 1970-77, 1978-88, 1989-93 and 1994-2001, 2002-04, 2004-2007.

2.2 The Period 1970-77

The successive governments actively pursued a policy of import substitution in industry (ISI) and on the whole this was a failure. In 1970, the government resumed its inward-looking policy of import substitution and tightened the restrictive measures further because of continuously falling terms of trade and deteriorating current account deficit, in order to cushion the impact on the domestic economy and alleviate increasing poverty (Indrarathna, A.D.V.de S. 1998). In 1971, a five year plan (1972 – 1976) was launched and a two-tier foreign exchange system (Foreign Exchange Entitlement Certificate Scheme) was introduced, with one tier favourable to earnings from non traditional exports and tourism. As an outcome of the closed economy and socialist policies implemented during 1970 and 1977 the growth rate had fallen below 3 percent.

Under the closed economy during 1970-77, there was a heavy emphasis on import substitution and government intervention in production, domestic marketing and import and export sectors. The government policies were focused on increasing paddy production to achieve the goal of self-sufficiency of rice. The subsidiary food crop sector was very important during this period because import of food was restricted. Hence total availability of food commodities comprised of local production. In addition the restrictions were imposed on imports of agricultural inputs such as fertilizer, tractors and agro-chemicals. Foreign exchange controls and quantitative restrictions on imports under import licensing were also imposed. The dual exchange rate system which was introduced in 1968 was used to curtail imports and to promote non-traditional exports. The domestic market was controlled by the government and state intervention on rice and other field crops was increased. Due to lack of competition in the market as a result of limited private sector participation, the market distortions were observed. The inadequacy of major food commodities in the market, contributed to people cultivated food crops in their own lands. Hence the production of other field crops has increased. There was a sharp increase of manioc and sweet potatoes production during 1972 and 1973. Under this protectionist framework though the production of subsidiary food crops had increased the quality of the produces was not improved.

The government invested in direct subsidies to supply the material inputs such as fertilizer and improved seed and planting materials and indirect support services such as research and development and extension services to expand agricultural production. Subsidized credit facilities were provided to the farmers. Agrarian service centres were established to serve the small scale farmers. The state marketing and distribution systems were established to control prices. The government introduced guaranteed minimum prices for subsidiary food crops in addition to paddy. The Paddy Marketing Board (PMB) was established in 1972 under the Act No 14 of 1971 besides being the sole purchaser of paddy, subsidiary food crops were also procured under the floor price by the Board. From 1975 to 1977 very small quantities of maize, black gram and sorghum were purchased by the PMB. Though these policies were ment to achieve the objective of selfsufficiency the majority of small farmers and the consumers did not benefit from these measures.

Table 2.2: Purchases of the PMB (Mt)

Year	Maize	Black gram	Sorghum
1975	11,964		790
1976	10,876		72
1977	15,407	7,324	36

Source: Paddy Marketing Board Annual Reports

To increase the production the government introduced new cultivars during this period. The new improved varieties of green gram type 77, MI 4 and MI 5 cowpea IITA, Bombay cowpea, MI 35, selection 75 and Arlington cowpea, groundnut X 14- 4B-19 B and groundnut No 45 were released. The following table depicts the variation of extent cultivated during this period according to the government policy.

Table 2.3: Cultivated Extent of Other Field Crops 1970 – 1977 (ha)

Crop	1970	1971	1972	1973	1974	1975	1976	1977
Groundnut	5,357	4,580	6,560	8,439	8,369	10,688	10,899	8,770
Gingerly	11,993	11,427	12,251	13,413	19,878	21,359	25,785	24,509
Green gram	3,775	3,341	4,535	7,217	8,788	15,895	11,994	11,848
Cowpea	4,137	4,096	5,493	5,339	5,774	11,469	11,567	14,608
Manioc	59,099	67,596	59,159	114,974	159,324	164,772	110,712	95,760
Sweet Potato	15,844	14,962	14,721	26,906	40,790	48,501	45,547	27,746
Potato	3,306	3,067	3,539	3,352	3,196	3,122	3,113	3,110
Red Onion	6,773	6,826	8,238	8,660	9,044	9,068	9,669	8,382
Chillies	20,249	23,338	34,578	42,265	53,288	49,495	54,581	51,707
Finger Millet	20,569	21,166	22,072	30,181	37,993	43,817	39,509	34,602
Maize	19,061	17,812	20,100	23,946	33,800	39,697	38,280	27,468

Source: Department of Census and Statistics

Table 2.4: Changes of cultivated Extent 1970 -1977 (%)

Crop	1975 Compared to 1970	1976 Compared to 1975	1977 Compared to 1976
Groundnut	100	2	-20
Gingerly	78	21	-5
Green gram	321	-25	-1
Cowpea	177	1	26
Manioc	179	-33	-14
Sweet Potato	206	-6	-39
Potato	-6	0	0
Red Onion	34	7	-13
Chillies	144	10	-5
Finger Millet	113	-10	-12
Maize	108	-4	-28

Source: Marketing Food Policy and Agribusiness Division/HARTI

According to the above table it is clear that the cultivated extents of other field crops that are used for the main meals have increased remarkably during the period of 1970 to 1975. The annual average growth rate of this sector to the GDP was 3.5 percent. Compared to 1975 the cultivated extent has declined in 1976 and since then cultivated extent of OFCs has declined gradually because attention was focused on paddy cultivation with the main goal of self sufficiency in rice.

2.3 The Period 1978-89

In the mid-1970s, policy-makers understood that the previous strategy hindered the development in the country. Therefore they decided to focus on export-oriented industrialization. They believed that increased international trade would stimulate greater growth in the national economy and then it would result in development. So the government in 1977 went for a drastic change to open the economy while abandoning many of the government controls established in the previous 20 years and adopted an open economic policy as its development strategy.

In November 1977 the government implemented a trade liberalization package by reducing tariff and removing import licensing and quota. Import duties have been used as a source of government revenue and to protect selected local industries. It was not uniform across the board or across the sector. Reduction of tariffs was accompanied by the removal of non tariff barriers. The government implemented a restricted single step switch over quota and licensing to a six band tariff structure (Indrarathna, 1998). The band ranged from 0 to 100 percent, depending on the essential or non essential nature of the good, revenue requirements of the government and protective needs of the local industry. The substitute imports were at a much lower tariff. Sri Lanka was one of the first among developing countries which implemented a far-reaching program of economic policy reforms unilaterally in mid 1977, mainly under the Structural Adjustment Policy (SAP) packages. Economic policy reforms implemented in Sri Lanka included: reductions of protection provided to import-competing sectors; provision of incentives to export oriented sectors; changing exchange rate regimes; fiscal and monetary reforms; liberalization of domestic factor and product markets from government intervention thus allowing free play of market forces; and privatization of some government business enterprises (Gunawardana and Somaratne, 1999). It showed the difference between an inward-looking controlled economy and an outward-looking free economy. It was the beginning of liberalization and privatization policies.

This shift in approach was simultaneously taking place across the developing world, pushed hard by the international financial institutions such as the International Monetary Fund (IMF) and World Bank (WB) and the economic powers of the United States and others, both for ideological and economic reasons. It joined together into a standard set of policy reforms and now it is known as the Washington Consensus. The basic principle of this trend was that the market was the best regulator of the economy, and that the government should minimize its involvement in the economy (Sri Lanka Trade Consultation, 13th – 14th December 2004).

Washington Consensus was basically on the following issues.

- Trade Liberalization
- Elimination of barriers to foreign investment
- Privatization of public enterprises
- Deregulation
- Security of property rights
- Fiscal discipline
- Restructuring public expenditure
- Tax reforms
- Financial liberalization
- Competitive exchange rate

The first wave of liberalization included significant trade liberalization that included reducing import tariffs and almost abandoning the use of import licensing and quotas, and financial sector liberalization that included dismantling foreign exchange controls and easing restrictions on foreign investment.

The OFC sector has shown a noticeable transition since 1978 compared to the period 1970-77, mainly due to the changes of trade policies in 1977. Since 1978 the government implemented economic reforms under an open economic framework. The reform 'package' included the reduction of protection provided to import competing sectors, exchange rate adjustments, fiscal and monetary reforms, liberalization of domestic sector and product markets, and privatization of some government business enterprises (Athukorala and Jayasuriya, 1994; Bandara and Gunawardana, 1989; Cuthbertson and Athukorala, 1991; Lakshman, 1994; Rajapathirana, 1988; Gunawardana and Somaratne, 2000).

The tariff structure was periodically reviewed since 1980 and changes were made according to the recommendations of the Presidential Tariff Commission appointed in 1980. In the mid 1980s, the tariff rate of 35 percent on C.I.F price was introduced. As a consumer protection technique tariff rates were revised to reduce the local market prices, when the domestic prices of potatoes, onions and chillies were very high. Thereafter the consumers used to purchase imported food commodities of good quality at cheaper prices compared to that of the domestic products. As a result imports of potatoes, dried chillies and big onions increased sharply. This adversely affected most of the local farmers because they did not try to increase the productivity and quality of the domestic products. Hence they faced difficulties in competing with imported items both in quality and in prices. On the other hand to protect the local farmer, government increased the tariff rates to increase the producer prices during the harvesting periods without considering the quality of the products.

With the introduction of the 'open economic policy' in 1977 the control of imports was reduced. Quantitative restrictions on imports were replaced with a six-band duty system because trade liberalization was a major component of the policy reform package. Exchange controls were removed and the exchange rate was unified and allowed to be market-determined. Because of the import liberalization policy local farmers as well as

traders were exposed to import competition due to availability of imported food commodities in the local market. As a result the local producers became aware of the prices as well as the quality of the products offered in the world market. This helped to improve the quality of the local products to some extent. Then the farmers and traders tried to sort these items according to the quality, size and the appearance to compete with the imported commodities and to sell at a higher price. The government further intervened in the market and purchased other field crops at the government proposed floor prices.

The second wave of liberalization and the first privatization programme began in 1989. A Tariff Commission was established to further rationalize the import tariff system towards two bands of 10% and 25%, and export duties were phased out completely. At the same time, almost all state-owned marketing boards and corporations were either partially or fully privatized or closed. The theory was that state owned enterprises were inherently inefficient. This was proved by the PMB by poor intervention of the domestic marketing. However the purchases of maize during 1988 was remarkable due to higher purchases from Anuradhapura (20,609), Ampara (6,329), Moneragala (5,043), Matale (4,445), Badulla (2,782) and Kurunegala (2,001) (PMB Statistical Bulletin 1988). The following table depicts the purchases of PMB during this period.

Table 2.5: Purchases of Other Field Crops by Paddy Marketing Board 1978-1989 (Mt)

Year	Maize	Black gram	Soya bean	Green gram	Gingely	Finger Millet	Sorghum	Ground nut	Cowpea	Chillies
1978	7,335	6,695	410	-			02			
1979	125	-	288	-						
1980	405	-	312	-	1,968			181	19	
1981	782	-	75	03	8,189			20	1,352	
1982	392	-	579	-	288			1,249		04
1983	1,365	-	3,777	-		716		237	315	
1984	3,152	-	201	-		03		58	120	
1985	848	-	19	-					04	
1986	2,940	-	436	118				13	169	77
1987	6,880	-	1,291	30	02	04			-	
1988	42,608	-	1,133	-					-	
1989	9,964	-	226	-					13	

Source: Paddy Marketing Board Statistical Bulletin 1988 & PMB Annual Reports

However, the structural change due to economic reforms during the first six years (1978-83) resulted in the contribution of non-plantation agriculture to GDP falling to about 12 percent compared to that existed under the previous regime. By 1981, its contribution to employment also fell to 27 percent. The contribution of non plantation agriculture to GDP of Sri Lanka was 17.5 percent during 1970-77 and the employed workforce of this sector was about 29 percent of the total employed workforce.

The government controlled structure was changed when the private sector entered the market and competed with the state marketing organizations. Therefore consumers were able to purchase food commodities according to their affordability and the needs. With the increased competition in the market, price ranges were observed according to the quality, availability and the demand. The farmers complained about the market prices when they were unable to compete with the imported commodities. That was mainly because of the inefficiencies in the crop production.

The government continued with the provision of funds to research and the introduction of new improved varieties to the producers. During this period the new improved varieties were released under the Seed Act. Seed market was also liberalized and seeds were imported under import permits issued in terms of Plant Protection Ordinance No. 10 of 1924, amended by Act No. 6 of 1950 and No. 22 of 1955.

Table 2.6: Other Field Crop Varieties Released

Crop	Variety	Year
Maize	T 48	Before 1970
	Bhadra	1977

Source: Department of Agriculture

The contribution of non-plantation agriculture to GDP increased to 14 percent during 1984- 89 from 12 percent. The annual average growth rate of the non-plantation sector dropped to a low of 0.6 percent during this period. This growth rate was the lowest of all sectors. During the same period all sectors except the plantation sector experienced lower growth rates than during 1978-89 mainly due to escalation of ethnic violence, civil wars and insurgencies (Gunawardana and Somaratne, 1999). As a result of uncertainties the extent cultivated had also affected. Compared to 1983 the cultivated extent of other field crops, mainly red onion, chillies, potato, cowpea, gingely, groundnut and finger millet, had declined with the highest recorded decline for red onion (60%), gingely (42%) and chillies (15%). Since 1985 red onion and chillies and big onion cultivation had improved remarkably in Kalpitiya and Sigiriya areas respectively.

In 1985 a major step in rationalization of tariff was taken and in this year the maximum nominal rate was reduced from 100 percent to 60 percent. To enhance the production the government removed the controls on the importation of agricultural inputs and machinery. This helped to increase the cultivated extent and the production of big onion and potato to some extent. In 1989, the cultivated extent under red onion and big onion had increased up to 9,100ha and 780ha respectively from 5585ha and 335ha. Cultivated extent of big onion was increased by 133 percent from 1985 to 1989 because farmers earned a better income from this crop. The Department of Agriculture also provided the required knowledge for crop management and post harvest activities. The cultivated extent of potato had increased since 1978 from 2860ha to 7119 in 1985 and since then it was around 7000ha. But there was no improvement of the production of traditional crops such as finger millet, green gram, cowpea and gingely.

Table 2.7: Cultivated Extent of Other Field Crops 1978-1983 (Ha)

Crop	1978	1979	1980	1981	1982	1983	% Change 1978 -1983
Groundnut	8,877	9,917	11,997	14,223	14,809	14,187	59.82
Gingely	12,400	26,249	30,201	26,078	31,625	24,798	99.98
Green gram	12,113	12,840	13,427	15,539	17,929	19,864	63.99
Cowpea	13,295	13,990	22,623	26,797	31,659	32,597	145.18
Soya bean							
Manioc	74,323	53,591	51,029	56,116	59,145	55,373	-25.50
Sweet Potato	20,689	16,342	14,312	16,671	16,276	14,408	-30.36
Potato	2,860	4,108	4,537	5,324	6,169	6,803	137.87
Red Onion	8,272	9,046	8,710	8,792	9,068	9,623	16.33
Big Onion							
Chillies	50,198	35,960	38,321	40,985	37,143	34,755	-30.76
Finger Millet	32,493	23,220	21,441	19,600	20,401	19,656	-39.51
Maize	24,770	19,491	19,433	24,081	26,685	26,246	5.96
Black gram							

Source: Department of Census and Statistics

Table 2.8: The Cultivated Extent of Other Field Crops 1984-1989 (Ha)

Crop	1984	1985	1986	1987	1988	1989	% Change 1984 -1989
Groundnut	10,649	10,164	10,132	7,837	10,548	11,233	5.48
Gingelly	14,393	14,824	14,326	12,576	12,507	8,349	-41.99
Green gram	22,348	23,615	24,993	25,577	28,447	27,123	21.37
Cowpea	28,041	29,569	27,705	27,597	24,205	22,808	-18.66
Soya bean	5,185	4,009	4,009	3,494	1,848	1,454	-71.96
Manioc	56,773	52,890	49,283	46,823	49,981	45,772	-19.38
Sweet Potato	16,362	14,768	13,148	12,676	12,658	12,320	-24.70
Potato	5,959	7,119	7,299	6,949	7,247	7,016	17.74
Red Onion	3,867	5,585	6,615	6,814	7,490	9,100	135.32
Big Onion	283	335	481	416	575	780	175.62
Chillies	29,402	30,862	35,667	25,128	27,130	24,351	-17.18
Finger Millet	16,927	13,070	13,227	11,598	12,362	10,199	-39.75
Maize	32,881	33,061	31,202	34,665	36,812	29,107	-11.48
Black gram	5,648	9,922	7,823	9,952	10,578	7,295	29.16

Source: Department of Census and Statistics

2.4 The Period 1989-1993

The government implemented a second wave of economic liberalization and policy reforms from 1989. An undertaking was given to the IMF and World Bank to pursue the structural adjustment programmes launched at the end of 1989 with a view to “establish a static macro economic environment utilizing the private sector as the major engine of

growth” (Indrarathna, 1998). A Tariff Commission was established to further rationalize the import tariff system towards two bands of 10% and 25%, and export duties were phased out completely. At the same time, almost all state-owned marketing boards and corporations were either partially or fully privatized or closed as the theory had mentioned.

Under the second wave of liberalization, the maximum nominal tariff on imports was reduced to 45 percent by 1993. The tariff system was altered from a six band structure in 1988 to a three band structure in 1992 to further relax the rigidity and distortions in non-plantation agriculture and manufacturing sectors (Presidential Tariff Commission on Tariff and Trade, 1994). The Rupee was devalued in order to promote exports. Three ‘high profile projects’ were also implemented: (i) privatization of a further number of public enterprises; (ii) new emphasis on export oriented industrialization under a more liberalized trade regime and further incentives to foreign investors in Export Processing Zones; and (iii) a major programme for the alleviation of poverty (Dunham and Kelagama, 1994).

Trade liberalization worked well in the first five to six years as was in the first phase. This favourable outcome was not sustained in the next six years due to inappropriate core of domestic macro policies pursued (Indrarathna, 1998). Macroeconomic instability multifaceted by government mismanagement of the domestic economy and ethnic violence and insurgency put a halt to the initial wave of liberalization during 1978-88 (Dunham and Kelagama, 1994; Athukorala and Jayasuriya, 1994).

Under the poverty alleviation programme a direct income transfer scheme “*Janasaviya*” was designed and implemented. The subsidy on fertilizer was totally removed with effect from 1 January 1990 and the private sector was allowed to carry out fertilizer marketing activities, together with government agencies. Fertilizer prices were aligned with world market prices. Interest rates on rural credit schemes were increased. Crop diversification and promotion of exports of non-plantation agriculture were encouraged further. The non-plantation agriculture recorded a negative growth rate while all other sectors of the economy registered higher and increasing growth rates during 1990-93 (Gunawardana and Somaratne, 1999).

The contribution of non-plantation agriculture to GDP was maintained at 14 percent during 1990-93. Its contribution to employment fell to about 25 percent in 1991. The annual average growth rate of non-plantation agriculture was 0.9 percent during 1990-93, which was the lowest growth rate among all sectors except the plantation sector.

The total availability of big onion was increased by 495 percent while total production was increased by 326 percent during this period. The domestic production contributed about 40 percent of the total availability. The total production and imports had increased by 326 and 710 percent during this period due to farmer protection programme and higher demand because consumers used to consume more big onion during this decade as red onion was in short supply and its price was high. The total availability of red

onion comprised of domestic production and this declined by 33 percent because the cultivated extent declined in the northern part of the country.

Table 2.9: Total Production of OFC 1989-1993 (Mt)

Crop	1989	1990	1991	1992	1993	% Change 89-93
Groundnut	7,443	6,282	4,327	3,236	5,453	-26.7
Green gram	20,480	26,951	26,584	23,139	21,076	2.9
Cowpea	19,074	22,864	22,407	17,453	19,387	1.6
Soy bean	1,488	3,151	1,979	1,351	896	-39.8
Manioc	420,776	395,009	358,809	302,207	308,995	-26.6
Potato	83,471	87,205	66,737	78,562	78,136	-6.4
Sweet potato	85,982	76,882	73,286	60,151	57,042	-33.7
Gingerly	4,571	4,829	5,484	4,786	4,879	6.7
Chillies	67,869	106,615	99,509	75,798	94,699	39.5
Big onion	5,365	15,903	14,046	27,879	22,838	325.7
Red Onion	71,836	67,957	41,630	54,515	47,548	-33.8
Finger millet	7,020	7,216	6,565	5,037	7,039	0.3
Maize	30,578	33,192	33,493	28,803	32,551	6.5

Source: Department of Census and Statistics
Marketing and Food Policy Division/HARTI

The above table illustrates that the domestic production of groundnut, soy bean, manioc, sweet potato and red onion had declined by 26 – 40 percent. Total availability of maize and soy bean had increased by 88 and 161 percent respectively due to increased imports to fulfill the demand of “thriposha programme” and animal feed industry. Contribution of maize production had declined from 50 percent to 29 percent from 1989 to 1993 while quantity imported had increased by 172 percent during this period. Only 25 percent of domestic production of soy bean had contributed to the total availability. The total availability of almost all other traditional field crops came from domestic supply.

Table 2.10: Production as a percentage of Total Availability of OFC 1989-1993

Crop	1989	1990	1991	1992	1993
Groundnut	100.0	99.8	100.0	100.0	96.1
Green gram	100.0	100.0	100.0	100.0	100.0
Cowpea	100.0	100.0	100.0	100.0	100.0
Soy bean	100.0	90.3	39.6	83.6	23.1
Manioc	100.0	100.0	100.0	100.0	100.0
Potato	99.4	100.0	100.0	100.0	100.0
Sweet potato	100.0	100.0	100.0	100.0	100.0
Gingely	100.0	100.0	100.0	100.0	99.9
Chillies	98.0	98.8	92.9	91.7	99.0
Big onion	55.9	37.0	23.3	45.9	40.0
Red Onion	100.0	99.6	99.7	100.0	100.0
Finger millet	100.0	100.0	100.0	100.0	100.0
Maize	50.8	41.9	38.6	45.3	28.7

Source: Department of Census and Statistics; Marketing and Food Policy Division/HARTI

2.5 Price Behaviour

To protect the domestic farmer the floor price scheme for other field crops was implemented by the Paddy Marketing Board (PMB). Except for maize and finger millet the floor prices of almost all these cash crops were higher than that of paddy. (Rs.5.26 – Rs.7.50/kg during this period). The PMB purchased very limited stocks and this programme was not successful because the marketing flow was not planned well. The prices of most of the crops were stable during the whole period. The value of the commodity was based on the cost of production, quantity supplied, quality and the demand. The farmers behaved according to the prices. This may be one reason for neglecting the cultivation of these crops on a commercial basis.

Table 2.11: Floor Price Scheme for Subsidiary Food Crops (Rs/kg)

Crop	1990 Jan-Dec	1991 Jan-Dec	1992	1993	1994
Maize	4.25	5.25	5.25	6.00	6.00
Finger Millet	5.00	5.00	5.00	5.00	5.00
Groundnut (with shell)	8.15	8.15	8.15	8.15	8.15
Soya bean	7.30	7.30	7.30	17.00	14.00
Gingely – Black	8.00	8.00	8.00	8.00	8.00
White	9.90	9.90	9.00	9.90	9.90
Dried Chillies Gr 1	32.00	32.00	32.00		
Dried Chillies Gr 2	30.00	30.00	30.00		
Cowpea	9.00	9.00	9.00	9.00	9.00
Green gram	12.00	12.00	12.00	20.00	20.00
Black gram	7.50	7.50	7.50	7.50	7.50

Source: Paddy Marketing Board, CBSL Annual Reports

On the request of farmers as well as other officials the government intervened into this sector through state institutions. The PMB purchased very limited quantity of maize, soya bean and green gram during 1990 to 1993 because at that time private sector intervened actively in this sector to purchase these commodities. On the other hand, the Floor Price Scheme for subsidiary food crops had not changed since 1993 and farmers had no incentive to sell their crops to the PMB. As a result the floor prices became less attractive and the private traders became active market participants in competition with the PMB.

Table 2.12: Purchases of the PMB 1991 – 1993 (Mt)

Year	Maize	Soya bean	Green gram
1990	916	154	153
1991	93	-	414
1992	49	-	-
1993	720	-	28

Source: Paddy Marketing Board Annual Reports

Table 2.13: Producer Prices of OFCs 1989-1993 (Rs/kg)

Crop	1989	1990	1991	1992	1993
Groundnut	12.51	15.72	15.92	19.65	22.56
Green gram	19.21	20.02	20.7	22.64	23.26
Cowpea	13.11	15.68	13.78	15.72	16.76
Soy bean	11.84	15.8	12.42	15.12	14.97
Manioc	3.46	4.39	4.9	5.75	6.77
Potato	10.76	24.6	37.48	38.77	33.04
Sweet potato	5.05	6.14	6.98	7.56	8.67
Gingely	13.76	15.09	17.61	18.76	18.18
Chillies	55.92	65.03	98.94	102.16	91.6
Big onion	8.74				
Red Onion	8.74	18.77	30.62	26.83	24.48
Finger millet	5.66	9.48	7.77	8.88	10.59
Maize	4.07	6.11	5.67	7.05	7.19

Source: Department of Census and Statistics, Big onion- MFPAD/HARTI

Table 2.14: Retail Prices of OFCs 1989-1993 (Rs/kg)

Crop	1989	1990	1991	1992	1993
Groundnut					
Green gram	32.99	31.00	31.23	35.65	34.91
Cowpea	25.28	26.29	21.51	23.87	25.60
Soy bean					
Manioc	5.72	6.38	7.02	8.97	10.66
Potato	24.14	32.83	48.57	43.13	46.56
Sweet potato	9.01	10.38	12.82	14.53	14.39
Gingely					
Chillies	83.57	94.12	134.32	131.44	121.36
Big onion	23.47	35.55	37.52	29.13	35.15
Red Onion	16.62	39.61	47.09	30.57	38.73
Finger millet					
Maize					

Source: Department of Census and Statistics; MFPAD/HARTI

Table 2.15: All Island Retail Prices of Other Field Crops (Rs/Kg)

Crop	1989	1990	1991	1992	1993
Groundnut	n.a				
Green gram	29.82	28.38	28.36	32.14	31.43
Cowpea	22.91	23.00	19.80	22.10	24.69
Soy bean	17.75	18.00	17.57	27.98	28.23
Manioc	6.09	6.39	7.00	9.07	10.75
Potato	23.11	29.04	44.56	45.09	44.54
Sweet potato	9.33	9.36	10.44	13.34	13.96
Gingely	n.a				
Chillies	77.08	89.15	123.70	126.80	119.99
Big onion	n.a				
Red Onion	15.29	36.47	44.82	45.14	37.90
Finger millet	8.54	14.39	15.30	17.78	17.85
Maize	7.41	9.23	11.24	11.85	13.42

Source: Department of Census and Statistics

Both the producer prices and all Island retail prices of these commodities showed an increasing trend during this period because of the declined domestic production of almost all crops while showing a sharp decline of manioc, sweet potato and red onion production. However during this period red onion demand had declined and that of big onion had increased. This was observed at the market during the period and the availability of both onion types showed it. The charts of other field crops show how the prices behaved according to the domestic change of production.

Figure 2.1: Production, Producer and Retail Prices of Manioc

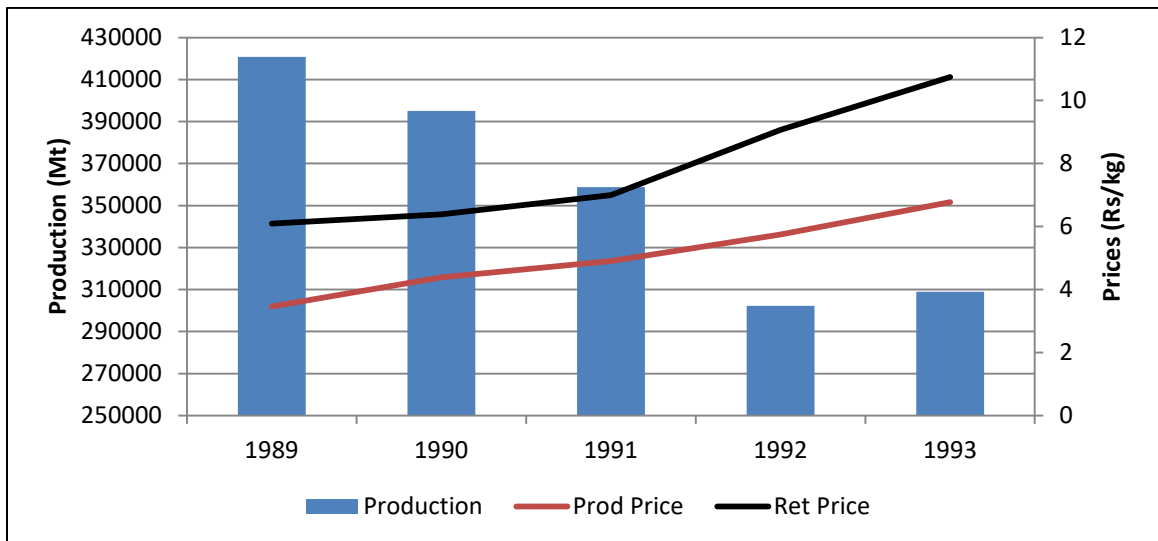


Figure 2.2: Production, Producer and Retail Prices of Sweet Potato

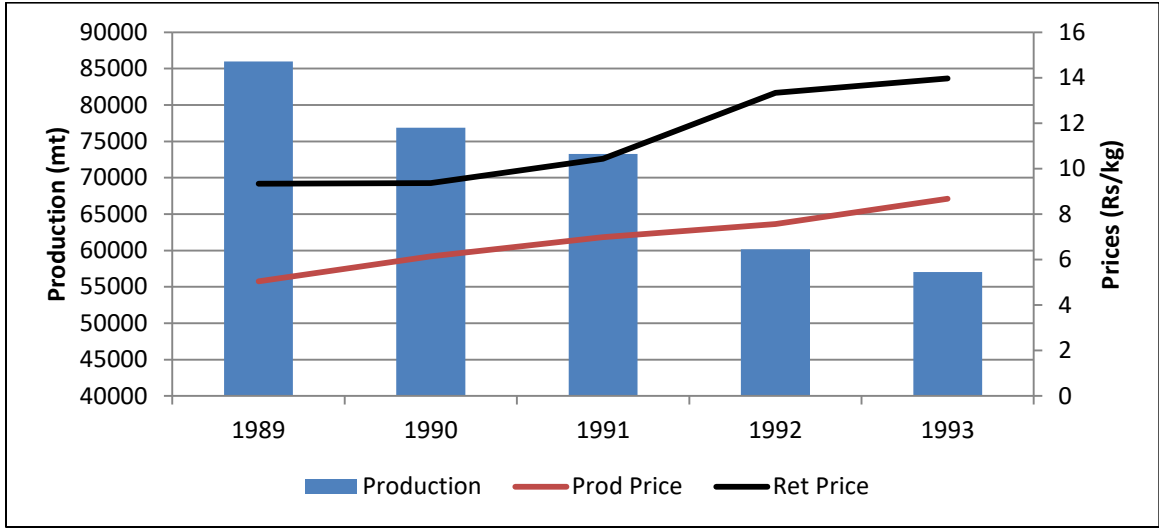


Figure 2.3: Production, Producer and Retail Prices of Red Onion

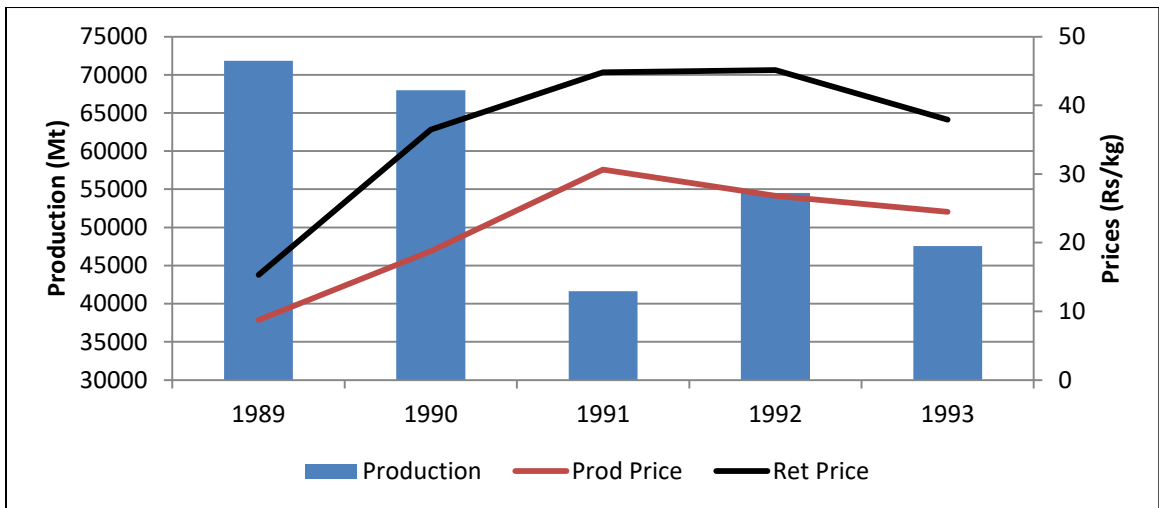


Figure 2.4: Production, Producer and Retail Prices of Finger Millet

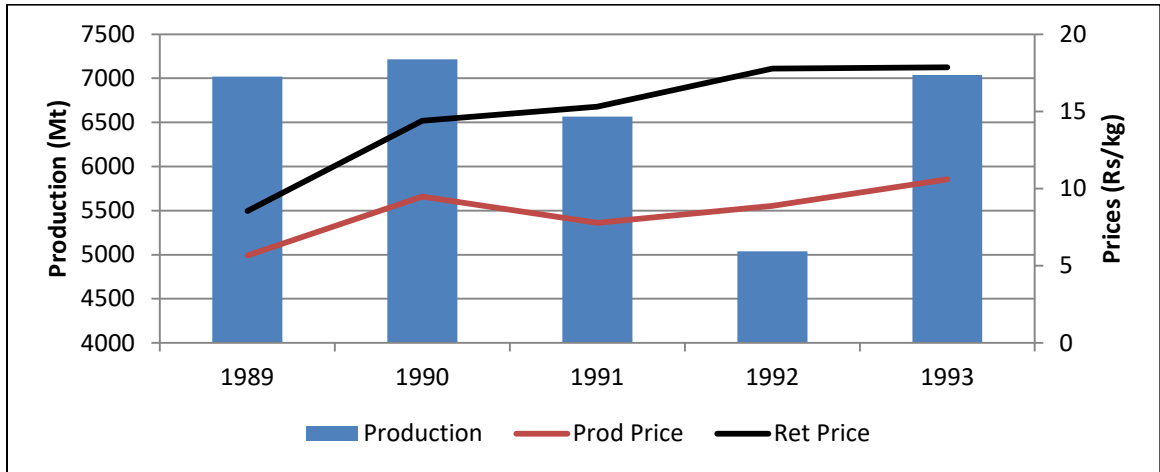


Figure 2.5: Production, Producer and Retail Prices of Maize

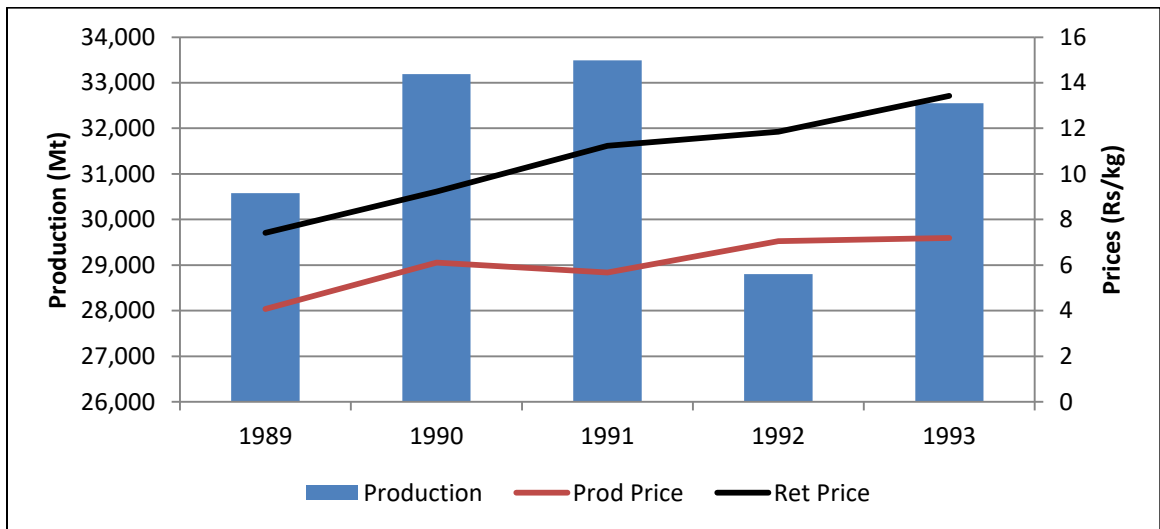


Figure 2.6: Production, Producer and Retail Prices of Chillies

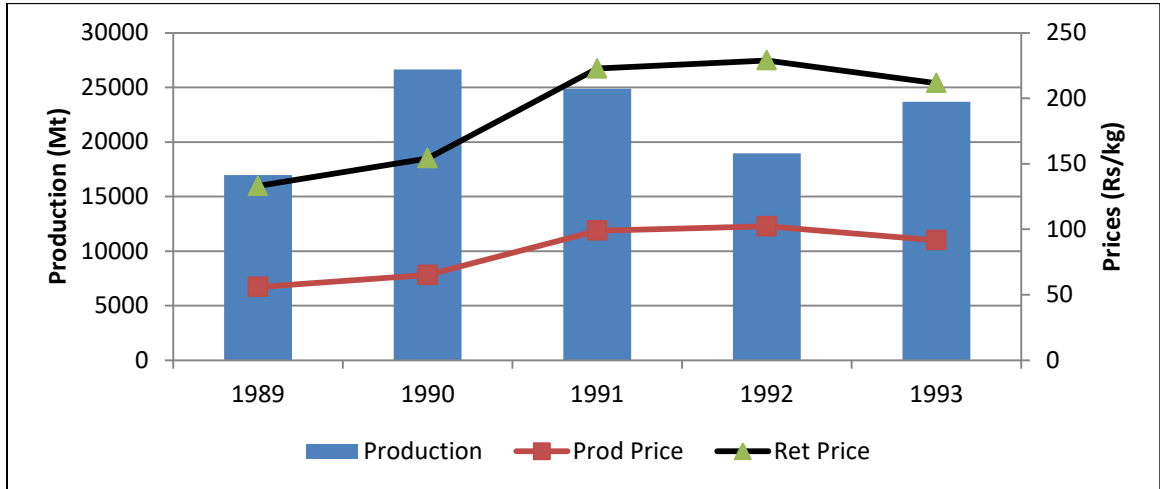


Figure 2.7: Production, Producer and Retail Prices of Green Gram

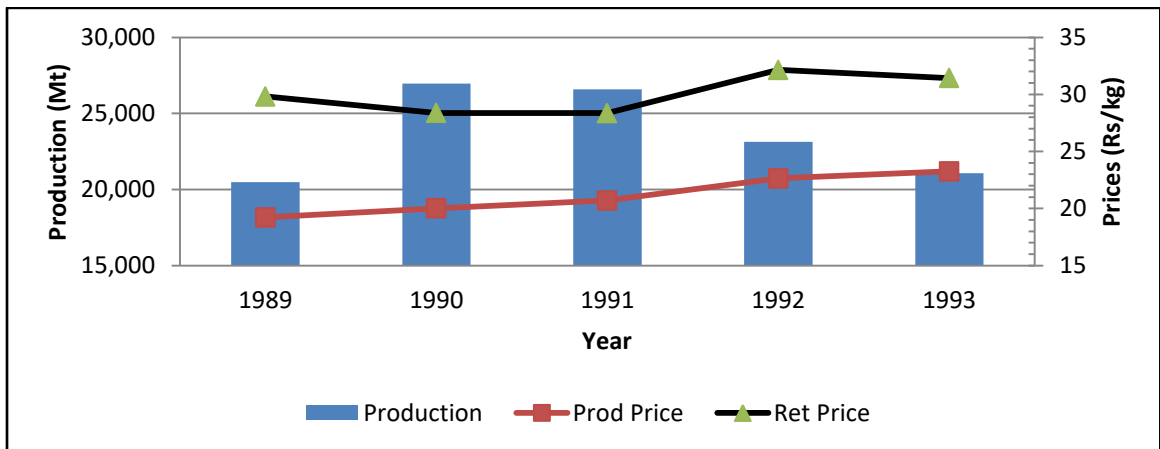


Figure 2.8: Production, Producer and Retail Prices of Cowpea

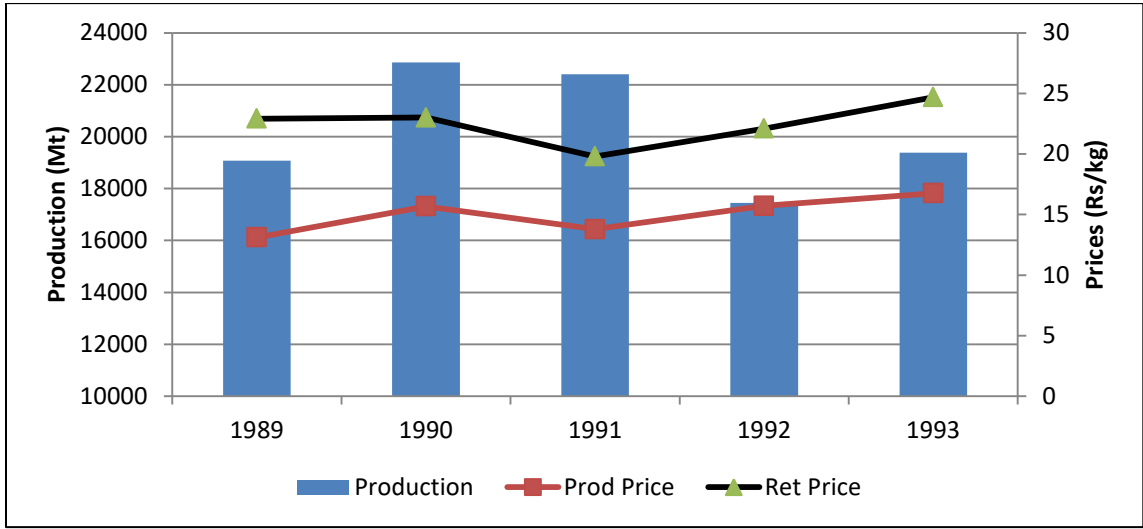


Figure 2.9: Production, Producer and Retail Prices of Soya Bean

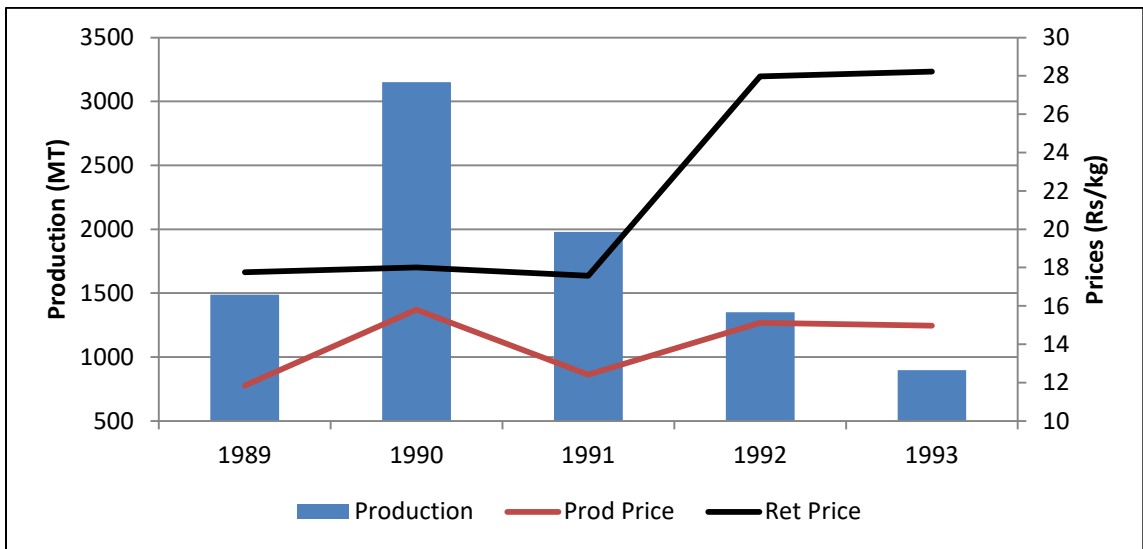
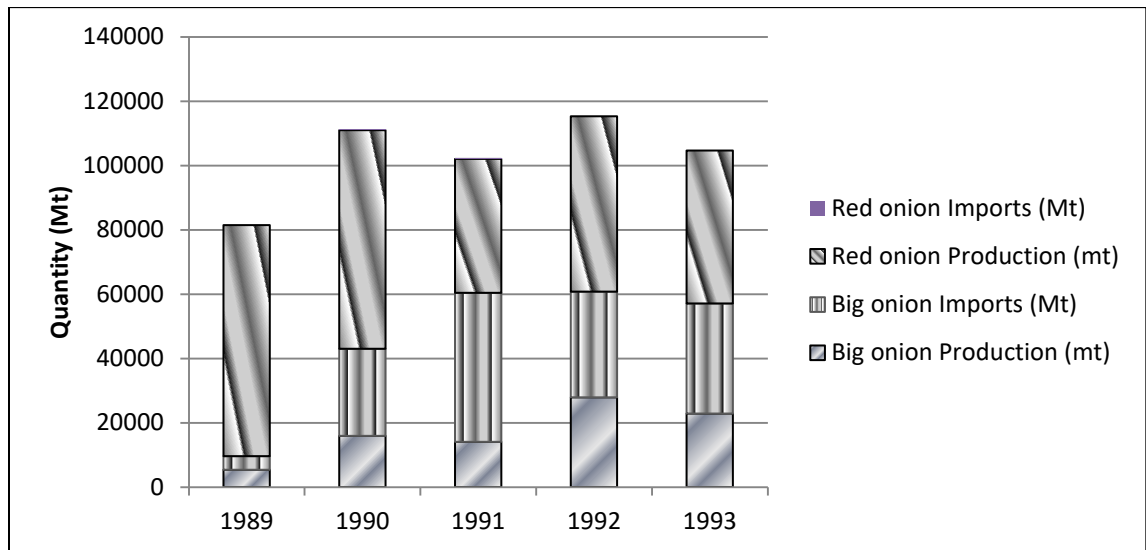


Figure 2.10: Total Availability of Big Onion and Red Onion



2.6 The Period 1994-2001

In 1994, a left of centre government came into power. But the former process was not changed as expected by the people. The National Policy Framework was prepared by the Ministry of Agriculture, Lands and Forestry (MALF) in 1995. The policies mentioned in this document included provision of high quality seeds and planting materials to farmers, consolidation of agricultural extension services and getting both private and non governmental organizations involved in developing the non plantation agricultural sector with the government playing the role of a facilitator. In December 1996 the MALF launched a countrywide food drive called “*Waga Lanka waga Sangramaya*” to face the global food scarcity in 2005. The objectives of the programme were to commercialize subsistence farming, to adopt integrate farming techniques for year round cultivation and to enable farmers to increase their bargaining power.

To achieve these objectives the MALF reinstated the farmer organizations set up earlier under the Agrarian Services Act in Early 1980s. In addition the MALF set up Farmer Companies to help farmers get remunerative prices for their farm products, to provide inputs on easy terms, to increase the production and improve the quality of the products, and to communicate farmers’ needs effectively influencing policy decisions by the government. But this scheme also did not function properly. There were only 3 farmer companies in 1977 and 111 in 1999. 85 farmer companies were registered and only 22 were in operation (Epaarachchi et al, 2002). Though the cultivation insurance scheme and the pension and social security scheme for farmers and fishermen were implemented under the Agricultural Insurance Board, farmers who cultivated other field crops benefited less. In 1999, the Agricultural Insurance Board was renamed as Agricultural and Agrarian Insurance Board under the new Act that allowed private companies to undertake crop insurance activities. But only one private company engaged in crop

insurance. The privatization of the Hingurakgoda seed farm in 1998 showed the success practically. Then a major share of the Palwehera seed farm was leased to the private sector. This was also a success and the farm produced quality seed and planting material.

The CIC Seed farm commenced its operations in early 1990's with the production and marketing of chilli seed. The company acquired the Talawa Seed Farm in 1991, the first farm to be privatized by the government, and initiated a seed paddy production program using the farm as a basis. Based on the performance of the Talawa farm, the government awarded the management rights of two other large state farms namely Hingurakgoda in 1998 and Pelwehera in 2000 to the CIC on a long term lease with a view to enhancing the local seed production. The initial thrust of the company was to develop a sound seed paddy business. According to the information provided by the CIC within a short period of time, CIC Seeds became a major player in the national seed paddy supply system with a market share of about 30 percent. To avert the risk bearing by depending on seed paddy programme with seasonal income, the company diversified its activities to produce other seed varieties and planting materials in the CIC farms as well as under contract growing. A trading operation too was initiated to import and supply hybrid vegetable seed and seed potatoes. The company today has become the foremost seed company in the country.

A major challenge the company had to face was the development of highlands in these farms. There were about 2250 acres of land with more than 60 percent in the highland. These highlands had to be developed by improving infrastructure facilities such as irrigation, farm roads, perimeter fencing and staff housing. Many programs were initiated in highlands to produce field crop seeds, fruits, vegetables and various types of livestock products. These farms were able to increase the livelihood of neighbouring rural community.

Following comprehensive research and a development programme carried out in its farm, the company has developed over 10 rice types. Many traditional varieties such as Kalu Heenati, Elvee and Suwandel with attributed medicinal values have been identified and developed with improved productivity and aimed at international markets. All these rice types are now marketed under the "Golden Crop" brand. In addition to growing in its three farms the company acquired the services of over 3,000 farmers in the Mahaweli System B, C & H and entrusted them with the task of multiplying the rice varieties identified and developed by the company. The CIC developed four rice varieties for the export market and already introduced new red rice 'Basmathi' and a new coloured rice variety to the international and local markets. These two rice varieties were specially targeted at higher income group and there is a good demand for these types of rice varieties overseas also.

The CIC set up a lab in Pelwehera to analyze soil and as a result researchers were in a position to recommend the fertilizer depending on the type of soil. The CIC Agri Businesses moved up the rice yield from 55 bushels per acre to 125 bushels at Hingurakgoda and planned to raise the yield up to 175 bushels per acre.

The CIC ventured into farming in 1998 with the leasing of a 1,500 acre government farm in Hingurakgoda. At Hingurakgoda there were two interesting activities a) the Agricultural Machinery Yard where the CIC Agri became accustomed to combine harvesters and other implements imported to suit local conditions. These harvesters are very useful to farmers as large areas could be harvested in double quick time, than using the manual labour. b) 50-acre Cavendish banana plantation where banana is planted under strict international conditions and the processing plant of banana exports. The packing house of banana was built to process banana for export market as per the agreement with one of the world's largest fruit exporter DOLE. This pack house has capacity of handling and storing 20 mt. of banana per day under controlled temperatures.

There are about 150 acre lands in the farm under micro irrigated banana crop. Cavendish, Kolikuttu, Ambul, Amban, Seeni & pulathisi are the main varieties cultivated in the farm. There is a collection of Banana varieties such as 'Kolikuttu', 'Seeni', 'Ambul', 'Ambun', 'Cavendish', 'Suwandel', 'Pulathisi', 'Alu' etc. and to supply the required materials use the Tissue Culture Laboratory.

The CIC leased the Pelwehera Government seed farm at Dambulla in 2000. At present both Hingurakgoda and Palwehera farms are well developed using modern technology. The Pelwehera farm consists of Mango Germ plasm Collection, Agri Technology Part, Agribusiness Centre, Juiceez, Planting Material Display Centre, Desert Plant Greenhouse, Greenhouse Cultivation, Herbal garden, Commercial Vegetable garden, Fruit Garden, Banana Mother Plant Orchard, Mango Mother Plant Orchard and the Citrus Garden.

Around 1,300 acres of the Pelwehera Farm is under paddy cultivation and it is also focused at Agro Tourism while the Windsor Park holiday chalets take the centre place of agro tourism. It includes Mango cultivation, Vegetable Garden, Machinery Yard, Seed Processing Unit, Banana Cultivation, Plant Nursery, Home Garden, Compost Production unit, Livestock Production and the Agri Holiday Resorts.

The CIC Agri not only raised their farms to modern levels as model farms where they obtained highest yields and ran them profitably and brought up their farms to the most modern level, but also offered every possible assistance to share the successful experiences with the farmers and any other person interested in farming. The company provides advice on poultry farming, cattle rearing, piggery, compost fertilizer manufacture, fresh water prawn and fish farming, etc.

In 1999, the government encouraged the private sector involvement in non plantation agricultural sector by reducing the production of seeds and planting materials in government farms, taking steps to liberalize agricultural extension service and crop insurance and introducing the forward sales contract scheme for agricultural commodity marketing (CBSL, 1999). The Department of Agriculture introduced a fee based private extension service as a pilot project under the Second Perennial Crop Development Project funded by the Asian Development Bank.

In 2000, the Ministry of Agriculture Lands and Forestry identified six areas for further reforms with the aim of increasing productivity and output. They were research, extension, supply of seed and planting materials, private sector participation in commercialization of agriculture, commodity marketing and institutional reforms. The MALF took a decision to reorganize agricultural research. Demand driven and priority areas were identified with the help of the Council for Agricultural Research Policy (CARP) for the optimal use of limited funds. The need of updating the Plant Quarantine Act and the Agrarian Services Act was identified to achieve the objectives of the National Policy Framework. The government continued with the provision of research and new varieties were released accordingly.

Two sweet potato varieties named Ranabima and Wariyapola –white and innala named “Binari” were released in 1997. In addition sweet potato varieties “Shanthi” and “Chitra” were also released during the year. Under the sweet potato and dioscorea varietal evaluation programmes the low sugar sweet potato variety called Gannoruwa- white and D. alata cultivars, king yam and kukul ala were identified for release.

A new cowpea variety “Dhawala” with an average yield of 1400kg/ha was released for cultivation in 1997. It was popular in the dry and intermediate zones of Sri Lanka since it could avoid drought due to early maturity (60-70 days) and had a high consumer preference. This variety is suitable for cultivation in yala and late maha. It can also be grown in paddy lands in between maha and yala paddy crops.

High cost of production, low market prices during the peak harvesting season, lack of suitable varieties and good quality seed were the main constraints faced by the farmers. With the objective of developing suitable high yielding big onion varieties adaptable to local conditions and capable of producing good seed, Department of Agriculture initiated varietal improvement programme of big onion at Field Crops Research and Development Institute (FCRDI), Maha Illuppallama in 1995/96 maha. Two varieties were selected from farmers in Matale district and these were Pusa Red (MI) and Rampur ((MI). The yield of purified Pusa red (MI) variety was higher.

In the big onion seed production it was shown that the seed yield was low due to high disease incidence, mainly purple blotch, when grown in late maha. Department of Agriculture found out that covering the seed crop with white polythene at night reduce the disease incidence and increase the seed yield by about 40 percent.

The research programme developed high yielding, pest and disease resistant varieties with good keeping quality. Two red onion varieties named Ratnapura I and Rambewa – white selected from farmers’ fields performed well in maha whereas the recommended variety Jaffna local and Ratnapura I performed well in yala. Rambewa- white was a white skinned variety with poor consumer preference. In 1997 a hybridization programme was initiated to combine desirable characters of Rambewa – white with a purple skinned variety (Agrifound Rose) and develop a variety with red/purple skin, high pungency and good sustainable quality. Several rose skinned first generation lines (F1) were selected for further research.

For the development of non plantation agricultural sector various subsidies and credit facilities were provided. Fertilizer subsidy was the most important one because there was a huge investment on it. The fertilizer subsidy which was removed in 1989 was reintroduced in 1994 for urea, sulphate of ammonia, muriate of potash and triple super phosphate and it reduced retail prices by 30 percent. The fertilizer subsidy was revised in 1995 due to increased prices of urea and triple super phosphate. Under this scheme upper limits of subsidies payable to importers were decided and subsidy payments varied according to the fluctuations of world market prices. This scheme was revised in September 1997 and subsidy was given only to urea.

The total production of green gram, cowpea and chillies had declined by nearly 50 percent followed by Finger millet 37%, soy bean 36%, potato 27 and red onion 24% during this period because import licensing requirements were removed in 1993 for other field crops such as potato, red onion, big onion, black gram, red lentils, and dried chillies. Production of both manioc and sweet potato had declined by 22 percent. The production of big onion increased sharply in 1999 when compared to the previous years. This was mainly due to increase of cultivated extent as a result of higher prices obtained by the farmers in 1998 and due to the protection provided and the government purchasing. The production trends during this period are shown in Table 2.16. Trends on both the cultivated extent and production are more or less equal. Data on cultivated extent is given in Table 03.

Table 2.16: Total Production of OFC 1994-2001 (Mt)

Crop	1994	1995	1996	1997	1998	1999	2000	2001	% Change 94-01
Groundnut	5,628	5,912	5,120	5,258	6,260	6,540	7,070	6,460	14.8
Green gram	19,030	16,013	16,585	15,000	15,650	13,820	11,690	9,720	-48.9
Cowpea	18,604	16,110	16,997	13,971	13,400	12,100	12,120	9,840	-47.1
Soy bean	972	2,367	726	418	600	800	640	620	-36.2
Manioc	298,402	288,768	270,596	249,779	257,160	251,510	249,110	233,580	-21.7
Potato	79,385	81,657	100,755	66,484	25,900	27,170	48,410	57,680	-27.3
Sweet potato	62,097	61,823	58,817	54,129	52,490	51,600	51,810	48,540	-21.8
Gingerly	4,646	4,499	3,817	6,635	5,720	4,770	4,600	4,210	-9.4
Chillies	23,254	21,340	18,467	18,058	15,618	15,008	13,965	12,260	-47.3
Big onion	34,726	29,719	19,367	29,138	17,440	62,730	36,560	31,970	-7.9
Red Onion	48,228	48,392	43,938	54,799	38,040	42,650	42,500	36,860	-23.6
Finger millet	6,672	4,876	3,906	3,500	4,300	4,810	4,850	4,190	-37.2
Maize	31,596	34,836	32,824	25,689	33,870	31,470	31,050	28,750	-9.0

Source: Department of Census and Statistics; MFPAD/HARTI

Policies of agricultural marketing were focussed on stabilizing market prices of domestic agricultural crops and to protect local farmers. Therefore the state intervention could be seen during the main harvesting season to protect farmers of selected field crops. As the state organizations the Paddy Marketing Board and the Cooperative Wholesale

Establishment (CWE) intervened in other field crops marketing from time to time. These institutions introduced various measures such as setting up of purchasing centres in the producing areas, introducing standards of products, setting up floor prices and distribution of the purchased items through multipurpose cooperative societies. But always the government intervention failed due to inefficiencies and did not generate the expected results (Epaarachchi *etal*, 2002).

Since 1997 production of chillies and potatoes had declined. According to the producers, the cost of production of these crops was very high and they could not compete with the imports. The cost of production of chillies and potatoes varied from Rs.36.00-Rs.70.00 and Rs.22.00-Rs.23.00/kg respectively. In 1997 the Cooperative Wholesale Establishment (CWE) was asked to purchase local potatoes at Rs.35.00 per kg while imported potatoes were available at the market at Rs.20.00 per kg. Locally produced big onion was also purchased by the CWE at higher prices though the quality keeping was not suitable for future sales. The high imports and increased production of dried chillies reduced the local prices. Chillies were included in the government purchasing programme in August 1997 and the Cooperative Wholesale Establishment intervened in the procurement of dried chillies and in November 1997 this scheme was extended for a period of two years. Under this scheme to protect local farmer producer prices of dried chillies were recommended as Rs.55.00 to Rs.70.00/kg by the government while the cost of production of chillies ranged between Rs.36.00 and Rs.70.00/kg.

The minimum producer price scheme was also a failure because without increasing the production efficiency and without improving quality, the products could not be marketed in a sustainable manner. As a result, these procurements incurred huge losses to the CWE though these commodities were sold at higher prices to cover up the huge overhead cost. The private traders determined the prices just below the CWE prices. This also affected the consumers because always private traders used this price as a market guide. Though the CWE's share was very limited, the open market prices were more or less equal to the prices of food commodities available at the CWE.

Table 2.17: OFC Purchases of CWE as a Percentage of Marketable Surplus

Commodity	1995	1996	1997	1998	1999	2000
Dried chillies	0.83	10.3	10.0	0.6	2.0	1.0
Big Onion	2.1	5.4	5.4	0.2	4.2	6.0
Potato	0.33	0.62	0.14	-	0.75	3.5

Source: CWE and Sri Lanka Customs/IPS

After realizing the need of a certain degree of protection to local farmers to enhance the domestic production the government introduced a Producer Prices Scheme for selected important other field crops in August 1997. The recommended price ranges are shown below.

Table 2.18: Recommended Producer Prices and Cost of Production of OFCs (Rs/kg)

Crop	Producer Price Range	Cost of Production (IIC)*				Cost of Production (EIC)**			
		95/96	96	96/97	97	95/96	96	96/97	97
Dried Chillies	55.00 – 70.00	82.49	60.08	69.84	68.82	33.76	32.86	27.99	35.77
Big onion	12.00 – 14.00		8.72		8.83		5.61		5.27
Red Onion	15.00 – 18.00	13.37			20.35	6.15			15.12
Potato	20.00 – 25.00	24.16	23.94	23.12	29.69	20.84	19.91	20.24	22.18
Maize	5.00 – 10.00			15.12				3.24	
Green gram	30.00 – 40.00	16.96		29.99		4.44		4.93	
Cowpea	15.00 – 20.00	14.27				2.61			
Groundnut	15.00 – 25.00			34.37				4.66	
Toor Dhal	20.00 – 30.00	24.29				8.91			

Source: Central Bank of Sri Lanka/Dept. of Agriculture

*IIC-Including Imputed Cost, **EIC- Excluding Imputed Cost

As an intervention the government fixed the minimum price for other field crops and procured very limited stocks. The fixed prices were well above the CIF prices though the standards were far below the international standards. Therefore the market was distorted when the intervention occurred. However the state intervention for the procurement of other field crops was mostly less than 5 percent of the total production. This badly affected the consumers due to high market inefficiencies and high market prices. Due to this government intervention during the harvesting season the domestic prices were increased at a higher rate and this discouraged the consumers to purchase domestic produce. The consumers used to buy local produce at lower rates during the harvesting season. But now they have to pay higher prices to purchase local produce. Hence the consumers reduce the purchases to limit the food cost. On the other hand it is understood that the quality of most of the local products were very low and it was not worth to pay such a higher price for these food commodities. The consumers were not willing to pay higher prices for the poor quality products. Though these commodities were domestically produced as substitutes there was no food security due to lack of affordability.

The main role of the CWE was to import food commodities and distribute those to the retail outlets located islandwide. The CWE imported major food commodities when necessary to stabilize market prices. Considering the other field crops CWE imported dried chillies, potatoes and big onions mainly for the festive seasons to stabilize the food prices. The CWE's market share on imports was less than 5 percent compared to that of the private sector. But when the prices were determined by the CWE, private traders followed it.

Table 2.19: Imports of the CWE as a Percentage of Total Imports

Commodity	1995	1996	1997	1998	1999	2000
Dried chillies	18	5	-	1	0.5	-
Big Onion	8	7	5	5	7	4
Potato	11	6	3	2	0.6	0.4

Source: CWE and Sri Lanka Customs/IPS

Table 2.20: Total Imported Quantities of Other Field Crops (Mt)

Commodity	1994	1995	1996	1997	1998	1999	2000	2001	1997-2001 % change
Groundnut	1,431	298	1,199	1,756	2,350	4,348	4,399	4,892	179
Green gram			22	2,091	5,132	7,528	6,767	8,717	317
Soy bean	14,779	2,669	285	200	179	1,830	2,972	3,166	1,483
Potato	7,849	11,982	25,784	108,403	115,613	128,921	116,453	62,559	-42
Gingerly	0	100	568	110	19	1,091	1,031	845	669
Chillies	8,346	10,820	9,946	13,269	19,211	20,359	23,364	25,898	95
Big onion	47,400	77,459	89,158	119,317	100,363	83,986	117,504	110,181	-8
Red Onion	2,814	1,010	4,389	3,117	2,032	2,064	5,944	2,726	-13
Finger millet			499	1,254	695	277	552	816	-35
Maize	85,117	80,481	92,457	90,767	106,544	125,632	123,138	157,404	73

Source: Sri Lanka Customs; MFPAD/HARTI

With the reduction of import tariff in 1993 and its further reduction with the relaxation of import restrictions in 1996 the imports of field crops had increased sharply in 1996 and 1997. The quality and the standards of imported commodities were witnessed and identified by traders as well as consumers. As a result the quality products gained a higher demand and the higher price. Since then except manioc, sweet potato and cowpea, almost all these commodities have been imported according to the need of the domestic market. When the local supply was not enough to satisfy the domestic demand, import tariff rates were relaxed to reduce the increasing trend of prices and cost of living.

On the other hand to protect domestic farmers and to raise the producer prices of some of these cash crops, mainly big onion and potato, the import tariff rates were increased from time to time. Majority of the farmers used this protection to earn more income. But they did not make effort to improve the quality of the products. In addition to this adverse impact, they sold other commodities produced in those areas at higher prices close to the protected prices to earn a higher income. Sometimes farmers used chemicals to protect coarse grains and pulses from weevil attack. In addition, domestic products contained too many impurities. When the consumers understood this they were reluctant to purchase those food commodities. To overcome these problems and to increase the demand for domestic products government did not impose regulations to apply specified standards. When it was neglected consumers decreased or curtailed their consumption of these commodities because most of these were substitutes.

Considering the total production and imported quantity, it is clear that production as a percentage of total availability had declined gradually. Still the production of red onion finger millet and gingely contributed 80 -90 percent of total availability while soy bean and maize contributed about 15 percent. That of green gram and potato had declined up to 50 percent and that of big onion had declined up to 22 percent.

Table 2.21: Production as a Percentage of Total Availability of OFC 1994-2001

Crop	1994	1995	1996	1997	1998	1999	2000	2001
Groundnut	79.7	95.2	81.0	75.0	72.7	60.1	61.6	56.9
Green gram	100.0	100.0	99.9	87.8	75.3	64.7	63.3	52.7
Cowpea	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Soy bean	6.2	47.0	71.8	67.6	77.0	30.4	17.7	16.4
Manioc	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Potato	91.0	87.2	79.6	38.0	18.3	17.4	29.4	48.0
Sweet potato	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gingerly	100.0	97.8	87.0	98.4	99.7	81.4	81.7	83.3
Chillies	73.6	66.4	65.0	57.6	44.8	42.4	37.4	32.1
Big onion	42.3	27.7	17.8	19.6	14.8	42.8	23.7	22.5
Red Onion	94.5	98.0	90.9	94.6	94.9	95.4	87.7	93.1
Finger millet	100.0	100.0	88.7	73.6	86.1	94.6	89.8	83.7
Maize	27.1	30.2	26.2	22.1	24.1	20.0	20.1	15.4

Source: Department of Census and Statistics; MFPAD/HARTI

To improve quality and to increase the yield of the domestic products, new varieties were introduced by the Department of Agriculture from time to time. The improved varieties and their specific characteristics are shown below.

Table 2.22: Other Field Crop Varieties Released during 1994 – 2001

Crop & Variety	Year of Released	Recommended Area	Average Yield Mt/Ha	Days to Maturity	Characteristics
Groundnut					
Indi	1994	Dry Zone	2.8	100-115	Tolerant to BND, high oil content
Green gram					
Ari	1999	Rain fed	1.2		
Cowpea					
Dhawala	1997		1.5	40-50	Cream colour seed
Soy bean					
Potato					
Hill star	1999	Nuwara Eliya, Badulla	25	110	Cream Colour skin
Gingerly					
Uma	1994	Dry Zone	1.1	70-75	Non branching type
Malee	1994	Dry Zone	1.13	75-80	branching type
Chillies					
Arunalu	1996	Islandwide	2.5-3.0	105-120	
Big onion					
Agnfound light red	1991	Dry Zone	15-20	90-100	Broad Oval Pink
Finger Millet					
Ravi	1992	All growing	2-3	90-100	Moderate resistant to lodging
Cassava					
Kirikawadi	1994	Wet & Dry Zones		180-360	Easy peeling, Resistant to pests
Sweet Potato					
Wariyapola red	1997	Islandwide	14-15	105	Pinkish orange skin
Wariyapola White	1997	Islandwide	22-25	105	White skin, medium sweetness
Shanthi	1997	Islandwide	12-14	105	White skin
Ranabima	1997	Islandwide	22-25	105-120	Pink skin
Chitra	1997	Islandwide	12-14	105	White skin
Gannoruwa sudu	1999	Islandwide	25	105-120	White skin
Maize					
Aruna	1992	All growing Areas	4.4	90-100	Good resistant to root and stalk lodging
Muthu	1993	All growing	5.4	110-115	do

Source: Department of Agriculture

2.7 Global Situation and Sri Lanka

Yields of the other field crops in Sri Lanka were low level compared to those in other countries. Yields of the protected crops were also very low resulting in high costs. Hence the local farmer and consumer were unable to get the comparative advantage. When this situation continued Sri Lankan farmer faced many problems.

The yields of cereals, pulses, millet and soya bean could be increased by various means. For the sustainability of crops it is needed to increase the yields of indigenous crops because there is a demand for these commodities. The following table shows that the yields of most of the crops in Sri Lanka were far below the yields of those in other countries. There is a potential to cultivate most of these crops in the country and it is needed to encourage farmers by improving new varieties which give good yields and distributing those among them. Hence it is necessary to find out the ways to increase the yields of almost all the selected crops.

Table 2.23: Yields of Other Field Crops in the World -1994 (kg/ha)

Crop	Sri Lanka	India	Developing Countries	Developed Countries	World
Maize	1,003	1,448	3,485	5,922	4,115
Soya bean	1,017	911	1,428	1,773	2,183
Groundnut in shell	540	1,027	1,500	2,116	1,307
Millet	711	747	882	998	735
Cereals	2,902	2,116	2,903	2,171	2,813
Pulses	833	601	714	707	822
Roots and Tubers	8,852	17,151	14,571	27,852	12,377
Cassava	8,927	24,528	12,928		9,807
Sweet potatoes	6,859	8,482	16,119	24,523	14,055
Potatoes	11,010	16,610	14,018	31,520	15,036
Onions (Dry)	11,918	10,671	14,455	40,681	16,046
Chillies & Pepper	2,547	8,980	9,553	32,593	11,022

Source: FAO Statistics

**Table 2.24: Yield Difference between Sri Lanka and Other Countries in 1994
(Kg/ha)**

Crop	Avg. Yield of Sri Lanka	Yield Difference between Sri Lanka and Other Countries			
		India	Developing Countries	Developed Countries	World
Maize	1,003	445	2,482	4,919	3,112
Soya bean	1,017	-106	411	756	1,166
Groundnut in shell	540	487	960	1,576	767
Millet	711	36	171	287	24
Cereals	2,902	-786	1	-731	-89
Pulses	833	-232	-119	-126	-11
Roots and Tubers	8,852	8,299	5,719	19,000	3,525
Cassava	8,927	15,601	4,001	-8,927	880
Sweet potatoes	6,859	1,623	9,260	17,664	7,196
Potatoes	11,010	5,600	3,008	20,510	4,026
Onions (Dry)	11,918	-1,247	2,537	28,763	4,128
Chillies & Peppers	2,547	6,433	7,006	30,046	8,475

Source: FAO Statistics/MFPAD

Table 2.25: Production as a Percentage of Total Availability of OFC 1994-2001

Crop	1994	1995	1996	1997	1998	1999	2000	2001
Groundnut	79.7	95.2	81.0	75.0	72.7	60.1	61.6	56.9
Green gram	100.0	100.0	99.9	87.8	75.3	64.7	63.3	52.7
Cowpea	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Soy bean	6.2	47.0	71.8	67.6	77.0	30.4	17.7	16.4
Manioc	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Potato	91.0	87.2	79.6	38.0	18.3	17.4	29.4	48.0
Sweet potato	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gingerly	100.0	97.8	87.0	98.4	99.7	81.4	81.7	83.3
Chillies	73.6	66.4	65.0	57.6	44.8	42.4	37.4	32.1
Big onion	42.3	27.7	17.8	19.6	14.8	42.8	23.7	22.5
Red Onion	94.5	98.0	90.9	94.6	94.9	95.4	87.7	93.1
Finger millet	100.0	100.0	88.7	73.6	86.1	94.6	89.8	83.7
Maize	27.1	30.2	26.2	22.1	24.1	20.0	20.1	15.4

Source: Department of Census and Statistics; MFPAD/HARTI

2.8 Tariff Policy

Until July 1996, the imports of dried chillies, big onion and potato had been restricted and import of red onion was totally banned to protect the local farmer. Imports of dried chillies, big onion and potato had come under the licensing system based on the local production. Import decisions were taken in consultation with the Ministry of Agriculture, Lands and Forestry. During the latter part of 1996, special attention was paid to these liberalized items and the issues were discussed by the tariff sub committee regularly and

adjustments were made according to the local supply and demand, domestic trade, social and economic factors and international prices. The tariff adjustments were made to increase the domestic price that enabled the farmer to recover his costs and earn a reasonable return.

In July 1996, imports of these commodities including red onion were liberalized and 20% turn over tax levied on them was waived while retaining 35% import duty. In December 1996 the import duty on these three commodities was lowered from 35 percent to 20 percent in order to reduce their domestic prices. The effective import duty of 20 percent remained valid until 31st January 1997 for potato and big onion. The effective import duty on potato and dried chillies was 35 percent between 01st February 1997 and 27th November 1997 to protect the domestic farmers. On 28th November 1997 15 percent duty waiver was introduced on potato and big onion. This was valid until 31st January 1998 to maintain the domestic prices at lower rates for the festival season and to match the seasonal demand. On 01st February 1998 the 15 percent duty waiver on big onion was removed making the effective duty rate at 35 percent and this was the off season of big onion. As a result the retail prices of big onion increased remarkably in February and March compared to the prices in the same months of previous year. This duty remained until the end of 2000.

From 01st February 1998 the effective duty rate on potato was 35 percent. The effective duty rate of 35 percent on dried chillies remained unchanged. The domestic potato producers forced the government to increase the prices of imported potatoes. Hence the government imposed 35 percent surcharge on imported potatoes in August 2000 in addition to the already effective duty of 35 percent. As a result the domestic prices have increased. In December 2000 this tariff structure was changed and a specific duty of Rs.20.00/kg on potatoes was imposed. As a result of high protection, domestic production had increased compared to 1999. Import duty on seed potatoes was at 10%. The two band tariff system with 10% and 35% that was imposed on imports in February 2000 had continued in 2001 also. The introduction of surcharges and grant of duty waivers on certain products in 2001 disturbed this simple structure. A 40% surcharge on import duty under section 10 (A) of the custom ordinance was imposed on 21st February 2001 and this was effective till 31st December 2001. Imports with zero duty were automatically exempted from this surcharge. In view of cost of living considerations potato was exempted from this surcharge.

Other than the import duty, Defense Levy/National Security Levy and the stamp duty should be added to the CIF price. Instead of Defense Levy, National Security Levy was introduced in 01st January 1996. Defense Levy was increased from 3.5 percent to 4.5 percent on 01st July 1995. Turn over Tax was replaced as Goods and Services Tax (GST) and GST and Surcharge were introduced in 1st April 1998. Chillies, onions and potatoes were exempted from GST.

Table 2.26: Tariff Changes on Imports of Other Field Crops

	Chillies	Red Onion	Big Onion	Potato
1995 Jan 1 - Feb 7	35% or Rs.20/kg	35%	35% or Rs.9/kg	35% or Rs.12/kg
1995 Feb 8 - July 96	35%		35%	
1996 July -Dec 03.1996	35%	20%	35%	35%
1996 Dec 4,- 1997 Jan 31	35%	20%	20%	20%
1997 Feb 1- 97 Nov 27	35%		35%	35%
1997 Nov 28- 1998 Jan 31	35%	20%	20%	20%
1998 Feb 1- 1998 Nov 05	35%		35%	35%
1998 Nov 06 - 2000 May 10	35%		35%	35%
2000 May 11- 2000 Aug 29	35%		35%	35%
2000 Aug 30- 2000 Dec 07	35%		35%	35% + 35% surcharge
2000 Dec 08 - Dec 31,2000	35%		35%	Rs.20/kg
2001.Feb 20-2002.Mar 31,40% surcharge on imported goods	35%		35%	Rs.20/kg

Source: CBSL Annual Reports, Sri Lanka Customs, Gazettes of the Government of Sri Lanka

The general public has very little awareness about the tariff structure. The effective duty rate alone cannot show the real picture of the taxes paid by the importer and the effect of sudden changes in the commodity marketing trade as well as the cost of living of the poor consumers.

Total Tax Incidence was calculated as follows

Custom Duty = CIF Value *effective custom duty rate

TT/GST = (CIF Value + Custom Duty) *1.25(TT rate/100)

DI/NSL = (CIF Value + Custom Duty) *1.25*(DL/NSL rate/100)

Surcharge= CIF Value *effective custom duty rate*Surcharge rate

Total Tax Incidence = Custom Duty + TT/GST+ DI/NSL+ Surcharge

According to this calculation the total tax incidence varied from 28 percent to 60 percent for potato between 1996 to November 2000. The lowest percentage was recorded when the duty waiver of 15 percent was implemented. With the introduction of 35 percent surcharge on potato in the first week of December 2000 the total tax incidence was increased up to 212 percent. As a result imports have declined by 10 percent and prices of potato and almost all the upcountry vegetables have increased considerably. The total tax incidence for big onion and dried chillies was just below 48 percent. In 1997 the imports of big onion had increased by 39 percent and in 1998 and 1999 it had declined by 16 percent.

The tariff structure indicates the open market price distortions. Thus the other field crop farmers were discouraged from farming and they tried to sell their products at a higher

rate. This type of long term protection of only potato and big onion distort the resource allocation and balance between the crop sectors. On the other hand the tariff reduction reduces the government revenue which is needed for the essential public services.

Under chapters 1-24 of the HS coding system, Sri Lanka has bound tariffs on almost all agricultural products including rice, big onion and chillies falling at 50 percent except for certain domestic food crops including potato and some varieties of beans that have been bound at 100 percent with the Initial Negotiation Rights given to countries of European Community. At the Uruguay Round in 1986-1994 the Agreement of Agriculture (AoA) was adopted and concluded in April 1994. It introduced new disciplines on trade and agricultural products and were implemented between 1995 and 2000. Accordingly Sri Lanka agreed to reduce tariff for agricultural imports to 50 percent. Some researchers have argued that because of this the domestic other field crop sector had failed. It is true that as a result of the import liberalization policy as well as tariff policy the imported quantities had increased and the domestic field crops sector has changed considerably. But in the other field crops sector, quality of the products is the main factor that reduces demand at the market. The best example is big onion. Very few farmers used quality seeds which produced good yields. They were able to compete with the imported big onions. But the other farmers who used poor quality seeds obtained poor yields and complained about the cost of the product. Then the government imposed additional tax to protect an inefficient crop.

Table 2.27: Total Tax Incidence for Potato

Period	CIF Value Rs/kg	Statutory Duty	Duty Waiver	Effective Import Duty	Surcharge %	TT/GST	DL/NSL	Total Tax Incidence
01.01.95-07.02.95		35% or Rs.12/kg	0	89	0	20	4.5	148.88
08.02.95-01.06.96		35	0	35	0	6	4.5	54.72
0.06.96-03.12.96		35	0	35	0	Exempted	4.5	44.59
04.12.96-31.01.97		35	15	20	0		4.5	28.75
01.02.97-27.11.97		35	0	35	0		4.5	44.59
28.11.97-31.01.96		35	15	20	0		4.5	28.75
01.02.98-05.11.98		35	0	35	0		4.5	44.59
05.11.98-10.05.2000		35	0	35	0		5.5	46.28
11.05.2000-29.11.2000	12.19	35	0	35	0		6.5	47.97
30.07.2000-07.12.2000		35	0	35	35%		6.5	60.22

Source: Sri Lanka Customs; IPS

Table 2.28: Total Tax Incidence for Big Onion

Period	CIF Value Rs/kg	Statutory Duty	Duty Waiver	Effective Import Duty	Surcharge %	TT/ GST	DL/ NSL	Total Tax Incidence
01.01.95-07.02.95	11.14	35% or Rs.9/kg	0	81	0	20	4.5	138
08.02.95-01.06.96		35	0	35	0	20	4.5	78.34
0.06.96-03.12.96		35	0	35	0	Exempted	4.5	44.59
04.12.96-31.01.97		35	15	20	0		4.5	28.75
01.02.97-27.11.97		35	0	35	0		4.5	44.59
28.11.97-31.01.98		35	15	20	0		4.5	28.75
01.02.98-05.11.98		35	0	35	0		4.5	44.59
06.11.98-10.05.2000		35	0	35	0		5.5	46.28
11.05.2000-31.12.2000		35	0	35	0		6.5	47.97

Source: Sri Lanka Customs; IPS

Table 2.29: Total Tax Incidence for Dried Chillies

Period	CIF Value Rs/kg	Statutory Duty	Duty Waiver	Effective Import Duty	Surcharge %	TT/ GST	DL/ NSL	Total Tax Incidence
01.01.95-07.02.95	48.42	35% or Rs.9/kg	0	41	0	20	4.5	68.18
08.02.95-01.06.96		35	0	35	0	20	4.5	78.34
0.06.96-03.12.96		35	0	35	0	Exempted	4.5	44.59
04.12.96-31.01.97		35	0	35	0		4.5	44.59
01.02.97-27.11.97		35	0	35	0		4.5	44.59
28.11.97-31.01.98		35	0	35	0		4.5	44.59
02.02.98-05.11.98		35	0	35	0		4.5	44.59
06.11.98-10.05.2000		35	0	35	0		5.5	46.28
11.05.2000-31.12.2000		35	0	35	0		6.5	47.97

Source: Sri Lanka Customs; IPS

The government introduced floor prices were not implemented properly under the open economic policy scenario. Hence the floor price scheme that operated before 1994 for the protection of other field crops sector was not in operation during 1996 (CBSL, 1996). After understanding this situation the Central Bank of Sri Lanka introduced the forward contract mechanism under the “*Govi Sahanaya Scheme*” in 1999. Under this scheme the farmers and traders entered into an agreement to purchase pre determined quantities at pre determined prices for the future sales/purchase. Forward contracts are useful to stabilize prices and market supply.

Considering the other field crops sector, maize crop was not protected by the tariff. The licensing requirement on the import of maize grain for the processing industry was removed in March 2000 and an import duty of 10% was imposed as against the duty free imports allowed when the commodity was under the license. In the budget 2000 government introduced a 5 % import duty on maize to protect farmers because maize is very important as a feed to the poultry industry. But the imported quantity was about 128,000mt and this indicated the insufficiency of local production. In 2000, as a result of

this high duty, domestic potato production was increased by 78% while the total availability remained at a lower rate compared to the previous years mainly due to low demand. The average retail prices increased by 23% compared to that of the previous year at the expense of consumers.

Table 2.30: Cost of Production of Other Field Crops

Crop	Cost of Production (Rs/Kg)											
	95/96		96		96/97		97		2000/01		2001	
	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC
Dried Chillies												
Anuradhapura	82.49	33.76	60.08	32.86	69.84	27.99	68.82	35.77	78.41	16.25		
Kalawewa							58.67	33.28			94.01	41.88
Big onion												
Kalawewa							9.33	5.44				
Matale			8.72	5.61			8.83	5.27			14.72	9.38
Red Onion												
Ratnapura	13.37	6.15										
Moneragala	12.18	9.70										
Puttalam							20.35	15.12	30.37	26.53	30.28	26.53
Potato												
Nuwara Eliya	24.16	20.84	23.94	19.91	23.12	20.24	29.69	22.18	34.48	27.66	42.23	36.69
Badulla	19.14	16.17	22.86	10.19	23.29	18.72	23.24	14.65	34.33	26.42	47.02	31.90
Maize												
Anuradhapura					15.12	3.24			14.41	6.75	15.74	6.43
Moneragala									17.30	7.82		
Badulla											15.82	7.51
Green gram												
Moneragala	16.96	4.44							48.21	22.38		
Hambantota	10.03	1.89							57.00	26.71		
Ratnapura					29.99	4.93						
Cowpea												
Moneragala	14.27	2.61							45.29	19.34		
Kurunegala											63.94	10.15
Groundnut												
Moneragala					21.56	3.82			36.93	17.87		
Ratnapura					34.37	4.66						
Nuwara Eliya					23.12	20.24						
Toor Dhal												
Anuradhapura	24.29	8.91										
Soy Bean												
Anuradhapura											29.58	15.70
Black gram												
System H											47.09	26.01
Finger Millet												
Anuradhapura									30.30	3.03		
Gingelly												
Anuradhapura											53.05	16.01
Manioc												
Gampaha											6.16	5.03
Sweet Potato												
Ratnapura											8.47	4.09

Source: Socio Economics & Planning Centre, Department of Agriculture

As a result of the increased retail prices the demand had declined gradually. The sustainability of the commodity depended on the high turnover. If not with the declined demand the crop may disappear from the market gradually. The government intervention discouraged the investment on agribusiness sector because of the high farm prices. Processing industry cannot sustain when there was inefficiency at the farm level because consumers could not afford the final product.

2.9 The Period 2002-2004; 2004-2007

The United National Party came in to power in December 2001 Parliamentary election and it had a reinforced determination to accelerate the reform process. In June 2002, it presented to the IMF and World Bank Sri Lanka first Poverty Reduction Strategy Paper (PRSP) as “Regaining Sri Lanka”. This policy document presented the new governments renewed commitment to greater economic growth and poverty reduction, more exports and further liberalization and privatization (Regaining Sri Lanka (2003).

The result of these policy reforms was that Sri Lanka became one of the most open economies in the region (WTO, Sri Lanka Trade Policy Review 2004). The official measure of openness, the ratio of exports and imports to gross domestic product (GDP), was 67% in 2002. Tariffs were the major trade policy instrument in the agricultural sector and while individual tariffs have been raised and lowered frequently, the simple average applied tariff was 21.0% on agricultural products.

In 2004, left of centre government came back to power after Parliamentary elections. But the former process was not changed as expected by the people. The National Policy Framework was prepared by the Ministry of Agriculture, Lands and Livestock (MALL) in 2004.

The contribution of non-plantation agriculture to GDP was maintained at 11 percent during 2003-2007 and it had shown a declining trend. During 2007, its share was only around 11.9 percent. It had declined by 1 percent in 2007 compared to that in 2003. The employment in agriculture had come down from 46.7 percent in 1990 to 32.6 percent in 2008. The absolute number of people employed in agriculture was 2.36 million in 1990 and 2.34 million in 2008 (Dept. of Census & Statistics, 2008). The annual average growth rate of non-plantation agriculture was 0.9 percent during 1994-2001 and -1 percent during 2002-07 which was the lowest growth rate among all sectors except the plantation sector.

Table 2.31: Contribution of Non-plantation Agriculture to GDP (%)

Sector	2003	2004	2005	2006	2007	2003-07 %
Agriculture & fisheries	13.23	12.54	11.82	11.34	11.69	-1.54
Agriculture	11.58	10.94	11.04	10.14	10.16	-1.42
Fisheries	1.65	1.60	0.78	1.20	1.54	-0.11

Source: CBSL Annual Report 2007

2.9.1 Agricultural Policies

As stated earlier, the new government, the United National Front (UNF), in 2002 presented a vision and strategy for accelerated development called 'Regaining Sri Lanka' (RSL). The framework identified the acceleration of the process of privatization of commercial activities, the reformation of the legal foundations of the economy and an increasing efficiency in critical government functions as the key elements of the programme required for Sri Lanka to regain control of the economic situation (Government of Sri Lanka 2003).

The aims of the agricultural policy framework of Sri Lanka in 2002 were to improve agricultural productivity, raise farm incomes, and ensure food security through supplying food at affordable prices. A secondary goal was to facilitate the transformation of traditional agriculture into commercially and economically viable enterprises. At the same time, the Government recognised the importance of small-scale agriculture as a means of reducing rural poverty and contributing to rural development. To achieve these aims the government made proposals for maximising the contribution of the agricultural sector towards poverty reduction (Government of Sri Lanka, 2002). These proposals involved: (a) improving land markets and strengthening land tenure arrangements; (b) making improved technology available to small farmers through intensive adaptive research on technologies that have proved successful elsewhere; (c) shifting responsibility for commercial seed production, veterinary services, etc. to the private sector; (d) rationalising government extension services at local level, encouraging private management where possible; (e) introducing partial cost recovery and other local financing mechanisms to enhance the responsiveness of research and extension services to the needs of small farmers; and (f) upgrading the agricultural marketing system.

There was a change of government after the 2004 General Election. The alliance government (based on a Memorandum of Understanding between the Sri Lanka Freedom Party and the Marxist Janatha Vimukthi Peramuna) launched a five point nation building programme called 'Rata Perata' (Country Forward: Creating Our Future: Building Our Nation), which included a new economic order, durable peace with dignity, investing in people, clean governance and ensuring law and order. The new United People's Freedom Alliance (UPFA) adopted a different strategy from that of the UNF regime, realizing that new social policies were essential for growth and economic stability. The policy of the new regime emphasized an equitable distribution of income by providing enhanced relief for the poor and vulnerable while encouraging more economic activities in the rural areas, through support of small and medium enterprises. Further, the government continued with welfare measures even at a time of high fiscal constraints despite the resistance of the multilateral financial institutions. Some policies such as restoring the fertilizer subsidy, broadening the poverty alleviation programme, and continuation of electricity, transport and petroleum subsidies were carried out to address the issues of poverty and unbalanced growth at the time (United People's Freedom Alliance 2004; Kelegama 2006).

In the policy statement 'Creating Our Future – Building Our Nation' (2004) rejected the previous policies. It implied that 'Liberalization and deregulation have displaced

domestic based production and other economic activities, particularly agriculture.’ ‘Due to the misaligned trade and tariff regime, the domestic resource based activities are unable to compete with imports.’ ‘Adequate safeguards will be put in place to protect the domestic economy from unfair import competition from nations that subsidize their own producers’.

With the implementation of this policy the government moved towards state intervention in the economic activities for the benefit of the poor, both consumers and producers. The strategies they used were incentives, subsidies, tariffs and other protective measures to build up the domestic economy to increase exports via small and medium sized enterprises (SME), particularly in agriculture. At the same time, it was projected to promote exports by pursuing greater access to foreign markets through bilateral trade agreements.

In the 2005 budget announced on 18th November 2004, the government continued its line against trade liberalization. In the areas of sensitive food items the government moved towards greater protection of domestic agriculture and industry, with a range of new subsidies, tax exemptions and tariff increases. The agricultural inputs such as seeds and planting materials, animal feed and shrimp feed etc. were exempted from VAT, and import duty on milk powder was to be reintroduced.

The agricultural sector showed the lowest growth performance of 0.4 percent during the period of 2000-04 compared to the average growth rate of about 2.5 percent in the 1980s and 1990s. In the past also this sector showed vast fluctuations in 1987, 1989, 1992 and 1996. The negative growth rate (-0.5 percent) was observed in 2001 mainly due to adverse weather conditions.

The most recent development plan is the Mahinda Chinthana: Vision for a New Sri Lanka. It provides a development framework for the country with a ten year horizon, 2006-2016. This policy tries to integrate the positive attributes of the market oriented economic policies while safeguarding the domestic needs by providing necessary support to domestic enterprises and encouraging foreign investment. The planning refers to creating an economy which is largely private sector driven, more dynamic and regionally integrated. It is important to note that the current development strategy emphasizes the importance of regional development, which is a timely issue and provide fertilizer subsidy for paddy and small holding agriculture (Ministry of Finance and Planning 2006).

The National Agricultural Policy document of 2007 covered food, floriculture and export agricultural crop sectors with the aim of solving many problems and facilitated their rapid growth. The objectives stipulated in the policies have been designed to meet the basic needs of the farming community in terms of food and nutrition security, enhanced employment opportunities and incomes. To achieve these objectives they have to adopt technically feasible, socially acceptable, economically viable and environmentally friendly production technologies, marketing and related strategies.

Goals and Objectives stipulated in the policy are to a) Increase domestic agricultural Production to ensure food and nutrition security of the nation, b) enhance agricultural productivity and ensure sustainable growth, c) maximize benefits and minimize adverse effects of globalization on domestic and export agriculture, d) adopt productive farming systems and improved agro technologies with a view to reduce the unit cost of production and increase profits, e) adopt technologies in farming which are environmentally friendly and harmless to health, f) promote agro based industries and increase employment opportunities, and g) enhance the income and the living standard of farming community (Herath, A).

Table 2.32: Production of Other Field Crops (Mt) 2002-2007

Crop	2002	2003	2004	2005	2006	2007	% Change		
							2002-03	2002-04	2004-07
Groundnut	5,730	6,580	7,930	9,040	9,820	9,840	14.8	38.4	24.1
Green gram	10,320	10,610	7,810	9,000	7,980	8,520	2.8	-24.3	9.1
Cowpea	10,440	12,900	9,160	11,180	10,120	10,850	23.6	-12.3	18.4
Soy bean	1,160	2,960	1,890	4,990	5,180	4,800	155.2	62.9	154.0
Manioc	224,980	228,840	220,780	223,210	226,080	219,930	1.7	-1.9	-0.4
Potato	88,710	71,750	81,270	79,450	78,490	77,390	-19.1	-8.4	-4.8
Sweet potato	47,460	44,050	39,720	41,180	41,620	49,160	-7.2	-16.3	23.8
Gingely	4,070	5,490	4,350	6,160	5,970	6,300	34.9	6.9	44.8
Chillies	46,350	46,190	40,480	52,870	52,900	48,700	-0.3	-12.7	20.3
Big onion	31,560	32,310	37,510	55,550	73,610	92,160	2.4	18.9	145.7
Red Onion	35,330	35,510	39,460	53,730	60,760	57,040	0.5	11.7	44.6
Finger millet	4,070	5,270	4,670	6,450	6,290	5,460	29.5	14.7	16.9
Maize	26,410	29,650	35,200	41,800	47,530	56,440	12.3	33.3	60.3

Source: Department of Census and Statistics; MFPAD/HARTI

Table 2.33: Production as a Percentage of Total Availability of OFC 2002-2007

Crop	2002	2003	2004	2005	2006	2007	% Change		
							2002-03	2002-04	2004-07
Groundnut	51.05	71.06	65.38	65.83	66.16	71.89	20.0	14.3	6.5
Green gram	59.17	99.23	98.40	49.12	40.98	40.03	40.1	39.2	-58.4
Cowpea									
Soy bean	24.83	67.11	54.04	79.23	96.07	99.98	42.3	29.2	45.9
Manioc	100								
Potato	70.01	63.93	74.37	66.10	62.77	47.39	-6.1	4.4	-27.0
Sweet potato	100								
Gingerly	93.06	99.30	99.51	99.56	99.55	99.12	6.2	6.5	-0.4
Chillies*	10.26	9.44	9.42	10.81	10.11	8.88	-0.8	-0.8	-0.5
Big onion	19.52	19.84	24.58	33.41	38.12	39.57	0.3	5.1	15.0
Red Onion	95.08	99.23	93.61	84.00	84.84	70.60	4.2	-1.5	-23.0
Finger millet	78.21	89.62	71.86	82.39	76.49	67.73	11.4	-6.3	-4.1
Maize	21.82	17.82	19.12	22.15	36.12	41.75	-4.0	-2.7	22.6

Source: Department of Census and Statistics; Sri Lanka Customs; MFPAD/HARTI

*It was assumed that 1/4th of the total production as dried chillies.

Table 2.34: Cost of Production of Other Field Crops Maha 95/96 – Yala 2007

Crop/District	Cost of Production (Rs/Kg)											
	95/96		96		96/97		97		2006/07		2007	
	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC	IIC	EIC
Dried Chillies												
Anuradhapura	82.49	33.76	60.08	32.86	69.84	27.99	68.82	35.77	78.41	16.25		
Kalawewa							58.67	33.28			94.01	41.88
Big onion												
Kalawewa							9.33	5.44				
Matale			8.72	5.61			8.83	5.27			14.72	9.38
Red Onion												
Ratnapura	13.37	6.15										
Moneragala	12.18	9.70										
Puttalam							20.35	15.12	30.37	26.53	30.28	26.53
Potato												
Nuwara Eliya	24.16	20.84	23.94	19.91	23.12	20.24	29.69	22.18	34.48	27.66	42.23	36.69
Badulla	19.14	16.17	22.86	10.19	23.29	18.72	23.24	14.65	34.33	26.42	47.02	31.90
Maize												
Anuradhapura					15.12	3.24			14.41	6.75	15.74	6.43
Moneragala									17.30	7.82		
Badulla											15.82	7.51
Green gram												
Moneragala	16.96	4.44							48.21	22.38		
Hambantota	10.03	1.89							57.00	26.71		
Ratnapura					29.99	4.93						
Cowpea												
Moneragala	14.27	2.61							45.29	19.34		
Kurunegala											63.94	10.15
Groundnut												
Moneragala					21.56	3.82			36.93	17.87		
Ratnapura					34.37	4.66						
Nuwara Eliya					23.12	20.24						
Toor Dhal												
Anuradhapura	24.29	8.91										
Soya Bean												
Anuradhapura											29.58	15.70
Black gram												
System H											47.09	26.01
Finger Millet												
Anuradhapura									30.30	3.03		
Gingelly												
Anuradhapura											53.05	16.01
Manioc												
Gampaha											6.16	5.03
Sweet Potato												
Ratnapura											8.47	4.09

Source: Department of Agriculture

With the new government policies the cultivated extent and production have increased. As seen earlier to 2003 and in 2004 the production had declined. However with the government change in 2004 introduction of policies favourable to agriculture contributed to increased production. During the period of 2004 – 2007 a considerable increase was reported for big onion followed by maize mainly due to protection policies. Though the production of green gram increased by about 9 percent from 2004 to 2007 the contribution to total availability had declined sharply. The contribution of domestic production of green gram to the total availability had declined from 98 percent in 2004 to 40 percent in 2007. The domestic production of potato had also declined during this period. Hence the contribution to the total availability had declined by 27 percent.

The highest increase of imports was reported for green gram. Imports of red onion, maize, potato and ginger had also increased at a remarkable rate.

Table 2.35: Imports of Other Field Crops (Mt) 2002-2007

Crop	2002	2003	2004	2005	2006	2007	% Change		
							2002-03	2002-04	2004-07
Groundnut	5,494	2,680	4,199	4,692	5,023	3,847	-51.2	-23.6	-8.4
Green gram	7,121	82	127	9,321	11,495	12,764	-98.8	-98.2	9950.4
Soy bean	3,512	1,451	1,607	1,308	212	1	-58.7	-54.2	-99.9
Potato	37,997	40,488	28,014	40,746	46,556	85,929	6.6	-26.3	206.7
Gingelly	303	39	21	27	27	56	-87.1	-93.1	166.7
D/Chillies	25,337	27,686	24,323	27,261	29,410	31,242	9.3	-4.0	28.4
Big onion	130,117	130,535	115,120	110,713	119,478	140,773	0.3	-11.5	22.3
Red Onion	1,828	276	2,693	10,233	10,859	23,754	-84.9	47.3	782.1
Finger millet	1,134	610	1,829	1,379	1,933	2,601	-46.2	61.3	42.2
Maize	2,962	886	4,522	11,612	12,792	26,355	-70.1	52.7	482.8

Source: Sri Lanka Customs

Table 2.36: Tax Revenue from Other Field Crops (Rs.mn) -2005

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Big Onion	195	173	160	197	167	171	166	0	0
potato	116	101	105	78	65	91	108	94	0
Chillies	73	62	87	52	0	56	58	54	69
Total of First 50 Items	3,793			4,799	6,313	5,996	6,169	6,059	6,630
Total	8,148			9,994	11,631	11,531	11,713	11,860	12,662

Source: Sri Lanka Customs

According to the available data it was revealed that tax revenue from big onion and potatoes remained under first 20 Revenue Earnings. The recorded highest tax earning food commodity was big onion and it was about 5 percent of the first fifty of total revenue and 2 percent of the total revenue followed by potato and dried chillies. These taxes were paid by the consumers to protect domestic farmers. Therefore it is necessary to increase the production efficiency for the sustainability of these crops and reduce the taxing of consumers.

Table 2.37: Tax Revenue from Other Field Crops as a Percentage of First Fifty of Total Revenue – 2005

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
B' Onion	5.15			4.10	2.65	2.86	2.70	0.00	0.00
Potato	3.06			1.61	1.02	1.52	1.76	1.54	0.00
Chillies	1.92			1.09	0.00	0.94	0.94	0.89	1.04

Source: Sri Lanka Customs

Table 2.38: Tax revenue from Other Field Crops as a percentage of total revenue – 2005

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
B' Onion	2.40			1.97	1.44	1.49	1.42	0.00	0.00
Potato	1.42			0.78	0.56	0.79	0.93	0.79	0.00
Chillies	0.89			0.52	0.00	0.49	0.50	0.45	0.55

Source: Sri Lanka Customs

2.9.2 Global Situation and Sri Lanka

It is necessary to understand the global situation of these food crops because imports of the country had increased while the domestic cultivation and production had declined. It was found that the yields of the other field crops in Sri Lanka were low compared to those in the other countries. Yields of the protected crops such as big onion and potato were also very low and hence the unit costs of these crops were very high. Therefore the local farmer was unable to compete with the products marketed by other producing countries. Hence the local farmer and consumer were unable to get the comparative advantage. When this situation continued, Sri Lankan farmer faced many problems.

There is a potential to increase the yields of cereals, pulses, millet and soya bean there is a potential to increase. For the sustainability of crops it is needed to increase the yields of indigenous crops because there is a demand for them. In addition it is necessary to find out ways to increase the yields of almost all the selected crops.

Table 2.39: Comparison of Other Field Crop Yield in Sri Lanka with the Yields of Other Regions of the World

Crop	Compared to India		Compared to Developed Countries		Compared to Developing Countries		Compared to World	
	1994	2004	1994	2004	1994	2004	1994	2004
Maize	44.37	84.67	490.43	451.80	247.46	309.87	18.08	19.36
Soya bean	-10.42	-30.73	74.34	75.34	40.41	32.94	52.87	65.24
Groundnut in shell	90.19	77.43	291.85	221.28	177.78	232.59	-12.87	-19.15
Millet	5.06	34.13	40.37	39.86	24.05	46.13	-16.67	-20.02
Cereals	-27.08	-24.60	-25.19	-30.51	0.03	17.20	-3.10	-2.09
Pulses	-27.85	-33.70	-15.13	28.65	-14.29	-10.32	15.13	13.25
Roots and Tubers	93.75	119.08	214.64	237.89	64.61	95.66	-15.06	-22.06
Cassava	174.76	223.26			44.82	87.46	-24.14	-34.59
Sweet potatoes	23.66	52.00	257.53	319.07	135.01	183.51	-12.80	-24.14
Potatoes	50.86	57.04	186.29	190.94	27.32	47.65	7.26	8.18
Onions (Dry)	-10.46	18.77	241.34	448.16	21.29	35.55	11.01	11.95
Chillies & Peppers	252.57	215.64	1179.66	912.96	275.07	487.71	15.38	-3.05

Source: FAO Statistics/MFPAD

Table 2.40: Yield Difference between Sri Lanka and Other Countries in 2004 (Kg/ha)

Crop	India	Developing Countries	Developed Countries	World
Maize	917	3,028	4,893	3,824
Soya bean	-339	249	831	1,131
Groundnut in shell	422	1,251	1,206	907
Millet	244	324	285	116
Cereals	-794	173	-985	102
Pulses	-307	-164	261	-65
Roots and Tubers	10,184	8,768	20,344	4,948
Cassava	19,281	8,099	-8,636	2,311
Sweet potatoes	3,079	13,525	18,892	8,830
Potatoes	6,486	4,885	21,712	6,215
Onions (Dry)	1,640	7,418	39,156	9,348
Chillies & Peppers	6,273	12,060	26,558	11,603

Source: FAO Statistics/MFPAD

Sri Lanka must seek avenues to increase the yields up to the Indian level. The yields of potato and onions in developed countries were higher by 22mt/ha and 39mt/ha than that of Sri Lanka.

Table 2.41: Changes of Yield in 1994 Compared to 2004 (%)

Crop	Sri Lanka	India	Developing Countries	Developed Countries	World
Maize	7.98	38.12	17.96	0.91	19.25
Soya bean	8.46	-16.14	-5.32	9.08	2.34
Groundnut in shell	0.93	-5.84	19.73	-17.25	11.09
Millet	0.56	28.38	17.80	0.20	13.06
Cereals	11.23	15.03	17.15	3.32	18.38
Pulses	9.36	0.50	4.62	65.77	2.92
Roots and Tubers	-3.39	9.24	18.87	3.75	9.07
Cassava	-3.26	13.82	29.45		11.62
Sweet potatoes	-13.68	6.11	20.64	1.18	4.95
Potatoes	3.28	7.51	15.97	4.96	16.96
Onions (Dry)	-26.69	-2.76	11.76	17.73	12.71
Chillies & Peppers	14.21	2.25	56.69	-9.59	31.66

Source: FAO Statistics/MFPAD

The table 2.41 illustrates that compared to 1994, 2004 yields of onions, sweet potatoes and cassava had declined by 27, 14 and 4 percent respectively in Sri Lanka while those had increased in the developing countries. Yield of maize, millet and cereals in India had increased by 38, 28 and 15 percent respectively. Another important feature is that yield increases in developing countries were higher than that of the developed countries. The highest yield increase was reported for pulses in developed countries.

This chapter indicates that before 1977 these selected crops were important for the national food security because economy was closed. As a result, the cultivated extent and the production had shown a significant increase. Hence total availability of food commodities was through local production. In addition, the restrictions were imposed on imports of agricultural inputs such as fertilizer, tractors and agro-chemicals. Foreign exchange controls and quantitative restrictions on imports under import licensing were also imposed.

Sri Lanka stepped on an extensive economic liberalization process in 1977. In November 1977 the government implemented a trade liberalization package by reducing tariff and removing import licensing and quota. Import duties had been used as a source of government revenue and to protect selected local industries. The OFC sector had shown a noticeable transition since 1978 Compared to the period 1970-77, mainly due to the changes of trade policies in 1977. The tariff structure was periodically reviewed since 1980 and changes were made according to the recommendations of the Presidential Tariff Commission appointed in 1980. When the domestic prices of potatoes, onions and chillies showed an increasing trend tariff rates were revised to reduce the local market prices as a consumer protection technique. Therefore the consumers used to purchase good quality imported food commodities at cheaper prices compared to those of the domestic products. As a result imported quantities of potatoes, dried chillies and big

onions increased sharply. This adversely affected most of the local farmers because they did not attempt to increase the productivity and quality of the domestic products. Without increasing the yields, improving the quality and reducing the cost of production, farmers complained about the imports. With the increased demand for imported food items demand for poor quality domestic food items declined.

As a result of protection policies potato production was somewhat stable during the period 1980 to 1997. Red onion was popular during 1970 to 1990 period and big onion cultivation had expanded since 1990. Since 1990 the cultivated extent of red onion had declined gradually while the cultivated extent of big onion had increased. Since 1997 imports of potato, green gram, maize, big onion, finger millet and dried chillies had increased gradually. With the farmer protection policies the extent cultivated and production of big onion had increased by 127 and 145 percent during the period 2004 to 2007. Though the farmer protection policy of potato was implemented, the extent cultivated had declined by 3 percent during this period. When the potato prices increased sharply in 1991 the farmers of upcountry vegetables sold those vegetables at higher prices. This trend is seen for the low county vegetables also. Hence the cultivated extent of potato had not expanded.

In the period 2002 to 2007 the production of big onion, red onion, maize, groundnut, finger millet, gingely and chillies had increased gradually. The total availability of these food crops had increased during the last few years. The deficit had been imported. That shows the demand. Hence it is needed to supply good quality new high yielding varieties to the farmers at the right time.

CHAPTER THREE

Marketing Margin as a Measure of Market Efficiency

3.1 Introduction

In this chapter the price spread, marketing efficiency and constraints in marketing of other field crops in Sri Lanka has been examined. Marketing economists evaluate marketing systems according to the degree of market efficiency. There is a distinction between technical and economic efficiency. Economic efficiency is more attractive because it considers the value of resources. Economic efficiency occurs in marketing when market operations are carried out at the least cost, subject to the techniques and knowledge available, provided that the goods are supplied at a desired quality.

Economic efficiency is likely to occur in a competitive environment where traders are forced to provide good quality products and services at low prices. The obstacles to economic efficiency in marketing are lack of information, conflict of established institutions and monopoly, oligopoly or monopsony power on the part of some market agents. The components of an efficient market must be identified to evaluate markets on the basis of efficiency. Some of these are:

- Consumer demand is accurately and quickly passed on to the producer and the resulting information on producer supply is conveyed back to the consumer.
- Marketing and distribution services are provided at the minimum cost per unit, compatible with the kinds and qualities of services required. Normally, the cost of marketing services will be reflected in the marketing margin.
- Innovation and flexibility exist in the market and the intermediaries can respond to new opportunities in terms of location or product quality. .

A common way of measuring market efficiency is to examine marketing margins. This is an attempt to evaluate economic or price efficiency. The overall marketing margin is simply the difference between the farm-gate price and the retail price. That difference is considered as the cost of marketing and all that is involved in getting the product from the producer to the consumer in the desired form. The question to be evaluated is whether the marketing services being provided are "worth" the cost of this margin.

Marketing margins can be calculated for different levels of the market, so that:

$$\text{Marketing margin} = P_1 - P_2$$

Where,

P_1 = the price at one level or stage in the market (producer/wholesaler)

P_2 = the price at another level (wholesaler/retailer)

A marketing margin is the difference between the primary and derived demand curves. Primary demand is based on consumer preferences and their responses to retail prices. Derived demand is based on the relationship between price and quantity at the farm gate

or intermediate points. Hence derived demand can be considered as consumer demand that is experienced by producers or other intermediaries. Primary and derived supply curves are similar. The retail price is established where the primary demand curve and the derived supply curve intersect. The farm-gate price, on the other hand, is at the point where derived demand and primary supply curves intersect. The difference between these two prices is the gross marketing margin (Amir & Knipscheer, 1989).

There are several types of marketing margins, based on the market stage. The wholesale margin is the difference between the price paid by the wholesale trader and the farm gate or producer price. The retail margin is the difference between purchasing price of the retailer and the price paid by the final consumer. This margin is expressed in monetary terms and it is called the price spread. Expressed as a percentage, it is known as the percentage margin. The mark-up is the price spread between two levels in the market divided by the selling price, expressed as a percentage.

Calculation of marketing margins

wholesale margin	=	Wholesale price - producer price
retail margin	=	Retail price – Wholesale price
total price spread	=	Wholesale margin + Retail margin
percentage margin	=	Wholesale margin/ Producer price*100
retail mark-up	=	Retail margin/ Retail price* 100

In an efficiently operating market, the competitive environment should keep the marketing margin to a minimum. Accordingly the market prices should reflect two elements such as the actual costs of marketing plus normal profit margin. In the normal profit margin returns to investment comparable to available rates of interest plus some compensation for the risk borne by the trader are included.

At different stages in the marketing system the "product", either a raw product or a processed product is sold and bought. Normally, at each successive stage, the price per unit bought/sold is higher and it is sold after value has been added. This refers to the fact that some marketing service has been provided, whether in transport, processing in other marketing functions, and the value of such service is included in the product price. Value added at each successive stage can be divided into two categories such as real additional costs of adding value and the extra "profit" made.

Some of the additional costs incurred at each marketing stage were also observed in the market. They were taxes and market fees, transport costs, packaging cost, storage cost and any interest paid on a loan borrowed to finance the purchase. It was difficult to obtain information on value added costs and profits as the traders were reluctant to reveal information. They suspect that they will be taxed or regulated and or information will be used by a competitor.

Value added costs and profits vary widely from time to time. This was revealed by analyzing the marketing margins. Some traders made profits while others failed due to many reasons even though the market as a whole showed normal margin.

Time series data were used to estimate marketing margins. This is one of the commonly used approaches to get sample prices of uniform products at each market stage through time, relying on data from a smaller number of sources. The method selected depended on the availability of reliable means of collecting data. Hence the price data collected at producer, wholesaler and retailer levels on weekly basis by the marketing, Food Policy and Agribusiness Division were used for the margin calculations. The channel is producer→ wholesaler→ retailer→ consumer. Cost and profit margin tabulation were not done because traders were reluctant to reveal accurate data due to fear that they will be taxed or regulated or the information might be used by a competitor.

The tables 3.1 to 3.11 illustrate the price spread of other field crops and the variations of margins during the last eight years.

3.2 Price Spread of Other Field Crops

The CIF price share of the retail price of imported dried chillies was lesser than that of the domestic producer price. The gross margin between wholesale price and the CIF price was less than 10 percent of the retail price in 2000 – 2002 and in 2004. During the rest of the period this gross margin ranged between 12 – 35 percent. The gross margin between CIF price or domestic producer price and wholesale price as a percentage of retail price was higher in 2006. The reason behind this was a higher tariff and limited supply. In 2006 and 2007 the retail prices of both dried chillies and green chillies increased sharply. The margin between wholesale and retail for dried chillies was less than 25 percent while that was about 40 percent for green chillies in 2007. The producer’s share of green chillies had increased from 51 percent in 2000 to 56 percent in 2007. Therefore the producers used to produce more green chillies to the market.

Table 3.1: Percentage Margin of Dried Chillies – Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF-WP %	WP-RP %
2000	81.75	92.00	115.19	70.97	8.89	20.13
2001	101.64	109.84	134.84	75.38	6.08	18.54
2002	101.74	114.25	136.07	74.77	9.19	16.04
2003	116.27	137.48	159.61	72.85	13.29	13.86
2004	104.88	116.35	143.84	72.91	7.98	19.11
2005	83.22	98.90	126.20	65.95	12.43	21.63
2006	97.27	160.94	182.57	53.28	34.88	11.85
2007	120.07	163.35	199.25	60.26	21.72	18.02

Source: Sri Lanka Customs: MFPAD/HARTI

Table 3.2: Percentage Margin of Dried Chillies Local

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	79.37	81.91	105.18	75.46	2.41	22.12
2001	98.11	99.92	124.89	78.55	1.45	20.00
2002	97.62	106.26	122.44	79.73	7.06	13.21
2003	108.27	136.93	156.03	69.39	18.37	12.24
2004	104.88	112.07	154.00	68.10	4.67	27.23
2005	90.56	91.87	126.20	71.76	1.03	27.20
2006	110.47	152.58	174.84	63.19	24.08	12.73
2007	130.48	150.00	199.25	65.49	9.80	24.72

Source: MFPAD/HARTI

Table 3.3: Percentage Margin of Green Chillies

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	30.84	33.28	67.34	50.59	3.61	45.80
2001	39.55	38.25	72.81	47.46	-1.79	54.32
2002	33.99	30.94	66.38	53.40	-4.60	51.21
2003	37.85	37.72	72.38	47.88	-0.17	52.29
2004	39.77	37.98	78.87	51.85	-2.27	50.42
2005	46.74	50.31	97.86	48.59	3.65	47.77
2006	47.40	51.72	106.94	51.64	4.04	44.32
2007	43.81	48.36	111.16	56.49	4.09	39.42

Source: MFPAD/HARTI

During the period 2000 to 2007, the gross margin between producer price and wholesale price of big onion was less than 45 percent of the retail price except in 2003 and 2007. The producer's share of big onion in 2003 was 64% and that was in 2007 was 87%. This had happened with the increased import tariff. When the tariff rate was increased the imports declined. As a result the domestic prices increased. These increased prices prevailed during the harvesting season. During the year of 2007 the producer price of domestic big onion increased remarkably because farmers control the supply to gain higher prices. As a result of this retail price of red onion- vedalan also increased. During the period of 2003 to 2006 the producer's share of retail price ranged between 65 – 70 percent. The gross margin between wholesale price and retail price was above 20 percent of the retail price for both types of onions.

The producer's share of domestic potato in early years of 21st century was above 75 percent and this has declined slightly in the later years. The gross margin between producer price and wholesale price was higher for Nuwara Eliya potato than that of Welimada potato because of the good keeping quality wholesalers keep stocks of Nuwara Eliya potato and they had to pay labourers, buy pallets and maintain the stores. In

addition, they sorted the good quality potato when the stocks spoiled. For that also they had to pay an additional cost.

Table 3.4: Percentage Margin of Big Onion – Local

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	20.12	24.87	34.27	58.71	13.86	27.43
2001	20.97	27.45	37.28	56.26	17.37	26.37
2002	18.84	25.34	34.10	55.24	19.07	25.70
2003	23.93	29.16	37.50	63.79	13.96	22.24
2004	24.73	32.45	41.41	59.73	18.63	21.64
2005	24.82	37.30	46.76	53.08	26.67	20.24
2006	27.57	36.62	47.14	58.49	19.20	22.31
2007	52.84	46.73	60.63	87.15	-10.08	22.92

Source: MFPAD/HARTI

Table 3.5: Percentage Margin of Big Onion –Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF -WP %	WP-RP %
2000	12.70	24.87	34.27	37.05	35.52	27.43
2001	15.87	27.45	37.28	42.57	31.06	26.37
2002	14.60	25.34	34.10	42.82	31.48	25.70
2003	16.24	29.16	37.50	43.29	34.47	22.24
2004	18.36	32.45	41.41	44.34	34.02	21.64
2005	16.98	37.30	46.76	36.31	43.44	20.24
2006	16.74	36.62	47.14	35.51	42.18	22.31
2007	32.04	46.73	60.63	52.84	24.24	22.92

Source: Sri Lanka Customs: MFPAD/HARTI

Table 3.6: Percentage Margin of Red Onion – Vedalan

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	26.11	53.76	68.63	38.04	40.29	21.67
2001	41.50	54.99	70.72	58.68	19.07	22.25
2002	33.72	48.18	60.32	55.90	23.98	20.12
2003	35.54	40.82	54.32	65.43	9.73	24.84
2004	37.35	45.81	59.12	63.18	14.30	22.52
2005	46.30	56.13	69.62	66.51	14.12	19.38
2006	53.33	56.13	79.60	66.99	3.52	29.49
2007	47.99	74.74	95.67	50.16	27.96	21.88

Source: MFPAD/HARTI

Normally, wholesalers were reluctant to stock Welimada potatoes which were not sufficiently mature because of high risks in storing. Hence traders tried to sell those potatoes immediately after purchasing. The gross margin between wholesale price and retail price was about 20 percent. The CIF price was around 30 percent of the retail price of imported potato. But the margin between CIF price and the wholesale price was very high due to the import taxes. When the local farmer protection programme was in operation the prices and the margin prevailed in the domestic market were high. Since 2002 the import duty structure was changed and instead of adveloram rate a specific rate was introduced. Since 2002 to 2007 the customs duty was Rs.20/kg and other taxes such as VAT, NSL, PAL and SRL varied from time to time. The gross margin between the wholesale price and the retail price was less than 20 percent. There was no any value addition involved to potato hence the margin comprised all marketing costs and profit margin. Wholesalers' commission was about 7 percent for the services rendered by them while importer's commission was about 3 percent. The average marketing cost was about Rs.5.00 per kg. Retailers kept about 20 percent for their cost and profit margin.

Table 3.7: Percentage Margin of Potato- Nuwara Eliya

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	33.18	35.97	48.30	68.70	5.77	25.52
2001	49.56	54.59	66.94	74.04	7.51	18.45
2002	46.90	51.83	62.88	74.58	7.85	17.58
2003	46.99	52.90	63.66	73.81	9.29	16.90
2004	49.92	55.43	68.17	73.23	8.09	18.68
2005	54.02	61.27	73.69	73.30	9.84	16.85
2006	52.98	60.48	74.92	70.72	10.01	19.28
2007	56.22	66.11	81.31	69.14	12.16	18.70

Source: MFPAD/HARTI

Table 3.8: Percentage Margin of Potato – Welimada

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	25.00	30.13	40.39	61.89	12.70	25.41
2001	53.99	49.05	61.37	87.96	-8.04	20.08
2002	41.68	46.20	56.33	74.00	8.02	17.98
2003	45.44	45.03	58.83	77.24	-0.71	23.47
2004	43.74	47.24	57.48	76.10	6.09	17.81
2005	50.53	53.38	69.24	72.97	4.13	22.91
2006	48.21	53.00	66.62	72.37	7.19	20.44
2007	50.93	54.25	68.92	73.91	4.82	21.28

Source: MFPAD/HARTI

Table 3.9: Percentage Margin of Potato – Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF -WP %	WP-RP %
2000	12.03	35.97	48.30	24.92	49.56	25.52
2001	14.00	54.59	66.94	20.91	60.64	18.45
2002	15.94	51.83	62.88	25.35	57.08	17.58
2003	13.17	52.90	63.66	20.69	62.41	16.90
2004	15.03	55.43	68.17	22.05	59.26	18.68
2005	18.59	61.27	73.69	25.22	57.92	16.85
2006	22.27	60.48	74.92	29.73	50.99	19.28
2007	25.45	66.11	81.31	31.30	50.00	18.70

Source: Sri Lanka Customs: MFPAD/HARTI

Table 3.10: Percentage Margin of Green Gram

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	36.69	50.11	63.90	57.42	21.00	21.58
2001	50.56	64.83	81.20	62.26	17.57	20.17
2002	46.03	61.65	76.23	60.39	20.49	19.12
2003	41.29	56.80	70.68	58.42	21.95	19.64
2004	49.63	63.21	76.35	65.01	17.78	17.21
2005	46.63	78.31	90.57	51.48	34.98	13.54
2006	66.41	99.02	114.35	58.08	28.52	13.41
2007	82.98	105.43	126.55	65.57	17.74	16.69

Source: MFPAD/HARTI

The producer's share of consumer rupee (retail price) for green gram had not changed considerably during the last few years. Both the wholesale and retail prices of green gram had increased during the last two years mainly due to increased prices of imported green gram. The domestic produce was sold at a higher price during this period. The gross margin between producer price and wholesale price declined due to specific duty that was implemented in the latter part of 2007. The gross margin between wholesale price and retail price did not decline accordingly because traders did not reduce the price.

Table 3.11: Percentage Margin of Cowpea

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	27.23	38.96	51.38	52.99	22.83	24.17
2001	41.54	48.06	59.05	70.35	11.04	18.61
2002	29.73	45.53	59.03	50.36	26.77	22.87
2003	32.90	41.82	56.91	57.81	15.68	26.51
2004	35.01	53.72	64.00	54.70	29.24	16.06
2005	36.54	61.91	79.24	46.11	32.02	21.88
2006	49.81	85.39	101.39	49.13	35.09	15.78
2007	66.71	96.15	121.66	54.83	24.20	20.97

Source: MFPAD/HARTI

Table 3.12: Percentage Margin of Black Gram

Year	Producer Price	Retail Price	Producer's Share %	Gross Margin %
2000	39.60	62.58	63.28	58.03
2001	50.50	73.65	68.57	45.84
2002	44.66	77.86	57.36	74.34
2003	42.84	75.17	56.99	75.47
2004	43.66	71.67	60.92	64.15
2005	46.60	79.01	58.98	69.55
2006	60.11	121.85	49.33	102.71
2007	69.49	150.76	46.09	116.95

Source: Department of Census & Statistics

Prices of cowpea also increased during the last two years mainly due to good quality imports. Though the local produce was not of the same quality its prices too had increased. Black gram was also imported to the country. As mentioned in relation to the other crops quality of imported stuff was higher than that of the local produce.

3.3 Price Behaviour

3.3.1 Big Onion

The CIF price was about 35- 40 percent of the retail price from January to July which is the off season of big onion in the country. During the harvesting period the producer's share ranged between 50 and 60 percent of the retail price. In the years 2000 and 2001 CIF price was about 70 percent of the retail price in June and July and producer price in November and December was about 70 - 75 percent of the retail price. In July and August 2002 also both the CIF and producer price was above 71 percent of the retail price. In June and July 2003 the CIF price was about 55- 60 percent and in October and November the producer's share was about 68-70 percent of the retail price. This illustrates that this share had increased gradually during the last few years. This increasing trend could be observed during the period 2004- 2007. A higher share was reported in November and December 2004 (73-84%), November 2005 (70%), December 2006 (70%) and November 2007 (76%). The highest producer's share was reported in December 2007 as 103 percent. When the imports reached the market during the latter part of the month the retail prices had declined slightly.

Margin between CIF price and wholesale price was higher during from April to July mainly due to the imposed duty on imports. Governments adopted protection measures on domestic production during the off season too. As a result, both the CIF price and producer price were reported about 50 percent of the retail price throughout the year except for November and December. To understand the adverse impact of protection of domestic farmers, the monthly average prices were categorized into three. These are January to July, August to September and November to December. It is observed that the lowest average price was reported from January to July. The highest average was reported in November to December. This highest average price continuously keeps the

market price at a higher rate. Therefore the prices had shown a sharp increasing trend. As a result of the protection policy, price stabilization could not be achieved.

The gross margin between wholesale price and retail price was around 25 percent of the retail price throughout the period.

In November 2007 producer prices of big onion had increased up to Rs.75.00 – Rs.90.00 per kg in Anuradhapura and Dambulla areas. The retail prices of local big onion had increased up to Rs.120.00 per kg. According to the Department of Agriculture the production was at 89,684mt and it was 22 percent higher than that of the previous year. The cost of cultivation in Matale was Rs.14.72 per kg. The local farmers kept the stocks without releasing to the market to get a higher price. From farm to the retail market, only processing activity can be seen in the retail market that sort out the spoiled big onion tubers. Though the cost of production of big onion was Rs.14.72 per kg, consumers had to purchase at Rs.120.00 per kg without any value addition. This illustrate that there was inefficiency in the marketing system.

Figure 3.1

Price Spread of Imported Big Onion 2000-2003

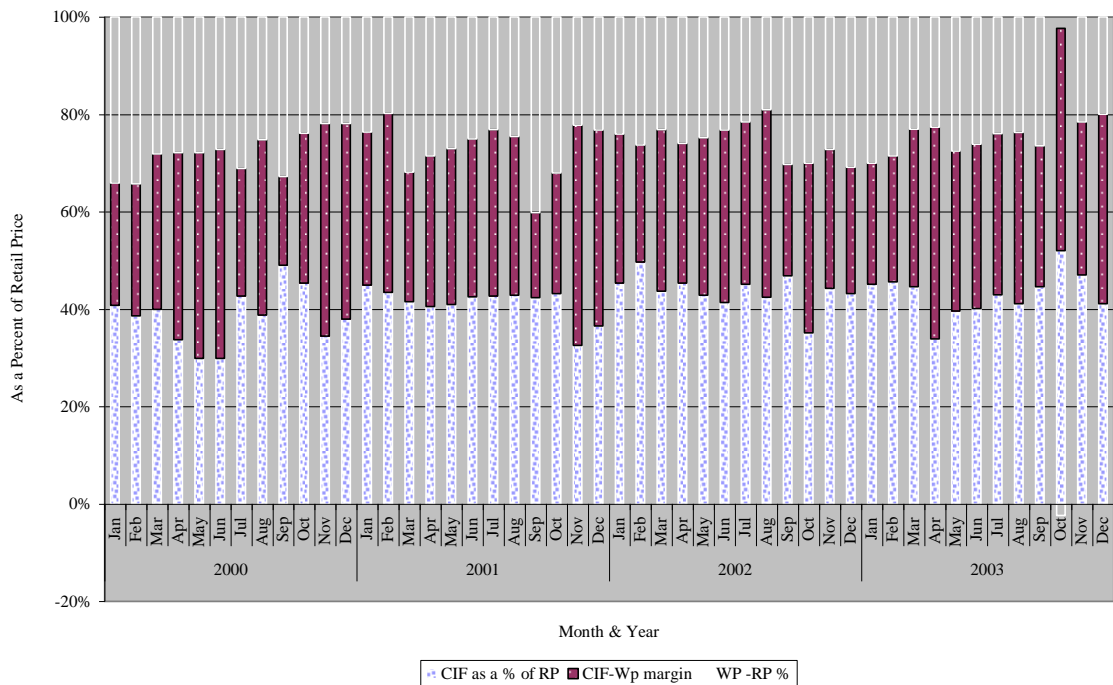


Figure 3.2

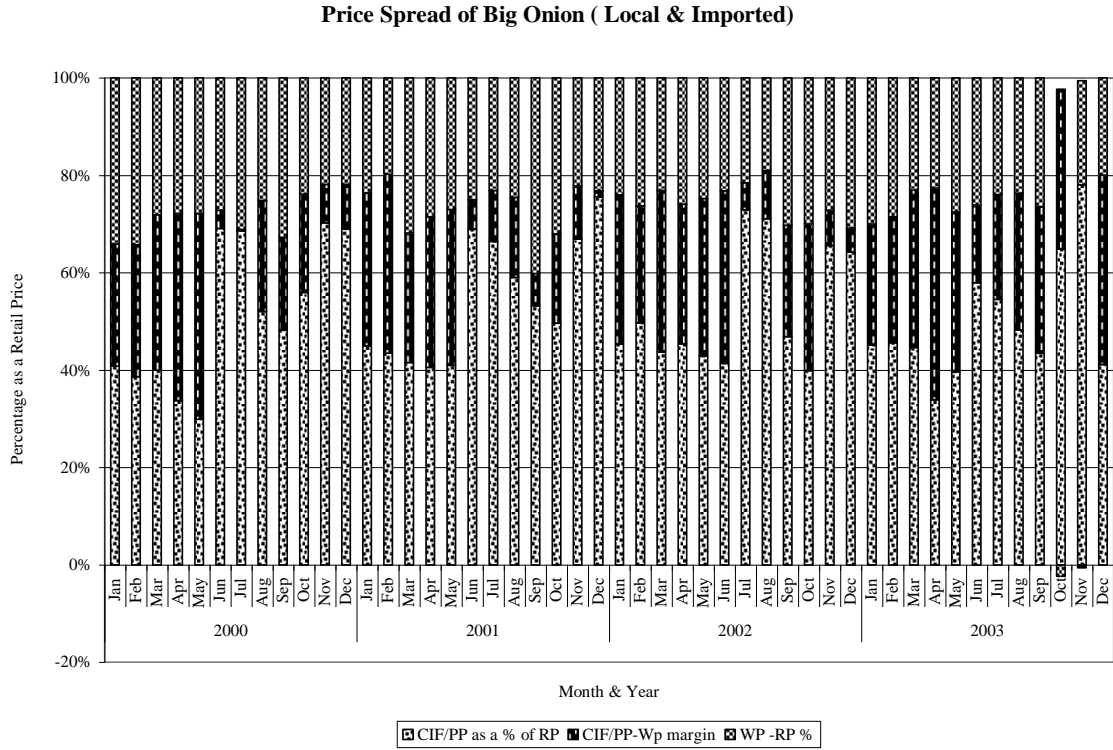


Figure 3.3

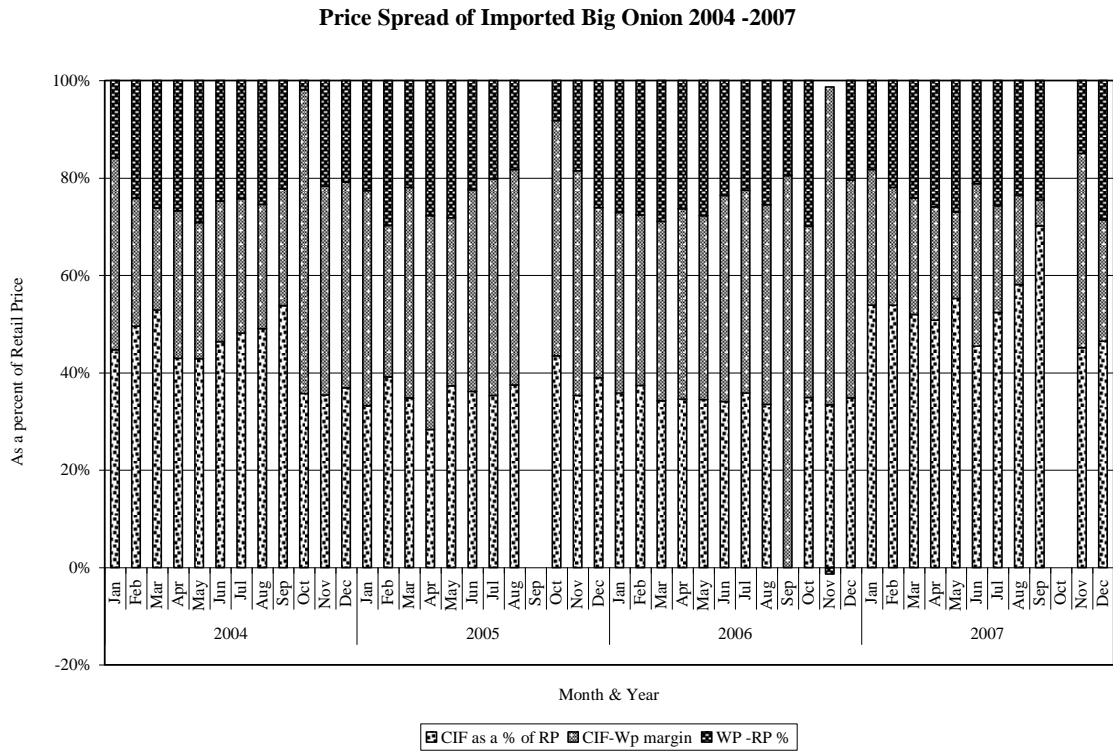


Figure 3.4

Average Wholesale Prices of Big Onion

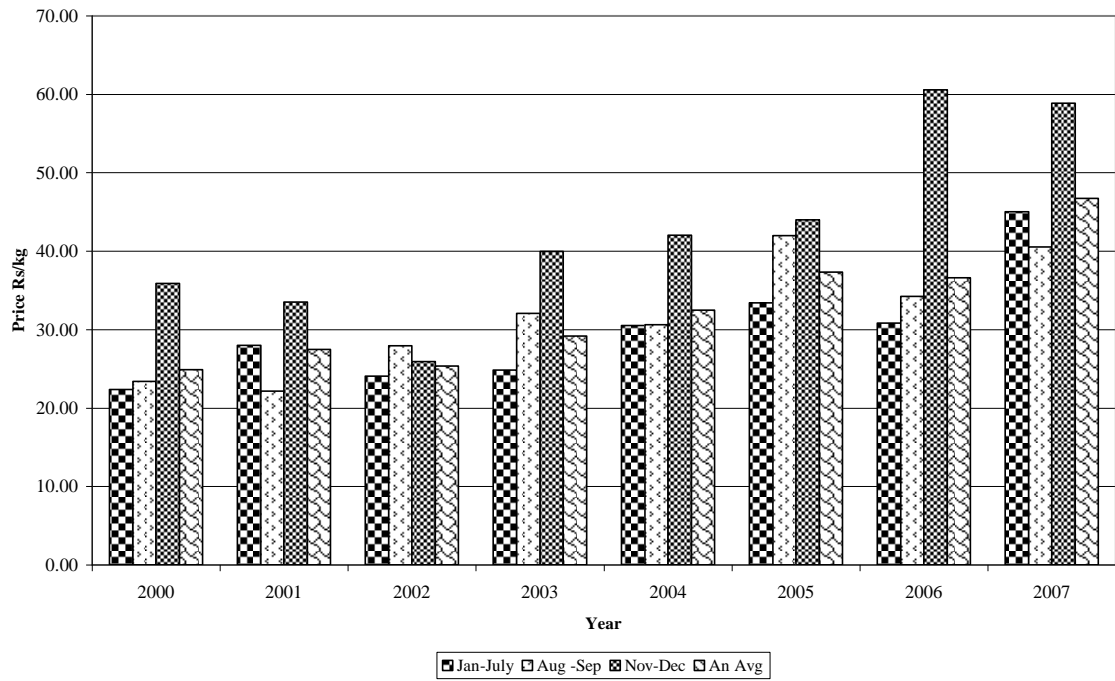


Figure 3.5

Average Retail Prices of Big Onion

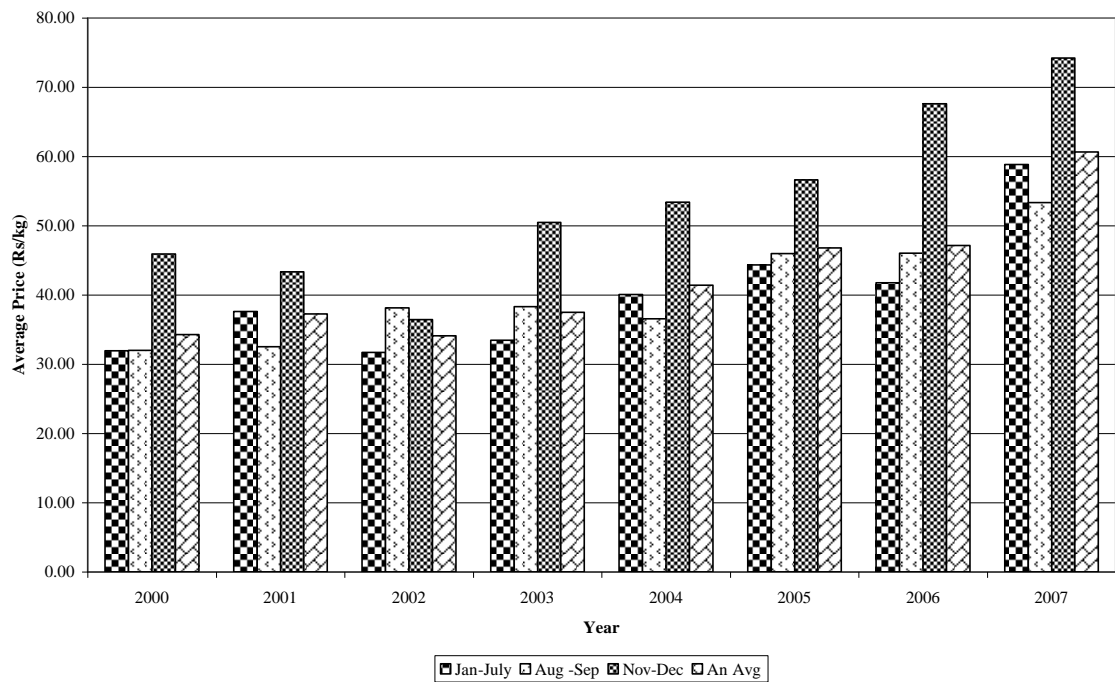


Figure 3.6

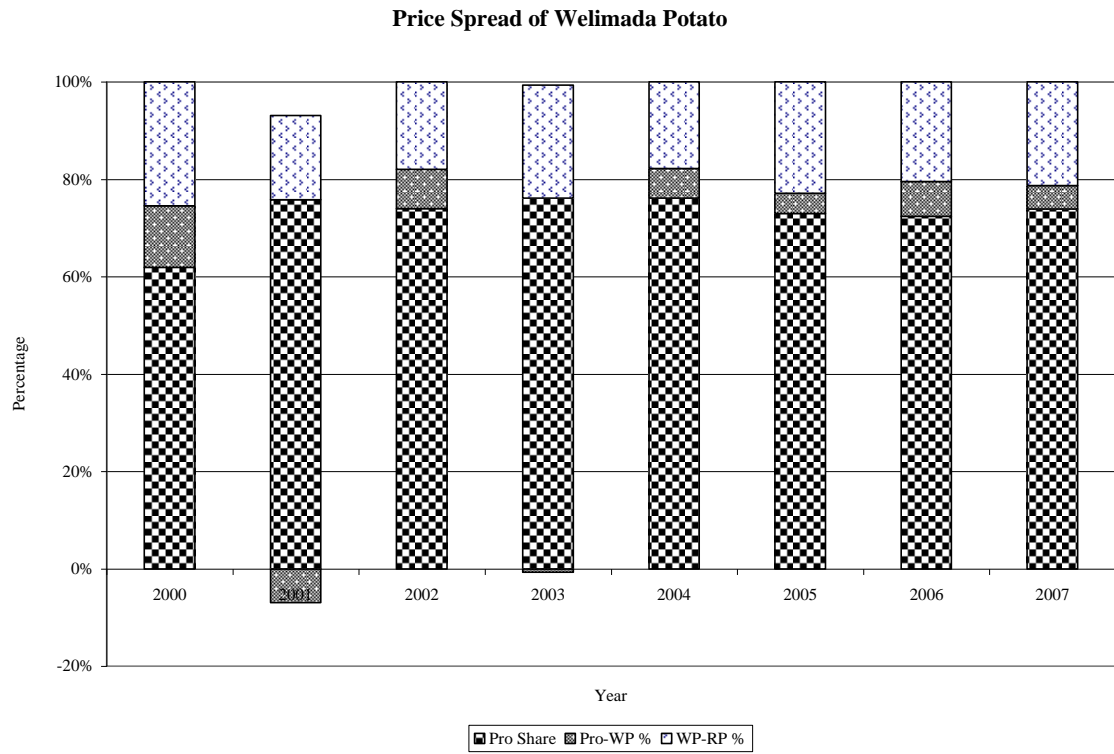


Figure 3.7

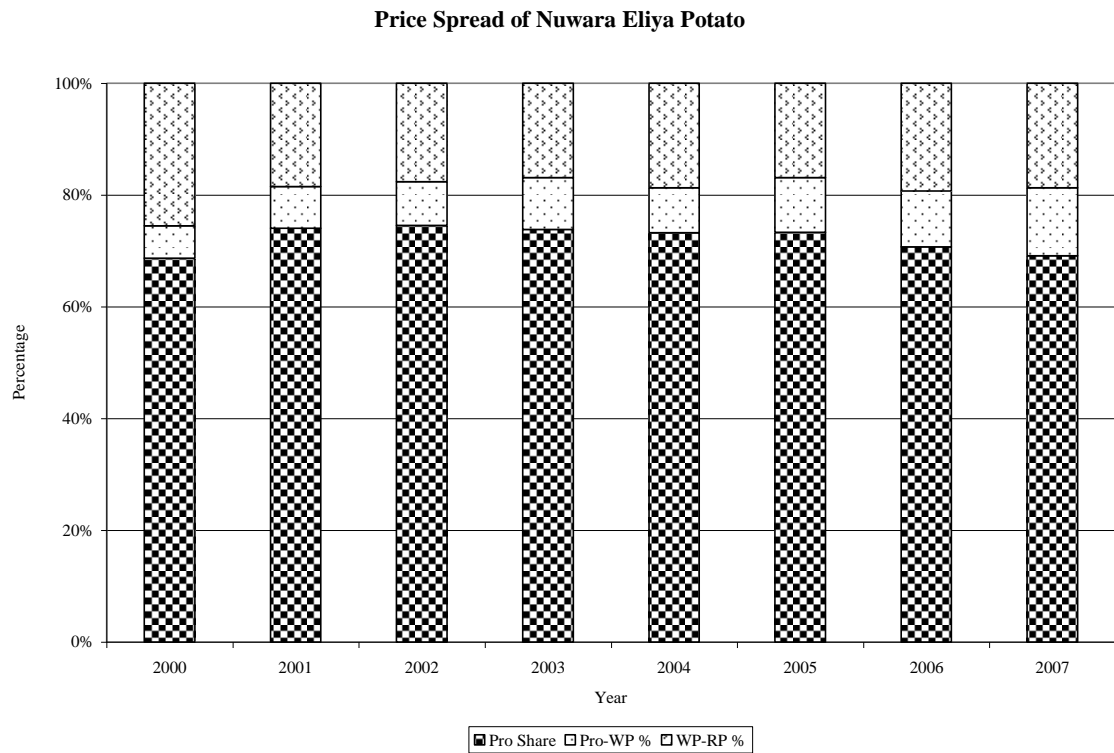
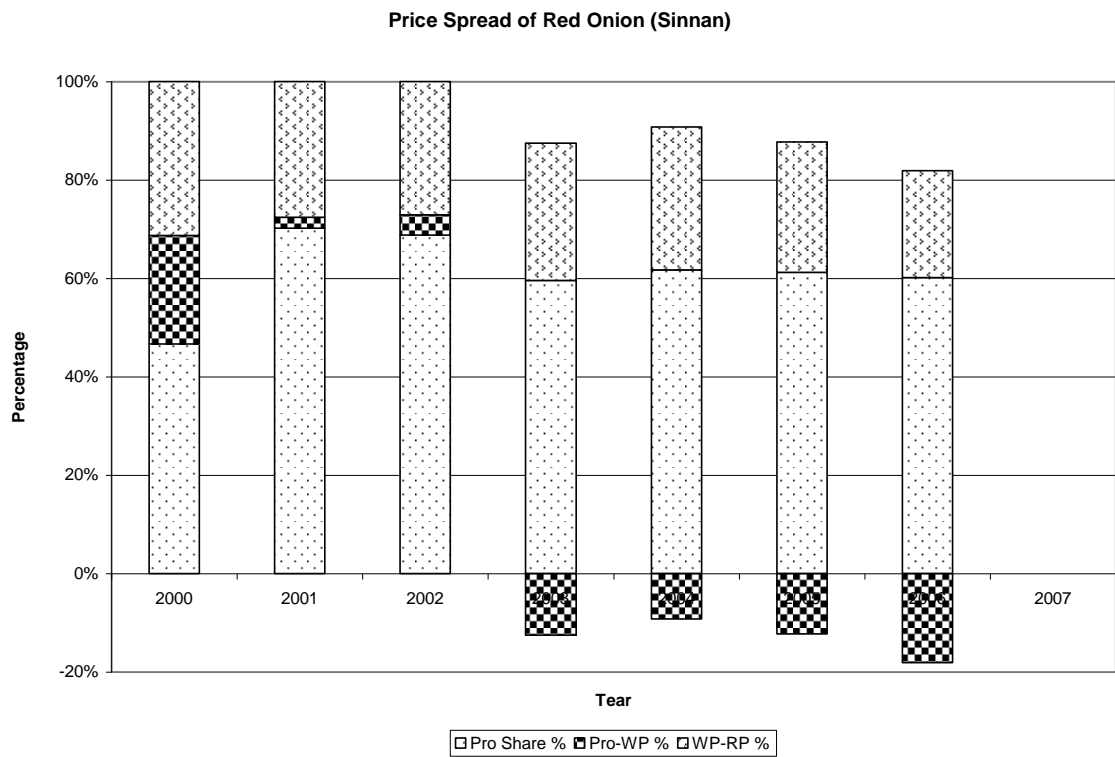


Figure 3.8



Figure 3.9



Producer's share of vedalan red onion had declined gradually from 65 percent to 50 percent from 2003 to 2007. Retailer's gross margin was about 20 percent and wholesaler's gross margin varied widely throughout this period.

3.3.2 Potato

Producer's share of both Nuwara Eliya and Welimada potato was over 70 percent during 2001 – 2007. The transport cost of potato was Rs.20.00 per 25kg and labour cost was Rs.620.00 per day. Electricity and other expenses were about Rs.3.00 per kg. Wholesalers keep 7 percent commission as a service charge. As a result of the farmer protection programme, tariff rate was increased during the harvesting season. Therefore farmers were able to gain a higher income. Retailer's gross margin was about 20 percent and wholesaler's gross margin was about 10 percent.

3.3.3. Green Chillies

Producer prices of green chillies at Hambantota were higher than that in the Anuradhapura. The share of Hambantota farmer was around 50 percent while that of Anuradhapura farmer was less than 40 percent. At the wholesale trade wholesalers collect only the commission and farmers were paid after deducting the cost and the commission. Compared to the prices of other OFCs the price behaviour of green chillies differed a lot. Gross margin of retailers were very high (over 50 percent) compared to that of other field crops mainly due to deterioration nature of green chillies. The wholesalers did not keep stocks and they tried to increase the daily turnover to maximize the profit.

Figure 3.10

Price spread of Green Chillies

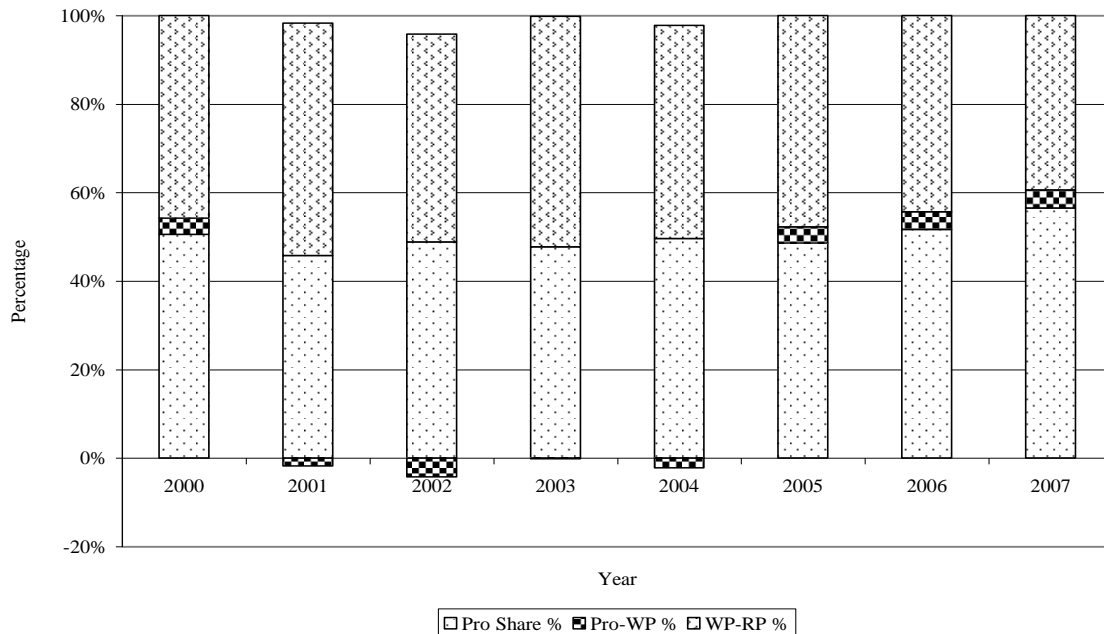


Figure 3.11

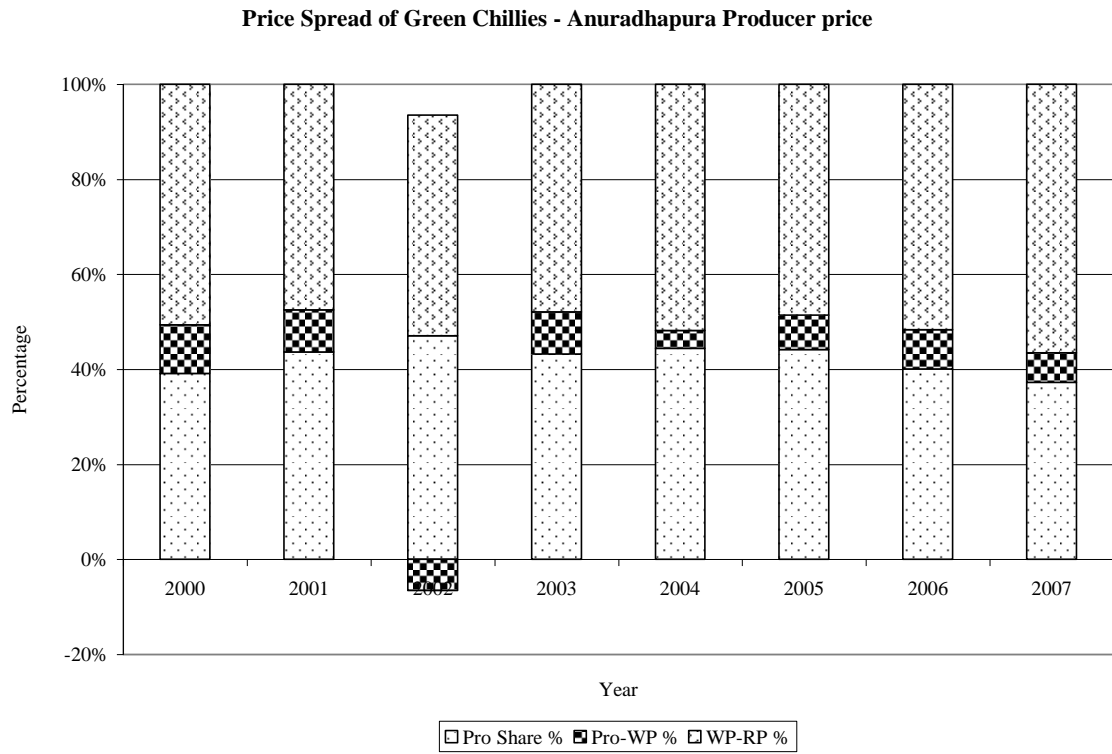


Figure 3.12

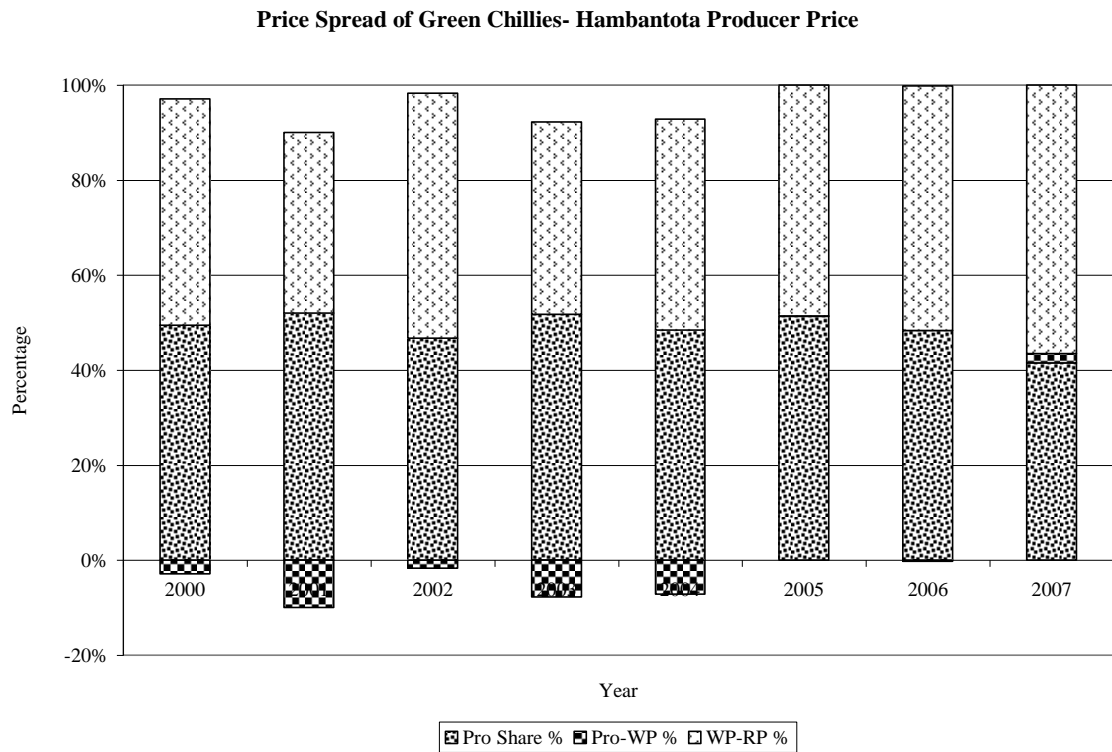
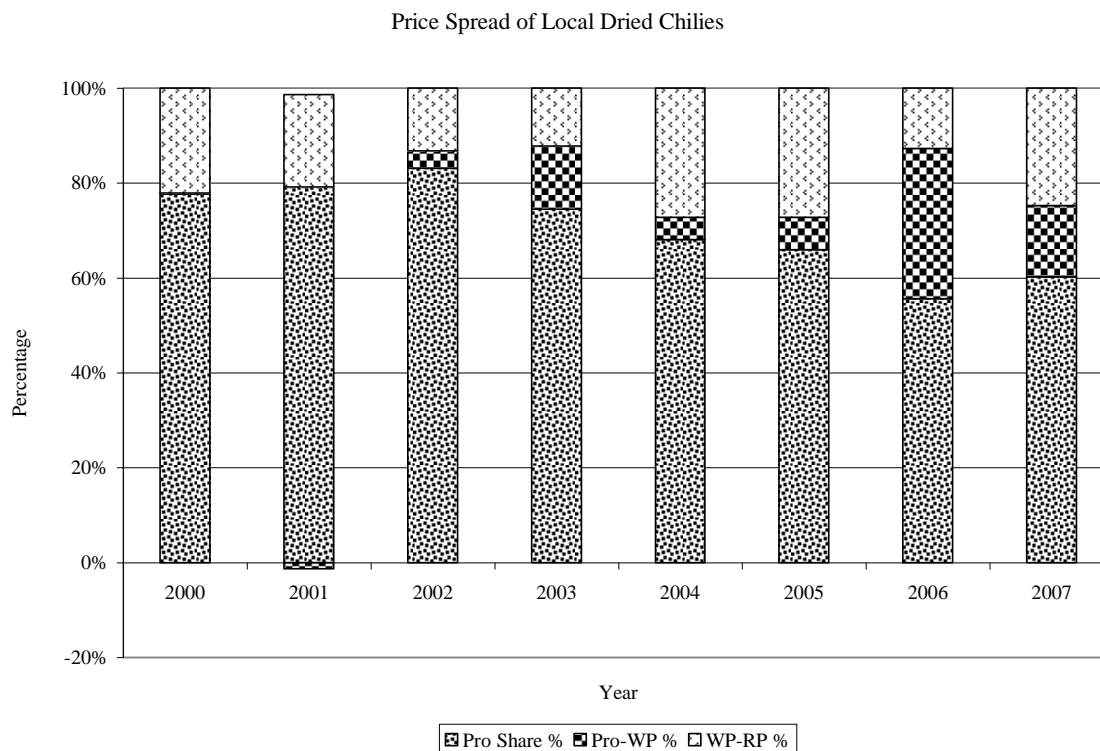


Figure 3.13



Producer's share of local dried chillies was about 80 percent in early 2000 and it had dropped up to 60 percent in 2007. Retailer's gross margin was around 25 percent of the retail price. The local production of dried chillies was very limited because farmers were reluctant to engage in processing activities with the higher green chillie prices. It was very profitable for them to sell green chillies. The CIF price of imported dried chillies was the 70 percent of the consumer rupee (retail price) in early 2000 and it had come down to 60 percent in 2007. The gross margin between CIF price and wholesale price was about 10 percent until 2004 and it had increased sharply in 2006 due to increased tariff rate. The tariff rate was changed in 2006 as Rs.30 per kg Customs Duty, 12% VAT, 5% PAL and 1.5% SRL. (Annex Table 07). Retailer's gross margin fluctuated around 20 percent. The tariff rate declined in 2007 up to Rs.30 per kg Customs Duty, 5% VAT, 3% PAL and 1% SRL. Duty waiver was introduced in 2007 at Rs.12per kg.

Producer's share of green gram has increased during the past few years. Gross margin between producer price and wholesale price had increased in 2005 and 2006 due to increased wholesale prices of imported green gram. The imported quantity of green gram had dincreased gradually since 2005. A Surcharge was introduced in 2006 and 2007 as 15 percent and 10 percent respectively. VAT, PAL and SRL rates were as same as for other field crops. These new taxes also had helped to increase the prices.

Figure 3.14

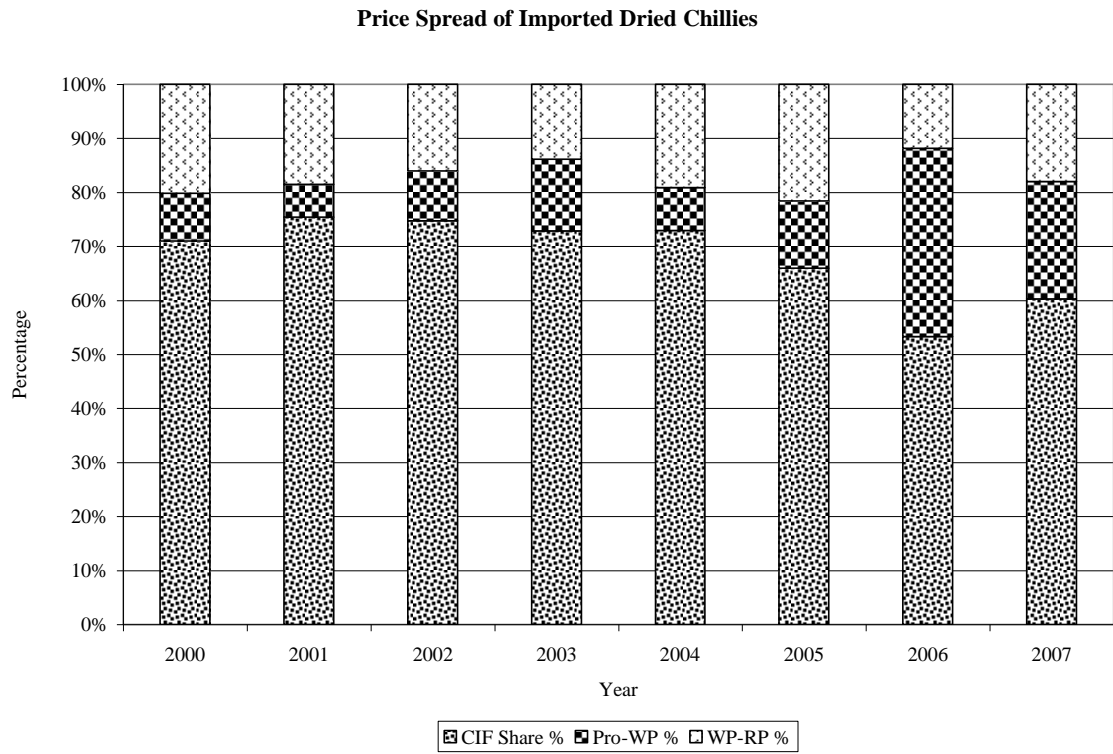


Figure 3.15

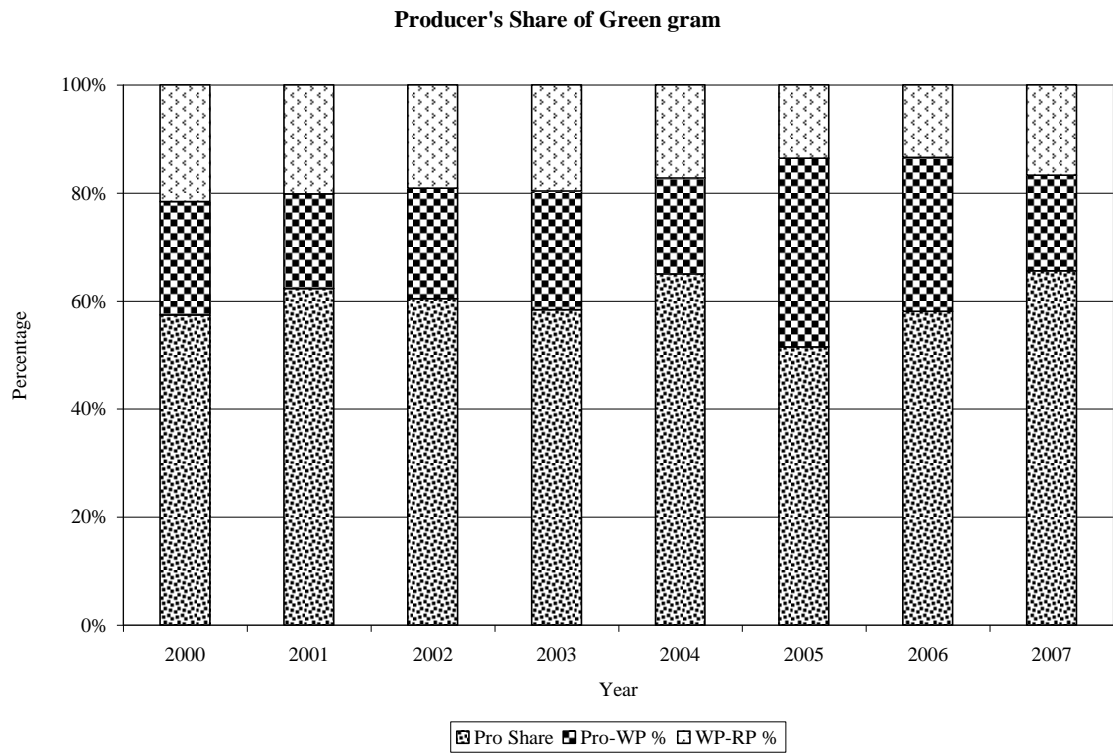


Figure 3.16

Annual Price Spread of Cowpea 2000-2007

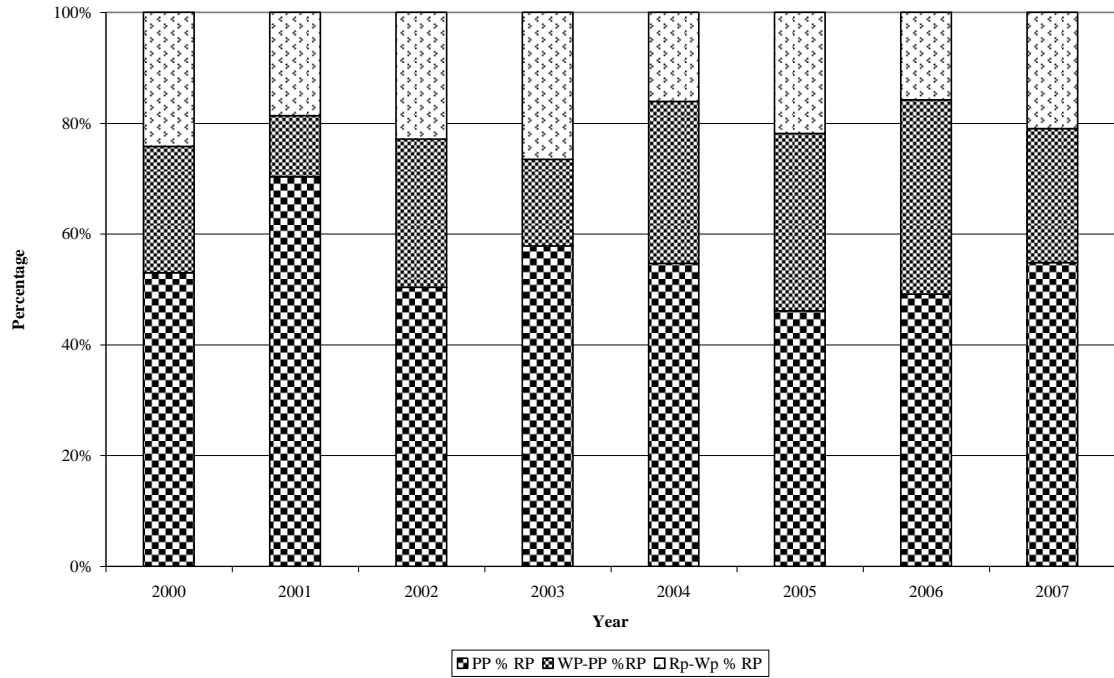


Figure 3.17

Price Spread of Imported Green gram 2003-2007

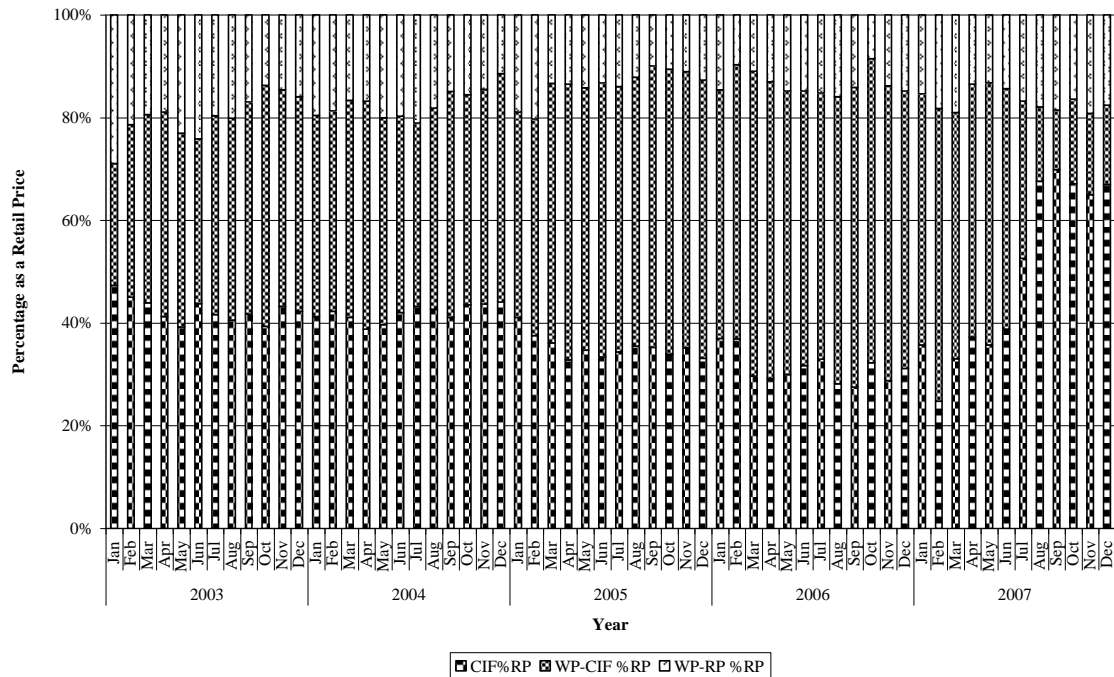


Table 3.13: Producer's Share of Finger Millet

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	13.18	19.58	67.31	32.69
1996	16.70	28.03	59.58	40.42
1997	18.49	30.87	59.90	40.10
1998	21.48	34.42	62.41	37.59
1999	25.46	38.25	66.56	33.44
2000	25.74	38.18	67.42	32.58
2001	28.15	43.19	65.18	34.82
2002	27.18	43.55	62.41	37.59
2003	27.08	39.14	69.19	30.81
2004	31.95	39.54	80.80	19.20
2005	30.45	43.20	70.49	29.51
2006	31.11	49.01	63.48	36.52

Source: Department of Census & Statistics; MFPAD/HARTI

Table 3.14: Producer's Share of Finger Millet Flour

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	13.18	39.70	33.20	66.80
1996	16.70	46.09	36.23	63.77
1997	18.49	55.03	33.60	66.40
1998	21.48	56.98	37.70	62.30
1999	25.46	57.58	44.22	55.78
2000	25.74	60.76	42.36	57.64
2001	28.15	71.33	39.46	60.54
2002	27.18	74.66	36.41	63.59
2003	27.08	71.68	37.78	62.22
2004	31.95	74.79	42.72	57.28
2005	30.45	78.79	38.65	61.35
2006	31.11	85.78	36.27	63.73

Source: Department of Census & Statistics; MFPAD/HARTI

Producer gets about 65 percent of the retail price of finger millet seed. Since 2003 the producer's share had increased because food processors had paid higher prices to purchase good quality seed. Producer's share of the processed item (flour) was less than the above. Normally producer's share of the consumer's rupee of the processed and or value added items is lower than that of the raw items.

Table 3.15: Producer's Share of Soya Bean

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	18.41	40.77	45.16	54.84
1996	21.96	43.56	50.41	49.59
1997	23.75	43.75	54.29	45.71
1998	30.10	45.56	66.07	33.93
1999	29.91	48.14	62.13	37.87
2000	31.44	60.75	51.75	48.25
2001	46.10	69.54	66.29	33.71
2002	43.60	73.38	59.42	40.58
2003	35.82	64.86	55.23	44.77
2004	32.41	68.24	47.49	52.51
2005	41.09	84.06	48.88	51.12
2006	40.36	90.96	44.37	55.63

Source: Department of Census & Statistics; MFPAD/HARTI

Table 3.16: Producer's Share of Maize

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	9.31	16.43	56.66	43.34
1996	10.51	21.47	48.95	51.05
1997	13.83	21.56	64.15	35.85
1998	15.57	17.30	90.00	10.00
1999	14.45	24.73	58.43	41.57
2000	14.35	24.93	57.56	42.44
2001	14.87	32.07	46.37	53.63
2002	18.10	40.48	44.71	55.29
2003	20.72	41.33	50.13	49.87
2004	21.44	47.47	45.17	54.83
2005	20.68	52.56	39.35	60.65
2006	19.78	61.81	32.00	68.00

Source: Department of Census & Statistics; MFPAD/HARTI

Producer's share of both soya bean and maize was less than 50 percent during the last five years. Before that it was around 60 percent. Since 2000 local producers had tried to sell their produce to the Thripasha programme and produced good quality seeds for this processing industry. As a result they were able to gain a higher income.

Table 3.17: Producer's Share of Gingelly

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	21.07	56.61	37.22	62.78
1996	36.66	74.99	48.89	51.11
1997	37.89	79.22	47.83	52.17
1998	31.22	69.61	44.85	55.15
1999	41.31	76.07	54.31	45.69
2000	45.33	78.73	57.58	42.42
2001	48.81	83.03	58.79	41.21
2002	49.03	88.14	55.63	44.37
2003	45.75	85.20	53.70	46.30
2004	49.98	98.89	50.54	49.46
2005	58.24	114.68	50.78	49.22
2006	55.90	124.46	44.91	55.09

Source: Department of Census & Statistics; MFPAD/HARTI

Producer's share of gingelly was lower than that of the groundnut because gingelly was mainly used for the processing industry. The other reason was that processors had to clean the raw produce before processing. Therefore the collectors paid a relatively lower price for the raw produce.

Table 3.18: Producer's Share of Groundnut

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	22.18	37.08	59.82	40.18
1996	29.84	47.62	62.66	37.34
1997	30.69	48.84	62.84	37.16
1998	32.13	54.64	58.80	41.20
1999	32.69	57.15	57.20	42.80
2000	32.96	47.93	68.77	31.23
2001	34.59	54.16	63.87	36.13
2002	35.80	58.15	61.56	38.44
2003	36.25	59.82	60.60	39.40
2004	39.91	63.87	62.49	37.51
2005	40.65	72.64	55.96	44.04
2006	46.73	80.24	58.24	41.76

Source: Department of Census & Statistics; MFPAD/HARTI

Producer's share of manioc was about 30 percent of the retail price. The producer's share had increased slightly because of higher exports growers had tried to produce good quality yams. Hence the prices had increased gradually. Most of the farmers in Gampaha

district produce good quality manioc for the export market and damaged yams are supplied to the domestic market. Wholesalers' margin was about 10 percent and retailers' margin varied from 200 to 250 percent during the period of 2000 to 2003 and during the last two years it had declined up to 200 percent of the wholesale price. Retailers keep higher margin to earn higher profit to avert the risk because consumer do not wish to purchase old yams.

Table 3.19: Producer's Share of Manioc

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	3.50	5.82	17.19	20.4	13.5	66.2
2001	5.10	5.61	17.06	29.9	3.0	67.1
2002	4.82	5.33	18.95	25.4	2.7	71.9
2003	4.67	5.22	18.82	24.8	2.9	72.2
2004	6.04	6.88	19.73	30.6	4.3	65.1
2005	8.13	11.32	27.09	30.0	11.8	58.2
2006	7.10	9.39	28.39	25.0	8.1	66.9
2007	9.69	10.38	31.84	30.4	2.2	67.4

Source: MFPAD/HARTI

Producer's share of sweet potato was less than 33 percent and it shows a gradual decline. The retailers' margin of sweet potato was about 60 percent of the retail price because retailers had to discard some yams due to damages. The retail prices had increased gradually and gross margin had also increased gradually. The producer's share of sweet potato and manioc was more or less the same. The wholesalers' margin varied from 25 to 38 percent of the producer price during this period and retailers' margin varied from 153 to 185 percent of the wholesale price.

Table 3.20: Producer's Share of Sweet Potato

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	7.51	9.94	25.18	29.8	9.6	60.5
2001	8.50	11.05	28.18	30.2	9.0	60.8
2002	8.68	11.01	28.83	30.1	8.1	61.8
2003	9.79	11.18	29.99	32.6	4.6	62.7
2004	10.69	12.68	32.54	32.9	6.1	61.0
2005	12.23	15.25	38.73	31.6	7.8	60.6
2006	12.25	15.74	44.93	27.3	7.8	65.0
2007	14.33	19.77	50.39	28.4	10.8	60.8

Source: MFPAD/HARTI

3.4 Margin Analysis of Major Imported Food Commodities

Table 3.21: Margin Analysis of Imported Big Onion -2005

Month	CIF	Total Taxes (%)	Total Taxes (Rs)	Landed cost	WP	RP	Margin as a % of LC	Margin as a % of WP
Jan	16.12	79	12.68	28.80	37.54	48.53	30.4	29.3
Feb	15.05	79	11.90	26.95	26.99	38.44	0.1	42.4
Mar	14.70	79	11.64	26.35	32.99	42.26	25.2	28.1
Apr	14.89	78	11.66	26.54	37.96	52.55	43.0	38.4
May	15.19	77	11.71	26.90	29.24	40.72	8.7	39.3
Jun	14.68	79	11.60	26.28	31.53	40.67	20.0	29.0
Jul	16.56	71	11.75	28.31	37.45	46.93	32.3	25.3
Aug	17.90	66	11.84	29.74	39.01	47.76	31.2	22.4
Sep	-				45.19	44.65		-1.2
Oct	19.74	71	14.01	33.75	41.69	45.45	23.5	9.0
Nov	20.37	66	13.48	33.85	46.99	57.72	38.8	22.8
Dec	21.60	71	15.34	36.94	40.99	55.49	11.0	35.4

Source: Sri Lanka Customs; MFPAD/HARTI

In the first half of 2005 the amount of total taxes of big onion was 79 percent of the CIF price and it had declined up to 71 percent in the latter part. About 25 to 30 percent was added to the landed cost of big onion to decide the price at wholesale level. This margin varied on the quantity supplied and the quality of the product. The importers had to open Letter of Credit and had to take a risk until the produce reached the country and sold to the wholesaler or retailer. The imported quantity was transported to the stores in the wholesale market and stacked. When the produce deteriorates it is necessary to select the bad onions and repack. At this stage importer/Wholesaler had to pay for labour and packing cost. The retailers or sub wholesalers visit wholesale market and purchase the stock and pay loading, transport and unloading cost. At this stage also retailer had to do the sorting by removing the bad onions a labour cost was incurred in the process.

Table 3.22: Margin Analysis of Imported Dried Chillies - 2005

Month	CIF	Total Taxes (%)	Total Taxes (Rs)	Landed cost	WP	RP	Margin as a % of LC	Margin as a % of WP
Jan	66.29	41	27.32	93.61	107.61	141.05	15.0	31.1
Feb	61.22	44	26.89	88.11	97.62	130.75	10.8	33.9
Mar	56.80	45	25.59	82.39	92.72	125.30	12.5	35.1
Apr	55.17	49	27.14	82.31	92.23	121.62	12.1	31.9
May	49.85	48	23.90	73.74	86.82	116.96	17.7	34.7
Jun	51.25	46	23.51	74.77	94.34	117.55	26.2	24.6
Jul	54.09	43	23.05	77.14	96.86	122.90	25.6	26.9
Aug	59.04	42	24.91	83.95	93.83	119.48	11.8	27.3
Sep	59.48	42	25.10	84.58	95.15	122.40	12.5	28.6
Oct	60.06	42	25.34	85.40	102.52	123.25	20.0	20.2
Nov	67.02	42	28.28	95.30	115.71	135.84	21.4	17.4
Dec	70.77	42	29.86	100.63	111.44	137.24	10.7	23.2

Source: Sri Lanka Customs; MFPAD/HARTI

In the first half of 2005 the amount of total taxes of dried chillies was 41 - 46 percent of the CIF price and it had declined up to 42 percent in the latter part. Importers kept about 10 to 20 percent gross margin for dried chillies to offset the cost incurred and profit. Wholesalers took about 5 percent commission for their services. When the wholesalers stock imports they kept a higher margin because of loose weight due to drying and also due to the cost of investment. Normally the importers always search information on supply areas, prices, duties and the regulations and restrictions involved in these crops. Those are hidden costs.

Table 3.23: Margin Analysis of Imported Potato – 2005

Month	CIF	Total Taxes (%)	Total Taxes (Rs)	Landed cost	WP	RP	Margin as a % of LC	Margin as a % of WP
Jan	18.13	125	22.64	40.77	54.99	65.14	34.9	18.5
Feb	16.89	125	21.18	38.07	45.64	58.10	19.9	27.3
Mar	16.20	128	20.66	36.86	45.76	59.51	24.1	30.0
Apr	16.69	124	20.71	37.40	50.51	60.86	35.0	20.5
May	18.76	111	20.84	39.60	54.93	64.26	38.7	17.0
Jun	18.45	113	20.82	39.27	56.30	68.46	43.4	21.6
Jul	18.06	115	20.79	38.85	57.86	71.10	48.9	22.9
Aug	19.17	109	20.88	40.05	54.22	67.19	35.4	23.9
Sep	18.92	109	20.61	39.53	44.82	59.43	13.4	32.6
Oct	18.75	109	20.42	39.17	51.63	70.00	31.8	35.6
Nov	21.54	109	23.46	45.00	62.12	74.65	38.0	20.2
Dec	21.49	109	23.41	44.90	59.38	74.26	32.3	25.1

Source: Sri Lanka Customs; MFPAD/HARTI

Total tax incidence of potato varied from 109 to 128 percent of the CIF price during the year 2005 and it was about Rs.20 per kg. Importers and wholesalers kept their margin at 30 to 35 percent for the services and the costs incurred. Both the importers and wholesalers had a higher profit margin in April, May and November and in June and July because of the higher demand in these months due to festival seasons and lean season of domestic vegetable supply. In February and March and in September the gross margin had declined with the low demand for imported potato due to the supply of Welimada potato in the market. Retailers kept 20 to 30 percent gross margin. When the domestic supply reached the market the government increased the import tariff. As a result retail price of potato had increased while the wholesale price of domestic potato had declined. During this period both the prices of imported potato and domestic potato which was supplied from Welimada area were available at more or less same prices. Hence this reflects as a higher margin.

Table 3.24: Margin Analysis of Imported Big Onion -2008

Month	CIF	Total Taxes (%)	Total Taxes (Rs)	Landed cost	WP	RP	Margin as a % of LC	Margin as a % of WP
Jan	23.17	86.50	20.04	43.22	45.42	61.99	5.1	36.5
Feb	20.94	96.19	20.15	41.09	42.54	58.98	3.5	38.6
Mar	20.63	97.69	20.15	40.78	47.80	63.41	17.2	32.7
Apr	24.67	82.26	20.29	44.97	46.98	61.21	4.5	30.3
May	19.81	101.49	20.10	39.91	42.04	57.77	5.3	37.4
Jun	19.42	103.48	20.10	39.52	41.20	55.48	4.3	34.7
Jul	24.38	82.45	20.10	44.48	50.41	62.52	13.3	24.0
Aug	30.71	65.58	20.14	50.86	56.25	72.16	10.6	28.3
Sep	29.09	69.17	20.12	49.21	48.95	63.66	-0.5	30.1
Oct	26.14	76.97	20.12	46.26	48.58	62.58	5.0	28.8
Nov	39.58	50.92	20.15	59.73	55.50	67.50	-7.1	21.6
Dec	35.40	56.75	20.09	55.49	64.16	79.91	15.6	24.6

Source: Sri Lanka Customs; MFPAD/HARTI

The total taxes of big onion varied from 82 to 103 percent of the CIF during the first half of the year 2008 and it had declined from 82 to 57 percent in the latter part of the year. The importers/wholesalers generally kept about 5 percent margin for cost and profit for their services. When the demand was high wholesalers had a higher profit margin and during these months it was above 5 percent. When the wholesalers kept higher margin, retailers were compelled to go for a lower profit margin to increase their turnover. When the retail prices were very high the demand declined. Hence the retailers cut down their profit margin to maintain the demand at the same level.

The total tax incidence of imported potato in 2008 varied from 62 to 83 percent of the CIF price. The import tax of potato was Rs.15/kg during the months of January to August of the year 2008 and it was increased up to Rs.20/kg since September 2008. Importers and the wholesalers kept about 10 to 15 percent margin for the services and during the high demand months it had increased above 20 percent. Retailers kept about 30 percent margin for the costs and profit.

Table 3.25: Margin Analysis of Imported Potato – 2008

Month	CIF	Total Taxes (%)	Total Taxes (Rs)	Landed cost	WP	RP	Margin as a % of LC	Margin as a % of WP
Jan	28.03	59.48	16.67	44.70	45.93	66.71	2.7	45.3
Feb	24.84	62.02	15.41	40.25	42.34	55.70	5.2	31.6
Mar	21.37	71.09	15.19	36.56	42.52	57.33	16.3	34.8
Apr	21.41	71.19	15.24	36.66	42.10	58.76	14.9	39.6
May	23.00	66.54	15.30	38.30	45.13	59.44	17.9	31.7
Jun	24.03	63.33	15.22	39.25	47.92	61.83	22.1	29.0
Jul	27.54	55.98	15.42	42.96	54.38	67.16	26.6	23.5
Aug	29.22	56.60	16.54	45.76	50.29	64.90	9.9	29.0
Sep	24.50	82.97	20.33	44.83	45.94	61.63	2.5	34.2
Oct	24.47	82.98	20.31	44.78	50.08	59.88	11.9	19.6
Nov	29.31	69.21	20.28	49.59	55.48	66.69	11.9	20.2
Dec	29.69	68.05	20.20	49.89	56.33	74.90	12.9	33.0

Source: Sri Lanka Customs; MFPAD/HARTI

The price behavior of these commodities shows that importers cum wholesalers had taken a high risk for importing these commodities and their margin was reasonable considering the investment, costs for buildings, labourers, taxes, information gathering and risk. The retailers' margin was about 30 percent and almost all these commodities were sold by the retailers at their retail shops. The daily turnover for greengram, cowpea, blackgram, gingelly, groundnut, soyabean and finger millet was very low compared to that of big onion and potato. In the period 2000 to 2005 both the wholesalers and retailers kept higher margins for big onion and potato marketing. When the keeping quality of produce was good, the margins had declined gradually.

CHAPTER FOUR

Present Status of the OFC Cultivation and Views of the Farmers

4.1 Introduction

The present status of the cultivation, new technologies adopted by the farmers to improve the quality of the produce and the problems faced by the farmers are discussed in this chapter. The researchers obtained the views of the farmers about the possibility of improving the quality of the products and also for expanding production. In addition, discussions were conducted to find out whether there was any effect of cultivation of other food crops on food security in the agrarian sector in the area.

4.2 Socio-economic Background of the Sample Area

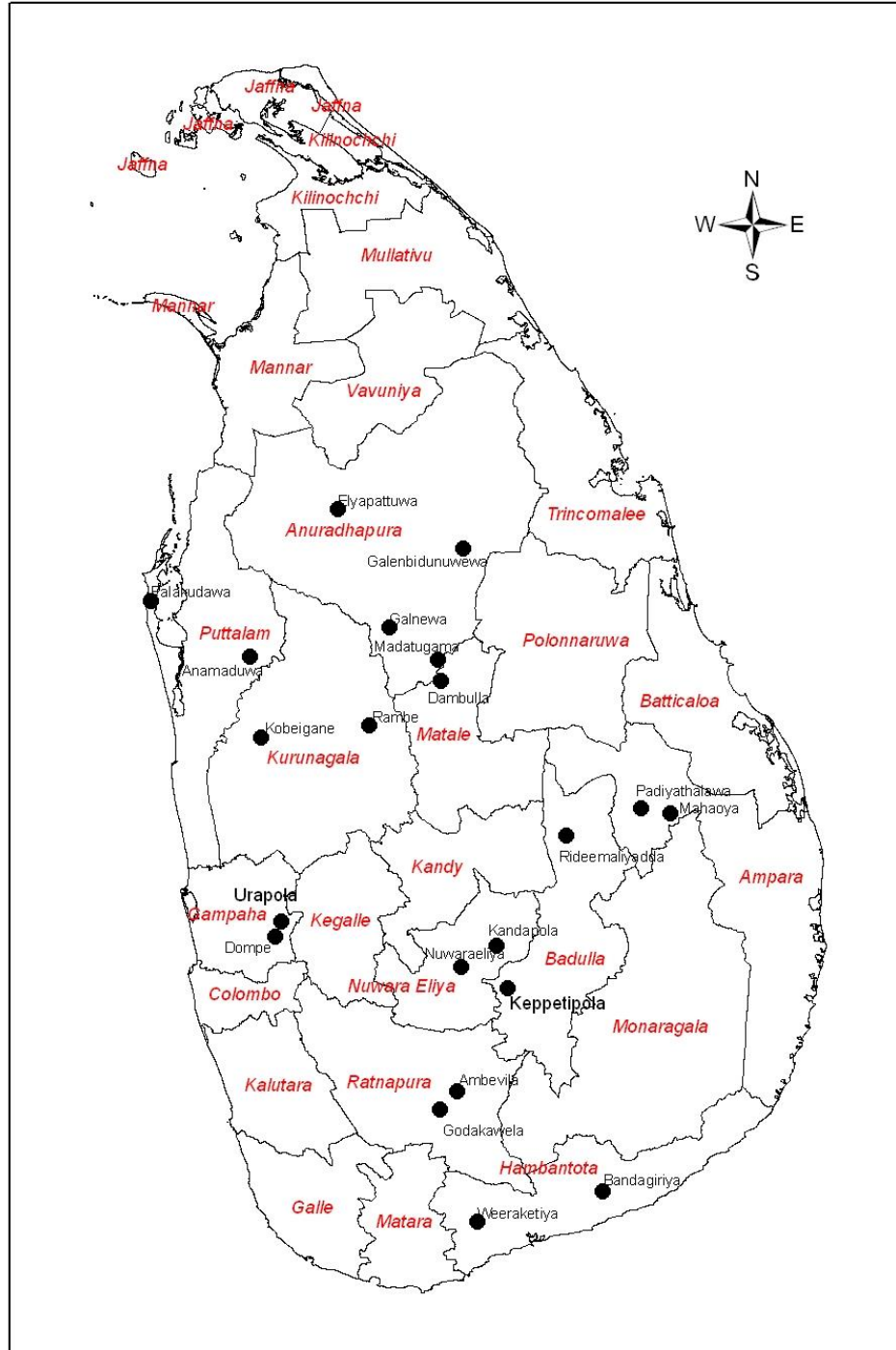
The survey was conducted in 11 districts. The districts were selected based on the highest cultivated extent and the production. The stratified sample technique was used to select agrarian service centre (ASC) areas and Grama Niladhari (GN) Divisions. The discussions were conducted with the Director of Agriculture in each selected district and Divisional Officers of Agrarian Service Centres to select the major areas and Grama Niladhari (GN) Divisions. Accordingly 646 farm families were selected from 21 agrarian service centre areas. Two agrarian service centre areas were selected in each district except Matale. The detailed selection is presented in the following table.

Table 4.1: Composition of the Farm Families in the Sample Frame

District	Agrarian Service Centre 1	Agrarian Service Centre 2	No. of families ASC 1	No. of families ASC 2	Total
Anuradhapura	Galenbindunuwewa	Elayapatthuwa	33	33	66
Mahaweli H	Madatugama	Galnewa	26	33	59
Matale	Dambulla	-	48	-	48
Puttalam	Anamaduwa	Palakuda	33	32	65
Hambantota	Weerawila	Bandagiriya	31	31	62
Kurunegala	Rambe	Kobeigane	33	31	64
Gampaha	Weke	Urapola	30	22	52
Badulla	Kappetipola	Redeemaliyadda	32	31	63
Ratnapura	Ambevila	Godakawela	31	27	58
Nuwara Eliya	Kandapola	Nuwara Eliya	19	30	49
Ampara	Mahaoya	Padiyatalawa	29	31	60
Total			345	301	646

Source: Survey data

Figure 4.1: Selected Agrarian Development Divisions of the Sample Area



In the 646 sample households there were 2,698 persons residing and about 3-4 persons were living in the 54 percent of the sample households. About 5-6 persons lived in the 31 percent of the sample households and more than 6 members lived in the 5 percent of the sample households. The majority of families had less than 4 family members.

The working population attempted to earn more to feed the family and to fulfill the needs of their children who were still studying. Hence they always went for crops which gave a higher income. About 30 percent of the sample households were engaged in farming and 20 percent were engaged as farm assistants. In the sample about 36 percent did not mention their occupation. The highest farming population was reported from Matale and it was 65 percent while the lowest farming population was reported in Gampaha.

Nearly 50 percent of the population had followed the secondary education. Almost 50 percent of the population are directly engaged in farming. About 10 percent of the population are employed in government sector such as police and armed forces and also in the private sector.

Table 4.2: Family Size of the Households

District	No. of Members 1 -2	No. of Members 3 - 4	No. of Members 5 - 6	No. of Members Above 6	Total
Anuradhapura	6	41	19	0	66
Mahaweli H	3	42	12	2	59
Matale	4	30	14	0	48
Puttalam	6	33	18	8	65
Hambantota	9	30	18	5	62
Kurunegala	6	36	20	2	64
Gampaha	5	26	18	3	52
Badulla	3	27	26	7	63
Ratnapura	10	27	18	3	58
Nuwara Eliya	2	25	18	4	49
Ampara	6	33	18	3	60
Total	60	350	199	37	646
As a % of total	9	54	31	6	100

Source: Survey data

Of the total surveyed population, 61 percent was male and 39 percent was female. The percentage of both male farmers and female farm assistants were 64 percent of the total sample population. A large number of people were in the age group of above 18 and below 64 years and the second largest was the age group of above 10 and below 18 years. Rest of the people was considered as the dependents of the family.

Table 4.3: Family Size of Surveyed Household

District	Households of 4>Family Members	Households of 5=< Family Members	Total No. of Families
Anuradhapura	47	19	66
Mahaweli H	45	14	59
Matale	34	14	48
Puttalam	39	26	65
Hambantota	39	23	62
Kurunegala	42	22	64
Gampaha	31	21	52
Badulla	30	33	63
Ratnapura	37	21	58
Nuwara Eliya	27	22	49
Ampara	39	21	60
Total	410	236	646

Source: Survey Data

Table 4.4: Gender Wise Population by District

District	No. of Males	%	No. of Females	%	Total
Anuradhapura	128	50	128	50	256
Mahaweli H	122	50	120	50	242
Matale	107	55	86	45	193
Puttalam	147	51	142	49	289
Hambantota	147	57	113	43	260
Kurunegala	130	51	125	49	255
Gampaha	117	53	103	47	220
Badulla	152	53	137	47	289
Ratnapura	128	55	103	45	231
Nuwara Eliya	111	51	107	49	218
Ampara	130	53	115	47	245
Total	1419	53	1279	47	2698

Source: Survey data

Table 4.5: Total Male Population Divided by Age Groups

District	Age Groups (Years)					Total
	<=5	5< <=10	10< <=18	18< <=64	64<	
Anuradhapura	7	7	21	87	6	128
Mahaweli H	5	10	17	88	2	122
Matale	6	9	20	68	4	107
Puttalam	11	13	27	87	9	147
Hambantota	10	10	25	92	10	147
Kurunegala	10	5	23	88	4	130
Gampaha	5	9	14	73	16	117
Badulla	15	11	31	86	9	152
Ratnapura	5	5	18	91	9	128
Nuwara Eliya	5	4	11	85	6	111
Ampara	5	7	26	87	5	130
Total	84	90	233	932	80	1419
<i>As a % of Total</i>	<i>6</i>	<i>6</i>	<i>16</i>	<i>66</i>	<i>6</i>	<i>100</i>

Source: Survey Data

Table 4.6: Total Female Population Divided by Age Groups

District	Age Groups (Years)					Total
	<=5	5< <=10	10< <=18	18< <=64	64<	
Anuradhapura	5	11	16	92	4	128
Mahaweli H	6	8	21	80	5	120
Matale	6	6	11	61	2	86
Puttalam	12	12	31	83	4	142
Hambantota	9	6	23	71	4	113
Kurunegala	5	11	26	81	2	125
Gampaha	4	5	16	68	10	103
Badulla	12	13	17	87	8	137
Ratnapura	9	4	15	68	7	103
Nuwara Eliya	7	4	7	81	8	107
Ampara	12	11	17	70	5	115
Total	87	91	200	842	59	1279
<i>As a % of Total</i>	7	7	16	66	5	100

Source: Survey Data

Table 4.7: Age Group of the Sample Households

District	Year <= 5	%	Year 5<=10	%	Year 10<=64	%	Year 64 <	%	Total
Anuradhapura	12	5	18	7	216	84	10	4	256
Mahaweli H	11	5	18	7	206	85	7	3	242
Matale	12	6	15	8	160	83	6	3	193
Puttalam	23	8	25	9	228	79	13	4	289
Hambantota	19	7	16	6	211	81	14	5	260
Kurunegala	15	6	16	6	218	85	6	2	255
Gampaha	9	4	14	6	171	78	26	12	220
Badulla	27	9	24	8	221	76	17	6	289
Ratnapura	14	6	9	4	192	83	16	7	231
Nuwara Eliya	12	6	8	4	184	84	14	6	218
Ampara	17	7	18	7	200	82	10	4	245
Total	171	6	181	7	2207	82	139	5	2698

Source: Survey data

Fifty three percent consisted of males and over 82 percent of the sample population was under the age group of 10< =64 in all the districts except in Puttalam, Badulla and Gampaha. The highest elderly population of 12 percent was reported in Gampaha district followed by Ratnapura. The highest younger group under year 10 was reported in Puttalam and Badulla districts while above average (13 percent) was reported in Matale, Hambantota and Ampara districts. Overall 18 percent of the sample population were dependents. Elderly population was about 5 percent and younger population was about 13 percent. Most of the children under 18 years were not fully engaged in farming. Therefore the workforce had to find income source to look after them too.

Table 4.8: Education Level of the Sample Households

District	Year 1 - 5	Year 6 -11	O/L Pass	A/L Pass	Vocational/ Degree	No Schooling (Elder)	Schooling (Children)	Total
Anuradhapura	60	135	34	8	2	6	11	256
Mahaweli H	46	134	40	11	0	0	11	124
Matale	46	107	20	7	0	1	12	193
Puttalam	72	129	41	12	3	10	22	289
Hambantota	92	96	34	9	2	7	20	260
Kurunegala	57	105	40	29	2	7	15	255
Gampaha	31	72	54	44	11	0	8	220
Badulla	72	109	55	16	4	6	27	289
Ratnapura	54	103	43	13	3	1	14	231
Nuwara Eliya	25	70	68	32	10	1	12	218
Ampara	72	111	29	13	1	3	16	245
Total	627	1171	458	194	38	42	168	2698
As a % of total	23	43	17	7	2	2	6	100

Source: Survey data

Both the farmers and farm assistants had secondary education and it was about 50 percent of the total sample. About 30 and 26 percent sample household members were engaged in farming and served as farm assistants. They were educated up to grade 5.

Table 4.9: Education Level of Farmers and Farm Assistants

District	Farmers					Farm Assistants				
	Total	Grade 1-5	Grade 6-10	As a % of Total		Total	Grade 1-5	Grade 6-10	As a % of Total	
				1-5	6-10				1-5	6-10
Anuradhapura	71	24	40	34	56	49	15	24	31	49
Mahaweli H	73	14	48	19	66	46	7	29	15	63
Matale	58	18	32	31	55	51	10	33	20	65
Puttalam	72	15	40	21	56	38	13	17	34	45
Hambantota	65	35	25	54	39	40	22	10	55	25
Kurunegala	72	21	38	29	53	38	12	15	32	40
Gampaha	43	5	20	12	47	23	2	9	9	39
Badulla	66	19	30	29	46	53	13	20	24	38
Ratnapura	58	22	27	38	47	45	9	22	20	48
Nuwara Eliya	46	5	16	11	35	48	4	24	8	50
Ampara	67	31	28	46	42	38	14	21	37	55
Total	691	209	344	30	50	469	121	224	26	48

Source: Survey Data

Most of the farmers owned less than 02 acres of highlands and lowlands. The large number of farmers with less than 02 acres of highland was in Mahaweli H, Ratnapura, Nuwara Eliya and Badulla districts. Just below 50 percent of farmers in the sample had highland of 2-4 acres in Hambantota, Anuradhapura, Ampara and Puttalam districts. The

above 05 acres highland land owners were in Gampaha district followed by Puttalam and Anuradhapura.

Table 4.10: Highland Land Sizes (Ac) of Surveyed Farmers

District	Land sizes (Ac)					As a % of Total		
	<=2	2< <=4	4< <=5	>5	Total	<2 %	2=< >4 %	<=5 %
Anuradhapura	14	31	15	6	66	21	47	91
Mahaweli H	55	4	0	0	59	93	7	100
Matale	25	16	3	4	48	52	33	92
Puttalam	25	27	5	8	65	38	42	88
Hambantota	24	30	4	4	62	39	48	94
Kurunegala	28	23	8	5	64	44	36	92
Gampaha	14	18	6	14	52	27	35	73
Badulla	39	22	2	0	63	62	35	100
Ratnapura	51	7	0	0	58	88	12	100
Nuwara Eliya	36	8	1	4	49	73	16	92
Ampara	14	27	17	2	60	23	45	97
Total	325	213	61	47	646	50	33	93

Source: Survey Data

Table 4.11: Lowland Land Sizes (Ac) of Surveyed Farmers

District	Land sizes (Ac)					As a % of Total		
	<=2	2< <=4	4< <=5	>5	Total	<2 %	2=< >4 %	<=5 %
Anuradhapura	41	19	6	0	66	62	29	100
Mahaweli H	18	33	5	3	59	31	56	95
Matale	30	16	2	0	48	63	33	100
Puttalam	54	8	3	0	65	83	12	100
Hambantota	37	23	2	0	62	60	37	100
Kurunegala	42	19	3	0	64	66	30	100
Gampaha	44	6	2	0	52	85	12	100
Badulla	51	11	1	0	63	81	17	100
Ratnapura	51	7	0	0	58	88	12	100
Nuwara Eliya	49	0	0	0	49	100	0	100
Ampara	44	14	1	1	60	73	23	98
Total	461	156	25	4	646	71	24	99

Source: Survey Data

The following table depicts that almost all the other field crop farmers cultivated less than two acres of land. Cultivation of manioc was under more than 3 acres in Gampaha for both maha and yala seasons. More than two acres were cultivated with maize in Anuradhapura and Ampara districts in maha season and red onion in Puttalam district in both seasons. Farmers cultivated about one acre land with black gram, soya bean, cowpea, big onion, gingelly, chillies and innala. On an average the extent of green gram cultivation in Kurunegala and innala and sweet potato in Ratnapura were less than one acre. The lowest land size was reported in Ratnapura district for sweet potato and innala cultivation.

Table 4.12: Average Land Sizes under each Crop of the Selected Farmers

District	Crops	Average Land Size (Ac)	
		Maha	Yala
Anuradhapura	Maize	2.17	0.43
	Black gram	1.99	-
	Gingelly	-	2.95
Mahaweli H	Soya bean	1.12	1.33
Matale	Sweet Potato	1.12	1.29
	Big onion		1.42
Puttalam	Red Onion	2.29	2.85
	Chilli	1.20	1.56
	Groundnuts	0.82	0.74
Hambantota	Green gram	0.94	0.25
	Gingelly	1.90	-
Kurunegala	Innala	1.16	-
	Green gram	0.59	0.31
Gampaha	Manioc	3.76	3.87
Badulla	Maize	1.47	1.45
	Potato	0.65	0.89
Ratnapura	Innala	0.73	0.81
	Sweet Potato	0.51	0.82
Ampara	Maize	2.12	0.90
	Cowpea	1.36	1.71
Nuwara Eliya	Potato		

Source: Survey data

In the sample, occupationswise of farming population was above 30 percent in Anuradhapura, Mahaweli H, Matale, Puttalam, Kurunegala and Ampara Districts while the farming population was below 30 percent in Badulla and Ratnapura. In Gampaha and Nuwara Eliya Districts the farming population was less than 25 percent. Above 20 percent of farm assistants were reported in Anuradhapura, Mahaweli H, Matale, Nuwara Eliya, Badulla and Ratnapura districts. About 15 to 18 percent worked as farm assistants in Puttalam, Hambantota, Kurunegala and Ampara districts. The lowest number of 10 percent was reported in Gampaha. Above 5 percent of sample population was reported as government servants in Gampaha, Kurunegala and Nuwara Eliya Districts while above 5 percent private sector employees were reported in Mahaweli H, Hambantota, Kurunegala, Gampaha, Ratnapura and Nuwara Eliya districts. The Highest percentage of 7 percent of police and Armed Forces Employees were reported in Anuradhapura followed by Ampara district. The members of households work as self employees, skilled labourers and businessmen and as workers abroad and this was about one percent. Over 30 percent of the sample population did not report their income source or employment. The highest reported percentage of 47 was in Gampaha district.

Table 4.13: Type of Occupation by District

Occupation	Anuradhapura	Mahaweli H	Matale	Puttalam	Hambantota	Kurunegala	Gampaha	Badulla	Ratnapura	Nuwara Eliya	Ampara	Total	As a % of working population	As a % of total
Farming	67	71	57	70	56	69	38	62	51	42	63	646	29.3	28.7
Farm assistants	49	45	48	35	38	38	18	52	44	48	34	449	20.3	20.0
Animal Husbandry	-	-	1	-	2	1	-	-	-	-	-	4	0.2	-
Ag. labourer	1	-	1	5	7	4	-	3	5	1	1	28	1.3	1.2
Non Ag. labourer	-	3	-	1	1	2	1	4	3	-	1	16	0.7	0.7
Govt. Employer	3	3	1	2	2	11	15	5	6	9	8	65	2.9	2.9
Pvt.sec. Employee	7	13	2	6	11	10	12	4	11	15	6	97	4.4	4.3
Police & Armed Forces	16	6	2	4	1	3	-	4	3	1	13	53	2.4	2.3
Self Employment	2	1	-	4	1	4	1	2	5	5	5	30	1.4	1.3
Skilled	1	1	-	4	13	3	1	-	1	2	-	26	1.2	1.2
Business	-	1	3	2	-	1	3	1	-	1	2	13	0.6	0.6
Foreign Employment	-	1	1	1	-	3	4	1	1	2	-	15	0.7	0.7
Ayurvedic	-	-	-	3	-	-	-	-	-	-	-	3	0.1	-
Not reported	77	67	47	97	83	72	81	86	62	60	69	801	36.3	35.6
Total	223	212	163	234	215	221	174	224	192	186	202	2246	100.0	100.0

Source: Survey data

Out of the surveyed population the total farming population was about 46 percent consisting 65 percent male farmers and 16 percent female farmers. Male farmers in the Mahaweli H, Puttalam, Badulla, Matale and Anuradhapura districts were above the average of 65 percent. 31 percent were engaged as farm assistants and 64 percent of them were female farm assistants. Major occupation as female farm assistants was reported in Matale, Badulla and Ratnapura districts and it was over 75 percent and well above the average of 64 percent.

Table 4.14: Major Occupations by District

District	Farming			Farm Assistants			Total			Farming as a % of total surveyed population		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Anuradhapura	57	14	71	4	45	49	85	65	150	67	22	47
Mahaweli H	63	10	73	9	37	46	88	60	148	72	17	49
Matale	52	6	58	16	35	51	76	44	120	68	14	48
Puttalam	61	11	72	5	33	38	85	57	142	72	19	51
Hambantota	56	9	65	6	34	40	93	51	144	60	18	45
Kurunegala	59	13	72	3	35	38	88	64	152	67	20	47
Gampaha	41	2	43	7	16	23	73	35	108	56	6	40
Badulla	59	7	66	9	44	53	85	59	144	69	12	46
Ratnapura	57	1	58	10	35	45	90	48	138	63	2	42
Nuwara Eliya	42	4	46	15	33	48	77	53	130	55	8	35
Ampara	52	15	67	7	31	38	87	54	141	60	28	48
Grand Total	599	92	691	91	378	469	927	590	1517	65	16	46

Source: Survey Data

Table 4.15: Type of Occupation

District	Surveyed Farming Population			Working Population (Age >18<=64)			Farming Population as a % of Working Population		
	M	F	Total	M	F	Total	M	F	Total
Anuradhapura	85	65	150	87	92	179	97.7	70.7	83.8
Mahaweli H	88	60	148	88	80	168	100.0	75.0	88.1
Matale	76	44	120	68	61	129	111.8	72.1	93.0
Puttalam	85	57	142	87	83	170	97.7	68.7	83.5
Hambantota	93	51	144	92	71	163	101.1	71.8	88.3
Kurunegala	88	64	152	88	81	169	100.0	79.0	89.9
Gampaha	73	35	108	73	68	141	100.0	51.5	76.6
Badulla	85	59	144	86	87	173	98.8	67.8	83.2
Ratnapura	90	48	138	91	68	159	98.9	70.6	86.8
Nuwara Eliya	77	53	130	85	81	166	90.6	65.4	78.3
Ampara	87	54	141	87	70	157	100.0	77.1	89.8
Total	927	590	1517	932	842	1774	99.5	70.1	85.5

Source: Survey Data

Total farming population was 85 percent of the working population. It was observed that most of the children under 18 were engaged in education or vocational training. The survey revealed that almost all the working population was engaged in farming.

Table 4.16: Type of Occupation by Gender

District	Surveyed Farming Population			as a % of Total		as a % of Total Surveyed Population		
	M No.	F No.	Total	M %	F %	M %	F %	Total %
Farming	599	92	691	87	13	64.6	15.6	45.6
Farm Asst	91	378	469	19	81	9.8	64.1	30.9
Livestock	3	1	4	75	25	0.3	0.2	0.3
Ag. Labourers	19	9	28	68	32	2.0	1.5	1.8
Labourers	12	4	16	75	25	1.3	0.7	1.1
Govt. Servants	36	30	66	55	45	3.9	5.1	4.4
Private sec.	54	44	98	55	45	5.8	7.5	6.5
Police & Forces	51	2	53	96	4	5.5	0.3	3.5
Self employment	16	15	31	52	48	1.7	2.5	2.0
Technical	26		26	100	0	2.8	0.0	1.7
Business	7	5	12	58	42	0.8	0.8	0.8
Foreign	6	8	14	43	57	0.6	1.4	0.9
Not Specified	4	2	6	67	33	0.4	0.3	0.4
Ayurvedic	3	0	3	100	0	0.3	0.0	0.2
Total	927	590	1517	61	39	100.0	100.0	100.0

Source: Survey Data

Of the total surveyed population 61 percent was male and 39 percent was female. The percentage of both male farmers and female farm assistants was 64 percent. It was observed that the large number of people was in the age group of above 18 and below 64

years followed by the age group of above 10 and below 18 years. The rest were dependents of the family.

Table 4.17: Total Male Population Divided by Age Groups

District	<=5	5< <=10	10< <=18	18< <=64	64<	Total
Anuradhapura	7	7	21	87	6	128
Mahaweli H	5	10	17	88	2	122
Matale	6	9	20	68	4	107
Puttalam	11	13	27	87	9	147
Hambantota	10	10	25	92	10	147
Kurunegala	10	5	23	88	4	130
Gampaha	5	9	14	73	16	117
Badulla	15	11	31	86	9	152
Ratnapura	5	5	18	91	9	128
Nuwara Eliya	5	4	11	85	6	111
Ampara	5	7	26	87	5	130
Total	84	90	233	932	80	1419

Source: Survey Data

Table 4.18: Total Female Population Divided by Age Groups

District	<=5	5< <=10	10< <=18	18< <=64	64<	Total
Anuradhapura	5	11	16	92	4	128
Mahaweli H	6	8	21	80	5	120
Matale	6	6	11	61	2	86
Puttalam	12	12	31	83	4	142
Hambantota	9	6	23	71	4	113
Kurunegala	5	11	26	81	2	125
Gampaha	4	5	16	68	10	103
Badulla	12	13	17	87	8	137
Ratnapura	9	4	15	68	7	103
Nuwara Eliya	7	4	7	81	8	107
Ampara	12	11	17	70	5	115
Total	87	91	200	842	59	1279

Source: Survey Data

Both the farmers and farm assistants have had secondary education and it was about 50 percent. About 30 and 26 percent household members did farming and served as farm assistants. They were educated up to grade 5.

4.3 Production and Marketing of Other Field Crops

The other field crop sector was considered as a cash crop sector in the 1970s. But the cultivation of field crops had changed considerably during the past 20 years due to many reasons. The secondary data shows that both the cultivated extent and production had declined gradually. An attempt was made to find out the reasons for these changes. According to the importance of the crops and the areas, farmers were selected and

interviewed to obtain the reasons for declining the cultivated extents, moving from one crop to another and their views on the crop sector. Farmers' responses were prioritized to find out the major reasons to overcome this situation.

Cultivation of crops varied in accordance with the demand. Some of the crops were cultivated throughout the year while some were cultivated either in the maha or yala season. In some areas some of these crops were cultivated in both seasons in different extents. However the extent of these crops varied widely due to various reasons. Maize, green gram and black gram were cultivated mainly in the *maha* season because these crops were cultivated in rain fed highlands. Although most of the farmers were aware of the price fluctuation during the year, most of these small farmers were not rich enough to invest on water pumps to cultivate during the yala season. The farmers who cultivated red onion, potato and chillies used irrigated water by using water pumps and these crops were cultivated throughout the year. There was a specific cropping pattern which could be observed in cultivation of cowpea in Ampara in between the main seasons of paddy cultivation under rain fed conditions. Soon after the maha paddy harvest, cowpea cultivation was started and the crop was harvested in May and June. They cultivated *Dhawala* variety which was introduced by the Department of Agriculture which fetched a higher price. Big onion and gingelly were mainly cultivated in the *yala* season. Big onion farmers earned a higher income than the other field crop farmers.

Table 4.19: Farmers View on Cropping Pattern Change

District	Cropping pattern changed		Cropping pattern not changed		Total
	Number	%	Number	%	
Anuradhapura	57	86	9	14	66
Mahaweli H	47	80	12	20	59
Matale	30	63	18	38	48
Puttalam	43	66	22	34	65
Hambantota	29	47	33	53	62
Kurunegala	31	48	33	52	64
Gampaha	9	17	43	83	52
Badulla	8	13	55	87	63
Ratnapura	28	48	30	52	58
Nuwara Eliya	14	29	35	71	49
Ampara	17	28	43	72	60
Total	313	48	333	52	646

Source: Survey data

About 48 percent farmers stated that there was a change in cropping pattern during the past ten years. Over 80 percent in Anuradhapura and Mahaweli H area reported that there was a change in cropping pattern recently compared to the period 10 years before. Above 60 percent farmers in Puttalam and Matale also had the same view. About 48 percent in both Hambantota and Kurunegala stated that there was a change in cropping pattern and about 52 percent in these areas stated that cropping pattern had not changed. 83 and 87 percent in Gampaha and Badulla stated that the cropping pattern had changed. Around

70 percent in Nuwara Eliya and Ampara reported that the cropping pattern had changed. 51 percent stated that there was no cropping pattern change and out of these 42 percent were from Hambantota, Kurunegala, Gampaha, Badulla, Ratnapura, Nuwara Eliya and Ampara districts.

According to the farmers, maize cultivation had increased in both seasons but sharply increased in the *yala* season. Soya bean cultivation had also increased because of the introduction of new projects by the government. Farmers cultivated innala in Kurunegala district and sweet potato in Ratnapura and Puttalam. Chillies, green gram, cowpea, potato, black gram and finger millet cultivation had declined considerably. Most of the farmers had started cultivation of perennial crops such as banana and papaw and also vegetables to obtain a better income. In the *yala* season farmers had cultivated other field crops and vegetables due to shortage of water. Among the perennial crops, banana and papaw were the most popular crops among the farmers because these crops brought a higher income for a long period and farmers were able to cultivate other field crops in the same land for a short term earning. The cultivation of maize and soya bean had increased slightly because the farmers had obtained better prices and found easy way to market their produce under the forward trade agreements signed with the private sector companies. As a result the risk in marketing had been averted to some extent. Farmers engaged in vegetable cultivation also had received a higher income because of the improved marketing practices.

Table 4.20: Cropping Pattern Change

Crop	10 Years before		Present		% Change	
	Maha	Yala	Maha	Yala	Maha	Yala
Paddy	106	32	91	23	-14	-28
Chillies	70	52	50	17	-29	-67
Maize	45	5	57	12	27	140
Green gram	54	19	26	4	-52	-79
Cowpea	70	26	32	9	-54	-65
Soya bean	2	14	8	51	300	264
Innala	16	2	20	6	25	200
Potato	14	8	5	4	-64	-50
Black gram	14	5	11	2	-21	-60
Gingelly	23	46	13	27	-43	-41
Finger Millet	54	9	7	0	-87	-100
Groundnut	13	7	30	19	131	171
Manioc	9	0	9	5	0	
Sweet potato	14	9	16	18	14	100
Big onion	2	42	2	47	0	12
Red onion	15	13	15	11	0	-15
Vegetables	89	55	170	103	91	87
Other Perennial Crops	9	8	35	23	289	188

Source: Survey data

More than 53 percent of the farmers had more than 20 years of experience in OFC farming and 32 percent of total farmers had ten to twenty years experience. In the *maha*

season about 38 percent of the farmers had used their own seeds and 55 percent of the farmers had used certified local and imported seeds supplied by the open market seed traders. In the *yala* season about 29 percent of the total farmers had used their own seeds and 66 percent had used certified local and imported seeds as well as seeds supplied by the open market seed traders.

Table 4.21: Farmers Experience on OFC Cultivation (Years)

District	Number of Farmers						As a % of Total Farmers		
	<5	<10	<=15	>15	>30	Total	<10	<=15	>15
Anuradhapura	2	4	24	42	3	66	6	36	64
Mahaweli H	2	6	20	39	6	59	10	34	66
Matale	0	3	20	28	4	48	6	42	58
Puttalam	7	16	34	31	7	65	25	52	48
Hambantota	3	7	18	44	9	62	11	29	71
Kurunegala	4	11	22	42	6	64	17	34	66
Gampaha	4	7	29	23	5	52	13	56	44
Badulla	3	11	33	30	2	63	17	52	48
Ratnapura	3	6	26	32	11	58	10	45	55
Nuwara Eliya	4	11	21	28	2	49	22	43	57
Ampara	2	7	27	33	8	60	12	45	55
Total	34	89	274	372	63	646	14	42	58

Source: Survey Data

Farmers have had good experience of OFC cultivation and some of them had got benefits by using their knowledge. 58 percent have had more than 15 years experience and 42 percent have had less than 15 years experience. Many farmers in Puttalam, Kurunegala, Badulla and Nuwara Eliya have had less than 10 years experience compared to that of other districts because they had entered the field to gain a higher income. According to the farmers' views the cropping pattern had changed rapidly in Anuradhapura and Mahaweli H areas followed by Puttalam and Kurunegala during the last 10 years. Farmers in these districts and the Mahaweli area cultivated banana and papaw. In Kurunegala district some farmers cultivated innala and they earned a good income from this crop.

In the marketing process of OFC both the traditional and new marketing channels were observed. As a new marketing system, forward contract was introduced and this was used by the maize farmers in Anuradhapura, Mahaweli H area and Badulla district. Farmers in other districts did not have this experience. Though the farmers engaged in the forward contract system they did not sell all produce to the agreed company when the market price was higher than the agreed price. As usual they visited the market traders and sold the produce at a better price.

This study reveals that the higher open market prices were the main factors to move from one crop to another. 65 percent of the farmers reported that they had moved from one crop to another due to higher prices while 21 percent of the farmers reported that it was

due to convenience. 13 percent of the farmers reported that it was due to low cost of production of the changed crop.

Table 4.22: Farmers' Views on Forward Contract

District	Practice Forward Contract		As a % of Total	
	Yes	No	Yes	No
Anuradhapura	46	20	66	70
Mahaweli H	30	29	59	51
Matale	3	45	48	6
Puttalam	0	65	65	0
Hambantota	1	61	62	2
Kurunegala	1	63	64	2
Gampaha	0	52	52	0
Badulla	13	50	63	21
Ratnapura	0	58	58	0
Nuwara Eliya	0	49	49	0
Ampara	1	59	60	2
Total	95	551	646	15

Source: Survey Data

The cultivation of some of these crops had decreased due to many reasons such as declined yield, increased pest attacks and diseases, low producer prices, lack of quality seeds and lack of capital. As a result, farmers had moved to new crops which gave a better income. Selection of each crop was based on various reasons. They were higher yields and higher prices, easy cultivation, low cost and low pest attacks.

Table 4.23: Ways of Selling OFC by Contract Farmers

District	Ways of Selling			Total No. of Contract Farmers	No. of farmers sell to the company %
	Agreed Company	Other Traders	Both		
Anuradhapura	32	12	2	46	70
Mahaweli H	25	2	3	30	83
Matale	3	0	3	3	100
Puttalam	0	0	0	0	
Hambantota	0	1	1	1	0
Kurunegala	1	0	1	1	100
Gampaha	0	0	0	0	
Badulla	8	2	3	13	62
Ratnapura			0	0	
Nuwara Eliya			0	0	
Ampara	1	0	0	1	100
Total	70	17	24	95	74

Source: Survey Data

Table 4.24: Reasons to Move to New Crops

Reasons	No. of Farmer Responses	Percentage
Higher Price	204	65.2
Easy agronomic practices	66	21.1
Low cost	43	13.7
Low pest and diseases	34	10.9
Recommended crops	21	6.7
Minimum damages by wild animals	10	3.2
Convenience	9	2.9
Harvest in a short period	3	1.0
keeping and storage ability	2	0.3
Cultivated decently	1	0.3
Ignorance of other crops	1	0.3
lack of family labor	1	0.6
Total No. of Farmers	313	100

Source: Survey data

Figure 4.2: Reasons to Move to New Crops

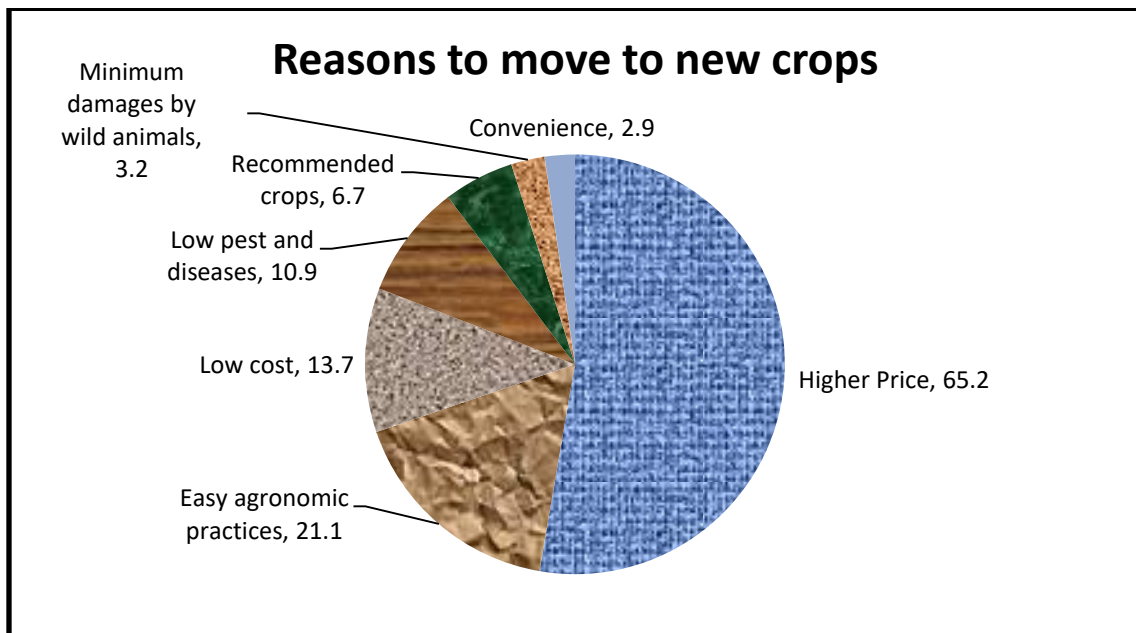
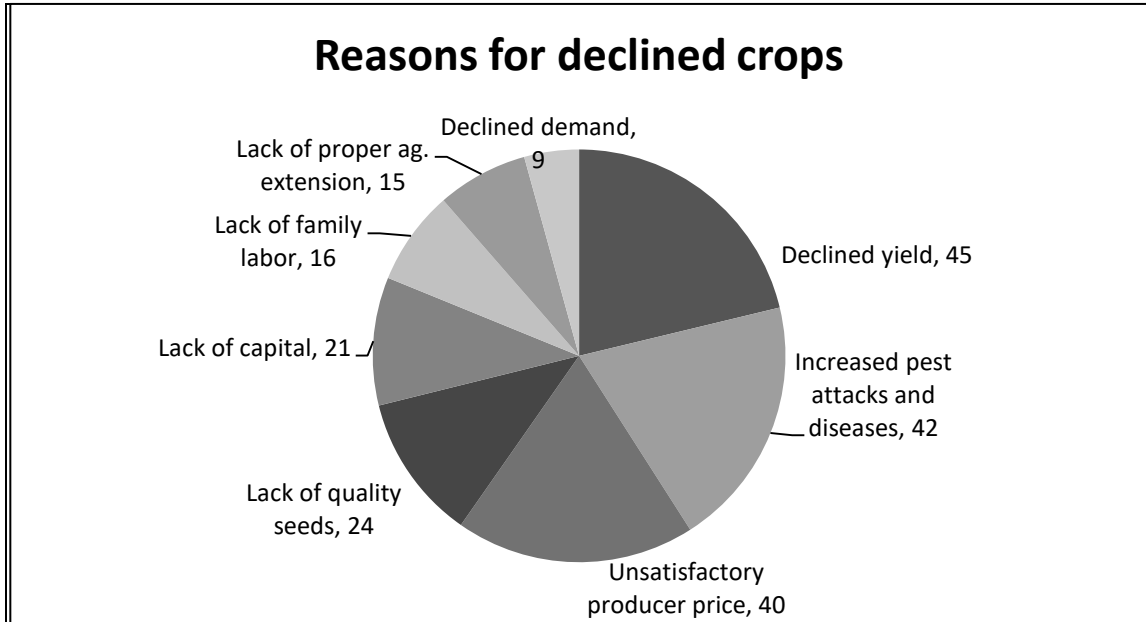


Figure 4.3: Reasons for Declined Crops



It was revealed that the highest recorded income was gained by potato farmers in Nuwara Eliya district followed by manioc and red onion farmers in Gampaha and Puttalam districts respectively. The farmers in Nuwara Eliya cultivated exotic vegetables and potato. The farmers in Gampaha district cultivated manioc for the export market. The farmers in Puttalam cultivated red onion and it fetched a higher price due to good quality. Most of these farmers sold almost all the production to the domestic and/or export market depending on the crop. According to the categorization of the FAO, farmers who sold more than 50 percent of their production are considered as commercial farmers. Under this categorization they can be considered as commercial farmers.

The table 4.25 illustrates the marketable surplus of OFC and the production data indicates the seasonality. The marketable surplus of each crop is calculated by deducting the quantity kept for consumption, for seed, for payment in kind and wastage during the post harvest. Use of their own seeds by the farmers varied according to the season and it was about 38 percent and 29 percent in the maha and yala season respectively. In the maha season 55 percent of the farmers used local certified seeds purchased from ASCs, imported certified and uncertified seeds from the open market. In the yala season it was about 66 percent. This situation implied that the marketable surplus in the yala season is higher than that of the maha season.

Out of the total sample 33 percent of the farmers earned Rs.15000- 30000 per month from the OFC farming. And 31 percent earned more than Rs.30000 per month. The highest income earners were potato farmers in Nuwara Eliya and they were about 92 percent of the surveyed farmers. They were highly protected by import tariff. About 87 percent in Gampaha earned more than Rs.15,000 per month from manioc farming and majority of the production was exported. 71 percent in Mahaweli H area, Matale and Puttalam districts earned more than Rs.15,000 per month from other field crop farming.

They cultivated mainly maize, big onion and red onion respectively. Around 60 percent in Kurunegala, Badulla and Ratnapura earned the same amount. Around 40 percent of the farmers in Hambantota earned less than Rs.15,000 per month because of the poor quality of green gram they produced. The farmers who cultivate mainly maize, big onion, red onion and potato were better off. As a result of the government protection procedure on big onion, gains from big onion farming were higher. The red onion, the main substitute for big onion was protected automatically. Maize farmers were protected to some extent due to forward trade agreements because they had connections with agri food companies. In Anuradhapura, Mahaweli H and Badulla, 98 percent of the farmers stated that Foward Trade Agreement (FTA) was very effective at present for maize and that it should be introduced to the other crops also. However the farmers complained that they had problems with FTA due to non availability of valid documents, disorganized marketing system, not availability of inputs in time, high price of inputs and provision of low quality inputs.

Table 4.25: Marketable Surplus of OFC

Crop	District	Maha 2006/07		Yala 2007	
		Total production Kg	Marketable Surplus %	Total production Kg	Marketable Surplus %
	Anuradhapura	193,515	95.61	2,800	99.99
	Badulla	33,970	93.37	25,700	94.36
	Ampara	60,375	92.22	190	62.11
Red Onion	Puttalam	189,750	92.79	145,500	89.52
Big Onion	Matale			325,340	99.27
Potato	Nuwara Eliya	599,190	85.37	80,913	97.49
	Badulla	92,970	82.05	178,275	99.05
Chillies	Puttalam	58,300	87.99	68,415	99.99
Green gram	Hambantota	8,690	94.02	50	99.99
	Kurunegala	2863	92.63	120	91.67
Black gram	Anuradhapura	11,210	86.92	120	91.67
Cowpea	Ampara	13,058	88.19	19,520	95.42
Gingelly	Anuradhapura			9,432	92.94
Groundnut	Puttalam	7,990	91.43	7,160	90.71
Soya bean	Mahaweli H	6,050	99.83	40,201	99.39
Innala	Kurunegala	43,715	99.12	40,201	99.39
	Ratnapura	108,158	92.05	51,312	99.37
Manioc	Gampaha	1,140,700	99.99	51,312	99.37
Sweet potato	Matale	55,600	99.96	99,250	99.95
	Ratnapura	32,670	99.40	37,385	99.91

Source: Survey data

Table 4.26: Monthly Income Distribution of Households by Districts

District	< 1500	1500- =<5000	5000< - =<10000	10000<- =<15000	15000<- =<30000	30000<	Total
Anuradhapura	0	2	10	18	24	12	66
Mahaweli H	0	1	6	10	26	16	59
Matale	0	3	4	7	19	15	48
Puttalam	1	2	5	11	16	30	65
Hambantota	2	8	10	15	20	7	62
Kurunegala	0	6	9	8	26	15	64
Gampaha	0	2	2	3	13	32	52
Badulla	4	1	8	12	18	20	63
Ratnapura	2	5	7	9	26	9	58
Nuwara Eliya	0	0	1	3	9	36	49
Ampara	3	5	21	9	15	7	60
Total	12	35	83	105	212	199	646
<i>As a % of total population</i>	2	5	13	16	33	31	100

Source: Survey data

As far as income levels of farmers are concerned the majority of the male farmers had gained an income in the range of Rs.20,000 –Rs.50,000 per month. The above Rs.50,000 monthly farm income was gained by the male farmers in Gampaha and Hambantota districts where manioc and green gram were cultivated respectively. The majority of female farmers' monthly income ranged between Rs.20,000 – Rs.50,000 and they were farm Assistants.

Table 4.27: Monthly Income Distribution of Male Farmers in Households by Districts

District	<=5000	>5000 <=10000	>10000 <=20000	>20000 <=50000	>50000	Total
Anuradhapura	7	7	21	87	6	128
Mahaweli H	5	10	17	88	2	122
Matale	6	9	20	68	4	107
Puttalam	11	13	27	87	9	147
Hambantota	10	10	25	92	10	147
Kurunegala	10	5	23	88	4	130
Gampaha	5	9	14	73	16	117
Badulla	15	11	31	86	9	152
Ratnapura	5	5	18	91	9	128
Nuwara Eliya	5	4	11	85	6	111
Ampara	5	7	26	87	5	130
Total	84	90	233	932	80	1419

Source: Survey Data

To obtain the market information farmers use telephone facilities. More than 50 percent of farmers in Nuwara Eliya, Gampaha, Puttalam, Matale, Mahaweli H and Anuradhapura had telephone facilities and they updated their knowledge by using them. Less than 30 percent telephone facilities in Ratnapura, Kurunegala and Ampara. The highest number of telephone owners was recorded in Nuwara Eliya (78 percent) followed by 59 percent

in Gampaha. As mentioned earlier higher income earned farmers lived in these two districts.

Table 4.28: Monthly Income Distribution of Female Farmers in Households by Districts

District	<=5000	>5000 <=10000	>10000 <=20000	>20000 <=50000	>50000	Total
Anuradhapura	5	11	16	92	4	128
Mahaweli H	6	8	21	80	5	120
Matale	6	6	11	61	2	86
Puttalam	12	12	31	83	4	142
Hambantota	9	6	23	71	4	113
Kurunegala	5	11	26	81	2	125
Gampaha	4	5	16	68	10	103
Badulla	12	13	17	87	8	137
Ratnapura	9	4	15	68	7	103
Nuwara Eliya	7	4	7	81	8	107
Ampara	12	11	17	70	5	115
Total	87	91	200	842	59	1279

Source: Survey Data

The researchers reviewed the farmers' views about sustainability of this crop sector. They requested provision of fertilizer at subsidized rates, increasing the availability of high quality inputs, introduction of Forward Trade Agreement scheme for other crops and easy harvesting techniques and establishing efficient agricultural extension system. In addition, farmers need state help to minimize crop damages done by wild animals and a program to protect them.

4.4 Relationship between Cost of Production and Producer Price

The data on cost of production was collected from the Department of Agriculture and the producer prices were collected by the HARTI while the field survey was in progress. The lowest cost of production was reported for manioc followed by sweet potatoes. It was below Rs.9.00 per kg. The cost of production for maize and big onion was less than Rs.15.00 per kg. The highest cost of production was reported for cowpea i.e. Rs.64.00 per kg followed by green gram. The cost of production had increased sharply due to the higher seed cost. The producer prices varied according to the quality of the produce. The cost of production also varied according to the cultivation practices of each farmer. It was observed that the farmers who resorted to better farming practices earned a higher income.

For the determination of selling price of each commodity, farmers consider cost of production, demand and supply situation and the government policies. The producer prices and the cost of production of each commodity show that they get favourable income from OFC farming. Both the secondary data and the primary data illustrate this point.

Table 4.29: Average Producer Prices of Other Field Crops

Crop	District	Maha 2006/07	Yala 2007
Green Chillies	Puttalam	42.00	39.60
Maize	Anuradhapura	24.71	25.00
	Badulla	23.30	28.10
Green gram	Hambantota	60.00	
Cowpea	Ampara	62.53	70.00
Soya bean	Anuradhapura		36.21
	Mahaweli H		36.85
Innala	Kurunegala	20.27	
	Rathnapura	22.42	
Potato	Badulla	46.83	49.47
	Nuwara Eliya	49.42	53.33
Black gram	Anuradhapura	74.44	
Gingelly	Anuradhapura		58.28
Finger millet	Anuradhapura	50.00	
	Hambantota	40.91	
Groundnut	Puttalam	59.16	63.33
Manioc	Gampaha	13.76	
Sweet potato	Matale	12.75	12.45
	Ratnapura	13.53	13.44
Big onion	Mahaweli H		27.56
	Matale		30.16
Red onion	Puttalam	51.52	53.33

Source: Survey data

Table 4.30: Gross Margin between Cost of Production and Producer Prices of Other Field Crops in Maha 2006/07 (Rs/kg)

Crop	COP Including Imputed cost	COP Excluding Imputed cost	Producer Price	Gross Margin
Maize	14.41	6.75	24.71	10.30
Green gram	57.00	26.71	60.00	3.00
Cowpea	45.29	19.37	62.53	17.24
Potato(Badulla)	34.33	26.42	46.83	12.50
Potato(N'Eliya)	34.48	27.66	49.42	14.94
Finger millet	30.30	3.03	50.00	19.70
Groundnut	36.93	17.87	59.16	22.23
Manioc	6.16	5.03	13.76	7.60
Red Onion	30.31	26.53	51.52	21.21
Black gram	47.09	26.01	74.44	27.35

Source: Department of Agriculture- Cost of Production
Survey data- Producer price

Figure 4.4: Cost of Production and Producer Prices of Selected OFCs Maha 2006/07 (Rs/kg)

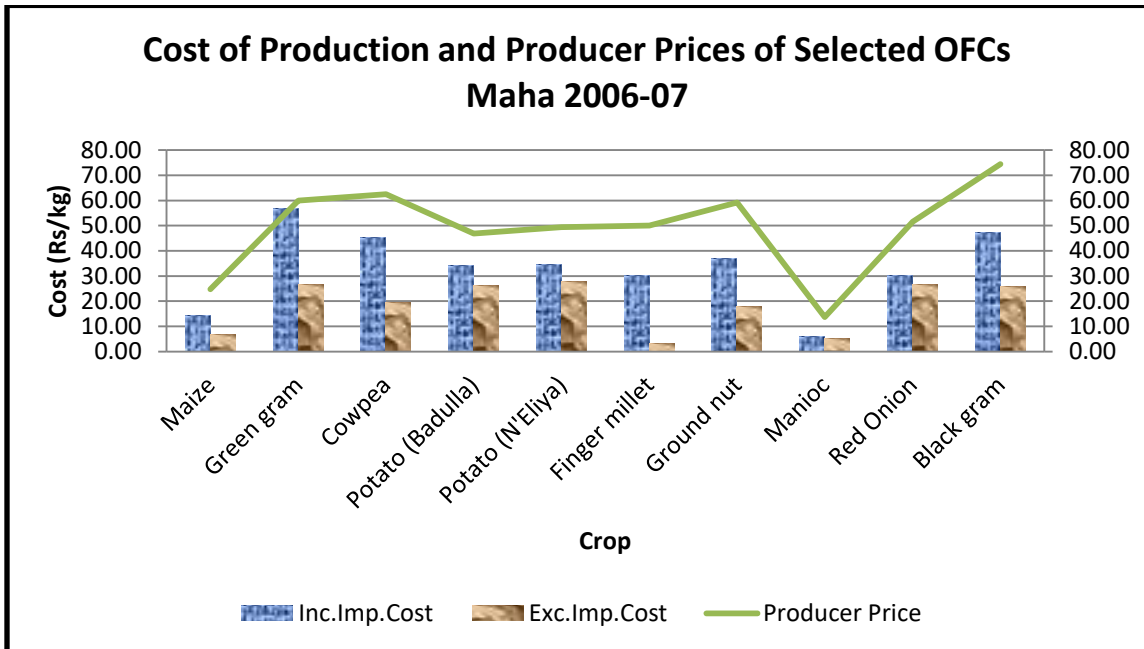


Figure 4.5: Cost of Production and Producer Prices of Selected OFCs Yala 2007 (Rs/kg)

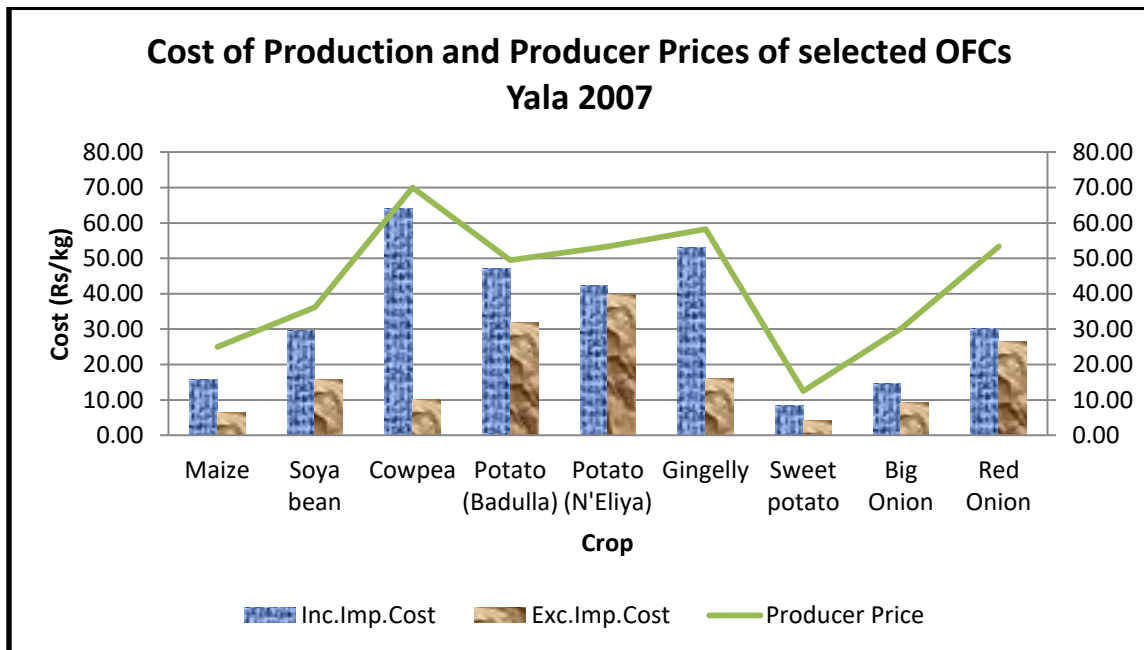


Table 4.31: Gross Margin between Cost of Production and Producer Prices of Other Field Crops in Yala 2007 (Rs/kg)

Crop	COP including Imputed Cost (Rs/kg)	COP Excluding Imputed Cost (Rs/kg)	Producer Price	Gross Margin
Maize	15.74	6.43	25.00	9.26
Soya bean	29.58	15.70	36.21	6.63
Cowpea	63.94	10.15	70.00	6.06
Potato(Badulla)	47.02	31.91	49.47	2.45
Potato(N'eliya)	42.23	39.69	53.33	11.10
Gingelly	53.05	16.01	58.28	5.23
Sweet potato	8.47	4.09	12.45	3.98
Big Onion	14.72	9.38	30.16	15.44
Red Onion	30.28	26.53	53.33	23.05

Source: Department of Agriculture- Cost of Production
Survey data- Producer price

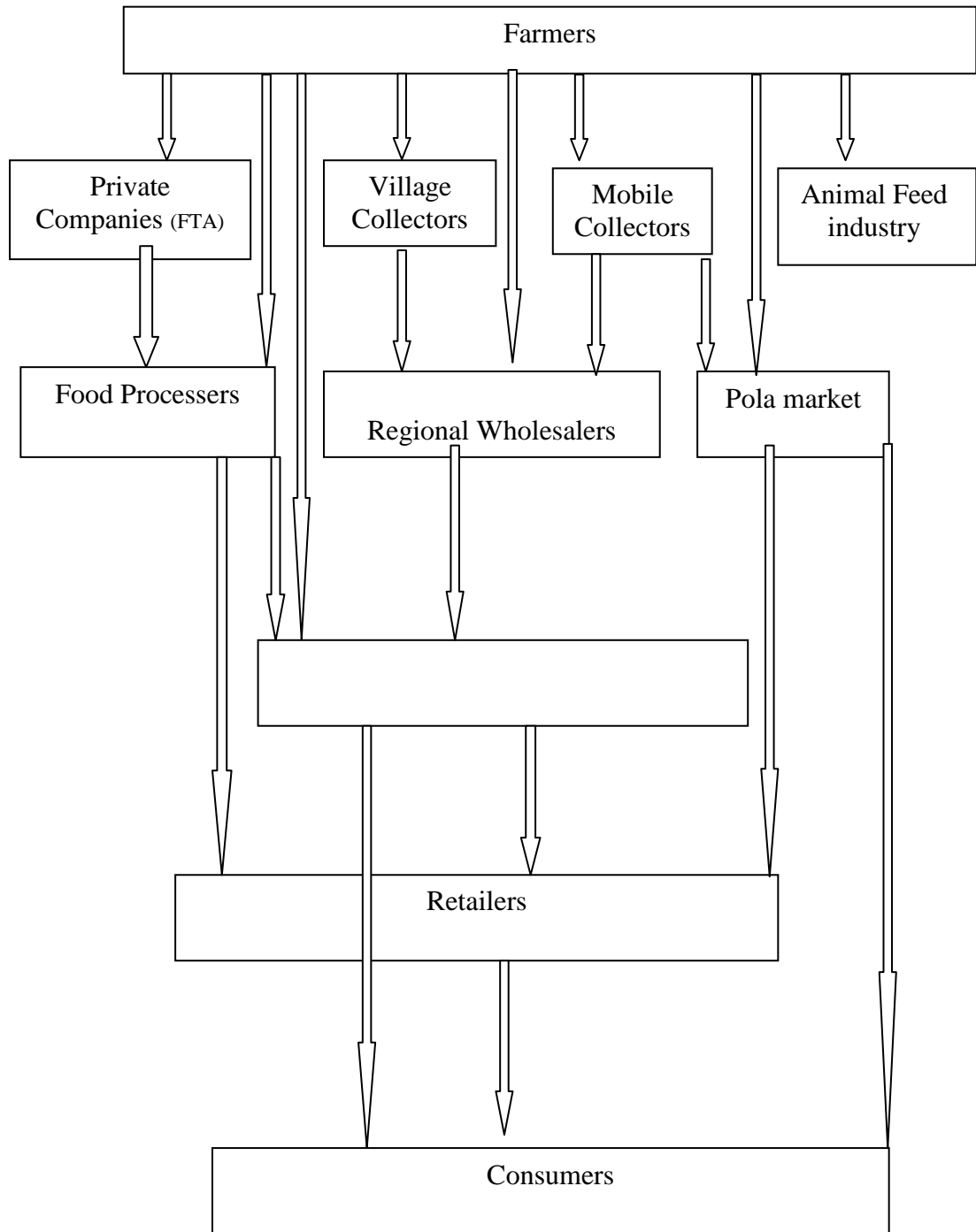
The gross margins were calculated using the cost of production including impute cost and the producer price in major producing areas. Considering the cost of production and producer prices, profits were reasonable. The margin between the cost of production and producer price was low in the yala season because the cost in the yala season was relatively higher due to irrigated water supply than that of the maha season for some crops. In addition, the margin for the protected crops such as maize, potato, big onion and red onion was higher than that of others.

Table 4.32: Gross Margin between Cost of Production and the Producer Price

Crop	Gross Margin [Producer Price - COP (Rs/kg)]		Gross Margin as a % Producer Price	
	2006/07 M	2007 Y	2006/07 M	2007 Y
Maize	41.68	37.04	10.30	9.26
Green gram	5.00		3.00	
Cowpea	27.57	8.66	17.24	6.06
Potato(Badulla)	26.69	4.95	12.50	2.45
Potato(N'eliya)	30.23	20.81	14.94	11.1
Finger millet	39.40		19.70	
Groundnut	37.58		22.23	
Manioc	55.23		7.60	
Red Onion	41.17	43.22	21.21	23.05
Black gram	36.74		27.35	
Soya bean		18.31		6.63
Gingelly		8.97		5.23
Sweet potato		31.97		3.98
Big Onion		51.19		15.44

Source: MFPAD/HARTI

Figure 4.6: Marketing Channels of Other Field Crops



4.5 Marketing Channels

The main channels for selling other field crops were mobile collectors and the traders in the nearest wholesale market and those amounted to 52%. They sold their produce to the village collectors, weekly pola traders, companies for FTA, traders in terminal market in the area and to the traders in Dambulla dedicated economic centre. 16 percent of the farmers sold their produce at the Dambulla dedicated economic centre. Selection of the mode was based on many reasons. The vital reasons were convenience, reliability and higher prices. Some of the farmers were of the view that there was no suitable way to sell the produce. When the farmer sold poor quality product, traders were reluctant to purchase the product. This was the main marketing problem faced by the farmers. When the quality of local produce was poor consumers preferred to buy imported produce. The farmers who produced good quality products did not face such a problem and gained higher income and they did cultivation in both seasons. The trading practices proceeded with the mutual understanding of each other.

Table 4.33: Modes of Selling Other Field Crops - 2006 Yala & 2006/2007 Maha

Type of Trader	Responses of Farmers	As a % of Total
Mobile collector	501	27
Wholesale center in the nearest town	465	25
Dambulla Dedicated Economic Center	290	16
Village collector	173	9
Weekly pola	130	7
Terminal market of the area	121	6
Relevant Company according to the FTA	85	5
Rice Millers	22	1
Co-operative/Farmer Company, Farmer Organization	21	1
Town Traders	20	1
Colombo Market	18	1
Feed Manufactures from outstations	15	1
Traders along the road side	3	0
Selling by the Farmer by road side	2	0
Total	1866	100

Source: Survey data

Table 4.34: Reasons for the Selection of Trader - 2006 Yala & 2006/2007 Maha

Reasons	Number of Responses	As a % of Total
As it is the most of convenient method of selling	893	40
Gain higher producer price	542	24
Lack of alternative methods	306	14
Reliability	224	10
Due to obtaining inputs on loan basis	109	5
Ability to sell large quantities	104	5
Trader not conscious about good quality	19	1
To recover loan	14	1
Due to the Agreement	14	1
For Export	3	0
Total	2228	100

Source: Survey data

4.6 Cropping Pattern Changes during the Past Decade

There was a good history for the cultivation of other field crops as cash crops. But the cultivation of those has changed considerably during the past 20 years due to many reasons. In this study the researchers attempted to find out the reasons for these changes. Accordingly the responses of the farmers, reasons affecting change were prioritized. The cultivation of crops had decreased due to many reasons such as declined yield, increased pest attacks and diseases, low producer price, lack of quality seeds and lack of capital. As a result farmers had changed over to new crops. The changes were based on many reasons related to each crop. They were higher yield, higher price, convenience of cultivation, low cost and low pest attacks.

About 48 percent farmers stated that there was a change in cropping pattern during the past ten years. Out of this number 27 percent represented Anuradhapura, Matale and Puttalam districts and the Mahaweli H area. Of the sample farmers 51 percent was of the view that there was no cropping pattern change and out of these 42 percent represented Hambantota, Kurunegala, Gampaha, Badulla, Ratnapura, Nuwara Eliya and Ampara districts.

Maize cultivation had increased in both seasons and particularly in the *yala* season. Soya bean cultivation had also increased because of the introduced new projects. Farmers used to cultivate innala in Kurunegala district and sweet potato in Ratnapura and Puttalam. Chillies, green gram, cowpea, potato, black gram and finger millet cultivation had declined considerably. Most of the farmers had started cultivation of perennial crops such as banana and papaw and also vegetables to earn more. In the *yala* season farmers had cultivated other field crops and vegetables due to shortage of water. Among the perennial crops, banana and papaw were the most popular among the farmers because these crops gave a higher income for a long period and farmers were able to cultivate other field crops in the same land for a short run. Farmers cultivated maize and soya

bean because the private sector companies had engaged in the forward trade agreements. Farmers considered that these agreements reduced their risk in marketing. The vegetable cultivation also had given a higher income because of the improved marketing practices.

Table 4.35: Cropping Pattern Change

Crop	10 Years before		Present		% Change	
	Maha	Yala	Maha	Yala	Maha	Yala
Paddy	106	32	91	23	-14	-28
Chilies	70	52	50	17	-29	-67
Maize	45	5	57	12	27	140
Green gram	54	19	26	4	-52	-79
Cowpea	70	26	32	9	-54	-65
Soya bean	2	14	8	51	300	264
Innala	16	2	20	6	25	200
Potato	14	8	5	4	-64	-50
Black gram	14	5	11	2	-21	-60
Gingelly	23	46	13	27	-43	-41
Finger Millet	54	9	7	0	-87	-100
Groundnut	13	7	30	19	131	171
Manioc	9	0	9	5	0	
Sweet potato	14	9	16	18	14	100
Big onion	2	42	2	47	0	12
Red onion	15	13	15	11	0	-15
Vegetables	89	55	170	103	91	87
Other Perennial Crops	9	8	35	23	289	188

Source: Survey data

This study has revealed that open market prices were the main factor for the change of crops which are cultivated in the present. 52 percent of the farmers reported this reason while 17 percent of the total stated that they cultivated these crops due to easy cultivation practices. 11 percent of the farmers reported that it was due to low cost of production.

Table 4.36: Reasons to Move into New Crops

Reasons	No. of Farmers Responded	Percentage
Higher Price	204	52
Easy agronomic practices	66	17
Low cost	43	11
Low pest and diseases	34	9
Recommended crops	21	5
Minimum damages by wild animals	10	3
Convenience	9	2
Harvest in a short period	3	1
keeping and storage ability	2	1
Cultivated decently	1	0
Ignorance of other crops	1	0
lack of family labor	1	0
Total	395	100

Source: Survey data

The private sector actively participated in the Forward Trade Agreements (FTA) in Anuradhapura and Badulla districts and also in the Mahaweli H area. It covered the maize, soya bean, and potato. The 98 percent of the farmers reported that cultivation of these crops had been successful in these three districts.

Table 4.37: Effectiveness of Forward Trade Agreements (FTA) by Districts

District	No. of Farmers	% of the total	Total
Anuradhapura	45	98	46
Mahaweli H	29	100	29
Badulla	12	92	13
Total	86	98	88

Source: Survey data

Cultivation of most of the traditional food crops had declined in the last three decades due to many reasons. The survey revealed that the low level of the yield (19%), increase of pest attacks and disease damage (18%), unsatisfactory producer prices (17%), lack of quality seeds (10%) and lack of capital (9%) were the major reasons.

Table 4.38: Reasons for the Declined Cultivation and Production

Reasons	No. of farmer Responses	Percentage
Decrease of yield	292	19
Increase of pest and diseases	271	18
unsatisfactory producer price	258	17
Lack of quality seeds	157	10
Lack of capital	138	9
Lack of family labour	102	7
Lack of efficient agricultural Extension	98	6
Decreasing the market demand	59	4
Scarcity of water	30	2
Moving to new agricultural activities	36	2
Fragmentation of lands	26	2
Crop damages by wild animals	38	2
Prohibition of cleaning forest	9	1
Moving to higher income crops	22	1
Other	6	0
Cultivation difficulties due to terrorist activities	3	0
Total	1545	100

Source: Survey data

Several reasons were reported for the increase of the cultivation of some cash crops especially potato, red onion, big onion, maize, soy bean and groundnut. The main reason for the increased cultivation were higher producer price compared to that of the other crops, increased yield due to usage of quality seeds, low pest attacks and diseases, availability of good quality seeds and especially for maize forward trade agreements.

Table 4.39: Major Reasons for the Increase of the Cultivation of Some of the Other Field Crops

Reasons	No. of farmer Responses	Percentage
Higher producer price	397	31.5
Increase yield	298	23.6
Low pest attacks and diseases	174	13.8
Availability of quality seeds	132	10.5
Convenience due to the Forward Trade Agreement	85	6.7
Convenience of cultivation	53	4.2
Ability to obtain a higher income together	28	2.2
Low cost of production	26	2.1
Increasing cultivated extent to retain a higher income	22	1.7
Ability to get a continuous income throughout the year	12	1
Minimum damage by wild animals	9	0.7
Other	7	0.6
Convenience in selling the harvest	8	0.6
Drought resistance	7	0.6
Ability to cultivate due to favorable security situation	4	0.3
Total	1262	100

Source: Survey data

4.7 Impact of Cropping Pattern Change and Food Security

According to the Department of Census and Statistics average farm size of the selected districts ranged between one acre and two and a half acres. In these districts the small holder population in agriculture was more than 40 percent of total population. In Moneragala, Anuradhapura, Hambantota, Kurunegala, Ratnapura and Matale districts small holding population varied from 60 percent to 86 percent (Annex table vi).

The Department of Census and Statistics revealed that there was high poverty level in the rural sector. The survey also indicates that the income levels of the households were very low. The income level varied from Rs.10,000 - Rs.30,000 per month for 49 percent of the survey households. They faced many problems related to access of food. In the past the rural people used to cultivate finger millet, green gram, maize, black gram and cowpea as well as local yams for their consumption. During the last three decades wheat and wheat based food consumption had increased in the rural sector too. As a result, the demand for some of the other field crops had declined and this sector had not developed as the wheat flour based food industry. The gravity of the problem was food insecurity in the rural sector and health problems in the urban sector. According to the FAO, “food security exists when people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life”. This definition invariably means to achieve food security adequacy and accessibility of food is a must. In the rural sector small farmers who cultivated substitute food crops had changed their cropping pattern gradually to earn more. Now they cultivate big onion or horticultural crops such as banana, papaw or any other crop. Hence they do not have substitute food for their food security. On the other hand though the food is available in the market the poor cannot afford to purchase sufficient food.

The declined extent and production had created many problems in the country and the most important one was non availability of nutritionally valued food. Calorie, protein, and fat intake had been used as the leading indicators in assessing food security status. In the country per capita calorie consumption had been well above the norm of the minimum energy intake of 2,200 kilocalorie at the national level assessed with aggregates throughout the last few decades due to higher consumption of rice and wheat flour based foods. The poor is protected by various food subsidy programmes. However for the protein intake the demand for livestock products had increased instead of legumes in the past. As a result the protein intake had increased up to the recommended intake level by 2000. Though the food habits have changed and created an increased demand for livestock products, fish and legumes had taken prime importance due to health reasons. Therefore there is a potential demand for the field crops in the near future. Though the urban and estate sector consumers are willing to consume these field crops they cannot afford them due to higher prices. In addition, the consumers complained about the poor quality. It is clear that for the development of this sector quality of the products and the prices should be taken into consideration.

According to the field survey, income of the small farmers who cultivated other field crops except big onion and potato was very low. Department of Census and Statistics revealed that lower income groups reported lower calorie intake and are likely to be undernourished compared to the higher income groups. The lowest income quintile had a considerably lower calorie intake, which was 82 percent of aggregate intake in 1981/82, compared to the highest income quintile, which was 115 percent of the aggregate. There was a continuous improvement of calorie intake among the poorest segment of the country during the last few decades. It is likely that the poorer groups are deprived of other nutrient intakes as well, since availability and affordability of protein sources and other major food items are more difficult (Herath, A).

The Demographic and Health Survey conducted in 2000 in the country reported malnutrition related parameters of children as incidences of stunting, wasting and underweight (Annex Table 5). There is a substantial difference in all three anthropometric measures in the urban, rural and estate sectors indicating a relatively high malnutrition levels in the rural sector and especially the estate sector. Although there had been improvements from 1993 to 2000 in all three indicators, deficiencies are still quite visible. The highest percentage of 15 percent wasting was recorded in the rural sector. The urban sector value has shown a remarkable decrease while that of estate sector had shown a slight increase. The highest percentage wasting of 18.2 percent was recorded in the age group of 12-23 months. This shows the lack of nutritional food intake. There was a significant decline in the underweight percentage from 1993 (37.7 percent) to 2000 (29.4 percent). Of the sector variations the lowest value of 18.2 percent was recorded in Colombo. The highest value of 44.1 percent was noted in the Estate sector.

The Demographic and Health Survey conducted in 2006/07 calculated and presented data in a different way. Accordingly each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The

indices in this table are NOT comparable to those based on the previously used NCHS/CDC/WHO standards.

Height and weight measurements were obtained for children born in the five years before the survey interview date. The height and weight data are used to compute three summary indices

of nutritional status: height-for-age; weight-for-height; and weight-for-age. These three indices are expressed as standardized scores (z-scores) or standard deviation units from the median for the international reference population recently developed by the World Health Organization (WHO, 2006). Children who fall more than two standard deviations below the reference median are regarded as undernourished, while those who fall more than three standard deviations below the reference median are considered severely undernourished.

Table 4.40: Anthropometric Indices (Stunting, Wasting and Underweight) for Children (3-59 months of age)

Sector	Incidences of Stunting (%) (Height /age)		Incidence of Wasting (%) (Weight/height)		Incidence of Underweight (%) (Weight /age)	
	1993	2000	1993	2000	1993	2000
	Rural	22.9	12.8	16.4	15.9	38.3
Urban	16.8	8.6	16.8	6.3	29.9	21.3
Estate	53.7	33.8	9.5	11.8	52.1	44.1
All	23.8	13.5	15.5	14.0	37.7	29.4

Source: Sri Lanka Demographic and Health Survey, 2000

Table 4.41: Nutritional Status of Children (Excluding Northern Province)

(Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional Status: height- for- age, weight- for- height, weight-for-age by background characteristics in Sri Lanka, 2006/07)						
Sector	height- for- age		weight- for- height		weight-for-age	
	Percentage Below -3 SD	Percentage Below -2 SD	Percentage Below -3 SD	Percentage Below -2 SD	Percentage Below -3 SD	Percentage Below -2 SD
Rural	3.5	16.7	2.8	15.2	3.5	21.7
Urban	2.9	13.7	3.4	14.9	3.0	16.6
Estate	15.3	42.2	3.6	12.6	8.7	29.7

Source: Sri Lanka Demographic and Health Survey, 2006/07

The above table illustrates the nutritional status among children below five years of age by selected background characteristics. Children whose height-for-age is below minus two standard deviations from the median of the reference population are considered stunted or short for their age. Stunting is the outcome of failure to receive adequate nutrition over an extended period and is also affected by recurrent or chronic illnesses. According to the 2006/07 SLDHS findings, 18 percent of Sri Lankan children are stunted, with 4 percent being severely stunted. Stunting levels increase rapidly with age,

peaking at 23 percent among children aged 18-23 months. Stunting levels are slightly higher for boys than girls and for estate children than for urban and rural children. The prevalence of stunting varies by districts from 8 percent in Colombo to 41 percent in Nuwara Eliya District. Stunting levels are above the average rural figure in Nuwara Eliya, Badulla, Moneragala, Kurunegala, Matale, Hambantota and Ratnapura (Annex Table 6).

Children whose weight-for-height is below minus two standard deviations from the median of the reference population are considered wasted (or slim). Wasting represents the failure to receive adequate nutrition in the period immediately before the survey and typically is the result of recent illness episodes, especially diarrhea, or of a rapid deterioration in food supplies. The table indicates that 15 percent of Sri Lankan children are wasted, with 3 percent severely wasted. Wasting levels are highest at ages between 18-23 months. Wasting is high in Trincomalee District followed by Hambantota, Moneragala, Badulla and Ampara districts than in other districts.

Children whose weight-for-age is below minus two standard deviations (-2 SD) from the median of the reference population are considered underweight. The measure reflects the effects of both acute and chronic malnutrition. 22 percent of Sri Lankan children are underweight, with 4 percent classified as severely underweight. Percentage of children with underweight steadily increases with increase in the age of the children. Underweight is higher for boys than girls and for estate children than for children in urban and rural areas. The Badulla district reported the highest proportion of underweight children followed by Trincomalee, Batticaloa, Moneragala and Nuwara Eliya districts.

Among the Other Field Crops, root crops, chilies, maize, pulses and cereals had shown a drastic drop in the cultivated extent and the production. This decline has had a direct impact on the rural food security as well as urban food security because most of the consumers could not afford them due to higher prices. The declined demand in turn has had a direct impact on rural farm income and rural development. Finally the government has to take care of poor by allocating huge amounts and earn the required amount by taxing the people. Therefore it is important to formulate policies which do not discourage the cultivation of other field crops.

Big onion crop was highly protected during the harvesting period. Therefore cultivated extent increased sharply. But the quality of most of the supplies were not up to the standard to store for about two three months. Due to bad post harvest practices huge quantities were deteriorated within a short time period. As a result of high domestic production, imported quantity was also curtailed. Hence prices increased sharply due to shortage. Therefore realistic price support for other field crop farmers is a must in a short run to overcome the inefficiencies in the marketing system. As the society needs quality products, farmers should be trained to produce quality products to increase production efficiency. This will finally help to allocate resources in a sustainable manner with better diversification of crops for rural development and poverty reduction through agribusinesses and/or agro based industries. Final result of the improvement of this

sector is an asset to the country because there will be healthy people in the country and a wealthy farming population.

The food quality and standards are very important. Sri Lanka Standards Institution is the national standards body responsible for integrated standardization activities at national level. National standards established by the SLSI are generally voluntary in nature unless declared compulsory under other laws and statutes. There are at present a total of 1,334 Sri Lanka Standards (SLS) items in force and Food and agriculture items consist 259. According to the traders and farmers they are not aware of the specifications given by the Sri Lanka Standards Institution. This is one of the neglected areas which need attention to improve the quality of other field crops.

CHAPTER FIVE

Conclusion and Recommendations

5.1 Conclusion

The total cultivated extent of most of the crops had declined until 2000 and thereafter it was stabilized. The decline of both the cultivated extent and the production of green gram, cowpea and finger millet had created problems of food security in the districts under consideration. About 20 percent of small farmers had earned less than Rs.10,000 per month from OFC farming. Maize cultivation had increased sharply as a result of Forward Contracts made by the private companies and as a result farmers cultivating maize as a mono crop. Therefore food commodities such as green gram, cowpea and finger millet were in short supply in the farm households. There was a tendency to cultivate new improved good quality local variety of Cowpea "*Dhawala*" in Ampara district because it fetched a higher price.

Though the private sector was engaged in seed industry, new improved varieties of pulses and cereals were not available with them. The private sector faced problems in importing seeds due to strict rules and regulations imposed by the government and also due to procedural delays. In addition research and extension service for these high value crops were not adequate and not demand driven. Farmers were willing to cultivate high value crops such as green gram, cowpea, big onion and black gram and they had faced problems in finding good quality seeds.

The qualities of products available in the market were relatively low due to nonavailability of quality seeds, poor crop management practices, and improper post harvest techniques used for processing. The imported commodities in the market had a good appearance and were of good quality. Hence the demand for imported commodities was high. Both the farmers and the traders lacked the knowledge of standards of each commodity which meant for the market and for human consumption. Therefore farmers sold the products without cleaning or processing.

Before 1996 the total availability of traditional crops consisted of local production because closed trade policy prohibited imports. Under the open economic policy, imports had gradually increased and availability of domestic crops had declined up to 70 percent. During this period both the traders and consumers had identified the quality and standards of commodities. Though the standards had been set by the state, awareness about those standards were very low.

The government interventions into stabilizing the prices for various commodities must reflect the preference of the society for the product and should promote quality. In the long run country needs to develop new mechanisms to provide protection to farmers so that their incomes can increase. Only the extent and production of big onion had

increased by 145% from 2004 – 2007 due to high protective measures taken by the government such as increasing customs duty from Rs.3.00/kg to Rs.9.00/kg.

Changes have taken place in the consumption basket of food. Therefore emphasis should be placed on development of technologies to promote and diversify the agricultural sector. Price interventions and infrastructure development need to be encouraged for agricultural diversification to address imbalances in Sri Lankan agriculture.

Ad hoc changes in tariff rates are not favourable for the long term growth of this sector, because such policies increased the inefficiency of production and marketing of the commodities. As a result of ad hoc tariff, market price distortions occur every year and this badly affects both the producers and the consumers. Big onion and potato are highly protected crops. Hence most of the small farmers did not try to increase the productivity of other crops. As a result prices of the other field crops were very high in the market. In addition, prices of vegetables have increased accordingly. Hence the demand was very limited throughout the year because both the farmers and the consumers cut down their purchases. In addition, the high prices adversely affected the small farmers, traders and processors in other field crops sector because the investors were reluctant to invest in the processing industry due to uncertainty. Though these crops had valuable nutrients very poor consumers cannot afford them.

The imports showed that there are consumers for traditional field crops and demand has increased. The demand from consumers in the urban areas has increased because they know the nutritional value of these crops. To fill the gap between local production and demand, about 25 -30% of total available supply was imported.

Among the Other Field Crops, root crops, chilies, maize, pulses and cereals had shown a drastic drop in the cultivated extent and the production. This decline has a direct impact on the rural food security as well as urban food security because most of the consumers cannot afford them due to higher prices. The declined demand in turn has a direct impact on rural farm income and rural development. Finally the government has to take care of the poor by allocating huge amounts of finance and earn the required amount by taxing the people. Therefore it is important to have policies which do not discourage the cultivation of other field crops.

Due to unrealistic crop protection, cultivated extent of big onion has increased sharply. But the benefit received the consumers were very limited due to high prices, poor quality and scarcity. The people of Sri Lanka, especially the urban poor, pay the price for excessive tariffs on agricultural imports. The realistic intervention for other field crop sector is a must in a short run to expand the cultivation and production and also to overcome some of the market inefficiencies. As the society needs quality products, farmers should be trained to produce quality products to increase production efficiency. This will finally help to allocate resources in a sustainable manner with better diversification of crops for rural development and poverty reduction through agribusinesses and/or agro based industries.

Mainly the urban consumers gradually change their food habits and demand has improved for pulses, cereals and local yams. This is a good indication for the development of this sector.

In the sample more than 53 percent of the farmers had more than 20 years of experience in other field crops (OFC) farming and 32 percent had ten to twenty years experience. Use of their own seeds by the farmers varied according to the season and in the maha season it is about 38 percent and in the yala season it is about 29 percent. In the maha season 55 percent of the farmers used local certified seeds purchased from ASCs and imported certified and uncertified seeds from the open market. In the yala season it was about 66 percent. This situation implies that the marketable surplus in the yala season is higher than that of the maha season.

Of the total sample, 33 percent of the farmers earn Rs.15,000- 30,000 per month from OFC farming and 31 percent earn more than Rs.30000 per month. The highest income earners are potato farmers in Nuwara Eliya and they are about 92 percent of the surveyed farmers. They are highly protected by import tariff. About 87 percent of the surveyed farmers in Gampaha earned more than Rs.15,000 per month from manioc farming and they export most of the production. It was revealed that 71 percent of the surveyed farmers in the Mahaweli H area, Matale and Puttalam districts earn more than Rs.15,000 per month from other field crop farming. They cultivate mainly maize, big onion and red onion respectively. As a result of the government protection procedure on big onion, gains from big onion farming are higher. The red onion, the main substitute crop for big onion, is also protected automatically. Maize farmers were protected to some extent due to forward trade agreements they had in agri food companies. Around 60 percent of the farmers in Kurunegala, Badulla and Ratnapura earned the same amount. Around 40 percent of the farmers in Hambantota earned less because the green gram they produced was sold at low prices due to poor quality. After seen the imported green gram they purchased seeds of those from the market and cultivated to obtain a higher price. This showed that the need of the quality seed at farm level.

To obtain the market information, farmers use telephones and 45 percent of the surveyed farmers had telephone facilities. More than 50 percent of Farmers in Nuwara Eliya, Gampaha, Puttalam, Matale, Mahaweli H and Anuradhapura had telephone facilities. The highest was recorded in Nuwara Eliya (78%) followed by (59%) in Gampaha. As presented earlier higher income farmers were in these districts.

Farmers shift from one crop to another depending on the market prices. This indicates that the farmers are market oriented. The farmers sell their produce to the mobile collectors and to the wholesalers in the nearest town and also to the Dedicated Economic Centre in Dambulla. The processors purchase very few quantities from producers because they have to clean the produce to remove impurities. In the surveyed households 82 percent of the people were in the age limits of 18-64 and 60 percent have had the secondary education. They have the knowledge to change their crops and understand how to improve the quality of the commodity. However they are not aware of the Sri Lanka standards. Hence the standards stipulated by the government should be made available to

them. Quality improvement is a must to develop the agro based industries for this sector because other countries produce good quality products.

Maize cultivation had increased in both seasons particularly in the yala season. Soya cultivation had also increased because of the introduced new projects. Farmers used to cultivate innala in Kurunegala district and sweet potato in Ratnapura and Puttalam. Chillies, green gram, cowpea, potato, black gram and finger millet cultivation had declined considerably. Most of the farmers had started cultivation of perennial crops such as banana and papaw and vegetables as cash crops.

Farmers in Hambantota and Kurunegala stated that cropping pattern had changed. About 48 percent of the total surveyed farmers stated that there was a change in cropping pattern during the last ten years. Of these 27 percent represented the Mahaweli H area, Anuradhapura, Matale and Puttalam districts. Of the sample farmers 51 percent were of the view that there was no change. 42 percent represented Hambantota, Kurunegala, Gampaha, Badulla, Ratnapura, Nuwara Eliya and Ampara districts. Farmers selected new crops due to many reasons such as higher yield, higher price, convenience of cultivation, low cost and low pest attacks. The cultivation of other field crops had decreased due to many reasons such as declined yield, increased pest attacks and diseases, low producer prices, lack of quality seeds and lack of capital.

In Anuradhapura, Mahaweli H and Badulla, 98 percent of the farmers stated that Forward Trade Agreement is very effective at present for maize and it should be introduced to the other crops also. However the farmers complained that they had problems with FTA due to non availability of valid documents, disorganized marketing system, not getting inputs in time, high price of inputs and provision of low quality inputs.

There is a potential to expand cultivation of these crops, provided that the farmers receive higher prices, and are supplied quality seeds to get higher yields and reduce crop damages from pest and diseases, and facilitate them with convenient trading practices such as FTA.

Farmers suggested that they should be given fertilizer at subsidized rates, availability of high quality inputs should be easily available, FTA scheme for other crops should be introduced, easy harvesting techniques should be introduced and efficient agricultural extension system should be established. To expand the production, farmers requested subsidized rates for inputs including fertilizer and seeds, Quality seeds, proper extension service, a reliable market, irrigation facilities, safety against crop damages by wild animals and a program to protect farmers were needed to improve the cultivation of other field crops.

The producer's share of retail price for big onion and red onion was about 65 – 70 percent. In 2003, October and November the producer's share was about 68-70 percent of the retail price. The producer's share of retail price for big onion had increased gradually during the last few years. This increasing trend could be observed during the period 2004- 2007. This higher share was reported in November and December 2004 (73-84), in

November 2005 (70), in December 2006 (70) and in November 2007 (76). The highest producer's share was reported in December 2007 (103). Though the crop was protected, consumers did not benefit because the highest gross margin between producer price and wholesale price prevailed during the harvesting season. As a result of the import tariff, margin between CIF price and wholesale price of big onion was around 40 percent of the retail price.

Producer's share of both Nuwara Eliya and Welimada potato was over 70 percent during 2001 – 2007. As a result of the farmer protection programme tariff rate was increased during the harvesting season. Therefore farmers were able to gain a higher income. Retailer's gross margin was about 20 percent and wholesaler's gross margin was about 10 percent. As a result of the import protection policy of potato, prices of almost all the up country vegetables had increased. Consequently the prices of low country vegetables were also increased.

Producer prices of green chillies at Hambantota were higher than that in the Anuradhapura. The producer's share of Hambantota farmer was around 50 percent while that of Anuradhapura farmer was less than 40 percent. Producer's share of local dried chillies was about 80 percent in early 2000 and it had dropped to 60 percent in 2007.

Producer got about 65 percent of the retail price of finger millet seed. Since 2003 the producer's share had increased because food processors paid higher prices to purchase good quality seed. Producer's share of the processed product, finger millet flour, was less than that of the raw finger millet. Normally producer's share of the consumer's rupee of the processed and or value added products was lower than that of the raw products. Producer's share of both soya bean and maize was less than 50 percent during the last five years. Producer's share of gingelly was lower than that of groundnut because gingelly was mainly used for the processing industry.

Producer's share of manioc was about 65 percent of the retail price. Most of the farmers in Gampaha district produced quality manioc for the export market and damaged yams were supplied to the domestic market.

5.2 Recommendations

The main problem faced by the farmers is lack of quality seeds. Private sector investors are also facing problems while importing seed and planting material for the development of the other field crop sector. The seed import industry needs to be liberalized but properly quarantined seeds should be supplied. Otherwise farmers will face problems while marketing due to poor quality of the products and high unit cost.

Quality is more important to develop this sector. For the improvement of quality, marketing information dissemination is vital. Though the price information is important, information on specifications for supplying quality products is also vital because the prices depend on the quality of the product. Therefore awareness programmes should be launched on specifications of other field crops developed by the Sri Lanka Standards

Institute to increase farm income. The specifications should be freely available to the stakeholders to improve the quality of the commodities.

The system of price interventions for important other food crops must continue in the short run with the special attention paid to the preference of the consumers. The prices should provide incentive for quality and efficiency. When the protective measures are implemented special attention should be paid to surplus generating areas as well as quality concerned farmers.

There was a high risk for investment on agribusiness due to ad hoc tariff changes. As a result of the unjustifiable tariff rate the prices had increased sharply. This situation had resulted in the entrepreneurs moving to other sectors. In addition, farmers cultivate protected crops to earn more without considering the food security. There is a serious drawback in this sector due to high protection of selected crops. To overcome the problems, reasonable tariff rates need to be introduced to protect the crops for a short run and maintain them consistently to increase the efficiency and for the sustainability of this sector.

Long run solution for deficiency is technology innovation that reduces cost of production. To achieve this, more reliance should be placed on untapped potential pockets in the country to meet future demand for these crops.

The private sector should be allowed to play an effective role in the development of agricultural marketing. It is advisable to collaborate with the private sector for better research on demand driven crops, field testing and related other activities for the expansion of this sector as a whole. The government should involve in providing infrastructure facilities and monitoring the supply and demand situation of these commodities for the benefit of producers, traders and consumers.

Farmers prefer the government introduced forward sales contract system and it seems to be a viable alternative. But it was revealed that when the open market prices are high producers violate the agreement.

For the sustainability of these crops it is needed to increase the productivity by using quality inputs. As a result the production will be increased and the cost of production will be reduced. Then the investors can invest in the agribusinesses. It is a necessity to reduce cost and increase production for the expansion of agro based industries. In addition, this will help to reduce the imports.

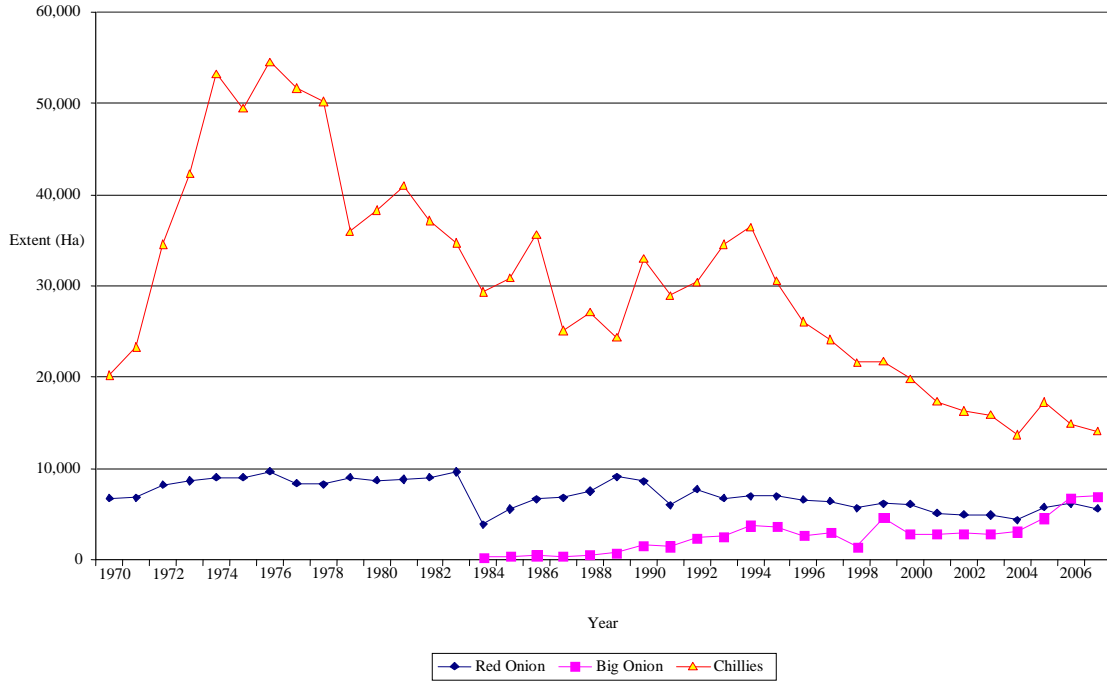
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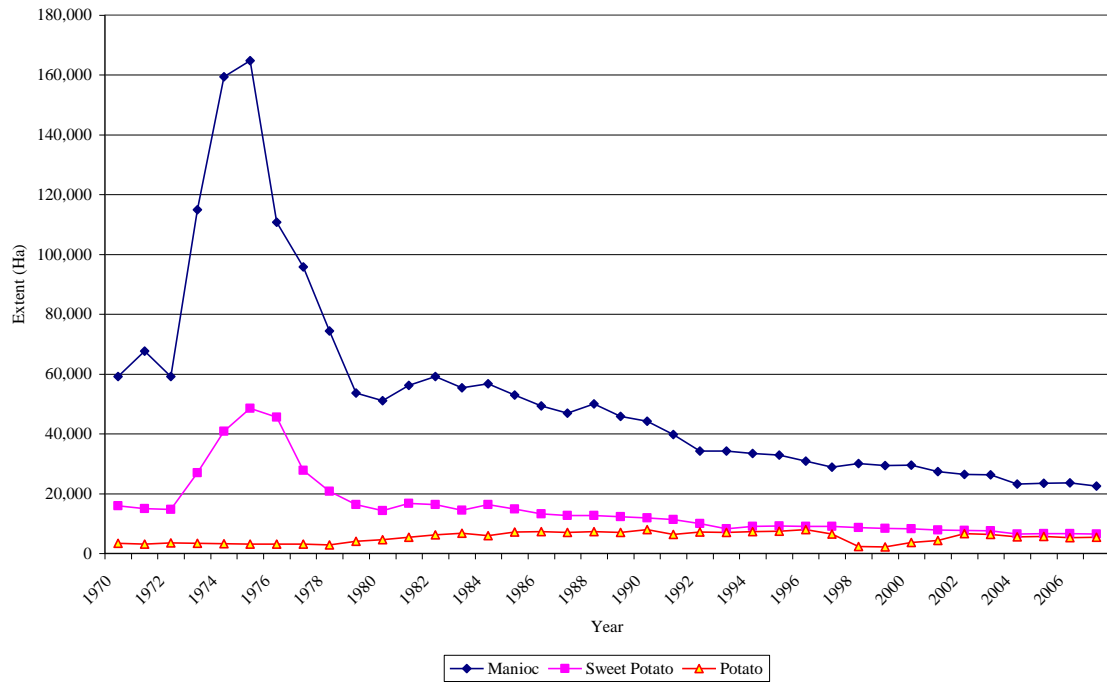
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Annex Figure 1. Cultivated Extent of Other Field Crops 1970-2007

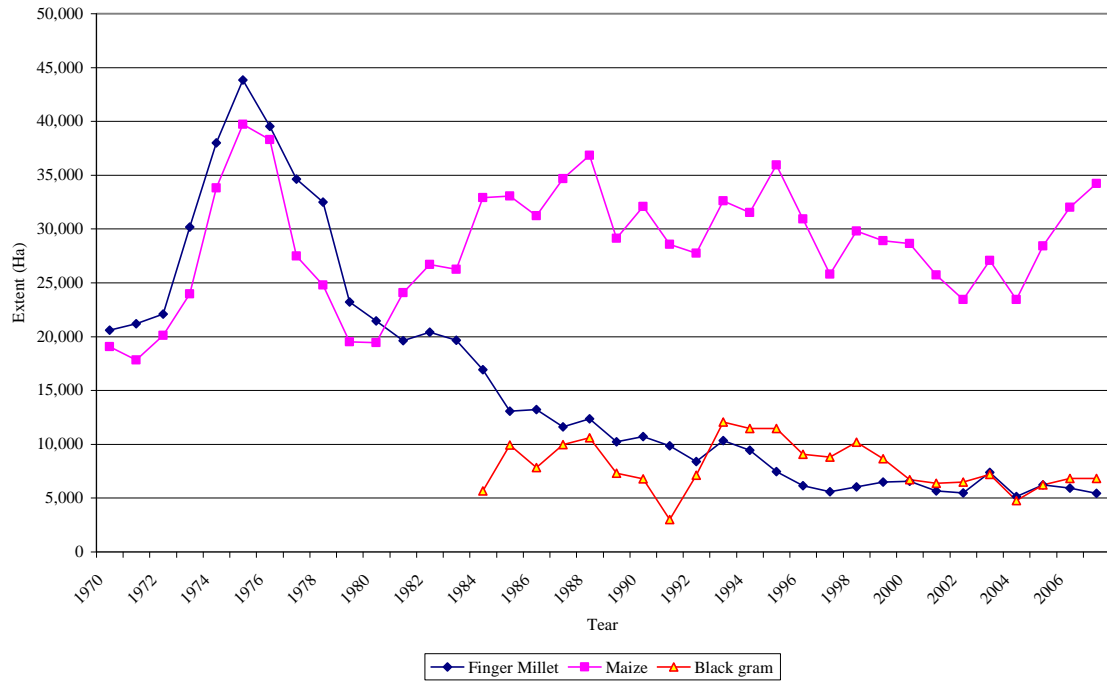
Cultivated Extent of Red Onion, Big Onion and Chillies



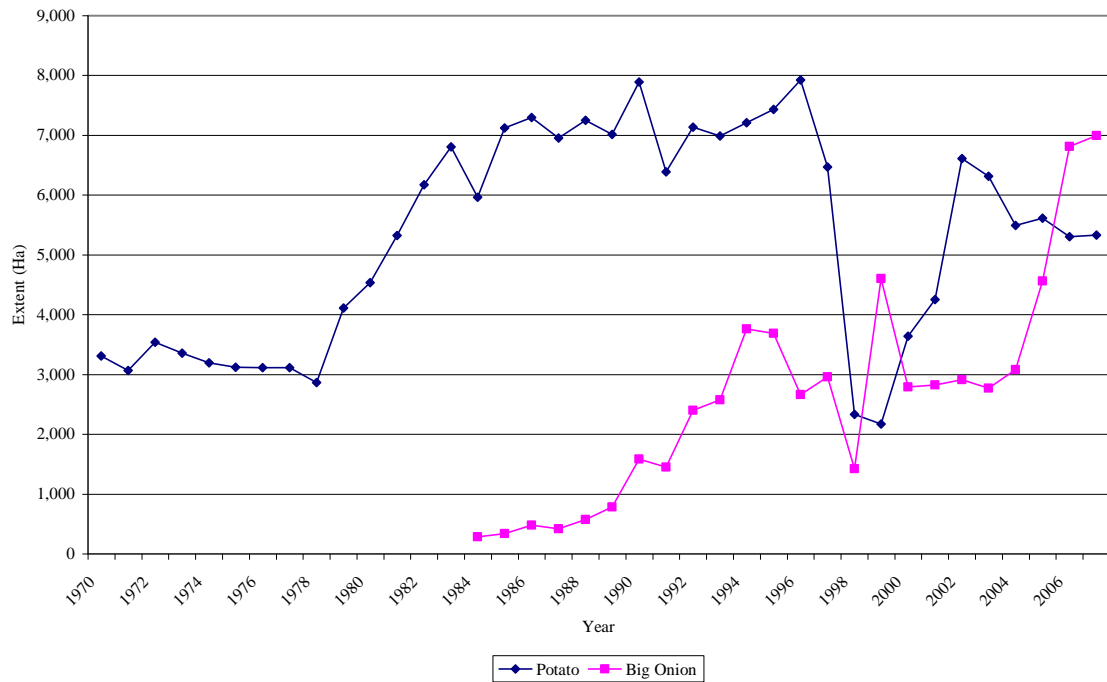
Cultivated Extent of Manioc, Sweet Potato and Potato



Cultivated Extent of Finger Millet, Maize and Black gram

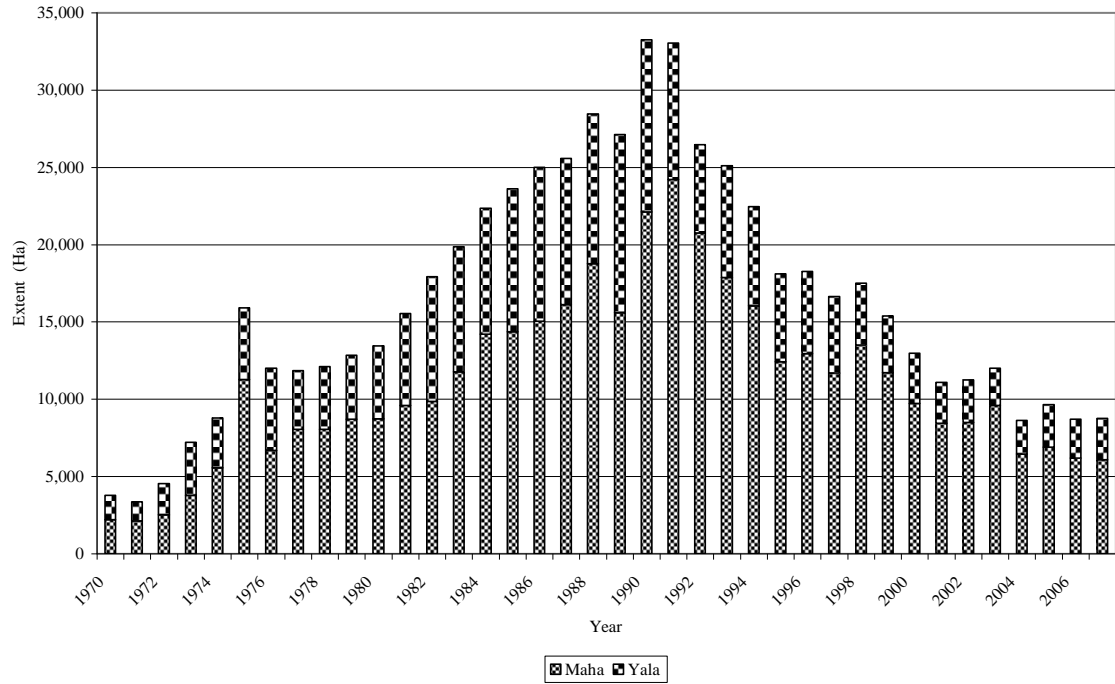


Cultivated Extent of Potato and Big Onion

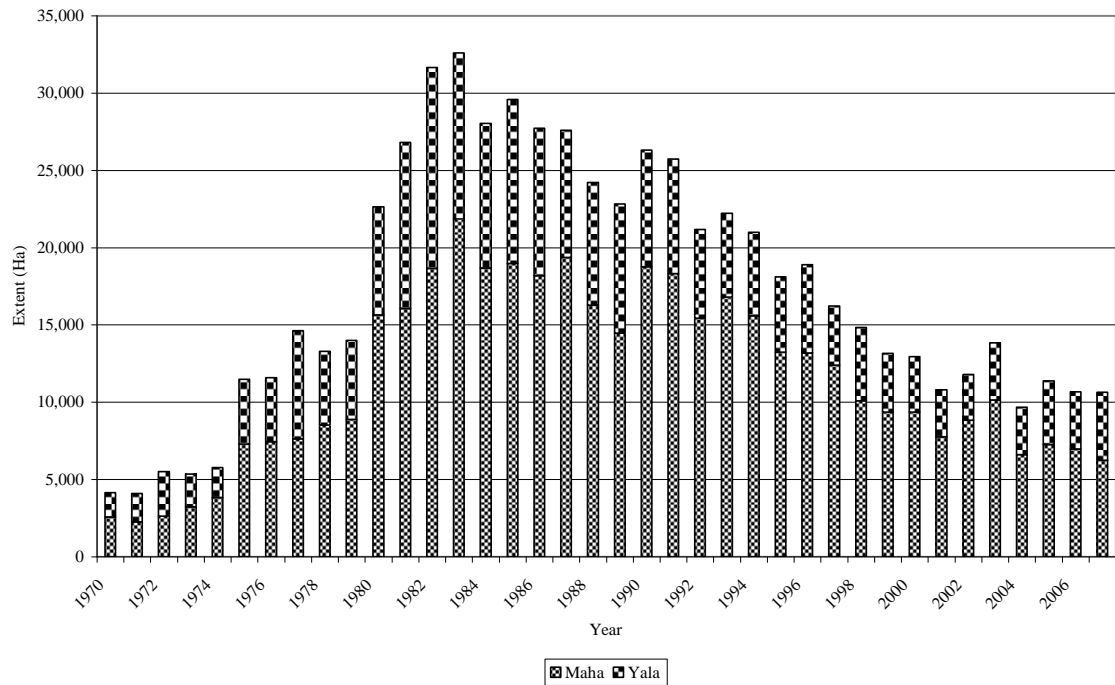


Annex Figure 2: Cultivated Extent of Other Field Crops (*Maha & Yala*) 1970-2007

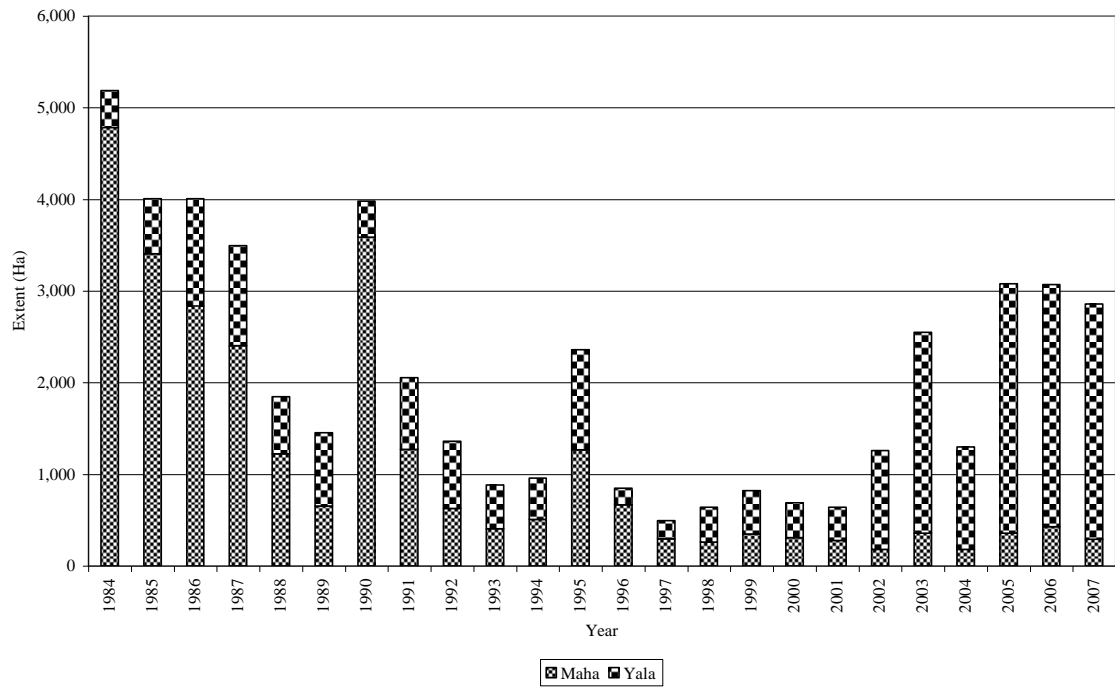
Cultivated Extent of Green gram



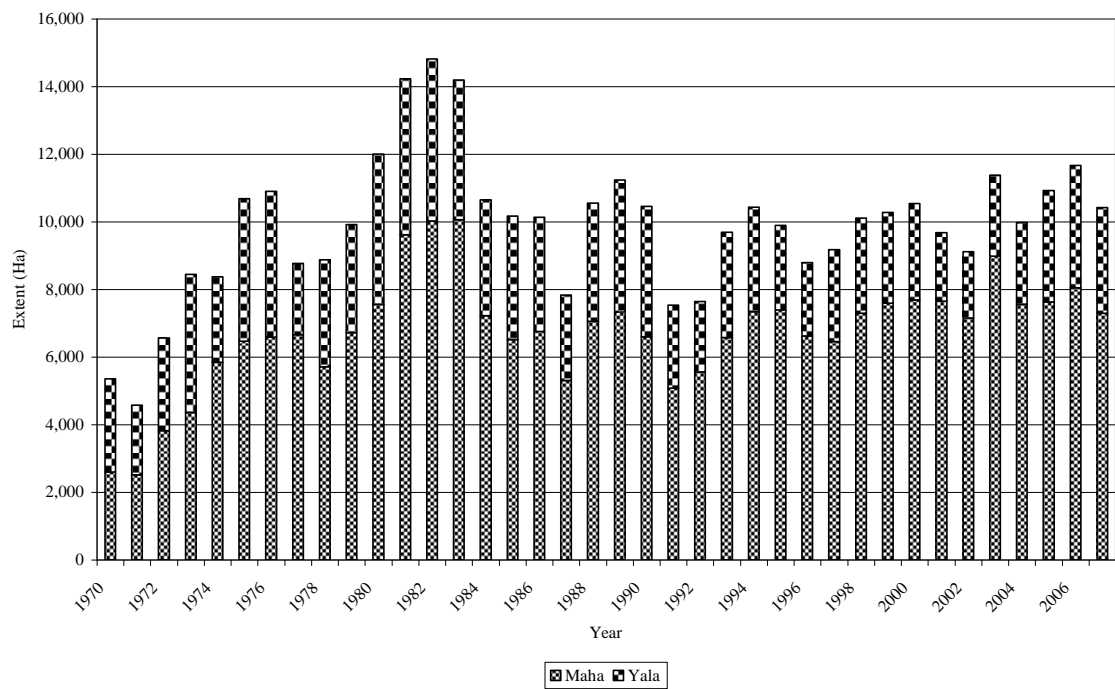
Cultivated Extent of Cowpea



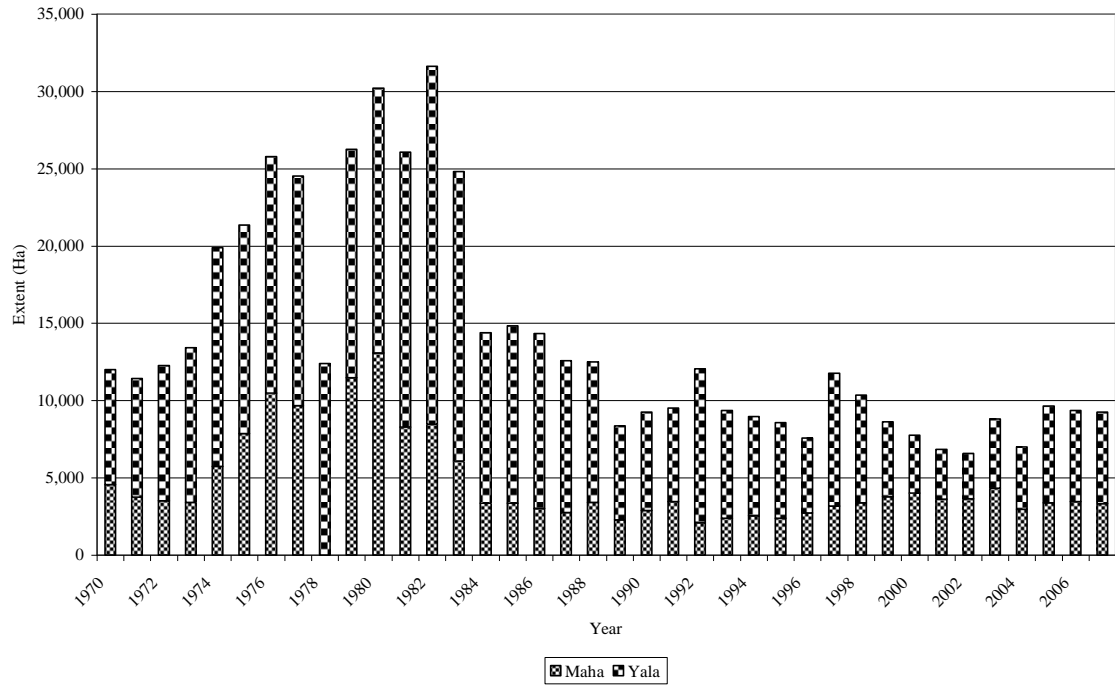
Cultivated Extent of Soya bean



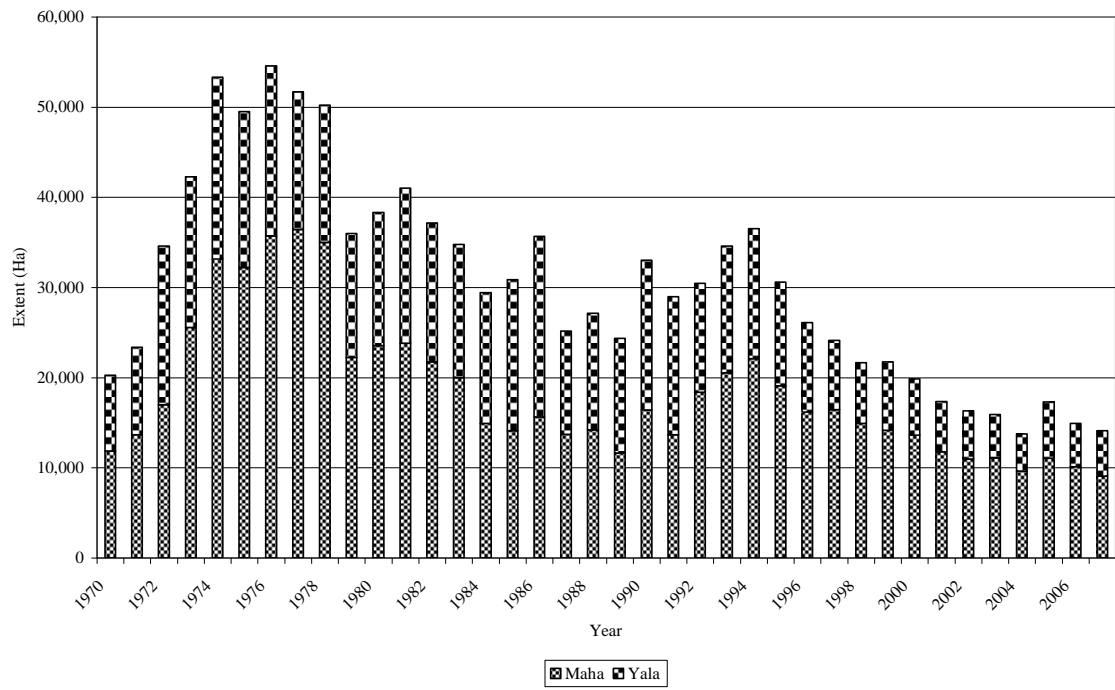
Cultivated Extent of Ground nut



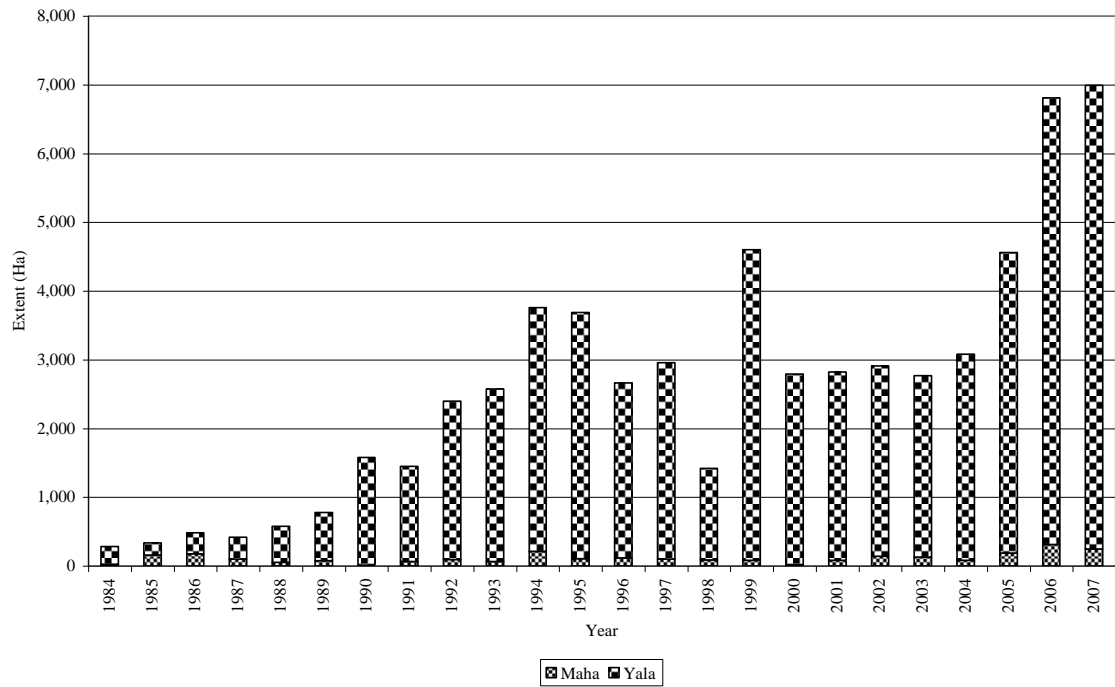
Cultivated Extent of Gingerly



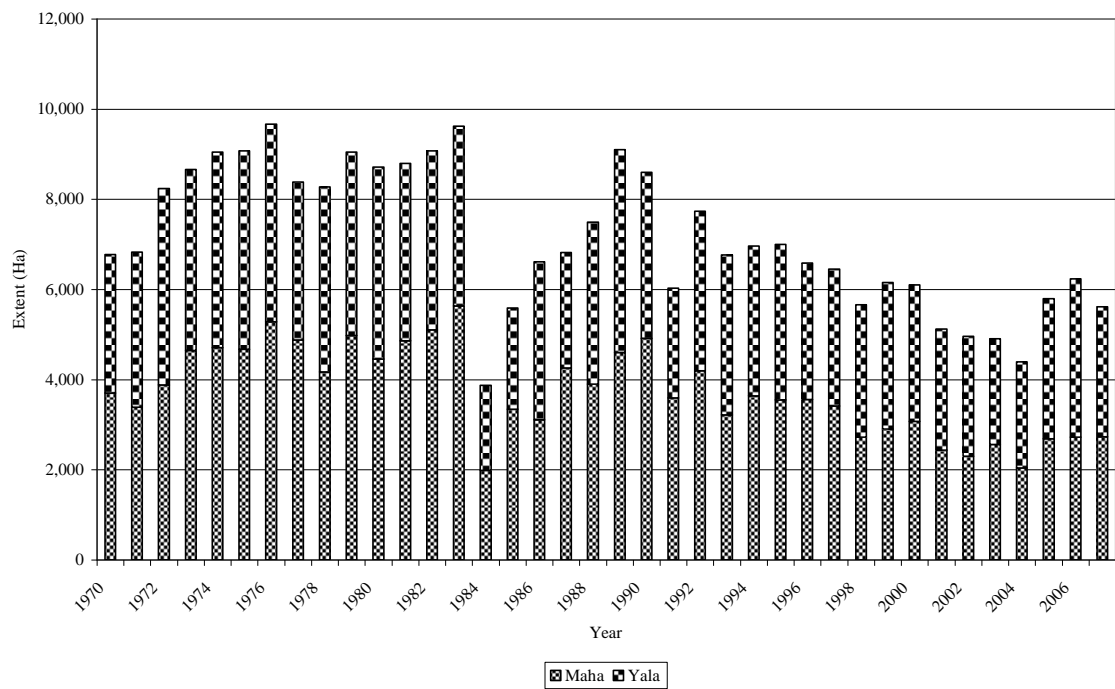
Cultivated Extent of Green Chillies



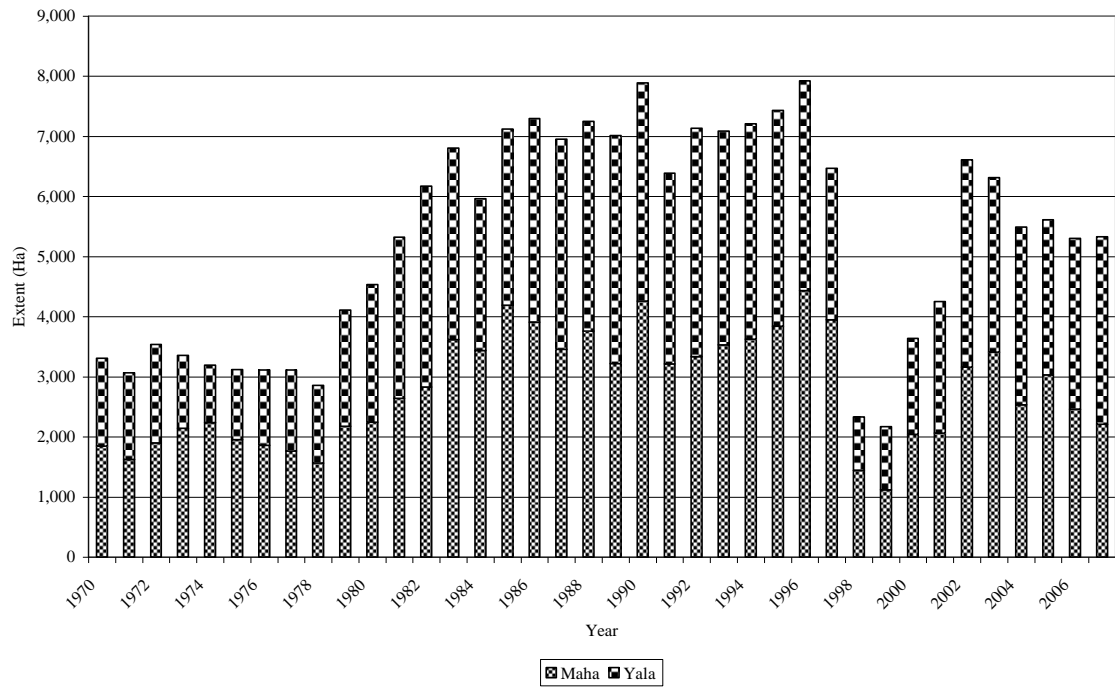
Cultivated Extent of Big Onion



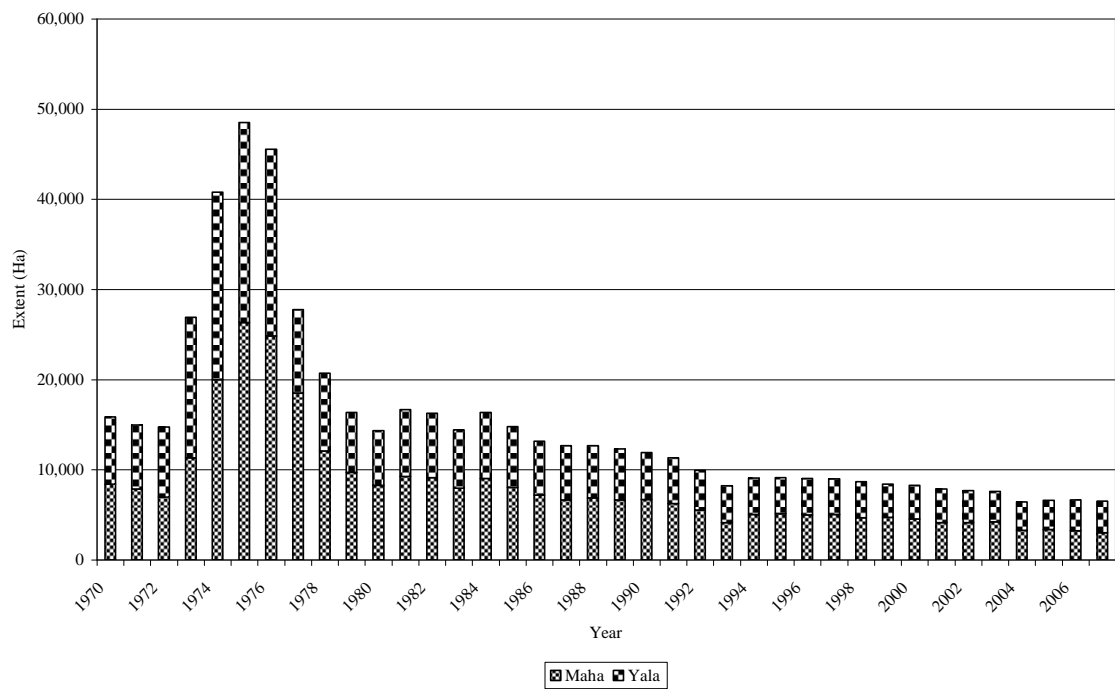
Cultivated Extent of Red Onion



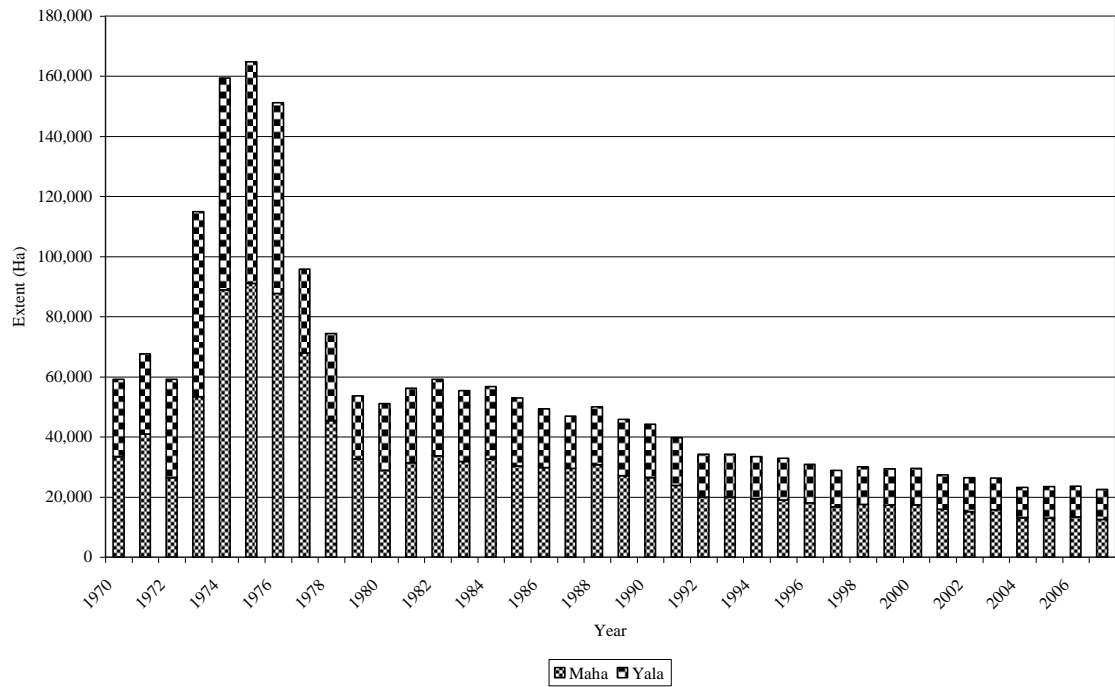
Cultivated Extent of Potato



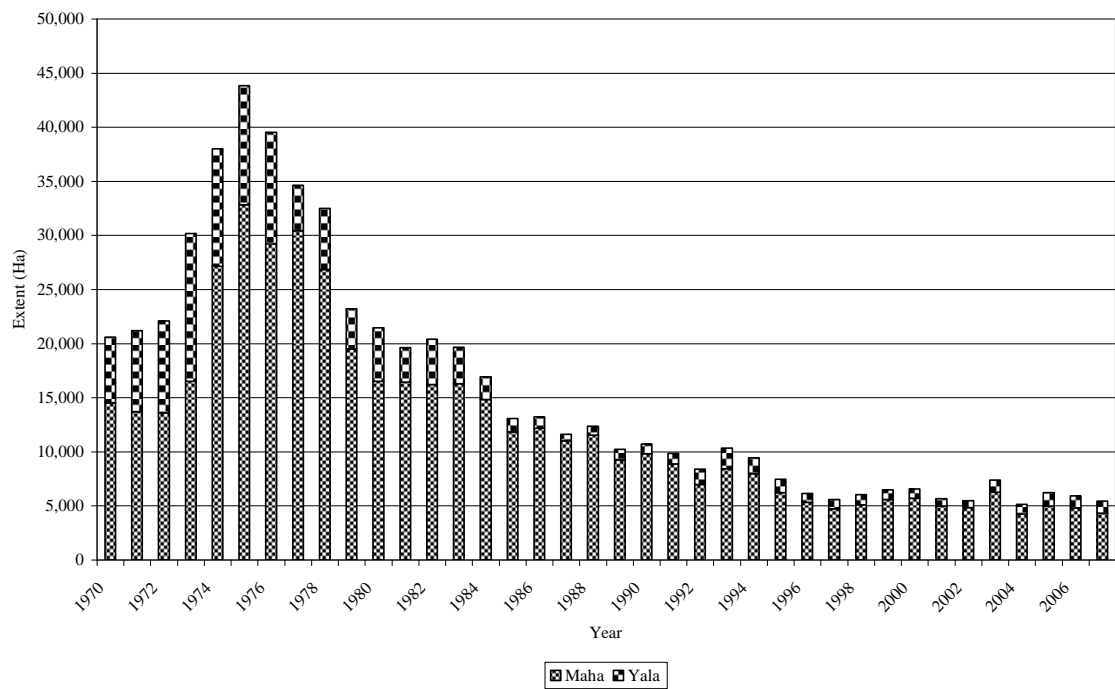
Extent Cultivated of Sweet Potato



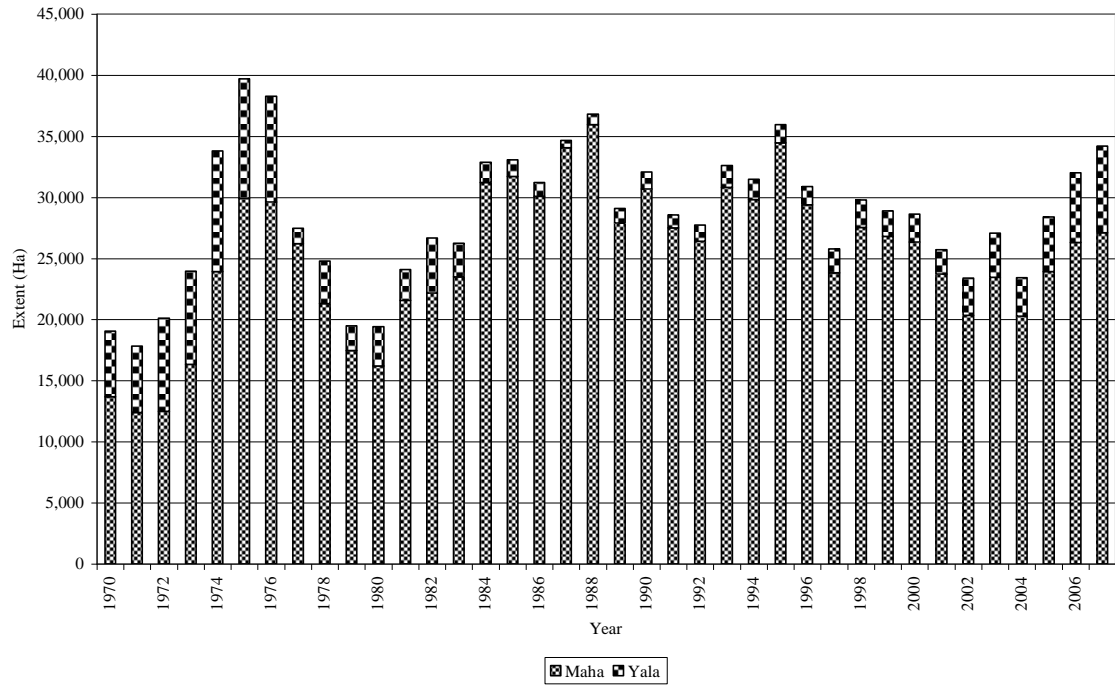
Cultivated Extent of Manioc



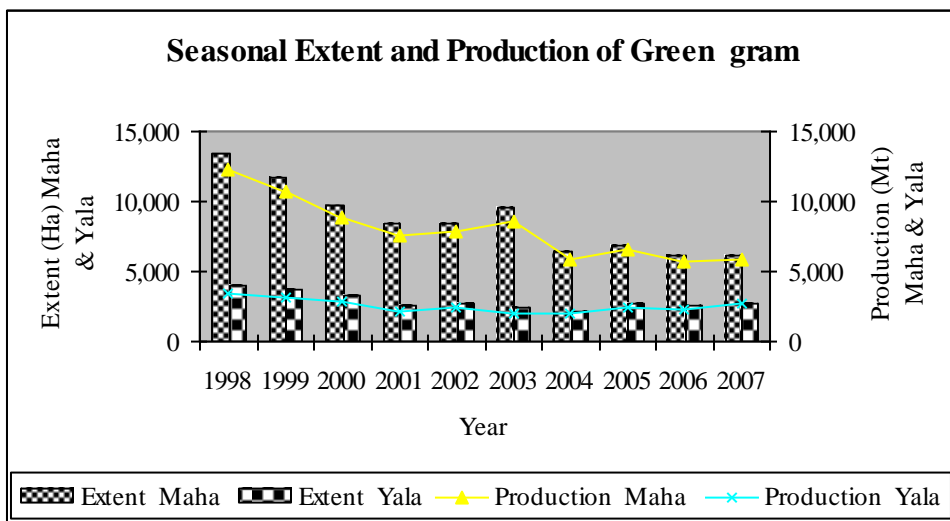
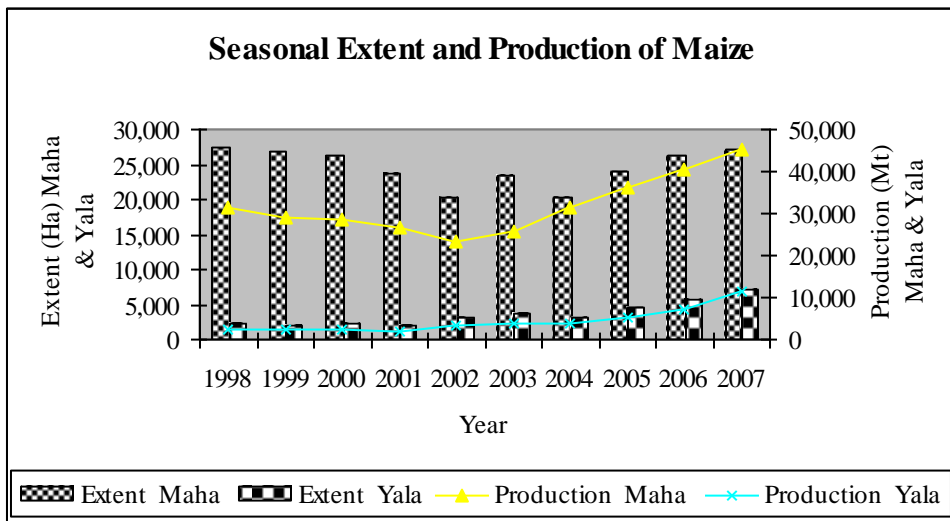
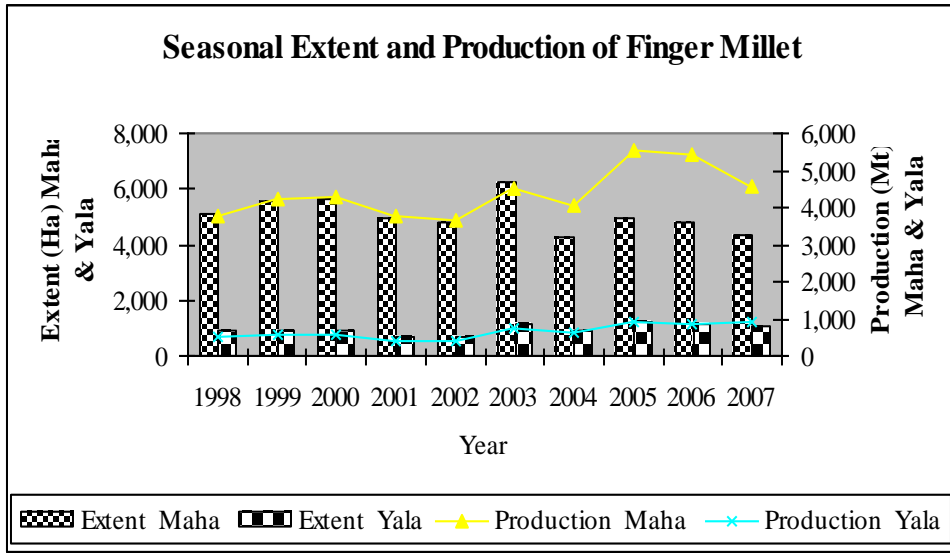
Cultivated Extent of Finger Millet

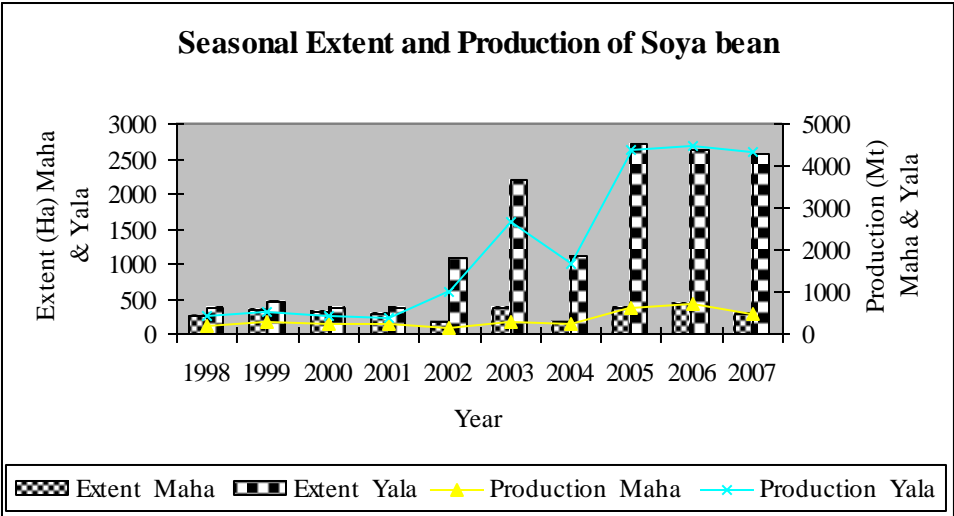
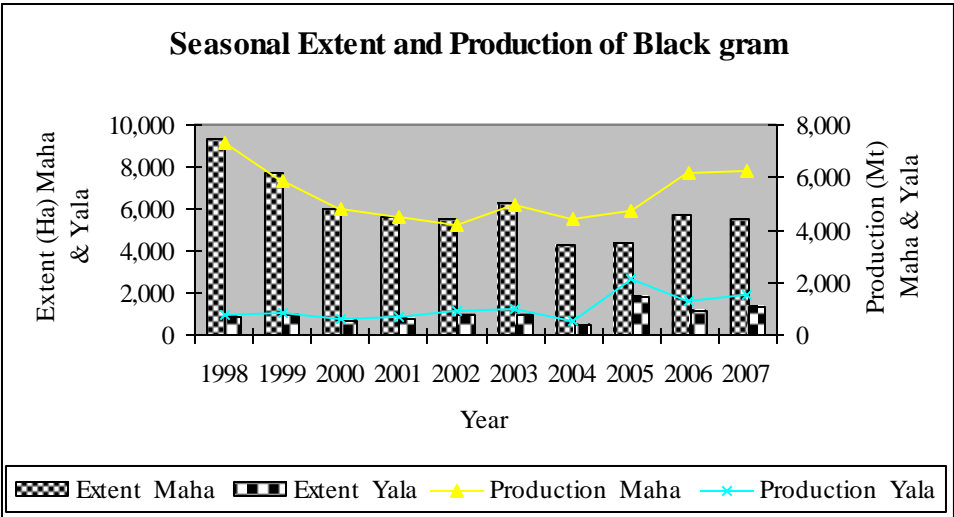
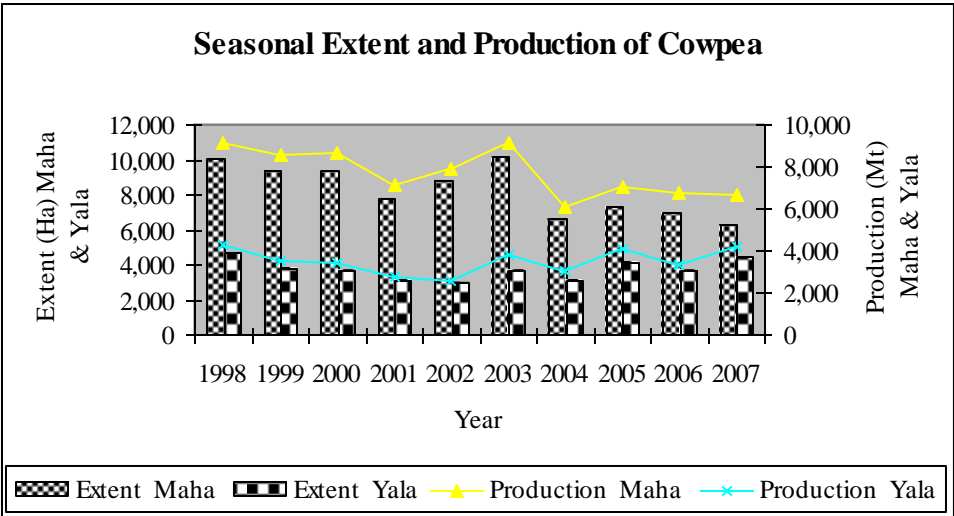


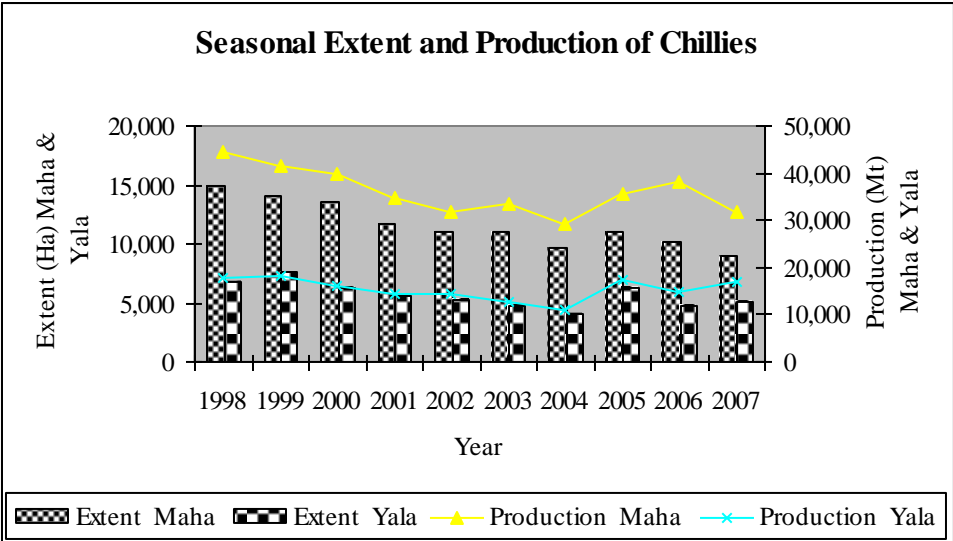
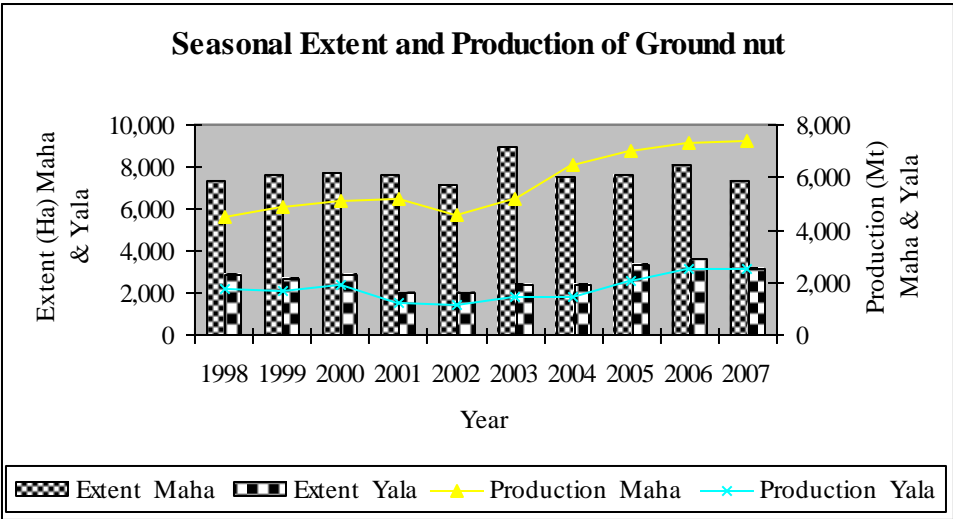
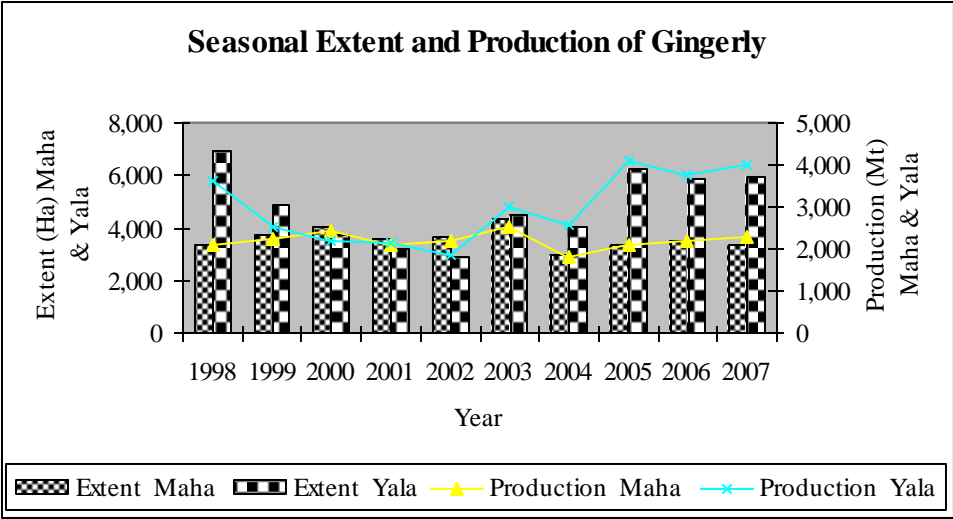
Total Extent Cultivated of Maize

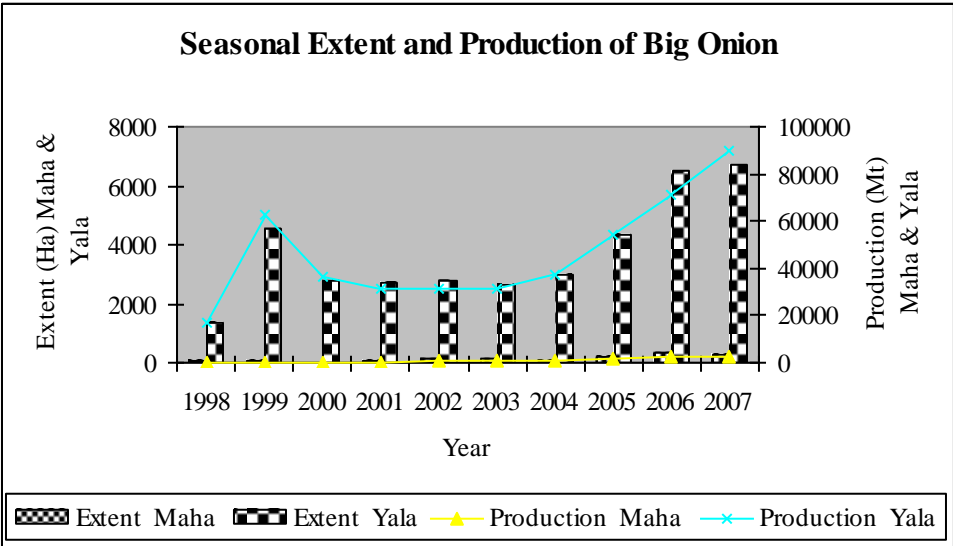
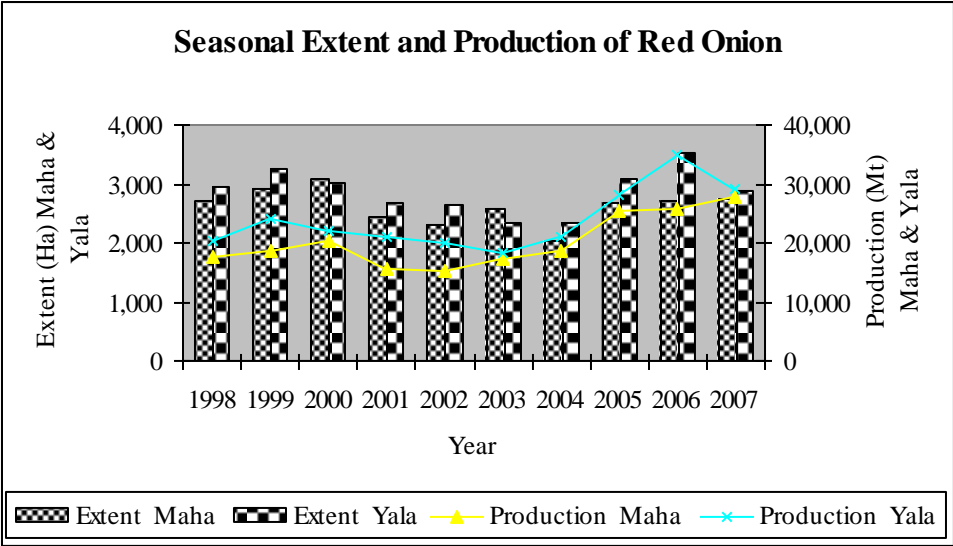


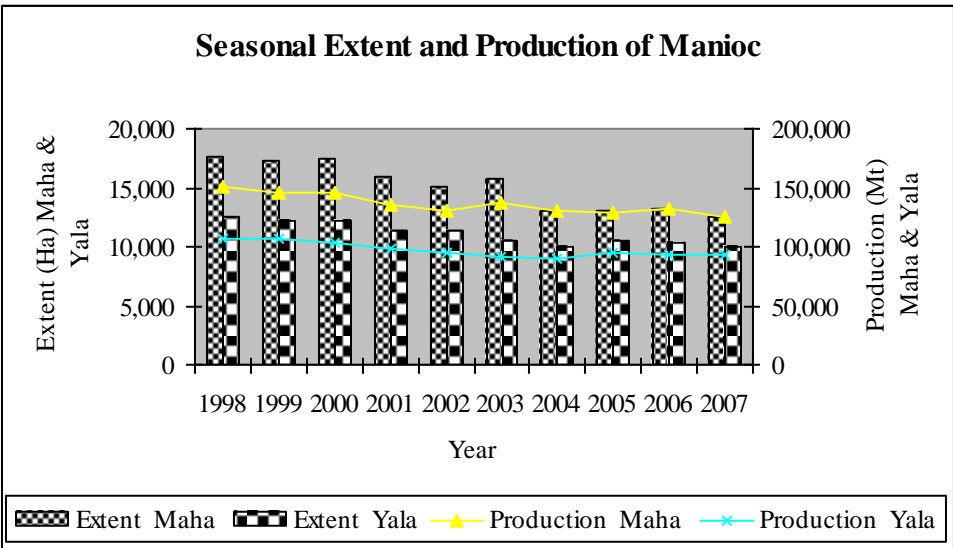
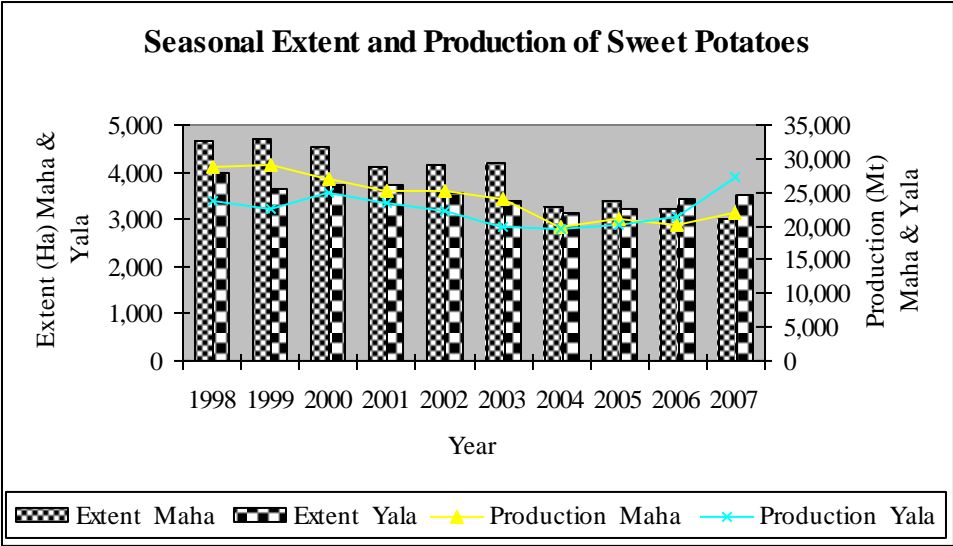
Annex Figure 3: Seasonal Extent and production of Other Field Crops 1998-2007



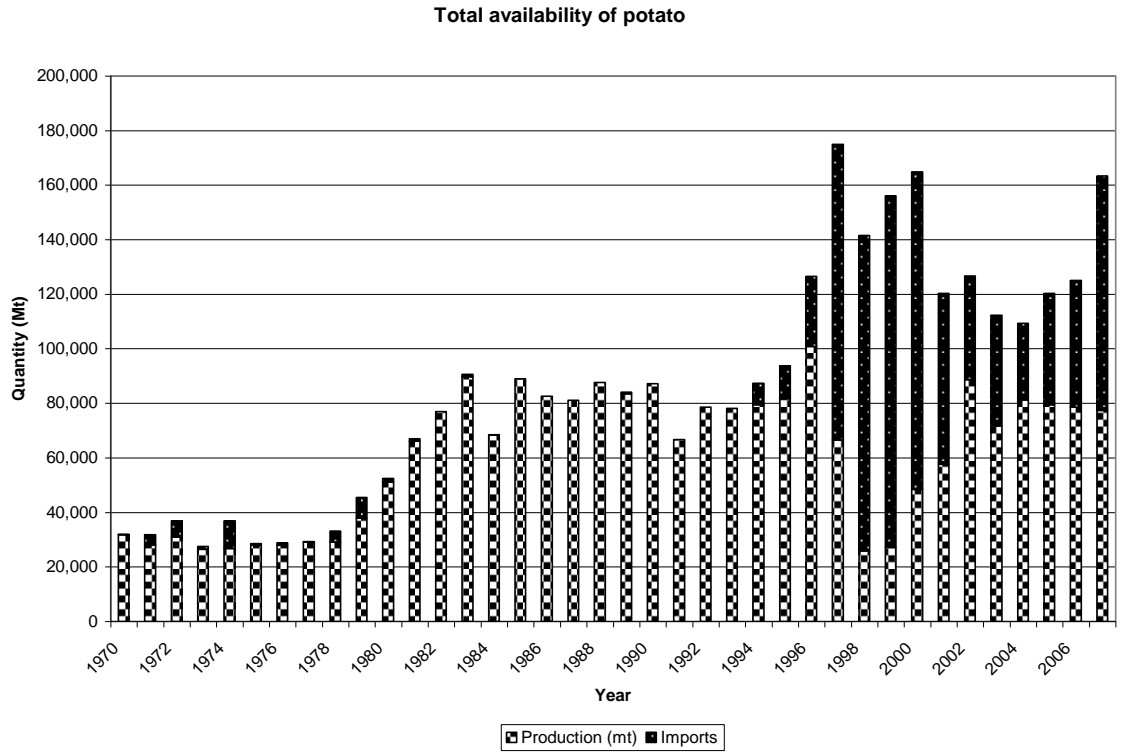




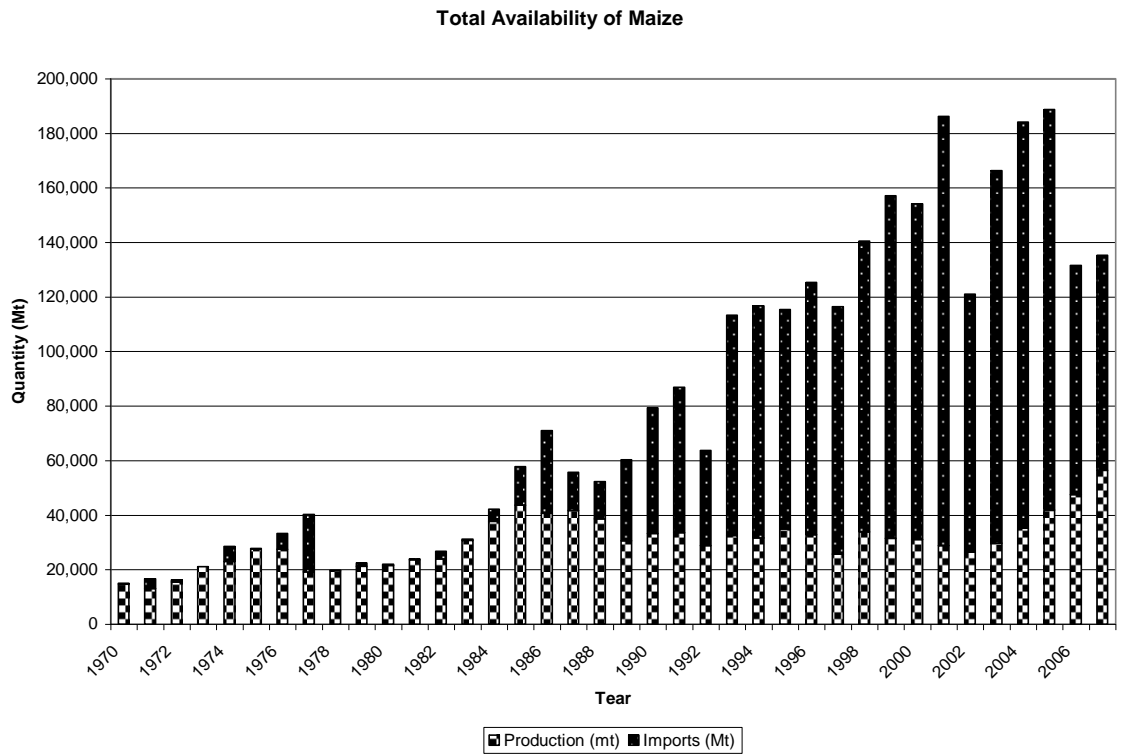




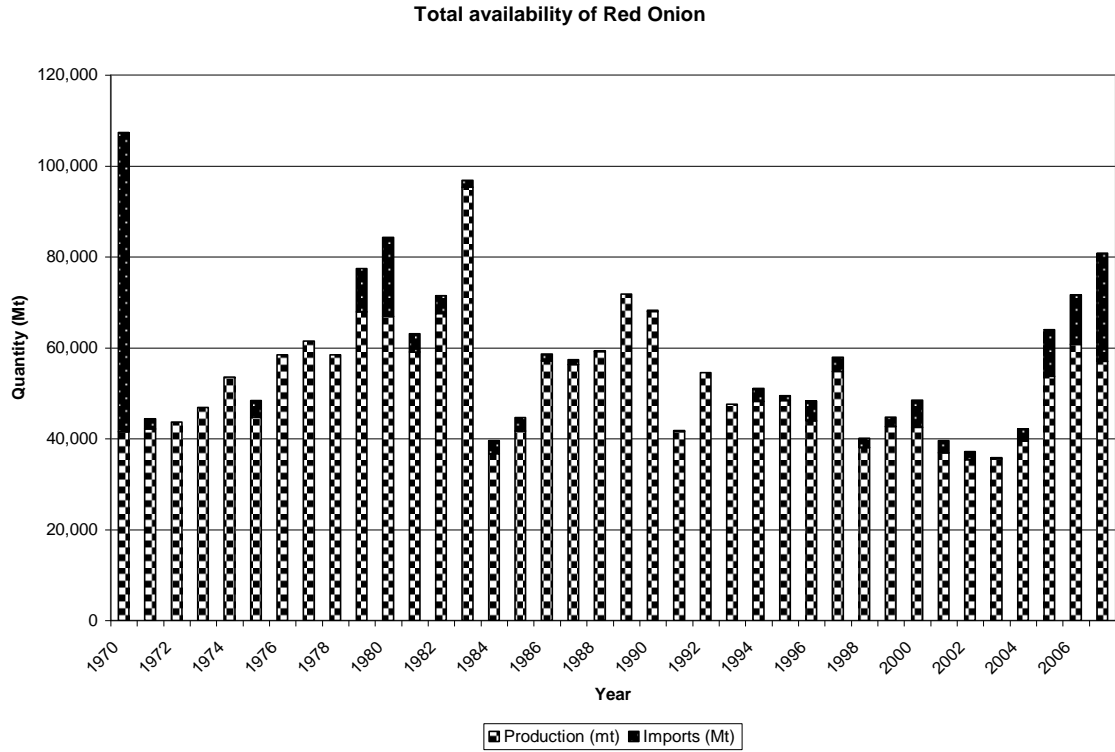
Annex Figure 4: Total Availability of Other Field Crops Total Availability of Potato



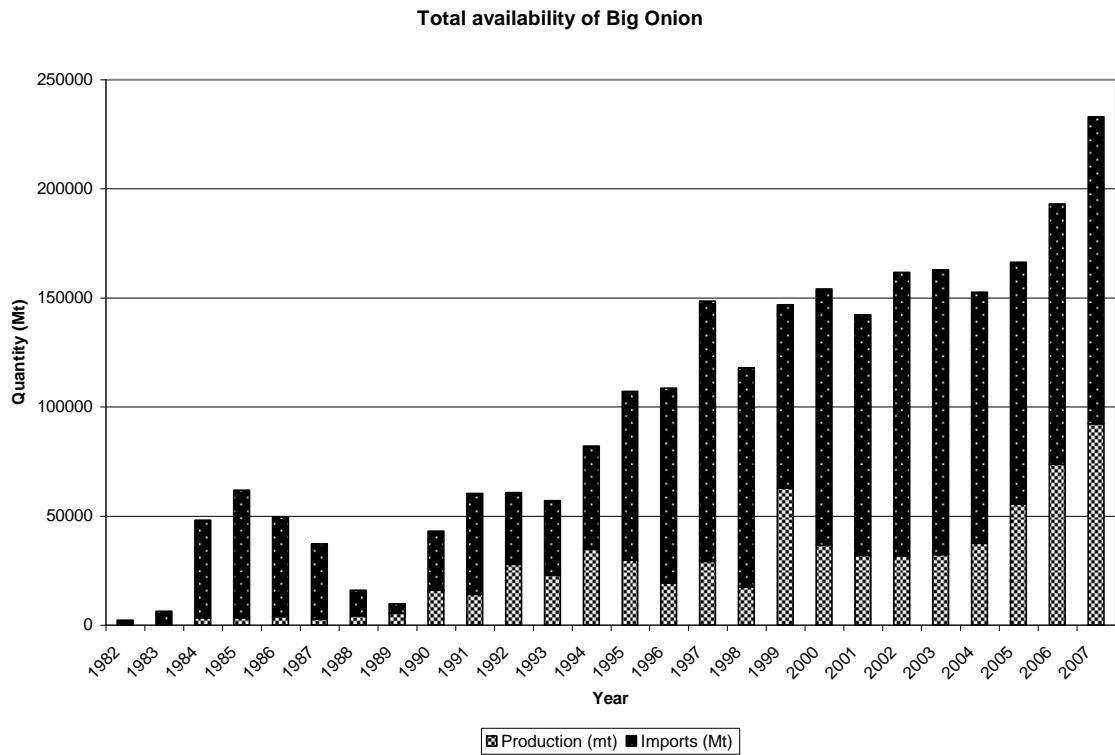
Total Availability of Maize



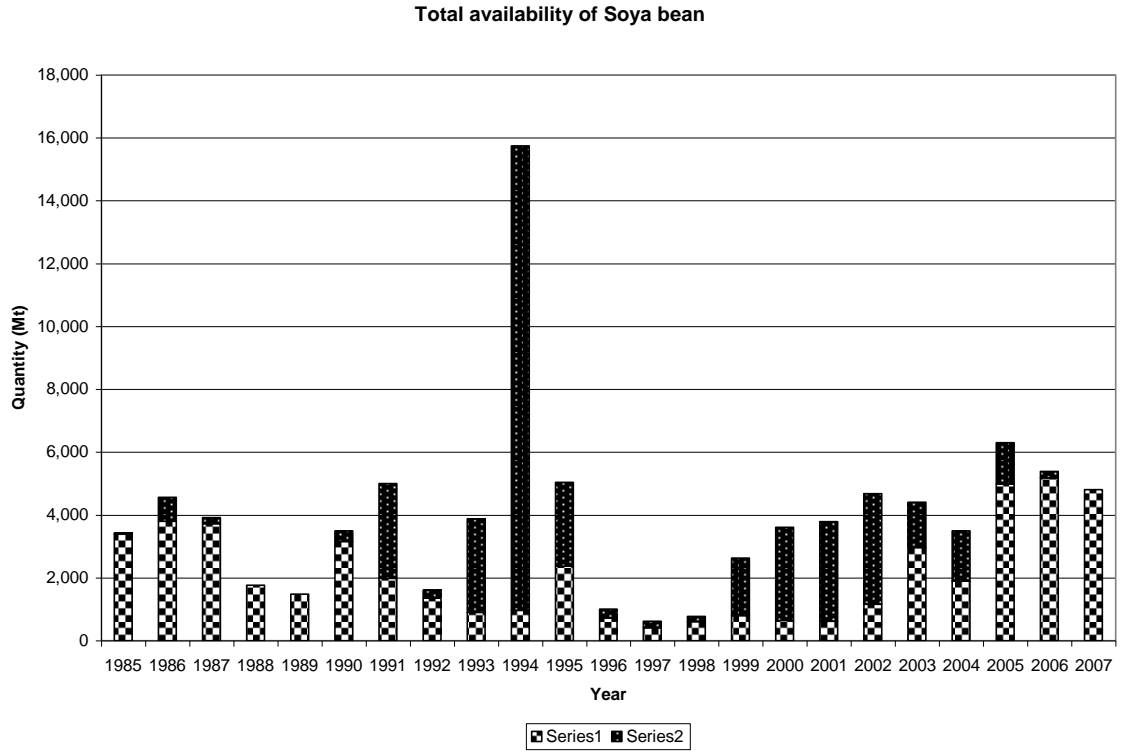
Total Availability of Red Onion



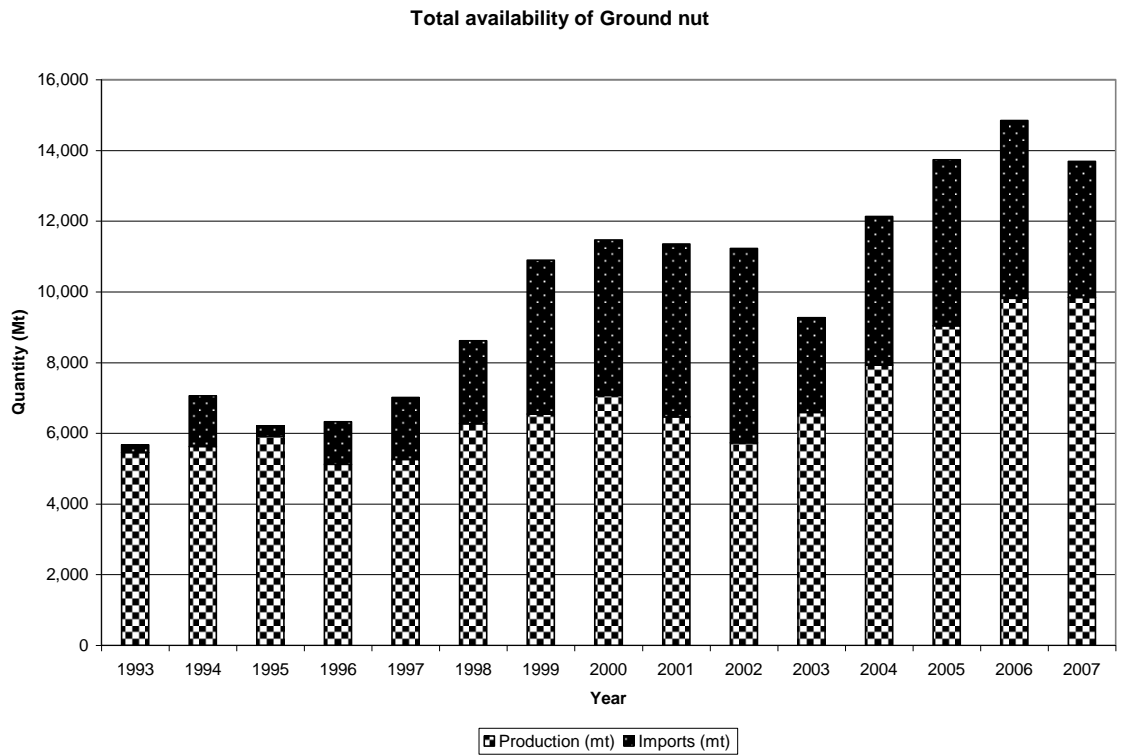
Total Availability of Big Onion



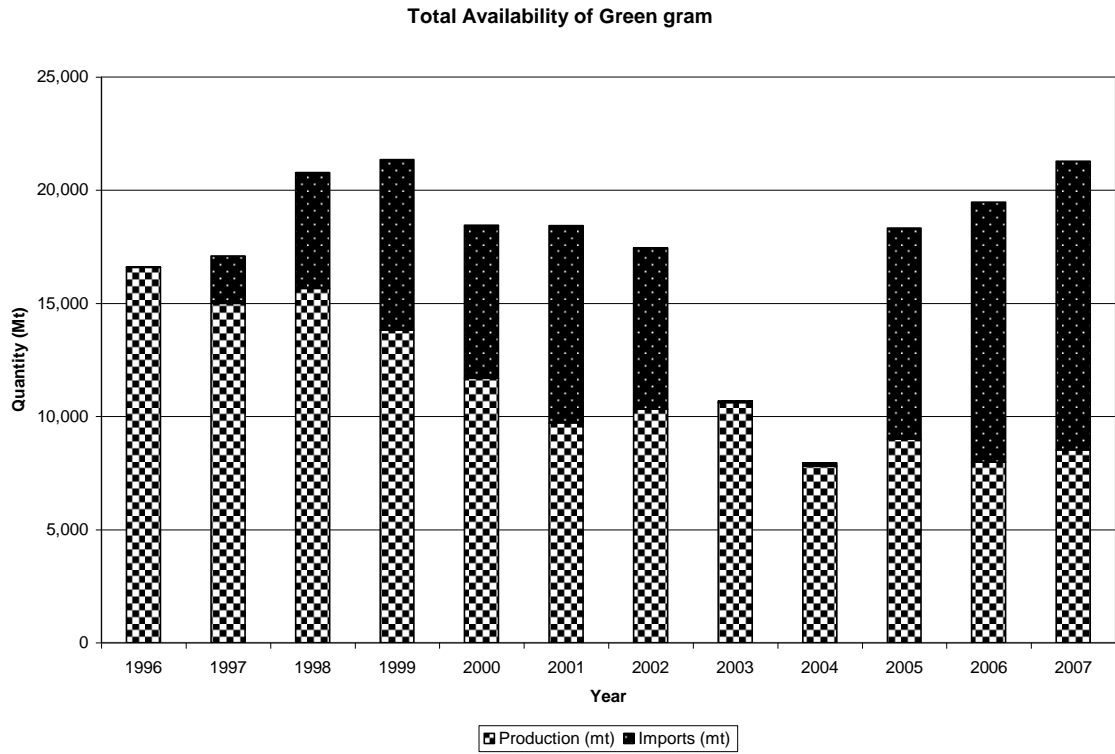
Total Availability of Soya Bean



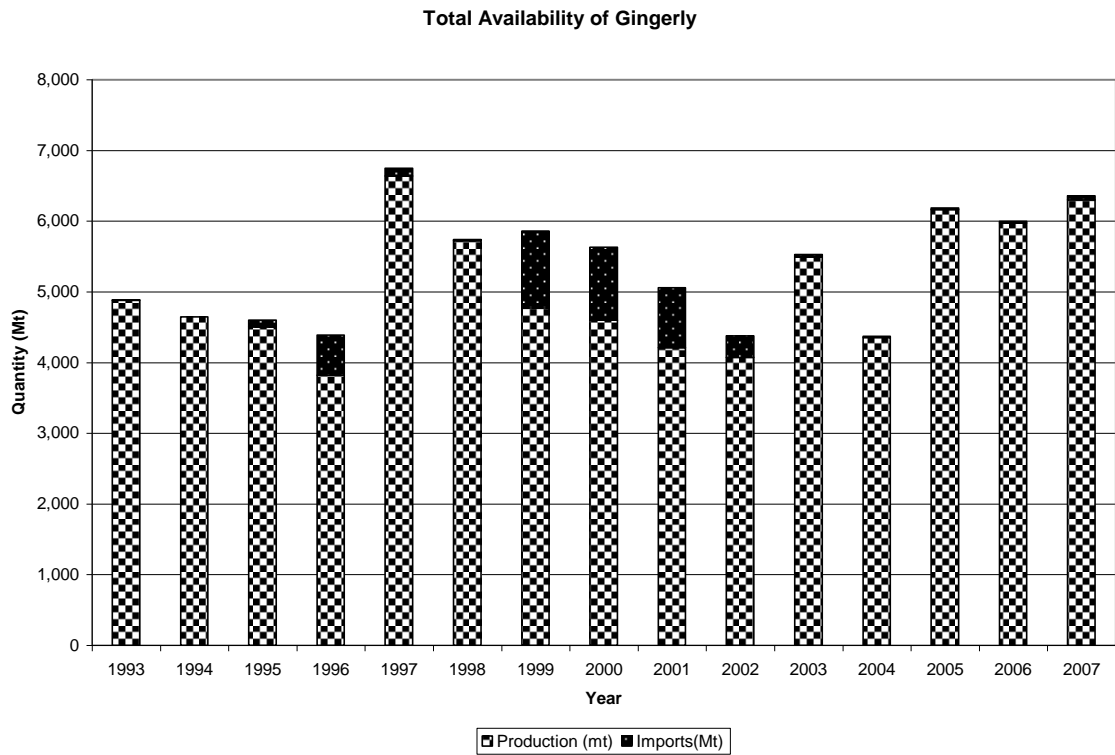
Total Availability of Groundnut



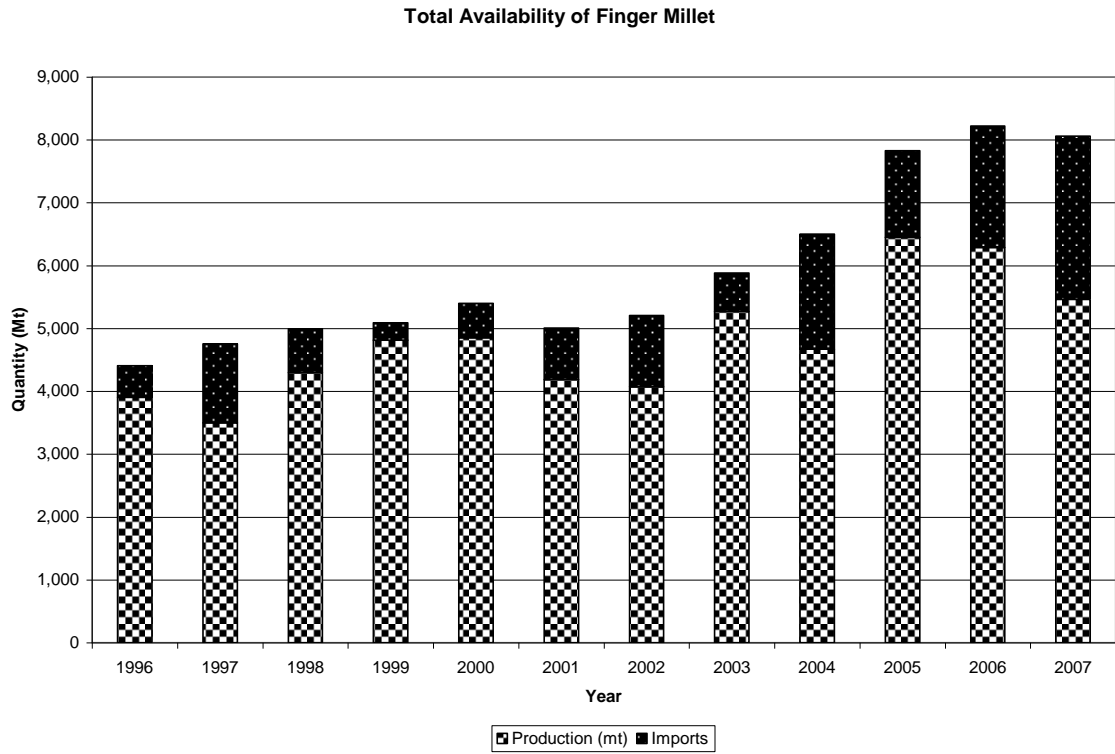
Total Availability of Green gram



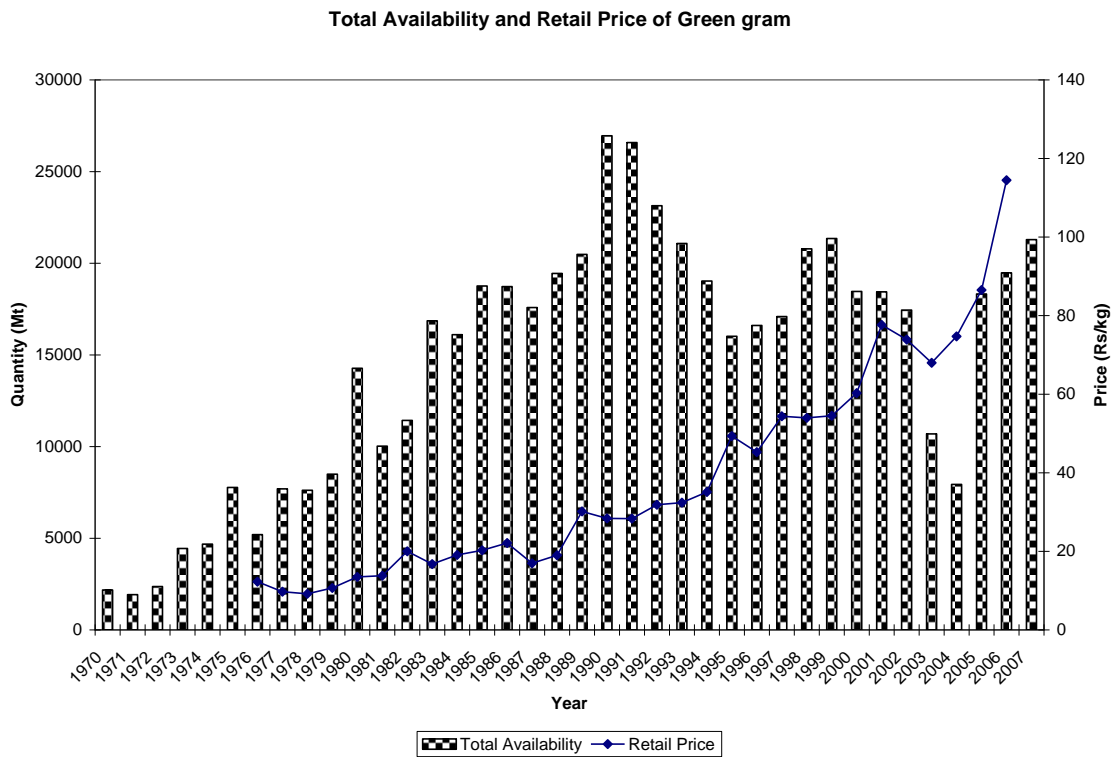
Total Availability of Gingelly



Total Availability of Finger Millet

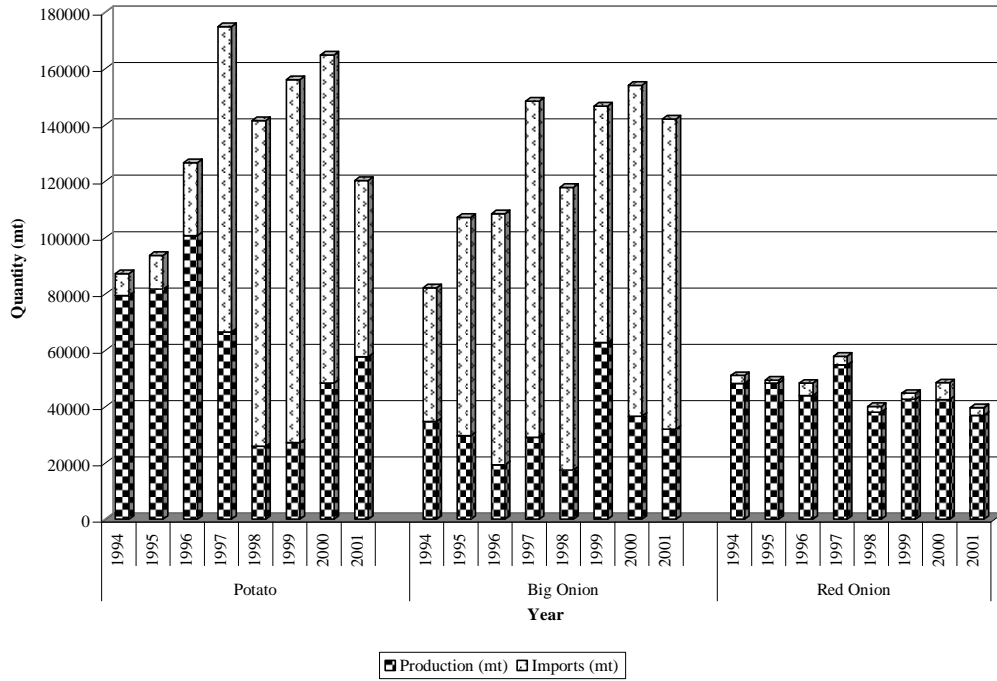


Total Availability and Retail Price of Green gram

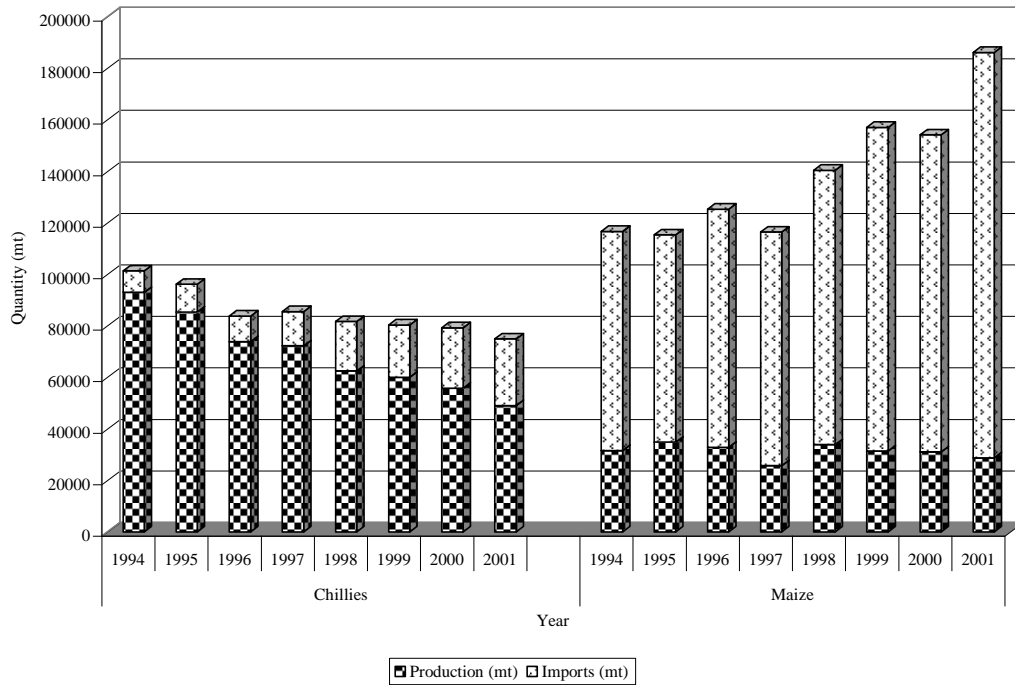


Annex Figure 5: Total Availability of Other Field Crops 1994-2001

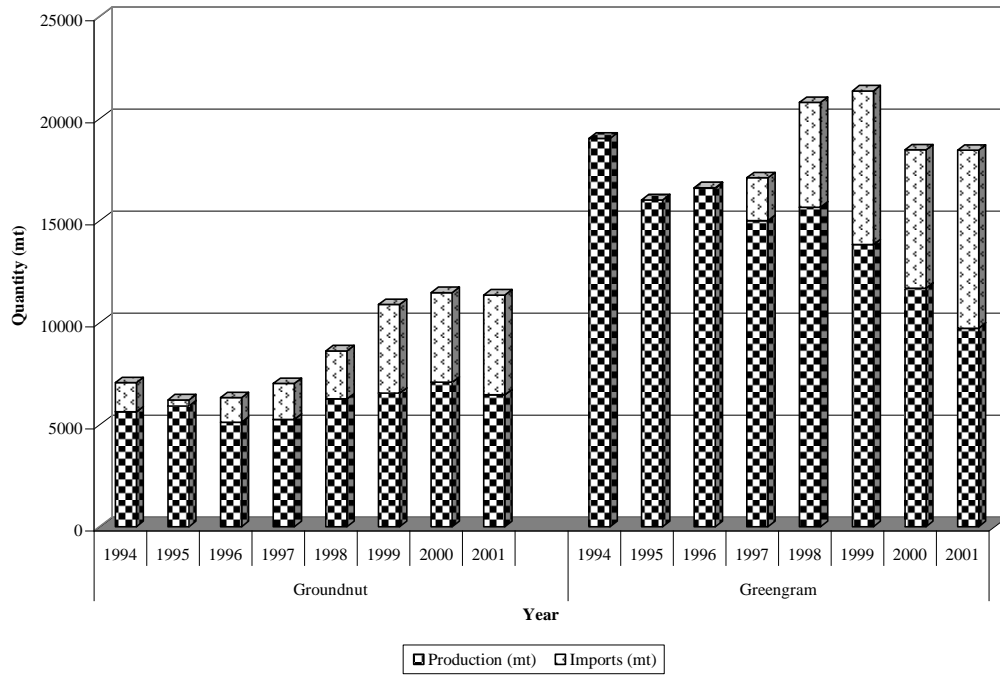
Total Availability of Potato, Big onion and Red Onion



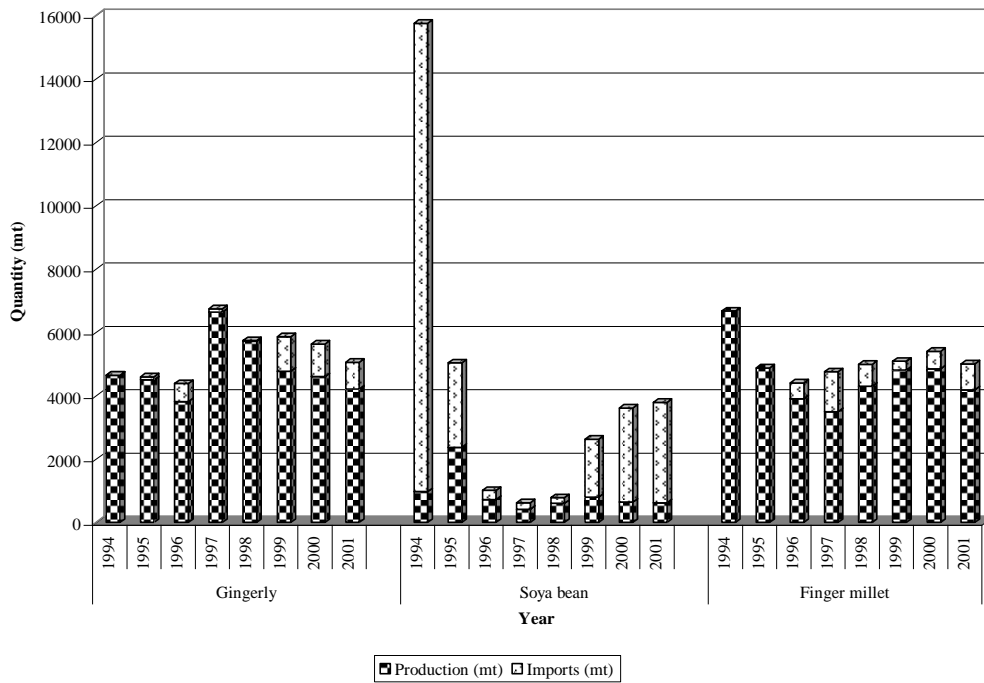
Total Availability of Chillies & Maize



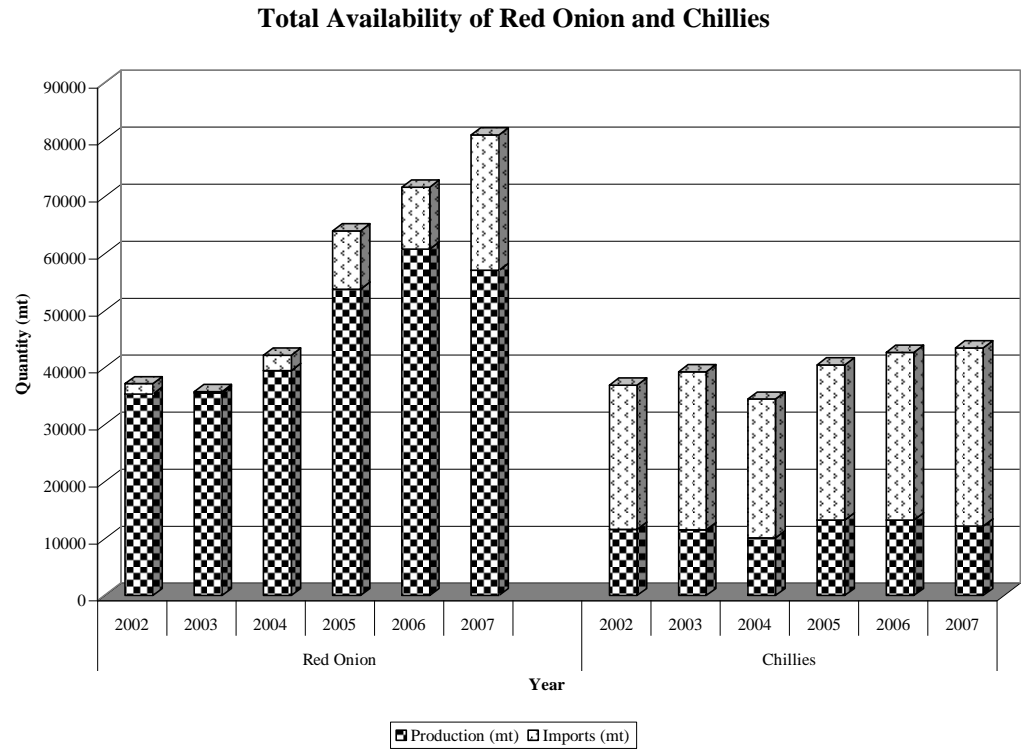
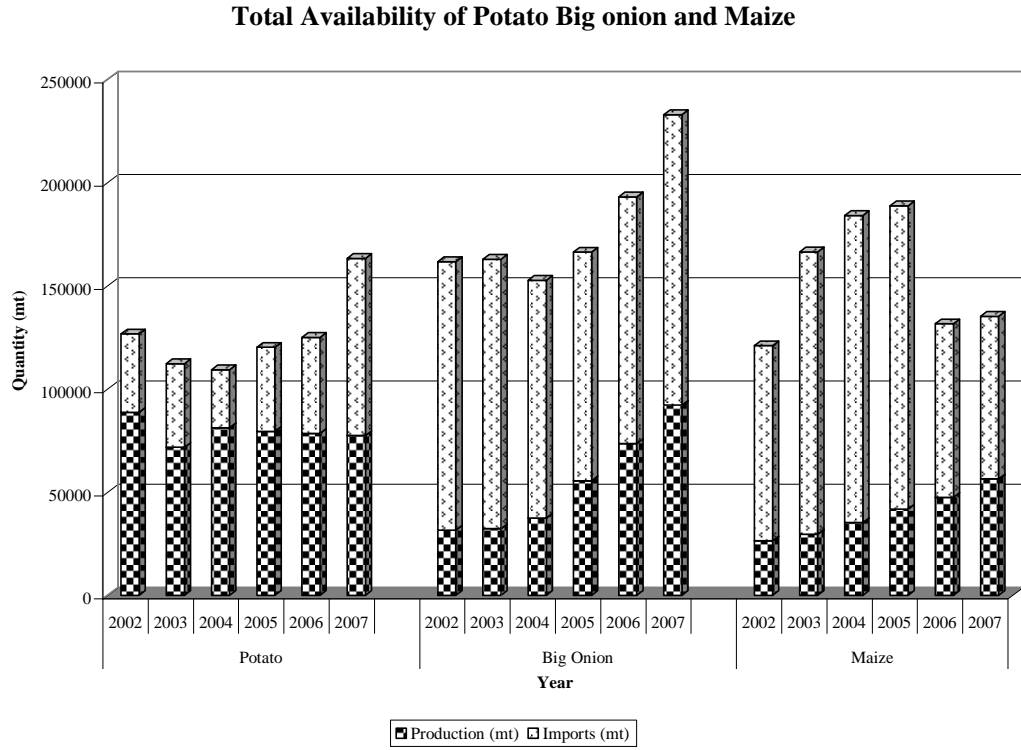
Total availability of ground nut and green gram



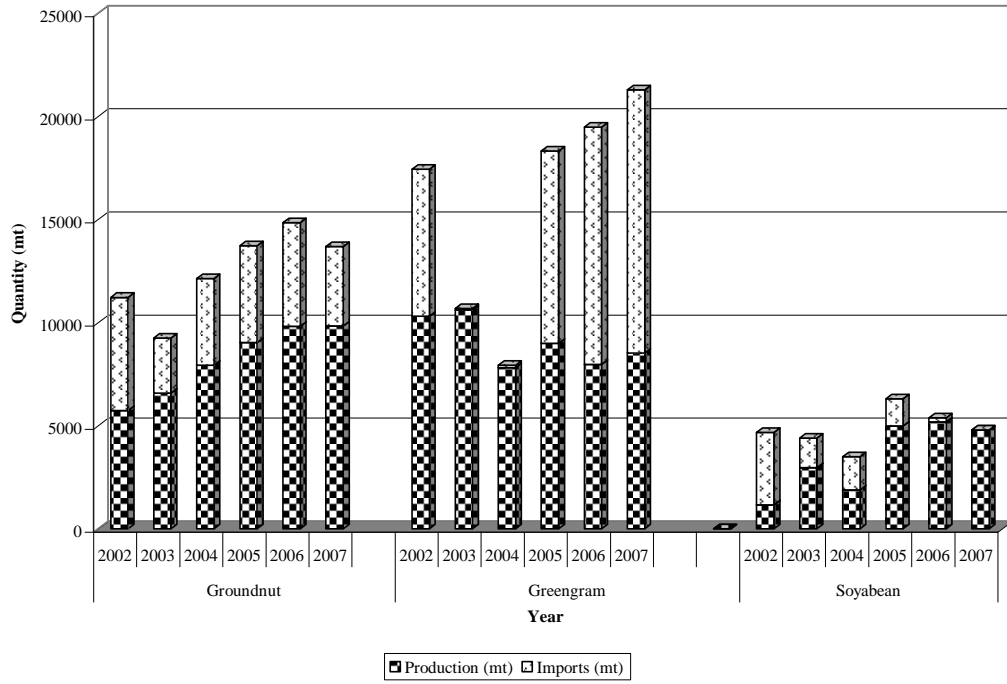
Total Availability of Gingery, Soya bean & Finger millet



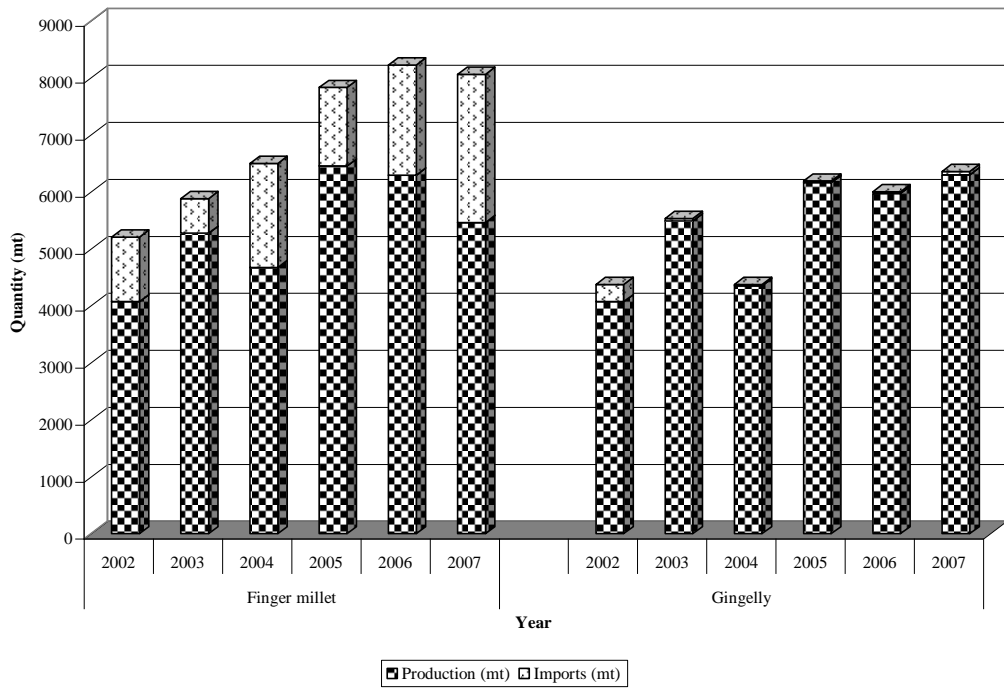
Annex Figure 6: Total Availability of Other Field Crops 2002-2007



Total Availability of Ground nut Green gram and Soya bean

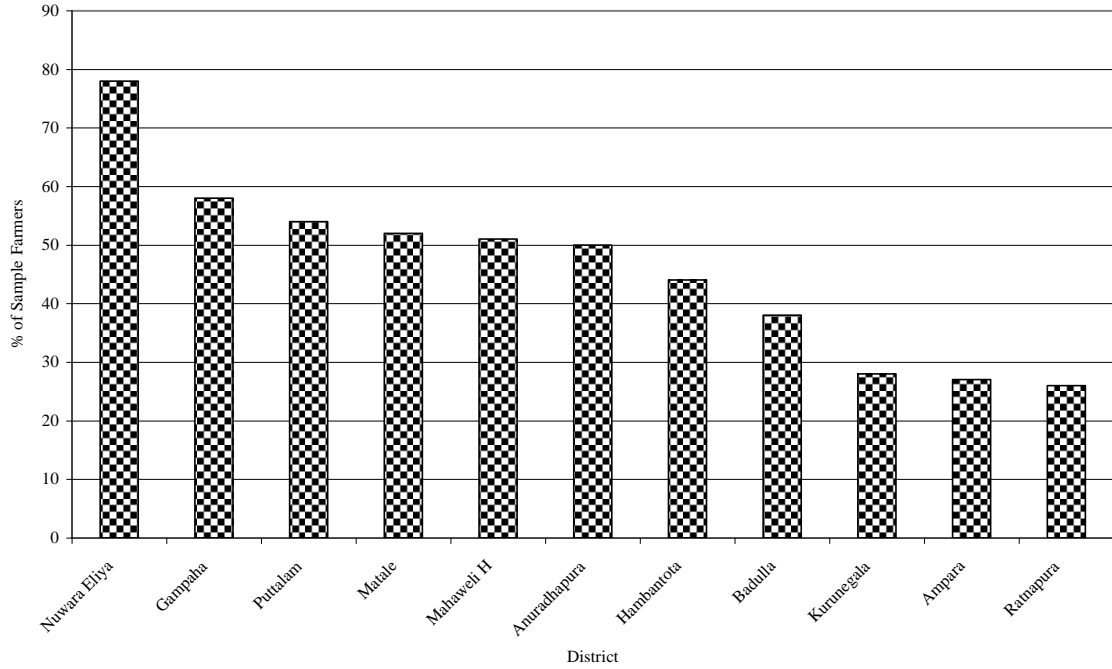


Total Availability of Finger Millet and Gingelly

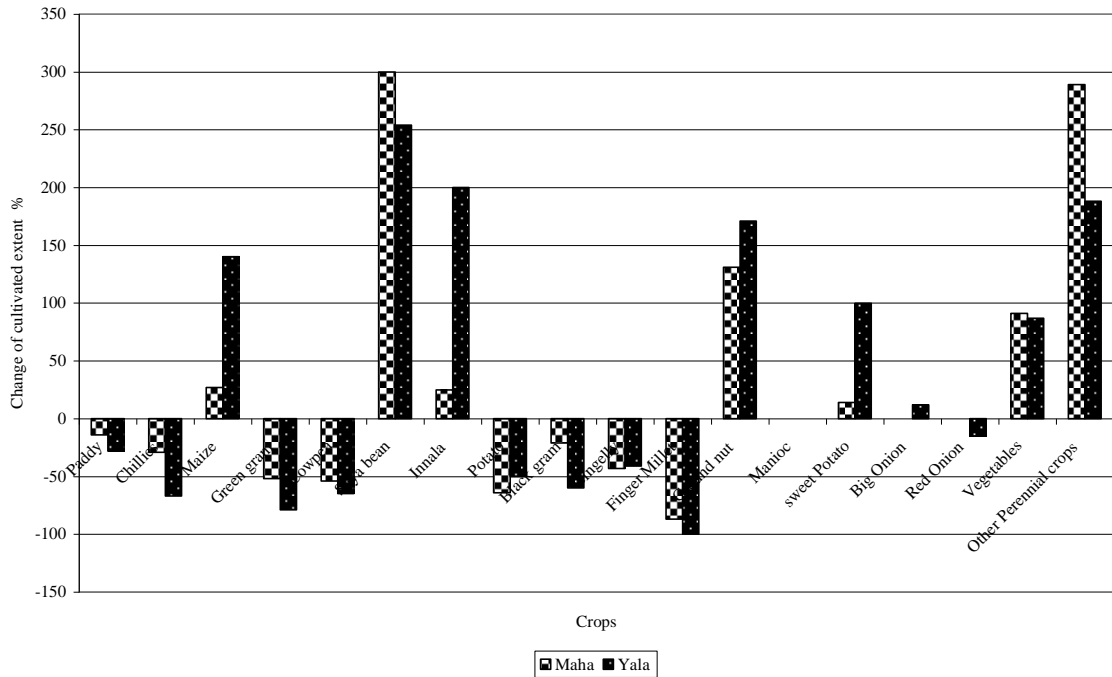


Annex Figure 7: Field Survey Findings

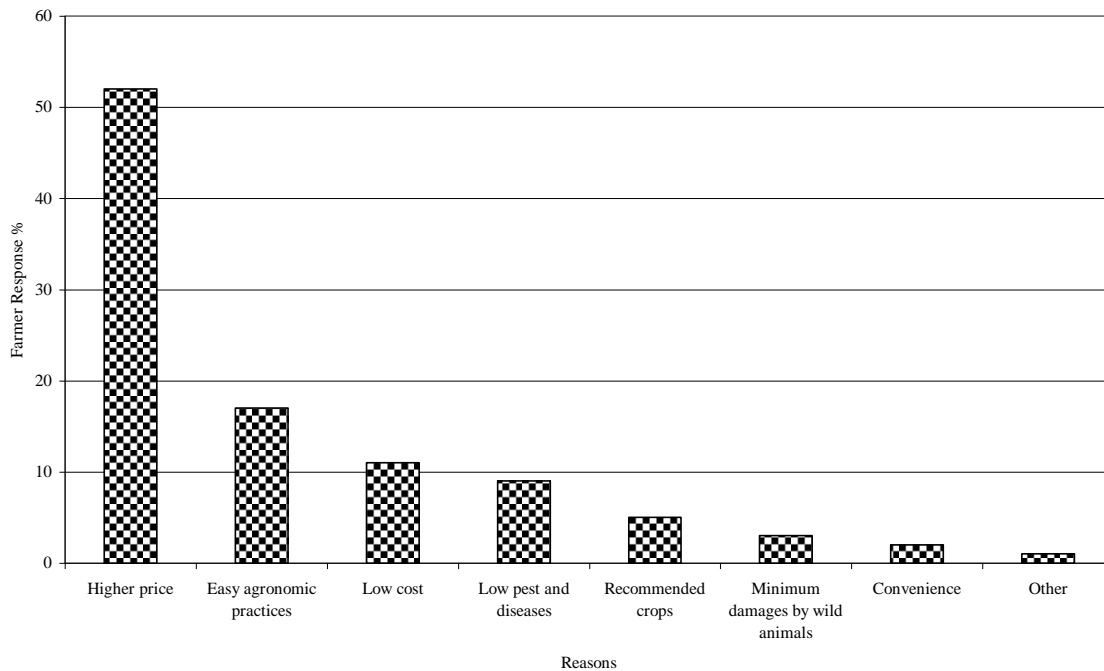
Availability of Communication Facilities



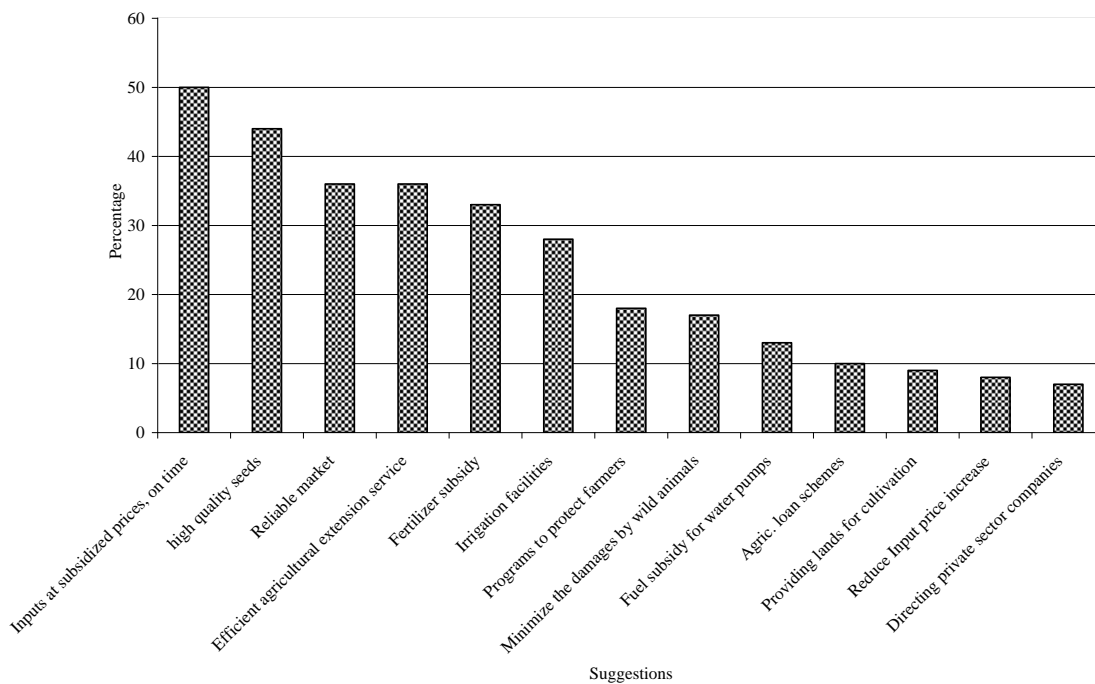
Cropping Pattern Change 10 years before and the Present



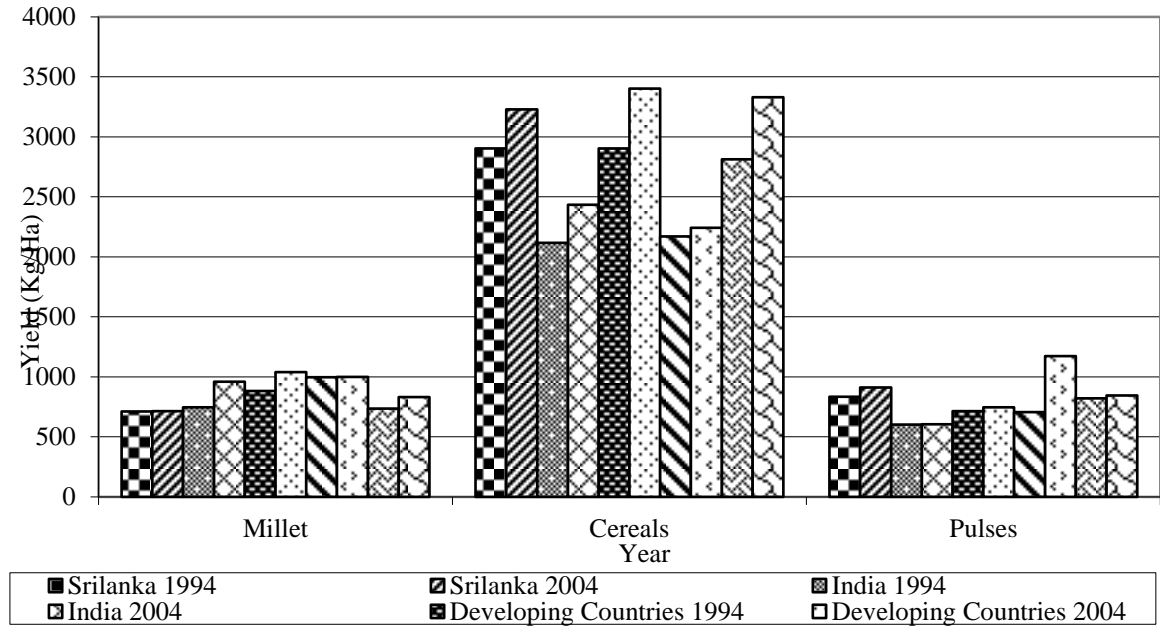
Reasons to Move New Crops



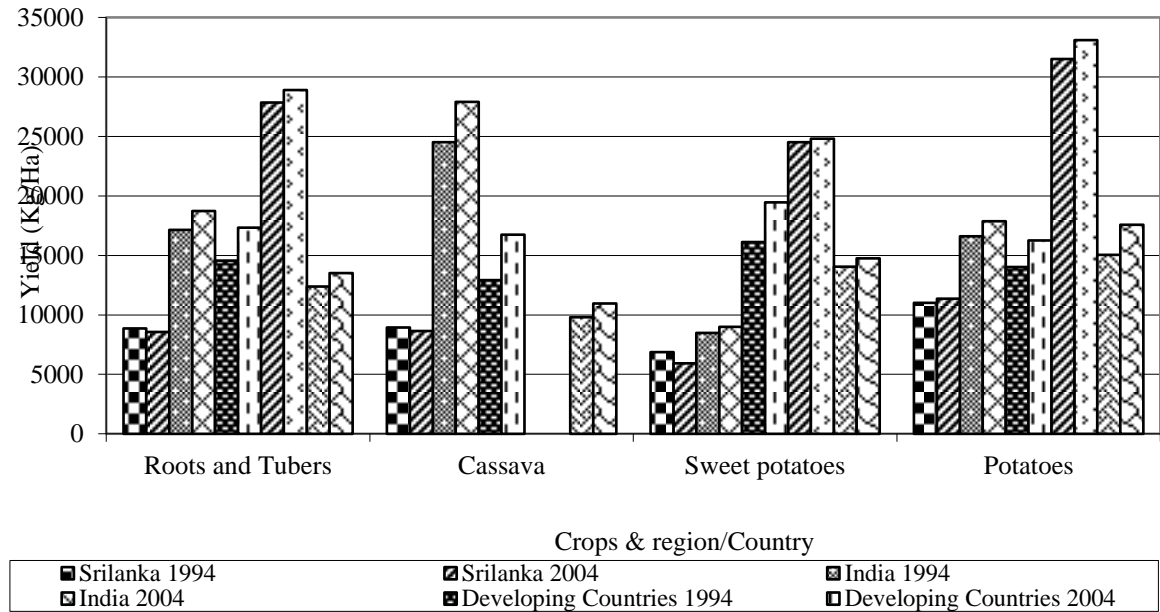
Farmers' Suggestions to Develop the Sector



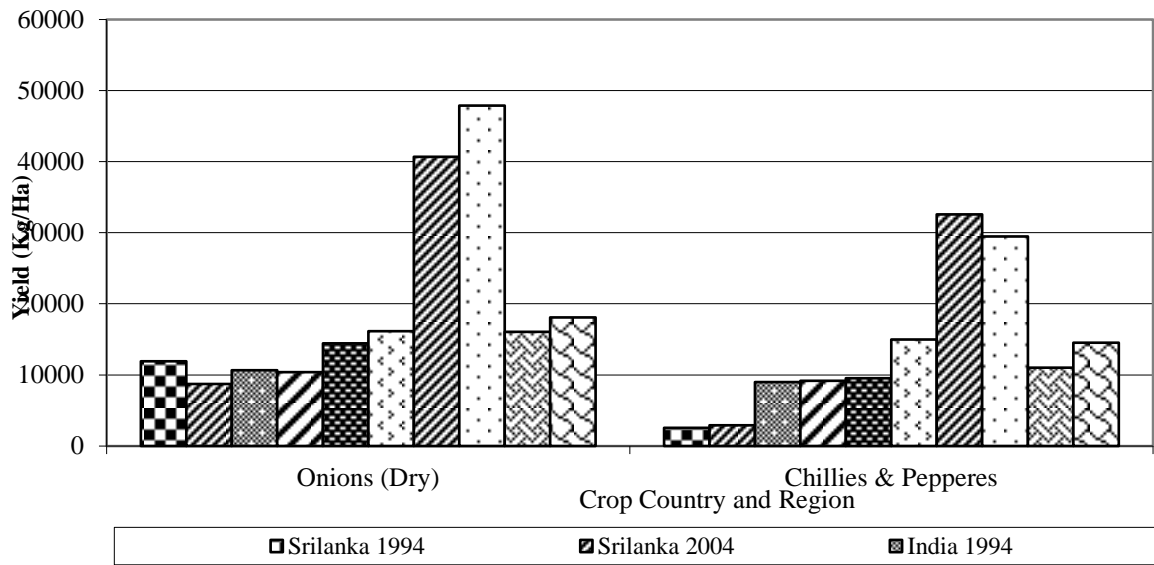
Annex Figure 8: Yield Comparison with Other Countries 1994 & 2004



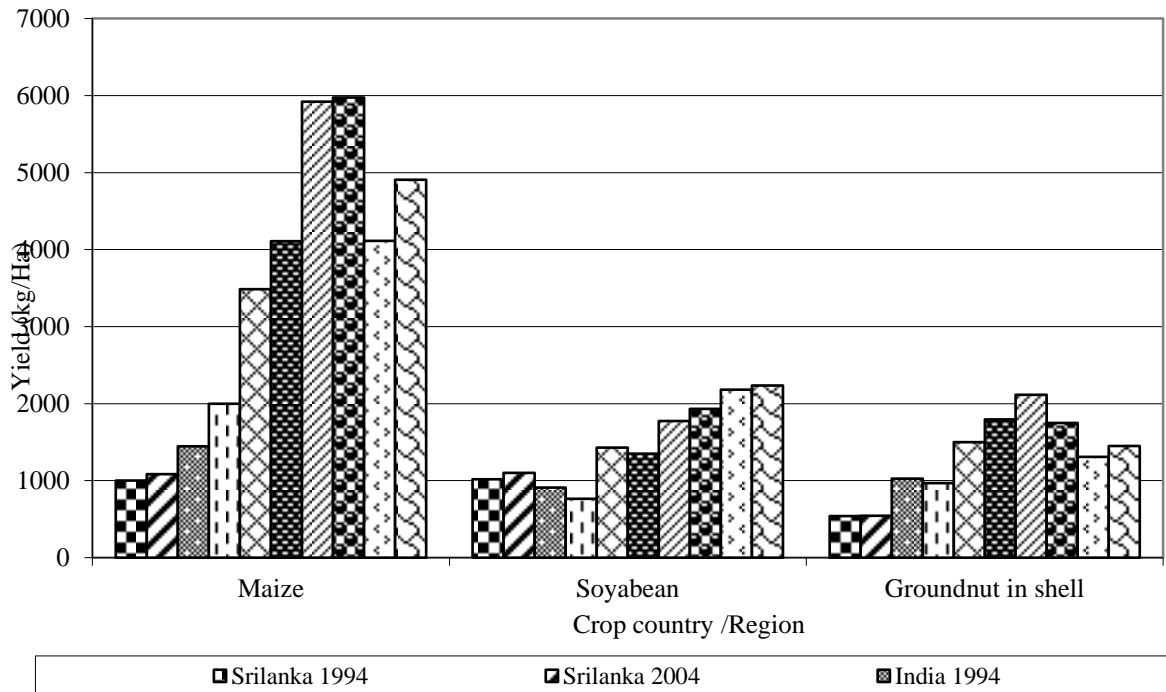
Yield Comparison of Roots and Tubers 1994 & 2004



Yield Comparison of Onions and Chillies 1994 & 2004

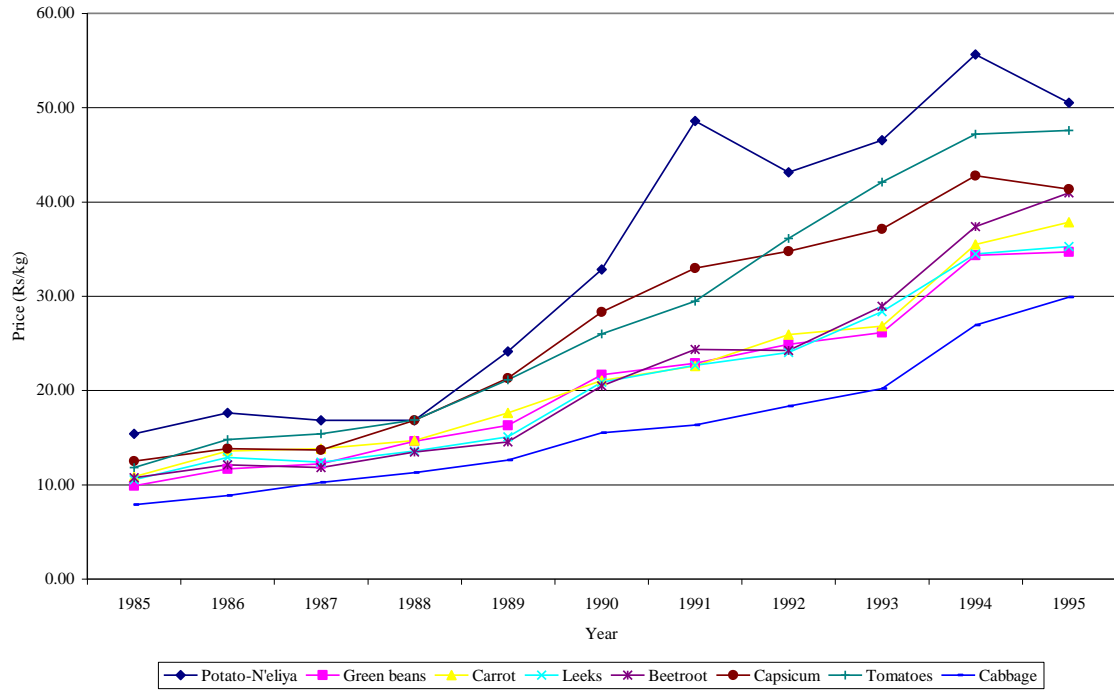


Yield Comparison of Maize, Soya bean and Ground nut

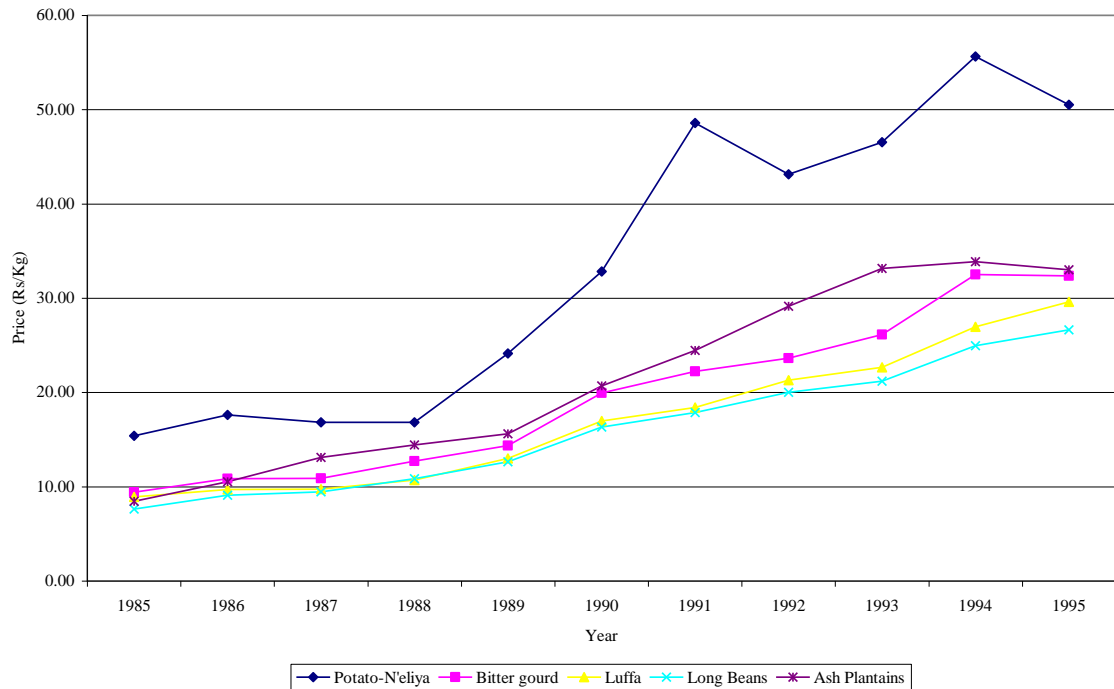


Annex Figure 9: Annual Average Retail Prices of Vegetables 1985-95

Annual Average Retail Prices of Vegetables 1985 -1995

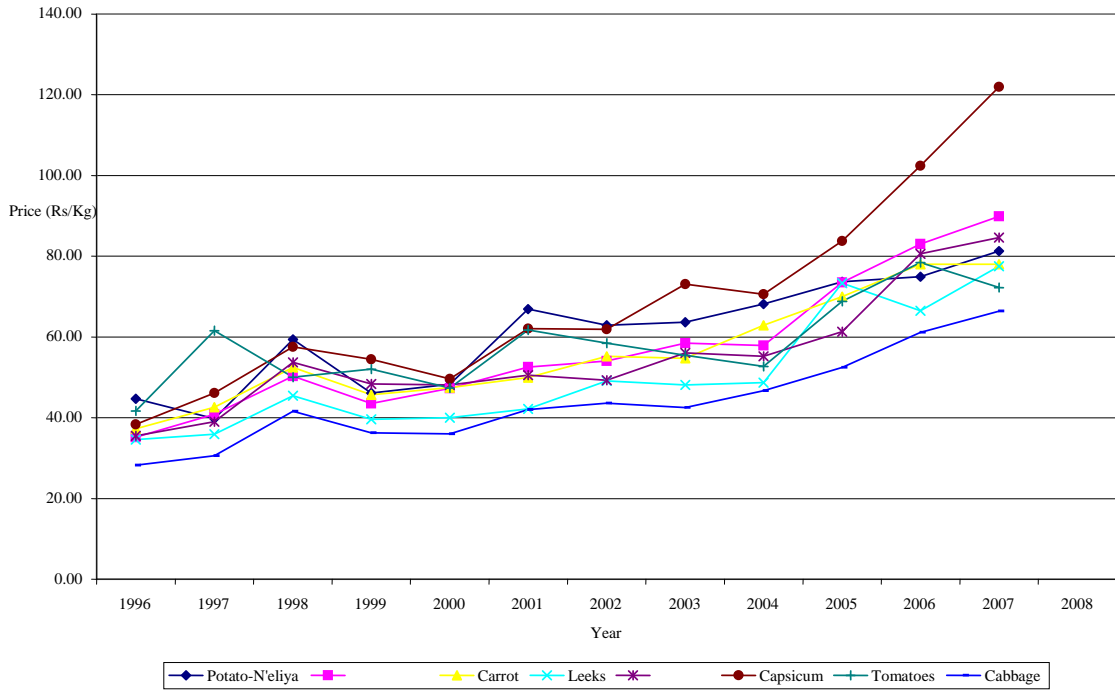


Annual Average Retail Prices of Low Country Vegetables 1985 - 1995

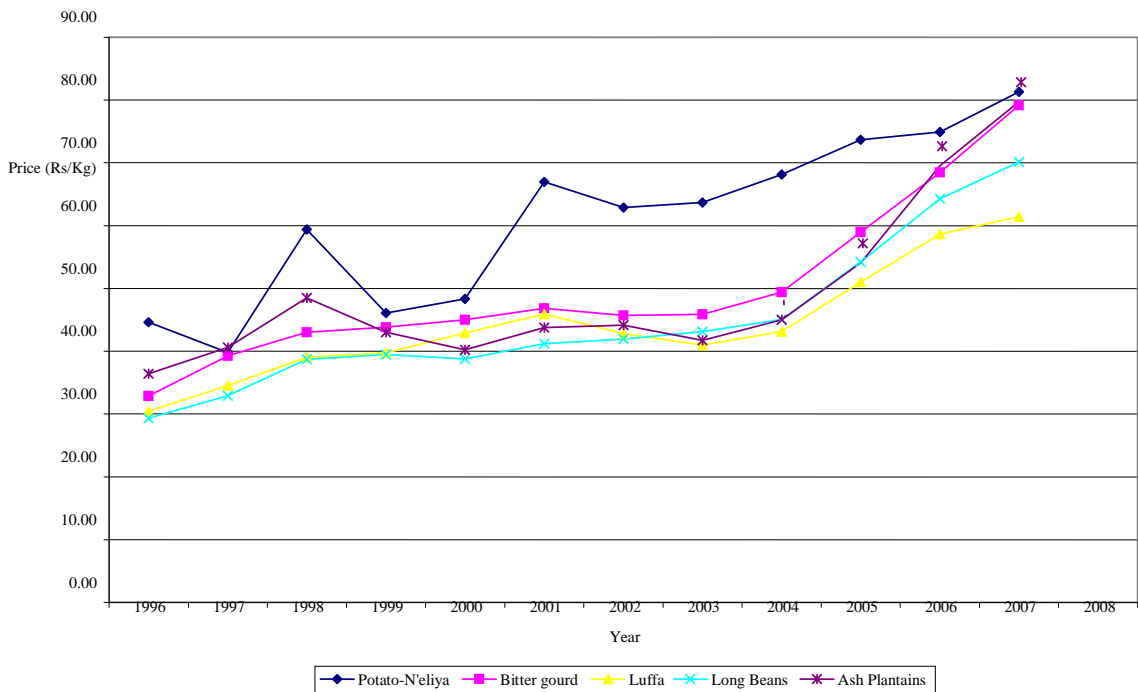


Annex Figure 10 Annual Average Retail Prices of Vegetables 1996-2007

Annual Average Retail Prices of Vegetables 1996 - 2007



Annual Average Retail Prices of Low Country Vegetables 1996 - 2007



**Annex Table 1: Cultivated Extent and Production of Other Field Crops
1970-2007**

Cultivated Extent of Other Field Crops 1970-2007 (Ha)

Crop	1970	1980	1990	2000	2005	2006	2007
Groundnut	5,357	11,997	10,453	10,540	10,920	11,660	10,420
Gingelly	11,993	30,201	9,236	7,760	9,650	9,340	9,260
Green gram	3,775	13,427	33,245	12,970	9,640	8,700	8,760
Cowpea	4,137	22,623	26,304	12,950	11,360	10,650	10,630
Soya bean	n.a	n.a	3,983	690	3,080	3,070	2,860
Manioc	59,099	51,029	44,221	29,540	23,450	23,560	22,560
Sweet Potato	15,844	14,312	11,922	8,260	6,620	6,650	6,530
Potato	3,306	4,537	7,888	3,640	5,610	5,300	5,330
Red Onion	6,773	8,710	8,600	6,100	5,790	6,230	5,610
Big Onion			1,580	2,790	4,560	6,810	6,990
Chillies	20,249	38,321	32,987	19,830	17,310	14,890	14,090
Finger Millet	20,569	21,441	10,718	6,550	6,210	5,910	5,410
Maize	19,061	19,433	32,079	28,640	28,410	32,000	34,190
Black gram	n.a	n.a	6785	6700	6210	6800	6820

Source: Department of Census and Statistics

Production of Other Field Crops 1970-2007 (Mt)

Crop	1970	1980	1990	2000	2005	2006	2007
Groundnut	2,316	7,084	6,282	7,070	9,040	9,820	9,840
Gingelly	6,741	12,947	4,829	4,600	6,160	5,970	6,300
Green gram	48,248	79,838	72,786	11,690	9,000	7,980	8,520
Cowpea	3,011	16,494	22,864	12,120	11,180	10,120	10,850
Soya bean			3,151	640	4,990	5,180	4,800
Manioc	353,746	499,488	395,009	249,110	223,210	226,080	219,930
Sweet Potato	60,746	127,427	76,882	51,810	41,180	41,620	49,160
Potato	31,741	51,121	87,205	48,410	79,450	78,490	77,390
Red Onion	41,507	66,891	67,957	42,500	53,730	60,760	57,040
Big Onion			15,903	36,560	55,550	73,610	92,160
Chillies	22,761	50,987	106,615	55,860	52,870	52,900	48,700
Finger Millet	11,630	13,119	7,216	4,850	6,450	6,290	5,460
Maize	14,687	21,599	33,192	31,050	41,800	47,530	56,440
Black gram				5,420	6,920	7,470	7,750

Source: Department of Census and Statistics

Annex Table 2: Extent and Production of Other Field Crops 1998-2007

Extent (Ha) and Production (Mt) of Finger Millet

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	5,090	3,800	950	500	6,040	4,300	84	88
1999	5,570	4,220	920	590	6,490	4,810	86	88
2000	5,670	4,290	880	560	6,550	4,850	87	88
2001	4,990	3,770	650	420	5,640	4,190	88	90
2002	4,830	3,660	650	410	5,480	4,070	88	90
2003	6,240	4,540	1,120	730	7,360	5,270	85	86
2004	4,230	4,030	890	640	5,120	4,670	83	86
2005	4,980	5,530	1,230	920	6,210	6,450	80	86
2006	4,780	5,420	1,130	870	5,910	6,290	81	86
2007	4,310	4,570	1,100	890	5,410	5,460	80	84

Extent (Ha) and Production (Mt) of Maize

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	27,530	31,450	2,260	2,420	29,790	33,870	92	93
1999	26,820	29,280	2,080	2,190	28,900	31,470	93	93
2000	26,340	28,540	2,300	2,510	28,640	31,050	92	92
2001	23,730	26,660	1,980	2,090	25,710	28,750	92	93
2002	20,330	23,240	3,080	3,170	23,410	26,410	87	88
2003	23,450	25,750	3,610	3,900	27,060	29,650	87	87
2004	20,280	31,450	3,150	3,750	23,430	35,200	87	89
2005	23,910	36,340	4,500	5,460	28,410	41,800	84	87
2006	26,310	40,380	5,690	7,150	32,000	47,530	82	85
2007	27,100	45,070	7,090	11,370	34,190	56,440	79	80

Extent (Ha) and Production (Mt) of Green gram

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	13,490	12,240	4,020	3,410	17,510	15,650	77	78
1999	11,710	10,670	3,660	3,150	15,370	13,820	76	77
2000	9,720	8,900	3,250	2,790	12,970	11,690	75	76
2001	8,440	7,590	2,630	2,130	11,070	9,720	76	78
2002	8,500	7,880	2,750	2,440	11,250	10,320	76	76
2003	9,600	8,560	2,410	2,050	12,010	10,610	80	81
2004	6,440	5,880	2,170	1,930	8,610	7,810	75	75
2005	6,890	6,520	2,750	2,480	9,640	9,000	71	72
2006	6,170	5,760	2,530	2,220	8,700	7,980	71	72
2007	6,090	5,850	2,670	2,670	8,760	8,520	70	69

Source: Department of Census and Statistics

Extent (Ha) and Production (Mt) of Cowpea

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	10,090	9,130	4,740	4,270	14,830	13,400	68	68
1999	9,340	8,560	3,810	3,540	13,150	12,100	71	71
2000	9,350	8,670	3,600	3,450	12,950	12,120	72	72
2001	7,760	7,100	3,030	2,740	10,790	9,840	72	72
2002	8,830	7,870	2,950	2,570	11,780	10,440	75	75
2003	10,130	9,130	3,710	3,770	13,840	12,900	73	71
2004	6,590	6,110	3,070	3,050	9,660	9,160	68	67
2005	7,260	7,040	4,100	4,140	11,360	11,180	64	63
2006	6,960	6,770	3,690	3,350	10,650	10,120	65	67
2007	6,230	6,700	4,400	4,150	10,630	10,850	59	62

Extent (Ha) and Production (Mt) of Black gram

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	9,320	7,290	850	760	10,170	8,050	92	91
1999	7,740	5,870	920	860	8,660	6,730	89	87
2000	6,010	4,810	690	610	6,700	5,420	90	89
2001	5,640	4,480	720	650	6,360	5,130	89	87
2002	5,490	4,180	990	910	6,480	5,090	85	82
2003	6,250	4,960	940	980	7,190	5,940	87	84
2004	4,300	4,450	440	510	4,740	4,960	91	90
2005	4,400	4,760	1,810	2,160	6,210	6,920	71	69
2006	5,670	6,140	1,130	1,330	6,800	7,470	83	82
2007	5,520	6,220	1,300	1,530	6,820	7,750	81	80

Extent (Ha) and Production (Mt) of Soya bean

Year	Maha		Yala		Total		yala as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	260	190	380	410	640	600	59	68
1999	350	280	470	520	820	800	57	65
2000	310	230	380	410	690	640	55	64
2001	280	220	360	400	640	620	56	65
2002	180	150	1,080	1,010	1,260	1,160	86	87
2003	360	290	2,190	2,670	2,550	2,960	86	90
2004	180	240	1,120	1,650	1,300	1,890	86	87
2005	360	610	2,720	4,380	3,080	4,990	88	88
2006	430	720	2,640	4,460	3,070	5,180	86	86
2007	290	490	2,570	4,310	2,860	4,800	90	90

Source: Department of Census and Statistics

Extent (Ha) and Production (Mt) of Gingelly

Year	Maha		Yala		Total		Yala as a % of Total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	3,390	2,090	6,960	3,630	10,350	5,720	67	63
1999	3,770	2,260	4,860	2,510	8,630	4,770	56	53
2000	4,010	2,410	3,750	2,190	7,760	4,600	48	48
2001	3,610	2,090	3,230	2,120	6,840	4,210	47	50
2002	3,650	2,210	2,930	1,860	6,580	4,070	45	46
2003	4,320	2,510	4,490	2,980	8,810	5,490	51	54
2004	2,970	1,800	4,020	2,550	6,990	4,350	58	59
2005	3,370	2,080	6,280	4,080	9,650	6,160	65	66
2006	3,470	2,190	5,870	3,780	9,340	5,970	63	63
2007	3,320	2,290	5,940	4,010	9,260	6,300	64	64

Extent (Ha) and Production (Mt) of Groundnut

Year	Maha		Yala		Total		Maha as a % of Total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	7,290	4,500	2,820	1,760	10,110	6,260	72	72
1999	7,590	4,860	2,680	1,680	10,270	6,540	74	74
2000	7,690	5,140	2,850	1,930	10,540	7,070	73	73
2001	7,650	5,210	2,030	1,250	9,680	6,460	79	81
2002	7,150	4,560	1,960	1,170	9,110	5,730	78	80
2003	8,980	5,170	2,400	1,410	11,380	6,580	79	79
2004	7,560	6,470	2,420	1,460	9,980	7,930	76	82
2005	7,630	7,000	3,290	2,040	10,920	9,040	70	77
2006	8,050	7,330	3,610	2,490	11,660	9,820	69	75
2007	7,290	7,360	3,130	2,480	10,420	9,840	70	75

Extent (Ha) and Production (Mt) of Big Onion

Year	Maha		Yala		Total		Yala as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	90	330	1,330	17,110	1,420	17,440	94	98
1999	80	360	4,520	62,370	4,600	62,730	98	99
2000	20	60	2,770	36,500	2,790	36,560	99	100
2001	80	320	2,740	31,650	2,820	31,970	97	99
2002	140	530	2,770	31,030	2,910	31,560	95	98
2003	130	650	2,640	31,660	2,770	32,310	95	98
2004	80	520	3,000	36,990	3,080	37,510	97	99
2005	190	1,380	4,370	54,170	4,560	55,550	96	98
2006	310	2,320	6,500	71,290	6,810	73,610	95	97
2007	250	2,480	6,740	89,680	6,990	92,160	96	97

Source: Department of Census and Statistics

Extent (Ha) and Production (Mt) of Red Onion

Year	Maha		Yala		Total		Yala as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	2,720	17,680	2,940	20,360	5,660	38,040	52	54
1999	2,900	18,520	3,250	24,130	6,150	42,650	53	57
2000	3,070	20,380	3,030	22,120	6,100	42,500	50	52
2001	2,430	15,690	2,690	21,170	5,120	36,860	53	57
2002	2,300	15,390	2,660	19,940	4,960	35,330	54	56
2003	2,560	17,170	2,340	18,340	4,900	35,510	48	52
2004	2,040	18,560	2,350	20,900	4,390	39,460	54	53
2005	2,690	25,580	3,100	28,150	5,790	53,730	54	52
2006	2,720	25,870	3,510	34,890	6,230	60,760	56	57
2007	2,730	27,880	2,880	29,160	5,610	57,040	51	51

Extent (Ha) and Production (Mt) of Chillies

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	14,910	44,580	6,730	17,890	21,640	62,470	69	71
1999	14,130	41,700	7,620	18,330	21,750	60,030	65	69
2000	13,630	39,850	6,200	16,010	19,830	55,860	69	71
2001	11,770	34,700	5,580	14,340	17,350	49,040	68	71
2002	10,980	31,970	5,310	14,380	16,290	46,350	67	69
2003	11,100	33,340	4,820	12,850	15,920	46,190	70	72
2004	9,620	29,260	4,130	11,220	13,750	40,480	70	72
2005	11,040	35,530	6,270	17,340	17,310	52,870	64	67
2006	10,100	37,940	4,790	14,960	14,890	52,900	68	72
2007	9,050	31,750	5,040	16,950	14,090	48,700	64	65

Extent (Ha) and Production (Mt) of Potato

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	1,440	16,400	890	9,500	2,330	25,900	62	63
1999	1,120	11,760	1,050	15,410	2,170	27,170	52	43
2000	2,040	26,600	1,600	21,810	3,640	48,410	56	55
2001	2,060	26,780	2,190	30,900	4,250	57,680	48	46
2002	3,160	40,330	3,450	48,380	6,610	88,710	48	45
2003	3,410	35,950	2,900	35,800	6,310	71,750	54	50
2004	2,530	30,480	2,960	50,790	5,490	81,270	46	38
2005	3,030	41,710	2,580	37,740	5,610	79,450	54	52
2006	2,460	34,550	2,840	43,940	5,300	78,490	46	44
2007	2,210	31,480	3,120	45,910	5,330	77,390	41	41

Source: Department of Census and Statistics

Extent (Ha) and Production (Mt) of Sweet Potato

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	4,660	28,800	3,990	23,690	8,650	52,490	54	55
1999	4,720	29,010	3,660	22,590	8,380	51,600	56	56
2000	4,540	27,010	3,720	24,800	8,260	51,810	55	52
2001	4,130	25,250	3,720	23,290	7,850	48,540	53	52
2002	4,150	25,240	3,550	22,220	7,700	47,460	54	53
2003	4,200	24,050	3,370	20,000	7,570	44,050	55	55
2004	3,270	20,010	3,150	19,710	6,420	39,720	51	50
2005	3,390	20,990	3,230	20,190	6,620	41,180	51	51
2006	3,220	20,170	3,430	21,450	6,650	41,620	48	48
2007	3,010	21,890	3,520	27,270	6,530	49,160	46	45

Extent (Ha) and Production (Mt) of Manioc

Year	Maha		Yala		Total		Maha as a % of total	
	Extent	Production	Extent	Production	Extent	Production	Extent	Production
1998	17,570	151,030	12,500	106,130	30,070	257,160	58	59
1999	17,310	145,440	12,120	106,070	29,430	251,510	59	58
2000	17,390	146,170	12,150	102,940	29,540	249,110	59	59
2001	15,920	135,510	11,380	98,070	27,300	233,580	58	58
2002	15,030	130,090	11,350	94,890	26,380	224,980	57	58
2003	15,710	137,660	10,570	91,180	26,280	228,840	60	60
2004	13,060	130,460	10,080	90,320	23,140	220,780	56	59
2005	12,970	129,030	10,480	94,180	23,450	223,210	55	58
2006	13,280	132,300	10,280	93,780	23,560	226,080	56	59
2007	12,490	126,210	10,070	93,720	22,560	219,930	55	57

Source: Department of Census and Statistics

Annex Table 3: District wise Land and Population Distribution

District	Area of smallholdings [$>1/4$ - <20 ac] (ac)	Total arable land (ac)	Total population in agriculture	Total population	Average size of farm (ac)	% of population in small holder agriculture
Kandy	148,100	189,977	451,685	1,272,463	1.4	35
Matale	125,215	146,437	266,885	442,427	1.9	60
Nuwara Eliya	58,309	121,910	203,980	700,083	1.3	29
Ampara	169,290	177,724	234,452	589,344	3.0	40
Batticaloa	71,126	81,214	85,999	486,447	3.5	18
Trincomalee	50,216	54,904	79,199	340,158	2.7	23
Anuradhapura	355,143	361,984	603,884	746,466	2.4	81
Polonnaruwa	159,113	165,296	249,182	359,197	2.7	69
Jaffna	31,762	41,705	106,382	490,621	1.3	22
Kilinochchi	36,504	37,358	56,662	151,577	2.7	37
Mannar	20,669	21,723	21,790	149,835	4.0	15
Mulleitive	38,766	39,760	49,581	127,263	3.3	39
Vavuniya	32,181	33,525	54,067	121,667	2.5	44
Kurunegala	526,316	590,791	1,008,444	1,452,369	2.1	69
Puttalam	158,435	190,479	279,911	705,342	2.3	40
Kegalle	146,006	195,670	338,864	779,774	1.7	43
Ratnapura	246,448	294,443	583,355	1,008,164	1.8	58
Galle	165,367	192,624	457,129	990,539	1.6	46
Hambantota	198,829	209,519	383,569	525,370	2.2	73
Matara	154,565	177,375	404,963	761,236	1.7	53
Badulla	152,732	199,404	373,793	774,555	1.7	48
Monaragala	218,314	223,040	339,127	396,173	2.6	86
Colombo	42,542	63,281	119,011	2,234,289	1.5	5
Gampaha	139,394	178,678	373,918	2,066,096	1.6	18
Kalutara	136,022	178,874	323,736	1,060,800	1.8	31
Total	3,581,364	4,167,695	7,449,567	18,732,255	2.2	40

Source: Department of Census and Statistics

Annex Table 4: Price Spread of Other Field Crops

Dried Chillies Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF-WP %	WP-RP %
2000	81.75	92.00	115.19	70.97	8.89	20.13
2001	101.64	109.84	134.84	75.38	6.08	18.54
2002	101.74	114.25	136.07	74.77	9.19	16.04
2003	116.27	137.48	159.61	72.85	13.29	13.86
2004	104.88	116.35	143.84	72.91	7.98	19.11
2005	83.22	98.90	126.20	65.95	12.43	21.63
2006	97.27	160.94	182.57	53.28	34.88	11.85
2007	120.07	163.35	199.25	60.26	21.72	18.02

Source: Sri Lanka Customs: MFPAD/HARTI

Dried Chillies Local

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	79.37	81.91	105.18	75.46	2.41	22.12
2001	98.11	99.92	124.89	78.55	1.45	20.00
2002	97.62	106.26	122.44	79.73	7.06	13.21
2003	108.27	136.93	156.03	69.39	18.37	12.24
2004	104.88	112.07	154.00	68.10	4.67	27.23
2005	90.56	91.87	126.20	71.76	1.03	27.20
2006	110.47	152.58	174.84	63.19	24.08	12.73
2007	130.48	150.00	199.25	65.49	9.80	24.72

Source: MFPAD/HARTI

Green Chillies

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	30.84	33.28	67.34	50.59	3.61	45.80
2001	39.55	38.25	72.81	47.46	-1.79	54.32
2002	33.99	30.94	66.38	53.40	-4.60	51.21
2003	37.85	37.72	72.38	47.88	-0.17	52.29
2004	39.77	37.98	78.87	51.85	-2.27	50.42
2005	46.74	50.31	97.86	48.59	3.65	47.77
2006	47.40	51.72	106.94	51.64	4.04	44.32
2007	43.81	48.36	111.16	56.49	4.09	39.42

Source: MFPAD/HARTI

Big Onion - Local

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	20.12	24.87	34.27	58.71	13.86	27.43
2001	20.97	27.45	37.28	56.26	17.37	26.37
2002	18.84	25.34	34.10	55.24	19.07	25.70
2003	23.93	29.16	37.50	63.79	13.96	22.24
2004	24.73	32.45	41.41	59.73	18.63	21.64
2005	24.82	37.30	46.76	53.08	26.67	20.24
2006	27.57	36.62	47.14	58.49	19.20	22.31
2007	52.84	46.73	60.63	87.15	-10.08	22.92

Source: MFPAD/HARTI

Big Onion -Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF -WP %	WP-RP %
2000	12.70	24.87	34.27	37.05	35.52	27.43
2001	15.87	27.45	37.28	42.57	31.06	26.37
2002	14.60	25.34	34.10	42.82	31.48	25.70
2003	16.24	29.16	37.50	43.29	34.47	22.24
2004	18.36	32.45	41.41	44.34	34.02	21.64
2005	16.98	37.30	46.76	36.31	43.44	20.24
2006	16.74	36.62	47.14	35.51	42.18	22.31
2007	32.04	46.73	60.63	52.84	24.24	22.92

Source: Sri Lanka Customs: MFPAD/HARTI

Red Onion - Vedalan

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	26.11	53.76	68.63	38.04	40.29	21.67
2001	41.50	54.99	70.72	58.68	19.07	22.25
2002	33.72	48.18	60.32	55.90	23.98	20.12
2003	35.54	40.82	54.32	65.43	9.73	24.84
2004	37.35	45.81	59.12	63.18	14.30	22.52
2005	46.30	56.13	69.62	66.51	14.12	19.38
2006	53.33	56.13	79.60	66.99	3.52	29.49
2007	47.99	74.74	95.67	50.16	27.96	21.88

Source: MFPAD/HARTI

Potato- Nuwara Eliya

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	33.18	35.97	48.30	68.70	5.77	25.52
2001	49.56	54.59	66.94	74.04	7.51	18.45
2002	46.90	51.83	62.88	74.58	7.85	17.58
2003	46.99	52.90	63.66	73.81	9.29	16.90
2004	49.92	55.43	68.17	73.23	8.09	18.68
2005	54.02	61.27	73.69	73.30	9.84	16.85
2006	52.98	60.48	74.92	70.72	10.01	19.28
2007	56.22	66.11	81.31	69.14	12.16	18.70

Source: MFPAD/HARTI

Potato - Welimada

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	25.00	30.13	40.39	61.89	12.70	25.41
2001	53.99	49.05	61.37	87.96	-8.04	20.08
2002	41.68	46.20	56.33	74.00	8.02	17.98
2003	45.44	45.03	58.83	77.24	-0.71	23.47
2004	43.74	47.24	57.48	76.10	6.09	17.81
2005	50.53	53.38	69.24	72.97	4.13	22.91
2006	48.21	53.00	66.62	72.37	7.19	20.44
2007	50.93	54.25	68.92	73.91	4.82	21.28

Source: MFPAD/HARTI

Potato - Imported

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	CIF	Wholesale	Retail	CIF Share %	CIF -WP %	WP-RP %
2000	12.03	35.97	48.30	24.92	49.56	25.52
2001	14.00	54.59	66.94	20.91	60.64	18.45
2002	15.94	51.83	62.88	25.35	57.08	17.58
2003	13.17	52.90	63.66	20.69	62.41	16.90
2004	15.03	55.43	68.17	22.05	59.26	18.68
2005	18.59	61.27	73.69	25.22	57.92	16.85
2006	22.27	60.48	74.92	29.73	50.99	19.28
2007	25.45	66.11	81.31	31.30	50.00	18.70

Source: Sri Lanka Customs: MFPAD/HARTI

Green gram

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	36.69	50.11	63.90	57.42	21.00	21.58
2001	50.56	64.83	81.20	62.26	17.57	20.17
2002	46.03	61.65	76.23	60.39	20.49	19.12
2003	41.29	56.80	70.68	58.42	21.95	19.64
2004	49.63	63.21	76.35	65.01	17.78	17.21
2005	46.63	78.31	90.57	51.48	34.98	13.54
2006	66.41	99.02	114.35	58.08	28.52	13.41
2007	82.98	105.43	126.55	65.57	17.74	16.69

Source: MFPAD/HARTI

Cowpea

Year	Prices (Rs/kg)			Price Spread as a Percentage of Retail Price		
	Producer	Wholesale	Retail	Pro Share %	Pro-WP %	WP-RP %
2000	27.23	38.96	51.38	52.99	22.83	24.17
2001	41.54	48.06	59.05	70.35	11.04	18.61
2002	29.73	45.53	59.03	50.36	26.77	22.87
2003	32.90	41.82	56.91	57.81	15.68	26.51
2004	35.01	53.72	64.00	54.70	29.24	16.06
2005	36.54	61.91	79.24	46.11	32.02	21.88
2006	49.81	85.39	101.39	49.13	35.09	15.78
2007	66.71	96.15	121.66	54.83	24.20	20.97

Source: MFPAD/HARTI

Finger Millet

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	13.18	19.58	67.31	32.69
1996	16.70	28.03	59.58	40.42
1997	18.49	30.87	59.90	40.10
1998	21.48	34.42	62.41	37.59
1999	25.46	38.25	66.56	33.44
2000	25.74	38.18	67.42	32.58
2001	28.15	43.19	65.18	34.82
2002	27.18	43.55	62.41	37.59
2003	27.08	39.14	69.19	30.81
2004	31.95	39.54	80.80	19.20
2005	30.45	43.20	70.49	29.51
2006	31.11	49.01	63.48	36.52

Source: Department of Census & Statistics; MFPAD/HARTI

Finger Millet Flour

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	13.18	39.70	33.20	66.80
1996	16.70	46.09	36.23	63.77
1997	18.49	55.03	33.60	66.40
1998	21.48	56.98	37.70	62.30
1999	25.46	57.58	44.22	55.78
2000	25.74	60.76	42.36	57.64
2001	28.15	71.33	39.46	60.54
2002	27.18	74.66	36.41	63.59
2003	27.08	71.68	37.78	62.22
2004	31.95	74.79	42.72	57.28
2005	30.45	78.79	38.65	61.35
2006	31.11	85.78	36.27	63.73

Source: Department of Census & Statistics; MFPAD/HARTI

Soya bean

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	18.41	40.77	45.16	54.84
1996	21.96	43.56	50.41	49.59
1997	23.75	43.75	54.29	45.71
1998	30.10	45.56	66.07	33.93
1999	29.91	48.14	62.13	37.87
2000	31.44	60.75	51.75	48.25
2001	46.10	69.54	66.29	33.71
2002	43.60	73.38	59.42	40.58
2003	35.82	64.86	55.23	44.77
2004	32.41	68.24	47.49	52.51
2005	41.09	84.06	48.88	51.12
2006	40.36	90.96	44.37	55.63

Source: Department of Census & Statistics; MFPAD/HARTI

Maize

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	9.31	16.43	56.66	43.34
1996	10.51	21.47	48.95	51.05
1997	13.83	21.56	64.15	35.85
1998	15.57	17.30	90.00	10.00
1999	14.45	24.73	58.43	41.57
2000	14.35	24.93	57.56	42.44
2001	14.87	32.07	46.37	53.63
2002	18.10	40.48	44.71	55.29
2003	20.72	41.33	50.13	49.87
2004	21.44	47.47	45.17	54.83
2005	20.68	52.56	39.35	60.65
2006	19.78	61.81	32.00	68.00

Source: Department of Census & Statistics; MFPAD/HARTI

Gingerly

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	21.07	56.61	37.22	62.78
1996	36.66	74.99	48.89	51.11
1997	37.89	79.22	47.83	52.17
1998	31.22	69.61	44.85	55.15
1999	41.31	76.07	54.31	45.69
2000	45.33	78.73	57.58	42.42
2001	48.81	83.03	58.79	41.21
2002	49.03	88.14	55.63	44.37
2003	45.75	85.20	53.70	46.30
2004	49.98	98.89	50.54	49.46
2005	58.24	114.68	50.78	49.22
2006	55.90	124.46	44.91	55.09

Source: Department of Census & Statistics; MFPAD/HARTI

Groundnut

Year	Prices (Rs/kg)		Price Spread as a Percentage of Retail Price	
	Producer	Retail	Pro Share %	Pro-RP %
1995	22.18	37.08	59.82	40.18
1996	29.84	47.62	62.66	37.34
1997	30.69	48.84	62.84	37.16
1998	32.13	54.64	58.80	41.20
1999	32.69	57.15	57.20	42.80
2000	32.96	47.93	68.77	31.23
2001	34.59	54.16	63.87	36.13
2002	35.80	58.15	61.56	38.44
2003	36.25	59.82	60.60	39.40
2004	39.91	63.87	62.49	37.51
2005	40.65	72.64	55.96	44.04
2006	46.73	80.24	58.24	41.76

Source: Department of Census & Statistics; MFPAD/HARTI

Annex Table 5: Nutritional Status of Children-2000

Table 9.10 Comparison of nutritional status of children								
Percentage of children aged (3 –36) months classified as undernourished (below-2 standard deviations from the median of the reference population) by sector, zone, sex, child's age in months, previous birth interval and educational level of mother according to three anthropometric indices; height-for-age, weight-for-height and weight-for-age, from DHS 1993 and DHS 2000.								
Background characteristic	Height-for-age (stunted)		Weight-for-height (wasted)		Weight-for-age (underweight)		Number of children measured	
	1993	2000	1993	2000	1993	2000	1993	2000
Sector								
Colombo metro	18.5	7.2	10.8	10.3	25.8	17.0	206	194
Other urban	13.8	6.0	12.9	8.2	28.8	22.4	143	134
Rural	19.6	10.8	14.8	15.2	32.5	26.9	1,376	1,082
Estate	51.1	30.9	10.1	13.7	53.2	43.2	106	139
Zone								
Zone 1	18.5	7.2	10.8	10.3	25.8	17.0	206	194
Zone 2	11.4	8.8	8.0	13.2	20.6	20.2	258	228
Zone 3	14.9	14.3	16.6	10.2	30.3	26.2	273	244
Zone 4	22.3	10.4	14.2	17.0	31.3	26.3	352	346
Zone 5	29.8	15.2	12.0	11.2	39.2	33.0	361	349
Zone 6	21.4	12.2	19.1	18.4	40.7	28.6	138	49
Zone 7	23.7	12.2	19.2	23.7	41.4	36.7	243	139
Sex								
Male	18.9	9.3	13.8	15.9	30.7	26.7	921	816
Female	22.7	14.3	14.0	11.6	34.6	26.6	910	733
Child's age in months								
3-5	4.9	3.9	3.1	1.3	5.8	0.6	117	152
6-11	11.8	5.7	6.8	10.3	17.9	20.2	375	282
12-23	25.7	16.2	18.2	18.2	36.3	28.8	686	549
24-36	23.7	12.5	15.4	14.8	42.1	34.8	653	566
Previous birth interval								
< 2 years	25.9	24.3	20.0	22.8	41.4	38.6	219	70
2-3 years	26.2	15.5	14.5	13.0	40.9	33.9	466	316
4 years or more	18.9	13.5	12.2	12.1	27.5	27.4	403	430
First birth	15.9	7.9	12.8	14.2	26.0	21.9	665	713
Twins	25.9	10.0	11.0	25.0	42.7	25.0	78	20
Educational level of mother								
No schooling	40.8	34.9	18.3	19.0	50.0	46.0	124	63
Primary	29.1	18.8	18.5	15.2	43.6	39.3	386	191
Secondary	20.0	10.5	13.9	14.4	31.6	28.0	730	735
G.C.E.(O/L)	12.1	12.0	9.9	16.1	23.1	24.3	591	292
G.C.E (A/L) & higher		4.5		7.5		12.3		268
Total	20.8	11.7	13.9	13.9	32.6	26.7	1,831	1,549

Source: Sri Lanka Demographic and Health Survey 2000

Annex Table 6: Nutritional Status of Children (Excluding Northern Province)

Background characteristic	Height-for-age		Weight-for-height		Weight-for-age		Number of Children
	Percentage below -3 SD	Percentage below -2 SD	Percentage below -3 SD	children Number of	Percentage below -3 SD	Percentage below -2 SD	
	Age in months						
<6	2.5	9.7	6.8	15.8	2.8	12.1	548
6-8	2.2	9.5	2.6	10.4	1.9	12.0	309
9-11	4.5	15.6	2.2	11.9	4.7	15.6	398
12-17	5.0	18.6	1.8	13.4	2.3	18.5	695
18-23	5.3	22.7	2.9	15.9	4.2	22.9	677
24-35	5.1	21.9	3.1	14.6	4.2	23.4	1,339
36-47	3.8	19.8	2.4	15.1	4.0	24.9	1,363
48-59	3.6	15.7	2.7	17.5	4.3	25.3	1,318
Sex							
Male	5.0	18.7	3.2	16.4	3.9	22.3	3,436
Female	3.3	17.2	2.7	13.6	3.6	20.8	3,212
Residence							
Urban	2.9	13.7	3.4	14.9	3.0	16.6	855
Rural	3.5	16.7	2.8	15.2	3.5	21.7	5,348
Estate	15.3	42.2	3.6	12.6	8.7	29.7	446
District							
Colombo	1.4	8.4	2.1	13.2	1.5	14.1	831
Gampaha	1.2	10.0	2.4	10.9	2.3	11.6	675
Kalutara	3.1	15.9	1.8	12.1	4.3	16.9	357
Kandy	2.4	18.1	2.1	15.7	4.4	25.3	449
Matale	6.7	19.2	2.5	11.8	4.8	23.2	188
Nuwara Eliya	13.5	40.8	2.0	10.5	5.4	25.3	346
Galle	2.5	16.0	1.1	14.3	2.0	23.2	319
Matara	2.7	14.8	2.9	17.4	2.0	23.3	320
Hambantota	5.8	18.8	3.7	20.9	4.2	23.8	206
Batticaloa	7.7	24.4	6.7	19.4	5.5	27.5	272
Ampara	2.7	14.1	4.7	19.3	2.1	22.0	322
Trincomalee	11.3	30.5	10.2	28.1	6.4	27.8	192
Kurunegala	4.2	18.6	2.8	13.3	3.9	20.6	381
Puttalam	1.4	14.0	1.2	11.7	1.9	19.2	236
Anuradhapura	2.5	15.3	3.4	14.6	2.9	25.0	264
Polonnaruwa	0.6	16.0	3.2	17.9	5.3	25.6	188
Badulla	8.7	33.1	3.7	17.5	7.0	32.8	352
Moneragala	7.4	21.7	3.9	19.8	7.8	26.6	230
Ratnapura	5.5	19.3	2.9	12.3	5.5	23.9	292
Kegalle	2.8	17.5	1.2	15.6	4.0	23.3	230

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used NCHS/CDC/WHO standards. It should be also noted that out of 65 clusters selected, the survey was conducted only in 45 clusters.

Source: Sri Lanka Demographic and Health Survey 2006/07

Annex Table 07: Duty Changes of Other Field Crops 2000-2009

Duty changes of Other Field Crops 2000 - 2009

Potato

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	Rs.20/kg	Ex	6.50%							
2003	Rs.20/kg	10%								
2004	Rs.20/kg	15%								
2005	Rs.20/kg	5%								
2006	Rs.20/kg	12%		5%	1.50%					
2007	Rs.20/kg	5%		3%	1%				Rs.15/KG	
09.01.2008-26.08.08										Rs.15/kg
26.08.2008-07.11.08										Rs.20/kg
07.11.2008-04.02.09										Rs.20/kg
04.02.2009-09.11.09										Rs.25/kg
10.11.2009-										Rs.10/kg

Red Onion

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	35%	Ex	6.50%							
2003	Rs.5/kg	10%								
2004	Rs.5/kg	15%								
2005	Rs.5/kg	5%								
2006	Rs.5/kg	12%		5%	1.5%					
2007	Rs.5/kg	5%		3%	1%				Rs.5/KG	
09.01.2008-26.08.08	Rs.5/kg	12%		5%	1.5%		3%			
26.08.2008-07.11.08	Rs.5/kg	12%		5%	1.5%		3%			
07.11.2008-04.02.09	Rs.5/kg	12%		5%	1.5%		3%			
04.02.2009-09.11.09	Rs.5/kg	12%		5%	1.5%		3%			
10.11.2009-										Rs.10/kg

Duty changes of Other Field Crops 2000 - 2009

Big onion

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	35%	Ex	6.50%							
2003	Rs.6/kg	10%								
2004	Rs.10/kg	15%								
2005	Rs.8/kg	5%								
2006	Rs.20/kg	12%		5%	1.5%					
2007	Rs.20/kg	5%		3%	1%					
09.01.2008-26.08.08										Rs.20/kg
26.08.2008-07.11.08										Rs.20/kg
07.11.2008-04.02.09										Rs.20/kg
04.02.2009-09.11.09										Rs.25/kg
10.11.2009-										Rs.10/kg

Dried Chillies

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	35%	Ex	6.50%							
2003	Rs.30/kg	10%								
2004	Rs.30/kg	15%								
2005	Rs.30/kg	5%								
2006	Rs.30/kg	12%		5%	1.5%					
2007	Rs.30/kg	5%		3%	1%				Rs.12/KG	
09.01.2008-26.08.08										Rs.30/kg
26.08.2008-07.11.08										Rs.30/kg
07.11.2008-04.02.09										Rs.30/kg
04.02.2009-09.11.09										Rs.40/kg
10.11.2009-										Rs.20/kg

Duty changes of Other Field Crops 2000 - 2009

Green gram

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	35%	Ex	6.50%							
2003	Rs.5/kg	20%								
2004	Rs.5/kg	15%								
2005	Rs.5/kg	15%								
2006	Rs.5/kg	12%		5%	1.50%	15%				
2007	Rs.5/kg	15%		3%	1%	10%			Rs.5/KG	
09.01.2008-26.08.08										Rs.13/kg
26.08.2008-07.11.08										Rs.13/kg
07.11.2008-04.02.09										Rs.13/kg
04.02.2009-09.11.09										Rs.15/kg
10.11.2009-										Rs.15/kg

Millet

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	25%	Ex	6.50%							
2003	25%	20%								
2004	27.50%	15%								
2005	28%	15%								
2006	28%	12%		5%	1.50%	15%				
2007	28%	15%		3%	1%	10%				
09.01.2008-26.08.08	28%	12%		5%	1.5%	15%	3%	25%		
26.08.2008-07.11.08	28%	12%		5%	1.5%	15%	3%	25%		
07.11.2008-04.02.09	28%	12%		5%	1.5%	15%	3%	25%		
04.02.2009-09.11.09	28%	12%		5%	1.5%	15%	3%	25%		
10.11.2009-	28%	12%		5%	1.5%	15%	3%	25%		

Duty changes of Other Field Crops 2000 - 2009

Black gram

Year & Item	Cus. Duty	VAT	NSL	PAL	SRL	SUR	NBT	Cess	Waiver	SCL
2000	35%	12%	5.50%							
2001	35%	12%	5.50%							
2002	10%	Ex	6.50%							
2003	10%	20%								
2004	12%	15%								
2005	15%	15%								
2006	15%	12%		5%	1.50%	15%				
2007	15%	15%		3%	1%	10%				
09.01.2008-26.08.08	15%	12%		5%	1.5%	15%	3%	15%		
26.08.2008-07.11.08	15%	12%		5%	1.5%	15%	3%	15%		
07.11.2008-04.02.09	15%	12%		5%	1.5%	15%	3%	15% or		
								Rs.30/kg		
04.02.2009-09.11.09	15%	12%		5%	1.5%	15%	3%	15% or		
								Rs.30/kg		
10.11.2009-	15%	12%		5%	1.5%	15%	3%	15% or		
								Rs.30/kg		

Source: Sri Lanka Customs

Abbreviations:

Cus. Duty	Custom Duty
VAT	Value Added Tax
NSL	National Security Levy
PAL	Port and Airport development Levy
SRL	Social Responsibility Levy
SUR	Surcharge Nation Building
NBT	Tax
Cess	Cess
Waiver	Duty Waiver
SCL	Special Commodity Levy

Annex Table 8: Cultivated Extent of Other Field Crops by District

Cultivated Extent of Other Field Crops by Districts(Ac)

District	Crops	Average Land Size(Ac)	
		Maha	Yala
Anuradapura	Maize	2.17	0.4375
	Blackgram	1.99	-
	Gingelly	-	2.95
Mahaweli H	Soya	1.12	1.33
	Sweet Potato	1.12	1.29
Matale	Bigonion	1.42	-
	Red Onion	2.29	2.85
Puttalam	Chilli	1.20	1.56
	Groundnuts	0.82	0.74
	Greengram	0.94	0.25
Hambanthota	Gingelly	1.90	-
	Innala	1.16	-
Kurunegala	Greengram	0.59	0.31
	Manioc	3.76	3.87
Gampaha	Maize	1.47	1.45
	Potato	0.65	0.89
Badulla	Innala	0.73	0.81
	Sweet Potato	0.51	0.82
Rathnapura	Maize	2.12	0.9
	Cowpea	1.36	1.71

Average Land Size by Districts(only above crops)

Source: Survey Data

Annex Table 9: Imports of Wheat 1999 – 2008

Year	Quantity '000 Mt	Value Rs.mn	CIF Rs/kg
1999	859	7,792	9.07
2000	922	9,625	10.44
2001	760	9,783	12.87
2002	993	12,427	12.51
2003	919	13,255	14.43
2004	993	18,536	18.67
2005	864	14,200	16.44
2006	1200	20,679	17.23
2007	952	25,891	27.20
2008	919	40,563	44.15

Source: Central Bank of Sri Lanka Annual Report 2008

Annex Table 10: Cost of Imports on Wheat & Grain 1990 – 2008

Year	Value Rs.mn.	Year	Value Rs.mn.
1990	3,791	2000	9,625
1991	3,303	2001	9,783
1992	4,549	2002	12,427
1993	5,609	2003	13,255
1994	5,825	2004	18,536
1995	10,155	2005	14,200
1996	11,267	2006	20,679
1997	8,128	2007	25,891
1998	8,133	2008	40,563
1999	7,792		

Source: Central Bank of Sri Lanka Annual Report 2008