

HARTI AGRICULTURAL COMMODITY REVIEW

Agricultural Commodity Review Series No. 1

May 1998

**Statistics and Data Processing Division
Hector Kobbekaduwa Agrarian Research & Training Institute
114, Wijerama Mawatha
Colombo - 07
Sri Lanka.**

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17133 B

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ISBN 955 - 612 - 039 - 4

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FOREWORD

This is the inaugural issue of another series of HARTI publications. It evolved in this form as an outcome of the discussions held by a Committee appointed by me in order to examine the possibility of compiling a statistical publication based on the data available at the HARTI Data Bank

Apart from the major objective of this publication, namely to bring out data available in the HARTI Data Bank in a more useful form, there are specific objectives among which one of prime importance is to provide access and enable efficient use of the available data of the HARTI Data Bank to a wider group of users.

Another specific objective of this Agricultural Commodity Review is to collate fragmented data which are already available at the HARTI Data Bank and present them in a more organized form. Here an attempt has been made to present the data related with selected agricultural commodities comprehensively by collecting additional data in order to fill the gaps. An attempt is also made to present the data with interpretations to the best possible extent. In this attempt special attention is given to incorporate as much data and information as possible from research projects and surveys conducted by the HARTI.

The other specific objective of this Agricultural Commodity Review is to publicize unpublished data relevant to new development activities in the agricultural and agrarian sectors.

HARTI hopes to bring out this publication periodically by updating.

I believe that this publication would be immensely beneficial to a wide range of users including policy makers, planners, researchers, academics and others who would want to utilize data relating to the agricultural sector as well as agrarian aspects.

This is the outcome of a team effort. Mr. J.K.M.D. Chandrasiri, former Head of the Statistics and Data Processing Division (SDPD) of the HARTI coordinated the whole exercise. The same Division undertook the responsibility of handling most of the work under this exercise. The statistical tables and graphs were prepared by Mrs.N.P. Jayanetti utilizing computer software packages available at HARTI, ably assisted and guided respectively by Mr. S.S.J. Rosa (Data Assistant) and Mr. K.D.S. Ariyasinghe and Mr. E.N.R. Fernando (Data Analysts).

The assistance of the researchers in the Marketing and Food Policy Division (MFPD) of the Institute was obtained for the preparation of reviews on selected food commodities with interpretations of the data. Mr.T.A. Dharmaratne, the present Head of the Division helped in writing reviews on Maize, B'onion, Red Onion, Potato and Dry Chilli, while Mr. L.P. Rupasena, the former Head of the Division prepared reviews on Green Gram and Cowpea. Reviews on Beans, Carrot, Cabbage, Banana, Pineapple and Mango were contributed by Mr.T. Ravichandran. Mrs.C.P. Hathurusinghe wrote reviews on Ginger, Gingelly, Groundnut, Brinjal, Ladies Finger and Tomato. Mr. J.K.M.D.Chandrasiri also undertook writing reviews on Paddy, Kurakkan, Soya and Manioc.

There are many others within the Institute who devoted much of their time to make this exercise a success.

Further, there are others outside the Institute who performed a valuable service in the process of evolving and developing this Commodity Review. Among them, the involvement of Mr. A.M.U. Dissanayake, Deputy Director, Agriculture Division, Department of Census and Statistics has to be especially mentioned. He actively participated in the discussions held in this regard and made valuable comments on the first draft. Dr. M.S. Amarasinghe, Director-General of the Department of Agriculture also made valuable comments on the format of this publication at the initial stage.

Dr. S.G.Samarasinghe
DIRECTOR

January, 1998.

ACKNOWLEDGEMENT

This is an exercise which evolved after much efforts. There are many who helped the Coordinator in this exercise in various ways and occasions. Their services are invaluable and must be highly appreciated.

Dr.S.G. Samarasinghe, Director, HARTI, who originated the idea of producing a statistical publication of this nature extended the necessary encouragement and support throughout to make it a success. The role played by him in this regard was very extensive. He issued the necessary instructions, contacted outside experts and coordinated meetings, in addition to providing the much needed guidance all of which I acknowledge with great appreciation.

Mr. L.P. Rupasena, former Head of Marketing and Food Policy Division of HARTI made a significant contribution throughout this exercise. His contribution included the preparation of a format for write-ups on crops, writing reviews on selected crops, making comments on the first draft and providing useful guidelines when the occasion demanded. I wish to acknowledge his role with appreciation.

I acknowledge the contributions of Mr. T.A. Dharmaratne, Head of the MFPD, Mr. T. Ravichandran and Mrs. C.P. Hathurusinghe, both Research and Training Officers of the MFPD who did a great service by writing reviews on a number of crops.

The support extended by Mr. K.D.S. Ariyasinghe and Mr. E.N.R. Fernando, Data Analysts at the Statistics and Data Processing Division (SDPD) of the HARTI, are very valuable. Their involvement and guidance especially in the preparation of tables and graphs have to be highly appreciated. I would like to thank Mrs. N.P. Jayanetti and Mr. S.S.J. Rosa, Data Assistants in the SDPD who also got involved in the preparation of tables and graphs by using the computer software.

I acknowledge the support given by Mr.M.S. Gowri Sanker, Research and Training Officer of the Agricultural Planning and Evaluation Division and Mr. K.A.S. Dayananda, Head of the Publications Division in editing the first draft of this Agricultural Commodity Review.

Both Mrs. D. Rupasinghe and Mrs. D. Hewavitharana, Secretaries of the Institute, devoted much of their time for computer word processing of this publication. I appreciate their services.

I would like to thank Dr.R.B. Senakarachchi, one of the former Heads of the SDP Division of the HARTI and Mr. P.Wickramarachchi, Research and Training Officer of the Agricultural Resource Management Division of the HARTI who were involved in initial discussions held regarding the compilation of a statistical publication of this magnitude.

I must thank Mr. A.M.U. Dissanayake, Deputy Director of the Agriculture Division of the Department of Census and Statistics, who encouraged us by expressing valuable ideas about this exercise and also by making comments on the first draft.

I appreciate the contribution of Dr. M.S. Amarasiri, Director-General of the Department of Agriculture, who made valuable comments on the format of this publication.

The directions given by the Board of Governors of the HARTI towards the compilation of this Agricultural Commodity Review deserve to be placed on record.

Finally, I wish to extend a word of thanks to all others in the HARTI who extended their support and assistance in various ways to make this exercise a success.

J.K.M.D. Chandrasiri
Former Head, Statistics and Data Processing Division

January, 1998.

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INTRODUCTION

This "HARTI AGRICULTURAL COMMODITY REVIEW" is a new publication initiated by the Statistics and Data Processing Division (SDPD) of the HARTI. The major objective of this is to bring out data available in the HARTI Data Bank in a more useful form.

The specific objectives of this are;

- (a) to provide data of the HARTI Data Bank to a wider group;
- (b) to collate fragmented data and present them with interpretations, and
- (c) to publish unpublished data relevant to new agricultural development activities

At present the use of the HARTI Data Bank is very limited. So, it is attempted by this publication to provide access and efficient use of the available data to a wider group of users consisting of policy makers, planners and academics, students and others who are interested in studying data on agricultural and agrarian aspects.

Most of the data available at the HARTI Data Bank are collected from different institutions such as Departments of Census and Statistics, Irrigation, Agriculture and the Central Bank of Sri Lanka. Such data are published in different reports and publications in raw form. This publication attempts to collate all the fragmented data (of which most are already available at the HARTI Data Bank) and present them in an organized manner with interpretations and wherever possible, with analysis through the utilization of research reports and other evidences such as direct observations.

There are also unpublished important data especially related to new development activities in the agricultural and agrarian sectors. This publication attempts to publish such data also for the benefit of data users.

It is expected to present comprehensive information on selected crop groups, through each issue of this Agricultural Commodity Review which is intended to be published periodically. The present issue covers 23 food commodities belonging to different crop groups such as grains, pulses, tubers, spices, oil seeds, vegetables and fruits. Every commodity is reviewed under different topics covering production, domestic marketing, external trade, consumption and government policy.

The presentation of reviews on each commodity is followed by a set of statistical tables. Attempts were made to incorporate as much additional information as possible when the follow up data sets of each commodity were being interpreted. Such additional information was derived from published as well as unpublished research reports based on studies carried out by HARTI and outside institutions as well as individuals and also from articles and monographs. Sometimes interpretations were based on field observations done by the HARTI researchers.

Generally, in this issue data are presented for the period 1970-1996. But in interpretation of data the period from 1991-1995 was considered as the reference period in most of the occasions, firstly whenever there were inadequate data for interpretation since 1970s and secondly when it was felt important in incorporating more information about the recent past.

Part II of this publication is reserved for selected agrarian statistics of which most have not already been published. They relate to *Govijana Kenderayas* (Agrarian Services Centres), Farmer Organizations, Minor Irrigations and Major Settlement Schemes, Agricultural Credit etc. Most of these data were collected especially for incorporation into this publication.

Part One: Food Commodities

1. PADDY

I. Introduction

The cultivated rice species which originated in South East Asia are botanically known as *Oryza sativa*. The history of its cultivation goes back to the earliest age of man. It has been cultivated before 2500 B.C. in China as well as in India. The history of its cultivation in Sri Lanka also goes back to the history of Sri Lankan civilization.

Rice is the most important cereal since it is the staple food of more than half the human population. The daily diet of the majority of people in South, East and South-East Asia is based on rice. These regions account for more than 75% of the cultivated extent and production of rice.

Rice is adapted to regions of high temperature and prolonged sun shine. It can be cultivated in different altitudes from sea level to such as 1,300 m. in Nuwara Eliya and 3,500 m. in Himalaya. Although it is cultivated in a wide range of soils, the preferable Ph value for heavy soils is 5.5-6.5.

The nutritional value of rice of hundred grams of edible portion is; Moisture - 13.3g., Energy - 346 kcal, Proteins - 6.4g., Fats - 0.4g., Carbohydrates - 79g., Calcium - 9mg., Phosphorus - 149mg., Iron - 4mg., Thiamine - 210mg., Riboflavin - 50mg., Niacin - 3.8mg.

Starch is the main constituent of the seed. It also contains globulin, albumen, oryzagenin and vitamin B.

Rice being the staple food contributes about 43-45% of the total calory requirement and 34% of the protein requirement of an average Sri Lankan. In the rural sector its contribution is more, i.e. 65% of the calory requirement and 80% of the protein requirement. So rice has become the main food crop grain cultivated in the country. In terms of employment, paddy farming is the main source in the rural sector and it accounts for more than half of the rural employment. Further, paddy farming is more related with the culture and social life, especially of the rural sector of the country.

II. Production

Sri Lanka produces 2.6 million metric tons (125 million bushels) of paddy or 1.8 million metric tons of rice per year which accounts for 95% of requirements. The majority of the 1.8 million farmers in the country are involved in paddy farming who are scattered all over the country. Most of them are small scale producers with less than one hectare (more than 75% of holdings are under this category) and owner cultivators (65%).

II.I Major Producing Districts

Kurunegala, Ampara, Polonnaruwa, Anuradhapura and Hambantota districts account for about 51% of the total production and 46% of the extent cultivated.

With the passage of time, some districts have gone down in the rating order in extent cultivated. For example, a district like Kandy has gone down in the rating order from 6th in 1980 to 11th by 1996. This change is mainly due to the reduction of area cultivated under paddy resulting from diversification from paddy to other high value crops and abandoning of paddy lands because of declining profitability of paddy cultivation.

II.II Seasonality of Production

Paddy is a seasonal crop. The bulk of the production comes from Maha which represents 65% of the total production and 63% of the extent cultivated. The main reason for this seasonal bias in production is

that most of the paddy producing areas are located in the Dry Zone where its cultivation activities mainly depend on rain in Maha. A limited extent of paddy is also cultivated in Yala but with irrigated water. In the Wet Zone, paddy is cultivated in both seasons with rain water.

II.III Trends in Production, Cultivated Area and Average Yield

Generally production, the extent cultivated and the average yields indicated a declining trend between 1970-73. Thereafter all these indicated an upward trend until mid 1980s demonstrating some of the greatest achievements in the paddy sector despite its setback between the two year period 1975-76 caused by drought situation.

Since mid 1980s the instability and stagnation in production, extent and yield are indicated. The main reason for this has been the eruption of ethnic and other civil strife which affected economic activities in major paddy producing regions in addition to experiencing drought conditions in some years (HARTI, 1994, p.39). However, the production and extents have positively changed after 1991, but yields do not show any improvement. This was mainly due to the increased extent under cultivation resulting from favourable weather that prevailed until 1995.

Regarding the extent cultivated, the recorded extent in 1984 was so far the highest. It was a 37% increase in extent compared with 1973, which was the starting point to increase. Regarding production, the year 1985 indicated a higher achievement (little below than the highest production recorded in 1995). It was a 96% increase in production compared to 1973. In yield levels, the highest achievement was demonstrated in 1983. It was a 58% increase in yield since in 1973.

These performances (in production) in paddy sector have been based on the increase in yield and extent cultivated (Colombage, 1996, p.45). The yield increase is a major result of the introduction of BG series of new improved varieties from the national rice breeding programme in early 1970s (HARTI, 1994, p.32). Introduction of new land for cultivation under new irrigation and settlement schemes including Mahaweli project etc., irrigation rehabilitation and increased cropping intensity associated with new techniques and farming practices have also directly resulted in the expansion of cultivated area. Above all, the encouragement of the people to engage in paddy cultivation by the government through the provision of infrastructural facilities, technological know how and other support services at free or subsidized rates have resulted in the expansion of the cultivated area, yield and production, which will be discussed in detail under policy review.

II.IV Review of Agricultural Inputs and Cost of Production

Labour is a major input in paddy cultivation which accounts for a higher percentage of its production cost. According to 1994/95 Maha data in Kurunegala, this percentage was 52%. Other major inputs for which substantial amounts have to be incurred are draught power, machinery and equipment (23%), fertilizer (11%) and agrochemicals (6%) which account for 41% of the total production costs.

One noticeable feature regarding labour is that in districts like Gampaha where non-agricultural activities have become prominent in their economy, the labour cost accounts for a higher percentage of the total production cost compared to other districts; i.e. in Gampaha it was 67% in 1994/95 Maha, but in Kurunegala it was 52%.

Another feature regarding the labour cost in paddy is that it has increased by a higher rate than the general increase in the total production cost. For example in Kurunegala between 1990/91 and 1994/95 Maha seasons, the total production cost has increased by 68%, but the labour cost has gone up by 138%.

Considering all districts the cost of production has been in the range of Rs.5,000-Rs.8,000/acre in 1990/91 Maha. It has increased upto around Rs.10,000-Rs.14,000/acre by 1994/95 Maha. The net return has also been varying according to the district due to different yield levels and other factors such as different production costs and selling price. The net return has declined greatly in many districts within the reference

period (between 1990/91 - 1994/95 Maha seasons) mainly due to the increase of production cost without any increase in paddy prices at the same level. This decline is higher in some districts like Gampaha where the labour cost has gone up more than in other districts with the expansion of non-agricultural activities there. When an imputed value is included to the production cost, many districts appear have experienced losses from paddy. These losses are higher in the districts of Gampaha, Kalutara and Kandy and greatly increased with time.

III. Domestic Marketing

The majority of farmers cultivate rice mainly for consumption purposes, but the surplus is sold. Once paddy is sold to millers they convert it into rice. There are about 7,000 mills in the country. Of those 23% are commercial ones among which large scale modern mills are very few.

The wholesale trading of rice is mainly done by millers. The major wholesale markets are located in principal cities such as Colombo, Kandy and Kegalle. Among them Colombo is the biggest with over 65 commission agents. In the major wholesale markets, trading is done on commission basis (in Colombo 5%). However, commission trading is on the decline because millers direct supplies to the town wholesalers and retailers which give more returns to them. Wholesale cum retailers emerge in most towns and they keep smaller margins than the usual retailers.

III.I Marketing Channels

There are two marketing systems for paddy: private and public. The bulk of the production is transacted via the private marketing system. The main marketing channels of the private marketing system are:

- (a) Producer -> collector -> processor -> wholesaler -> retailer -> consumer
(the bulk of the market surplus moves through this)
- (b) Producer -> processor -> wholesaler -> retailer -> consumer
(commercial farmers and regular producers practise this)

Within the public marketing system the Paddy Marketing Board, Multi-purpose Cooperative Societies and since recently the CWE are functioning. The PMB purchases paddy through its own collecting centres and through farmer organizations at the GPS while the MPCs purchase through the cooperative network at a price fixed by them. The CWE which has two mills (one is recently opened and the other is to be opened) purchases paddy through cooperatives at a price fixed by the CWE.

III.II Price Behaviour

The prices of rice indicate an increase over the years. Between 1991-95 the prices have increased despite a slight decline in 1994 due to a combination of factors such as excellent harvests in 1994 and a wheat flour and bread subsidy scheme that has lowered the domestic demand for rice (Rassas et al., 1995, p.7). The prices moderately fluctuated around 10% in the year; from October to February the prices are high recording the highest price either in December or January.

III.III Review of Marketing Cost

The marketing cost for paddy/rice is around 35%. This is around 15% less compared with vegetables because paddy is a less perishable produce. According to available studies, market margins vary over time and retailers keep low margins during lean supply periods and vice versa (HARTI, 1994, p.51). The price spread between wholesale and retail is around Rs.2.50/kg. in the Colombo area.

IV. External Trade

For a longer period, rice has been imported. Since mid 1980s the quantity imported has been equal to 10%-15% of the domestic demand. The monopoly power of rice imports was under the government until November 1988 when import of rice by private sector was authorized but subject to licenses and quotas. Since March 1994 imports were fully liberalized.

IV.I Major Imports/Exports

Sri Lanka imports rice mainly from Vietnam, Pakistan and India followed by Burma and Thailand.

IV.II Trends in Imports in Quantity, Value and Price

Considering the period 1970-1995, it appears that rice imports are on a declining trend with some fluctuations in some occasions due to shortfalls in domestic production.

Imports have declined by 55% between 1971-1991 but the quantity imported has increased in 1975 due to crop damages experienced by heavy drought, and in 1977 due to the free distribution of rice in the domestic market with the new government coming into power. In 1992 and 1993 also the quantity imported has increased with the release of government monopoly in imports under licenses. In 1994 and 1995 the quantity imported has declined due to the better crop harvested locally and the increase of CIF price especially in 1995.

The import value has increased remarkably over the years despite the decline in the quantity imported due to the increased CIF price.

IV.III Export Trade Regulations

The tariff rates in 1996 for the import of paddy, husked rice or semi-milled/wholly milled rice were: 35% of duty and 4.5% of national security levy.

V. Consumption

According to the data of consumer finance and socio-economic surveys of the Central Bank of Sri Lanka, the per capita consumption of rice indicates an increasing trend in the period 1973-1987. In consumption, the urban sector has been always behind the rural and estate sectors which overtake each other on different occasions.

Based on the data in 1986/87, the consumption level was very low among the lowest income groups. Among middle income groups, between the income levels of Rs.1,501-Rs.5,000 the consumption level was very high and above the national average.

VI. Government Policy and its Review

Since independence the policy focus of many governments to develop the country was based on rice. Self sufficiency in rice has been the major aim of many development efforts. Even after 1977, under the liberal economic policies the importance of this major aim has not diminished. Employment and income generation, development of rice based off farm activities and improvement of the situation of food security and nutritional standards and saving the foreign currency going out of the country for import of rice have been subsequent objectives expected to be achieved through the development of the paddy sector.

In order to achieve these objectives, different policies, programmes and strategies were adopted and followed. Land and irrigation development, infrastructural development, research and extension facilities and input supply and support services including marketing facilities were the broad areas covered by

implementation of action under the above programmes. Generally these policies have a demarcation based on 1977, as before 1977 policies were welfare-oriented and after 1977 policies are market-oriented. The impact of each and every action taken to develop the paddy sector cannot be separated easily. Most of those have been jointly implemented to demonstrate successful achievements especially until mid 1980s when the production came to the level of near self-sufficiency. Even after that, 85% to 90% of self-sufficiency level was maintained continuously. In addition, the paddy sector has employed the majority of the 1.8 million farm families in the country as paddy farmers. It has provided more than 1,000 million man days of employment per year (HARTI, 1994). The supply of adequate amounts of rice has also promoted the nutritional level of the people. Some of the identified impacts of the policies, programmes and strategies which prepared the foundation to show these impressive achievements are briefly reviewed, in the subsequent section.

Since before independence more than 100 settlement schemes were established by settling a large number of families around new or rehabilitated tanks with the provision of basic infrastructure and free water. This land development and settlement programme became a contributory factor to the increase in the extent under paddy and also the production.

As a result of government's investment for research, newly improved paddy varieties could be introduced at the first half of 1960s with other inputs (chemical fertilizer and agrochemicals etc.), cultural practices and extension facilities. This resulted in a rapid increase in yield between 1966-1970 (HARTI, 1994, p.32). Then the introduction of BG varieties in early 1970s resulted in further increase in yield and production as well since 1974. New rice varieties have greatly contributed to the development of the paddy sector continuously. Altogether 44 rice varieties have been released between 1965-1991 by the Department of Agriculture.

Most of the policies were changed after 1977 and, as a result, different impacts can be observed. The fertilizer subsidy was once again subjected to such changes. Around 40-50% of the subsidy remained for 30 years until January 1990 when it was withdrawn, and again it was restored in October 1994. This subsidy programme encouraged 90% utilization of new varieties of paddy. The elimination of the subsidy has not affected the fertilizer application or the production (Henegedara, 1997).

Regarding marketing, the Guaranteed Price Scheme (GPS) operated since 1948 is still continuing. Before 1977, the GPS was used as a price determinant and after 1977 it was operated as a floor price. Between the period 1972-75 the Paddy Marketing Board (PMB) purchased over 40% of the production (in 1973 and 1974) when it had the monopoly in the purchase of paddy. Between 1980-85 the purchases of the PMB diminished to 10% and even lesser because of the high price fetched at the open market (ARTI, 1987, p.16). After a relaxation of a long period, the PMB was involved in purchasing a larger quantity (4%) in 1994 and 1995. In 1997 the government encouraged the farmer organizations to purchase paddy and provided financial assistance through the People's Bank.

The import and tariff policies have become very effective for the development of the paddy sector especially in the recent past. In the period 1970-77, the import of rice was very limited and was handled by the government. This became a major factor for having an attractive price by the local farmers for their products which encouraged them to invest on paddy. Even after the liberalization of trade after 1977, the government held a monopoly in rice imports until November 1988 when the private sector was allowed to get involved under quotas and licenses. Hence under liberalization also there were some types of protective markets until November 1994 when the imports were completely liberalized. However before November 1994 the government controlled imports balancing the local prices to protect the consumer as well as the producer. Under liberalization the price received by the producer has not been much attractive causing a drop in the profitability, year after year, because the price as well as the average yield of paddy have not increased in line with the cost of production (Wickramarachchi, 1996, p.21.). This discouraged reinvestment in rice.

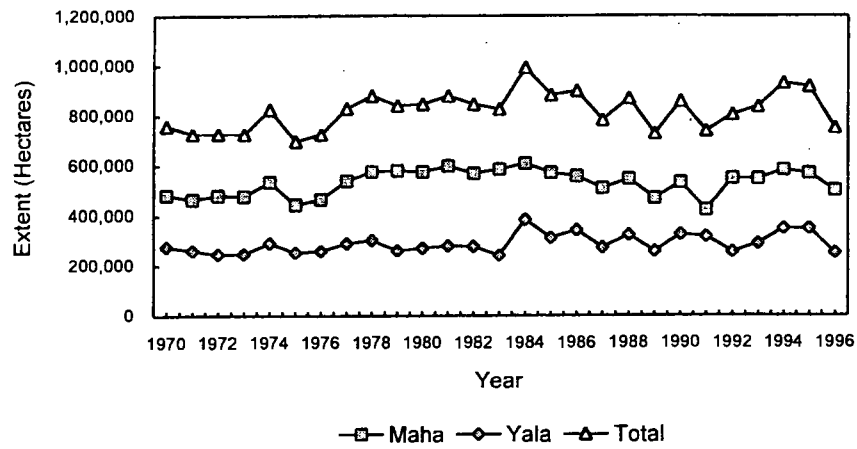
According to observations, the complete liberalization of imports has not badly affected the farmers due to the control on imports by the prevailing high CIF prices and duties which stood at 35% in 1996. Instead, it has positively affected the consumers because the imports have controlled the price of rice in the local market during the period of crop damage caused by drought in 1996.

Table 1.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF PADDY -SRI LANKA

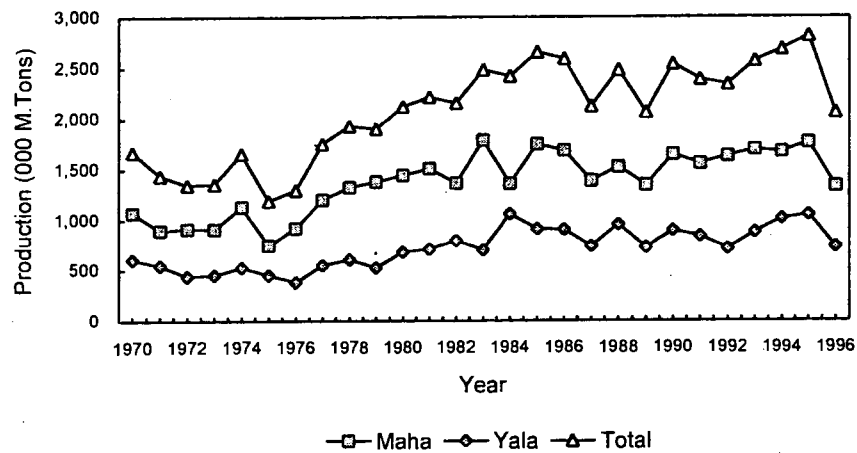
YEAR	EXTENT (Ha)			PRODUCTION (000 M.Tons)			AVERAGE YIELD (Kg/Ha)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	482,172	276,839	759,011	1,070	602	1,672	2,691	2,566	2,644
1971	464,360	261,489	725,849	896	544	1,440	2,314	2,457	2,366
1972	479,973	246,265	726,238	910	438	1,348	2,479	2,296	2,413
1973	477,112	248,126	725,238	909	448	1,357	2,296	2,205	2,298
1974	533,303	291,471	824,774	1,131	526	1,657	2,460	2,152	2,353
1975	443,476	252,329	695,805	743	449	1,192	2,384	2,105	2,270
1976	464,159	259,780	723,939	918	380	1,298	2,431	2,077	2,319
1977	537,726	290,339	828,065	1,204	548	1,752	2,658	2,267	2,423
1978	574,947	302,963	877,910	1,326	603	1,929	2,733	2,403	2,567
1979	578,069	260,557	838,626	1,379	522	1,901	2,820	2,574	2,747
1980	573,436	271,212	844,648	1,443	677	2,120	2,950	2,886	2,929
1981	596,692	280,054	876,746	1,509	707	2,216	3,005	2,933	2,981
1982	567,245	276,918	844,163	1,362	793	2,155	3,149	3,331	3,215
1983	582,887	241,213	824,100	1,783	698	2,481	3,637	3,603	3,627
1984	606,429	383,769	990,198	1,359	1,060	2,419	3,030	3,145	3,079
1985	568,743	311,948	880,691	1,748	907	2,655	3,497	3,342	3,466
1986	555,209	342,238	897,447	1,684	903	2,587	3,585	3,287	3,493
1987	507,834	273,396	781,230	1,390	735	2,125	3,677	3,361	3,562
1988	544,628	323,179	867,807	1,525	952	2,477	3,439	3,370	3,412
1989	468,845	258,108	726,953	1,343	721	2,064	3,428	3,278	3,374
1990	530,729	325,981	856,710	1,647	891	2,538	3,563	3,264	3,453
1991	422,282	316,134	738,416	1,554	835	2,389	3,771	3,040	3,398
1992	548,190	254,983	803,173	1,630	710	2,340	3,512	3,253	3,429
1993	545,689	288,574	834,263	1,692	877	2,569	3,601	3,462	3,501
1994	581,064	348,557	929,621	1,670	1,013	2,683	3,344	3,393	3,362
1995	566,650	348,371	915,021	1,761	1,049	2,810	3,603	3,427	3,534
1996	498,930	249,815	748,745	1,331	730	2,061	3,534	3,477	3,512

Source: Department of Census and Statistics
Data Development Unit of HARTI

Graph 1.1
EXTENT OF PADDY



Graph 1.2
PRODUCTION OF PADDY



Graph 1.3
AVERAGE YIELD OF PADDY

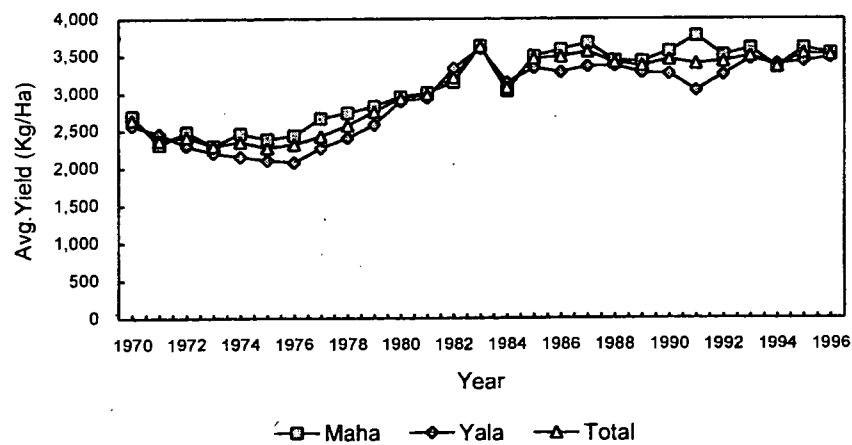


Table 1.2
EXTENT OF PADDY BY MAJOR GROWING DISTRICTS (HECTARES)

District	Season	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95) %	
Kurunegala	Maha	45,809	70,506	70,997	67,743	68,961	74,028	71,683	74,908	69,559	71,828	13.6
	Yala	36,654	39,864	40,696	40,257	42,267	43,543	37,928	39,874	52,851	43,293	
	Total	82,463	110,370	111,693	108,000	111,228	117,571	109,611	114,782	122,410	115,120	
Ampara	Maha	35,147	41,056	45,223	53,307	40,669	46,896	51,878	56,183	55,877	50,301	11.4
	Yala	20,666	29,414	36,594	47,492	38,691	42,252	44,920	51,440	52,050	45,871	
	Total	55,813	70,470	81,817	100,799	79,360	89,148	96,798	107,623	107,927	96,171	
Polonnaruwa	Maha	26,081	30,752	32,944	41,228	43,659	43,658	43,382	45,772	45,396	44,373	9.8
	Yala	11,322	19,310	23,662	37,122	38,140	28,501	39,893	42,380	42,957	38,374	
	Total	37,403	50,062	56,606	78,350	81,799	72,159	83,275	88,152	88,353	82,748	
Anuradhapura	Maha	8,515	76,299	44,332	29,748	31,065	45,509	41,978	61,268	59,293	47,823	7.3
	Yala	1,710	10,990	6,847	14,722	8,451	7,483	7,150	25,222	19,028	13,467	
	Total	10,225	87,289	51,179	44,470	39,516	52,992	49,128	86,490	78,321	61,289	
Hambantota	Maha	18,273	16,079	17,646	18,391	17,635	21,537	22,085	23,167	22,545	21,394	4.3
	Yala	13,244	13,262	12,592	13,592	13,839	12,095	11,691	18,346	18,653	14,925	
	Total	31,517	29,341	30,238	31,983	31,474	33,632	33,776	41,513	41,198	36,319	
Batticaloa	Maha	34,707	39,398	38,170	38,332	0	32,004	30,855	31,077	31,940	25,175	4.3
	Yala	7,569	9,153	11,053	14,400	8,986	10,670	10,508	11,629	12,395	10,838	
	Total	42,276	48,551	49,223	52,732	8,986	42,674	41,363	42,706	44,335	36,013	
Matara	Maha	20,027	20,175	19,236	19,480	18,259	19,308	19,108	18,367	18,123	18,633	4.1
	Yala	19,366	16,818	17,696	17,922	15,192	14,317	16,575	17,153	15,763	15,800	
	Total	39,393	36,993	36,932	37,402	33,451	33,625	35,683	35,520	33,886	34,433	
Galle	Maha	23,574	18,972	20,068	19,498	20,002	19,687	18,730	18,468	17,652	18,908	4.0
	Yala	23,720	17,121	19,847	18,427	19,007	10,234	15,887	17,182	11,932	14,848	
	Total	47,294	36,093	39,915	37,925	39,009	29,921	34,617	35,650	29,584	33,756	
Kalutara	Maha	21,177	19,204	19,786	18,030	17,961	17,825	16,902	16,732	16,707	17,225	3.7
	Yala	20,386	17,323	16,898	16,254	16,386	13,639	13,618	14,506	13,025	14,235	
	Total	41,563	36,527	36,684	34,284	34,347	31,464	30,520	31,238	29,732	31,460	
Badulla	Maha	15,381	16,297	19,406	20,058	20,243	20,286	20,091	20,340	20,114	20,215	3.6
	Yala	5,890	5,703	9,761	10,383	10,163	9,381	10,241	10,592	10,645	10,204	
	Total	21,271	22,000	29,167	30,441	30,406	29,667	30,332	30,932	30,759	30,419	
Kandy	Maha	19,839	22,423	18,574	19,147	19,155	18,975	17,230	17,046	17,089	17,899	3.6
	Yala	17,450	16,387	14,160	16,110	14,845	13,794	12,039	8,930	12,191	12,360	
	Total	37,289	38,810	32,734	35,257	34,000	32,769	29,269	25,976	29,280	30,259	
Other *	Maha	174,946	202,275	222,361	185,767	124,673	188,477	191,767	197,736	192,355	179,002	30.3
	Yala	74,352	75,867	102,142	79,300	90,167	49,074	68,124	91,303	86,881	77,110	
	Total	249,298	278,142	324,503	265,067	214,840	237,551	259,891	289,039	279,236	256,111	
Sri Lanka	Maha	443,476	573,436	568,743	530,729	422,282	548,190	545,689	581,064	566,650	532,775	
	%	63.7	67.9	64.6	61.9	57.2	68.3	65.4	62.5	61.9	63.1	
	Yala	252,329	271,212	311,948	325,981	316,134	254,983	288,574	348,557	348,371	311,324	
	%	36.3	32.1	35.4	38.1	42.8	31.7	34.6	37.5	38.1	36.9	
	Total	695,805	844,648	880,691	856,710	738,416	803,173	834,263	929,621	915,021	844,099	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Puttalam, Kegalle, Ratnapura, Matale, Nuwara Eliya, Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Trincomalee & Killinochchi districts and special projects Mahaweli H and Uda walawe

Primary Source : Dept. of Census & Statistics

Table 1.3
PRODUCTION OF PADDY BY MAJOR PRODUCING DISTRICTS (000 M.TONS)

District	Season	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
Kurunegala	Maha	64	200	257	225	249	224	234	262	224	239	
	Yala	67	107	117	98	118	135	98	80	146	115	
	Total	131	307	374	323	367	359	332	342	370	354	13.8
Ampara	Maha	75	140	165	177	134	180	168	141	190	163	
	Yala	46	112	159	125	127	144	179	197	198	169	
	Total	121	252	324	302	261	324	347	338	388	332	13.0
Polonnaruwa	Maha	88	102	142	166	170	169	194	117	195	169	
	Yala	23	50	92	125	134	97	165	168	161	145	
	Total	111	152	234	291	304	266	359	285	356	314	12.3
Anuradhapura	Maha	9	220	140	88	98	123	123	186	190	144	
	Yala	2	26	29	37	23	17	17	64	48	34	
	Total	11	246	169	125	121	140	140	250	238	178	7.0
Hambantota	Maha	48	48	66	65	67	87	89	81	78	80	
	Yala	31	41	43	55	42	32	47	62	64	49	
	Total	79	89	109	120	109	119	136	143	142	130	5.1
Mahaweli H	Maha	NA	NA	98	109	118	101	106	104	119	110	
	Yala	NA	NA	28	18	17	2	3	27	29	16	
	Total	NA	NA	126	127	135	103	109	131	148	125	4.9
Badulla	Maha	42	44	61	64	69	59	67	70	61	65	
	Yala	12	10	29	34	31	28	32	29	32	30	
	Total	54	54	90	98	100	87	99	99	93	96	3.7
Other *	Maha	417	689	819	753	649	687	711	709	704	692	
	Yala	268	331	410	399	343	255	336	386	371	338	
	Total	685	1,020	1,229	1,152	992	942	1,047	1,095	1,075	1,030	40.3
Sri Lanka	Maha	743	1,443	1,748	1,647	1,554	1,630	1,692	1,670	1,761	1,661	
	%	62.3	68.1	65.8	64.9	65.0	69.7	65.9	62.2	62.7	64.9	
	Yala	449	677	907	891	835	710	877	1,013	1,049	897	
	%	37.7	31.9	34.2	35.1	35.0	30.3	34.1	37.8	37.3	35.1	
	Total	1,192	2,120	2,655	2,538	2,389	2,340	2,569	2,683	2,810	2,558	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kegalle, Ratnapura, Matale, Nuwara Eliya, Moneragala, Kandy, Batticaloe, Jaffna, Vavuniya, Mullativu, Mannar, Trincomalee & Killinochchi districts and Special project Uda Walawe.

NA - Data Not Available
Primary Source : Dept of Census & Statistics.

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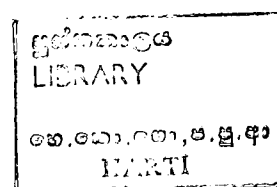


Table 1.4
COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN GAMPAHA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	3,774	3,492	5,205	5,770	9,458	3,494	3,627	4,484	6,717	5,312
Seed	464	458	530	580	616	314	454	530	557	531
Fertilizer	1,416	1,578	1,681	1,970	1,286	1,338	1,713	1,140	1,580	1,851
Agro-Chemicals	204	135	119	368	690	192	310	222	394	597
Draught power - Machinery & Equipment	939	1,757	2,002	2,469	2,170	850	1,012	2,242	1,808	2,058
Total	6,797	7,420	9,537	11,157	14,220	6,188	7,116	8,618	11,056	10,349

Table 1.5
COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN KURUNEGALA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	1,990	3,232	4,216	4,354	4,739	2,910	3,021	NA	4,365	4,466
Seed	517	480	576	676	619	495	434	NA	636	724
Fertilizer	1,284	1,540	1,800	1,669	1,025	1,484	1,314	NA	1,974	1,753
Agro-Chemicals	517	449	875	693	565	338	544	NA	281	920
Draught power - Machinery & Equipment	1,076	1,616	2,030	1,887	2,112	1,255	1,174	NA	2,088	2,184
Total	5,384	7,317	9,497	9,279	9,060	6,482	6,487	NA	9,344	10,047

NA - Data not available
Source : Dept. of Agriculture

Table 1.6

COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN ANURADHAPURA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	2,880	4,077	4,798	3,794	5,136	NA	NA	NA	NA	4,531
Seed	454	632	529	782	716	NA	NA	NA	NA	699
Fertilizer	822	1,425	772	1,392	1,168	NA	NA	NA	NA	1,488
Agro-Chemicals	245	351	300	318	584	NA	NA	NA	NA	532
Draught power - Machinery & Equipment	1,199	1,758	2,150	1,491	2,099	NA	NA	NA	NA	1,850
Total	5,600	8,243	8,549	7,777	9,703	NA	NA	NA	NA	9,100

NA - Data not available
Source : Dept. of Agriculture

Table 1.7
COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN POLONNARUWA (RS/ACRE)

INPUT	90/91	91/92	92/93	93/94	94/95	90	91	92	93	94
	Maha	Maha	Maha	Maha	Maha	Yala	Yala	Yala	Yala	Yala
Labour	4,053	3,889	3,816	3,554	5,758	3,140	3,591	3,520	4,226	3,845
Seed	344	540	528	514	548	447	466	540	508	511
Fertilizer	1,487	1,519	1,629	1,876	1,560	1,394	1,805	1,521	1,651	1,721
Agro-Chemicals	263	616	314	775	1,274	649	393	616	805	770
Draught power - Machinery & Equipment	1,669	2,236	2,285	2,570	2,985	1,796	2,302	1,791	2,526	3,065
Total	7,816	8,800	8,572	9,289	12,125	7,426	8,557	7,988	9,716	9,912

Table 1.8
COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN HAMBANTOTA (RS/ACRE)

INPUT	90/91	91/92	92/93	93/94	94/95	90	91	92	93	94
	Maha	Maha	Maha	Maha	Maha	Yala	Yala	Yala	Yala	Yala
Labour	4,065	4,318	4,894	4,360	6,026	3,508	4,306	4,708	3,903	5,692
Seed	461	504	569	888	900	424	540	534	1,026	946
Fertilizer	1,398	1,506	1,387	1,754	1,130	1,592	1,324	1,517	1,942	1,654
Agro-Chemicals	956	1,110	1,215	1,412	1,085	522	693	1,164	949	1,159
Draught power - Machinery & Equipment	1,607	1,746	1,816	1,853	2,325	1,521	1,750	1,797	1,743	1,616
Total	8,487	9,184	9,881	10,267	11,466	7,567	8,613	9,720	9,563	11,067

Table 1.9
COST OF CULTIVATION PER ACRE OF PADDY (IRRIGATED) BY INPUTS IN KALAWEWA (RS/ACRE)

INPUT	90/91	91/92	92/93	93/94	94/95	90	91	92	93	94
	Maha	Maha	Maha	Maha	Maha	Yala	Yala	Yala	Yala	Yala
Labour	3,766	4,319	4,207	4,572	5,069	3,123	4,182	3,472	4,599	5,211
Seed	450	552	578	498	564	486	511	492	554	531
Fertilizer	1,401	1,702	1,636	1,480	1,246	1,400	1,410	1,361	1,992	1,532
Agro-Chemicals	325	520	727	626	770	407	465	584	620	692
Draught power - Machinery & Equipment	1,594	2,109	2,241	1,986	2,556	1,373	1,774	1,876	1,773	1,951
Total	7,536	9,202	9,389	9,162	10,205	6,789	8,342	7,785	9,538	9,917

NA - Data not available
Source : Dept. of Agriculture

Table 1.10
COST OF CULTIVATION PER ACRE OF PADDY (RAINFED) BY INPUTS IN GAMPAHA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	3,789	4,233	5,385	7,058	7,963	3,366	3,974	5,028	5,694	5,879
Seed	441	491	476	520	579	323	476	478	456	535
Fertilizer	1,279	1,739	1,139	1,725	1,275	1,237	1,223	1,321	1,349	1,508
Agro-Chemicals	103	193	120	608	645	210	171	194	503	282
Draught power - Machinery & Equipment	890	840	1,220	1,728	2,495	840	1,106	1,067	1,842	2,085
Total	6,502	7,496	8,340	11,639	12,957	5,976	6,950	8,088	9,844	10,289

Table 1.11
COST OF CULTIVATION PER ACRE OF PADDY (RAINFED) BY INPUTS IN KALUTARA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	4,282	5,028	5,534	6,632	7,144	4,150	4,547	5,372	4,133	NA
Seed	489	518	525	535	581	433	525	530	539	NA
Fertilizer	1,011	1,382	1,215	1,473	1,326	910	1,238	1,242	1,722	NA
Agro-Chemicals	131	129	209	278	316	106	179	214	348	NA
Other	-	-	-	328	-	-	-	-	-	NA
Draught power - Machinery & Equipment	529	588	692	636	672	518	376	662	1,670	NA
Total	6,442	7,645	8,175	9,882	10,039	6,117	6,865	8,020	8,412	NA

Table 1.12
COST OF CULTIVATION PER ACRE OF PADDY (RAINFED) BY INPUTS IN GALLE (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	3,226	3,638	3,471	NA	4,784	2,836	2,777	3,310	3,710	NA
Seed	334	477	574	NA	635	300	360	536	578	NA
Fertilizer	639	1,220	1,090	NA	987	534	810	1,173	1,123	NA
Agro-Chemicals	426	410	535	NA	1,005	554	445	724	745	NA
Draught power - Machinery & Equipment	1,345	1,274	1,397	NA	2,145	1,036	1,185	1,454	1,561	NA
Total	5,970	7,019	7,067	NA	9,556	5,260	5,577	7,197	7,717	NA

NA - Data not available
Source : Dept. of Agriculture

Table 1.13
COST OF CULTIVATION PER ACRE OF PADDY (RAINFED) BY INPUTS IN KURUNEGALA (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	2,679	3,536	3,265	4,742	4,253	3,464	3,411	NA	4,687	6,123
Seed	525	598	540	681	638	512	537	NA	678	638
Fertilizer	928	1,425	1,373	1,314	1,37	796	978	NA	1,903	3,130
Agro-Chemicals	179	385	854	561	570	241	211	NA	795	384
Other	-	-	-	-	-	-	-	NA	-	197
Draught power - Machinery & Equipment	996	1,818	1,444	1,552	2,927	1,153	1,192	NA	1,289	1,259
Total	5,307	7,762	7,476	8,850	9,765	6,166	6,329	NA	9,352	11,731

Table 1.14
COST OF CULTIVATION PER ACRE OF PADDY (RAINFED) BY INPUTS IN KANDY (RS/ACRE)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	5,342	6,001	6,430	7,517	8,384	4,897	5,918	6,085	5,479	7,528
Seed	455	331	471	540	484	341	738	511	519	367
Fertilizer	921	1,505	1,450	1,643	1,218	775	1,036	1,266	1,218	1,286
Agro-Chemicals	221	37	-	194	175	204	102	37	213	-
Other	-	-	-	-	-	-	-	-	-	75
Draught power - Machinery & Equipment	547	1,225	1,310	903	1,013	778	743	1,469	1,855	1,604
Total	7,486	9,099	9,661	10,797	11,274	6,995	8,537	9,368	9,284	10,860

NA - Data not available
Source : Dept. of Agriculture

Table 1.15
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN GAMPAHA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	1,341	3,875
90/91 Maha	1,893	4,973
91 Yala	(816)	2,497
91/92 Maha	1,811	4,207
92 Yala	360	4,431
92/93 Maha	2,139	7,173
93 Yala	(1,507)	4,937
93/94 Maha	534	3,527
94 Yala	(1,164)	4,132
94/95 Maha	(5,416)	921

Table 1.16
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN KURUNEGALA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	6,173	9,845
90/91 Maha	5,257	7,799
91 Yala	2,885	6,240
91/92 Maha	7,024	9,966
92 Yala	-	-
92/93 Maha	6,354	9,783
93 Yala	2,896	5,726
93/94 Maha	(135)	3,143
94 Yala	3,201	6,424
94/95 Maha	2,865	6,356

Table 1.17
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala		
90/91 Maha	2,522	4,709
91 Yala		
91/92 Maha	2,818	6,326
92 Yala		
92/93 Maha	1,271	4,975
93 Yala		
93/94 Maha	2,482	5,077
94 Yala	2,365	6,297
94/95 Maha	2,064	4,465

Negative returns are given in paranthesis
Source : Dept. of Agriculture

Table 1.18
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN
POLONNARUWA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	4,243	5,947
90/91 Maha	635	2,167
91 Yala	2,703	4,350
91/92 Maha	2,317	4,524
92 Yala	3,115	4,706
92/93 Maha	1,611	3,517
93 Yala	5,229	7,878
93/94 Maha	(925)	1,735
94 Yala	3,163	6,131
94/95 Maha	844	4,615

Table 1.19
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN HAMBANTOTA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	5,266	6,616
90/91 Maha	2,427	4,171
91 Yala	4,872	6,780
91/92 Maha	4,908	6,752
92 Yala	4,857	6,591
92/93 Maha	3,366	5,424
93 Yala	2,523	5,166
93/94 Maha	1,944	5,342
94 Yala	407	3,561
94/95 Maha	2,795	6,752

Table 1.20
NET RETURN PER ACRE OF PADDY (IRRIGATED) BY SEASONS IN KALAWEWA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	4,987	7,097
90/91 Maha	5,714	7,904
91 Yala	2,698	5,376
91/92 Maha	3,262	6,132
92 Yala	4,323	6,015
92/93 Maha	6,695	10,180
93 Yala	10,595	12,854
93/94 Maha	3,584	6,120
94 Yala	1,969	4,889
94/95 Maha	4,382	7,344

Negative returns are given in paranthesis
Source : Dept. of Agriculture

Table 1.21
NET RETURN PER ACRE OF PADDY (RAINFED) BY SEASONS IN GAMPAHA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	1,371	3,904
90/91 Maha	1,044	3,820
91 Yala	(949)	2,602
91/92 Maha	1,737	5,777
92 Yala	622	3,876
92/93 Maha	308	4,497
93 Yala	(484)	5,664
93/94 Maha	(257)	2,899
94 Yala	(138)	6,093
94/95 Maha	(4,423)	1,652

Table 1.22
NET RETURN PER ACRE OF PADDY (RAINFED) BY SEASONS KALUTARA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	1,155	2,928
90/91 Maha	(446)	1,725
91 Yala	(481)	2,073
91/92 Maha	(771)	2,141
92 Yala	(1,495)	1,885
92/93 Maha	451	4,028
93 Yala	108	2,638
93/94 Maha	(1,309)	4,929
94 Yala		
94/95 Maha	(3,064)	1,095

Table 1.23
NET RETURN PER ACRE OF PADDY (RAINFED) BY SEASONS IN GALLE

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	239	1,497
90/91 Maha	1,231	2,332
91 Yala	582	1,713
91/92 Maha	949	2,009
92 Yala	879	1,755
92/93 Maha	1,862	2,790
93 Yala	157	1,771
93/94 Maha		
94 Yala		
94/95 Maha	(702)	1,702

Negative returns are given in paranthesis
Source : Dept. of Agriculture

Table 1.24

NET RETURN PER ACRE OF PADDY (RAINFED) BY SEASONS IN KURUNEGALA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	3,104	7,294
90/91 Maha	3,699	7,030
91 Yala	1,574	5,068
91/92 Maha	998	5,018
92 Yala		
92/93 Maha	3,826	7,052
93 Yala	879	3,100
93/94 Maha	619	4,685
94 Yala	(2,381)	2,103
94/95 Maha	(1,125)	2,422

Table 1.25

NET RETURN PER ACRE OF PADDY (RAINFED) BY SEASONS IN KANDY

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	759	5,359
90/91 Maha	532	5,282
91 Yala	(101)	5,753
91/92 Maha	619	5,575
92 Yala	(81)	5,945
92/93 Maha	(817)	4,465
93 Yala	(1,432)	3,096
93/94 Maha	(3,125)	2,018
94 Yala	(2,628)	3,299
94/95 Maha	(4,659)	343

Negative returns are given in paranthesis

Source : Dept. of Agriculture

Table 1.26
MONTHLY AVERAGE RETAIL PRICE OF RICE - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991				1992			
	SAMBA 2	KORA 1	NADU 1	RAW(RED)	SAMBA 2	KORA 1	NADU 1	RAW(RED)
January	24.35	17.96	17.88	18.21	21.49	18.20	18.00	19.83
February	21.22	17.40	17.21	18.00	20.88	18.20	18.02	18.55
March	18.74	16.06	15.50	16.58	21.11	15.92	15.79	15.72
April	16.00	14.66	14.06	14.70	19.61	16.05	15.42	16.47
May	16.01	14.98	14.29	14.86	21.06	17.90	17.53	18.52
June	16.08	14.67	14.13	14.73	20.29	17.37	16.87	17.87
July	16.48	15.25	14.64	15.39	19.40	16.73	16.18	17.51
August	16.56	15.18	14.81	15.31	18.75	16.28	15.66	17.26
September	17.24	15.10	14.62	15.20	21.17	17.08	17.02	19.38
October	20.40	17.32	16.67	17.24	21.76	17.69	17.67	18.96
November	22.60	18.66	18.26	18.88	22.13	18.35	18.08	19.80
December	22.29	18.54	17.97	18.84	23.29	18.99	18.87	20.84
An. Average	19.00	16.32	15.84	16.50	20.91	17.40	17.09	18.39

Table 1.26 (contd..)
MONTHLY AVERAGE RETAIL PRICE OF RICE - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1993				1994			
	SAMBA 2	KORA 1	NADU 1	RAW(RED)	SAMBA 2	KORA 1	NADU 1	RAW(RED)
January	23.66	18.34	18.29	21.34	26.39	21.18	20.67	19.51
February	23.36	18.04	17.56	20.03	23.06	19.04	18.06	18.82
March	20.98	16.74	16.21	16.78	21.47	18.03	16.82	17.88
April	20.23	16.39	15.73	16.06	20.09	17.26	16.13	16.98
May	21.62	16.63	16.19	16.29	20.21	17.33	16.26	16.80
June	22.04	17.11	16.77	16.63	20.32	17.27	16.17	16.84
July	21.39	16.81	16.36	16.55	19.93	16.94	15.86	16.74
August	21.36	16.82	16.25	16.51	21.37	17.78	17.23	17.03
September	21.37	17.09	16.66	16.87	20.57	17.16	16.53	16.66
October	21.69	17.72	17.36	17.41	20.97	17.22	16.53	16.48
November	23.83	19.28	18.85	18.98	23.41	18.44	17.78	17.65
December	25.43	20.83	20.40	19.57	24.70	19.47	18.69	18.79
An. Average	22.35	17.62	17.22	17.76	21.87	18.09	17.23	17.51

Source : Marketing & Food Policy Division - HARTI

Table 1.26 (contd..)

MONTHLY AVERAGE RETAIL PRICE OF RICE - COLOMBO AND SUBURBS

UNIT : Rs/Kg

Month	1995				1996			
	SAMBA 2	KORA 1	NADU 1	RAW(RED)	SAMBA 2	KORA 1	NADU 1	RAW(RED)
January	23.99	19.09	18.15	18.83	24.11	19.51	18.59	19.89
February	23.60	18.51	17.78	18.81	25.10	19.91	19.24	20.14
March	22.18	17.30	16.45	17.37	24.36	19.49	19.00	19.52
April	21.17	16.82	15.80	16.56	24.16	19.39	19.03	19.59
May	21.16	17.24	16.43	17.06	24.28	19.75	19.54	20.02
June	21.24	17.51	16.72	17.26	24.48	21.23	21.15	21.33
July	20.91	17.26	16.48	17.15	24.63	22.56	22.42	22.50
August	20.48	16.74	16.15	16.98	24.94	23.02	22.89	24.88
September	20.29	16.50	16.01	16.79	27.40	23.90	23.93	26.13
October	21.59	17.27	16.86	17.46	27.23	22.74	22.74	25.63
November	24.97	19.61	19.07	20.20	29.36	23.40	23.40	25.93
December	24.90	19.74	18.90	20.10	30.30	23.57	23.42	27.45
An. Average	22.20	17.80	17.07	17.88	25.89	21.54	21.28	22.75

Source : Marketing & Food Policy Division - HARTI

Table 1.27
MONTHLY AVERAGE WHOLESALE PRICE OF RICE - PETTAH MARKET
UNIT : Rs/65Kg

Month	1991				1992			
	SAMBA 2	KORA 1	NADU 1	RAW (RED)	SAMBA 2	KORA 1	NADU 1	RAW (RED)
January	1,340	1,019	1,002	1,031	1,153	1,104	1,078	1,151
February	1,080	919	901	966	1,140	1,023	1,002	981
March	1,057	838	800	895	1,093	856	822	870
April	938	838	793	803	1,059	924	887	1,010
May	926	830	788	806	1,117	1,039	983	1,070
June	984	842	830	834	1,092	1,005	972	1,037
July	1,000	869	841	866	1,068	969	937	1,005
August	996	857	833	837	1,062	940	922	1,011
September	1,056	829	807	835	1,212	1,009	988	1,112
October	1,188	1,014	984	1,037	1,241	1,050	1,017	1,095
November	1,257	1,087	1,062	1,065	1,312	1,079	1,055	1,156
December	1,230	1,053	1,053	1,106	1,424	1,113	1,125	1,233
An. Average	1,088	916	891	923	1,165	1,009	982	1,061

Month	1993				1994			
	SAMBA 2	KORA 1	NADU 1	RAW (RED)	SAMBA 2	KORA 1	NADU 1	RAW (RED)
January	1,404	1,086	1,063	1,223	1,533	1,216	1,190	1,122
February	1,368	1,049	1,014	1,103	1,259	1,032	1,003	1,056
March	1,115	927	891	931	1,153	945	884	991
April	1,148	924	887	923	1,079	934	899	942
May	1,230	955	928	934	1,090	948	901	931
June	1,221	986	958	947	1,102	953	911	946
July	1,172	949	911	934	1,081	936	887	934
August	1,202	957	923	942	1,192	1,039	1,011	951
September	1,196	1,001	977	975	1,108	933	903	909
October	1,248	1,086	1,056	1,037	1,210	962	930	902
November	1,425	1,185	1,163	1,148	1,401	1,122	1,077	1,047
December	1,517	1,238	1,223	1,150	1,408	1,132	1,086	1,071
An. Average	1,271	1,029	1,001	1,021	1,218	1,013	974	984

Month	1995				1996			
	SAMBA 2	KORA 1	NADU 1	RAW (RED)	SAMBA 2	KORA 1	NADU 1	RAW (RED)
January	1,317	1,067	1,017	1,065	1,392	1,082	1,034	1,130
February	1,342	1,018	983	1,015	1,446	1,147	1,134	1,158
March	1,172	870	836	902	1,322	1,069	1,052	1,074
April	1,116	889	867	898	1,341	1,113	1,105	1,145
May	1,144	968	946	931	1,327	1,134	1,101	1,158
June	1,134	950	918	946	1,399	1,301	1,289	1,282
July	1,138	932	899	947	1,400	1,320	1,295	1,309
August	1,116	892	867	912	1,466	1,386	1,380	1,503
September	1,124	904	877	912	1,641	1,393	1,393	1,527
October	1,255	994	965	995	1,611	1,253	1,251	1,505
November	1,472	1,132	1,095	1,161	1,782	1,358	1,355	1,548
December	1,395	1,121	1,076	1,142	1,799	1,351	1,350	1,642
An. Average	1,227	978	945	985	1,494	1,242	1,228	1,332

Source : Marketing & Food Policy Division - HARTI

Table 1.28
IMPORTS OF RICE

Year	Quantity (MT)	Value (Rs 000)	CIF Price (Rs/Kg)
1970	480,014	317,801	0.66
1971	294,175	195,075	0.66
1972	298,488	160,771	0.54
1973	337,966	270,174	0.80
1974	297,417	720,469	2.42
1975	465,364	1,062,146	2.28
1976	377,900	641,836	1.70
1977	538,750	916,539	1.70
1978	186,854	689,435	3.69
1979	211,619	883,982	4.18
1980	168,315	756,172	4.49
1981	154,577	891,787	5.77
1982	111,634	588,448	4.90
1983	176,746	917,758	5.19
1984	20,225	152,014	5.29
1985	176,844	922,735	5.22
1986	210,877	975,751	4.63
1987	74,749	486,116	6.50
1988	194,457	1,677,041	8.62
1989	139,444	1,464,400	10.50
1990	116,798	1,295,500	9.67
1991	132,947	1,588,600	11.80
1992	237,202	28,851,372	12.02
1993	202,785	2,325,342	11.46
1994	58,415	655,158	11.21
1995	9,414	120,786	12.83
1996	336,442	5,038	14.97

Source : Dept. of Customs

Table 1.29
IMPORTS OF RICE BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
India	10926	146.30	39591	482.60	41898	562.60	587	8.90	3556	40.90	181394	2781.10
Pakistan	25542	255.10	31353	371.00	26234	307.70	36828	416.40	5134	65.50	41465	559.20
Thailand	405	8.00	27641	359.50	18621	215.50	3596	46.10	542	10.90	19638	347.6
Vietnam	93694	1151.10	128180	1517.00	69157	746.70	10024	102.5	-	-	69173	984.5
Burma	-	-	10362	119.80	20298	208.20	5360	43.30	-	-	17678	262.70
Other Countries	2380	28.10	75	1.50	26577	284.60	2020	38	182	3.50	7094	103.10
TOTAL	132947	1588.6	237202	2851.4	202785	2325.3	58415	655.2	9414	120.8	336442	5038.2

Source : Dept. of Customs

Table : 1.30
PER CAPITA CONSUMPTION OF RICE PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1973	80.3	88.1	89.6	86.8
1978/79	77.20	95.90	88.40	90.90
1981/82	87.50	104.60	103.20	101.30
1986/87	82.56	107.60	114.89	103.66

Primary Source : Central Bank of Sri Lanka

Table : 1.31
PER CAPITA CONSUMPTION OF RICE PER ANNUM
BY INCOME GROUP & SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs.)	Urban	Rural	Estate	All Sectors
0-100	67.88	77.87	-	75.63
101-200	65.36	96.78	-	85.90
201-400	72.36	97.17	46.39	91.24
401-600	73.26	90.48	101.77	90.08
601-800	67.59	90.91	98.78	89.29
801-1000	68.94	95.49	103.96	94.10
1001-1500	76.08	102.25	112.05	100.98
1501-2000	83.08	110.19	117.74	107.46
2001-3000	86.34	115.14	119.28	110.46
3001-5000	84.59	115.35	122.21	106.86
5001-10000	85.41	114.60	168.85	102.86
OVER 10000	78.27	112.01	120.00	94.30
Overall Avg.	82.56	107.60	114.89	103.66

Primary Source : Central Bank of Sri Lanka

2. MAIZE

I. Introduction

Maize (or Indian Corn) is cultivated in many Asian, African and Latin American countries, under both irrigation and rainfed conditions. *Zea mays* is the botanical name of the crop which was included in the Poaceae family of the plants. As a "Food Crop", maize was firstly discerned by the Latin Americans (this is the only cereal originating from the Americans) in the early centuries, and now it has become one of the major commercial crops in the world especially in African and American countries.

The primary consumers of maize were the rural farming population in many countries and it was also consumed by the livestock sector in developed as well as developing countries. Therefore, maize is one of the major trade commodities of the international markets.

Maize is rich in its protein content than in rice or wheat (see annex I for more details about its nutritious value).

Maize requires well-drained, deep soils. The optimum soil pH is in the range of 5.3-6.0. It grows in localities not particularly suitable for other cereals.

In Sri Lanka maize is grown mainly (in the Dry Zone) as a rainfed crop during Maha. This requires at least 500-600 mm of rainfall evenly distributed during the growing season. Since very recent past, the Yala cultivation under irrigated condition has been expanding.

The present recommended variety is Bhadra-1 which takes 105-115 days for maturity. Its potential yield is 4,428-4,500 kg./ha. (Dept. of Agri., 1990, p.1).

II. Production

Maize is cultivated in both settled and shifting (chena) types of highland. It is also cultivated as a pure as well as a mixed crop.

II.I Major Producing Districts

Ampara (23%), Anuradhapura (21%), Moneragala (16%) and Badulla (16%) are the major producing districts which account for 76% of the national production. The next important districts and areas are respectively Matale (5%), Batticaloa (4%) and Mahaweli H (3%).

In terms of the average extent cultivated during 1991-95, Anuradhapura district takes priority by accounting for 25% of the total land area. The other important districts in terms of the extent cultivated are respectively Ampara (17%), Badulla (17%) and Moneragala (17%).

II.II Seasonality of Production

Maize is a seasonal crop which is mainly cultivated in Maha season under rainfed conditions. However, Yala cultivation is possible only with irrigation, especially in the Dry Zone. Maha cultivation commences during October-December period under the North-East monsoon in major producing areas. Nearly 95 percent of the extent and production are recorded during Maha season.

II.III Trends in Production, Extent and Average Yield

The figures in the last 20 years indicate slight changes both in the extent and production of maize. In the case of the extent, there was a severe fall (15%) within a very short period, from 32,280 ha. in 1976 to 27,468 ha. in 1977. The extent gradually declined until the year 1980 (when a 49% decline was recorded

compared with 1977 figures). Thereafter the extent cultivated has gradually increased regardless of slight falls in some years. However, the extent has not still reached the level recorded in 1976.

In the case of production also, there was a fall (30%) after 1976 from 27,417 mt. to 19,194 mt. by the year 1977. Thereafter, production has gradually increased until 1985, recording a 127% increase for this period. Since then a gradual decline in production is indicated with slight changes in some years.

The statistics relating to the average yield in the last twenty years indicate a fluctuating trend. It has increased (by 76%) from 751 kg/ha. in 1976 to 1,320 kg/ha. in 1985. Thereafter it has slightly decreased. The average yield during 1991-95 period was 980 kg/ha.

II.IV Agricultural Inputs and Cost of Production

Maize is cultivated in Sri Lanka using less complexed technology, with local seed material or mixed varieties and minimum or zero inputs. Therefore, the cost of production is very low compared to other subsidiary crops such as big onions, chillies and potatoes. However, according to the Department of Agriculture, the cost of production, is Rs.3,639.51/acre including the imputed cost and Rs.829.95/acre excluding the imputed cost in 1993/94 Maha season under rainfed agriculture. The cost including the imputed cost has increased by 78% from 1993/94 Maha to 1994/95 Maha. This increase is solely attributed to the increase in cost for labour (by 79%) which is the prime component in the cost of maize.

According to the data on the net return from maize under rainfed condition during all the Maha seasons from 1991/92 to 1994/95 in Anuradhapura, farmers incurred losses when the imputed cost was included. When the imputed cost is excluded there is a return changing from Rs. 1,026/acre to Rs. 3,332/acre.

III. Domestic Marketing

The marketable surplus is 60 percent of the production. The balance 40 percent is consumed by the farmers' households. The highest share of the harvest is sold during the first month of the harvest. At village level, farmers selling to traders in the village or in the bazaar is the most common method of marketing. Also a few collecting agents come to the farms to purchase maize.

III.I Marketing Channels

Compared to the other subsidiary crops, there is no significant difference in the marketing of maize. However, there are three types of major intermediaries between the producers and consumers.

- (a) Farm level assemblers (local collectors, local traders and co-operatives who buy the crop directly from the farmers);
- (b) Intermediate buyers (who buy from other traders); and
- (c) Wholesalers (final purchasers in Colombo or other urban areas who buy from farm level assemblers/local collectors or intermediate buyers).

In the marketing channel, more than 70 percent is handled by the farm level assemblers in the country. The balance 30 percent is collected by local traders and co-operatives of the area.

According to the farmers, the prices they receive are not adequate. Little bargaining takes place to decide the price. The traders decide the price in advance depending on the availability and the price in Colombo. However, some studies indicate that producers generally receive 81-88 percent of the wholesale price in Colombo.

The Floor Price Scheme (FPS) was introduced in 1975 for maize and other crops. Hence, the production of maize increased considerably with immediate effect due to the restriction of imports. However, unduly low prices prevail at markets, during the harvesting time, which is a major problem of the farmers. After 1977, under the new economic policies, the scheme was not implemented further.

III.II Price Behaviour

Compared to other crops, the producer price within the year has been stabilized to some extent. Looking at the period 1991-95, the producer price has increased only on two occasions, between 1991-92 and 1994-95, but in a three year period, 1992-94, it has remained unchanged.

III.III Review of Marketing Cost

There are no high post-harvest losses for maize. Hence, the marketing cost is relatively low compared to other OFCs.

IV. External Trade

Since 1980s there is a regular trend in the import of maize to Sri Lanka. The imports are mainly intended for livestock industry and other industrial purposes. The quantity of imports mainly depends on the local production. There are re-exports also to some countries for value addition.

IV.I Major Import/Export Countries

The major importing countries were China and India. Among the other import countries South Africa, Argentina, U.S.A. and Thailand were prominent.

Exports from Sri Lanka were very small. The highest quantity of exports was nearly 15 mt. recorded in 1990. The major exporting countries were Singapore, Maldives, Canada and Germany.

IV.II Trends in Imports/Exports (Quantity, Value and Prices)

Until 1984 there was no regular trend of importing a larger quantity of maize. Since 1984 the quantity imported has increased. This increase was about ten times between 1984-1990 and 70% between 1990-95. This increase in quantity in imports has been mainly due to the insufficiency of local production to fulfil the market requirements. On the other hand the local demand has increased owing to the development of the livestock sector specially in egg and meat industry.

As in the case of quantity, the import value also has increased over the years between 1984-1995 without much subjecting to the declines of CIF prices especially between 1992-95 because of the large scale increase in the import quantities.

The quantity of exports showed a declining trend during the period of 1993-95. In 1993 nearly 12 mt. have been exported. It has been nearly one mt. in 1994.

IV.III Trade Regulations

The trade regulations for maize are the same as for other subsidiary food crops. Since 1996, the rate of duty is 35%, Turnover Tax is 6% and National Security Levy is 4.5% for imports in both forms, seed and flour.

Compared with the duty rates in the early years, the rate of duty seems to have been on a decreasing trend under the free economic policies adopted by the government. For example the duty for maize was 75% in 1984 to 1986 and 60% in 1989. It was 45% in 1994.

V. Consumption

The per capita consumption of maize has declined over time. The Consumer Finance and Socio-Economic Survey 1981/82 has indicated that the per capita consumption of maize was 42.3 grams per month and it has declined to 21.9 grams by 1986/87. According to the Household Income and Expenditure Survey conducted by the Dept. of Census and Statistics, the per capita consumption of maize was 18.8 grams per month in 1990/91. Considering the higher protein content of maize than rice or wheat, the declining trend in its consumption pattern is an issue that needs more attention to be paid.

According to the Department of Agriculture, the national requirement of maize for 1997 and the next 3 years are as follows:-

Year	National Requirements (mt '000)
1997	105
1998	107
1999	108
2000	109

The data indicate an increasing trend in the national requirement. The local production is not enough to fulfil the market demand, which expands mainly due to the livestock industry, which is growing rapidly.

VI.II Government Policy and its Review

The government policy for improving maize production has been operationalized by assuring an attractive/protective price for farmers through different forms of actions in different periods. During the period 1970-77, like most other food crops, the import of maize was banned in order to promote the local farmers. This policy had a positive impact. But after 1977 under the liberalized economic policies, imports were resumed and this resulted in creating a marketing problem for the local farmers.

As a solution, the government introduced a floor price scheme for maize too since 1984. Under this maize was purchased at Rs.3.00/Kg in 1984, Rs.4.00/Kg in 1986, Rs.5.25/Kg in 1991 and Rs.6.00/Kg in 1993. Some studies (HARTI, 1987, p.67) have shown that this increase in the purchase price has not been in line with the increase in the cost of production thus reducing the net income of farmers who grow maize.

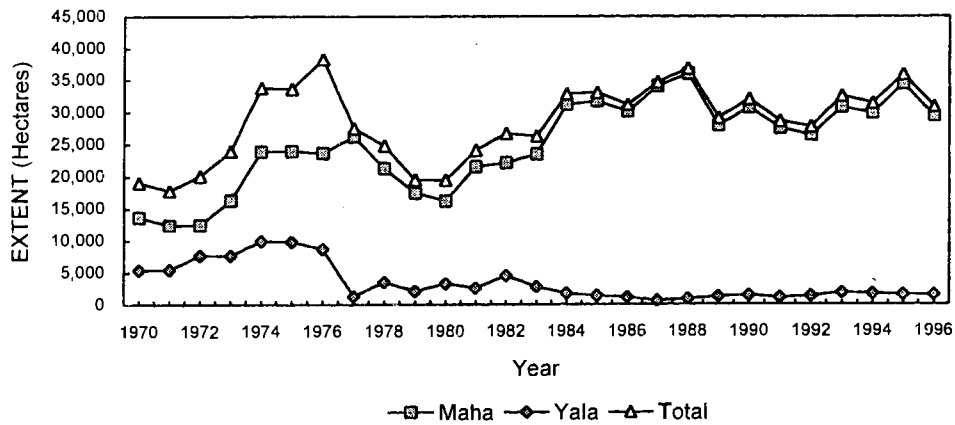
The PMB had been a major buyer of the produce. In 1984 it has purchased 3,152 mt of maize. The highest amount of purchases it has done was in 1988, which was 42,808 mt. Thereafter the purchased amount has gone down. Unless there was pressure from the government, the PMB was not in a position to purchase maize from farmers and it did not provide any facilities either. So, farmers did not benefit much from the floor price.

Table 2.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF MAIZE - SRI LANKA

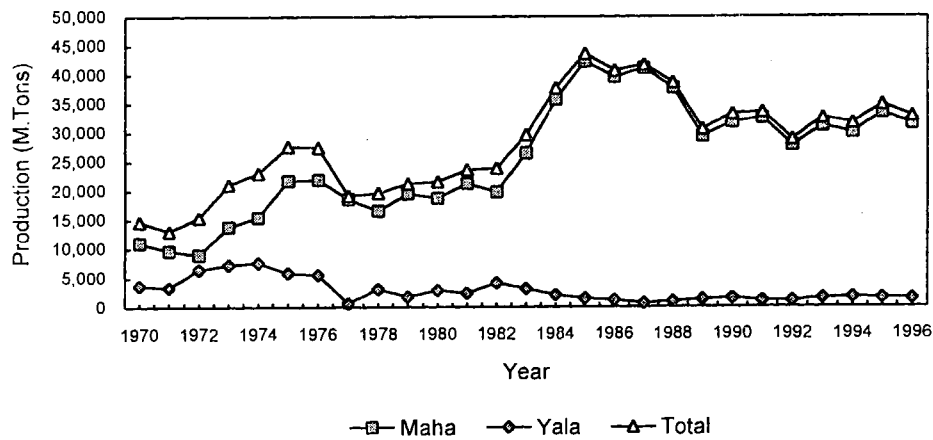
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1970	13,673	5,388	19,061	11,026	3,661	14,687	806	679	771
1971	12,399	5,413	17,812	9,664	3,356	13,020	779	620	731
1972	12,491	7,610	20,101	8,934	6,466	15,400	715	850	766
1973	16,336	7,609	23,945	13,821	7,251	21,072	846	953	880
1974	23,917	9,883	33,800	15,444	7,611	23,055	646	770	682
1975	23,932	9,765	33,697	21,766	5,853	27,619	909	599	820
1976	29,637	8,643	38,280	21,910	5,507	27,417	927	637	716
1977	26,205	1,263	27,468	18,555	639	19,194	708	506	699
1978	21,302	3,468	24,770	16,525	3,077	19,602	776	887	791
1979	17,448	2,043	19,491	19,473	1,753	21,226	1,116	858	1,089
1980	16,215	3,218	19,433	18,728	2,871	21,599	1,155	892	1,111
1981	21,557	2,524	24,081	21,232	2,381	23,613	985	943	981
1982	22,171	4,514	26,685	19,762	4,105	23,867	891	909	894
1983	23,484	2,762	26,246	26,449	3,102	29,551	1,126	1,123	1,126
1984	31,203	1,678	32,881	35,654	2,016	37,670	1,143	1,201	1,146
1985	31,706	1,355	33,061	42,217	1,439	43,656	1,332	1,062	1,320
1986	30,091	1,111	31,202	39,562	1,139	40,701	1,315	1,025	1,304
1987	34,058	607	34,665	41,065	614	41,679	1,206	1,012	1,202
1988	35,955	857	36,812	37,699	904	38,603	1,049	1,055	1,049
1989	27,895	1,212	29,107	29,293	1,285	30,578	1,050	1,060	1,051
1990	30,673	1,406	32,079	31,703	1,489	33,192	1,034	1,059	1,035
1991	27,499	1,066	28,565	32,456	1,037	33,493	1,180	973	1,173
1992	26,419	1,302	27,721	27,743	1,060	28,803	1,050	814	1,039
1993	30,802	1,792	32,594	31,073	1,478	32,551	1,009	825	999
1994	29,824	1,671	31,495	29,974	1,622	31,596	1,005	971	1,003
1995	34,455	1,483	35,938	33,340	1,496	34,836	968	1,009	969
1996	29,391	1,504	30,895	31,430	1,394	32,824	1,069	927	1,062

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

Graph 2.1
EXTENT OF MAIZE



Graph 2.2
PRODUCTION OF MAIZE



Graph 2.3
AVERAGE YIELD OF MAIZE

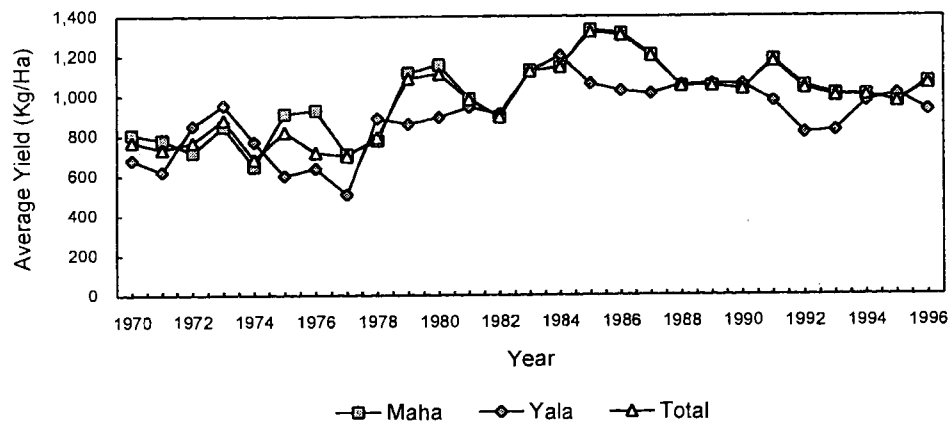


Table 2.2
EXTENT OF MAIZE BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG (91-95)	%
Anuradhapura	Maha	2,700	3,021	6,748	5,730	5,635	5,769	7,699	6,752	12,218	7,615	
	Yala	1,509	-	355	168	167	75	79	81	82	97	
	Total	4,209	3,021	7,103	5,898	5,802	5,844	7,778	6,833	12,300	7,711	24.6
Ampara	Maha	2,127	274	5,320	5,479	5,248	5,019	5,118	5,624	5,507	5,303	
	Yala	388	-	37	365	36	49	54	148	213	100	
	Total	2,515	274	5,357	5,844	5,284	5,068	5,172	5,772	5,720	5,403	17.2
Badulla	Maha	4,355	4,012	5,872	5,080	4,585	4,621	5,455	5,510	5,368	5,108	
	Yala	1,872	472	129	105	105	106	217	240	246	183	
	Total	6,227	4,484	6,001	5,185	4,690	4,727	5,672	5,750	5,614	5,291	16.9
Moneragala	Maha	7,928	6,285	3,481	5,739	5,470	4,574	4,806	5,661	5,263	5,155	
	Yala	784	670	66	110	113	34	99	98	114	92	
	Total	8,712	6,955	3,547	5,849	5,583	4,608	4,905	5,759	5,377	5,246	16.7
Matale	Maha	901	1,367	1,186	2,480	1,977	1,465	1,154	1,154	1,246	1,399	
	Yala	45	741	159	16	74	66	68	38	37	57	
	Total	946	2,108	1,345	2,496	2,051	1,531	1,222	1,192	1,283	1,456	4.6
Kurunegala	Maha	1,392	622	967	931	832	889	1,067	1,046	807	928	
	Yala	357	130	44	208	187	140	227	228	70	170	
	Total	1,749	752	1,011	1,139	1,019	1,029	1,294	1,274	877	1,099	3.5
Other *	Maha	10,529	634	8,132	5,234	3,752	4,082	5,503	4,077	4,046	4,292	
	Yala	4,810	1,205	565	434	384	832	1,048	838	721	765	
	Total	15,339	1,839	8,697	5,668	4,136	4,914	6,551	4,915	4,767	5,057	16.1
SRI LANKA	Maha	29,932	16,215	31,706	30,673	27,499	26,419	30,802	29,824	34,455	29,800	
	%	75.4	83.4	95.9	95.6	96.2	95.3	94.5	94.6	95.8	95.3	
	Yala	9,765	3,218	1,355	1,406	1,066	1,302	1,792	1,671	1,483	1,463	
	%	24.6	16.5	4.1	4.3	3.7	4.7	5.5	5.3	4.1	4.6	
	Total	39,697	19,433	33,061	32,079	28,565	27,721	32,594	31,495	35,938	31,263	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kegalle Ratnapura, Kandy, Nuwara-Eliya, Jaffna, Vavuniya, Mannar, Mullativu, Polonnaruwa, Trincomalee, Batticaloa, Hambantota, Killinochchi & Mahaweli H districts

Primary Source : Dept. of Census & Statistics

Table 2.3
PRODUCTION OF MAIZE BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
AMPARA	Maha	2,011	3,241	9,130	7,032	7,353	6,973	6,403	7,117	7,645	7,098	
	Yala	292	-	42	384	46	57	81	221	335	148	
	Total	2,303	3,241	9,172	7,416	7,399	7,030	6,484	7,338	7,980	7,246	22.5
ANURADHAPURA	Maha	1,341	2,552	10,382	6,289	6,999	4,549	6,529	5,992	9,413	6,696	
	Yala	275	-	506	183	139	65	83	93	92	94	
	Total	1,616	2,552	10,888	6,472	7,138	4,614	6,612	6,085	9,505	6,791	21.1
MONERAGALA	Maha	5,362	3,717	5,200	4,772	6,014	4,793	5,100	5,036	4,837	5,156	
	Yala	570	459	120	174	157	49	151	132	155	129	
	Total	5,932	4,176	5,320	4,946	6,171	4,842	5,251	5,168	4,992	5,285	16.4
BADULLA	Maha	3,322	3,190	6,513	5,273	4,768	4,817	4,905	4,980	4,920	4,878	
	Yala	1,620	570	118	96	93	88	97	163	176	123	
	Total	4,942	3,760	6,631	5,369	4,861	4,905	5,002	5,143	5,096	5,001	15.5
MATALE	Maha	759	1,796	1,174	2,821	2,595	1,484	1,040	1,125	1,226	1,494	
	Yala	52	473	159	8	49	66	79	49	49	58	
	Total	811	2,269	1,333	2,829	2,644	1,550	1,119	1,174	1,275	1,552	4.8
OTHER *	Maha	8,971	4,232	9,818	5,516	4,727	5,127	7,096	5,724	5,299	5,595	
	Yala	3,044	1,369	494	14,044	553	735	987	964	689	786	
	Total	12,015	5,601	10,312	19,560	5,280	5,862	8,083	6,688	5,988	6,380	19.8
SRI LANKA	Maha	21,766	18,728	42,217	31,703	32,456	27,743	31,073	29,974	33,340	30,917	
	%	78.8	86.7	96.7	68.0	96.9	96.3	95.5	94.9	95.7	95.9	
	Yala	5,853	2,871	1,439	14,889	1,037	1,060	1,478	1,622	1,496	1,339	
	%	21.2	13.3	3.3	32.0	3.1	3.7	4.5	5.1	4.3	4.1	
	Total	27,619	21,599	43,656	46,592	33,493	28,803	32,551	31,596	34,836	32,256	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ratnapura, Kandy, Nuwara-Eliya, Jaffna, Vavuniya, Mannar, Mullativu, Polonnarwawara, Trincomalee, Batticaloe, Hambantota, Killinochchi, & Mahaweli _H Districts

Primary Source : Dept. of Census & Statistics

Table 2.4
COST OF CULTIVATION PER ACRE OF MAIZE (RAINFED) BY INPUTS IN
ANURADHAPURA (Rs./Acre)

INPUT	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha
Labour	4,569	4,613	3,585	6,400
Seed	64	72	54	74
Fertilizer	-	-	-	-
Agro-Chemicals	-	-	-	-
Draught Power	-	-	-	-
Machinery & Equipment	-	-	-	-
Total	4,633	4,685	3,639	6,474

Source: Dept. of Agriculture

Table 2.5
NET RETURN PER ACRE OF MAIZE (RAINFED) BY SEASONS
IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
91/92 Maha	(1,235)	2,545
92/93 Maha	(1,341)	2,190
93/94 Maha	(1,783)	1,026
94/95 Maha	(2,389)	3,332

Negative returns are given in paranthesis

Source: Dept. of Agriculture

Table 2.6
AVERAGE PRODUCER PRICES OF MAIZE - SRI LANKA
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	4.67	6.10	6.92	6.93	7.70	10.06
February	5.68	6.48	6.35	6.53	8.43	9.46
March	5.29	6.29	6.58	6.76	9.30	11.17
April	5.36	6.56	6.46	6.97	9.03	10.47
May	5.54	7.40	6.57	6.85	9.86	10.30
June	5.72	7.41	6.23	7.15	9.83	10.03
July	6.11	7.35	6.68	6.92	9.83	10.26
August	6.07	7.46	6.24	6.68	9.74	10.29
September	6.11	7.66	8.70	7.30	9.56	10.62
October	5.58	7.58	8.26	8.06	9.40	11.09
November	5.61	7.50	8.46	8.15	9.38	10.75
December	5.47	7.28	8.05	8.02	9.71	11.33
An. Average	5.67	7.05	7.19	7.21	9.31	10.51

Source : Dept. of Census & Statistics

Table 2.7
IMPORTS OF MAIZE

Year (Mt)	Quantity (000 Rs)	Value (Rs/Kg)	CIF Price
1970	*	0.2	3.10
1971	3,512.4	1,844.3	0.53
1972	399.6	186.5	0.47
1973	-	-	-
1974	5,317.4	7,513.5	1.41
1975	*	1.4	15.49
1976	-	-	-
1977	-	-	-
1978	-	-	-
1979	1,000.0	2,929.3	2.93
1980	-	-	-
1981	2.0	23.7	6.65
1982	2,461.2	12,305.5	4.49
1983	20.6	779.1	37.82
1984	4,200.0	17,098.7	4.07
1985	13,796.5	62,138.7	3.95
1986	30,103.0	113,148.0	2.91
1987	13,708.0	129,168.6	9.42
1988	13,572.6	97,332.4	7.17
1989	29,601.4	167,800.2	5.67
1990	46,051.7	290,668.4	6.31
1991	53,381.8	484,950.5	9.08
1992	34,843.0	336,775.8	9.67
1993	80,762.3	535,122.0	6.62
1994	84,824.3	587,843.1	6.91
1995	80,058.6	634,735.0	7.92
1996	35,502.0	425,600.0	11.99

* Negligible

Source : Dept. of Customs

Table 2.8
IMPORTS OF MAIZE BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
China	48,393.00	399.20	34,803.00	336.10	76,110.00	502.00	48,714.00	334.70	2.00	*	4.00	0.10
Thailand	3,044.00	75.80	40.00	0.70	NR	0.70	257.00	2.00	-	-	2.00	0.20
India	-	-	-	-	201.00	1.30	18,003.00	118.40	4,689.00	44.70	6,302.00	70.16
Kenya	1,894.00	9.90	-	-	-	-	-	-	-	-	-	-
South Africa	-	-	-	-	-	-	17,850.00	132.70	22,047.00	109.50	-	-
Hong Kong	-	-	-	-	4,451.00	31.20	-	-	-	-	-	-
U.S.A.	-	-	-	-	-	-	-	-	20,606.00	190.60	-	-
Argentina	-	-	-	-	-	-	-	-	32,715.00	289.10	12,887.00	170.37
Singapore	9,281.00	110.20	-	-	-	-	-	-	-	-	-	-
Burma	4,222.00	44.27	-	-	-	-	-	-	-	-	-	-
Netherland	-	2,800.00	30.20	-	-	-	-	-	-	-	-	-
Other Countries	-	-	-	-	-	-	-	-	*	0.80	4.00	0.10
TOTAL	53,331.00	484.90	34,843.00	336.80	80,762.00	535.20	84,824.00	587.80	80,059.00	634.70	35,502.00	425.60

* - Negligible NR - Not reported

Source : Dept. of Customs

Table 2.9
IMPORTS OF MAIZE FLOUR BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
India	-	-	-	-	-	-	250.00	2.10	300.00	2.40	601.00	5.92
Netherlands	21.00	0.30	-	-	-	-	21.00	0.30	38.00	0.80	-	-
France	-	-	-	-	-	-	-	-	81.00	1.60	60.00	1.30
Singapore	4.00	0.50	-	-	-	-	-	-	-	-	-	-
Thailand	210.00	2.69	-	-	-	-	-	-	-	-	-	-
Other Countries	*	*	*	*	2.00	*	3.00	0.40	4.00	0.10	2.00	0.20
TOTAL	21.00	0.30	*	*	2.00	*	274.00	2.80	423.00	4.90	877.00	9.98

* - Negligible

Source : Dept. of Customs

3. KURAKKAN

I. Introduction

Kurakkan (*Eleusine coracana*) or finger millet (red millet) is one of the important cereal crops of the chenas in the Dry Zone. It belongs to the family Poaceae.

Its nutritive value is very high especially in protein (7% of high quality protein), fat and minerals than rice, maize or sorghum. It provides a sustaining diet to the people who do hard work. Some other useful characteristics of this crop are: it is relatively free by nature from pests and diseases which makes its quality sufficient to store well for long periods without any damage, its plants are largely self-fertilized and are also capable of resisting even severe droughts. The varietal differences of Kurakkan are based on the period of maturity, habit of growth, size, shape and colour of earheads, yielding capacity, size and quality of the grain.

Kurakkan requires 20-35 inches of rain. It can be grown well up to an elevation of 4,000 feet provided rainfall is moderate. As it is a moisture loving crop, it is well adapted to the Dry Zone conditions during Maha season. It can be grown even in Yala with supplementary irrigation during critical periods. The paddy fields are also suitable during Yala if water logging is prevented.

Kurakkan develops well in all well-drained soils, but silt loams are the most desirable (Dept. of Agric., 1990,p.4).

The recommended varieties by the Dept. of Agriculture for all the districts are undermentioned. Their potential yield level is 2,400 kg/ha.

Recommended Varieties of Kurakkan

Variety	Days to maturity
M1 301	115-120
M1 302	115-120
CO 10	90-100
KM 1	90-100

II. Production

II.I Major Producing Districts

As seen in the five years 1991-1995 production averages in Anuradhapura (21%), Hambantota (16%), Matale (12%) and Moneragala (11%) account for 60% of the total production. Other districts which contribute substantially to the national production are Nuwara Eliya (6%), Kurunegala (6%) and Ratnapura (6%).

These districts, with different orders, have taken the priority with regard to the extents grown. Anuradhapura (21%), Matale (13%), Hambantota (12%), Moneragala (11%) and Kurunegala (8%) account for 65% of the total extent in the same periods.

II.II Seasonality of Production

Kurakkan is purely a Maha season crop and it mainly grows in chenas under rainfed. The seasonality breakdown of production data for the referenced period indicate that nearly 86% of the production comes from Maha. In some years it was more, eg. in 1990 it was nearly 93%.

II.III Trends in Production, Cultivated Area and Average Yields

Both production and the extent have sharply increased (99% and 62% respectively) between 1972 and 1975 indicating a progress over the years in that period. After 1975 there was a declining trend of both production and the extent. This trend was very sharp between 1975-79 and slight between 1979-1996.

The encouragement of the people by the government which was in power between 1970-77 to grow more and more local foods has been a major reason for the increase in extent as well as the production during 1972 to 1975. Reduction of chena lands and drawing more attention towards commercial crops and changes in food habits even among rural people have been some of the major reasons for a greater decline in the extent and production of Kurakkan during the last two decades.

The average yield data indicate a stagnation between 1970-72 (around 565 kg/ha.) and thereafter a decline until 1975. However after 1975, the yield has gradually increased over the years until 1983 when the highest yield of 714 kg/ha. was achieved. Thereafter, there was stagnation.

II.IV Review of Agricultural Inputs

No recent data are available on agricultural inputs or cost of production of Kurakkan.

III. Domestic Marketing

Farmers sell to the resident traders who in turn sell to the demand side wholesalers who come by trucks. The balance stock is sent to the Colombo market on commission basis.

Only producer prices are available. The price increased from Rs. 7.77/kg. in 1991 to Rs. 13.18/kg. in 1995, registering a 70% increase. This was due to the decline of production by 26% during the period concerned.

Except for a small reduction in prices in February-March after the Maha crop and in June-July after the Yala crop, there is no significant change in prices throughout the year. The major reason for this has been the limited demand available for Kurakkan. Even the available demand is from the companies which process Kurakkan for various purposes.

No detailed information on the marketing cost is available.

IV. External Trade

Kurakkan also has been exported. Since the very recent past, imports have been done for animal feed. Statistics on export are available from the year 1985 when exporting with substantial amounts was started.

IV.I Major Import/Export Countries

Based on export statistics from 1991 to 1995, Malaysia and Pakistan were the two countries to which the largest amounts were exported. U.A.E is the other country to which the next largest amount was exported in the referred period.

IV.II Trends in Exports/Imports in Quantity, Value and Price

There has been an increasing trend in exports between 1985 and 1991 and thereafter a decreasing trend until 1995. The highest exports were recorded in 1991 which amounted to 55.5 mt. Before that year exports never recorded over 3.6 mt, and thereafter not recorded over 0.6 mt.

As well as the quantity exported, the export value has also increased from Rs. 3,000 in 1986 to Rs. 763,823 in 1991 and thereafter it has decreased to Rs. 19,551 in 1995.

The export prices vary for different countries as well as in different years. For example, in 1991 Kurakkan exported to Pakistan has been priced at Rs. 13.57/kg. and to U.A.E. at Rs. 34.55/kg. Then in 1992 it was priced at Rs. 68.80/kg. and in 1993 at Rs. 42.57/kg respectively.

The imports indicate an increasing trend over the years. Exports have increased (by 172%) from 18 mt. in 1991 to 41 mt. in 1993 and to 499 mt. (a 918% increase) in 1996.

The value of import has declined from Rs. 0.8 million in 1991 to Rs. 0.2 million in 1993 and it increased to Rs. 4 million in 1996.

IV.III Export Trade Regulations

The export trade regulations for Kurakkan from 1996 have been 35% duty, 6% turn over tax and 4.5% national security levy.

V. Consumption

The per capita consumption of Kurakkan has declined over the years between 1973-1986/87. Kurakkan is mainly consumed by rural people of which a higher consumption is registered among the middle class people.

VI. Government Policy

Under the import substitute development policies and local food production drives during 1971-77, cultivation of Kurakkan was also indirectly encouraged. The ban on importation of many crops and high duty rates imposed on imports led to an increase in the demand and prices of many local foods including Kurakkan.

After 1977, the government has paid attention on farmers who grow Kurakkan by including it under the floor price scheme in 1979. The price paid under this scheme in 1981 was Rs.2.00/kg. and it increased to Rs.2.75 in 1982, to Rs.4.50 in 1986 and finally to Rs.5.00 in 1990. It was the same even in 1993. This programme has not been much effective on the farmers due to the following reasons:-

- (i) The purchases have been done on ad hoc basis, eg. 3 Mt. in 1984 and 4 Mt. in 1987 were the recorded purchases;
- (ii) The price paid under the floor price scheme has been constant for a long period and insufficient to yield a net profit.

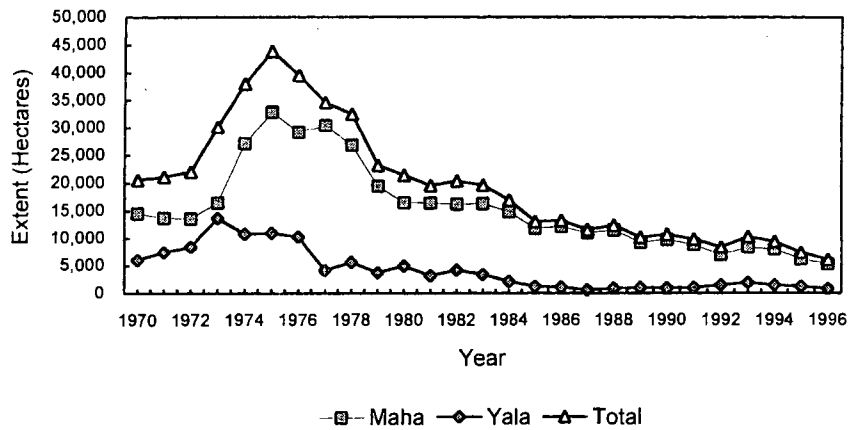
The present government has identified Kurakkan as a food crop and it has been included in the group of 12 commodities for which the government introduced a threshold price.

Tablet 3.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF KURAKKAN - SRI LANKA

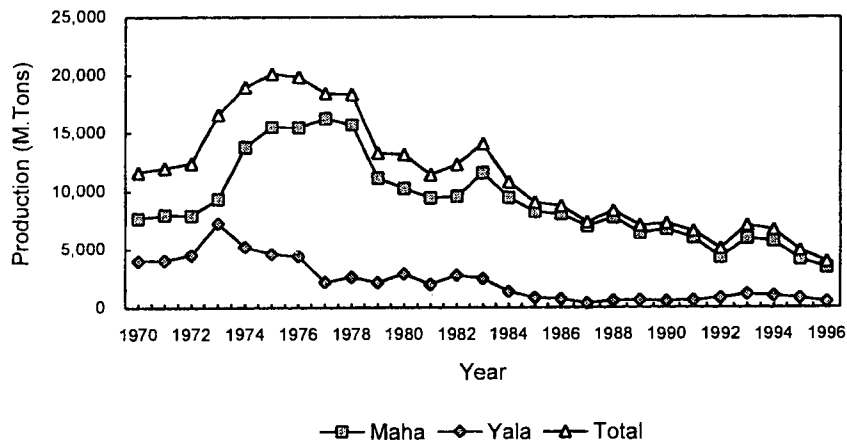
YEAR	EXTENT (Ha)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	14,524	6,045	20,569	7,642	3,988	11,630	526	660	565
1971	13,687	7,479	21,166	7,946	4,020	11,966	581	537	565
1972	13,585	8,486	22,072	7,888	4,491	12,379	581	529	561
1973	16,494	13,687	30,181	9,341	7,237	16,578	566	529	549
1974	27,148	10,845	37,993	13,752	5,222	18,974	507	481	499
1975	32,837	10,980	43,817	15,518	4,589	20,107	473	418	459
1976	29,183	10,326	39,509	15,458	4,391	19,849	530	425	502
1977	30,428	4,174	34,602	16,251	2,158	18,409	534	517	532
1978	26,832	5,661	32,493	15,720	2,612	18,332	586	461	564
1979	19,487	3,733	23,220	11,123	2,147	13,270	571	575	571
1980	16,487	4,954	21,441	10,241	2,878	13,119	621	581	612
1981	16,437	3,163	19,600	9,441	1,974	11,415	574	624	582
1982	16,208	4,193	20,401	9,545	2,737	12,282	589	653	602
1983	16,280	3,376	19,656	11,579	2,464	14,043	711	730	714
1984	14,803	2,124	16,927	9,425	1,338	10,763	637	630	636
1985	11,837	1,233	13,070	8,210	819	9,029	694	664	691
1986	12,146	1,081	13,227	8,002	719	8,721	659	665	659
1987	11,002	596	11,598	6,957	367	7,324	632	616	631
1988	11,524	838	12,362	7,731	573	8,304	671	684	672
1989	9,248	951	10,199	6,381	639	7,020	690	672	688
1990	9,808	910	10,718	6,696	520	7,216	683	571	673
1991	8,857	983	9,840	5,964	601	6,565	673	611	667
1992	6,975	1,414	8,389	4,247	790	5,037	609	559	600
1993	8,417	1,898	10,315	5,912	1,127	7,039	702	594	682
1994	7,983	1,465	9,448	5,682	990	6,672	712	676	706
1995	6,208	1,231	7,439	4,088	788	4,876	659	640	655
1996	5,306	823	6,129	3,401	505	3,906	641	614	637

Source: Department of Census and Statistics
Data Development Unit of HARTI

Graph 3.1
EXTENT OF KURAKKAN



Graph 3.2
PRODUCTION OF KURAKKAN



Graph 3.3
AVERAGE YIELD OF KURAKKAN

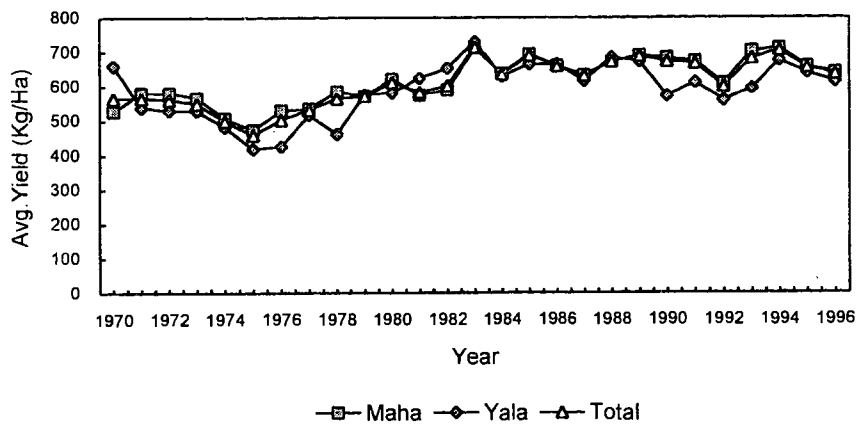


Table 3.2
EXTENT OF KURAKKAN BY MAJOR GROWING DISTRICTS (Hectares)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
ANURADHAPURA	MAHA	6,964	3,383	2,610	2,263	2,190	1,160	2,109	2,050	1,137	1,729	
	YALA	985	1	0	12	13	25	44	47	47	35	
	TOTAL	7,948	3,384	2,610	2,275	2,203	1,185	2,153	2,907	1,184	1,926	21.2
MATALE	MAHA	2,548	2,336	1,595	1,996	1,855	1,562	678	922	851	1,174	
	YALA	154	1,597	65	6	42	38	23	8	8	24	
	TOTAL	2,702	3,933	1,660	2,002	1,897	1,600	701	930	859	1,197	13.2
HAMBANTOTA	MAHA	2,950	1,202	825	738	783	830	916	846	953	866	
	YALA	1,344	244	249	108	216	189	229	228	208	214	
	TOTAL	4,295	1,446	1,074	846	999	1,019	1,145	1,074	1,161	1,080	11.9
MONERAGALA	MAHA	4,306	1,989	1,388	1,148	713	428	1,193	1,294	974	920	
	YALA	885	629	59	33	23	10	96	43	47	44	
	TOTAL	5,191	2,618	1,447	1,181	736	438	1,289	1,337	1,021	964	10.6
KURUNEGALA	MAHA	5,805	2,059	592	763	696	650	668	514	302	566	
	YALA	1,579	414	102	116	106	43	231	231	44	131	
	TOTAL	7,384	2,473	694	879	802	693	899	745	346	697	7.7
NUWARAELIYA	MAHA	466	203	701	334	338	289	635	452	295	402	
	YALA	586	25	124	87	80	397	389	79	60	201	
	TOTAL	1,052	228	825	421	418	686	1,024	531	355	603	6.6
BADULLA	MAHA	2,384	1,620	1,212	591	584	621	420	444	361	486	
	YALA	1,016	293	28	26	32	43	118	110	70	75	
	TOTAL	3,401	1,913	1,240	617	616	664	538	554	431	561	6.2
RATNAPURA	MAHA	1,814	1,252	858	254	259	274	342	391	399	333	
	YALA	1,402	742	109	94	90	169	178	168	186	158	
	TOTAL	3,216	1,994	967	348	349	443	520	559	585	491	5.4
OTHERS *	MAHA	5,600	2,443	2,056	1,721	1,439	1,161	1,456	1,070	936	1,212	
	YALA	3,029	1,009	497	428	381	500	590	551	561	517	
	TOTAL	8,629	3,452	2,553	2,149	1,820	1,661	2,046	1,621	1,497	1,729	19.0
SRI LANKA	MAHA	32,837	16,487	11,837	9,808	8,857	6,975	8,417	7,983	6,208	7,688	
	%	74.9	76.9	90.6	91.5	90.0	83.1	81.6	84.5	83.5	84.6	
	YALA	10,980	4,954	1,233	910	983	1,414	1,898	1,465	1,231	1,398	
	%	25.1	23.1	9.4	8.5	10.0	16.9	18.4	15.5	16.5	15.4	
	TOTAL	43,817	21,441	13,070	10,718	9,840	8,389	10,315	9,448	7,439	9,086	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Total of Jaffna, Kandy, Ampara, Puttalam, Polonnaruwa, Mahaweli H, Vavuniya, Batticaloe, Matara, Kilinochchi, Trincomalee, Mannar, Colombo, Kegalle and Gampaha districts.
Primary Source : Department of Census and Statistics.

Table 3.3
PRODUCTION OF KURAKKAN BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
ANURADHAPURA	MAHA	780	39	1,609	1,571	1,506	627	1,501	1,655	809	1,220	
	YALA	283	0	0	7	8	20	30	36	35	26	
	TOTAL	1,063	1,649	1,609	1,578	1,514	647	1,531	1,691	844	1,245	20.6
HAMBANTOTA	MAHA	1,293	593	685	681	673	725	970	937	676	796	
	YALA	583	120	235	67	135	157	205	237	138	174	
	TOTAL	1,876	713	920	748	808	882	1,175	1,174	814	971	16.1
MATALE	MAHA	1,630	2,172	1,111	1,479	1,222	898	385	546	504	711	
	YALA	121	638	39	4	21	19	9	5	5	12	
	TOTAL	1,751	2,810	1,150	1,483	1,243	917	394	551	509	723	12.0
MONERAGALA	MAHA	3,353	1,511	850	694	459	271	867	802	620	604	
	YALA	420	461	24	19	17	7	71	32	40	33	
	TOTAL	3,773	1,972	874	713	476	278	938	834	660	637	10.6
NUWARAELIYA	MAHA	245	125	567	213	216	185	485	343	207	287	
	YALA	107	16	99	54	50	144	141	39	32	81	
	TOTAL	352	141	666	267	266	329	626	382	239	368	6.1
KURUNEGALA	MAHA	3,051	1,269	379	393	408	334	296	231	161	286	
	YALA	673	225	54	65	61	23	139	128	23	75	
	TOTAL	3,724	1,494	433	458	469	357	435	359	184	361	6.0
RATNAPURA	MAHA	755	772	617	249	253	180	254	277	316	256	
	YALA	589	458	70	52	49	98	109	100	114	94	
	TOTAL	1,344	1,230	687	301	302	278	363	377	430	350	5.8
KANDY	MAHA	789	424	934	422	409	236	331	135	96	241	
	YALA	426	610	0	81	88	12	22	10	19	30	
	TOTAL	1,215	1,034	934	503	497	248	353	145	115	272	4.5
OTHERS *	MAHA	3,622	3,336	1,458	994	818	791	823	756	699	777	
	YALA	1,387	350	298	171	172	310	401	403	382	334	
	TOTAL	5,009	3,686	1,756	1,165	990	1,101	1,224	1,159	1,081	1,111	18.4
SRI LANKA	MAHA	15,518	10,241	8,210	6,696	5,964	4,247	5,912	5,682	4,088	5,179	
	%	77.2	78.1	90.9	92.8	90.8	84.3	84.0	85.2	83.8	85.8	
	YALA	4,589	2,878	819	520	601	790	1,127	990	788	859	
	%	22.8	21.9	9.1	7.2	9.2	15.7	16.0	14.8	16.2	14.2	
	TOTAL	20,107	13,119	9,029	7,216	6,565	5,037	7,039	6,672	4,876	6,038	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Total of Jaffna, Badulla, Ampara, Puttalam, Polonnaruwa, Mahaweli H, Vavuniya, Matara, Trincomalee, Batticaloe, Killinochchi, Mannar, Colombo, Kegalle and Gampaha districts.

Primary Source : Department of Census and Statistics.

Table 3.4
AVERAGE PRODUCER PRICES OF KURUKKAN - SRI LANKA UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	9.01	9.49	10.03	11.35	13.13	11.96
February	8.80	8.64	9.82	11.24	12.22	15.61
March	7.66	7.68	10.00	10.36	11.86	16.06
April	7.26	8.28	10.51	11.56	12.06	15.13
May	8.24	8.50	11.11	11.84	13.23	16.63
June	7.78	8.57	10.07	12.09	13.78	15.89
July	7.65	8.98	10.40	9.24	13.52	14.94
August	8.09	9.59	11.54	8.83	13.52	16.64
September	7.60	9.32	11.00	10.30	13.28	16.94
October	6.48	8.85	11.00	10.45	13.83	17.76
November	7.08	9.58	10.99	10.01	14.33	17.35
December	7.42	9.32	10.73	10.01	13.31	19.95
An. Average	7.77	8.88	10.59	10.62	13.18	16.70

Source: Dept. of Census & Statistics

Table 3.5
EXPORTS OF KURAKKAN BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Kg.)	Value (Rs000)	Qty. (Kg.)	Value (Rs000)	Qty. (Kg.)	Value (Rs000)	Qty. (Kg.)	Value (Rs000)	Qty. (Kg.)	Value (Rs000)	Qty. (Kg.)	Value (Rs000)
Malaysia	51,000	644.8	-	-	-	-	-	-	-	-	-	-
Pakistan	3,000	40.7	-	-	-	-	-	-	-	-	-	-
U.A.E.	1,210	41.8	500	34.4	350	14.9	40	2.7	76	2.60	291.00	10.70
kuwait	-	-	-	-	-	-	-	-	-	-	200.00	7.30
Other	320	36.6	125	5.3	75	25.2	192	6.6	143	16.90	86	3.40
Total	55,530	763.9	625	39.7	425	40.1	232	9.3	219	19.5	219	19.5

Source : Dept. of Customs

Table : 3.6
PER CAPITA CONSUMPTION OF KURAKKAN PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1973	0.6	4.8	-	3.6
1978/79	0.10	1.00	-	0.70
1981/82	0.10	1.60	0.10	1.20
1986/87	0.11	0.72	0.26	0.57

Primary Source : Central Bank of Sri Lanka

Table : 3.7
PER CAPITA CONSUMPTION OF KURAKKAN PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	0.84	-	0.66
101-200	-	-	-	-
201-400	-	0.95	-	0.79
401-600	0.40	0.98	-	0.86
601-800	-	1.37	-	1.19
801-1000	0.30	0.46	-	0.38
1001-1500	-	1.15	0.17	0.93
1501-2000	-	0.54	-	0.41
2001-3000	0.90	0.65	0.35	0.52
3001-5000	0.23	0.40	1.24	0.39
5001-10000	0.17	0.36	-	0.28
OVER 10000	0.20	0.33	-	0.16
Overall Avg.	0.10	0.70	0.20	0.50

Primary Source : Central Bank of Sri Lanka

4. GREEN GRAM

I. Introduction

Botnically green gram is known as *Vigna radiata* L. wilczek. It is grown at a temperature of 20-350 centigrade on a wide range of soil types, from light sandy soils to heavy clays.

II Production

The average production is in the range of 21,000 mt. per year with an extent of 25,000 ha.

II.I Major Producing Districts

Moneragale (23%), Hambantota (21%), and Kurunegala (20%) are the three major producing districts, contributing nearly 65% to the national production. The next important district is Anuradapura (5%). Kurunegala district contributed 31% to the national production in the late 1980s, but it has come down to 20% during the period 1991 -95. The percentage of contribution from Hambantota district increased from 10% in the late 1980s to 21% in the mid 1990s. Nevertheless, in terms of the extent under cultivation, Kurunegala district has the highest extent which accounts for 27% of the total extent. The second is Monaragala district (20%) followed by Hambantota (16%).

II.II Seasonality of Production

The major production season is Maha contributing nearly 75% to the national production and to the total extent. Cultivation during the Yala season is on the decline. The average Yala extent dropped to 6,768 ha. per season during the period 1991-95 from 10,362 ha. during the period 1986-1990. Similarly production declined to 5,395 mt. from 7,472 mt. per season for the same period. There is no yield variation for the two seasons.

II.III Trends in Production, Extent and Average Yield

Both production and the extent appear to be declining over time. The production declined to 16,013 mt. in 1995 from 26,951 mt. in 1990, which recorded the highest production during last ten years. This reflects a 41% decline. Similarly the cultivated extent dropped to 18,097 ha. in 1995 from 33,245 ha. in 1990 showing a decline of 46%. This was due to the availability of red dhal at a cheaper price as a result of the removal of import duty in 1994. However, the average yield shows an increasing trend: from 0.75 in 1986 to 0.88 mt/ha. in 1995. Nevertheless, there is a substantial gap between the potential and the actual yield. The yield potential is estimated at 1,250 kg for MI - 5 and 1,300 kg. for Type 77 per hectare in farmers' fields.

II.IV Review of Agricultural Inputs

Labour is the major input which accounts for over 90% of the total cost of production in 1993/94 Maha season. The cost of production increased by 37% during the period 1990/91 - 1993/94 Maha, because of increased labour charges. After the establishment of garment factories there was a problem of getting labour for agriculture.

III Domestic Marketing

Green gram is produced for the domestic market and it's market is thin. The bulk of the production is consumed in raw form and a small quantity is used for producing infant meals.

III.I Marketing Channels

Although both the public and the private sectors operate in marketing of green gram, the market share of the private sector is over 90%. In the public sector, CWE and MPCPS purchase green gram to meet their requirements. The procurement price is determined by themselves after examining the open market price. The CWE purchases through the MPCPS where farmers bring their stocks for sale. The CWE and MPCPS sell to consumers through their own retail outlet. The public sector does not undertake wholesaling. Farmers have two major market outlets: assemblers (collectors) and fairs (*polas*). The former is prominent at the farm level. They purchase and hold stocks. Farmers bring their stocks to the collecting centres located in towns in the producing areas for selling. Assembly traders sell to town wholesalers in consuming areas who come and buy at the centre, and to the Pettah Commission Agents. The Pettah market is the largest wholesale market in the country. Trading concentrates at 4th Cross Street and Old Moor Street. The number of traders is 26 at 4th Cross Street and 9 at Old Moor. The major buyers are retailers. Sri Lanka does not export green gram. Also, processing is very limited. A very few companies are involved in processing green gram into dhal. The average extraction rate is 80% from grains to dhal. The Indian made huller machine is used.

III.II Price Behaviour

The price of green gram is low during the period January to March in the year. This is the harvesting period of the Maha crop. There is a sharp increase in price in April due to the increased demand during the New Year festival period. Green gram is used for preparing confectionery items for the festival. The price of green gram remains stabilized from April to July and then increases rapidly. The price becomes peak in November. The producer gets around 65% of the consumer price.

III.III Review of Marketing Cost

Green gram is packed in a gunny bag which contains 70 kg of grains. The cost of a bag is Rs.25/-. The transport cost from major producing areas to Colombo is around Rs.30/- per bag. Loading and unloading charges are Rs.5/- per bag. Wastage is around 10%.

IV External Trade

Very small quantities are either imported or exported depending on the availability of the local supply. There is no quantitative restrictions in exporting or importing green gram. For imports, there is 35% duty, 20% turnover tax and 4.5% defence levy.

V Major Import/Export Countries

Not applicable

VI Consumption

The per capita annual consumption of green gram has increased from 0.11kg in 1978/79 to 0.71 kg. in 1986/87. The per capita consumption in the estate sector was 0.96 kg which is slightly higher than the national average. When the income rises, consumption of green gram is declining. The contribution of green gram to the Cost of living Index is 0.16%.

VII Government Policy and its Review

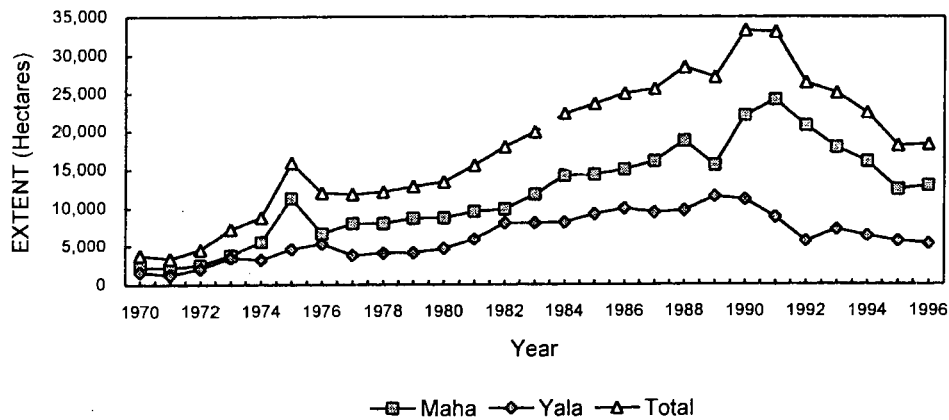
Until 1977 green gram was considered as a priority commodity in the agricultural development programmes. It was included in the list of commodities covered in the flour price scheme. After 1977 when open economic policies were introduced, priority was given to high value crops in which green gram was not included. However, today, the Presidential Task Force has identified 12 commodities as priority items and green gram is one of them.

Table 4.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF GREEN GRAM - SRI LANKA

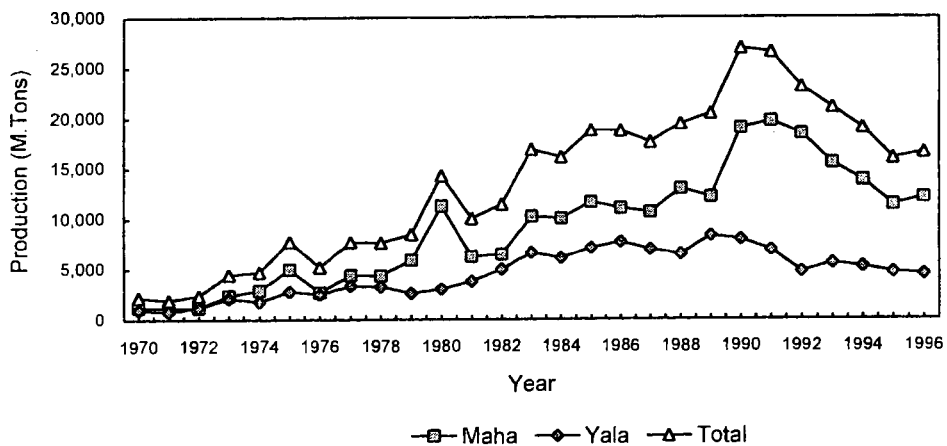
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1970	2,200	1,575	3,775	1,196	977	2,173	544	620	576
1971	2,129	1,212	3,341	1,129	794	1,923	530	655	576
1972	2,502	2,033	4,535	1,184	1,182	2,366	473	581	522
1973	3,763	3,454	7,217	2,366	2,074	4,440	629	600	615
1974	5,551	3,237	8,788	2,895	1,783	4,678	522	551	532
1975	11,275	4,620	15,895	4,984	2,784	7,768	442	603	489
1976	6,678	5,316	11,994	2,691	2,507	5,198	403	472	433
1977	8,036	3,812	11,848	4,361	3,329	7,690	543	873	649
1978	8,033	4,080	12,113	4,341	3,274	7,615	540	802	629
1979	8,701	4,139	12,840	5,899	2,594	8,493	678	627	661
1980	8,731	4,696	13,427	11,261	3,007	14,268	1,290	640	1,063
1981	9,596	5,943	15,539	6,248	3,772	10,020	651	635	645
1982	9,855	8,074	17,929	6,466	4,958	11,424	656	614	637
1983	11,775	8,089	19,864	10,233	6,624	16,857	869	819	849
1984	14,205	8,143	22,348	10,035	6,065	16,100	706	745	720
1985	14,360	9,255	23,615	11,656	7,102	18,758	812	767	794
1986	15,026	9,967	24,993	11,040	7,685	18,725	735	771	749
1987	16,106	9,471	25,577	10,644	6,939	17,583	661	733	687
1988	18,746	9,701	28,447	12,990	6,454	19,444	693	665	684
1989	15,591	11,532	27,123	12,150	8,330	20,480	779	722	755
1990	22,107	11,138	33,245	18,997	7,954	26,951	859	714	811
1991	24,210	8,822	33,032	19,729	6,855	26,584	815	777	805
1992	20,759	5,689	26,448	18,408	4,731	23,139	887	832	875
1993	17,877	7,231	25,108	15,540	5,536	21,076	869	766	839
1994	16,038	6,407	22,445	13,837	5,193	19,030	863	811	848
1995	12,405	5,692	18,097	11,353	4,660	16,013	915	819	885
1996	12,934	5,327	18,261	12,112	4,473	16,585	936	840	908

Source : Dept of Census & Statistics
Data Development Unit of HARTI

Graph 4.1
EXTENT OF GREEN GRAM



Graph 4.2
PRODUCTION OF GREEN GRAM



Graph 4.3
AVERAGE YIELD OF GREEN GRAM

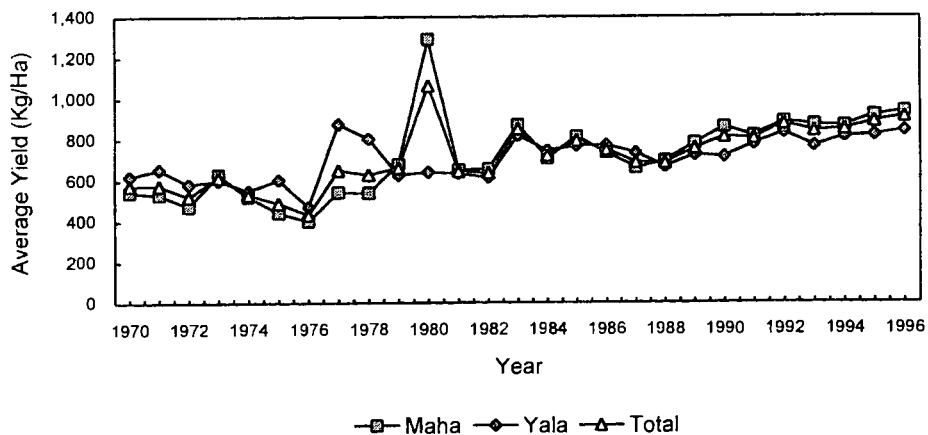


Table 4.2
EXTENT OF GREEN GRAM BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	Maha	1,987	2,828	6,067	6,070	5,272	5,959	5,963	5,036	2,524	4,951	26.9
	Yala	932	1,537	4,844	4,997	2,737	1,253	2,410	1,512	1,035	1,789	
	Total	2,919	4,365	10,911	11,067	8,009	7,212	8,373	6,548	3,559	6,740	
MONERAGALA	Maha	860	626	1,129	6,824	8,065	5,214	3,751	3,664	2,335	4,606	19.7
	Yala	252	237	270	1,403	759	82	334	227	189	318	
	Total	1,112	863	1,399	8,227	8,824	5,296	4,085	3,891	2,524	4,924	
HAMBANTOTA	Maha	1,801	1,628	1,544	3,486	3,789	3,295	3,099	2,179	2,334	2,939	16.1
	Yala	1,469	443	475	322	1,011	1,340	853	1,170	1,087	1,092	
	Total	3,270	2,071	2,019	3,808	4,800	4,635	3,952	3,349	3,421	4,031	
PUTTALAM	Maha	398	476	1,447	1,871	1,989	2,170	1,698	1,514	1,461	1,766	9.1
	Yala	151	453	1,483	544	365	514	580	514	584	511	
	Total	549	929	2,930	2,415	2,354	2,684	2,278	2,028	2,045	2,278	
RATNAPURA	Maha	563	649	1,078	1,036	1,028	1,087	448	591	559	743	5.9
	Yala	518	552	732	848	1,532	500	548	540	541	732	
	Total	1,081	1,201	1,810	1,884	2,560	1,587	996	1,131	1,100	1,475	
OTHER *	Maha	5,666	2,524	3,095	2,820	4,067	3,034	2,918	3,054	3,192	3,253	22.3
	Yala	1,298	1,474	1,451	3,024	2,418	2,000	2,506	2,444	2,256	2,325	
	Total	6,964	3,998	4,546	5,844	6,485	5,034	5,424	5,498	5,448	5,578	
SRI LANKA	Maha	11,275	8,731	14,360	22,107	24,210	20,759	17,877	16,038	12,405	18,258	100.00
	%	70.93	65.03	60.81	66.50	73.29	78.49	71.20	71.45	68.55	72.96	
	Yala	4,620	4,696	9,255	11,138	8,822	5,689	7,231	6,407	5,692	6,768	
	%	29.07	34.97	39.19	33.50	26.71	21.51	28.80	28.55	31.45	27.04	
	Total	15,895	13,427	23,615	33,245	33,032	26,448	25,108	22,445	18,097	25,026	
	%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

* Total of Anuradhapura, Badulla, Ampara, Polonnaruwa, Jaffna, Matale, Mahaweli h, Kilinochchi, Batticaloa Vavuniya, Mullativu, Trincomalee, Kandy, Mannar, Kegalle, Matara, Nuwara Eliya & Gampaha districts

Primary Source : Dept. of Census & Statistics

Table 4.3

PRODUCTION OF GREEN GRAM BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
MONERAGALA	Maha	906	637	942	6,685	7,766	5,658	3,626	3,354	2,343	4,549	
	Yala	105	181	256	1,371	737	76	334	231	204	316	
	Total	1,011	818	1,198	8,056	8,503	5,734	3,960	3,585	2,547	4,866	22.99
HAMBANTOTA	Maha	1,375	1,424	1,421	4,126	3,226	3,916	3,838	2,743	2,676	3,280	
	Yala	1,079	387	494	280	1,054	1,522	967	1,355	1,242	1,228	
	Total	2,454	1,811	1,915	4,406	4,280	5,438	4,805	4,098	3,918	4,508	21.29
KURUNEGALA	Maha	883	1,236	4,541	3,821	3,313	4,190	3,515	2,929	1,485	3,086	
	Yala	593	672	3,304	3,086	1,760	730	1,500	901	617	1,102	
	Total	1,476	1,908	7,845	6,907	5,073	4,920	5,015	3,830	2,102	4,188	19.78
PUTTALAM	Maha	143	336	286	558	853	959	1,237	1,255	1,223	1,105	
	Yala	51	264	481	212	146	439	486	389	416	375	
	Total	194	600	767	770	999	1,398	1,723	1,644	1,639	1,481	6.99
RATNAPURA	Maha	273	473	1,299	1,028	1,055	1,221	344	538	4	727	
	Yala	245	402	914	613	1,265	332	360	374	349	536	
	Total	518	875	2,213	1,641	2,320	1,553	704	912	825	1,263	5.97
OTHER *	Maha	1,404	7,155	3,167	2,779	3,516	2,464	2,980	3,018	3,150	3,026	
	Yala	711	1,101	1,653	2,392	1,893	1,632	1,889	1,943	1,832	1,838	
	Total	2,115	8,256	4,820	5,171	5,409	4,096	4,869	4,961	4,982	4,863	22.97
SRI LANKA	Maha	4,984	11,261	11,656	18,997	19,729	18,408	15,540	13,837	11,353	15,773	
	%	64.16	78.92	62.14	70.49	74.21	79.55	73.73	72.71	70.90	74.51	
	Yala	2,784	3,007	7,102	7,954	6,855	4,731	5,536	5,193	4,660	5,395	
	%	35.84	21.08	37.86	29.51	25.79	20.45	26.27	27.29	29.10	25.49	
	Total	7,768	14,268	18,758	26,951	26,584	23,139	21,076	19,030	16,013	21,168	
	%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Total of Anuradhapura, Badulla, Ampara, Polonnaruwa, Jaffna, Matale, Mahaweli h, Kilinochchi, Batticaloa
Vavuniya, Mullativu, Trincomalee, Kandy, Mannar, Kegalle, Matara, Nuwara Eliya & Gampaha districts

Primary Source : Dept. of Census & Statistics

Table 4.4
COST OF CULTIVATION PER ACRE OF GREEN GRAM (RAINFED) BY INPUTS
IN KURUNEGALA (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	90 Yala	91 Yala	92 Yala	93 Yala
Labour	2500	2255	3230	3729	1840	2146	NA	3580
Seed	236	206	163	175	166	140	NA	164
Fertilizer	174	—	—	—	—	—	NA	—
Agro-Chemicals	—	184	289	139	122	135	NA	280
Draught Power- Machinery & Equipment	39	—	—	—	—	—	NA	900
NA								
Total	2949	2645	3682	4043	2128	2421	NA	4924

N.A. - Data not available
Source: Dept. of Agriculture

Table 4.5
NET RETURN PER ACRE OF GREEN GRAM (RAINFED)
BY SEASONS IN KURUNEGALA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	1,694.00	2,700.00
90/91 Maha	1,046.00	3,013.00
91 Yala	1,139.00	2,935.00
91/92 Maha	1,188.00	3,304.00
92 Yala	NA	NA
92/93 Maha	1,463.00	4,583.00
93 Yala	(419.00)	3,353.00
93/94 Maha	(1,322.00)	1,544.00

NA - Not available
Source: Dept. of Agriculture

Table 4.6
MONTHLY AVERAGE WHOLESALE PRICE OF GREEN GRAM - PETTAH MARKET
UNIT : Rs/50Kg

Month	1991	1992	1993	1994	1995	1996
January	1,017.00	1,054.00	1,150.00	1,056.00	2,016.00	1,780.00
February	956.00	1,081.00	1,267.00	1,009.00	2,069.00	1,819.00
March	945.00	1,275.00	1,253.00	1,092.00	2,313.00	1,722.00
April	1,035.00	1,476.00	1,308.00	1,272.00	2,359.00	1,749.00
May	1,091.00	1,576.00	1,334.00	1,271.00	2,297.00	1,692.00
June	1,122.00	1,502.00	1,309.00	1,421.00	1,994.00	1,657.00
July	1,263.00	1,428.00	1,307.00	1,639.00	1,874.00	1,786.00
August	1,346.00	1,592.00	1,388.00	2,121.00	2,108.00	2,044.00
September	1,438.00	1,618.00	1,522.00	2,133.00	2,176.00	2,016.00
October	1,752.00	1,768.00	1,754.00	2,502.00	2,233.00	1,977.00
November	1,630.00	1,665.00	1,832.00	2,646.00	2,295.00	1,992.00
December	1,218.00	1,217.00	1,341.00	1,666.00	1,833.00	1,983.00
An. Average	1,234.00	1,437.67	1,397.08	1,652.33	2,130.58	1,851.42

Source : Marketing & Food Policy Division - HARTI

Table 4.7
MONTHLY AVERAGE RETAIL PRICE OF GREEN GRAM - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	29.26	29.31	32.30	31.55	46.61	48.03
February	28.26	28.45	31.43	29.65	49.79	47.55
March	26.38	30.38	31.88	29.37	51.73	44.87
April	25.59	35.33	33.03	32.67	56.84	45.62
May	26.02	37.70	33.55	32.90	56.48	44.40
June	26.33	37.69	33.90	34.24	54.01	43.86
July	28.68	35.44	33.15	38.16	50.30	44.57
August	32.23	37.48	34.02	46.76	50.02	47.16
September	32.83	38.20	34.95	50.51	51.35	47.47
October	40.59	39.28	38.95	55.15	53.18	47.45
November	42.22	40.36	42.22	64.95	55.32	47.54
December	36.36	38.16	39.52	50.83	53.45	47.59
An. Average	31.23	35.65	34.91	41.39	52.42	46.34

Source : Marketing & Food Policy Division - HARTI

Table 4.8
EXPORTS OF GREEN GRAM BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)
Maldives	1,002.00	40.17	538.00	34.51	942.00	62.81	160.00	14.75	701.00	48.35	1,017.00	67.75
Canada	5.00	4.25	-	-	2,080.00	103.97	NA	52.05	500.00	87.14	-	-
Japan	-	-	-	-	19.00	1.33	-	-	-	-	-	-
Lebanon	-	-	-	-	-	-	12,642.00	1,622.96	-	-	-	-
Germany	445.00	65.00	-	-	-	-	-	-	-	-	-	-
Other Countries	95.00	11.06	200.00	21.32	132.00	11.42	NA	0.29	591.00	35.55	176.00	22.11
TOTAL	1,102.00	55.48	738.00	55.83	3,173.00	179.53	12,802.00	1,690.05	1,792.00	171.04	1,638.00	154.86

NA - Not available
Source: Dept. of Customs

Table : 4.9
PER CAPITA CONSUMPTION OF GREEN GRAM PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.10	0.10	0.20	0.11
1981/82	0.40	0.40	0.40	0.40
1986/87	0.72	0.68	0.96	0.71

Primary Source : Central Bank of Sri Lanka

Table : 4.10
PER CAPITA CONSUMPTION OF GREEN GRAM PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	-	-	-
101-200	1.42	0.60	-	0.89
201-400	0.57	0.44	1.12	0.50
401-600	1.26	0.35	0.36	0.41
601-800	0.43	0.47	0.72	0.48
801-1000	0.21	0.49	1.33	0.54
1001-1500	0.47	0.52	0.65	0.53
1501-2000	0.66	0.67	1.13	0.72
2001-3000	0.54	0.79	0.99	0.77
3001-5000	0.79	0.89	1.22	0.88
5001-10000	1.01	0.98	2.12	1.00
OVER 10000	1.00	0.65	-	0.84
Overall Avg.	0.72	0.68	0.96	0.71

Primary Source : Central Bank of Sri Lanka

5. COWPEA

I. Introduction

Cowpea is botanically known as *vigna unguiculata* and belongs to *Faboceae* species. It is known as *Black eyed Pea in the US* and *China Bean or Black-eyed Bean* in most of other European countries. Although cowpea is considered to be a native of India and the Middle East, it was earlier cultivated in China. Although cowpea can be grown on a wide range of soils, best yields are obtained on sandy-to clay-loam soils which are well-drained and have a pH of 6-7. With regard to nutrient contents, there are slight differences between red dhal and cowpea as shown below. For instance, cowpea has 323 kcal of energy against 343 kcal for red dhal, 24.1g of protein against 25.1g for red dhal, and 54.5g of carbohydrates against 59.0g for red dhal per 100g of edible portion while calcium (77 mg), phosphorus (414 mg) and iron (5.9 mg) are higher than red dhal.

II. Production

Sri Lanka produces around 19,000 mt. per year in an extent of 22,000 ha. Cowpea is a rainfed crop mainly grown on marginal lands in the Dry Zone. Since it is not considered as a high value crop, cultivation under irrigation is not attractive. Farmers do not apply fertilizer and few use agrochemicals. Family labour is a major input.

II.I Major Producing Districts

About 80% of the production come from six districts: Kurunegala (21%), Ampara (14%), Moneragala (13%), Anuradhapura (12%), Hambantota (10%) and Puttalam (10%). The extent under cultivation in these districts accounts for 80% of the total area of cowpea in the country.

II.II Seasonality of Production

Cowpea is mainly grown in the Maha season which represents nearly 75% of the production and the area under cultivation. Yala cultivation is limited to the areas where water is inadequate for crops like paddy and chillies and is on the decline. The extent in Yala was 37% of the total in 1975, but the figure for 1995 was 27%.

II.III Trends in Production, Cultivated Area and Average Yield

Both production and the area under cultivation have increased continuously since 1970 to the mid 1980s and since then a declining trend could be observed. The highest extent and production since 1970 was reported in 1983 with 32,597 ha. of area and 30,752 mt. of production. The availability of red dhal freely under the open economic policy has caused a decline in the cultivation of cowpea. Cowpea dhal which had good demand in the 1970s, has disappeared in the market now.

The average yield remain less than one metric per hectare and there is no marked variation in between Yala and Maha. Yield has increased marginally from 728 kg/ha in 1970 to 900 kg/ha in 1996. MI35 is a popular variety among farmers and it has 1350 kg/ha of yield potential in farmers' fields.

II.IV. Review of Agricultural Inputs

Labour is the major input which accounts for nearly 90% of the total variable cost. The total variable cost per acre increased from Rs. 3,000 to 4,480 (50%) within the four seasons; 1990/91-1993/94 Maha. This is due to increased wages in the labour market. The net return per acre has declined to Rs. 1,070 in 1993/94 Maha season and it gives negative return when family labour is valued. This analysis was based on the information relating to Kurunegala district where production contributes one fourth of the total.

III. Domestic Marketing

Since cowpea is considered as an inferior commodity and mostly consumed by the farm households, it has a thin market. Cowpea dhal which had a good demand in the 1970s has almost disappeared in the market with the availability of imported red dhal.

III.I Marketing Channels

Farmers have two major marketing outlets: (1) assembly traders (collectors) and (2) *polas*. Assembly traders have established their own trading places where farmers bring cowpea for sale. These traders often keep stocks for future sale and the balance is sold to town wholesalers who come to buy and send the produce to Colombo for selling on commission basis. *Pola* located in the producing area is a place where farmers and traders meet each other for transactions. Most of the buyers come from major consuming areas and purchase on spot cash. They are town wholesalers who distribute goods among retailers located in and outside the town.

III.II Price Behaviour

Price is on the increase and the 1995 price has doubled compared to that of 1985. A rapid price increase was observed during 1989 and 1994. With regard to price variation within the year, price becomes peak in December and comes down with the arrival of the Maha harvest. This trend continues till June.

III.III Review of Marketing Cost

Cowpea is packed in gunny bags which cost Rs.20/- each. Transport cost from farm to the assembly market (within a distance of 10 miles) is around Rs.20/- per bag, while from producing areas to Colombo it is Rs.30/-. Loading and unloading cost at Pettah is Rs.5/- per bag.

IV. External Trade

Sri Lanka does not import or export cowpea on a commercial basis. Imports are allowed subject to 35% duty, 20% turn over tax and 4.5% defence levy.

V. Consumption

The per capita consumption is less than 500 grams per annum. The highest consumption is reported in the estate sector which is nearly double the national figure. With regard to income levels of the consumers, the highest consumption is attributed to the poorest income group earning less than Rs.200/- per month while consumption is almost zero in the case of families with a monthly income of above Rs.10,000/-.

VI Government Policy and its Review

Cowpea is one of the commodities included in the Floor Price Scheme introduced in 1970s, but not in operation now. In September 1997, the government introduced a new scheme for nine commodities where minimum prices for 1997/98 Maha season were announced. Cowpea is not in the list.

Table 5.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF COWPEA - SRI LANKA

YEAR	EXTENT (Ha.)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	2,567	1,571	4,137	1,781	1,231	3,011	694	784	728
1971	2,244	1,852	4,096	1,387	1,312	2,699	618	708	659
1972	2,626	2,867	5,493	1,550	1,616	3,166	590	564	576
1973	3,212	2,127	5,339	1,859	1,357	3,216	579	638	602
1974	3,837	1,937	5,774	2,380	1,013	3,393	620	523	588
1975	7,275	4,194	11,469	2,790	2,857	5,647	383	681	492
1976	7,436	4,131	11,567	4,782	2,802	7,584	643	678	656
1977	7,616	6,993	14,609	4,963	4,660	9,623	652	666	659
1978	8,524	4,771	13,295	8,263	4,107	12,370	969	861	930
1979	8,873	5,117	13,990	7,740	3,346	11,086	872	654	792
1980	15,630	6,993	22,623	11,059	5,435	16,494	708	777	729
1981	16,064	10,733	26,797	12,261	7,051	19,312	763	657	721
1982	18,665	12,994	31,659	12,896	8,784	21,680	691	676	685
1983	21,860	10,737	32,597	22,379	8,373	30,752	1,024	780	943
1984	18,673	9,368	28,041	15,153	6,579	21,732	811	702	775
1985	18,974	10,595	29,569	15,669	8,186	23,855	826	773	807
1986	18,194	9,511	27,705	16,425	8,182	24,607	903	860	888
1987	19,352	8,245	27,597	15,617	6,552	22,169	807	795	803
1988	16,272	7,933	24,205	13,626	6,318	19,944	837	796	824
1989	14,471	8,337	22,808	11,948	7,126	19,074	826	855	836
1990	18,756	7,548	26,304	16,760	6,104	22,864	894	809	869
1991	18,323	7,404	25,727	16,208	6,199	22,407	885	837	871
1992	15,423	5,755	21,178	12,496	4,957	17,453	810	861	824
1993	16,790	5,423	22,213	14,693	4,694	19,387	875	866	873
1994	15,598	5,379	20,977	13,790	4,814	18,604	884	895	887
1995	13,224	4,881	18,105	11,742	4,368	16,110	888	895	890
1996	13,182	5,702	18,884	11,887	5,110	16,997	902	896	900

Source : Department of Census and Statistics
Data Development Unit of HART I

Table 5.2

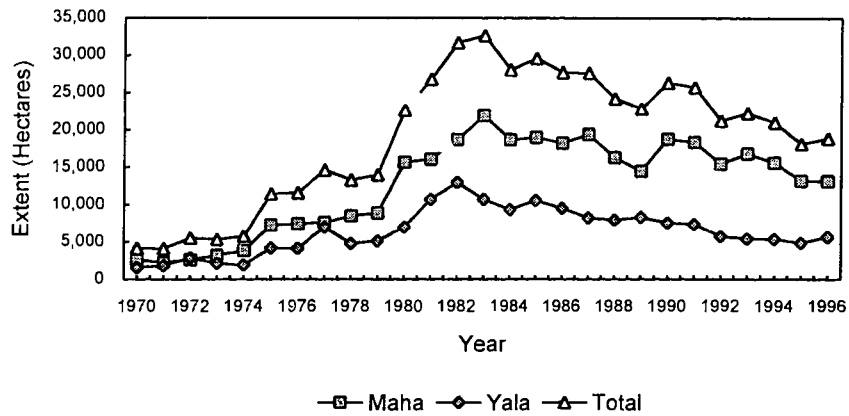
EXTENT OF COWPEA BY MAJOR GROWING DISTRICTS (Hectares)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	MAHA	933	4,334	5,228	4,990	4,768	4,118	3,771	3,310	2,062	3,606	24.8
	YALA	785	2,227	4,503	3,570	2,718	2,029	1,710	1,496	810	1,753	
	TOTAL	1,718	6,561	9,731	8,560	7,486	6,147	5,481	4,806	2,872	5,358	
AMPARA	MAHA	102	544	1,450	1,267	2,107	1,656	1,951	1,737	1,773	1,845	14.0
	YALA	78	465	177	872	1,188	1,061	1,114	1,112	1,452	1,185	
	TOTAL	180	1,009	1,627	2,139	3,295	2,717	3,065	2,849	3,225	3,030	
PUTTALAM	MAHA	514	4,399	2,166	2,776	2,706	2,736	2,027	1,808	1,769	2,209	12.9
	YALA	376	2,112	3,005	846	563	654	619	536	577	590	
	TOTAL	889	6,511	5,171	3,622	3,269	3,390	2,646	2,344	2,346	2,799	
ANURADHAPURA	MAHA	987	2,610	3,405	2,318	2,291	1,310	2,648	2,780	2,414	2,289	11.7
	YALA	651	347	229	234	222	217	243	250	233	228	
	TOTAL	1,638	2,610	3,752	2,547	2,525	1,532	2,865	3,023	2,664	2,522	
MONERAGALA	MAHA	943	541	1,946	2,677	1,484	1,709	1,926	2,257	1,630	1,801	10.4
	YALA	93	359	435	523	1,045	241	345	263	324	444	
	TOTAL	1,036	900	2,381	3,200	2,529	1,950	2,271	2,520	1,954	2,245	
HAMBANTOTA	MAHA	903	666	1,049	2,009	2,117	1,535	936	801	834	1,245	7.4
	YALA	700	201	258	154	347	410	268	463	307	359	
	TOTAL	1,603	867	1,307	2,163	2,464	1,945	1,204	1,264	1,141	1,604	
OTHERS *	MAHA	2,893	2,536	3,730	2,719	2,850	2,359	3,531	2,905	2,742	2,877	18.9
	YALA	1,511	1,629	1,870	1,354	1,309	1,138	1,150	1,266	1,161	1,205	
	TOTAL	4,404	4,165	5,600	4,073	4,159	3,497	4,681	4,171	3,903	4,082	
SRI LANKA	MAHA	7,275	15,630	18,974	18,756	18,323	15,423	16,790	15,598	13,224	15,872	100.0
	%	63.4	69.1	64.2	71.3	71.2	72.8	75.6	74.4	73.0	73.3	
	YALA	4,194	6,993	10,595	7,548	7,404	5,755	5,423	5,379	4,881	5,768	
	%	36.6	30.9	35.8	28.7	28.8	27.2	24.4	25.6	27.0	26.7	
	TOTAL	11,469	22,623	29,569	26,304	25,727	21,178	22,213	20,977	18,105	21,640	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

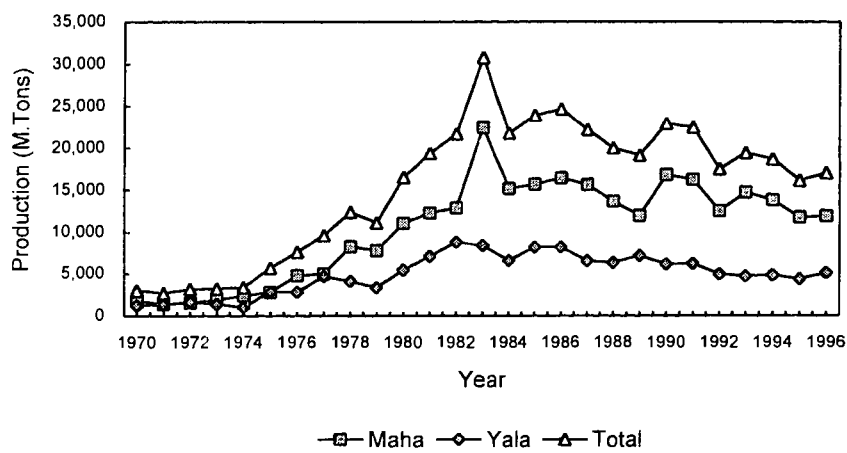
* Total of Badulla, Matale, Ratnapura, Vavuniya, Polonnaruwa, Jaffna, Batticaloe, Trincomalee, Mullativu, Nuwara Eliya, Kandy, Kilinochchi, Mannar, Kegalle, Matara, Gampaha and Kalutara districts & special project Mahaweli H.

Primary Source : Department of Census and Statistics.

Graph 5.1
EXTENT OF COWPEA



Graph 5.2
PRODUCTION OF COWPEA



Graph 5.3
AVERAGE YIELD OF COWPEA

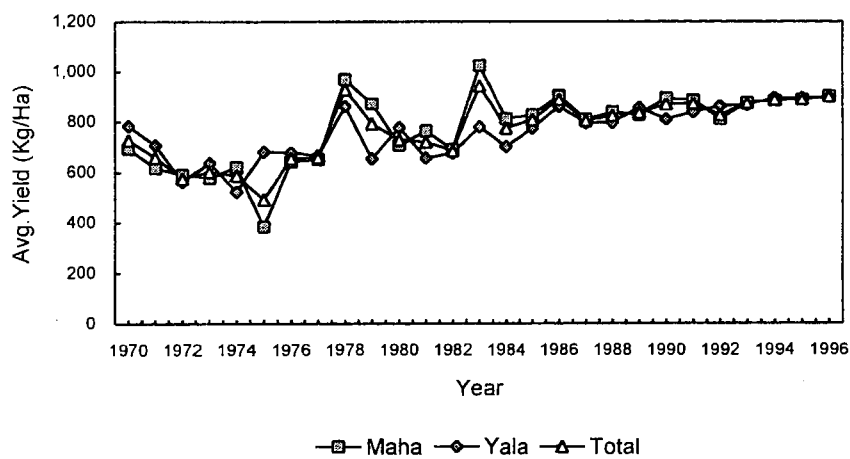


Table 5.3
PRODUCTION OF COWPEA BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	MAHA	320	2,526	3,871	4,023	3,787	3,407	2,615	2,252	1,325	2,677	21.1
	YALA	617	1,298	3,487	2,610	2,115	1,402	1,261	1,062	574	1,283	
	TOTAL	937	3,824	7,358	6,633	5,902	4,809	3,876	3,314	1,899	3,960	
AMPARA	MAHA	98	318	1,413	1,185	1,761	1,307	1,706	1,568	1,599	1,588	13.5
	YALA	57	302	150	711	945	883	887	862	1,164	948	
	TOTAL	155	620	1,563	1,896	2,706	2,190	2,593	2,430	2,763	2,536	
MONERAGALA	MAHA	354	1,433	1,682	2,913	1,680	1,410	2,152	2,303	1,825	1,874	12.6
	YALA	74	758	436	611	1,059	270	410	367	392	500	
	TOTAL	428	2,191	2,118	3,524	2,739	1,680	2,562	2,670	2,217	2,374	
ANURADHAPURA	MAHA	253	1,744	3,169	2,535	2,609	1,026	2,180	2,252	2,034	2,020	12.0
	YALA	206	351	266	211	240	224	248	255	236		
	TOTAL	459	1,744	3,520	2,801	2,820	1,266	2,404	2,500	2,289	2,256	
HAMBANTOTA	MAHA	387	460	986	2,439	2,529	1,820	1,171	1,014	917	1,490	9.9
	YALA	703	595	271	170	379	448	238	487	266	364	
	TOTAL	1,091	1,055	1,257	2,609	2,908	2,268	1,409	1,501	1,183	1,854	
PUTTALAM	MAHA	166	2,786	883	1,006	1,255	1,179	1,477	1,395	1,386	1,338	9.6
	YALA	159	1,016	1,246	404	255	528	595	439	493	462	
	TOTAL	325	3,802	2,129	1,410	1,510	1,707	2,072	1,834	1,879	1,800	
OTHERS *	MAHA	1,212	1,792	3,665	2,659	2,587	2,347	3,392	3,006	2,656	2,798	21.4
	YALA	1,041	1,466	2,245	1,332	1,235	1,186	1,079	1,349	1,224	1,215	
	TOTAL	2,253	3,258	5,910	3,991	3,822	3,533	4,471	4,355	3,880	4,012	
SRI LANKA	MAHA	2,790	11,059	15,669	16,760	16,208	12,496	14,693	13,790	11,742	13,786	100.0
	%	49.4	67.0	65.7	73.3	72.3	71.6	75.8	74.1	72.9	73.4	
	YALA	2,857	5,435	8,186	6,104	6,199	4,957	4,694	4,814	4,368	5,006	
	%	50.6	33.0	34.3	26.7	27.7	28.4	24.2	25.9	27.1	26.6	
	TOTAL	5,647	16,494	23,855	22,864	22,407	17,453	19,387	18,604	16,110	18,792	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Badulla, Matale, Ratnapura, Vavuniya, Polonnaruwa, Jaffna, Batticaloe, Trincomalee, Mullativu, Nuwara Eliya, Kandy, Kilinochchi, Mannar, Kegalle, Matara, Gampaha and Kalutara districts & special project Mahaweli H.

Primary Source : Department of Census and Statistics.

Table 5.4
COST OF CULTIVATION PER ACRE OF COWPEA (RAINFED) BY INPUTS
IN KURUNEGALA (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	90 Yala	91 Yala	92 Yala	93 Yala
Labour	2618	2280	3740	3890	2277	2411	NA	3189
Seed	177	92	1	152	131	120	NA	163
Fertilizer	-	-	-	-	-	-	NA	-
Agro-Chemicals	171	167	283	439	158	140	NA	276
Draught Power- Machinery & Equipment	33	-	-	-	-	-	NA	-
Total	2999	2539	3739	4481	2566	2671	NA	3628

NA - Not available
Source : Dept. of Agriculture

Table 5.5
NET RETURN PER ACRE OF COWPEA (RAINFED) BY SEASONS
IN KURUNEGALA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	604.42	2,740.74
90/91 Maha	1,762.51	3,550.57
91 Yala	64.86	2,214.06
91/92 Maha	774.73	2,653.06
92 Yala	NA	NA
92/93 Maha	1,509.82	4,222.67
93 Yala	791.33	3,716.12
93/94 Maha	(2,401.98)	1,069.39

NA - Not available
Source : Dept. of Agriculture

Table 5.6
MONTHLY AVERAGE WHOLESALE PRICES OF COWPEA - PETTAH MARKET
UNIT : Rs/50Kg

Month	1991	1992	1993	1994	1995	1996
January	765.00	700.00	955.00	1,037.00	1,266.00	1,601.00
February	679.00	694.00	895.00	912.00	1,186.00	1,376.00
March	651.00	749.00	838.00	879.00	1,290.00	1,307.00
April	637.00	800.00	861.00	877.00	1,326.00	1,303.00
May	614.00	1,003.00	848.00	1,017.00	1,266.00	1,166.00
June	618.00	984.00	845.00	998.00	1,069.00	1,085.00
July	650.00	991.00	831.00	1,052.00	1,213.00	1,214.00
August	650.00	1,139.00	913.00	1,208.00	1,372.00	1,434.00
September	662.00	1,167.00	970.00	1,268.00	1,359.00	1,415.00
October	736.00	1,287.00	1,030.00	1,370.00	1,514.00	1,407.00
November	752.00	1,237.00	1,130.00	1,452.00	1,710.00	1,416.00
December	702.00	1,207.00	1,060.00	1,379.00	1,796.00	1,401.00
An. Average	676.33	996.50	931.33	1,120.75	1,363.92	1,344.00

Table 5.7
MONTHLY AVERAGE RETAIL PRICES OF COWPEA - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	27.18	19.86	29.15	27.88	33.75	40.36
February	24.46	19.29	26.56	26.85	33.22	37.81
March	22.58	19.59	26.27	26.17	34.04	36.20
April	20.65	21.14	25.12	27.16	34.46	35.75
May	20.14	22.10	23.75	27.14	33.54	35.18
June	20.01	22.75	23.75	26.20	32.42	33.12
July	20.08	23.19	24.24	27.75	32.69	34.81
August	20.57	26.44	23.93	30.02	35.49	37.27
September	20.14	26.37	24.31	31.18	35.77	36.97
October	20.67	28.30	25.28	32.15	37.08	36.67
November	20.76	28.75	27.10	34.77	38.15	36.79
December	20.91	28.64	27.77	34.02	38.41	37.13
An. Average	21.51	23.87	25.60	29.27	34.92	36.41

Source : Marketing & Food Policy Division - HARTI

Table : 5.8
PER CAPITA CONSUMPTION OF COWPEA PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.57	0.60	1.31	0.65
1981/82	0.34	0.67	1.63	0.67
1986/87	0.17	0.25	0.42	0.25

Primary Source : Central Bank of Sri Lanka

Table : 5.9
PER CAPITA CONSUMPTION OF COWPEA PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	-	-	-
101-200	-	1.81	-	1.19
201-400	-	-	-	-
401-600	-	0.26	0.24	0.24
601-800	0.18	0.17	0.90	0.17
801-1000	0.27	0.35	0.36	0.35
1001-1500	0.55	0.21	0.43	0.26
1501-2000	0.60	0.28	0.18	0.23
2001-3000	0.13	0.26	0.58	0.27
3001-5000	0.10	0.30	0.80	0.27
5001-10000	0.90	0.20	-	0.15
OVER 10000	0.10	0.11	-	0.60
Overall Avg.	0.14	0.25	0.42	0.25

Primary Source : Central Bank of Sri Lanka

6. SOYA BEAN

I. Introduction

Soya bean (*Glycine max*) is a legume which provides protein of high biological value. Asia is the place of its origin, but USA is the major producer at present. Soya flour is widely used in the bakery industry. Soya oil is used for industrial as well as cooking purposes.

Every 100g of edible soya consist of 432 kcal of energy, 43.2g of proteins, 19.5g of fats, 20.9g of carbohydrates.

Soya can be grown in most agro-climatic regions, but the Dry Zone and the drier parts of the Intermediate Zone are the preferred areas.

Any soil with a PH of 6-7 is adequate and excessive moisture is not suitable.

PB-1 and Bossier are the recommended varieties by the Department of Agriculture and the former is more popular due to its early maturity and high yields etc. The potential yield of both are between 2,500-2,800 kg/ha.

II. Production

Soya has become a popular Dry Zone crop cultivated in paddy fields in Yala season.

II.I Major Producing Districts

North Central and Central Provinces produce more than 90% of the soya production in the country. Anuradhapura district and Mahaweli H areas account for 71% of the extent cultivated and 72% of the total quantity produced. Then Matale, Nuwara Eliya and Polonnaruwa districts are respectively important for both the extents cultivated and quantities produced, which are 21% in each category.

Mahaweli H area is foremost (37%) in production although it is second to Anuradhapura in terms of the extent cultivated, which is 28%, due to the higher level of productivity there.

II.II Seasonality of Production

As revealed by production statistics there is no large seasonal bias in production. However, 54% of the production is from Yala season. In mid-1980s and in 1990 over 80% of the production has been from Maha season and this trend has changed later on.

II.III Trends in Production, Cultivated Area and Average Yields

Generally, in the period between 1984-1996 the extent grown and the production have seriously declined gradually despite some fluctuations that took place on certain occasions, eg. the extent has increased between 1990-91 and in 1995, and the production has increased between the periods 1985-87, 1990-91 and in 1995. The decline in extent between the aforesaid two periods (1984-1996) was 84% and in terms of production it was 77%.

The decline in extent under soya and its production generally after 1986 has been caused by a number of factors. One factor was the marketing problems that arose by imported soya bean and soya products. The other factor was the allocation of lands in major soya producing areas such as Anuradhapura, Mahaweli H and Matale for other commercial crops, including B'Onions, which are comparatively more attractive as far as the returns are concerned.

The yield has increased over the years between 1984-87, and thereafter it has become stagnant despite slight fluctuations.

II.IV Review of Agricultural Inputs

Labour accounts for a higher percentage of the cost of cultivation; it was 65% in rainfed cultivations and 79% in irrigated cultivations. Then a substantial share of the production cost has been spent for machinery and equipment under rainfed lands. Agrochemicals and fertilizer appear to have not been applied for rainfed cultivations.

The cost of production has increased over the years. The increase was 107% between 1990-91 (Rs.4,280/acre) and 1994-95 (Rs.8,844/acre) under rainfed areas in Anuradhapura.

The net return has been very high from irrigated lands compared to rainfed lands. It has been nearly Rs.3,000/acre excluding the imputed cost for rainfed lands. Including the imputed cost, the net return has been less than Rs.1,000/acre and in some years (1994/95 Maha) losses were experienced. Nevertheless, the net return has increased over the years between 1992-94 only in Yala seasons in Anuradhapura district under irrigated lands. The reason is not clear.

III. Domestic Marketing

Soya is processed in a number of forms such as meat, flour, ice-cream and milk. The bulk is processed by the Ministry of Health for use as infant meal (Triposha).

III.I Market Channels

The market channels for soya bean are the same as in other pulses such as green gram and cowpea.

III.II Price Behaviour

There are no price data available for soya bean.

IV. External Trade

Soya is being imported in two forms, viz soya seeds and processed soya.

IV.I Major Import/Export Countries

Soya is being imported mainly from India, China, Argentina, U.S.A. and Malaysia.

IV.II Trends in Import Quantity, Value and Price

The quantity imported between 1991-95 has highly fluctuated. However, there was an increasing trend in imports over the years between 1992-94 (about 55 times increase from 266 mt. to 14,779 mt. between those two years). In 1995 imports have drastically dropped. The notable increase in local production and the extent cultivated in that year have also affected it.

The import value has declined from Rs.52mn. in 1991 to Rs.5 mn. in 1992 and it has increased upto Rs.197 mn. by the year 1994 when a larger quantity was imported. This amount dropped down to Rs.32 mn. in the following year.

IV.III Export Trade Regulations

The tariff rates for import of soya bean, which have been effective since 1996, are 35% duty, 6% turnover tax and 4.5% national security levy.

V. Consumption

According to the available limited data, the per capita consumption of soya bean has slightly increased between the period 1978/79 and 1981/82. The increase is high in the urban sector followed by the estate sector.

VI. Government Policy and Its Review

The government policy during 1970-77 was to increase domestic food production and supportive actions such as import bans and marketing facilities were provided through cooperatives, which created a better environment for investment on soya bean. During that time it received attention as a commercial crop which had a certain demand from food processors.

The import liberalization policies of post-1977 period led to the import of soya bean and processed products which adversely affected the market that prevailed for local farmers.

The government introduced a Floor Price Scheme for soya bean in 1979 to protect the local farmers. Under this scheme the PMB got involved in purchasing soya from local farmers. According to studies this scheme was not effective as a salvage price (HARTI, 1987, p.66). For example, for a long period between 1982/83 Maha and 1995 Yala the Floor Price remained constant while the production cost was increasing, which resulted in a decline in the net profit. The declining profit discouraged local farmers to invest on soya and this was the reason for the decline in the area cultivated and production as well.

Table 6.1

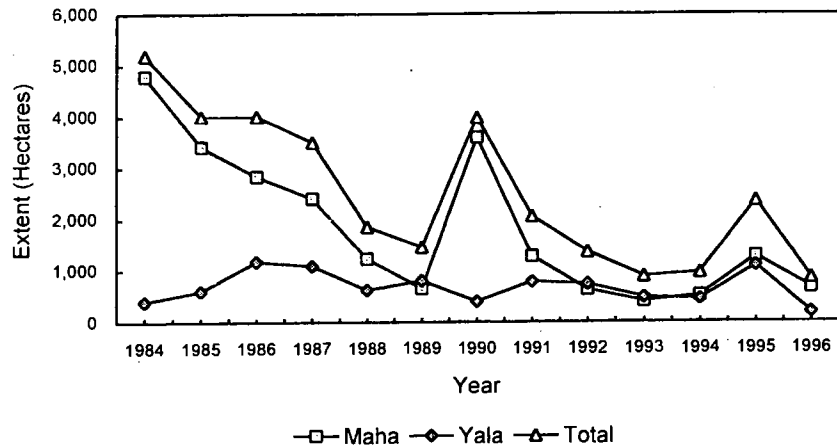
EXTENT, PRODUCTION AND AVERAGE YIELD OF SOYA BEAN - SRI LANKA

YEAR	EXTENT (Ha)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Hec.)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1984	4,787	398	5,185	2,708	406	3,114	566	1,020	601
1985	3,407	602	4,009	2,863	621	3,484	840	1,032	869
1986	2,835	1,174	4,009	2,380	1,424	3,804	840	1,213	949
1987	2,405	1,089	3,494	2,131	1,588	3,719	886	1,458	1,064
1988	1,224	624	1,848	1,071	698	1,769	875	1,119	957
1989	652	802	1,454	637	851	1,488	977	1,061	1,023
1990	3,588	395	3,983	2,764	387	3,151	770	980	791
1991	1,273	780	2,053	1,147	832	1,979	901	1,067	964
1992	629	731	1,360	525	826	1,351	835	1,130	993
1993	405	479	884	349	547	896	862	1,142	1,014
1994	508	449	957	451	521	972	888	1,160	1,016
1995	1,270	1,089	2,359	988	1,379	2,367	778	1,266	1,003
1996	665	184	849	540	186	726	812	1011	855

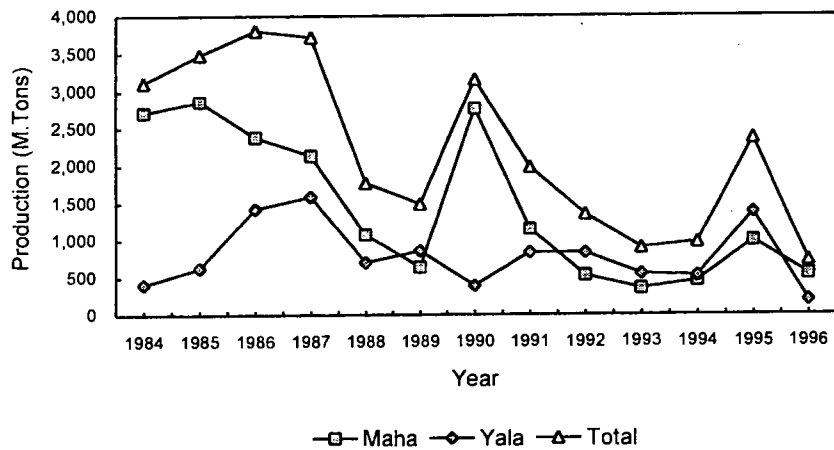
Source: Department of Census and Statistics

Data Development Unit of HARTI

Graph 6.1
EXTENT OF SOYA BEAN



Graph 6.2
PRODUCTION OF SOYA BEAN



Graph 6.3
AVERAGE YIELD OF SOYA BEAN

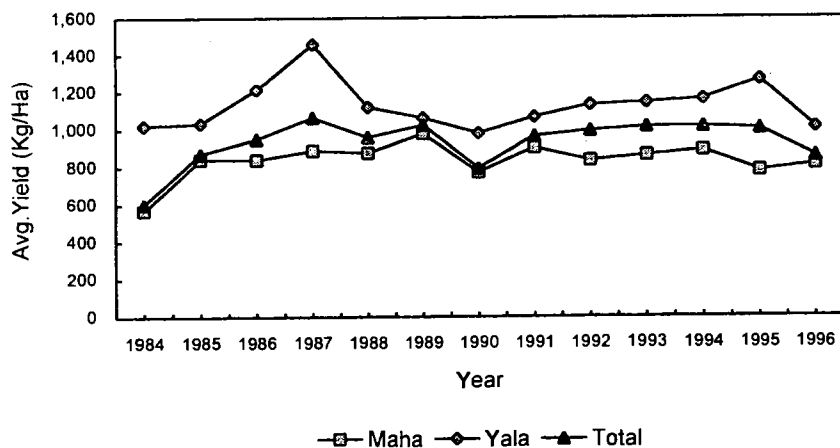


Table 6.2
EXTENT OF SOYA BEAN BY MAJOR GROWING DISTRICTS (Hectares)

DISTRICT	PERIOD	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
ANURADHAPURA	MAHA	2,723	3,026	959	355	296	300	987	579	43.7
	YALA	200	13	106	131	68	62	62	86	
	TOTAL	2,923	3,039	1,065	486	364	362	1,049	665	
MAHAWELI-H	MAHA	28	43	25	50	15	42	105	47	27.6
	YALA	70	36	265	298	198	222	882	373	
	TOTAL	98	79	290	348	213	264	987	420	
MATALE	MAHA	138	319	116	57	38	45	64	64	9.3
	YALA	118	133	114	87	65	57	62	77	
	TOTAL	256	452	230	144	103	102	126	141	
NUWARAELIYA	MAHA	101	106	107	101	2	59	56	65	6.3
	YALA	52	46	49	13	33	32	30	31	
	TOTAL	153	152	156	114	35	91	86	96	
POLONNARUWA	MAHA	18	11	17	13	22	6	21	16	5.7
	YALA	33	14	196	20	69	44	25	71	
	TOTAL	51	25	213	33	91	50	46	87	
OTHERS *	MAHA	399	83	49	53	32	56	37	45	7.4
	YALA	129	153	50	182	46	32	28	68	
	TOTAL	528	236	99	235	78	88	65	113	
SRI LANKA	MAHA	3,407	3,588	1,273	629	405	508	1,270	817	53.7
	%	85.0	90.1	62.0	46.2	45.8	53.1	53.8	53.7	
	YALA	602	395	780	731	479	449	1,089	706	
	%	15.0	9.9	38.0	53.8	54.2	46.9	46.2	46.3	
	TOTAL	4,009	3,983	2,053	1,360	884	957	2,359	1,523	100.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

*Total of Ampara, Badulla, Kandy, Kurunegala, Puttalam, Hambantota, Monaragala, Trincomalee, Jaffna, Mannar, Kegalle and Colombo districts.

Primary Source: Department of Census and Statistics.

Table 6.3
PRODUCTION OF SOYA BEAN BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	PERIOD	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
MAHAWELI-H	MAHA	28	58	33	67	20	57	141	64	
	YALA	103	39	357	401	266	299	1,187	502	
	TOTAL	131	97	390	468	286	356	1,328	566	37.4
ANURADHAPURA	MAHA	1,992	2,230	820	236	250	234	672	442	
	YALA	189	16	106	135	62	55	55	83	
	TOTAL	2,181	2,246	926	371	312	289	727	525	34.7
MATALE	MAHA	127	296	102	52	34	40	58	57	
	YALA	124	130	112	78	51	43	47	66	
	TOTAL	251	426	214	130	85	83	105	123	8.2
NUWARAELIYA	MAHA	133	118	119	112	2	70	65	74	
	YALA	72	41	44	15	30	30	30	30	
	TOTAL	205	159	163	127	32	100	95	103	6.8
POLONNARUWA	MAHA	27	6	13	13	18	5	22	14	
	YALA	58	11	184	22	104	64	39	83	
	TOTAL	85	17	197	35	122	69	61	97	6.4
OTHERS *	MAHA	456	56	60	45	25	45	30	41	
	YALA	75	150	29	175	34	30	21	58	
	TOTAL	531	206	89	220	59	75	51	99	6.5
SRI LANKA	MAHA	2,763	2,764	1,147	525	349	451	988	692	
	%	81.6	87.7	58.0	38.9	39.0	46.4	41.7	45.7	
	YALA	621	387	832	826	547	521	1,379	821	
	%	18.4	12.3	42.0	61.1	61.0	53.6	58.3	54.3	
	TOTAL	3,384	3,151	1,979	1,351	896	972	2,367	1,513	100.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

*Total of Ampara, Badulla, Kandy, Kurunegala, Puttalam, Hambantota, Monaragala Trincomalee, Jaffna, Mannar, Kegalle and Colombo districts.

Primary Source: Department of Census and Statistics.

Table 6.4
COST OF CULTIVATION PER ACRE OF SOYABEAN (RAINFED) BY INPUTS
IN ANURADHAPURA (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha
Labour	2,835	3,996	NA	5,179	5,731
Seed	403	426	NA	528	652
Fertilizer	-	-	NA	-	-
Agro-Chemicals	-	195	NA	-	-
Draught Power- Machinery & Equipment	1,042	237	NA	402	2,461
Total	0	0	NA	0	0

Table 6.5
COST OF CULTIVATION PER ACRE OF SOYABEAN (IRRIGATED) BY
INPUTS IN ANURADHAPURA (Rs/Acre)

INPUT	92 Yala	93 Yala	94 Yala
Labour	4,558	5,971	6,740
Seed	570	641	570
Fertilizer	288	199	526
Agro-Chemicals	307	373	390
Draught Power- Machinery & Equipment	808	1,321	272
Total	6,531	8,505	8,498

NA - Not available
Source: Dept. of Agriculture

Table 6.6
NET RETURN PER ACRE OF SOYA BEAN (RAINFED) BY SEASONS
IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90/91 Maha	911	2,875
91/92 Maha	19	2,952
92/93 Maha	NA	NA
93/94 Maha	919	3,448
94/95 Maha	(738)	2,882

Table 6.7
NET RETURN PER ACRE OF SOYABEAN (IRRIGATED) BY SEASONS
IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
92 Yala	419	3,659
93 Yala	2,744	6,290
94 Yala	8,815	13,634

Negative returns are given in parenthesis

NA - Not available

Source: Dept. of Agriculture

Table 6.8

IMPORTS OF SOYA BEAN BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
Argentina	3,003.0	51.97	-	-	-	-	-	-	-	-	-	-
Malaysia	-	-	266.0	4.63	517.0	9.31	-	-	-	-	-	-
U.S.A.	-	-	-	-	1,876.0	36.20	-	-	-	-	-	-
India	7.0	0.13	-	-	595.0	6.52	9,409.0	112.92	2,669.0	32.35	285.0	4.85
China	-	-	-	-	-	-	5,130.0	80.66	-	-	-	-
Other Countries	7.0	0.10	*	0.10	NA	*	240.0	3.52	*	*	-	-
Total	3,017.0	52.20	266.0	4.64	2,988.0	52.03	14,779.0	197.10	2,669.0	32.35	285.0	4.85

NA- Data not available * - Negligible amount

Source : Dept. of Customs

Table 6.9
PER CAPITA CONSUMPTION OF SOYA BEAN
PER ANNUM BY SECTORS (Kg)

SECTORS	1978/79	1981/82 **
Urban	0.10	0.80
Rural	*	0.30
Estate	0.50	0.20
All Sectors	0.10	0.50

* - Negligible amount

** - (Soya Bean + Soya Product)

Primary Source : Central Bank of Sri Lanka

7. BIG ONION

1. Introduction

Big onion (*Allium cepa*) is one of the most popular crops of the onion family in Sri Lanka. This crop was introduced into this country two decades ago. Since 1970s successive governments of Sri Lanka were committed to a policy of promoting the cultivation of big onions. Until recently, the big onions became a popular high value commercial crop in the rural farming sector.

Big Onion can be grown up to an elevation of 2,000 mm. from mean sea level. Rainfall should not exceed 750 mm during the growing season. Sunny weather of 1-1 1/2 months is needed for crop maturity. The optimum soil PH is 6.5-7.8 (Dept. of Agriculture, 1990, p.114). Accordingly it can be best adopted in the Dry Zone.

II. Production

In addition to the policy support of the government, there was a specific reason for the rapid expansion of big onion cultivation and production in the country in the recent past. The North-East war played a role in stopping transportation of red onions from North to South. The response was the cultivation of big onions in the South as a substitute for red onions.

There are four varieties recommended by the Dept. of Agriculture. Those are: Pusa red, Bombay red, Rampur Red and Red Creole.

II.I Major Producing Districts

According to the average production between 1991-95, Mahaweli-H (44%) and Matale (40%) contributed 84% to the national production. Other important district in this regard was Polonnaruwa which contributed 7% to the national production.

In terms of the average extent cultivated during the same period, the above mentioned districts have also taken prominence by the same order but with slightly different percentages. Accordingly out of the total extent cultivated, 38%, 36% and 12% respectively belonged to the districts of Mahaweli H, Matale and Polonnaruwa.

II.II Seasonality of Production

Big onion is mainly a Yala season crop. Ninety six percent of both the average production as well as the extent cultivated during 1991-95 period were recorded from Yala.

Both planting and harvesting in major producing areas take place before the onset of the South-West and North-East monsoon rains. Accordingly the main cultivation period extends from April to June of the year. Over 80% of the cultivation activities are completed by the end of June. The main harvesting period is August to September. More than 90% of the crop is harvested by the end of September. Particularly in Kalawewa, most of big onion planting is done in May while harvesting takes place in August.

II.III Trends in Production Extent and Average Yields

After several years of stagnation the extent, production and yield started to increase from 1987. This increase which occurred over the years prevailed until 1994 when imports were liberalized. The former progress in extent and production was a result of the high return from big onions mainly due to its protection from imported products by government policies (Wickramarachchi, 1996, p.25). The utilization of high quality seed varieties has helped to increase the yield level. After 1994, the extent as well as production has declined due to imports under more liberalized trade policies.

II.IV Agricultural Inputs and Cost of Production

The cost of production differs from highland to lowland mainly due to the mode of water supply. The highland farmers use water pumps for watering the fields, while irrigated water is used by the low land farmers. Labour is one of the other major inputs. Family labour is widely used by the farmers who cultivate less than one acre. Hired labour is utilized by commercial farmers for activities such as planting, weeding, harvesting and processing.

According to the Department of Agriculture, the cost of production of big onions under irrigated conditions was around Rs.25,500/ac. in both Matale and Kalawewa in 1994 Yala season. There is no big difference in the cost of production in 1990 and 1994 especially in respect of Matale. But in between these two years it has varied much in the same area.

According to the observation of HARTI (Marketing and Food Policy Division), the cost of production of big onions in 1996 Yala season, with the imputed cost, was nearly Rs.51,000/acre. Therefore, it was obvious to note that the cost of production of big onions has rapidly increased during the last few years. The cost of production per kilogram differs at cost levels and at different yield levels. The HARTI's observations have shown that the cost of production is in the range of Rs.8.00-14.00 per kilogram in major producing areas.

The statistics on the net return will give a complicated picture. The net return including the imputed cost for the period 1990 Yala to 1994 Yala, both relating to Matale and Kalawewa, has changed from Rs.18,638 per acre to Rs.62,388/acre. Excluding the imputed cost it has changed from Rs.27,014 /acre to Rs.70,517/acre for both these areas in the same period. The 1991 Yala season indicates some unusual figures on returns.

III. Domestic Marketing

The marketing of big onions operates at different levels such as farmgate, middlemen, wholesale and retail. The main harvesting period is August to September and large quantities of local production reach the markets in this period. During this period 70 percent of the harvest is sold by farmers at the farmgate and the rest is stored. Higher consumer prices prevail in urban areas.

III.I Marketing Channels

The main marketing channels for big onions are as follows:-

1. Farmer -> Resident Trader -> Itinerant Trader -> Commission Wholesaler -> Local Wholesaler/Retailer -> Consumer.
2. Farmer -> CWE Purchasing Centre -> Local Wholesaler/Retailer -> Consumer.

Several middlemen are involved in between the marketing channels and a number of them depends on the length of the market channel. Resident traders/itinerant traders buy the crops directly from the producers. Sometimes, the itinerant traders purchase these commodities from other traders. The final wholesalers are the final purchasers of the produce in Colombo or other major urban centres. The private sector plays a dominant role in the context of marketing channels of big onions. Most of the traders who are involved in marketing channels follow the "buy and sell policy" as they are commission agents. On the other hand, most of the traders who are involved in marketing of big onions, cannot store onions due to high cost and perishability.

III.II Price Behaviour

The price of big onions widely fluctuates during harvest and off-seasons. The farmgate price fluctuates from Rs.30.00 to Rs.20.00/kg. and during the harvesting period this ranges from Rs.20.00-Rs.10.00/kg. During the period 1991-1995 the price of big onion in both wholesale and retail markets has decreased.

In the year the general price increase commences in October and the increasing trend continues up to January. The highest prices are recorded in December and January due to lack of supplies and the higher demand during the festival season. From February the price declines due to the import of big onions. The declining trend continues upto April and May, and in June, the price increases slightly. During July and August the price declines significantly, while the lowest price is recorded in September due to large quantities of local production reaching the market from July to October. This pattern has changed somewhat now due to imports made throughout the year.

III.III Review of Marketing Cost

The marketing cost of big onions at different stages is as follows.

From Farm to Regional Market

- * Loading cost Rs.2.00 per 60 kg bag.
- * Unloading cost Rs.5.00 per 60 kg bag.
- * Handling within the lorry Rs.2.00 per 60 kg bag.
- * Brokers' charges Rs.2.00 per 60 kg bag.

From regional market to wholesale market

- * Handling Rs. 4.50 per 50 kg bag.
- * Transport Rs. 25.00 per 50 kg bag.
- * Brokers' commission 6 percent of the value.

Recently the marketing cost has increased considerably due to various reasons such as high transport cost, fuel and labour cost etc. The marketing costs incurred by the traders are limited mainly to collecting, handling, packaging, storing, processing and transport. Marketing costs vary from place to place and from time to time.

IV. External Trade

Imports are one of the major factors affecting the future production of big onions in Sri Lanka. The local cost of production and prices of big onion are well above the cost and prices in the international markets, especially compared to India. Therefore, one can argue that the import of big onions is much more profitable than cultivation of big onions in Sri Lanka, considering the opportunity cost of resources.

IV.I Major Import/Export Countries

Sri Lanka has not achieved self sufficiency in big onions in terms of the demand of the market all year round. Therefore to fulfil the local market requirements the imports are needed. At present the major imports are made from countries like India and Pakistan. Over 90% of the imports are done from these two countries.

IV.II Trends of Imports in Quantity, Value and Prices

The big onion imports in bulk quantities have started after 1983 when communal riots erupted and simultaneously red onion transport from Jaffna faced restrictions. Accordingly the quantity imported in 1984 indicates a five times increase compared with 1983. This increase remained until 1985 and then started to decline over the years until 1989 due to the increase of the local production of big onions as well as red onions. Thereafter too there has been an increasing trend in imports since the production of red onions has declined, although a reverse trend in big onion production is indicated until 1994. With further liberalization of big onion imports in 1994 the quantity imported has largely increased in and after that year. There is an increasing trend in the CIF price of big onions between the period 1982-1995.

IV.III Trade Regulations

The import of food commodities has been gradually liberalized since 1977 with the introduction of an open economic policy. However, there are several mechanisms for the control of imports and the protection of the domestic producers in the country. The import duty is one of the major mechanisms for the control of imports. The business turn over tax on the big onions is 20 percent and the rate of duty is 35 percent.

V. Consumption

The Household Income and Expenditure Survey 1990/91 conducted by the Department of Census & Statistics has indicated that the magnitude of consumption in relation to the total expenditure on big onions was 0.26 percent.

The per capita consumption of big onions has increased over time in Sri Lanka. This increase is indicated in all the sectors.

There is a positive relationship between income levels and the per capita consumption of big onions. Accordingly the urban sector indicates a higher consumption rate than the rural and estate sectors. For example, the Consumer Finance Survey in 1986/87 indicated the per capita consumption in the urban sector as 2.7/kg and it was 1.3/kg for the rural sector and 0.85/kg for the estate sector.

According to the Ministry of Agriculture, Lands and Forestry, the national requirement of big onions in 1997 was 65,600 mt. Based on the per capita availability statistics of the Dept. of Census and Statistics (4.20/kg per year in 1994) the national requirement is around 73,000 mt (local production and imports). Accordingly the monthly requirement is in the range of 5,000-6,000 mt. In this context the local annual production, which is around 30,000 mt., is sufficient to meet the requirements for nearly 4-5 months. Hence, imports are required for the balance period of 7-8 months.

VI. Government Policy and its Review

Commercial cultivation of big onions began only in the mid-1980s on an experimental basis. The governments which were in power since then were committed to a policy of encouraging production of big onions in order to cut down imports. The major support the government provided until 1992 was the provision of a protective market for the local farmers by controlling the imports, which was under government monopoly. Even after the removal of government's monopoly in imports in 1992, imports were regulated through quotas and licensing which was changed from year to year depending on the level of domestic production (Rassas et al., 1995, p.10).

The external trade policy of the government regarding big onions (until 1994) positively affected the increase in its extent and production.

More liberalization of imports in 1994 has created a competition for local products from imported ones. Resultantly both the production and the area cultivated have declined.

Table 7.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF B' ONION - SRI LANKA

YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1984	25	258	283	222	3,027	3,249	8,880	11,733	11,481
1985	160	175	335	1,319	1,865	3,184	8,244	10,657	9,504
1986	175	306	481	1,213	2,593	3,806	6,931	8,474	7,913
1987	102	314	416	591	2,132	2,723	5,794	6,790	6,546
1988	54	521	575	350	3,872	4,222	6,481	7,432	7,343
1989	78	702	780	364	5,001	5,365	4,667	7,124	6,878
1990	13	1,567	1,580	47	15,856	15,903	3,615	10,119	10,065
1991	64	1,383	1,447	428	13,618	14,046	6,688	9,847	9,707
1992	95	2,300	2,395	803	27,076	27,879	8,453	11,772	11,641
1993	67	2,507	2,574	577	22,261	22,838	8,612	8,880	8,873
1994	210	3,551	3,761	1,884	32,842	34,726	8,971	9,249	9,233
1995	107	3,580	3,687	606	29,113	29,719	5,664	8,132	8,060
1996	119	2,543	2,662	508	18,859	19,367	4,269	7,416	7,275

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

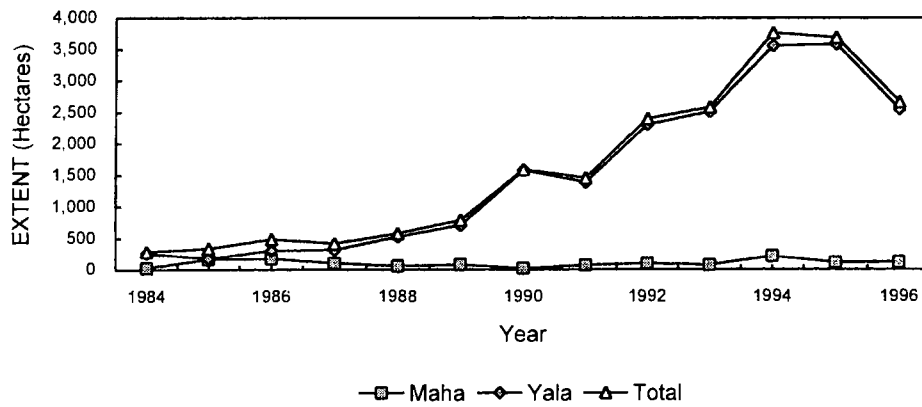
Table 7.2
EXTENT OF B'ONION BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
MAHAWELI-H	Maha	2	5	-	2	0	117	6	42	
	Yala	12	431	404	871	775	1,677	1,391	1,024	
	Total	14	436	404	873	775	1,794	1,397	1,049	37.8
MATALE	Maha	43	0	13	44	7	10	16	18	
	Yala	55	628	444	1,027	1,129	1,217	1,145	992	
	Total	98	628	457	1,071	1,136	1,227	1,161	1,010	36.4
POLONNARUWA	Maha	1	0	6	0	12	3	28	12	
	Yala	4	233	347	138	276	270	567	320	
	Total	5	233	353	138	288	273	595	329	11.8
OTHER *	Maha	114	8	45	49	48	80	57	56	
	Yala	104	275	188	264	327	387	477	329	
	Total	218	283	233	313	375	467	534	384	13.8
SRI LANKA	Maha	160	13	64	95	67	210	107	109	
	%	47.7	0.8	4.4	3.9	2.6	5.5	2.9	3.9	
	Yala	175	1,567	1,383	2,300	2,507	3,551	3,580	2,664	
	%	52.2	99.1	95.5	96.0	97.4	94.4	97.1	96.0	
	Total	335	1,580	1,447	2,395	2,574	3,761	3,687	2,773	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

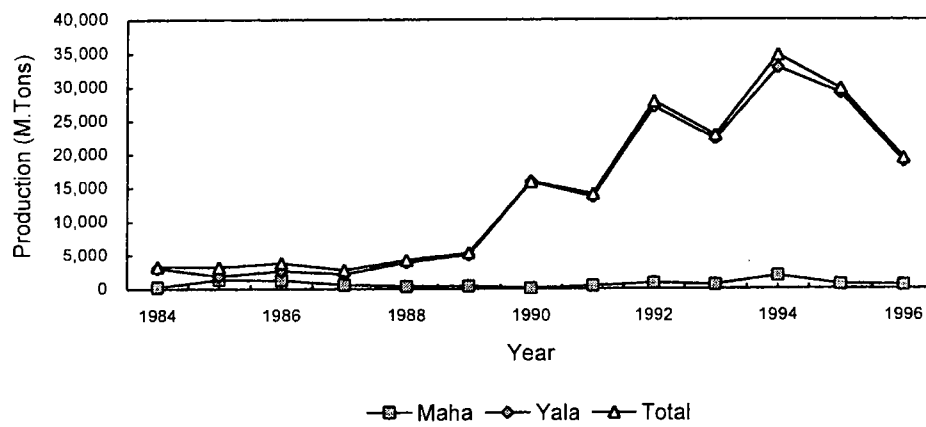
* Total of Anuradhapura, Badulla, Puttalam, Jaffna, Ratnapura, Kilinochchi, Galle Mullativu, Trincomalee, Kandy, Mannar, Matara, Hambantota, Ampara, Colombo, Kalutara Gampaha, Kurunegala, Nuwara Eliya, Batticaloe, Moneragala, Vavuniya, Kegalle districts

Primary Source : Dept. of Census & Statistics

Graph 7.1
EXTENT OF B' ONION



Graph 7.2
PRODUCTION OF B' ONION



Graph 7.3
AVERAGE YIELD OF B' ONION

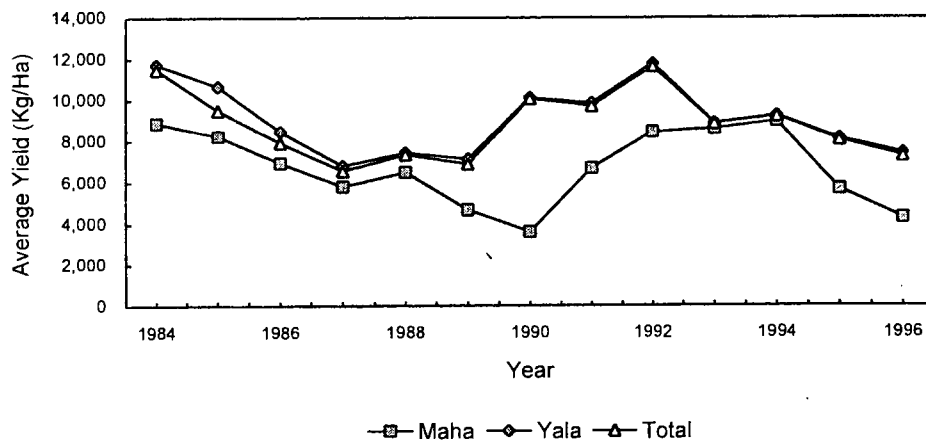


Table 7.3

PRODUCTION OF B'ONION BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
MAHAWELI-H	Maha	5	9	-	23	0	1,248	69	335	
	Yala	114	3,965	4,653	9,298	8,269	17,890	14,846	10,991	
	Total	119	3,974	4,653	9,321	8,269	19,138	14,915	11,259	43.5
MATALE	Maha	432	0	79	462	40	57	72	142	
	Yala	540	7,335	4,597	15,340	10,851	11,686	8,971	10,289	
	Total	972	7,335	4,676	15,802	10,891	11,743	9,043	10,431	40.3
POLONNARUWA	Maha	6	0	28	0	94	14	124	52	
	Yala	46	2,252	3,360	1,079	1,214	1,015	2,512	1,836	
	Total	52	2,252	3,388	1,079	1,308	1,029	2,636	1,888	7.3
OTHER *	Maha	876	38	321	318	443	565	341	398	
	Yala	1,165	2,304	1,008	1,359	1,927	2,251	2,784	1,866	
	Total	2,041	2,342	1,329	1,677	2,370	2,816	3,125	2,263	8.7
SRI LANKA	Maha	1,319	47	428	803	577	1,884	606	860	
	%		41.4	0.3	3.0	2.8	2.5	5.4	2.0	3.3
	Yala	1,865	15,856	13,618	27,076	22,261	32,842	29,113	24,982	
	%		58.5	99.7	96.9	97.1	97.4	94.5	97.9	96.6
	Total	3,184	15,903	14,046	27,879	22,838	34,726	29,719	25,842	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Anuradhapura, Badulla, Puttalam, Jaffna, Ratnapura, Kilinochchi, Galle
Mullativu, Trincomalee, Kandy, Mannar, Matara, Hambantota, Ampara, Colombo, Kalutara
Gampaha, Kurunegala, Nuwara Eliya, Batticaloe, Moneragala, Vavuniya & Kegalle districts

Primary Source : Dept. of Census & Statistics

Table 7.4
COST OF CULTIVATION PER ACRE OF B'ONION (IRRIGATED) BY INPUTS
IN MATALE (Rs/Acre)

INPUT	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	12,469	14,478	21,271	11,700	14,737
Seed	2,808	4,160	2,375	8,352	1,534
Fertilizer	5,352	4,510	4,410	5,324	4,304
Agro-Chemicals	2,549	2,742	2,326	1,348	2,491
Draught power - Machinery & Equipment	1,732	4,363	5,540	2,713	2,885
Total	24,910	30,253	35,922	29,437	25,951

Table 7.5
COST OF CULTIVATION PER ACRE OF B'ONION (IRRIGATED) BY INPUTS
IN KALAWEWA (Rs/Acre)

INPUT	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	14,117	15,285	17,053	NA	16,820
Seed	2,214	4,000	3,222	NA	1,885
Fertilizer	2,919	4,030	2,714	NA	2,822
Agro-Chemicals	1,578	3,720	3,194	NA	2,127
Draught power - Machinery & Equipment	1,209	664	2,623	NA	1,799
Total	22,037	27,699	28,806	NA	25,453

Table 7.6
NET RETURN PER ACRE OF BONION (IRRIGATED) BY
SEASONS IN MATALE

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	62,388	70,517
91 Yala	23,670	32,534
92 Yala	16,278	28,688
93 Yala	41,741	48,502
94 Yala	29,985	37,133

Primary Source : Dept. of Agriculture

Table 7.7
NET RETURN PER ACRE OF B'ONION (IRRIGATED) BY
SEASONS IN KALAWEWA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	62,388	70,517
90 Yala	18,638	27,014
91 Yala	(3,440)	5,006
92 Yala	24,295	35,595
93 Yala	NA	NA
94 Yala	27,332	35,625

Negative returns are given in parenthesis
Primary Source : Dept. of Agriculture

Table 7.8
MONTHLY AVERAGE WHOLESALE PRICE OF BIG ONION - PETTAH MARKET
UNIT : Rs/50Kg

Month	1991	1992	1993	1994	1995	1996
January	1,895	1,349	3,797	2,197	1,635	1,167
February	1,650	1,250	1,452	1,519	815	843
March	1,555	1,250	1,350	1,500	727	891
April	1,696	1,250	1,320	1,285	714	867
May	1,479	1,250	1,234	1,350	997	1,170
June	1,459	1,262	1,028	1,793	935	1,017
July	1,599	1,294	1,070	1,199	1,150	1,345
August	1,475	1,235	1,110	1,030	1,003	1,120
September	1,055	797	624	599	764	1,021
October	1,034	606	830	931	1,127	1,193
November	1,446	803	1,391	1,199	1,740	1,227
December	1,277	2,012	2,015	1,570	1,734	1,203
An. Average	1,468	1,196	1,435	1,348	1,112	1,089

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 7.9
MONTHLY AVERAGE RETAIL PRICE OF BIG ONION - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	49.07	34.10	77.62	52.98	41.86	32.45
February	42.46	31.18	38.31	38.02	23.76	23.94
March	36.91	29.98	31.62	36.76	20.60	24.37
April	46.21	30.17	31.32	32.60	19.56	24.11
May	36.82	30.65	30.75	32.68	28.54	30.97
June	35.45	30.13	27.48	45.86	25.53	26.26
July	38.23	29.16	26.48	31.49	29.60	33.33
August	34.81	28.64	29.30	29.31	28.20	29.67
September	30.03	23.76	20.64	19.71	24.73	27.63
October	29.82	19.72	22.57	25.71	29.50	29.62
November	36.09	21.13	36.88	31.65	42.69	31.70
December	34.34	40.94	48.84	38.71	44.42	31.05
An. Average	37.52	29.13	35.15	34.62	29.92	28.76

NA - DATA NOT AVAILABLE

Source : Marketing & Food Policy Division - HARTI

Table 7.10
IMPORTS OF B'ONION

Year	Quantity (Mt)	Value (000 Rs)	CIF Price (Rs/Kg)
1982	2,159.1	14,405.0	5.47
1983	6,276.8	40,475.0	6.02
1984	44,735.9	268,556.0	5.70
1985	58,690.1	328,981.8	5.36
1986	45,828.1	314,532.2	6.86
1987	34,401.8	301,184.8	8.76
1988	11,672.2	86,695.8	7.43
1989	4,225.3	46,009.1	10.89
1990	27,077.7	279,268.4	10.00
1991	46,330.4	626,580.8	13.52
1992	32,868.1	353,796.2	10.42
1993	34,229.4	390,755.8	11.15
1994	47,399.8	529,928.3	11.07
1995	77,458.6	861,690.2	11.09
1996	89,157.6	1,088,878.0	12.21

Source : Dept. of Customs

Table 7.11

IMPORTS OF B'ONION BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	46,326.00	626.24	32,559.00	350.29	33,163.00	379.41	45,782.00	509.58	75,502.00	838.78	84,904.00	1,035.90
Pakistan	-	-	309.00	3.47	66.00	0.76	1,257.00	13.36	1,116.00	14.24	4,198.00	52.22
Japan	-	-	-	-	1,000.00	10.56	100.00	1.17	165.00	1.42	-	-
Netherlands	55.00	0.73										
Others	4.00	0.26	0.50	0.30	-	-	261.00	5.81	674.50	7.24	0.20	0.30
TOTAL	46,330.00	626.50	32,868.50	353.79	34,229.00	390.73	47,400.00	529.92	77,457.50	861.68	89,157.20	1,088.88

Source : Dept. of Customs

Table : 7.12
PER CAPITA CONSUMPTION OF B'ONION PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.20	0.10	0.10	0.10
1981/82	0.31	1.13	0.60	0.16
1986/87	2.56	1.33	0.85	1.52

Primary Source : Central Bank of Sri Lanka

Table : 7.13
PER CAPITA CONSUMPTION OF B'ONION PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	2.54	-	1.98
101-200	1.85	2.50	-	2.28
201-400	4.83	0.75	0.54	1.14
401-600	2.35	0.65	0.55	0.75
601-800	1.36	0.51	0.96	0.60
801-1000	1.07	0.69	0.65	0.71
1001-1500	1.48	0.84	0.68	0.88
1501-2000	1.44	1.03	0.93	1.08
2001-3000	1.72	1.55	0.67	1.51
3001-5000	2.86	2.08	1.62	2.28
5001-10000	3.91	2.97	1.41	3.35
OVER 10000	5.26	3.19	8.57	4.29
Overall Avg.	2.56	1.33	0.85	1.52

Primary Source : Central Bank of Sri Lanka

8. RED ONION

I. Introduction

Red onion or "Shallot" (*Allium ascalonium*) is the most widely cultivated onion family member in Sri Lanka. The other onion family members are Leeks, Garlic and big onions.

Red onions can be best adopted to the Dry Zone. It can be grown on a wide range of soils except strong and heavy soils. The optimum soil pH is 6.5-7.8.

In Sri Lanka there are two varieties of red onions, Sinnan and Vedalan (Jaffna local).

II. Production

Since long ago Jaffna and since the recent past Kalpitiya Peninsula, have been more popular for red onion cultivation because of their better suitability for this crop. By this time big onion cultivation has expanded to some other districts.

II.I Major Producing Districts

Based on a five-year average (1991-95) of the extent cultivated, 22% of land was in the Puttalam district, while 21% was in Jaffna. The next important producing districts were Ratnapura (8%), Nuwara Eliya (8%), Batticaloa (7%), Vavunia (6%) and Kurunegala (5%).

With regard to production, the Jaffna district takes priority by contributing 29% to the national production, which was 48,063 mt. per year during reference period (1991-95). The contribution of the Puttalam district was 16% of the national production.

II.II Seasonality of Production

Red onion is a seasonal crop, but in some areas such as Kalpitiya it is cultivated year round to meet the market demand. The Maha season cultivation mainly depends on rains, while Yala cultivation takes place mainly in the Dry Zone under irrigation. During the reference period (1991-95) the cultivated extent per year was 53% in Maha and 47% in Yala. As regards production, Maha season had a contribution of 52% of the national production.

II.III Trends in Production, Cultivation Area and Average Yield

Looking at the production as well as the extent cultivated during the last 25 years (1970-1995), both indicates a gradual increase over the years until 1983. After 1983 the extent as well as the production sharply declined within one year. Regarding the extent and production, the declines were 60% and 62% respectively. The major reason for this decline has been the communal disturbances in the country which affected transportation of red onions from the Jaffna district, which was the major producing area, to other areas where there was a market for them. This is clearly indicated by the relevant statistics for the Jaffna district; there the extent has reduced by 75% (from 4,442 ha. to 1107 ha.) and production has reduced by 77% (from 55,158 mt. to 12,714 mt.) between the two years 1983-84.

Between 1991-95 there was a stagnation both in the extent and production.

Regarding the average yield also there was an increase over the years between 1970-1983. Thereafter there was a decline and a stagnation as well which prevailed as a continuous phenomenon.

II.IV Review of Agricultural Inputs

The major agricultural inputs are the same as for other field crops. However seeds and labour have

been the major cost components. Seed were mostly imported at very high cost. As revealed by 1994 Yala data, seed cost accounted for 61% of the total cost of production. The same data indicated that labour cost was 21% of the production cost.

The production cost has increased over the years to a very high level. For example it has increased by 46% between 1990 Yala and 1994 Yala. The cost of production seems to have been higher in Maha season.

The net return has varied from year to year and the variation has not been systematic. In the Puttalam district for irrigated land, excluding the imputed cost, it has changed from Rs.3,254/acre to Rs.55,427/acre for Yala seasons and from Rs.12,791/acre to Rs.43,762/acre for Maha seasons for the period 1990 to 1995.

III Domestic Marketing

Still Sri Lanka has not achieved self-sufficiency in red onions. It's demand is year round. Most of the production is available only within a limited period. Because it is a perishable crop it is difficult to store the excess produce for a long period.

III.I Marketing Channels

The marketing channels of red onions are the same as for big onions and some other exotic vegetables. However based on available information the following two major channels can be identified.

- (1) Producer -> Resident trader/Demand side wholesaler -> Retailer -> Consumer
- (2) Producer -> Resident trader -> Colombo commission agent -> Retailer -> Consumer

III.II Price Behaviour

Generally the average wholesale and retail prices are high within the period November to January and again from April to July. In addition to the scarcity of produce due to the non-harvesting period, the other factor for the increase in price is the higher demand associated with the festival season. The prices are lowest in the months of February, March, August, September and October due to harvesting in the major producing areas. Prices are highest in May and June due to the off-season.

The local supplies and the quantities of imports are significant factors in determination of red onion prices.

The price has changed over the years erratically. A scarcity or a glut in the supply situation in the market due to improper coordination of imports has been the reason for this situation.

III.III Review of Marketing Cost

The marketing costs vary at different stages in the marketing channels. The price difference from the producer to the consumer is higher than in the case of other crops owing to the perishability of the produce.

IV. External Trade

Red onions have been imported since long ago because they constitute a major food ingredient of the Sri Lankan diet and the country was not able to produce it sufficiently.

IV.I Major Import/Export Countries

Based on import statistics for the period 1991-1995, India was the major exporting country from

which more than 88% was imported during this period. The other countries from which imports were made were Malaysia and Turkey.

IV.II Trends in Exports/Imports in Quantity, Value and Price

Looking at the quantity imported since 1960s, the main features identified were: firstly the quantity imported has declined in a large scale over time; secondly the imports have been made in fluctuating quantities especially after 1970; thirdly in some periods imports have been negligible or have completely stopped.

From 1961 and 1970 in most of the years imports were between 60,000 mt. to 70,000 mt. Between the 1971-78 period imports have been restricted. Within this period imports have been made on limited occasions and lesser quantities in order to supplement the domestic production.

Since 1979 under the liberalized economic policies, imports have been made regularly but in fluctuating quantities. For example, imports have been 9,519 mt. in 1979 and 17,348 mt. in 1980. Between 1981-86 the import quantity has been between 4,005 mt. to 1,482 mt. in a year.

Since 1987 imports have declined sharply. In some years no imports have taken place. In the period between 1987-1995 not more than 2,815 mt. have been imported in a single year. The expansion of red onion as well as big onion cultivation, which became a substitute for red onions, throughout the country and also the commencement of importing big onions in large quantities, which are cheaper than red onions, have been the reason for this situation.

The import value also has been changing in different periods. From 1961-1970 it has been between Rs.16-Rs.29 Million in a year. From 1970-78 it has been lesser than Rs. one Mn. Between 1979-1995 it has risen upto Rs.82 Mn.

The CIF price for red onions has increased over the years during the period 1970-1995. In some years it has increased in an extraordinary manner.

IV.III Export Trade Regulations

Except for general regulations there were no specific regulations for the export and import of red onions in the recent past. Especially after 1994, there were no licenses and quotas for the import and export of onions.

The tariff rates which were effective since 1996 for red onions are: 35% of duty, 6% of turnover tax and 4.5% of national security levy.

V. Consumption

According to the Consumer Finance and Socio Economic Survey of the Central Bank of Sri Lanka, the per capita consumption of red onions was 3.36 kg. in 1986/87. The consumption level has increased compared with the same surveys carried out in 1978/79 and 1981/92. The consumption level in the urban sector was the highest followed by the rural sector. Normally the consumption level tends to increase when the income level is increasing.

VI. Government Policy

Self sufficiency in red onions was the major policy goal of the government since 1970. Various measures have been taken to achieve this objective. Among them, in addition to the provision of technical services (including seeds) and extension facilities attempts were made to create a proper market in various ways including price guarantees, import bans and other protective measures such as imposing tariff barriers.

In the period 1970-77 under the import substitution policies, red onion imports were completely restricted by not granting permission to import. This policy led to a good market for red onions which resulted in an expansion of cultivation on a commercial scale.

Even after the import liberalization policies in 1977 red onion imports were done under government monopoly. This crop also included in the floor price scheme in 1979 in order to increase farmers' incomes. However, this has not been effective for prices due to the fact that the Paddy Marketing Board has not purchased red onions any time because of the lack of special storage facilities.

After 1992, the private sector was allowed to participate in imports, but under a licensing and quota system which varied from year to year depending on the level of domestic production. As imports were prohibited in harvesting seasons, this policy provided a high level of protection for the local farmers.

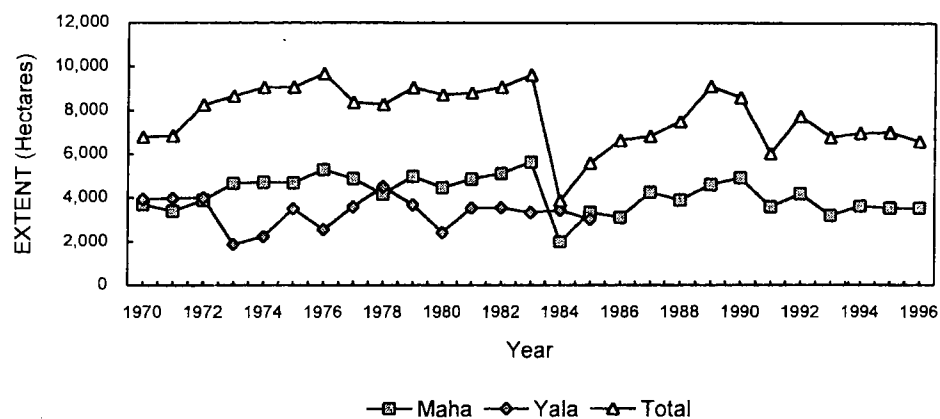
Under the recent liberalization of trade, tariffs have been reduced and licensing quotas and other types of restrictions for onion imports such as banning in the harvesting period have been completely removed.

Table 8.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF RED ONION - SRI LANKA

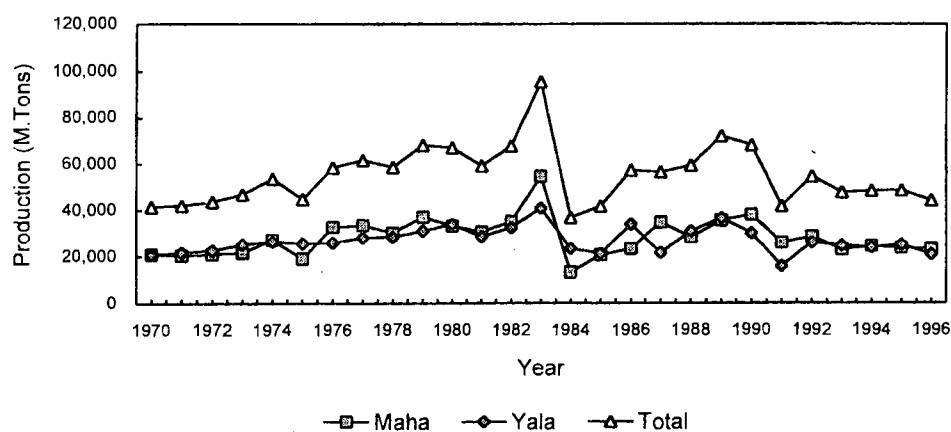
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1970	3,703	3,070	6,773	20,876	20,631	41,507	5,638	6,720	6,128
1971	3,388	3,438	6,826	20,474	21,623	42,097	6,043	6,289	6,167
1972	3,884	4,354	8,238	21,024	22,655	43,679	5,413	5,203	5,302
1973	4,648	4,012	8,660	21,641	25,214	46,855	4,656	6,285	5,411
1974	4,709	4,335	9,044	27,150	26,371	53,521	5,766	6,083	5,918
1975	4,674	4,394	9,068	19,099	25,659	44,758	4,086	5,840	4,936
1976	5,279	4,390	9,669	32,557	25,850	58,407	6,167	5,888	6,041
1977	4,873	3,509	8,382	33,468	28,029	61,497	6,868	7,988	7,337
1978	4,169	4,103	8,272	30,069	28,357	58,426	7,213	6,911	7,063
1979	4,974	4,072	9,046	36,980	30,912	67,892	7,435	7,591	7,505
1980	4,454	4,256	8,710	33,108	33,783	66,891	7,433	7,938	7,680
1981	4,858	3,934	8,792	30,586	28,497	59,083	6,296	7,244	6,720
1982	5,098	3,970	9,068	35,030	32,513	67,543	6,871	8,190	7,449
1983	5,631	3,992	9,623	54,525	40,838	95,363	9,683	10,230	9,910
1984	1,989	1,878	3,867	13,210	23,470	36,680	6,642	12,497	9,485
1985	3,344	2,241	5,585	20,480	21,204	41,684	6,124	9,462	7,464
1986	3,110	3,505	6,615	23,313	33,834	57,147	7,496	9,653	8,639
1987	4,253	2,561	6,814	34,724	21,543	56,267	8,165	8,412	8,258
1988	3,896	3,594	7,490	28,274	30,880	59,154	7,257	8,592	7,898
1989	4,597	4,503	9,100	35,462	36,374	71,836	7,714	8,078	7,894
1990	4,913	3,687	8,600	37,997	29,960	67,957	7,734	8,126	7,902
1991	3,593	2,430	6,023	25,901	15,729	41,630	7,209	6,473	6,912
1992	4,196	3,537	7,733	28,468	26,047	54,515	6,785	7,364	7,050
1993	3,218	3,545	6,763	22,890	24,658	47,548	7,113	6,956	7,031
1994	3,634	3,326	6,960	24,356	23,872	48,228	6,702	7,177	6,929
1995	3,551	3,442	6,993	23,513	24,879	48,392	6,622	7,228	6,920
1996	3,553	3,031	6,584	23,154	20,784	43,938	6,517	6,857	6,673

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

Graph 8.1
EXTENT OF RED ONION



Graph 8.2
PRODUCTION OF RED ONION



Graph 8.3
AVERAGE YIELD OF RED ONION

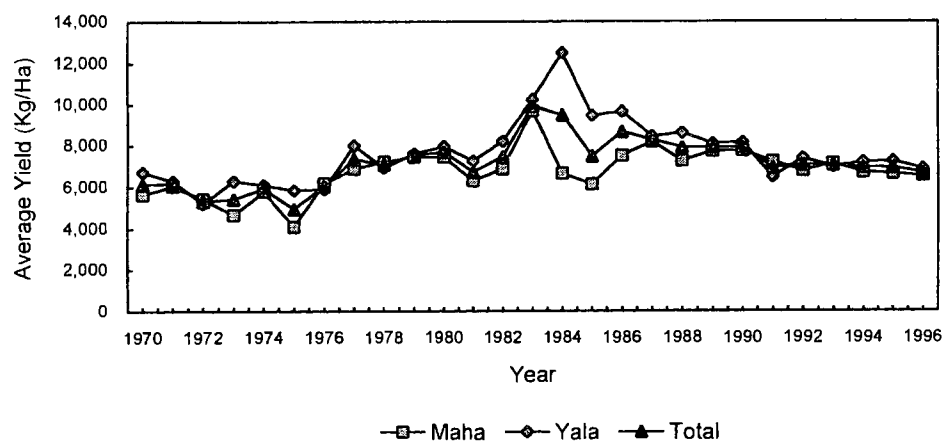


Table 8.2
EXTENT OF RED ONION BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
PUTTALAM	Maha	168	86	1,073	705	652	718	744	881	868	773	21.6
	Yala	205	96	59	531	680	707	733	709	757	717	
	Total	373	182	1,132	1,236	1,332	1,425	1,477	1,590	1,625	1,490	
JAFFNA	Maha	1,859	2,096	1,133	1,914	1,490	1,288	542	455	519	859	20.8
	Yala	1,694	1,862	725	1,112	463	620	587	603	603	575	
	Total	3,553	3,958	1,858	3,026	1,953	1,908	1,129	1,058	1,122	1,434	
RATNAPURA	Maha	178	381	236	351	240	599	302	366	348	371	8.1
	Yala	622	236	104	180	206	185	178	179	172	184	
	Total	800	617	340	531	446	784	480	545	520	555	
NUWARA ELIYA	Maha	149	26	157	374	382	407	70	322	341	304	7.7
	Yala	180	19	166	205	228	210	198	267	223	225	
	Total	329	45	323	579	610	617	268	589	564	530	
BATTICALOA	Maha	34	70	80	348	187	300	318	163	156	225	6.9
	Yala	24	66	329	285	227	359	288	187	182	249	
	Total	58	136	409	633	414	659	606	350	338	473	
VAVUNIYA	Maha	11	95	51	40	-	-	-	-	-	-	5.9
	Yala	159	168	112	274	-	525	324	362	415	406	
	Total	170	263	163	314	-	525	324	362	415	406	
KURUNEGALA	Maha	457	334	85	299	148	169	210	235	204	193	5.3
	Yala	352	435	146	188	53	107	281	238	197	175	
	Total	809	769	231	487	201	276	491	473	401	368	
OTHER *	Maha	1,818	1,366	529	882	494	715	1,032	1,212	1,115	914	24.9
	Yala	1,158	1,374	600	912	573	824	956	781	893	805	
	Total	2,976	2,740	1,129	1,794	1,067	1,539	1,988	1,993	2,008	1,719	
SRI LANKA	Maha	4,674	4,454	3,344	4,913	3,593	4,196	3,218	3,634	3,551	3,638	100.0
	%	51.5	51.1	59.9	57.1	59.7	54.3	47.6	52.2	50.8	52.8	
	Yala	4,394	4,256	2,241	3,687	2,430	3,537	3,545	3,326	3,442	3,256	
	%	48.5	48.9	40.1	42.9	40.3	45.7	52.4	47.8	49.2	47.2	
	Total	9,068	8,710	5,585	8,600	6,023	7,733	6,763	6,960	6,993	6,894	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Anuradhapura, Badulla, Polonnaruwa, Matale, Kilinochchi, Moneragala
Mullativu, Trincomalee, Kandy, Mannar, Matara, Hambantota, Ampara, Colombo, Kalutara, Galle
Gampaha, & Kegalle districts and special project Mahaweli H
Primary Source : Dept. of Census & Statistics

Table 8.3
PRODUCTION OF RED ONION BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
JAFFNA	Maha	8071	22698	10263	20102	13666	12714	5418	4526	5171	8299	29.2
	Yala	17793	20203	7728	11296	4418	6053	5914	6109	6109	5721	
	Total	25864	42901	17991	31398	18084	18767	11332	10635	11280	14020	
PUTTALAM	Maha	925	379	1060	3897	3492	3767	3731	4436	4367	3959	15.6
	Yala	520	376	465	2631	3288	3420	3679	3550	3663	3520	
	Total	1445	755	1525	6528	6780	7187	7410	7986	8030	7479	
VAVUNIYA	Maha	58	78	642	305	-	-	-	-	-	-	9.7
	Yala	535	888	1227	3216	-	5833	3802	4145	4933	4678	
	Total	0	966	1869	3521	-	5833	3802	4145	4933	4678	
BATTICALOA	Maha	164	381	946	3353	1825	2887	3097	1198	1138	2029	9.3
	Yala	70	365	3314	2972	2249	3521	2795	1815	1766	2429	
	Total	234	746	4260	6325	4074	6408	5892	3013	2904	4458	
NUWARA ELIYA	Maha	601	50	1069	2311	2348	2517	427	2689	2727	2142	7.8
	Yala	228	35	1273	1435	1567	1457	1439	1948	1603	1603	
	Total	829	85	2342	3746	3915	3974	1866	4637	4330	3744	
OTHER *	Maha	9280	9522	6500	8029	4570	6583	10217	11507	10110	8597	30.4
	Yala	6513	11916	7197	8410	4207	5763	7029	6305	6805	6022	
	Total	15793	21438	13697	16439	8777	12346	17246	17812	16915	14619	
SRI LANKA	Maha	19099	33108	20480	37997	25901	28468	22890	24356	23513	25026	100.0
	%	42.7	49.5	49.1	55.9	62.2	52.2	48.1	50.5	48.6	52.1	
	Yala	25659.0	33783.0	21204	29960	15729	26047	24658	23872	24879	23037	
	%	57.3	50.5	50.9	44.1	37.8	47.8	51.9	49.5	51.4	47.9	
	Total	44758	66891	41684	67957	41630	54515	47548	48228	48392	48063	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Anuradhapura, Badulla, Polonnaruwa, Matale, Kilinochchi, Moneragala
Mullativu, Trincomalee, Kandy, Mannar, Matara, Hambantota, Ampara, Colombo, Kalutara, Galle
Gampaha, Ratnapura, Kurunegala, Kegalle districts & special project Mahaweli H.

Primary Source : Dept. of Census & Statistics

Table 8.4
COST OF CULTIVATION PER ACRE OF RED ONION (IRRIGATED) BY INPUTS IN
PUTTALAM (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	NA	10561	11920	10743	8650	8802	NA	9127	11610
Seed	NA	19738	22033	31090	23289	37761	NA	24449	34295
Fertilizer	NA	5241	5282	5275	3210	4115	NA	4975	4038
Agro-Chemicals	NA			566	1191	511	NA	696	1137
Draught Power- Machinery & Equipment	NA						NA		
	NA	4157	6140	7213	3448	3319	NA	5879	5230
Total	NA	39697	45941	55512	38597	54508	NA	45126	56310

NA - Not available
Source : Dept. of Agriculture

Table 8.5
NET RETURN PER ACRE OF RED ONION (IRRIGATED) BY
SEASONS IN PUTTALAM

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	51,974.00	55,427.00
90/91 Maha	NA	NA
91 Yala	22,987.00	25,370.00
91/92 Maha	32,322.00	40,323.00
92 Yala	NA	NA
92/93 Maha	38,913.00	43,762.00
93 Yala	1,442.00	3,254.00
93/94 Maha	9,525.00	12,791.00
94 Yala	16,925.00	18,266.00
94/95 Maha	NA	NA

NA - Not available
Source: Dept. of Agriculture

Table 8.6

MONTHLY AVERAGE WHOLESALE PRICE OF RED ONION - PETTAH MARKET UNIT : Rs/50Kg

MONTH	1991		1992		1993		1994		1995		1996	
	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan
January	1,932	2,103	NA	867	2,467	2,729	1,569	2,307	1,522	2,279	978	1,149
February	2,023	2,287	NA	1,094	NA	1,500	2,243	3,073	827	1,313	NA	939
March	2,054	2,414	NA	917	942	1,153	2,197	2,808	836	1,187	NA	896
April	1,964	2,436	878	1,180	1,284	1,481	NA	2,471	980	1,380	NA	1,177
May	2,981	3,484	1,415	1,820	2,134	2,491	NA	2,536	1,492	2,203	NA	2,823
June	1,776	2,001	1,878	2,339	1,565	1,909	NA	2,536	NA	2,026	NA	3,359
July	NA	1,564	1,068	1,246	781	882	NA	1,497	918	1,370	NA	2,255
August	NA	1,153	801	957	653	791	NA	1,296	626	853	1,954	2,368
September	NA	909	648	760	518	628	NA	1,565	638	834	NA	2,453
October	NA	1,635	654	771	578	803	NA	1,596	492	1,205	NA	2,194
November	NA	1,306	522	798	NA	1,415	NA	1,308	NA	2,016	NA	1,857
December	NA	805	1,421	2,012	NA	1,979	NA	2,059	1,272	2,066	NA	1,879
An. Average	2,122	1,841	1,032	1,230	1,214	1,480	2,003	2,088	960	1,561	1,466	1,946

Table 8.7

MONTHLY AVERAGE RETAIL PRICE OF RED ONION - COLOMBO AND SUBURBS UNIT : Rs/Kg

MONTH	1991		1992		1993		1994		1995		1996	
	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan	Sinnan	Vedalan
January	NA	51.00	NA	23.73	82.09	66.19	44.91	55.53	45.59	59.75	27.09	35.15
February	NA	56.46	NA	27.63	NA	40.09	61.21	74.83	29.86	36.61	NA	27.01
March	NA	57.66	NA	23.48	26.41	30.03	61.69	71.78	26.15	31.06	NA	27.15
April	NA	55.98	25.68	33.30	33.00	37.24	NA	64.15	32.42	37.42	NA	33.40
May	NA	86.38	40.04	42.98	57.04	62.95	NA	52.51	NA	57.24	NA	65.11
June	NA	55.74	51.44	55.68	51.22	52.17	NA	63.23	NA	56.10	NA	86.50
July	NA	41.41	31.75	34.54	26.30	25.92	NA	40.43	26.16	37.34	NA	58.54
August	NA	32.42	22.47	25.60	21.25	22.21	NA	34.63	22.40	25.65	NA	56.88
September	NA	24.41	18.70	21.61	NA	18.71	NA	38.06	NA	24.95	NA	57.94
October	NA	40.03	18.87	21.19	NA	21.63	NA	44.16	NA	30.89	NA	55.27
November	NA	38.81	18.88	21.43	NA	36.63	NA	38.74	NA	50.52	NA	49.91
December	NA	24.80	26.00	35.65	NA	50.97	NA	50.84	43.27	53.60	NA	48.11
An. Average	NA	47.09	28.21	30.57	42.47	38.73	55.94	52.41	32.26	41.76	27.09	50.08

NA - DATA NOT AVAILABLE

Source : Marketing & Food Policy Division - HARTI

Table 8.8
IMPORTS OF RED ONION

Year	Quantity (Mt)	Value (000 Rs)	CIF Price (Rs/Kg)
1970	65,864.8	29,106.6	0.44
1971	2,278.5	752.2	0.33
1972	7.7	18.4	2.38
1973	-	-	-
1974	0.4	58.0	-
1975	3,628.5	110.4	0.30
1976	-	-	-
1977	*	*	-
1978	52.4	327.6	6.26
1979	9,519.4	29,327.1	3.08
1980	17,347.5	82,093.8	4.73
1981	4,005.9	15,368.4	3.84
1982	3,937.3	22,577.9	5.60
1983	1,484.5	8,066.7	5.43
1984	2,887.6	28,450.4	9.58
1985	2,942.1	25,140.3	7.36
1986	1,482.2	9,800.9	6.61
1987	1.1	22.6	21.26
1988	0.1	12.3	86.66
1989	-	-	-
1990	280.0	3,283.7	11.73
1991	0.1	6.2	44.61
1992	-	-	-
1993	-	-	-
1994	2,814.2	43,548.2	15.47
1995	1,010.0	10,437.6	10.33
1996	4,388.0	68,495.7	15.61

* Negligible Amount

Source : Dept. of Customs

Table 8.9
IMPORTS OF RED ONION BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	-	-	-	-	-	-	2,354.00	37.95	1,010.00	10.44	4,307.00	67.48
Malaysia	-	-	-	-	-	-	350.00	3.90	-	-	-	-
Turkey	-	-	-	-	-	-	111.00	1.69	-	-	-	-
Netherland	0.10	*	-	-	-	-	-	-	-	-	56.00	0.70
Pakistan	-	-	-	-	-	-	-	-	-	-	25.00	0.31
TOTAL	0.10	*	-	-	-	-	2,815.00	43.54	1,010.00	10.44	4,388.00	68.49

* - Negligible

Source : Dept. of Customs

Table : 8.10
PER CAPITA CONSUMPTION OF RED ONION PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.14	0.12	0.11	1.38
1981/82	3.43	2.74	2.02	3.29
1986/87	4.06	3.34	2.76	3.36

Primary Source : Central Bank of Sri Lanka

Table : 8.11
PER CAPITA CONSUMPTION OF RED ONION PER ANNUM
BY INCOME GROUP & SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	7.88	3.05	-	4.12
101-200	3.33	2.16	-	2.57
201-400	4.24	3.43	1.95	3.41
401-600	4.38	4.09	3.33	3.02
601-800	2.76	2.89	2.69	2.87
801-1000	2.97	2.86	2.97	2.88
1001-1500	3.03	2.91	3.00	2.93
1501-2000	3.42	3.14	3.20	3.19
2001-3000	3.78	3.49	2.87	3.49
3001-5000	3.74	3.89	3.24	3.81
5001-10000	4.30	3.84	2.84	4.03
OVER 10000	4.92	4.31	4.28	4.63
Overall Avg.	4.06	3.34	2.76	3.36

Primary Source : Central Bank of Sri Lanka

9. POTATO

I. Introduction

The "potato" (botanically called *Solanum tuberosum* and belonging to the family *Solanaceae*) was originally discovered by the indigenous inhabitants of *Maya* and *Inka* in Andies mountains in South America. It was introduced to European countries in the 16th century as a food commodity for the people. However, as a nutritious and profitable crop, potatoes were very much popular in the 18th century in Europe. At present potatoes are one of the major food commodities in the world. In Sinhala language it is called "artapal" which originally came from the word "ardappalen" in the Dutch Language. The meaning of "Ardappalen" is "Earth Apple".

In many countries in the world, the potatoes are used as a human as well as an animal feed.

Potatoes were first introduced to this country by Sir Samuel Baker in 1850s who was the most popular and pioneer estate planter in Sri Lanka. After 1948, potatoes became a popular vegetable crop in Sri Lanka and the Department of Agriculture organized many research and extension activities for this crop.

Potatoes can be grown well in the upcountry Wet, Intermediate and Dry Zones at temperatures between 24°C and 32°C as well as in the Puttalam and Jaffna districts during Maha season (Dept. of Agric. 1990, P.125)

All upcountry soils and well drained latosols, regosols and non-calcic brown soils of the low country are preferable.

There are two groups of varieties, commercial and local. Arka, Vekero, Cardinal, Desiree and Isna are the commercial varieties. Seta, Krushi and SE1 are the local varieties. Commercial varieties mostly take 3 1/2 months for maturity while the local varieties take 3 1/2 to 4 months.

II. Production

Until recently potatoes were one of the major high value commercial crops in Sri Lanka which have been cultivated in the upcountry regions and Jaffna Peninsula. The production of potatoes is location specific and the variety of production is different from place to place. Therefore, in Sri Lanka, there are three major categories of potatoes seen at the market identified by their producing place name. These are:

- i. Nuwara Eliya potatoes
- ii. Welimada potatoes
- iii. Jaffna potatoes

Generally the quality, demand and prices are different from each other. The Nuwara Eliya variety is the best.

II.I Major Producing Districts

The cultivation of potatoes is mainly concentrated in two districts, Nuwara Eliya and Badulla. As revealed by five year (1991-95) averages of production as well as the extents, these two districts have become prominent as major producing areas. Accordingly Nuwara Eliya (43%) and Badulla (56%) together contributed nearly 99% of the national production. Meanwhile the same two districts viz. Nuwara Eliya (38%) and Badulla (60%) accounted for 98% of the extent cultivated. The next important district in this connection was Jaffna. Although its contribution was not much it was nearly one percent according to the data relating to production as well as the extent in 1995.

II.II Seasonality of Production

The production statistics relating to the five year period (1991-95) indicate that there is no seasonal bias in potato production in the country. As revealed by these statistics, the per year production is distributed more or less equally between Maha (51.75%) and Yala (49.25%). However, looking at the per year production for the same period, in the major potato producing districts such as Nuwara Eliya and Badulla separately, there is a minor variation in production on seasonality. For example, in Nuwara Eliya and Badulla, Maha season accounted for 60% and 43% of the production respectively.

Another major feature of its seasonality is the changing nature of planting and harvesting periods, even within the same cultivation seasons, on the basis of location-specific climatic conditions. For example in Nuwara Eliya, the cultivating and harvesting period is between February and June for Yala, but in Badulla, it is between June and October. For Maha, this period is September to January in Nuwara Eliya and November to March in Badulla.

II.III Trends in Production and Average Yield

Considering the period (1970-1996) there has been a stagnation in both the extent as well as in production until 1978. Then 1979 onwards both production and the extent have increased over the years. Overall, the extent has increased by 37% between 1970-1980 and by 16% between 1980-1990 and by less than 1% between 1990-96. The increases in production in these three periods were 61%, 71%, and 74% respectively. Until 1994 an increase in the extent as well as in production has taken place as a result of the better local market created by import controls, but in and after 1994, these aspects have increased with increasing imports.

The average yield has increased (by 17%) between 1970-1980 and thereafter a stagnation is recorded.

II.IV Review of Agricultural Inputs

Seed potatoes, fertilizer, pesticides and weedicides, labour and lands are the major inputs for potato production. Compared to most of the other vegetables, the cost of production of potatoes is very high. One major reason for this is the high price of potato seeds. Fertilizers and other chemicals are also much used resultantly increasing the production cost. According to the HARTI field observations, 60%-70% of the production cost of potatoes goes for imported inputs such as seeds and fertilizer. Another major reason for the high production cost has been the high value of lands in major producing districts such as Nuwara Eliya and Badulla. The high labour cost also has been a reason.

The other significant feature in the cost of production has been its high variability according to the change in location or district and the nature of irrigation. It changes according to time of the year too. For example, the production cost in 1990 Yala under irrigated conditions in Nuwara Eliya has been Rs.89,965/acre and in Badulla it has been Rs.49,598/acre. The gap has been about Rs.40,000/acre. The change in requirements, amounts and mixtures of fertilizer and other inputs according to land and area has been one major reason for this change in production cost. With time the cost of production has rapidly increased; i.e. in Badulla under irrigated land production cost has increased from Rs.49,598/acre in 1990 Yala to Rs.85,675/acre in 1994 Yala. Like in fertilizer and other inputs, a rapid increase in labour costs has been the major reason for this increase.

The net return also has varied like the cost of production. For example, between 1990-95 the net return has changed from 66,458/acre to 169,934/acre including the imputed cost, under irrigated conditions in Nuwara Eliya district. In Badulla, the income has been much lower than this. It was between Rs.17,710/acre - Rs.84,757/acre for the same period.

III. Domestic Marketing

Sri Lanka has not achieved self-sufficiency in potatoes as in the case of exotic vegetables in terms of the market all the year round. The crop is highly perishable and production is highly seasonal. During the harvesting period, supply largely exceeds the market demand.

III.I Marketing Channels

The market channels through which potatoes pass between the grower and the consumer vary. Based on information on the volume handled in each channel and the relationship between the grower and the wholesaler, the following are identified as the major channels for potatoes:-

1. Farmer -> Transport unions -> Commission agents in Colombo and Kandy market -> Wholesalers/Retailers -> Consumers
2. Farmers -> Wholesalers/Retailers -> Consumers
3. Farmers -> CWE Purchasing Centres -> Local Wholesalers/Retailers -> Consumers.

III.II Price Behaviour

The price is very high during the months of June-July and August while it is lowest in February-March and September to October in the year, due to the harvesting period. This price behaviour is most common to both Nuwara Eliya as well as Welimada varieties. However the price of Nuwara Eliya variety is a little higher than the Welimada variety. Wholesale as well as retail prices of both varieties have fluctuated in the period between 1991-1995 from Rs.40 to 50. However, there has been a clear declining trend in all the prices after 1994 due to import liberalization of potatoes which led to the availability of a bulk of imported produce in the market. The wholesale price of a 50 kg. gunny bag of Nuwara Eliya variety in the Pettah wholesale market was Rs.2,289 in 1984, Rs.2,059 in 1995 and Rs.1,761 in 1996. The retail price of the same variety in the same years was Rs.55.63/kg., Rs.50.51/kg., Rs.44.65/kg. respectively.

III.III Review of Marketing Cost

According to the recent observations (in September 1997) of the HARTI, the costs incurred for various purposes in moving the produce from the producer to the wholesaler are indicated in the following section. This estimation has been done on the assumption that the wholesale price of a kilo at the Colombo wholesale market was Rs.30/-.

	Wholesale price	Rs. 30.00
	Deduct	
1.	Transport cost (per kilo)	Rs. 0.70
2.	Wholesale commission	Rs. 1.50
3.	Loading and unloading charges (based on Rs. 5 for a 50 kilo/gunny)	Rs. 0.10
4.	For wastage (based on experience)	Rs. 0.40
		Rs. 2.70
	Price for the farmer	Rs. 30.00 - 2.70
		Rs. 27.30

A high profit margin is involved in the marketing channels when product goes from the wholesaler to the consumer. According to HARTI observations, the annual average of the wholesale and retail price difference was Rs.4.16/kg. for Welimada variety and Rs.9.43/kg. for Nuwara Eliya variety in 1996. This price difference includes all the costs of marketing such as transport, handling, loading, unloading and profit margins.

IV. External Trade

Irrespective of bans and limitations in some periods, potatoes, have been imported since long ago under different policy regimes in order to satisfy the country's demand among which are included the requirements for consumption and seed potatoes.

IV.I Major Import/Export Countries

According to the data relating to the 1991-95 period, the major source of imports of potatoes for consumption was India. Over 98% of such imports have been made from there. Then Japan, China and Lebanon were the other countries from where minor amounts have been imported. Regarding importation of seed potatoes, the Netherlands, France, Germany, Australia and New Zealand were important.

IV.II Trends in Import in Quantity, Value and Price

The import of potatoes has declined by 79% from 1972 to 1973 due to the restrictions of imports under the import substitution policies. Thereafter imports have been lesser than one mt. until 1977, except the year 1974 when a larger quantity has been imported perhaps due to the decline in the world market price in a large scale. Imports increased over the years after 1977 until 1979 under the open economic policies. Again it has declined gradually due to some of the government restrictions such as quotas and licenses. Between 1982-1993 imports have been made in very limited quantities sometimes even less than 1,000 mt. Imports were started again on a large scale in 1994 when imports were more liberalized. Thereafter imports have increased over the years. The trend in the import value has been similar to the imported quantities.

The CIF price of potatoes has increased over the years between 1971-1987; thereafter it had a slight decline which prevailed continuously except in 1990 and 1992 when prices went up significantly.

IV.III Export Trade Regulations

There was a 100% duty for potato imports during the period 1980-86. It was 60% in 1989. In 1994 there was a 35% duty or a charge of Rs. 2.00/kg. and 20% as BTT. The tariff rates effective from 1996 and still valid are: 35% duty, 20% turnover tax and 4.5% national security levy.

V. Consumption

The per capita consumption of potatoes has increased from 1.3 kg. in 1973 to 3.0 kg. in 1981/82 and it has slightly declined by 1986/87. The consumption level was higher in the urban sector followed by estate and rural sectors. Generally, the consumption level has increased with the increase of the income levels.

VI. Review of Government Policies

The government's involvement in developing potato cultivation goes back to the 2nd half of the 1960s. At that time the government attempted to encourage local farmers to initiate the cultivation of potatoes by limiting the imported quantity in 1967 and in later years and by completely banning imports in 1969. This policy had some impact on local agriculture in terms of establishing potato cultivation as a food crop as well as a commercial crop.

Then under import substitution policies in 1970s, imports of potatoes were practically limited from 1973 onwards until 1977 when imports were liberalized. In this period potatoes were established more as a commercial crop.

After 1977 under the liberalization of imports duties were utilized as the mechanism to control imports and protect the local farmer. In addition to this the approval of the Ministry of Agriculture also had to be obtained for imports. Especially after 1982, imports were more controlled. Between 1985-1993 imports have been stopped except in the year 1989. Due to the ban on imports especially by not issuing licenses during 1980s and early 1990s, the potato industry experienced a considerable growth. The majority of the vegetable growers in Nuwara Eliya and Badulla became farmers who earned an attractive income. The land area under potato cultivation and the production increased. The lands with high slopes which were not suitable for cultivation were also utilized for potato cultivation, due to the gainful income it provided, by causing environmental damages also.

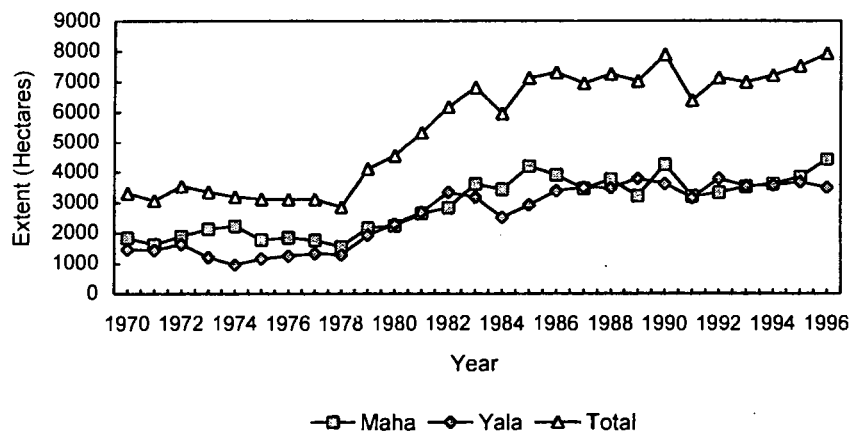
With more liberalization of import in and after 1994, the import duty was reduced and all the restrictions for potato imports were also removed. As a result, large quantities have been imported recording an increase year after year. As revealed by HARTI observations, the import of an excessive amount in the year 1997 (111,900 mt.) has affected the local farmers greatly in terms of decreases in farm gate price, cultivated area and production.

Table 9.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF POTATO - SRI LANKA

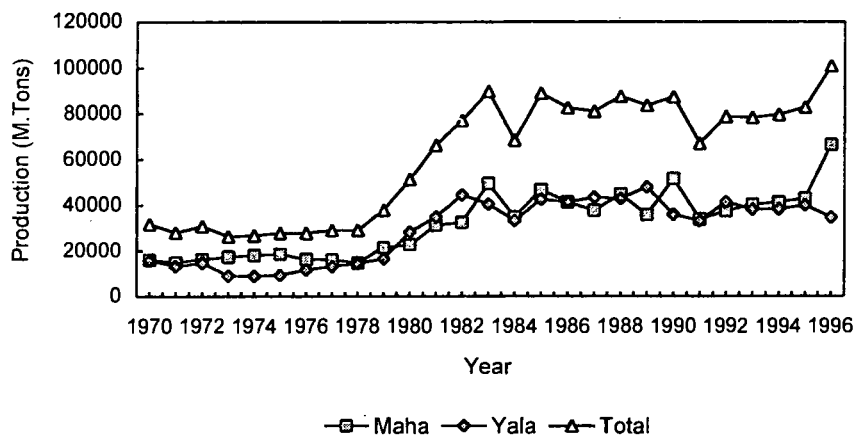
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1970	1,845	1,461	3,306	15,955	15,787	31,742	8,648	10,806	9,602
1971	1,622	1,445	3,067	14,757	13,283	28,040	9,096	9,194	9,142
1972	1,900	1,639	3,539	16,152	14,692	30,844	8,501	8,962	8,715
1973	2,144	1,208	3,352	17,320	9,067	26,387	8,078	7,506	7,872
1974	2,235	957	3,192	17,910	8,855	26,765	8,013	9,249	8,385
1975	1,779	1,167	3,122	18,571	9,354	27,925	10,439	8,012	8,946
1976	1,857	1,256	3,113	16,168	11,709	27,877	8,708	9,319	8,954
1977	1,767	1,343	3,110	15,993	13,110	29,103	9,052	9,760	9,358
1978	1,560	1,300	2,859	14,637	14,461	29,098	9,382	11,128	10,176
1979	2,174	1,935	4,108	21,492	16,397	37,889	9,888	8,476	9,223
1980	2,244	2,293	4,537	22,786	28,335	51,121	10,154	12,357	11,268
1981	2,641	2,683	5,324	31,196	34,814	66,010	11,812	12,976	12,398
1982	2,830	3,339	6,169	32,466	44,427	76,893	11,472	13,305	12,464
1983	3,617	3,186	6,803	49,390	40,363	89,753	13,655	12,669	13,193
1984	3,438	2,521	5,959	34,879	33,375	68,254	10,145	13,239	11,454
1985	4,193	2,926	7,119	46,483	42,472	88,955	11,086	14,515	12,495
1986	3,907	3,392	7,299	41,221	41,261	82,482	10,550	12,164	11,300
1987	3,453	3,496	6,949	37,669	43,373	81,042	10,909	12,406	11,662
1988	3,758	3,489	7,247	44,696	42,839	87,535	11,894	12,278	12,079
1989	3,223	3,793	7,016	35,716	47,755	83,471	11,082	12,590	11,897
1990	4,260	3,628	7,888	51,451	35,754	87,205	12,078	9,855	11,055
1991	3,211	3,173	6,384	33,740	32,997	66,737	10,508	10,399	10,454
1992	3,336	3,799	7,135	37,335	41,227	78,562	11,192	10,852	11,011
1993	3,532	3,554	6,986	40,154	37,982	78,136	11,369	10,687	11,185
1994	3,624	3,586	7,210	41,139	38,246	79,385	11,352	10,665	11,010
1995	3,842	3,678	7,519	42,764	39,893	82,657	11,131	10,846	10,993
1996	4,430	3,495	7,925	66,236	34,519	100,755	14,952	9,877	12,714

Source : Dept. of Census & Statistics
 Data Development Unit of HARTI

Graph 9.1
EXTENT OF POTATO



Graph 9.2
PRODUCTION OF POTATO



Graph 9.3
AVERAGE YIELD OF POTATO

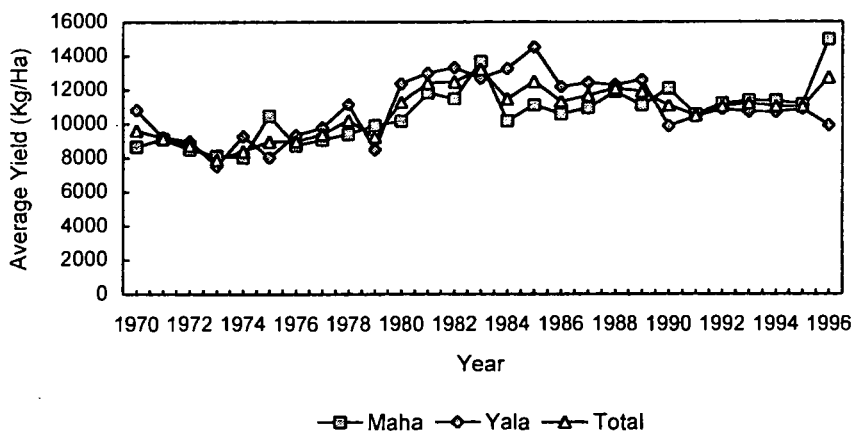


Table 9.2
EXTENT OF POTATO BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	Avg(91-95)	%
BADULLA	Maha	816	1,092	2,407	2,262	1,875	1,807	1,817	1,885	1,938	1,864	
	Yala	647	1,655	2,148	2,552	2,263	2,500	2,226	2,410	2,441	2,368	
	Total	1,463	2,747	4,555	4,814	4,138	4,307	4,043	4,295	4,379	4,232	(60.2)
NUWARA ELIYA	Maha	507	514	1,389	1,809	1,246	1,452	1,602	1,606	1,708	1,523	
	Yala	459	614	768	1,063	904	1,278	1,201	1,157	1,130	1,134	
	Total	966	1,128	2,157	2,872	2,150	2,730	2,803	2,763	2,838	2,657	(37.8)
OTHERS *	Maha	484	634	366	185	80	68	109	128	187	114	
	Yala	60	23	1	10	2	17	22	14	14	14	
	Total	544	657	367	195	82	85	131	142	201	128	(1.8)
SRI LANKA	Maha	1,954	2,244	4,193	4,260	3,211	3,336	3,532	3,624	3,842	3,509	
	%	62.6	49.5	58.9	54.0	50.3	46.8	50.6	50.3	51.7	(49.9)	
	Yala	1,168	2,293	2,926	3,628	3,173	3,799	3,454	3,586	3,586	3,520	
	%	37.4	50.5	41.1	46.0	49.7	53.2	49.4	49.7	48.3	(50.1)	
	Total	3,122	4,537	7,119	7,888	6,384	7,135	6,986	7,210	7,428	7,029	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(100.0)	(100.0)

Table 9.3
PRODUCTION OF POTATO BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	Avg(91-95)	%
BADULLA	Maha	1395	10102	25947	23151	18400	18581	17716	19009	19520	18645.2	
	Yala	5,651	21,040	30,842	25,005	21,858	26,557	24,774	24,101	25,097	24,477	
	Total	7,046	31,142	56,789	48,156	40,258	45,138	42,490	43,110	44,617	43,123	(56.1)
NUWARA ELIYA	Maha	5,864	5,743	17,921	26,902	14,997	18,539	21,543	21,176	21,830	19,617	
	Yala	3,657	6,966	11,549	10,673	11,101	14,604	13,030	14,028	13,708	13,294	
	Total	9,521	12,709	29,470	37,575	26,098	33,143	34,573	35,204	35,538	32,911	(42.8)
OTHERS *	Maha	6,005	6,919	2,468	1,365	304	177	861	941	1,391	735	
	Yala	43	325	4	58	13	38	144	84	83	72	
	Total	6,048	7,244	2,472	1,423	317	215	1,005	1,025	1,474	807	(1.0)
SRI LANKA	Maha	18,571	22,786	46,483	51,451	33,740	37,335	40,154	41,139	42,764	39,026	
	%	66.5	44.6	52.3	59.0	50.6	47.5	51.4	51.8	52.4	(50.7)	
	Yala	9,354	28,335	42,472	35,754	32,997	41,227	37,982	38,246	38,893	37,869	
	%	33.5	55.4	47.7	41.0	49.4	52.5	48.6	48.2	47.6	(49.3)	
	Total	27,925	51,121	88,955	87,205	66,737	78,562	78,136	79,385	81,657	76,895	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(100.0)	(100.0)

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ratnapura, Kandy, Jaffna, Kandy, Matale, Moneragala, Jaffna, Vavuniya Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloa, Ampara, Hambantota and special projects Killinochchi & Mahaweli H Areas
Primary Source : Department of Census & Statistics

Table 9.4
COST OF CULTIVATION PER ACRE OF POTATO (IRRIGATED) BY INPUTS
IN NUWARA-ELIYA (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	20,054	18,588	NA	23,681	36,029	19,425	21,117	NA	21,125	29,738
Seed	69,079	78,988	NA	57,810	58,272	50,674	64,523	NA	56,897	40,418
Fertilizer	21,358	29,186	NA	23,325	28,025	18,842	21,086	NA	21,012	17,442
Agro-Chemicals	8,410	6,370	NA	9,230	11,927	1,024	4,897	NA	8,640	6,636
Draught power - Machinery & Equipment	2,177	333	NA	1,800	4,455	-	823	NA	6,225	1,233
Total	121,078	133,465	NA	115,846	138,708	89,965	112,446	NA	113,899	95,467

Table 9.5
COST OF CULTIVATION PER ACRE OF POTATO (IRRIGATED)
BY INPUTS IN BADULLA (Rs/Acre)

INPUT	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	10,944	11,314	12,701	15,007	21,550
Seed	27,095	53,801	46,340	45,567	45,360
Fertilizer	8,186	8,654	9,200	9,504	12,285
Agro-Chemicals	2,428	3,418	1,695	3,864	6,480
Draught power - Machinery & Equipment	945	180	162	-	-
Total	49,598	77,367	70,098	73,942	85,675

Table 9.6
COST OF CULTIVATION PER ACRE OF POTATO (RAINFED)
BY INPUTS IN BADULLA (Rs/Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha
Labour	10,464	10,899	13,396	18,425	21,600
Seed	35,544	47,816	47,618	50,589	47,765
Fertilizer	6,623	8,555	7,700	8,854	11,096
Agro-Chemicals	3,685	4,405	4,456	5,850	8,406
Draught power - Machinery & Equipment	252	-	-	-	1,459
Total	56,568	71,675	73,170	83,718	90,326

NA - DATA NOT AVAILABLE
Source : Dept. of Agriculture

Table 9.7
NET RETURN PER ACRE OF POTATO (IRRIGATED)
BY SEASONS IN NUWARA ELIYA

SEASON	NET RETURN PER ACRE (Rs)	
	Including Imputed cost	Excluding Imputed cost
90 Yala	84,061	87,584
90/91 Maha	169,934	171,903
91 Yala	77,839	84,549
91/92 Maha	99,041	101,737
92 Yala	NA	NA
92/93 Maha	NA	NA
93 Yala	97,613	140,348
93/94 Maha	66,458	75,267
94 Yala	117,533	132,488
94/95 Maha	74,988	86,987

Primary Source : Dept. of Agriculture

Table 9.8
NET RETURN PER ACRE OF POTATO (IRRIGATED/RAINFED) BY
SEASONS IN BADULLA

SEASON	IRRIGATED		RAINFED	
	NET RETURN PER ACRE (Rs) Including Imputed cost	Excluding Imputed cost	NET RETURN PER ACRE (Rs) Including Imputed cost	Excluding Imputed cost
90 Yala	17,710	45,732	-	-
90/91 Maha	-	-	49,461	61,793
91 Yala	25,895	57,740	-	-
91/92 Maha	-	-	57,069	72,202
92 Yala	36,961	77,252	-	-
92/93 Maha	-	-	58,123	85,994
93 Yala	17,294	51,328	-	-
93/94 Maha	-	-	65,825	72,904
94 Yala	84,757	100,932	-	-
94/95 Maha	-	-	66,763	82,679

Primary Source : Dept. of Agriculture

Table 9.9
MONTHLY AVERAGE WHOLESALE PRICE OF POTATO - PETTAH MARKET UNIT : Rs/50Kg

Month	1991		1992		1993		1994		1995	
	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya
January	1,816.00	2,069.00	1,534.00	1,695.00	1,945.00	2,259.00	1,952.00	2,214.00	1,624.00	1,787.00
February	1,736.00	1,936.00	1,779.00	1,930.00	1,781.00	2,002.00	1,615.00	1,873.00	1,250.00	1,492.00
March	1,845.00	2,031.00	1,762.00	2,167.00	1,404.00	1,572.00	2,243.00	2,476.00	1,069.00	1,264.00
April	1,925.00	2,142.00	1,825.00	2,029.00	1,320.00	1,477.00	2,081.00	2,375.00	1,364.00	1,532.00
May	1,896.00	2,099.00	2,027.00	2,248.00	1,269.00	1,386.00	1,795.00	1,978.00	1,715.00	1,903.00
June	1,958.00	2,157.00	2,018.00	2,241.00	1,671.00	1,835.00	1,903.00	2,104.00	-	2,396.00
July	2,075.00	2,707.00	1,710.00	1,892.00	1,957.00	2,313.00	-	2,800.00	2,691.00	2,991.00
August	2,010.00	2,345.00	1,307.00	1,499.00	2,004.00	2,508.00	2,003.00	2,518.00	2,237.00	2,700.00
September	1,171.00	1,597.00	957.00	1,202.00	1,156.00	1,585.00	1,468.00	1,774.00	1,725.00	2,190.00
October	1,240.00	1,461.00	1,107.00	1,233.00	1,387.00	1,572.00	1,678.00	1,891.00	1,901.00	2,178.00
November	1,497.00	1,682.00	1,650.00	1,800.00	1,768.00	1,979.00	2,777.00	3,019.00	2,112.00	2,373.00
December	1,562.00	1,640.00	2,044.00	2,192.00	2,049.00	2,283.00	2,118.00	2,441.00	1,659.00	1,909.00
An. Average	1,727.59	1,989.00	1,643.00	1,844.00	1,643.00	1,898.00	1,967.00	2,289.00	1,759.00	2,060.00

Table 9.10
MONTHLY AVERAGE RETAIL PRICE OF POTATO - COLOMBO AND SUBURBS UNIT : Rs/Kg

Month	1991		1992		1993		1994		1995	
	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya	Welimada	N'Eliya
January	49.08	53.21	38.74	42.48	49.80	56.57	48.11	53.57	40.86	43.56
February	45.00	48.74	40.89	44.60	43.37	48.75	41.25	46.47	34.07	37.70
March	44.57	47.79	41.55	45.52	34.45	38.30	52.34	57.17	29.79	32.68
April	49.36	52.87	44.39	48.28	33.59	37.11	56.39	61.80	36.31	39.09
May	47.11	50.72	48.86	53.57	32.91	36.78	45.55	48.55	43.68	46.71
June	47.65	50.81	51.55	55.73	39.79	43.03	45.28	49.34	47.55	56.59
July	52.42	62.08	42.71	45.38	47.45	52.56	NA	63.14	64.52	68.61
August	50.15	55.54	32.34	37.33	51.44	58.66	52.27	61.94	55.16	64.20
September	30.46	41.10	26.66	28.74	30.98	47.03	37.70	48.04	43.94	54.51
October	31.77	36.98	25.13	26.30	33.46	38.99	42.57	46.50	47.53	53.93
November	37.58	41.14	38.13	40.43	42.50	46.64	65.07	70.08	52.08	57.63
December	39.17	41.90	47.17	49.18	48.82	54.25	54.55	61.00	42.13	50.87
An. Average	43.69	48.57	39.84	43.13	40.71	46.56	49.19	55.63	44.80	50.51

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 9.11
IMPORTS OF POTATO

Year	Quantity (Mt)	Value (000 Rs)	CIF Price (Rs/Kg)
1970	186.5	177.6	0.95
1971	3,720.5	3,835.2	1.03
1972	5,942.4	7,595.5	1.28
1973	1,275.2	1,763.0	1.38
1974	10,027.3	5,540.6	0.55
1975	586.8	1,133.6	1.93
1976	870.5	2,143.9	2.46
1977	141.2	606.4	4.29
1978	3,967.0	9,256.0	2.33
1979	7,606.9	35,048.4	4.56
1980	1,287.9	12,023.9	9.34
1981	1,000.0	2,600.0	2.60
1982	0.1	10.9	-
1983	860.6	5,669.0	6.58
1984	214.3	1,684.1	7.86
1985	*	30.1	-
1986	*	0.4	-
1987	0.8	17.1	21.38
1988	20.0	288.6	14.43
1989	501.0	5,780.8	11.54
1990	0.1	12.7	-
1991	*	10.5	-
1992	0.4	87.7	-
1993	*	0.7	-
1994	7,849.2	90,086.8	11.40
1995	11,982.0	161,102.0	13.43
1996	25,784.3	410,396.9	15.92

* Negligible

Source : Dept. of Customs

Table 9.12
IMPORTS OF POTATO FOR CONSUMPTION BY COUNTRIES

COUNTRY	1990		1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	-	-	-	-	NR	0.50	-	-	7,717.00	88.81	11,867.00	159.58	17,655.00	296.46
Japan	*	*	-	-	-	-	-	-	105.00	0.97	10.00	0.13	*	*
China	-	-	-	-	-	-	-	-	-	-	55.00	0.52	-	-
Lebanon	-	-	-	-	-	-	-	-	-	-	50.00	0.81	-	-
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	50.00	0.69
Egypt	-	-	-	-	-	-	-	-	-	-	-	-	100.00	1.98
Fed. Germany	-	-	-	-	-	-	-	-	-	-	-	-	54.00	0.81
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-	6,362.00	89.33
Rumania	-	-	-	-	-	-	-	-	-	-	-	-	79.00	1.17
U.K.	-	-	-	-	-	-	-	-	-	-	-	-	1,484.00	19.94
Others	0.90	0.10	*	0.10	0.38	0.40	0.30	*	27.03	0.30	0.50	0.60	-	-
TOTAL	0.90	0.10	*	0.10	0.38	0.90	0.30	*	7,849.03	90.08	11,982.50	161.10	25,784.00	410.38

* - Negligible NR - Not reported Source : Dept. of Customs

Table 9.13
IMPORTS OF SEED POTATO BY COUNTRIES

COUNTRY	1990		1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	-	-	-	-	-	-	-	-	-	-	-	-	187	3.98
Netherlands	36.00	0.82	919.00	28.95	505.00	19.09	2219.00	77.97	6404.00	274.92	9672.00	408.96	3426.00	140.28
France	-	-	80.00	2.32	250.00	6.09	1803.00	64.16	1938.00	86.05	357.00	15.02	-	-
Germany	-	-	0.24	*	80.00	3.21	165.00	7.23	138.00	7.45	1138.00	60.94	637.00	21.14
Australia	-	-	-	-	-	-	-	-	522.00	16.44	457.00	18.98	288.00	11.63
New Zealand	-	-	-	-	-	-	-	-	441.00	15.01	833.00	35.79	255.00	10.22
Others	-	-	-	-	0.50	0.10	-	-	74.00	1.94	151.00	2.17	50.00	3.12
TOTAL	36.00	0.82	999.24	31.27	585.05	22.31	2634.00	91.29	9382.00	379.92	14189.00	612.89	5200.00	205.39

* - Negligible Source : Dept. of Customs

Table 9.14
IMPORTS OF POTATO ** BY COUNTRIES

COUNTRY	1990		1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	-	-	-	-	NR	0.50	-	-	7,727.00	88.91	11,980.00	160.52	17,842.00	300.44
Japan	*	*	-	-	0.50	0.10	-	-	105.00	0.97	10.00	0.13	*	*
China	-	-	-	-	-	-	-	-	-	-	80.00	0.94	-	-
Lebanon	-	-	-	-	-	-	-	-	-	-	50.00	0.81	-	-
Netherlands	36.00	0.82	919.00	28.96	505.00	19.09	2,219.00	77.97	6,404.00	274.92	9,672.00	408.96	9,788.00	229.61
France	-	-	80.00	2.32	-	-	250.00	6.09	1,803.00	64.16	1,938.00	86.05	357.00	15.02
Germany	-	-	0.24	*	80.00	3.21	165.00	7.23	138.00	7.45	1,138.00	60.94	637.00	21.14
Australia	-	-	-	-	-	-	0.20	*	522.01	16.44	457.00	18.98	288.00	11.63
New Zealand	-	-	-	-	-	-	-	-	441.00	15.01	833.00	35.79	255.00	10.22
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	50.00	0.69
Egypt	-	-	-	-	-	-	-	-	-	-	-	-	100.00	1.98
Fed. Germany	-	-	-	-	-	-	-	-	-	-	-	-	54.00	0.81
Rumania	-	-	-	-	-	-	-	-	-	-	-	-	79.00	1.17
U.K.	-	-	-	-	-	-	-	-	-	-	-	-	1,484.00	19.94
Others	0.90	0.10	*	*	0.38	0.40	0.10	*	91.02	2.14	13.50	0.87	50.00	3.14
TOTAL	36.09	0.83	999.24	31.28	585.43	22.40	2,634.03	91.29	17,231.03	470.00	26,171.50	773.99	30,984.00	615.79

NR - Not reported Source : Dept. of Customs ** - Potato for consumption & Seed Potatoe

Table : 9.15
PER CAPITA CONSUMPTION OF POTATO PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1973	2.20	1.10	1.20	1.30
1978/79	2.80	2.40	2.70	1.50
1981/82	3.50	2.90	2.90	3.00
1986/87	3.50	2.70	2.70	2.80

Primary Source : Central Bank of Sri Lanka

Table : 9.16
PER CAPITA CONSUMPTION OF POTATO PER ANNUM
BY INCOME GROUP & SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	3.60	-	-	0.80
101-200	2.30	7.30	-	5.60
201-400	1.50	1.50	0.50	1.40
401-600	3.30	1.20	0.60	1.30
601-800	1.90	1.40	0.70	1.40
801-1000	1.10	1.30	2.00	1.40
1001-1500	2.50	1.90	2.00	2.00
1501-2000	2.50	2.20	2.50	2.30
2001-3000	3.10	3.20	3.80	3.20
3001-5000	3.70	3.80	4.00	3.80
5001-10000	4.90	5.30	3.50	5.10
OVER 10000	5.20	5.40	8.60	5.30
Overall Avg.	3.50	2.70	2.70	2.80

Primary Source : Central Bank of Sri Lanka

Table 9.17
SELF SUFFICIENCY RATIO - POTATO

YEAR (M.T.)	PRODUCTION (M.T.)	SEED REQUIREMENT (M.T.)	CONSUMPTION ** AVAILABILITY * (M.T.)	SELF *** REQUIREMENTS RATIO %	SUFFICIENCY
1970	31,742	8,059	20,509	16,263	126.1
1971	28,040	7,477	17,759	16,385	108.4
1972	30,844	8,627	19,133	16,714	114.5
1973	26,387	8,171	15,577	17,013	91.6
1974	26,765	7,781	16,308	17,264	94.5
1975	27,925	7,611	17,522	17,539	99.9
1976	27,877	7,589	17,500	17,827	98.2
1977	29,103	7,582	18,611	18,119	102.7
1978	29,093	6,970	19,214	18,441	104.2
1979	37,889	10,014	24,086	36,226	66.5
1980	51,121	11,060	34,949	36,912	94.7
1981	66,010	12,979	46,430	37,576	123.6
1982	76,893	15,039	54,165	45,974	117.8
1983	89,753	16,584	64,194	46,859	137.0
1984	68,254	14,527	46,902	47,415	98.9
1985	88,955	17,355	62,704	48,138	130.3
1986	82,482	17,793	56,441	48,989	115.2
1987	81,042	16,940	55,998	49,731	112.6
1988	87,535	17,667	61,114	46,713	130.8
1989	83,471	17,104	58,020	47,332	122.6
1990	87,205	19,229	59,256	47,859	123.8
1991	66,737	15,563	44,500	48,575	91.6
1992	78,562	17,394	53,312	49,019	108.8
1993	78,136	17,030	53,292	49,622	107.4
1994	79,385	17,576	53,870	50,315	107.1
1995	82,657	18,330	56,061	51,011	109.9
1996	100,755	19,320	71,360	51,540	138.5

* Availability - (Production * 0.9) - Seed requirement

** Consumption - Per capita Consumption * Mid year population

*** Self sufficiency ratio - Availability / requirement * 100

Source : Hector Kobbekaduwa Agrarian Research & Training Institute
Dept. of Census & Statistics
Central Bank of Sri Lanka
Registra Generals Department

10. MANIOC

I. Introduction

The manioc plant, also called *topioca* or *cassava*, is distinguished botanically as *Manihot esculenta*, *M. utilissima*. Five hundred million people in Africa, Latin America and some parts of Asia eat manioc every day, some as their chief staple food and others as their important subsidiary food.

Its tuber possesses a sufficient quantity of digestive nutrients. The fresh root has 50% to 75% water and less than 1% protein. The roots as well as the leaves are also used as a livestock food.

The manioc plant has useful characteristics. It can be grown and harvested at any time of the year. It can survive under conditions of severe drought and it thrives during the rainy season. It resists pests too. It can be grown well in clayey as well as in sandy soils. It will thrive where other crops will not thrive.

II. Production

Manioc was first introduced to Sri Lanka during the Dutch period. Since then it remained as a smallholding crop mainly cultivated to provide home consumption requirements.

II.I Major Producing Districts

According to the five year (1991-95) production average, Kurunegala (15%), Batticaloa (9%), Ratnapura (8%), Gampaha (8%), Ampara (5%) and Kegalle (5%) were the prominent districts in respect of production which contributed 50% to the total production.

In terms of the extent cultivated the previous order has changed i.e. Kurunegala (14%), Ratnapura (8%), Gampaha (8%), Kegalle (6%), Puttalam (6%), Ampara (5%), Batticaloa (5%) and Hambantota (5%) got the prominence in this regard and accounted for 57% of the total extent in the country.

II.II Seasonality of Production

Despite the fact that manioc is not a seasonal crop, there was a slight difference in seasonality of the total production (59% of production comes in Maha) of which a substantial portion comes from the Dry Zone districts where the agricultural activities were given high priority during Maha season. In the Wet Zone districts there is no identifiable difference in seasonality in production.

II.III Trends in Production, Cultivation Area and Average Yield

Looking at the trend of manioc production for the period 1970-1996 the main features identified were the very rapid increase between 1972-75 (by 146%), a share of decline between 1975-77 (by 29%), stagnation between 1977-1982, a share of increase between 1982-83 (by 26%) and a gradual decline in a long period from 1983 to 1996. These changes in the production trend have been caused due to policy changes.

The trend in the extent is also similar to the trend in production. Accordingly it has sharply increased (by 179%) between 1972-75. Thereafter the declining process was started. Even in that period a sharp drop (by 50%) is indicated between 1976-77. The extent declined (by 68%) very slightly in a long period from 1977-1996.

The above changes in production as well as in the extent have been caused by policy changes in the country which will be explained in detail under the review of government policies. In brief, the reason for the sharp increase in production between 1972-75 has been the government's commitment and encouragement of the people to grow local food in order to attain self-sufficiency under its import substitution policies.

The relaxation of some rules and regulations imposed earlier to achieve the aforesaid objectives has been a reason for the decline in the cultivated area and production after 1975. Then the declining process was accelerated in 1977 and thereafter by the liberal economic policies which led to the availability of much of the imported foods at cheap prices in local markets discouraged the demand for local subsidiaries.

Unlike the production and the extent, the average yield has declined after 1972. The utilization of marginal lands on large scale where any other crop cannot be grown must have been the reason for the reflection of this decline in the data. After stagnation in yield for years it has again started to increase in 1975 and it has continued until 1985. The stoppage of cultivation in marginal lands where the yield rate is lower and continuation in cultivation in lands where higher yields are possible has been a probable reason to the increase in the yield level. After 1983 the yield has been declining, at the beginning at a rapid rate (at 24% between 1983-86), and later at a very slower rate (at 11% between 1986-1996). There is no identifiable reason for the declines in yield other than the cultivation in the same lands and less care by farmers who can hire their labour instead of utilizing it on land, which brings a comparatively attractive income.

II.IV Review of Agricultural Inputs

Labour is the only input incurred in the cultivation of manioc. According to the Department of Agriculture the cost of production in the Puttalam district in 1990/91 Maha has been Rs.2,325/acre. For the same district the net return per acre from cultivation of manioc has been Rs.22,569 including the imputed cost and Rs.24,426 excluding the imputed cost.

III. Domestic Marketing

The most important marketing channel of manioc, which is mainly consumed in the producing area itself, is a three-step channel of producer, retailer and consumer. The bulk of the harvest goes directly from the producer to the consumer too.

One major point to be mentioned about the price behaviour is that in both wholesale and retail prices, there is no clear pattern of fluctuations throughout the year except what happens in an ad hoc way. The non availability of a proper cultivation and harvesting season has been one major reason for this.

The price has gone up very slowly during the five year period 1991-1995. It has been from Rs.7.48/kg. to Rs.11.81/kg. (a 58% increase). The availability of wheat flour freely at subsidized prices, which has become a reason for low income earners to consume bread as their staple, has been one reason for the comparatively lesser demand and the slow increase in price.

IV. External Trade

Manioc has been exported in the past.

IV.I Major Import/Export Countries

Based on exports during the 1993-95 period, U.A.E., other Middle-East countries, Netherlands, United Kingdom and Australia can be mentioned as the major countries to which exports were made.

IV.II. Trends in Export/Import in Quantity, Value and Price

During the reference period (1991-95) the quantity of exports has increased over the years. This increase has been 109%.

The export value also has increased by 133% between the 1991-95 two years with some fluctuations in between.

Looking at the export price to the U.A.E. it has changed during the whole period from 1991-95 except in 1994 which was Rs.33.86/kg. In 1991 the price was Rs.29.03/kg. The price fetched in different countries has varied. For example, in 1991 it has been Rs.14.00/kg. in Netherlands while it was Rs.41.31/kg. in England and Rs.33.33/kg. in U.S.A.

IV.III Export Trade Regulations

At present 35% duty, 20% turnover tax and 4.5% national security levy is being imposed for exports of manioc.

V. Consumption

Per capita consumption of manioc has decreased between 1973-1978/79 by 43%. This change can be attributed to the change in the economy of the country after 1977 which changed the consumption pattern of the people compared to the earlier years. Again a decline was reported in the 1986/87 survey.

The above trend in consumption is reflected in all sectors. Compared to the urban consumption, the rural sector was higher followed by the estate sector.

The highest consumption recorded from middle and lower income groups ranged between Rs.201-1,000. It declined when incomes went up.

VI. Government Policy

After 1970 the government encouraged local farmers and others to grow local food crops. The import substitution policies included discouragement of imports through imposition of high taxes and bannings. Other rules and regulations of the government, which involved local people to grow manioc especially among many other subsidiaries, placed more restrictions on accessibility for rice and flour in the open market by rationing them, increased demand. Manioc was the main alternative for rice and flour. Hence, people started to grow it on a large scale. As a result, the extent as well as the production increased in the first part of the decade starting from 1970. After 1975 some strict rules and regulations connected with transportation, availability and accessibility to a lot of food items were relaxed and with this measure, the high demand as well as the enthusiasm for cultivation of manioc waned.

The commencement of economic liberalization policies in 1977 and their continuation upto this time, which led to the free availability and accessibility to a lot of foods, especially imported items, discouraged the cultivation of manioc. The acceleration of economic liberalization under later governments which came to power in 1989 and in 1994 has been a reason for a further decline in the cultivated area as well as in production.

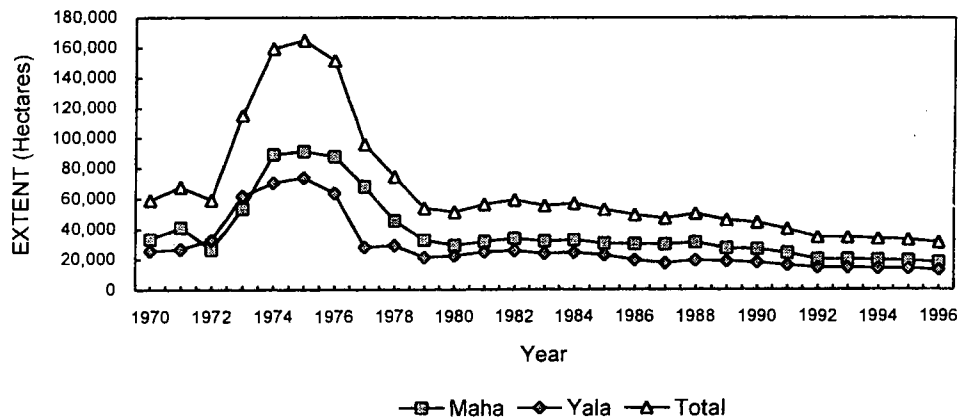
Table 10.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF MANIOC - SRI LANKA

YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1970	33,459	25,640	59,099	197,506	156,242	353,748	5,903	6,094	5,986
1971	40,944	26,651	67,595	224,703	157,499	382,202	5,488	5,910	5,654
1972	26,350	32,809	59,159	146,902	170,685	317,587	5,575	5,202	5,368
1973	53,357	61,616	114,973	243,091	306,249	549,340	4,556	4,970	4,778
1974	88,877	70,447	159,324	369,714	326,872	696,586	4,160	4,640	4,372
1975	91,139	73,633	164,772	420,980	359,470	780,450	4,619	4,882	4,737
1976	87,643	63,537	151,180	407,397	309,718	717,115	4,648	4,875	4,743
1977	67,878	27,882	95,760	364,917	191,729	556,646	5,376	6,876	5,813
1978	45,466	28,857	74,323	306,138	279,701	585,839	6,733	9,693	7,882
1979	32,548	21,043	53,591	315,414	219,088	534,502	9,691	10,411	9,974
1980	28,885	22,144	51,029	279,058	220,430	499,488	9,661	9,954	9,788
1981	31,416	24,700	56,116	293,550	232,460	526,010	9,344	9,411	9,374
1982	33,628	25,517	59,145	320,907	251,916	572,823	9,543	9,872	9,685
1983	31,751	23,622	55,373	419,356	302,743	722,099	13,208	12,816	13,041
1984	32,579	24,194	56,773	408,776	273,678	682,454	12,547	11,312	12,021
1985	30,286	22,604	52,890	330,127	249,589	579,716	10,900	11,042	10,961
1986	29,748	19,535	49,283	308,883	176,974	485,857	10,383	9,059	9,859
1987	29,514	17,309	46,823	286,463	140,976	427,439	9,706	8,145	9,129
1988	30,753	19,228	49,981	310,807	180,908	491,715	10,107	9,409	9,838
1989	27,076	18,696	45,772	250,569	170,207	420,776	9,254	9,104	9,193
1990	26,457	17,764	44,221	237,365	157,644	395,009	8,972	8,874	8,933
1991	23,899	15,827	39,726	215,085	143,724	358,809	9,000	9,081	9,032
1992	19,884	14,325	34,209	178,819	123,388	302,207	8,993	8,613	8,834
1993	19,906	14,327	34,233	181,008	127,987	308,995	9,093	8,933	9,026
1994	19,388	14,040	33,428	174,801	123,601	298,402	9,016	8,803	8,927
1995	18,989	13,835	32,824	167,647	121,121	288,768	8,829	8,755	8,797
1996	18,039	12,876	30,915	160,329	110,267	270,596	8,888	8,564	8,753

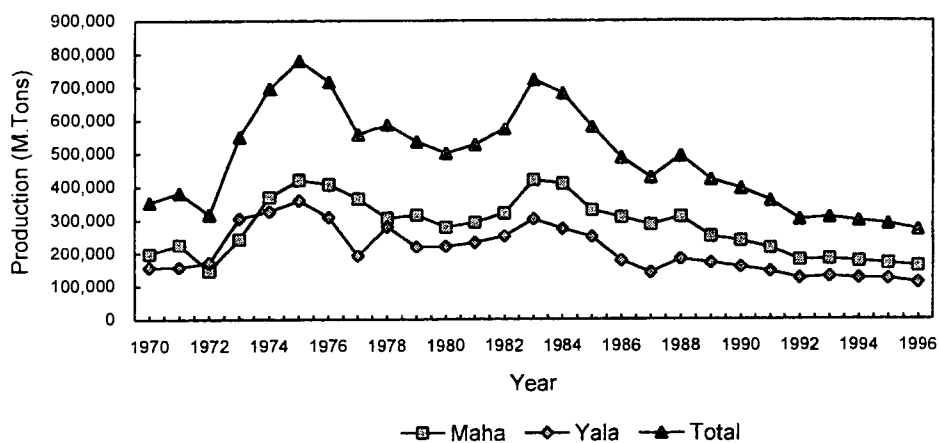
Source : Dept. of Census & Statistics

Data Development Unit of HARTI

Graph 10.1
EXTENT OF MANIOC



Graph 10.2
PRODUCTION OF MANIOC



Graph 10.3
AVERAGE YIELD OF MANIOC

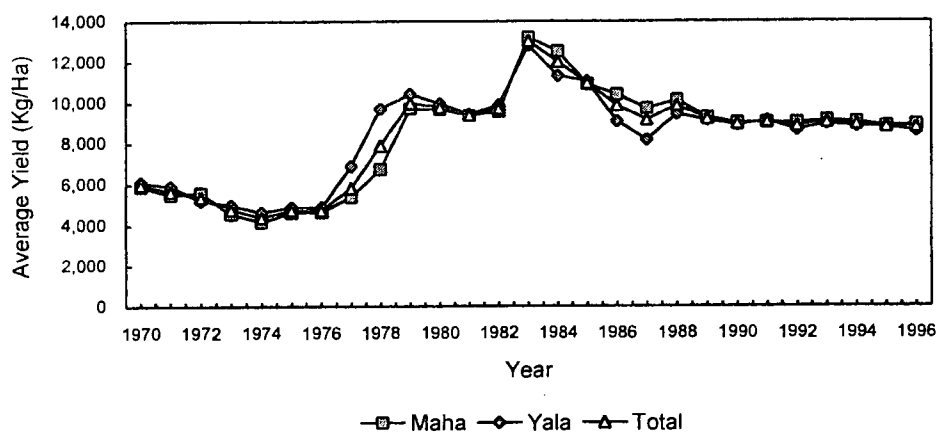


Table 10.2
EXTENT OF MANIOC BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	Maha	16,492	3,547	4,083	3,465	3,290	2,512	3,291	2,543	2,220	2,771	14.2
	Yala	19,303	2,942	4,332	3,535	2,317	2,447	2,085	2,032	2,095	2,195	
	Total	35,795	6,489	8,415	7,000	5,607	4,959	5,376	4,575	4,315	4,966	
RATNAPURA	Maha	5,704	2,436	2,527	1,076	1,280	1,399	1,389	1,393	1,443	1,381	8.3
	Yala	4,555	1,894	2,512	1,429	1,276	1,521	1,597	1,576	1,610	1,516	
	Total	10,259	4,330	5,039	2,505	2,556	2,920	2,986	2,969	3,053	2,897	
GAMPAHA	Maha	na	2,141	1,839	1,405	1,571	1,131	1,238	1,327	1,297	1,313	7.8
	Yala	na	2,371	1,282	1,576	1,562	1,520	1,480	1,337	1,173	1,414	
	Total	na	4,512	3,121	2,981	3,133	2,651	2,718	2,664	2,470	2,727	
KEGALLE	Maha	6,364	1,853	1,037	1,089	1,293	936	1,091	989	998	1,061	6.1
	Yala	4,475	1,735	1,692	1,197	1,202	1,077	1,032	1,032	1,032	1,075	
	Total	10,839	3,588	2,729	2,286	2,495	2,013	2,123	2,021	2,030	2,136	
PUTTALAM	Maha	4,794	1,475	1,692	1,563	1,363	1,158	1,140	1,090	1,081	1,166	5.6
	Yala	4,405	1,307	1,618	915	591	838	912	798	776	783	
	Total	9,199	2,782	3,310	2,478	1,954	1,996	2,052	1,888	1,857	1,949	
AMPARA	Maha	1,831	1,480	1,448	1,781	1,236	1,359	1,236	1,278	1,255	1,273	5.2
	Yala	520	1,033	370	801	783	611	598	242	407	528	
	Total	2,351	2,513	1,818	2,582	2,019	1,970	1,834	1,520	1,662	1,801	
BATTICALOA	Maha	3,353	1,212	3,222	2,121	1,963	1,085	1,168	949	838	1,201	5.1
	Yala	1,722	557	921	778	870	454	541	544	474	577	
	Total	5,075	1,769	4,143	2,899	2,833	1,539	1,709	1,493	1,312	1,777	
HAMBANTOTA	Maha	3,823	1,167	1,157	992	950	888	901	927	1,088	951	5.0
	Yala	2,812	816	1,067	594	808	757	790	804	847	801	
	Total	6,635	1,983	2,224	1,586	1,758	1,645	1,691	1,731	1,935	1,752	
OTHER *	Maha	48,778	13,574	13,281	12,965	10,953	9,416	8,452	8,892	8,769	9,296	42.6
	Yala	35,841	9,489	8,810	6,939	6,418	5,100	5,292	5,675	5,421	5,581	
	Total	84,619	23,063	22,091	19,904	17,371	14,516	13,744	14,567	14,190	14,878	
SRI LANKA	Maha	91,139	28,885	30,286	26,457	23,899	19,884	19,906	19,388	18,989	20,413	100.0
	%	55.3	56.6	57.3	59.8	60.2	58.1	58.1	58.0	57.9	58.5	
	Yala	73,633	22,144	22,604	17,764	15,827	14,325	14,327	14,040	13,835	14,471	
	%	44.7	43.4	42.7	40.2	39.8	41.9	41.9	42.0	42.1	41.5	
	Total	164,772	51,029	52,890	44,221	39,726	34,209	34,233	33,428	32,824	34,884	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Anuradhapura, Badulla, Polonnaruwa, Jaffna, Matale, Mahaweli H, Kilinochchi, Moneragala, Galle Vavuniya, Mullativu, Trincomalee, Kandy, Mannar, Matara, Nuwara Eliya, Colombo & Kalutara districts

Primary Source : Dept. of Census & Statistics

Table 10.3
PRODUCTION OF MANIOC BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	Maha	81,494	44,523	56,040	43,130	33,038	25,050	27,352	23,906	21,772	26,224	15.3
	Yala	92,241	36,928	53,116	40,586	25,153	26,349	20,008	17,855	17,483	21,370	
	Total	173,735	81,451	109,156	83,716	58,191	51,399	47,360	41,761	39,255	47,593	
BATTICALOA	Maha	19,188	12,592	47,503	23,958	22,117	20,269	22,000	14,700	12,923	18,402	8.6
	Yala	1,285	2,588	11,488	8,999	16,173	5,562	6,992	6,985	6,093	8,361	
	Total	20,473	15,180	58,991	32,957	38,290	25,831	28,992	21,685	19,016	26,763	
RATNAPURA	Maha	60,299	45,867	30,911	7,932	11,016	11,864	11,771	12,724	13,989	12,273	8.1
	Yala	68,193	35,656	36,119	12,451	11,625	12,559	13,729	13,017	13,566	12,899	
	Total	128,492	81,523	67,030	20,383	22,641	24,423	25,500	25,741	27,555	25,172	
GAMPAHA	Maha	na	21,564	14,953	9,857	11,497	8,890	10,171	11,250	10,390	10,440	7.8
	Yala	na	26,051	9,713	12,549	12,958	12,345	16,716	15,107	12,729	13,971	
	Total	na	47,615	24,666	22,406	24,455	21,235	26,887	26,357	23,119	24,411	
AMPARA	Maha	10,771	18,491	14,376	16,958	11,068	10,170	12,412	9,483	9,249	10,476	5.1
	Yala	457	9,700	4,607	8,005	8,199	4,655	5,673	5,016	3,989	5,506	
	Total	11,228	28,191	18,983	24,963	19,267	14,825	18,085	14,499	13,238	15,983	
KEGALLE	Maha	24,813	27,909	15,483	8,284	10,995	6,158	7,691	7,263	7,649	7,951	5.1
	Yala	12,416	26,135	22,877	8,877	8,956	7,877	7,319	7,577	7,710	7,888	
	Total	37,229	54,044	38,360	17,161	19,951	14,035	15,010	14,840	15,359	15,839	
OTHER *	Maha	224,414	108,112	150,861	127,246	115,354	96,418	89,611	95,475	91,675	97,707	50.0
	Yala	184,878	83,372	111,669	66,177	60,660	54,041	57,550	58,044	59,551	57,969	
	Total	409,293	191,484	262,530	193,423	176,014	150,459	147,161	153,519	151,226	155,676	
SRI LANKA	Maha %	420,980 53.9	279,058 55.9	330,127 56.9	237,365 60.1	215,085 59.9	178,819 59.2	181,008 58.6	174,801 58.6	167,647 58.1	183,472 58.9	100.0
	Yala %	359,470 46.1	220,430 44.1	249,589 43.1	157,644 39.9	143,724 40.1	123,388 40.8	127,987 41.4	123,601 41.4	121,121 41.9	127,964 41.1	
	Total %	780,450 100.0	499,488 100.0	579,716 100.0	395,009 100.0	358,809 100.0	302,207 100.0	308,995 100.0	298,402 100.0	288,768 100.0	311,436 100.0	

* Total of Anuradhapura, Badulla, Polonnaruwa, Jaffna, Matale, Mahaweli H, Kilinochchi, Moneragala, Galle
 Vavuniya, Mullativu, Trincomalee, Kandy, Mannar, Matara, Nuwara Eliya, Puttalam, Hambantota, Kalutara & Colombo Districts
 Primary Source : Dept. of Census & Statistics

Table 10.4
COST OF CULTIVATION PER ACRE OF MANIOC (RAINFED)
BY INPUTS IN PUTTALAM (Rs/Acre)

INPUT	90/91 Maha
Labour	2325
Seed	-
Fertilizer	-
Agro-Chemicals	-
Draught Power- Machinery & Equipment	-
Total	2325

Source: Dept. of Agriculture

Table 10.5
NET RETURN PER ACRE OF MANIOC (RAINFED) BY
SEASONS IN PUTTALAM

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90/91 Maha	22,569.00	24,426.00

SOURCE: Dept. of Agriculture

Table 10.6
MONTHLY AVERAGE WHOLESALE PRICE OF MANIOC - PETTAH MARKET UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	2.52	3.11	4.41	3.89	4.08	4.11
February	2.44	3.35	4.47	4.21	3.68	3.26
March	3.00	3.97	4.14	3.93	3.53	3.39
April	3.06	4.07	4.12	4.00	3.82	4.34
May	3.34	4.09	4.26	3.89	4.36	5.17
June	3.57	4.64	4.52	4.46	5.03	6.75
July	3.21	4.34	4.46	4.01	4.28	6.34
August	2.84	3.78	4.38	3.75	4.04	5.48
September	2.75	4.11	3.89	3.57	3.74	4.77
October	2.92	4.35	3.65	3.63	4.25	5.60
November	2.99	4.58	4.03	4.08	5.38	6.63
December	3.11	5.29	3.72	4.22	4.49	6.77
An. Average	2.98	4.14	4.17	3.97	4.22	5.22

Table 10.7
MONTHLY AVERAGE RETAIL PRICE OF MANIOC - COLOMBO AND SUBURBS UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	6.94	7.97	9.82	11.29	12.60	11.30
February	6.92	6.90	10.12	11.81	12.09	5.33
March	7.02	9.48	9.77	11.32	11.37	11.32
April	7.49	10.58	9.94	11.52	10.86	11.67
May	7.98	10.65	9.99	11.77	11.48	11.51
June	8.05	11.46	9.97	10.45	12.85	14.23
July	7.79	10.34	10.08	11.52	13.29	14.01
August	7.58	9.72	10.38	11.91	11.43	13.93
September	7.12	9.34	10.51	11.82	11.20	13.68
October	7.70	9.91	10.67	12.18	11.36	14.06
November	7.58	9.80	11.24	14.06	11.65	15.56
December	7.59	9.65	10.78	12.79	11.55	15.53
An. Average	7.48	9.65	10.27	11.87	11.81	12.68

NA - DATA NOT AVAILABLE

Source : Marketing & Food Policy Division - HARTI

Table 10.8
EXPORTS OF MANIOC BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
U.A.E.	465.00	13.50	373.00	11.10	500.00	14.30	567.00	19.20	988.00	29.10	623.00	19.83
Other Middle-East	159.00	3.30	103.00	2.20	140.00	2.80	109.00	4.60	514.00	15.60	462.00	15.04
Countries												
Netherlands	50.00	0.70	2.00	0.10	-	-	-	-	-	-	-	-
United Kingdom	29.00	1.20	1.00	*	3.00	0.20	*	*	-	-	-	-
Australia	21.00	0.70	-	-	-	-	-	-	-	-	-	-
U.S.A.	8	0.2	-	-	16	0.4	-	-	-	-	-	-
Maldiv Islands	1	*	3	0.1	7	0.3	*	*	*	*	-	-
Switzerland	-	-	2	0.1	3	0.1	-	-	8	0.2	-	-
France	-	-	2	0.1	5	0.3	-	-	-	-	-	-
India	-	-	-	-	*	*	-	-	-	-	-	-
South Africa	-	-	-	-	-	-	-	-	10	0.3	-	-
Norway	-	-	-	-	-	-	-	-	8	0.2	-	-
Brunei	-	-	-	-	-	-	-	-	6	0.2	-	-
TOTAL	733.00	19.60	486.00	13.70	674.00	18.40	676.00	23.80	1,534.00	45.60	1,085.00	34.87

* - Negligible

Source : Dept. of Customs

Table : 10.9
PER CAPITA CONSUMPTION OF MANIOC PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1973	0.60	0.17	0.11	0.14
1978/79	0.40	0.10	0.40	0.90
1981/82	2.36	9.90	4.36	8.10
1986/87	0.81	2.86	1.57	2.37

Primary Source : Central Bank of Sri Lanka

Table : 10.10
PER CAPITA CONSUMPTION OF MANIOC PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	-	-	-
101-200	-	-	-	-
201-400	-	2.93	-	2.44
401-600	0.47	3.30	3.93	3.15
601-800	1.80	3.33	1.46	3.11
801-1000	1.41	3.77	1.56	3.39
1001-1500	0.11	3.15	1.43	2.68
1501-2000	0.91	2.97	1.89	2.58
2001-3000	1.22	2.65	1.12	2.27
3001-5000	0.93	2.43	1.15	1.93
5001-10000	0.57	1.91	2.82	1.36
OVER 10000	0.10	1.15	-	0.60
Overall Avg.	0.81	2.86	1.57	2.38

Primary Source : Central Bank of Sri Lanka

11. DRY CHILLI

I. Introduction

The chilli plant belongs to the family *Solanaceae*, and the genus *Capsicum*. The commercial capsicum can be classified into four broad categories on the basis of colour, size, pungency and end use. These four categories are; (i) *Capsicum pendulum*, (ii) *Capsicum pubescent*, (iii) *Capsicum annum*, (iv) *Capsicum frutescens*. *Capsicum annum* is the most popular and the most common variety in Sri Lanka and India. Chillies are the most important traditional condiment used in the Sri Lankan food preparations. So it has become an important agricultural commodity.

Chillies are grown successfully under a wide range of environmental conditions from mean sea level to an altitude of 1660 m. However this is best adapted to the Dry Zone (Dept. of Agri, 1990, p.101).

The better soil type for chillies is deep, fertile, well-drained loamy soils.

The recommended varieties are M1-1 and M1-2, which require 150 days for maturity.

II. Production

The Dry Zone is the major chilli producing area in Sri Lanka. However, the crop can be cultivated throughout the Island. The land under chilli cultivation is classified into three categories, viz. low land, highland and chena. In Yala season cultivation is mainly in low land and high land with irrigation facilities. The Maha cultivation mainly depends on monsoon rains (in September-October).

II.I Major Producing Districts

According to the five year (1991-95) average of production data, Anuradhapura (31%), Mahaweli-H (14%), Kurunegala (8%) and Polonnaruwa (7%) districts account for 59% of the national production. The next important districts are Matale (6%), Hambantota (5%), Kilinochchi (5%), Vavuniya (4%) and Moneragala (4%). Looking at the percentage contribution, the production from Mullativu district has declined from 7% in 1980 to 1 percent in 1995 thereby reducing its importance as a producing district. The isolation of this district from other areas of the country due to the internal conflict situation in the North has been attributed as a reason.

Anuradhapura (28%) and Mahaweli-H (16%) and Kurunegala (7%) have become the main areas with regard to the extent cultivated. Then Hambantota (7%), Moneragala (5%) and Matale (5%) districts take prominence.

II.II Seasonality of Production

Chillies can be cultivated during Yala and Maha, year round. About 60% of the extent as well as the production in the country is recorded during Maha season. Chillies reach the market during two peak periods in the year. One is April to June and the next is from September to October.

II.III Trends in Production, Cultivated Area and Average Yield

The extent has sharply increased (by 170%) over the years between 1970-76 despite the slight fluctuation (decline) in 1974 which happened due to the drought. The major reason for this pattern was (especially between 1973-77) the government's intervention in order to increase chilli production by discouraging imports.

From 1977 onwards a declining trend in the extent is indicated compared with the early years of import of chillies under the liberalized economy. This decline was very sharp in 1979 when it went down

below 36,000 ha. from about 50,198 ha. in the previous year. After 1989,, there was an increasing trend in the extent cultivated. The reason was the favourable market created by the decline in imports due to price increases in world market. After 1994 again a declining trend in the extent is indicated as a result of more liberalization in imports.

Unlike in the extent, there has been an increase (of 124%) in the production of chillies over the years, between 1970-1980. The reason for this slow increase in comparison with the rapid increase in the extent has been the declining trend in yield. The production indicated a slight decline in the 1981-82 period. This is due to the decline in yields. After 1982, the production has increased over the years with much fluctuations on some occasions. The increase in yield (above 2,500 kg/ha) compared to the early years (less than 1,000 kg/ha) has been one reason for this progress.

II.IV Review of Agricultural Inputs and Cost of Production

Compared with other field crops, the cost of production of chillies is high due to higher application of fertilizer, pesticide and other chemical inputs (around 25% of the cost of production accounts for these). According to the Department of Agriculture, the cost of production in Anuradhapura in 1993/94 Maha season under rainfed conditions was Rs.12,755.63/acre including the imputed cost whereas the cost of production excluding the imputed cost was Rs.4,980.10/acre. During 1993 Yala season, the cost of production in Kalawewa and Matale including the imputed cost under irrigation was Rs.17,880.44/acre, and Rs.24,217.00/acre respectively. The cost of production excluding the imputed cost in Kalawewa and Matale was Rs.9,626.12/acre and Rs.14,106.99/acre respectively in 1993 Yala season. This information indicates that the cost of production varies according to the irrigated conditions as well as the geographical profile of the district.

The gross returns under irrigation in Matale and Kalawewa were Rs.34,314.00/acre and Rs.31,557.78/acre respectively in 1993 Yala season. The net return in Matale was Rs.16,433.56/acre including the imputed cost and Rs.24,687/acre excluding the imputed cost. In Kalawewa, this was Rs.7,358.74/acre including the imputed cost and Rs.17,468.79/acre excluding the imputed cost in 1993 Yala season. As revealed by HARTI field observations, in general, the cost of production of chillies indicated an increasing trend while the net return indicated a declining trend over time in the last few years.

III. Domestic Marketing

Chillies are considered an important high value crop. The collector is the principal buyer from the farmers. He maintains stocks and disposes them depending on the market prices. Pettah is the biggest market for chillies and collectors are the principal suppliers to the market from the major producing areas. In this regard the collector plays a dominant role due to small scale production and seasonality of production.

III.I Marketing Channels

The Marketing channels for chillies are slightly complex due to the well known inherent characteristics of agriculture. Both private and government channels operate, but the private sector plays a bigger role, representing more than 90 percent of the market share. The government sector operates only during harvest time. The CWE has been purchasing dried chillies in major producing areas. However, farmers prefer the private sector due to the inefficiency of the government marketing institutions which are also ill-equipped to cater to producers' needs. The major marketing channels of the private sector are shown below:

1. Farmer -> Resident Collector -> Demand side Wholesaler ->Retailer -> Consumer
2. Farmer -> Resident Collector -> Colombo Commission Agent -> Retailer -> Consumer
3. Farmer -> Resident Collector -> Processor -> Retailer ->Consumer

III.II Price Behaviour

Dried chillies are found to be one of the most expensive food commodities throughout the year in Sri Lanka. The prices remain at a high level during the period from December to February with highest prices prevailing in August which is identified as the off season. The prices are low from April to June and from September to October.

The behaviour of wholesale as well as retail prices between 1992-96 are as follows. First there was a decline (of 14%) until 1994 and then there was an increase (of 24%). Price changes mainly depend on the quantity of local supplies and the quantity of imported stocks available at the market.

III.III Review of Marketing Cost

Relatively, the marketing cost of chillies is high mainly due to the large number of intermediaries involved in the marketing system. Marketing margins appear to be variable. The retailer keeps low margins during lean supply periods.

IV. External Trade

Sri Lanka has not achieved self-sufficiency in chillies. This aspect justifies the import of chillies in order to fulfil the national requirement. The total dried chillie imports in 1996 was 9,945 mt. and the value of this quantity was Rs.633 million. The total imports of dried chillies in 1997 were 12,386 mt. and the value of the quantity was Rs.550 mn. The average CIF price was Rs.45.10/kg. in 1997.

IV.I Major Import/Export Countries

According to the data in respect of 1991-1995, more than 90 percent of imports came from India, while small quantities were imported from Pakistan, China, Bangladesh and Hong-Kong. About 7,000-10,000 mt. of chillies are imported from India annually.

IV.II Trends in Import/Export Quantity, Value and Prices

The quantity of imports which was between 12,000 mt.-20,000 mt. during 1965-1972, dropped to less than 1,200 mt. in 1973 and further to less than 1,000 mt. or zero level in later years until 1978, when the import of chillies was re-started. Thereafter imports have been done continuously but the quantity imported varied such as 13,000 mt. in 1980 and 580 mt. in 1981. Looking at the 1991-95 period, the imported quantity has decreased at first by 88% between 1991-93 and it has increased later by eleven times between 1993-95.

The import value has been Rs.24 mn.-43 mn. within the period 1965-1972. Between 1973-77 it has been between Rs.3.1 mn. to zero. Thereafter it has recorded much variation. Over the years the value has increased although there were fluctuations. The maximum was Rs. 528 Mn. in 1993 and in 1995 it was Rs. 523 Mn.

The CIF price of chillies has increased over the years from 1978-1995 despite the fluctuations in some years, but looking at the period 1991-95 the prices have declined over the years.

IV.III Import Trade Regulations

The tariff rates which have been in force since 1996 are 35% duty, 6% turnover tax and 4.5% of national security levy. They are still continuing.

V. Consumption

As revealed by the 1990/91 Household Income and Expenditure Survey of the Department of Census & Statistics, the magnitude of consumption in relation to total expenditure on dried chillies was 2.37 percent. The amount was high compared to potatoes (0.71%) red onions (1.74%), and big onions (0.26).

The per capita consumption of chillies has increased from 0.7/kg in 1973 to 2.0/kg. in 1981/82 per year. Again the per capita consumption dropped marginally to 1.94/kg. in 1986/87. The consumption level has been highest in the estate sector followed by the rural sector. There was no strong relationship between income and consumption.

VI. Review of Government Policies

Chillies are one of the major crops in which the government has much intervened since 1970s with policy decisions to develop or to become self-sufficient. During 1970-77, the then Government banned the import of chillies under its import substitution policies in order to protect the local produce from the 'invasion' of imported chillies. This decision was implemented since 1973 onwards. Simultaneously marketing facilities, extension services and other technical services including seed production and supply were provided by the government. These policy interventions were much beneficial to the farmers so that they could earn an attractive income. Resultantly they were much encouraged to cultivate more which was indicated by the production and the extent data in this period.

After 1977 even under the open market economic policies there was a government monopoly in chillie imports until 1992. The imports were done by the CWE even in 1993 although the government monopoly on imports was removed in 1992. Under the government monopoly imports were limited to off seasons to protect the local farmers.

In 1980 dry chillies were included in the Floor Price Scheme of the government. In 1980 the floor price was Rs.18.79/kg. and in 1981 it was Rs.20.90/kg. In the years 1982, 1983, 1984, and 1985 it was Rs.26. As revealed by some studies, in most areas, the farm gate price of chillies has been below the floor price until 1982 and thereafter it has been completely reversed.

After 1992 a high proportion of imports was handed over to the private sector which was subject to quota and licenses. In harvesting seasons imports were controlled. Under this policy the market share of the CWE decreased to 63% in 1993 and to 27% in 1994.

In 1994 imports of chillies were completely liberalized. Immediately after liberalizing, bulk quantities of chillies (7,500 mt. within three months) were imported. This badly affected the farm gate price which dropped to Rs.50 from Rs.75/kg. Subsequently the cultivated extent also declined substantially.

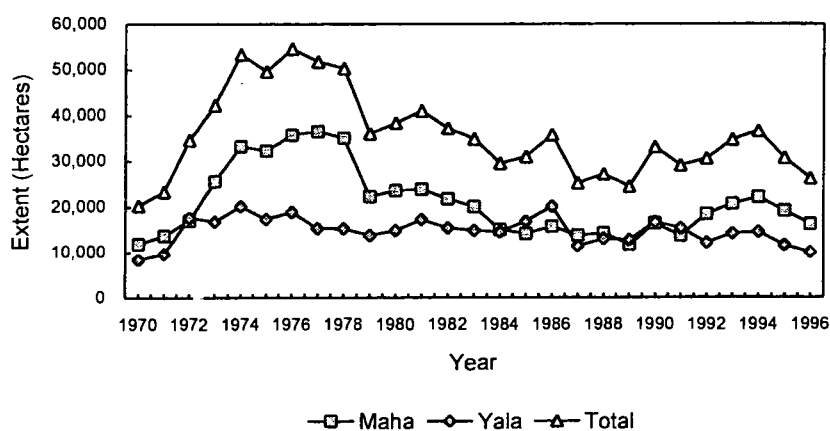
Table 11.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF CHILLI (GREEN) - SRI LANKA

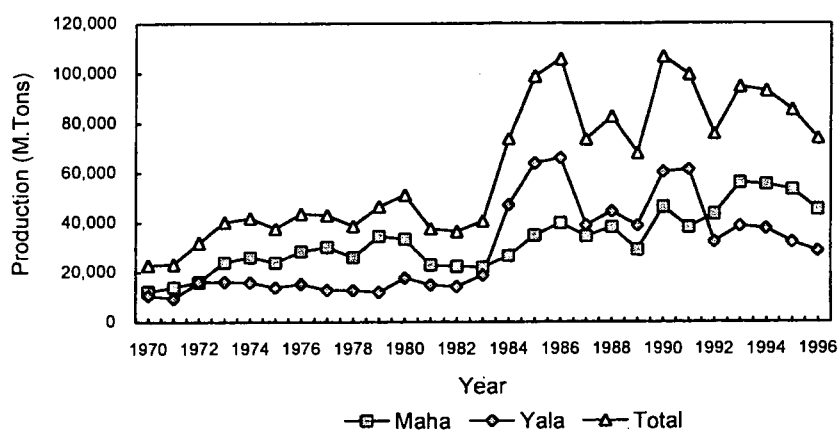
YEAR	EXTENT (Ha.)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha.)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	11,870	8,379	20,249	12,191	10,570	22,761	1,027	1,261	1,124
1971	13,669	9,669	23,338	13,891	9,284	23,175	1,016	960	993
1972	16,978	17,600	34,578	15,953	16,027	31,980	940	911	925
1973	25,532	16,733	42,265	23,917	16,147	40,064	937	965	948
1974	33,145	20,143	53,288	25,972	15,860	41,832	784	787	785
1975	32,191	17,304	49,495	23,748	13,859	37,607	738	801	760
1976	35,724	18,857	54,581	28,370	15,165	43,535	794	804	798
1977	36,439	15,268	51,707	30,200	12,773	42,973	829	837	831
1978	34,998	15,200	50,198	25,991	12,595	38,586	743	829	769
1979	22,214	13,746	35,960	34,484	11,880	46,364	1,552	864	1,289
1980	23,522	14,799	38,321	33,351	17,636	50,987	1,418	1,192	1,331
1981	23,809	17,176	40,985	22,692	14,821	37,513	953	863	915
1982	21,747	15,396	37,143	22,279	14,166	36,445	1,024	920	981
1983	19,979	14,776	34,755	21,903	18,706	40,609	1,096	1,266	1,168
1984	14,917	14,485	29,402	26,624	47,043	73,667	1,785	3,248	2,506
1985	14,121	16,741	30,862	34,908	63,815	98,723	2,472	3,812	3,199
1986	15,622	20,045	35,667	39,850	65,884	105,734	2,551	3,287	2,964
1987	13,713	11,415	25,128	34,467	39,034	73,501	2,513	3,420	2,925
1988	14,201	12,929	27,130	38,206	44,484	82,690	2,690	3,441	3,048
1989	11,639	12,712	24,351	29,076	38,793	67,869	2,498	3,052	2,787
1990	16,372	16,615	32,987	46,302	60,313	106,615	2,828	3,630	3,232
1991	13,654	15,321	28,975	38,201	61,308	99,509	2,798	4,002	3,434
1992	18,388	12,066	30,454	43,497	32,301	75,798	2,366	2,677	2,489
1993	20,522	14,076	34,598	55,942	38,757	94,699	2,726	2,753	2,737
1994	22,088	14,428	36,516	55,336	37,678	93,014	2,505	2,611	2,547
1995	19,096	11,496	30,592	53,167	32,191	85,358	2,784	2,800	2,790
1996	16,157	9,941	26,098	45,243	28,623	73,866	2,800	2,879	2,830

Source: Department of Census and Statistics
Data Development Unit of HARTI

Graph 11.1
EXTENT OF CHILLI (GREEN)



Graph 11.2
PRODUCTION OF CHILLI (GREEN)



Graph 11.3
AVERAGE YIELD OF CHILLI (GREEN)

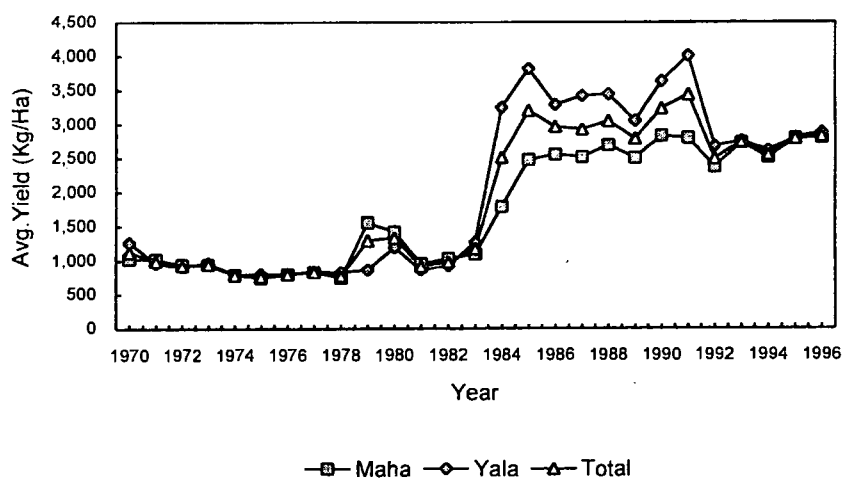


Table 11.2
EXTENT OF CHILLI BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
ANURADHAPURA	MAHA	8,456	5,171	3,306	3,870	4,338	8,462	9,237	8,951	8,303	7,858	
	YALA	2,250	454	1,503	998	416	1,341	1,469	1,388	1,422	1,207	
	TOTAL	10,706	5,626	4,809	4,868	4,754	9,803	10,706	10,339	9,725	9,065	28.1
MAHAWELI-H	MAHA	NA	NA	272	1,108	325	689	878	3,170	406	1,094	
	YALA	NA	NA	5,369	5,720	6,287	2,930	4,102	4,968	2,532	4,164	
	TOTAL	NA	NA	5,641	6,828	6,612	3,619	4,980	8,138	2,938	5,257	16.3
KURUNEGALA	MAHA	3,712	2,763	708	1,344	716	1,205	1,319	1,126	945	1,062	
	YALA	2,226	1,449	2,404	1,479	1,328	1,358	1,377	1,380	1,011	1,291	
	TOTAL	5,938	4,212	3,112	2,823	2,044	2,563	2,696	2,506	1,956	2,353	7.3
HAMBANTOTA	MAHA	4,589	2,608	843	1,549	1,561	1,452	1,175	889	1,093	1,234	
	YALA	2,872	1,321	775	492	1,011	845	946	973	796	914	
	TOTAL	7,460	3,929	1,618	2,041	2,572	2,297	2,121	1,862	1,889	2,148	6.6
MONERAGALA	MAHA	2,341	1,337	918	823	1,689	1,118	1,372	1,357	1,274	1,362	
	YALA	464	410	106	230	365	182	248	218	163	235	
	TOTAL	2,805	1,748	1,024	1,053	2,054	1,300	1,620	1,575	1,437	1,597	4.9
MATALE	MAHA	2,074	1,340	613	893	752	622	694	580	641	658	
	YALA	1,473	1,782	1,624	1,277	1,071	940	861	811	807	898	
	TOTAL	3,547	3,121	2,237	2,170	1,823	1,562	1,555	1,391	1,448	1,556	4.8
OTHERS *	MAHA	11,019	10,303	7,461	6,785	4,273	4,840	5,847	6,015	6,434	5,482	
	YALA	8,019	9,383	4,960	6,419	4,843	4,470	5,073	4,690	4,765	4,768	
	TOTAL	19,039	19,685	12,421	13,204	9,116	9,310	10,920	10,705	11,199	10,250	31.8
SRI LANKA	MAHA	32,191	23,522	14,121	16,372	13,654	18,388	20,522	22,088	19,096	18,750	
	%	65.0	61.3	45.7	49.6	47.1	60.3	59.3	60.4	62.4	58.1	
	YALA	17,304	14,799	16,741	16,615	15,321	12,066	14,076	14,428	11,496	13,477	
	%	34.9	38.6	54.2	50.3	52.8	39.6	40.6	39.5	37.5	41.8	
	TOTAL	49,495	38,321	30,862	32,987	28,975	30,454	34,598	36,516	30,592	32,227	100.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

*Total of Killinochchi, Polonnaruwa, Puttalam, Ampara, Badulla, Jaffna, Ratnapura, Vavuniya, Kandy, Mannar, Nuwara Eliya, Trincomalee, Mullativu, Batticaloe, Matara, Gampaha, Kegalle, Colombo, Kalutara and Galle

NA - Not available
Primary Source : Department of Census & Statistics

Table 11.3
PRODUCTION OF CHILLI (GREEN) BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
ANURADHAPURA	MAHA	4,722	2,717	6,211	13,846	14,433	18,994	27,799	27,360	26,031	22,923	30.7
	YALA	1,355	550	2,417	3,273	1,552	6,035	5,441	4,935	5,211	4,635	
	TOTAL	6,077	3,267	8,628	17,119	15,985	25,029	33,240	32,295	31,242	27,558	
MAHAWELI-H	MAHA	NA	NA	673	2,793	490	3,461	1,102	3,979	510	1,908	13.6
	YALA	NA	NA	32,352	29,187	33,164	3,696	5,150	6,236	3,178	10,285	
	TOTAL	NA	NA	33,025	31,980	33,654	7,157	6,252	10,215	3,688	12,193	
KURUNEGALA	MAHA	2,328	1,388	1,494	3,423	2,248	1,541	2,394	2,097	1,918	2,040	7.5
	YALA	1,709	728	6,137	4,082	4,665	4,716	5,741	5,288	3,051	4,692	
	TOTAL	4,037	2,116	7,631	7,505	6,913	6,257	8,135	7,385	4,969	6,732	
POLONNARUWA	MAHA	948	475	967	1,632	1,543	1,471	2,235	1,368	1,512	1,626	7.0
	YALA	654	1,533	4,852	4,476	9,044	3,343	4,282	3,780	2,882	4,666	
	TOTAL	1,602	2,008	5,819	6,108	10,587	4,814	6,517	5,148	4,394	6,292	
MATALE	MAHA	1,388	503	2,340	2,885	2,530	2,223	2,322	2,323	2,521	2,384	6.1
	YALA	791	1,103	8,386	3,634	2,716	3,274	3,200	3,181	3,287	3,132	
	TOTAL	2,178	1,606	10,726	6,519	5,246	5,497	5,522	5,504	5,808	5,515	
HAMBANTOTA	MAHA	4,624	1,309	1,232	4,181	4,194	3,436	1,976	1,623	2,123	2,670	4.9
	YALA	1,442	663	1,383	779	1,824	1,660	1,918	2,115	1,367	1,777	
	TOTAL	6,066	1,972	2,615	4,960	6,018	5,096	3,894	3,738	3,490	4,447	
OTHERS *	MAHA	9,738	26,959	21,991	17,542	12,763	12,371	18,114	16,586	18,552	15,677	30.0
	YALA	7,908	13,059	8,288	14,882	8,343	9,577	13,025	12,143	13,215	11,261	
	TOTAL	17,647	40,018	30,279	32,424	21,106	21,948	31,139	28,729	31,767	26,938	
SRI LANKA	MAHA	23,748	33,351	34,908	46,302	38,201	43,497	55,942	55,336	53,167	49,229	100.0
	%	63.1	65.4	35.3	43.4	38.3	57.3	59.0	59.4	62.2	54.9	
	YALA	13,859	17,636	63,815	60,313	61,308	32,301	38,757	37,678	32,191	40,447	
	%	36.8	34.5	64.6	56.5	61.6	42.6	40.9	40.5	37.7	45.1	
	TOTAL	37,607	50,987	98,723	106,615	99,509	75,798	94,699	93,014	85,358	89,676	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

*Total of Killinochchi, Vavuniya, Monaragala, Puttalam, Badulla, Jaffna, Mannar, Ampara, Kandy, Nuwara Eliya, Ratnapura, Trincomalee, Batticaloe, Mullativu, Gampaha, Colombo, Matara, Kegalle, Kalutara and Galle districts

NA - Not available
Primary Source : Department of Census & Statistics

Table 11.4
COST OF CULTIVATION PER ACRE OF CHILLI (RAINFED) BY INPUTS IN
ANURADHAPURA (Rs./Acre)

INPUT	90/91 Maha	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha
Labour	9,928	11,825	10,707	9,699	14,420
Seed	362	732	644	750	1,207
Fertilizer	1,639	1,840	748	1,972	2,751
Agro-Chemicals	1,278	1,450	2,467	336	683
Total	13,207	15,847	14,566	12,757	19,061

Table 11.5
COST OF CULTIVATION PER ACRE OF CHILLI (IRRIGATED) BY INPUTS IN
MATALE (Rs./Acre)

INPUT	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	6,800	9,263	NA	10,491	15,914
Seed	404	741	NA	517	801
Fertilizer	2,359	1,945	NA	2,686	4,341
Agro-Chemicals	1,056	2,477	NA	2,606	4,497
Other	-	-	NA	30	501
Draught Power - Machinery & Equipment	1,071	2,912	NA	1,551	-
Total	11,690	17,338	NA	17,881	26,054

Table 11.6
COST OF CULTIVATION PER ACRE OF CHILLI (IRRIGATED) BY INPUTS IN
KALAWEWA (Rs./Acre)

INPUT	90 Yala	91 Yala	92 Yala	93 Yala	94 Yala
Labour	13,141	17,678	NA	13,698	15,925
Seed	399	541	NA	660	718
Fertilizer	2,897	3,134	NA	2,616	2,259
Agro-Chemicals	3,850	6,619	NA	4,278	3,930
Other	-	-	NA	337	243
Draught Power - Machinery & Equipment	1,348	1,220	NA	2,628	1,631
Total	21,635	29,192	NA	24,217	24,706

NA - Not available
Source: Dept. of Agriculture

Table 11.7
NET RETURN PER ACRE OF CHILLI (RAINFED) BY SEASONS IN
ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90/91 Maha	7,342	13,747
91/92 Maha	3,522	13,664
92/93 Maha	6,083	14,261
93/94 Maha	(6,113)	1,663
94/95 Maha	21,970	34,545

Table 11.8
NET RETURN PER ACRE OF CHILLI (IRRIGATED) BY
SEASONS IN MATALE

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	7,235	12,930
91 Yala	17,406	25,823
92 Yala	NA	NA
93 Yala	16,434	24,688
94 Yala	21,981	32,663

Table 11.9
NET RETURN PER ACRE OF CHILLI (IRRIGATED) BY SEASONS
IN KALAWEWA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	4,848	14,437
91 Yala	3,684	14,083
92 Yala	NA	NA
93 Yala	7,359	17,469
94 Yala	32,951	43,990

Negative returns are given in paranthesis

NA - Not available

Source: Dept. of Agriculture

Table 11.10
MONTHLY AVERAGE WHOLESALE PRICES OF DRY CHILLI - PETTAH MARKET
UNIT : Rs/50Kg

Month	1991		1992		1993		1994		1995		1996	
	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium
January	5,457.00	4,861.00	6,337.00	5,631.00	6,224.00	5,767.00	5,476.00	4,971.00	5,394.00	4,887.00	7,463.00	6,954.00
February	6,537.00	5,566.00	5,686.00	5,208.00	6,007.00	5,518.00	4,724.00	4,234.00	5,129.00	4,638.00	5,554.00	5,058.00
March	6,546.00	5,480.00	4,910.00	4,424.00	4,852.00	4,673.00	4,049.00	3,559.00	4,537.00	4,022.00	4,950.00	4,450.00
April	6,295.00	5,411.00	4,999.00	4,507.00	4,735.00	4,230.00	3,717.00	3,234.00	3,903.00	3,416.00	5,179.00	4,677.00
May	5,144.00	4,341.00	4,870.00	4,430.00	4,573.00	4,070.00	3,505.00	3,028.00	3,986.00	3,496.00	5,124.00	4,625.00
June	5,179.00	4,439.00	5,276.00	4,755.00	4,935.00	4,433.00	3,781.00	3,156.00	4,869.00	4,372.00	6,247.00	5,750.00
July	5,369.00	4,768.00	5,547.00	4,921.00	4,780.00	4,315.00	4,536.00	3,846.00	6,202.00	5,698.00	6,085.00	5,584.00
August	5,488.00	4,907.00	6,254.00	5,736.00	4,858.00	4,366.00	5,238.00	4,741.00	6,166.00	5,638.00	6,224.00	5,728.00
September	4,374.00	4,036.00	5,081.00	4,629.00	4,053.00	3,582.00	4,074.00	3,575.00	4,991.00	4,503.00	5,472.00	4,966.00
October	4,718.00	4,345.00	4,941.00	4,635.00	3,850.00	3,406.00	4,439.00	3,949.00	5,154.00	4,662.00	5,323.00	4,819.00
November	5,427.00	4,936.00	5,664.00	5,371.00	4,581.00	4,077.00	5,112.00	4,611.00	5,836.00	5,337.00	5,561.00	5,092.00
December	5,407.00	4,977.00	6,187.00	5,942.00	4,553.00	4,062.00	5,162.00	4,665.00	6,378.00	5,870.00	5,040.00	4,347.00
An. Average	5,495.00	4,839.00	5,479.33	5,015.75	4,833.42	4,374.92	4,484.42	3,964.08	5,212.08	4,711.58	5,685.00	5,172.00

Table 11.11
MONTHLY AVERAGE RETAIL PRICES OF DRY CHILLI - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991		1992		1993		1994		1995		1996	
	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium	Grade 1	Medium
January	123.68	112.92	144.95	134.83	146.60	137.48	127.59	117.62	129.40	119.55	166.49	156.40
February	156.67	141.77	139.38	127.36	142.24	131.67	125.22	115.27	127.16	117.25	146.73	136.69
March	158.64	148.82	122.50	112.22	129.27	119.46	108.45	98.41	118.86	108.85	129.13	119.12
April	147.03	136.79	122.05	112.15	119.71	109.71	101.97	92.02	106.51	96.53	128.75	118.81
May	137.06	126.97	121.16	111.25	117.91	107.78	95.29	85.52	105.23	95.30	126.39	116.45
June	133.31	123.23	124.44	112.67	120.08	110.10	94.46	84.51	115.22	105.22	145.16	135.02
July	133.98	123.88	132.41	115.98	122.30	112.32	104.95	95.02	143.66	133.68	149.36	139.57
August	134.66	124.26	145.07	129.17	120.79	111.00	131.65	121.74	147.64	136.63	153.39	143.50
September	111.08	101.71	126.19	113.84	110.92	100.80	110.29	100.28	129.34	119.30	141.18	131.15
October	113.62	103.67	120.38	109.24	102.08	92.06	112.52	102.40	127.10	116.96	131.80	121.64
November	129.06	119.22	133.02	130.07	109.18	99.16	123.27	113.20	136.86	126.70	134.69	124.74
December	133.09	123.19	145.69	134.91	115.23	105.26	125.48	115.48	143.12	133.07	130.62	120.61
An. Average	134.32	123.87	131.44	120.31	121.36	111.40	113.43	103.46	127.51	117.42	140.31	130.31

Source : Marketing & Food Policy Division - HARTI

Table 11.12
IMPORTS OF DRY CHILLI

Year (Mt)	Quantity (Rs 000)	Value (Rs/Kg)	CIF Price
1970	13,686.30	26,484.35	1.94
1971	12,804.80	30,216.93	2.36
1972	19,770.10	24,438.99	1.24
1973	1,196.00	3,100.00	2.59
1974	-	-	-
1975	NA	0.70	-
1976	0.80	2.00	2.48
1977	*	*	-
1978	2,304.10	30,110.42	12.90
1979	8,887.50	106,998.21	11.96
1980	13,383.50	174,921.38	13.07
1981	580.00	9,324.46	16.08
1982	3,362.50	58,339.02	16.29
1983	9,285.00	163,336.56	17.13
1984	8,154.10	235,065.16	26.91
1985	4,116.60	116,891.51	28.40
1986	3,311.60	97,824.39	28.26
1987	2,100.10	86,195.91	41.04
1988	8,789.40	306,238.30	34.59
1989	1,387.50	73,149.51	52.72
1990	1,327.00	150,940.51	-
1991	7,664.50	483,132.00	60.93
1992	6,846.00	482,179.31	69.24
1993	933.70	52,827.60	48.61
1994	8,346.40	299,330.68	35.55
1995	10,820.40	523,895.85	48.26
1996	9,947.00	634,346.00	63.77

NA - Not available
* Negligible

Source : Dept. of Customs

Table 11.13
IMPORTS OF DRY CHILLI BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
India	7,177.00	454.63	5,839.00	429.92	934.00	52.80	7,732.00	278.64	10,576.00	513.39	9,696.00	620.62
Pakistan	375.00	23.27	500.00	25.42	-	-	-	-	-	-	-	-
Bangladesh	-	-	507.00	26.80	-	-	-	-	-	-	-	-
Hongkon	-	-	0.40	0.30	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	533.00	17.35	-	-	11.00	0.60
Singapore	-	-	-	-	-	-	-	-	-	-	155.00	8.51
U.S.A.	-	-	-	-	-	-	-	-	-	-	48.00	2.36
Other Countries	113.10	5.23	*	*	*	0.30	82.00	2.61	245.20	10.49	37.00	2.24
Total	7,665.10	483.13	6,846.40	482.17	934.00	52.83	8,347.00	298.60	10,821.20	523.88	9,947.00	634.33

* - Negligible

Source : Dept. of Customs

Table : 11.14
PER CAPITA CONSUMPTION OF CHILLI PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1973	0.80	0.60	0.50	0.70
1978/79	1.60	1.70	2.00	1.70
1981/82	1.90	2.00	2.40	2.00
1986/87	1.85	1.93	2.22	1.94

Primary Source : Central Bank of Sri Lanka

Table : 11.15
PER CAPITA CONSUMPTION OF CHILLI PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	1.43	2.40	-	2.19
101-200	1.30	1.09	-	1.17
201-400	1.84	2.01	1.79	2.04
401-600	1.77	1.90	2.20	1.91
601-800	1.59	1.69	2.09	1.71
801-1000	1.61	1.79	2.30	1.83
1001-1500	1.77	1.79	2.07	1.82
1501-2000	1.78	1.91	2.23	1.93
2001-3000	1.73	2.02	2.34	2.00
3001-5000	1.88	2.07	2.32	2.03
5001-10000	2.04	2.15	2.13	2.11
OVER 10000	2.12	2.14	4.28	2.13
Overall Avg.	1.85	1.93	2.22	1.94

Primary Source : Central Bank of Sri Lanka

12. GINGER

I. Introduction

Ginger (*Zingiber officinale*) plant belongs to the family of *Zingiberaceae*. It is a low country Wet Zone crop used in local medicine and as a spice in flavouring. There are several varieties among which the local varieties are fairly common. However, Cochin and Surat varieties are considered good for curing.

II. Production

II.I Major Producing Districts

The major producing districts based on the 1991-95 five year average of production were Gampaha (25%), Kegalle (19%), Kurunegala (18%) and Kalutara (10%) which accounted for 72% of the total production. Other important districts were Colombo (9%) and Matara (6%).

Looking at the extent cultivated, the foregoing priority order of the districts has changed. Accordingly Kurunegala (22%), Gampaha (21%), Kegalle (12%) and Kandy (11%) were recorded as the most important districts which accounted for 66% of the total cultivated extent.

II.II Seasonality of Production

Normally planting is done in mid March or early April and the crop is lifted in December or January. Although the harvesting can be done in stages according to market fluctuations, most of the production comes into the market in the normal harvesting season. At present the total production is recorded in the Maha season only. However, between the 1970 and 1976 period, about half of the production or more had come in Yala season. The steps taken to increase local food production during this period has led to intensive cultivation even in Yala season.

II.III Trends in Production, Cultivated Area and Average Yield

Considering the period from 1970 to 1996, there was a tremendous increase in production in the first part of 1980s which was followed by a sudden fall, mainly as a result of yield variations. The increase in production between 1970-1986 was from 4,184 mt. to 18,270 mt. (33%). The decrease in production between 1986-1993 was very sharp and it was from 18,270 mt. to 3,156 mt. (83%).

The data on the extent cultivated indicate a different picture than in the case of production. Until 1976 there was a gradual increase in the extent cultivated (from 2,344 ha. in 1970 to 5,197 ha. in 1976 - 122% increase). The extent cultivated decreased to 2,397 ha. in 1997 due to the stoppage of Yala season cultivation. Thereafter the extent cultivated was more or less stable until 1990s.

Between 1970-78 the yield was stable (between 1,290, kg/ha. and 1,790 kg/ha.). There was a sharp increase in 1979 (4,911 kg/ha.). The yield remained more or less stable for a long period although there were slight fluctuations.

II.IV Review of Agricultural Inputs

There are no data available regarding input use and cost of production of ginger.

III. Domestic Marketing

III.I Marketing Channels

The channels of marketing of ginger are the same as in the case of vegetables.

III.II Price Behaviour

Only producer prices are available. In the period under reference (1991-95), the highest price recorded (Rs.53.57/kg.) was in 1992 which was a lean production year and the lowest price (Rs.28.64/kg.) was in 1994 when the production increased. After 1992 a decline in prices was indicated.

A seasonal variation in prices can also be seen. Normally the lowest prices are recorded in January and February which is the main harvesting period. During the rest of the year prices normally go up. For example in 1995, except for January to March, the prices were above Rs.30/kg. and in December it was above Rs.43/kg.

IV. External Trade

IV.I Major Import/Export Countries

Both imports and exports are reported. According to the statistics for 1991-95, the major exporting countries were China, India and Singapore. The major importing countries were Saudi Arabia, UAE, Netherlands, Kuwait and Bahrain.

IV.II Trends in Import/Export in Quantity, Value and Price

The quantity imported increased remarkably in 1993 due to the declining production during early 1990s. In 1994 and 1995 it gradually declined. Foreign expenditure on imports also fluctuated accordingly.

The quantity of exports also increased (by twice) from 13mt. in 1991 to 40mt. in 1993 and thereafter it declined to 3 mt. The value of export earnings has also changed according to the quantity (Rs.0.7 mn. in 1991 to Rs.1.9 mn. in 1993 and to Rs.0.4 mn. in 1995).

IV.III Export Trade Regulations

At present the general tariff rates regarding imports of ginger are 35% duty, 20% turnover tax and 4.5% national security levy. The specific tariff rates are, 29.4% duty for imports from Bangladesh and 31.5% duty for imports from SAPTA - LDCs only.

V. Consumption

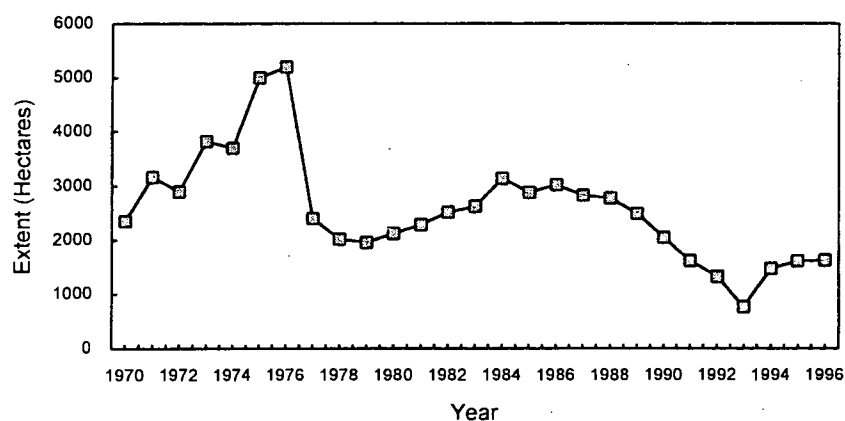
According to the 1986/87 data the per capita consumption of ginger per annum was 0.03 kg. The urban sector consumes more than the rural sector. In the estate sector, the consumption level was negligible. A higher consumption level was recorded from lower (below Rs. 200) and higher income groups (over Rs.5,001) in the urban sector. Such a higher consumption level was recorded from higher income group (over Rs. 10,000) in the rural sector too.

Table 12.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF GINGER (RAW) - SRI LANKA

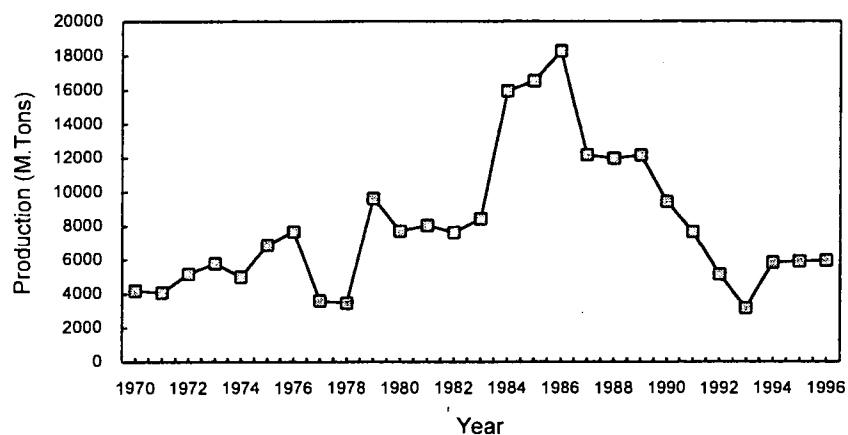
YEAR	EXTENT (Ha.)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha.)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	1189	1155	2344	2253	1931	4184	1895	1672	1785
1971	1360	1797	3157	1670	2410	4080	1228	1341	1292
1972	1381	1509	2890	1901	3260	5161	1376	2161	1786
1973	1895	1917	3812	2774	3000	5774	1464	1565	1515
1974	1850	1839	3690	2294	2699	4992	1240	1467	1353
1975	2388	2607	4995	2926	3921	6847	1225	1504	1371
1976	2673	2524	5197	3881	3767	7648	1452	1492	1472
1977	2397	-	2397	3577	-	3577	1493	-	1493
1978	2018	-	2018	3463	-	3463	1716	-	1716
1979	1956	-	1956	9608	-	9608	4911	-	4911
1980	2124	-	2124	7700	-	7700	3626	-	3626
1981	2282	-	2282	8017	-	8017	3513	-	3513
1982	2510	-	2510	7609	-	7609	3031	-	3031
1983	2613	-	2613	8409	-	8409	3218	-	3218
1984	3135	-	3135	15946	-	15946	5086	-	5086
1985	2873	-	2873	16547	-	16547	5759	-	5759
1986	3017	-	3017	18270	-	18270	6056	-	6056
1987	2821	-	2821	12164	-	12164	4312	-	4312
1988	2769	-	2769	11944	-	11944	4313	-	4313
1989	2488	-	2488	12134	-	12134	4877	-	4877
1990	2044	-	2044	9421	-	9421	4609	-	4609
1991	1612	-	1612	7636	-	7636	4737	-	4737
1992	1318	-	1318	5114	-	5114	3880	-	3880
1993	761	-	761	3156	-	3156	4147	-	4147
1994	1461	-	1461	5804	-	5804	3973	-	3973
1995	1602	-	1602	5879	-	5879	3670	-	3670
1996	1618	-	1618	5911	-	5911	3653	-	3653

Source: Department of Census and Statistics
Data Development Unit of HARTI

Graph 12.1
EXTENT OF GINGER



Graph 12.2
PRODUCTION OF GINGER



Graph 12.3
AVERAGE YIELD OF GINGER

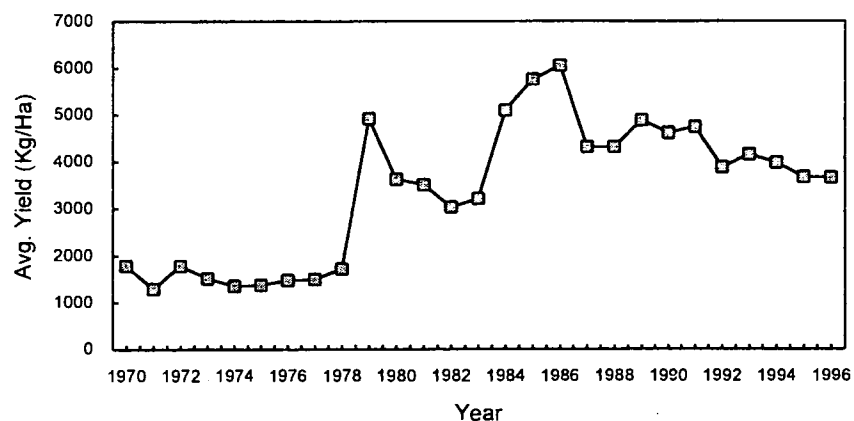


Table 12.2

EXTENT OF GINGER BY MAJOR GROWING DISTRICTS (Hectares)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	1,090	676	923	362	130	252	244	393	466	297	22.0
GAMPAHA	-	429	681	573	470	222	97	306	336	286	21.2
KEGALLE	376	257	348	239	217	140	138	185	152	166	12.3
KANDY	575	214	246	262	219	191	16	115	166	141	10.5
MATARA	142	55	92	87	83	97	94	115	97	97	7.2
KALUTARA	241	124	207	152	148	94	11	98	100	90	6.7
COLOMBO	1630	158	84	146	102	102	27	66	64	72	5.3
OTHERS *	941	211	292	223	243	220	134	183	221	200	14.8
SRI LANKA	4,995	2,124	2,873	2,044	1,612	1,318	761	1,461	1,602	1,351	100.0

*Total of Galle, Matara, Ratnapura, Puttalam, Matale, Nuwara Eliya, Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Hambantota, Ampara, Polonnaruwa, Trincomalee, Batticaloe, Killinochchi, Badulla and Anuradhapura districts.

Primary Source : Department of Census and Statistics.

Table 12.3

PRODUCTION OF GINGER (RAW) BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
GAMPAHA	-	1,576	2,877	2,832	1,866	1,124	482	1,673	1,633	1,356	24.6
KEGALLE	544	1,610	2,547	1,471	1,366	951	981	1,006	1,005	1,062	19.2
KURUNEGALA	1,220	1,273	6,275	1,557	1,305	643	735	1,115	1,198	999	18.1
KALUTARA	509	225	1,387	1,083	1,054	495	67	585	626	565	10.2
COLOMBO	2,043	1,125	736	998	762	727	189	405	374	491	8.9
MATARA	288	161	348	327	241	350	355	369	322	327	5.9
OTHERS *	2,243	1,730	2,377	1,153	1,042	824	347	651	721	717	13.0
SRI LANKA	6,847	7,700	16,547	9,421	7,636	5,114	3,156	5,804	5,879	5,518	100.0

*Total of Kandy, NuwaraEliya, Galle, Matara, Ratnapura, Puttalam, Matale, Moneragala, Jaffna, Vavuniya, Mullativu, Hambantota, Ampara, Polonnaruwa,

Table 12.4
AVERAGE PRODUCER PRICES OF GINGER - SRI LANKA UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	24.22	43.92	46.13	26.63	23.00	44.44
February	20.09	44.61	47.28	24.61	24.33	50.10
March	32.22	49.78	43.60	25.87	25.20	46.20
April	33.35	51.33	50.84	27.95	33.82	53.52
May	36.20	53.22	49.59	25.05	34.26	55.65
June	31.27	58.11	50.50	27.82	39.11	61.25
July	34.21	53.78	47.33	29.08	37.60	56.00
August	36.54	53.22	49.94	32.13	39.94	62.92
September	33.39	56.75	47.63	33.56	38.87	66.46
October	34.11	61.29	46.52	31.38	35.54	72.22
November	32.88	58.33	45.91	40.00	39.88	74.47
December	30.33	56.81	45.91	35.89	43.13	64.21
An. Average	33.26	53.57	47.12	28.64	34.89	60.22

Source : Dept. of Census & Statistics

Table 12.5
IMPORTS OF GINGER BY COUNTRY OF ORIGIN

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)	Qty. (Mt)	Value (Rs/Mn)
China	48.00	2.18	44.00	3.27	63.00	4.11	48.00	1.75	27.00	1.32	31.00	2.60
India	64.00	2.96	52.00	1.52	41.00	1.90	21.00	1.36	2.00	0.14	53.00	2.65
Singapore	5.00	0.32	-	-	6.00	0.46	37.00	2.20	12.00	0.77	8.00	0.72
Other Countries	*	0.10	*	*	21.00	0.54	*	0.20	*	0.60	13.00	1.90
Total	117.00	5.47	96.00	4.79	131.00	7.01	106.00	5.33	41.00	2.29	105.00	7.87

* - Less than one Metric Ton

Source:Dept. of Customs

Table 12.6

EXPORTS OF GINGER BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
Kuwait	-	-	4.00	0.60	3.00	0.70	-	-	2.00	0.90	-	-
Maldives	2.00	0.90	1.00	0.40	-	-	1.00	0.60	-	-	-	-
Saudi Arabia	3.00	0.50	12.00	0.19	9.00	0.14	1.00	0.50	-	-	-	-
U.A.E.	4.00	0.70	6.00	0.11	8.00	0.20	1.00	0.10	-	-	-	-
Baharain	1.00	0.30	2.00	0.30	3.00	0.90	3.00	0.80	-	-	-	-
Qatar	1.00	0.10	3.00	0.60	3.00	0.50	-	-	-	-	-	-
Netherlands	-	-	1.00	0.12	13.00	0.76	-	-	-	-	-	-
U.K.	-	-	-	-	-	-	-	-	-	-	1.50	0.30
Other Countries	2.00	0.46	1.00	0.48	1.00	0.63	2.00	0.82	1.00	0.33	2.40	0.44
Total	13.00	0.71	30.00	1.09	40.00	1.94	8.00	1.02	3.00	0.42	3.90	0.74

Source : Dept. of Customs

Table : 12.7
PER CAPITA CONSUMPTION OF GINGER (RAW) PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	0.22	-	-	0.50
101-200	0.22	0.20	-	0.90
201-400	0.80	-	-	-
401-600	0.60	0.10	-	0.10
601-800	0.50	*	*	-
801-1000	0.60	0.10	-	0.10
1001-1500	0.30	0.10	*	-
1501-2000	0.50	0.10	*	0.20
2001-3000	0.30	0.20	*	0.20
3001-5000	0.90	0.40	*	0.50
5001-10000	0.11	0.60	0.29	0.80
OVER 10000	0.21	0.10	-	0.16
Overall Avg.	0.80	0.20	*	0.30

Primary Source : Central Bank of Sri Lanka

13. GINGELLY

1. Introduction

The gingelly plant (*Sesamum indicum*) belongs to the family *pedaliaceae*, a small family comprising mainly herbs. Gingelly is one of the oldest oil seeds of which India is its native place. Gingelly oil is used for cooking and other domestic purposes and to manufacture margarine, soap and perfumes. Besides being one of the richest sources of oil, it contains a high proportion of protein, calcium and phosphorus.

Gingelly is mainly a Yala crop which requires less rain. A variety from Burma known as B3 has been recommended by the Department of Agriculture for many years. It is a black-seeded variety with an oil percentage of about 40%. There are better varieties such as M-1 and M-2 (black seeded) and M-3 (white-seeded) developed at the Maha Iluppallama Research Station. These high yielding varieties take about 80 days to mature.

II. Production

II.I Major Producing Districts

Based on 1991 to 1995 five year average of production, Anuradhapura (36%), Kurunegala (13%), Moneragala (13%), Hambantota (9%) and Matale (6%) can be identified as the major producing districts which account for 77% of the total production.

With regard to the extent cultivated also Anuradhapura (46%), Kurunegala (11%), Moneragala (9%), Hambantota (7%) and Puttalam (5%) take priority in the same order as in production. All these five districts have accounted for 78% of the total extent cultivated.

II.II Seasonality of Production

It is mainly a Yala crop. About 69% of the production and 73% of the extent were recorded from Yala season.

II.III Trends in Production, Cultivation Area and Average Yield

The production has declined sharply in 1978 and 1984 as a result of a drop both in the extent and the yield. Since 1984 the production has shown a decreasing trend. The highest production was recorded in 1983 (14,979 mt.).

Between 1970-76 the extent cultivated increased by 115% mainly due to the government encouragement to grow local crops. After 1976, the extent cultivated declined sharply.

In the period (1990-96) the yield level has been more or less stagnant. The lowest yield level was 389 kg./ha. and the highest was 604 kg./ha.

II.IV Review of Agricultural Inputs

The main components of cost of production are labour (93%) and seeds. During the 1990-93 period, the cost of cultivation has increased by 37%. The net return has increased gradually, both including and excluding the imputed cost.

III. Domestic Marketing

The marketing channels are the same as in vegetables and fruits.

Only the producer prices are available. Prices have fluctuated from Rs.17.61/kg. in 1991 to Rs.21.07/kg. in 1995 and also according to the seasons during the year. Lower prices were observed in June-July and January-February. The demand comes from a limited number of food processors and others who collect gingelly for medicinal purposes.

IV. External Trade

Gingelly is being exported and imported in two forms viz. seeds and oil.

IV.I Major Import/Export Countries

Seeds have been exported mainly to Singapore, China-Taiwan and China and oil has been exported to U.K., Canada and East Germany.

The main seed importing countries were India and Australia and oil importing countries were India, Singapore and Malaysia.

IV.II Trends in Imports/Exports in Quantity, Value and Price

Gingelly seeds exports are recorded from 1976 and that of oil is recorded from 1970. The seeds exports have gradually increased (by four times) from 5,858 mt. in 1976 to the maximum of 23,383 mt. in 1982. Thereafter exports have gradually declined (by 99%) to 229 mt. in 1995 mainly due to the declined extent and production in the country.

The export earnings of seeds have increased from Rs.24 mn. in 1976 to Rs.234 mn. in 1982 and then declined to Rs.7 mn. in 1995. Compared to the early 1980s, oil exports have increased up to 31 mt. in 1995.

The export earnings of gingelly oil have increased from Rs.0.2 mn. in 1981 to Rs.3.2 mn. in 1991 and to Rs.5.6 mn. in 1995.

Imports of gingelly seeds as well as its oil have been commenced in mid-1980s. The quantity imported has increased. The quantity of seeds imported in 1987 was 10 kg. and it has increased to 9.9 mt. in 1995. Foreign expenditure on seeds imports has increased remarkably from Rs.201/- in 1987 to Rs.2 mn. in 1995.

Gingelly oil imports have increased from 1.6 mt. in 1987 to 14.8 mt. in 1995. Foreign expenditure has increased from Rs.0.2 mn. in 1987 to Rs.1.2 mn. in 1995.

V. Consumption

In 1986/87 the per capita consumption of gingelly per day was 0.01 grams. More data on this aspect is not available to do a further analysis in this regard.

VI. Government Policy

Gingelly was included in the Floor Price Scheme after 1977 and the PMB started buying at the floor price.

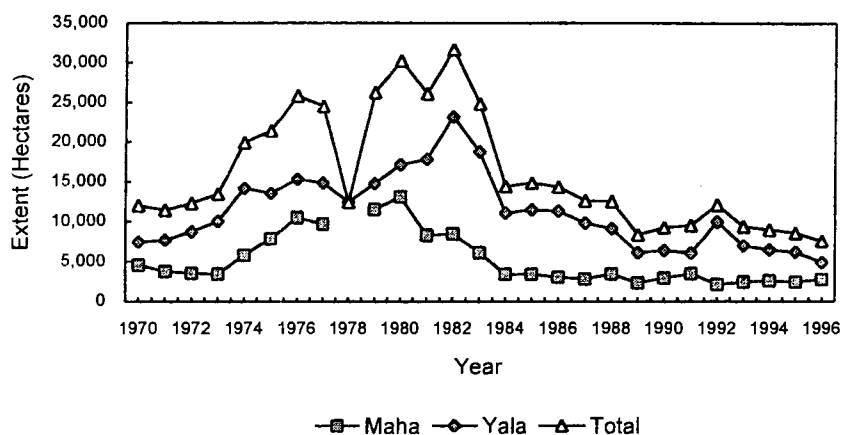
Table 13.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF GINGELLY - SRI LANKA

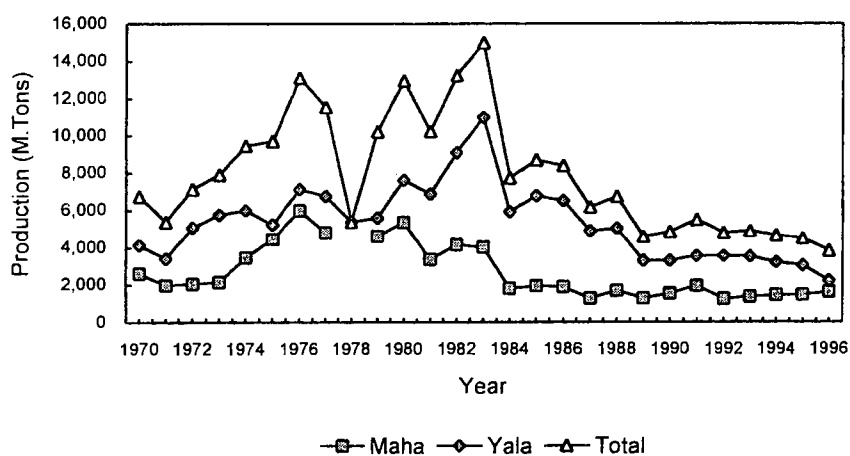
YEAR	EXTENT (Ha.)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha.)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	4,559	7,434	11,993	2,607	4,134	6,741	572	556	562
1971	3,752	7,675	11,427	1,977	3,408	5,385	527	444	471
1972	3,514	8,738	12,252	2,066	5,076	7,142	588	581	583
1973	3,401	10,012	13,413	2,136	5,762	7,898	628	576	589
1974	5,743	14,135	19,878	3,457	5,988	9,445	602	424	475
1975	7,847	13,512	21,359	4,451	5,230	9,681	567	387	453
1976	10,489	15,295	25,784	5,990	7,113	13,103	571	465	508
1977	9,672	14,837	24,509	4,802	6,742	11,544	496	454	471
1978	NA	12,400	12,400	NA	5,388	5,388	NA	435	435
1979	11,486	14,763	26,249	4,620	5,585	10,205	402	378	389
1980	13,069	17,132	30,201	5,355	7,592	12,947	410	443	429
1981	8,285	17,793	26,078	3,364	6,859	10,223	406	385	392
1982	8,473	23,152	31,625	4,145	9,080	13,225	489	392	418
1983	6,072	18,726	24,798	4,011	10,968	14,979	661	586	604
1984	3,356	11,037	14,393	1,801	5,920	7,721	537	536	536
1985	3,365	11,459	14,824	1,932	6,752	8,684	574	589	586
1986	3,017	11,308	14,325	1,879	6,498	8,377	623	575	585
1987	2,760	9,816	12,576	1,266	4,893	6,159	459	498	490
1988	3,396	9,111	12,507	1,685	5,030	6,715	496	552	537
1989	2,279	6,070	8,349	1,277	3,294	4,571	560	543	547
1990	2,876	6,360	9,236	1,531	3,298	4,829	532	519	523
1991	3,471	6,039	9,510	1,938	3,546	5,484	558	587	577
1992	2,101	9,951	12,052	1,237	3,549	4,786	589	357	397
1993	2,391	6,970	9,361	1,360	3,519	4,879	569	505	521
1994	2,553	6,412	8,965	1,444	3,202	4,646	566	499	518
1995	2,394	6,166	8,560	1,459	3,040	4,499	609	493	526
1996	2,718	4,849	7,567	1,612	2,205	3,817	593	455	504

Source : Department of Census and Statistics
Data Development Unit of HARTI

Graph 13.1
EXTENT OF GINGELLY



Graph 13.2
PRODUCTION OF GINGELLY



Graph 13.3
AVERAGE YIELD OF GINGELLY

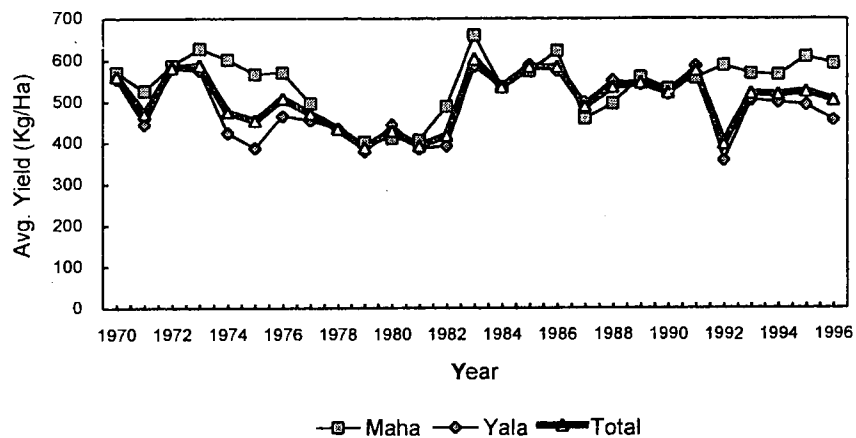


Table 13.2

EXTENT OF GINGELLY BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-92)	%
ANURADHAPURA	MAHA	1,697	254	367	299	363	123	54	133	21	139	
	YALA	4,291	5,537	2,869	1,938	1,904	7,541	4,065	4,112	4,097	4,344	
	TOTAL	5,988	5,791	3,236	2,237	2,267	7,664	4,119	4,245	4,118	4,483	46.3
KURUNEGALA	MAHA	1,334	525	86	440	50	53	29	28	41	40	
	YALA	4,357	4,477	4,230	1,775	1,332	1,264	1,320	641	567	1,025	
	TOTAL	5,691	5,002	4,316	2,215	1,382	1,317	1,349	669	608	1,065	11.0
MONERAGALA	MAHA	1,604	1,305	584	321	125	178	628	674	413	404	
	YALA	673	1,229	1,196	914	1,128	100	267	317	333	429	
	TOTAL	2,278	2,534	1,780	1,235	1,253	278	895	991	746	833	8.6
HAMBANTOTA	MAHA	596	5,379	516	405	549	531	363	306	435	437	
	YALA	823	772	314	103	257	199	231	230	204	224	
	TOTAL	1,418	6,151	830	508	806	730	594	536	639	661	6.8
PUTTALAM	MAHA	330	1,540	341	269	316	327	247	214	198	260	
	YALA	359	1,830	868	299	133	200	226	281	260	220	
	TOTAL	688	3,370	1,209	568	449	527	473	495	458	480	5.0
OTHERS *	MAHA	2,286	4,066	1,471	1,142	2,068	889	1,070	1,198	1,286	1,302	
	YALA	3,344	5,093	2,826	1,606	1,394	823	1,063	1,088	941	1,062	
	TOTAL	5,630	9,159	4,297	2,748	3,462	1,712	2,133	2,286	2,227	2,364	24.4
SRI LANKA	MAHA	7,847	13,069	3,365	2,876	3,471	2,101	2,391	2,553	2,394	2,582	
	%	36.7	43.3	22.7	31.1	36.5	17.4	25.5	28.5	28.0	26.6	
	YALA	13,512	17,132	11,459	6,360	6,039	9,951	6,970	6,412	6,166	7,108	
	%	63.3	56.7	77.3	68.9	63.5	82.6	74.5	71.5	72.0	73.4	
	TOTAL	21,359	30,201	14,824	9,236	9,510	12,052	9,361	8,965	8,560	9,690	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Badulla, Matale, Jaffna, Ratnapura, Vavuniya, Kilinochchi, Polonnaruwa, Ampara, Mannar, Kandy, Batticaloe, Trincomalee, Nuwara Eliya, Mullativu, Matara and Kegalle districts & special project Mahaweli H.

Primary Source : Department of Census & Statistics

Table 13.3

PRODUCTION OF GINGELLY BY MAJOR PRODUCING DISTRICTS (M. Tons)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-92)	%
ANURADHAPURA	MAHA	746	95	230	138	215	65	23	51	9	73	
	YALA	1,251	1,496	1,800	918	1,088	2,218	1,705	1,711	1,730	1,690	
	TOTAL	1,997	1,591	2,030	1,056	1,303	2,283	1,728	1,762	1,739	1,763	36.3
KURUNEGALA	MAHA	506	277	39	210	26	31	15	16	22	22	
	YALA	1,677	2,358	2,082	951	765	666	770	425	398	605	
	TOTAL	2,184	2,635	2,121	1,161	791	697	785	441	420	627	12.9
MONERAGALA	MAHA	1,614	441	328	223	91	109	391	421	328	268	
	YALA	345	1,221	963	556	857	89	252	313	311	364	
	TOTAL	1,959	1,662	1,291	779	948	198	643	734	639	632	13.0
HAMBANTOTA	MAHA	305	2,267	351	256	397	397	250	212	311	313	
	YALA	421	325	278	71	174	115	143	178	110	144	
	TOTAL	727	2,592	629	327	571	512	393	390	421	457	9.4
MATALE	MAHA	278	156	423	205	125	136	80	177	181	140	
	YALA	250	140	516	219	237	100	157	133	136	153	
	TOTAL	528	296	939	424	362	236	237	310	317	292	6.0
OTHERS *	MAHA	1,002	2,119	561	499	1,084	499	601	567	608	672	
	YALA	1,286	2,052	1,113	583	425	361	492	442	355	415	
	TOTAL	2,288	4,171	1,674	1,082	1,509	860	1,093	1,009	963	1,087	22.4
SRI LANKA	MAHA	4,451	5,355	1,932	1,531	1,938	1,237	1,360	1,444	1,459	1,488	
	%		46.0	41.4	22.2	31.7	35.3	25.8	27.9	31.1	32.4	30.6
	YALA	5,230	7,592	6,752	3,298	3,546	3,549	3,519	3,202	3,040	3,371	
	%	54.0	58.6	77.8	68.3	64.7	74.2	72.1	68.9	67.6	69.4	
	TOTAL	9,680	12,947	8,684	4,829	5,484	4,786	4,879	4,646	4,499	4,859	100.0
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Jaffna, Puttalam, Badulla, Ratnapura, Vavuniya, Kilinochchi, Kandy, Polonnaruwa, Ampara, Mannar, Batticaloe, Trincomale, Mullativu, Nuwara Eliya and Kegalle districts & special project Mahaweli H

Primary Source : Department of Census & Statistics

Table 13.4
COST OF CULTIVATION PER ACRE OF GINGELLY (RAINFED) BY INPUTS
IN ANURADHAPURA (Rs/Acre)

INPUT	90	91	92	93
	YALA	YALA	YALA	YALA
Labour	1,439	1,586	2,623	2,024
Seed	137	104	126	130
Fertilizer	-	-	-	-
Agro-Chemicals	-	-	-	-
Draught Power	-	-	-	-
Machinery & Equipment	-	-	-	-
Total	1,576	1,690	2,749	2,154

Source : Dept. of Agriculture

Table 13.5
NET RETURN PER ACRE OF GINGELLY (RAINFED) BY SEASONS
IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	538.67	1,915.60
91 Yala	1,441.26	2,579.09
92 Yala	614.91	2,650.57
93 Yala	1,479.56	3,244.96

Source : Dept. of Agriculture

Table 13.6
AVERAGE PRODUCER PRICES OF GINGELLY - SRI LANKA UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	12.45	16.29	19.25	19.00	22.23	29.55
February	15.27	17.33	20.00	18.75	19.95	36.72
March	23.53	19.42	21.33	18.46	17.68	44.71
April	20.08	19.49	16.67	20.14	16.81	38.50
May	19.71	19.51	16.33	17.70	18.49	27.31
June	16.87	20.75	17.22	15.88	19.41	29.88
July	16.57	21.39	18.15	15.46	20.00	37.72
August	18.04	18.39	17.59	16.32	23.70	34.63
September	17.28	18.33	15.70	14.53	22.82	38.98
October	16.22	17.85	18.10	18.42	24.53	41.83
November	17.16	18.87	19.00	21.75	24.12	38.69
December	17.27	17.46	19.84	22.44	22.26	39.35
An. Average	17.61	18.76	18.18	17.82	21.07	36.65

Source : Dept. of Census & Statistics

Table 13.7
EXPORTS OF GINGELLY BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
SINGAPORE	278.00	5.93	242.00	5.85	-	-	17.00	0.40	53.00	1.82	-	-
CHINA TAIWAN	-	-	1,893.00	45.51	-	-	-	-	175.00	5.55	-	-
TAIWAN	1,558.00	33.48	-	-	-	-	-	-	-	-	-	-
CHINA	-	-	113.00	1.94	-	-	-	-	-	-	-	-
MALAYSIA	-	-	18.00	0.44	-	-	-	-	-	-	-	-
SPAIN	-	-	85.00	2.12	-	-	-	-	-	-	-	-
JAPAN	-	-	-	-	-	-	-	-	-	-	1.00	0.19
OTHER COUNTRIES	105.30	2.73	1.00	1.00	0.50	0.90	0.40	0.50	1.40	0.11	1.00	0.17
TOTAL	1,941.30	42.14	2,352.00	56.86	0.50	0.90	17.40	0.45	229.40	7.48	2.00	0.36

Source : DEPARTMENT OF CUSTOMS.

14. GROUND NUT

I. Introduction

Ground nut (*Arachis hypogea*) in the world market is considered as an oil seed, but Sri Lankan consume it in a roasted form.

Ground nut is mainly cultivated in the Maha season and planted in late September. For the Yala season, it is planted in March/April under irrigation.

The recommended varieties are Red Spanish, Uganda Erect, A 20, A 92, MI-1 and SAA 6. The better yields are given by MI-1 and SAA 6. A1-1 has a big seed and SAA 6 contains three seeds per pod. These are bushy types and take 110 days to mature.

II. Production

II.I. Major Producing Districts

As shown by the five-year average (1991-95) of production, the major producing districts of ground nut were Moneragala (24%), Puttalam (12%), Kurunegala (10%), Hambantota (9%), Polonnaruwa (9%) and Trincomalee (8%). All these districts have contributed 72% of the total production.

According to the five year average of the extent cultivated (84%), Moneragala covered 25%, Puttalam 13%, Kurunegala 11%, Hambantota 20%, Mullativu 9% and Polonnaruwa 6%.

II.II Seasonality in Production

This is mainly cultivated in Maha season. Between the 1991-95 five-year period, 71% was cultivated in Maha and 64% of the production was also recorded in Maha season.

II.III Trends in Production, Cultivated Area, and Average Yield

The production has gradually increased upto 1981 (from 2,316 mt. in 1970 to 7,369 mt. in 1981 - an increase of about two times). Thereafter it has declined.

The extent cultivated has shown the same picture.

Irrespective of the extent cultivated yield has fluctuated drastically.

The highest yield recorded was 663 kg/ha. in 1989 and the lowest was 424 kg/ha. in 1992.

II.IV Review of Agricultural Inputs

According to the Department of Agriculture, the main component of the cost of production is labour (83%). The cost of seeds accounted for 11%. The cost of production has increased by 62% from Rs.6,421/acre in 1991/92 Maha to Rs.10,383/acre in 1994/95 Maha.

Profit is not shown when the own input cost is included during the Maha season. On that basis there was a profit of Rs.1,505/acre for Yala in 1990. The net return is higher when the imputed cost is excluded. It has increased gradually.

III. Domestic Marketing

III.I Marketing Channels

The predominant marketing channel for groundnut is as follows:

Farmer -> Collector/Transport Agent -> Colombo Wholesaler and/or Regional Wholesaler -> Processor/Retailer -> Consumer

III.II Price Behaviour

Except for the producer price, wholesale and retail prices are not available.

According to the Department of Census and Statistics, the average producer price was Rs.15.92/kg. in 1991 and it has increased to Rs.22.18/kg. in 1995.

IV. External Trade

Ground nut has been imported while small quantities have been exported. The major export countries are Canada, Australia and Poland during the reference period (1991-95). In 1994, 10.4 mt. were exported while 1430.6 mt. were imported. The major importing countries are India and Singapore. The quantity imported has been increased remarkably by over five times in 1994 compared to 1990. The foreign expenditure was Rs. 13.3 mn. while foreign earnings were Rs.0.3 mn. in 1994.

At present both ground nut and ground nut oil are subjected to 35% duty, 20% turn over tax and 4.5% national security levy when they are imported. Import duty rates were high earlier. Before 1984 it was 100%. It was 75% in 1984, 60% in 1989 and 45% in 1994. Exports are not restricted by any regulation.

V. Consumption

According to the Consumer Finance and Socio-Economic Survey of the Central Bank in 1986/87, the per capita consumption of ground nut per day was 0.03 grams.

Table 14.1

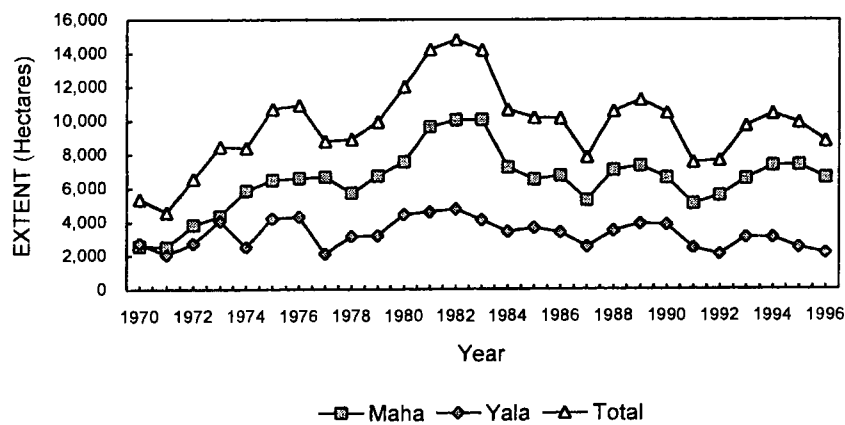
EXTENT, PRODUCTION AND AVERAGE YIELD OF GROUND NUT - SRI LANKA

YEAR	EXTENT (Ha.)			PRODUCTION (M. Tons)			AVERAGE YIELD (Kg/Ha.)		
	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL	MAHA	YALA	TOTAL
1970	2,599	2,758	5,357	1,330	986	2,316	512	358	432
1971	2,509	2,071	4,580	1,370	920	2,290	546	444	500
1972	3,819	2,741	6,560	2,128	1,141	3,269	557	416	498
1973	4,362	4,077	8,439	2,342	1,914	4,256	537	469	504
1974	5,846	2,523	8,369	2,776	1,303	4,079	475	516	487
1975	6,469	4,219	10,688	2,350	2,106	4,456	363	499	417
1976	6,582	4,317	10,899	2,607	2,102	4,709	396	487	432
1977	6,658	2,112	8,770	2,211	682	2,893	332	323	330
1978	5,713	3,164	8,877	1,963	1,968	3,931	344	622	443
1979	6,713	3,204	9,917	3,877	2,158	6,035	578	674	609
1980	7,551	4,446	11,997	4,515	2,569	7,084	598	578	590
1981	9,620	4,603	14,223	4,808	2,561	7,369	500	556	518
1982	10,028	4,781	14,809	3,790	1,848	5,638	378	387	381
1983	10,054	4,133	14,187	4,941	1,897	6,838	491	459	482
1984	7,226	3,423	10,649	4,509	1,769	6,278	624	517	590
1985	6,515	3,649	10,164	3,961	1,916	5,877	608	525	578
1986	6,750	3,382	10,132	4,874	1,689	6,563	722	499	648
1987	5,309	2,528	7,837	3,182	1,449	4,631	599	573	591
1988	7,056	3,492	10,548	4,241	1,855	6,096	601	531	578
1989	7,325	3,908	11,233	5,237	2,206	7,443	715	564	663
1990	6,604	3,849	10,453	3,874	2,408	6,282	587	626	601
1991	5,074	2,455	7,529	2,792	1,535	4,327	550	625	575
1992	5,560	2,081	7,641	2,101	1,135	3,236	378	545	424
1993	6,579	3,111	9,690	3,322	2,131	5,453	505	685	563
1994	7,342	3,094	10,436	3,486	2,142	5,628	475	692	539
1995	7,393	2,503	9,896	4,172	1,740	5,912	564	695	597
1996	6,628	2,165	8,793	3,719	1,401	5,120	561	647	582

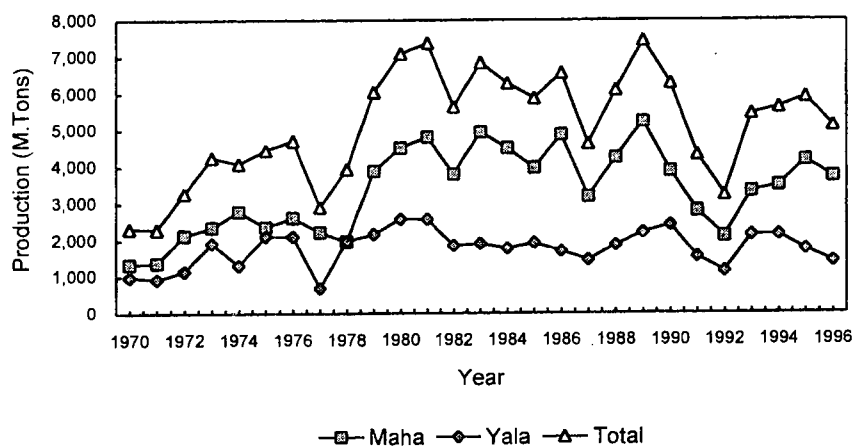
Source : Department of Census and Statistics

Data Development Unit of HARTI

Graph 14.1
EXTENT OF GROUND NUT



Graph 14.2
PRODUCTION OF GROUND NUT



Graph 14.3
AVERAGE YIELD OF GROUND NUT

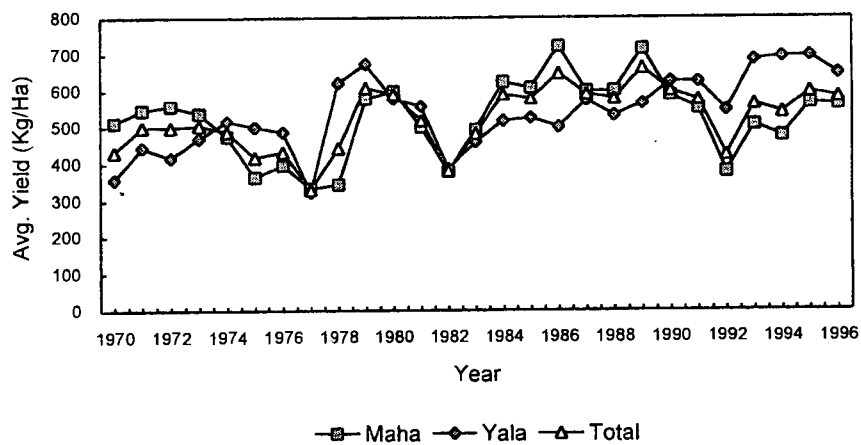


Table 14.2
EXTENT OF GROUND NUT BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-92)	%
MONERAGALA	MAHA	1,324	1,293	990	1,919	2,078	1,917	1,790	2,598	2,082	2,093	25.2
	YALA	451	757	575	1,226	NA	50	458	218	210	234	
	TOTAL	1,775	2,050	1,565	3,145	2,078	1,967	2,248	2,816	2,292	2,280	
PUTTALAM	MAHA	170	475	1,042	636	547	550	752	694	701	649	12.6
	YALA	272	594	954	421	738	374	403	472	473	492	
	TOTAL	442	1,069	1,996	1,057	1,285	924	1,155	1,166	1,174	1,141	
KURUNEGALA	MAHA	355	321	338	685	255	481	611	774	724	569	10.8
	YALA	288	246	544	652	21	503	546	547	411	406	
	TOTAL	643	567	882	1,337	276	984	1,157	1,321	1,135	975	
HAMBANTOTA	MAHA	1,302	1,046	627	607	781	768	526	470	743	658	10.2
	YALA	1,143	365	229	115	25	280	285	437	284	262	
	TOTAL	2,445	1,411	856	722	806	1,048	811	907	1,027	920	
MULLATIVU	MAHA	-	1,486	478	214	NA	210	808	808	808	658	9.0
	YALA	-	371	335	176	NA	151	151	151	151	151	
	TOTAL	-	1,857	813	390	NA	361	959	959	959	810	
POLONNARUWA	MAHA	184	92	112	198	155	226	262	136	218	199	5.6
	YALA	192	215	294	624	213	70	493	462	288	305	
	TOTAL	376	307	406	822	368	296	755	598	506	505	
RATNAPURA	MAHA	59	117	530	258	252	272	293	260	463	308	5.5
	YALA	398	459	385	240	NA	207	298	248	205	240	
	TOTAL	457	576	915	498	252	479	591	508	668	500	
OTHERS *	MAHA	3,075	2,721	2,398	2,087	1,006	1,136	1,537	1,602	1,654	1,255	20.1
	YALA	1,475	1,439	333	395	1,458	446	477	559	481	559	
	TOTAL	4,550	4,160	2,731	2,482	2,464	1,582	2,014	2,161	2,135	1,815	
SRI LANKA	MAHA	6,469	7,551	6,515	6,604	5,074	5,560	6,579	7,342	7,393	6,390	100.0
	%	60.5	62.9	64.1	63.2	67.4	72.8	67.9	70.4	74.7	70.7	
	YALA	4,219	4,446	3,649	3,849	2,455	2,081	3,111	3,094	2,503	2,649	
	%	39.5	37.1	35.9	36.8	32.6	27.2	32.1	29.6	25.3	29.3	
	TOTAL	10,688	11,997	10,164	10,453	7,529	7,641	9,690	10,436	9,896	9,038	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Batticaloe, Trincomalee, Galle, Ampara, Vavuniya, Matale, Kilinochchi, Badulla, Anuradhapura, Mannar, Jaffna, Kandy, Nuwara Eliya and Matara districts & special project Mahaweli H
NA - Not available

Primary Source : Department of Census and Statistics

Table 14.3

PRODUCTION OF GROUND-NUT BY MAJOR PRODUCING DISTRICTS (M.Tons)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-92)	%
MONERAGALA	MAHA	578	632	568	1,606	1,452	637	730	1,064	1,261	1,029	
	YALA	404	368	529	811	NA	33	337	182	191	186	
	TOTAL	982	1,000	1,097	2,417	1,452	670	1,067	1,246	1,452	1,177	23.9
PUTTALAM	MAHA	53	134	65	119	93	114	324	345	369	249	
	YALA	160	169	198	145	715	208	216	247	263	330	
	TOTAL	214	303	263	264	808	322	540	592	632	579	11.7
KURUNEGALA	MAHA	84	79	227	259	151	157	342	346	268	253	
	YALA	201	61	170	272	7	170	432	405	287	260	
	TOTAL	285	140	397	531	158	327	774	751	555	513	10.4
HAMBANTOTA	MAHA	578	1,547	541	313	394	332	231	199	557	343	
	YALA	452	541	153	114	18	87	96	196	163	112	
	TOTAL	1,031	2,088	694	427	412	419	327	395	720	455	9.2
POLONNARUWA	MAHA	86	19	107	155	120	171	238	122	187	168	
	YALA	91	58	285	584	152	63	429	456	249	270	
	TOTAL	177	77	392	739	272	234	667	578	436	437	8.9
TRINCOMALEE	MAHA	22	88	208	126	NA	0	354	346	388	272	
	YALA	40	48	1	34	NA	165	132	145	121	141	
	TOTAL	62	136	209	160	NA	165	486	491	509	413	8.4
RATNAPURA	MAHA	32	43	302	155	149	147	165	159	286	181	
	YALA	351	170	224	161	NA	128	184	170	150	158	
	TOTAL	383	213	526	316	149	275	349	329	436	308	6.2
MULLATIVU	MAHA	-	367	237	55	NA	50	199	199	199	162	
	YALA	-	97	152	113	NA	93	93	93	93	93	
	TOTAL	-	464	389	168	NA	143	292	292	292	255	5.2
OTHERS *	MAHA	917	1,606	1,706	1,086	433	493	739	706	657	519	
	YALA	407	1,057	204	174	643	188	212	248	223	187	
	TOTAL	1,324	2,663	1,910	1,260	1,076	681	951	954	880	706	14.3
SRI LANKA	MAHA	2,350	4,515	3,961	3,874	2,792	2,101	3,322	3,486	4,172	3,175	
	%	52.7	63.7	67.4	61.7	64.5	64.9	60.9	60.9	70.6	64.4	
	YALA	2,106	2,569	1,916	2,408	1,535	1,135	2,131	2,142	1,740	1,737	
	%	47.3	36.3	32.6	38.3	35.5	35.1	39.1	37.4	29.4	35.2	
	TOTAL	4,456	7,084	5,877	6,282	4,327	3,236	5,453	5,728	5,912	4,931	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Batticaloe, Ampara, Galle, Vavuniya, Matale, Mannar, Anuradhapura, Kilinochchi, Badulla, Jaffna and Kandy districts & special project Mahaweli H..

NA - Not available

Primary Source : Department of Census and Statistics

Table 14.4
AVERAGE PRODUCER PRICES OF GROUND NUT - SRI LANKA
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	13.38	14.93	20.02	20.96	20.19	29.55
February	14.75	15.88	20.88	20.90	21.30	36.72
March	22.50	15.72	22.77	19.32	21.00	44.71
April	18.17	18.57	23.01	19.57	21.35	38.50
May	11.33	17.98	21.14	16.81	21.88	27.31
June	10.33	19.32	33.95	19.30	23.80	29.88
July	13.75	19.55	21.80	19.15	23.11	37.72
August	14.37	18.82	21.50	19.86	22.86	34.63
September	17.25	19.67	21.35	17.04	23.21	38.98
October	18.25	21.03	22.66	20.47	21.70	41.83
November	18.25	22.07	20.83	21.76	22.53	38.69
December	18.67	21.44	21.16	21.31	23.14	39.35
An. Average	15.92	19.65	22.56	19.50	22.18	36.66

Source : Dept. of Census & Statistics

Table 14.5
COST OF CULTIVATION PER ACRE OF GROUNDNUT (RAINFED) BY INPUTS IN
MONARAGALA (Rs./Acre)

INPUT	91/92 Maha	92/93 Maha	93/94 Maha	94/95 Maha	90 Yala
Labour	4,502	NA	NA	8,650	4,381
Seed	1,584	NA	NA	1,120	907
Fertilizer	-	NA	NA	-	-
Agro-Chemicals	-	NA	NA	-	493
Draught Power					
Machinery & Equipment	335	NA	NA	613	36
Total	6,421	NA	NA	10,383	5,817

NA - Not available
Source : Dept. of Agriculture

Table 14.6
NET RETURN PER ACRE OF GROUNDNUT (RAINFED) BY
SEASONS IN MONERAGALA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
90 Yala	1,505.37	5,754.33
91/92 Maha	(132.59)	5,323.65
94/95 Maha	(1,200.71)	6,794.11

Negative returns are given in paranthesis
Source : Dept. of Agriculture

15. BEANS

I. Introduction

Bush and Pole beans (*Phaseolus vulgaris*) can be grown in all ecological regions except in the upcountry Wet Zone. Well drained soils are suitable (preferably pH6); ill-drained soils can cause growth problems.

The recommended and promising varieties for Bush beans are Wade and Top Crop and for Pole beans are Kentucky Wonder Green, Kentucky Wonder Wax, Peas Butter, Katugastosa, Lanka Nill. Expected yield is 6-10 tons/ha. for bush beans, and 9-12 tons/ha for pole beans.

II. Production

III. Major Producing Districts

Badulla is the major producing area for beans. According to the average production for the period 1991-95, Badulla accounted for 34% of the national production followed by Nuwara Eliya (27%), Matale (18%), Ratnapura (8%) and Kandy (6%).

According to the extent data also, the three districts of Badulla, Nuwara Eliya and Matale took priority in representing 33%, 27% and 17% of the average extent cultivated in the country during the same period.

II.II. Seasonality of Production

Beans are available throughout the year in the market. However, in 1990 nearly 54% of the production came from Maha and that level declined to 49% by 1995. The main reason for this is the increase in the extent cultivated and average yield in Yala season.

II.III Trends in Production, Cultivated Area and Average Yield

The production statistics for over a decade (1973-1996) indicate a tremendous increase in production at the beginning (by 251% from 1973 to 1984) and a long stagnant period thereafter (from 1984 to 1992). We could also see a drop (by 18% from 1992 to 1996) which has happened under a situation where no significant change in the cultivated area was recorded. But it coincides with the drop in the average yield in the same period.

The statistics on the extent cultivated in the same period (1973-1996) indicate an unstable increase with a few drops in some years.

Regarding the average yield for the whole period (1973-1996), an increase (by 88%) is indicated with much fluctuations in some years. Especially after the period 1983, a stagnation and a slow down in yields were indicated.

II.IV. Review of Agricultural Inputs

The cost of cultivation of beans was Rs.31,581/acre in Badulla under rainfed conditions for 1994/95 Maha. The labour cost accounted for nearly 50% of the total cultivation cost, fertilizer 17%, seeds 13%, agrochemicals 13%.

III. Domestic Marketing

III.1 Marketing Channels

There are several important marketing channels in operation for vegetables, which are mostly common to beans too (see annex II for marketing channels). In the past, farmers sent their produce to Colombo Manning Market through transport agents. The commission trader at the Manning Market sells the vegetables to the retailers. The commission traders take 10% of the total sale values as commission for them. This was the leading channel in the past. Main buyers in this market are retailers from Colombo and suburbs.

The other channel is the process of the producer selling the produce to the local collector or wholesalers (supply side), who supply these vegetables to wholesalers in the demand side, mostly wholesalers who come from different regions. These wholesalers (demand side) supply the produce to the retailers, who in turn sell it to the consumers. The local collectors/wholesalers also sell the vegetables to commission traders of the Manning Market depending on the existing price levels. At present the importance of this channel is growing due to its better functioning.

The other channel is that of the farmer taking the vegetables to producer fairs, where the local collector/wholesalers (supply side) or the traders coming from different parts of the country (demand side) buy the produce. Thereafter they sell it to the retailers. This channel is mostly operated for the low country vegetables.

The institutional buyers (hotels, restaurants, super markets) buy mainly from contract traders, who buy from farmers, commission traders or the collectors/wholesaler (supply side). The exporters also either buy directly from farmers or commission traders at the Manning Market. Some export companies cultivate their own vegetables.

The contribution of state trading agencies such as the CWE is very negligible in the vegetable marketing channel.

II. Price Behaviour

The farmgate, wholesale and retail prices of beans have increased steadily during the period 1991-95. The annual average farm gate price of butter beans was Rs.12.65/kg in 1991 which increased to Rs.17.75/kg in 1995. The annual average wholesale price has increased from Rs.14.67 in 1991 to Rs.19.11/kg in 1995. Similarly, the retail price has increased from Rs.23.07/kg to Rs.34.66/kg.

According to the observations of HARTI, the share of producer prices is nearly 50% of the retail price.

The highest prices were recorded during the end of April to mid-June and also relatively higher prices were recorded during November to mid-January. The monthly average wholesale prices ranged between Rs.10.00/kg to Rs. 29.87/kg and the retail price was between Rs.22.72/kg to Rs. 50.15/kg during 1995.

IV. External Trade

Beans is being exported in small quantities. Furthermore exports have not shown a stable growth. The export earnings totalled Rs.97,000 in 1990 and increased to Rs. 1.08 million in 1994. The Maldives is the major market and accounted for more than 95% of total exports while there was a small quantity of imports from Thailand and other countries specially to meet the requirements of tourist hotels. However, imports are not continuous and remained less in quantity and value.

One of the main problems faced by the vegetable exporters in Sri Lanka is that the producers are not aware of the quality requirements of the exports and thus most of their produce lack uniformity in size, shape and colour. Normally foreign buyers maintain strict specifications with regard to the length, shape, appearance of the vegetables and colour etc.

Another problem is that the supply and the range and varieties of vegetables available are limited.

IV.III Import Trade Regulations

The tariff structure for importation of the vegetables including beans is as follows; customs duty 35%, turnover tax 10% and national security levy 4.5%. There are no restrictions or duties for export of most of the vegetables.

V. Consumption

The consumption of beans is the highest among the vegetables and fruits. The proportion of consumption of beans to total expenditure on food was 1.12% per household per month. The per capita consumption per annum was 2.60 kg. in 1978/79 and increased to 3.84 kg. in 1990/91. The per capita consumption is very high in the estate sector with 6.99 Kg. followed by the urban sector 4.69 kg. and rural sector 3.29 kg. in 1986/87.

A higher consumption is observed in the income groups above Rs.3,000. This is common to all three sectors urban, rural and estate. The estate sector consumption rate is higher among all income groups.

VI. Government Policy

In 1995 the government set up a Task Force on Vegetables and Potatoes (VPTF) to ensure the year round availability of selected vegetables in the market at affordable prices while protecting the interest of the vegetable farmers and consumers by improving the present production, distribution and utilization practices. With a view to alleviating the problems in the vegetable sector, the following objectives were identified by the VPTF: (i) to assess the domestic demand and current supply of vegetables; (ii) to exploit possibilities for price stabilization of vegetables; (iii) to avoid temporary gluts of vegetables in major producing areas; (iv) to identify potential areas for slack seasons and regional production expansion; (v) to improve regional distribution networks; (vi) to reduce post-harvest losses; (vii) quality improvement of vegetables available in the market; (viii) to establish a strong market information network for farmers, traders, market organizations and officials; (ix) to reduce environmental hazards related to agricultural practices; (x) to promote vegetable exports and reduce imports of specific vegetable varieties by growing them in the country; (xi) to improve the food system and (xii) to promote local seed production programmes.

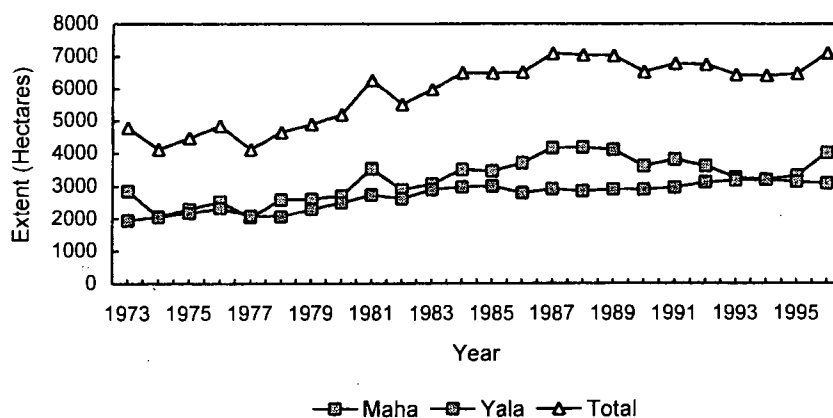
Table 15.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF BEANS - SRI LANKA

YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	
1973	2,851	1,937	4,788	5,876	4,484	10,360	2,061	2,315	
1974	2,067	2,048	4,115	5,346	4,063	9,409	2,586	1,984	
1975	2,294	2,176	4,470	5,839	4,023	9,862	2,545	1,849	
1976	2,530	2,316	4,846	6,494	5,638	12,132	2,567	2,434	
1977	2,031	2,086	4,117	5,361	5,197	10,558	2,640	2,491	
1978	2,588	2,061	4,649	7,020	3,862	10,882	2,713	1,874	
1979	2,604	2,293	4,897	8,565	9,870	18,435	3,289	4,304	
1980	2,699	2,489	5,188	9,781	10,851	20,632	3,624	4,360	
1981	3,532	2,732	6,264	9,113	9,033	18,146	2,580	3,306	
1982	2,889	2,616	5,505	9,681	7,812	17,493	3,351	2,986	
1983	3,068	2,902	5,970	18,528	13,159	31,687	6,039	4,534	
1984	3,506	2,978	6,484	19,652	16,685	36,337	5,605	5,603	
1985	3,461	3,011	6,472	18,235	17,332	35,567	5,269	5,756	
1986	3,709	2,796	6,505	20,531	16,445	36,976	5,535	5,882	
1987	4,170	2,917	7,087	22,020	15,313	37,333	5,281	5,250	
1988	4,184	2,853	7,037	21,369	16,364	37,733	5,107	5,736	
1989	4,104	2,914	7,018	20,692	15,452	36,144	5,042	5,303	
1990	3,618	2,900	6,518	20,171	15,545	35,716	5,575	5,360	
1991	3,812	2,960	6,772	20,546	14,494	35,040	5,390	4,897	
1992	3,620	3,118	6,738	19,987	15,494	35,481	5,521	4,969	
1993	3,259	3,170	6,429	13,698	14,330	28,028	4,203	4,521	
1994	3,204	3,194	6,398	12,843	13,315	26,158	4,008	4,169	
1995	3,323	3,139	6,462	13,554	14,041	27,595	4,079	4,473	
1996	4,020	3,088	7,108	15,809	13,122	28,931	3,933	4,249	

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

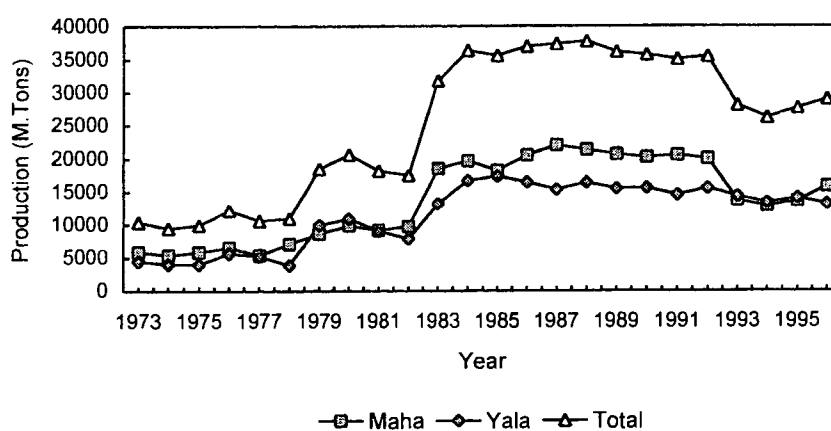
Graph 15.1

EXTENT OF BEANS



Graph 15.2

PRODUCTION OF BEANS



Graph 15.3

AVERAGE YIELD OF BEANS

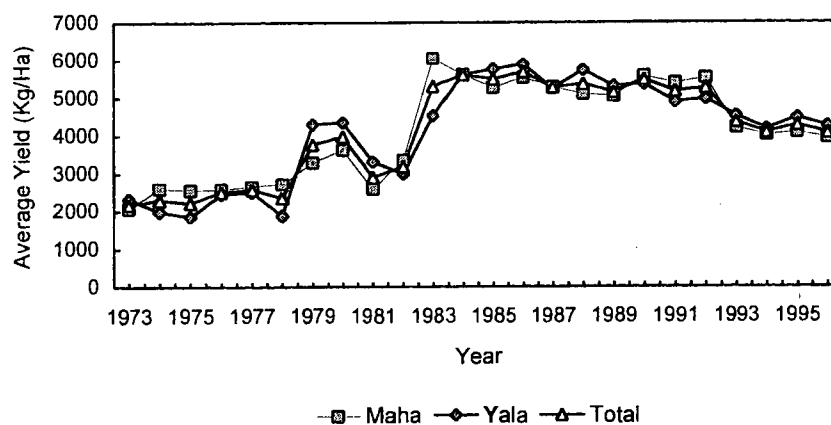


Table 15.2
EXTENT OF BEANS BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
BADULLA	Maha	977	803	1,242	1,309	1,286	1,238	946	970	883	1,065	
	Yala	866	769	956	1,037	1,130	1,117	1,066	1,072	1,074	1,092	
	Total	1,843	1,572	2,198	2,346	2,416	2,355	2,012	2,042	1,957	2,156	32.9
NUWARA ELIYA	Maha	244	197	590	1,009	1,079	1,079	897	849	894	960	
	Yala	309	180	598	629	700	794	848	852	858	810	
	Total	553	377	1,188	1,638	1,779	1,873	1,745	1,701	1,752	1,770	27.0
MATALE	Maha	443	998	861	698	799	733	726	704	774	747	
	Yala	396	601	530	462	420	405	396	400	384	401	
	Total	839	1,599	1,391	1,160	1,219	1,138	1,122	1,104	1,158	1,148	17.5
KANDY	Maha	406	494	528	344	307	254	267	255	278	272	
	Yala	379	747	629	488	493	465	504	521	495	496	
	Total	785	1,241	1,157	832	800	719	771	776	773	768	11.7
OTHER *	Maha	224	604	240	258	341	316	423	426	494	400	
	Yala	226	192	298	284	217	337	356	349	328	317	
	Total	450	796	538	542	558	653	779	775	822	717	10.9
SRI LANKA	Maha	2,294	2,699	3,461	3,618	3,812	3,620	3,259	3,204	3,323	3,444	
	%	51.3	52.0	53.5	55.5	56.3	53.7	50.7	50.1	51.4	52.5	
	Yala	2,176	2,489	3,011	2,900	2,960	3,118	3,170	3,194	3,139	3,116	
	%	48.7	48.0	46.5	44.5	43.7	46.3	49.3	49.9	48.6	47.5	
	Total	4,470	5,188	6,472	6,518	6,772	6,738	6,429	6,398	6,462	6,560	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ratnapura
Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe
Ampara Killinochchi & Hambantota districts and special project Mahaweli H.
Primary Source : Dept. of Census & Statistics

Table 15.3
PRODUCTION OF BEANS BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
BADULLA	Maha	3,440	3,619	5,747	6,065	5,592	5,825	4,035	4,246	3,870	4,714	34.1
	Yala	2,296	3,361	5,492	5,389	5,846	5,872	5,737	5,041	5,918	5,683	
	Total	5,736	6,980	11,239	11,454	11,438	11,697	9,772	9,287	9,788	10,396	
NUWARA ELIYA	Maha	307	300	5,293	7,905	8,480	8,490	3,830	3,294	3,047	5,428	29.4
	Yala	382	331	3,385	3,591	3,881	4,403	2,993	3,110	3,209	3,519	
	Total	689	631	8,678	11,496	12,361	12,893	6,823	6,404	6,256	8,947	
MATALE	Maha	1,203	2,329	5,370	3,806	4,407	3,724	3,038	2,421	2,936	3,305	18.2
	Yala	416	2,640	5,186	3,197	2,360	2,262	2,295	2,226	2,033	2,235	
	Total	1,619	4,969	10,556	7,003	6,767	5,986	5,333	4,647	4,969	5,540	
RAINAPURA	Maha	741	557	638	426	537	454	1,121	1,383	2,071	1,113	7.9
	Yala	389	518	1,119	1,516	665	1,373	1,493	1,494	1,417	1,288	
	Total	1,130	1,075	1,757	1,942	1,202	1,827	2,614	2,877	3,488	2,402	
KANDY	Maha	515	2,771	949	949	825	618	649	605	593	658	6.2
	Yala	444	3,921	1,859	1,324	1,336	1,274	1,395	1,037	1,080	1,224	
	Total	959	6,692	2,808	2,273	2,161	1,892	2,044	1,642	1,673	1,882	
OTHER *	Maha	104	205	238	1,020	705	876	1,025	894	1,037	907	4.2
	Yala	96	80	291	528	406	310	417	407	384	385	
	Total	200	285	529	1,548	1,111	1,186	1,442	1,301	1,421	1,292	
SRI LANKA	Maha	6,310	9,781	18,235	20,171	20,546	19,987	13,698	12,843	13,554	16,126	100.0
	%	61.1	47.4	51.3	56.5	58.6	56.3	48.9	49.1	49.1	52.9	
	Yala	4,023	10,851	17,332	15,545	14,494	15,494	14,330	13,315	14,041	14,335	
	%	38.9	52.6	48.7	43.5	41.4	43.7	51.1	50.9	50.9	47.1	
	Total	10,333	20,632	35,567	35,716	35,040	35,481	28,028	26,158	27,595	30,460	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Moneragala
Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe
Ampara, Hambantota & Killinochchi districts and Special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 15.4
MONTHLY AVERAGE WHOLESALE PRICE OF BEANS - PETTAH MARKET
UNIT : Rs/Kg

Month	1991		1992		1993		1994		1995		1996	
	Butter	Green	Butter	Green	Butter	Green	Butter	Green	Butter	Green	Butter	Green
January	14.98	15.06	18.34	18.17	13.47	13.37	28.64	28.64	25.73	25.72	13.88	13.93
February	10.86	10.86	12.64	12.58	14.61	14.59	28.82	28.82	15.11	15.11	12.00	12.22
March	17.22	17.23	15.89	15.84	12.34	12.39	19.00	18.98	10.00	10.00	13.45	13.48
April	14.39	14.26	19.92	18.89	11.78	11.78	18.87	18.87	15.03	14.96	26.58	26.58
May	17.23	17.25	25.41	25.41	22.24	22.54	16.39	16.43	29.87	29.87	25.28	25.66
June	18.57	16.05	21.37	21.61	21.54	21.58	27.55	27.55	27.48	27.55	33.89	33.74
July	15.91	15.92	10.43	10.43	23.97	23.99	21.19	21.91	23.55	23.48	26.40	26.39
August	17.10	17.09	11.34	11.34	21.16	21.10	20.69	20.64	18.18	18.18	18.75	18.75
September	13.06	13.06	16.90	16.90	12.74	12.74	18.11	18.11	16.11	16.11	8.83	18.93
October	10.79	10.79	14.91	14.97	10.46	10.48	13.61	13.61	17.37	17.47	20.52	20.81
November	13.97	13.97	13.83	13.83	15.63	15.69	21.17	21.17	20.34	20.36	12.14	12.17
December	12.01	11.93	17.45	17.36	15.15	15.14	24.96	24.96	10.51	10.51	27.13	27.14
An. Average	14.67	14.46	16.54	16.44	16.26	16.28	21.58	21.64	19.11	19.11	19.90	20.82

Table 15.5
MONTHLY AVERAGE RETAIL PRICE OF BEANS - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991		1992		1993		1994		1995		1996	
	Butter	Green	Butter	Green	Butter	Green	Butter	Green	Butter	Green	Butter	Green
January	22.33	22.33	25.77	25.59	22.79	22.83	42.71	42.76	38.80	38.79	25.29	25.26
February	18.51	18.40	20.66	20.46	23.28	23.28	41.50	41.50	30.11	30.09	25.77	25.50
March	24.25	24.08	24.46	24.46	20.10	20.04	32.85	32.84	22.72	22.72	26.77	26.67
April	23.22	22.55	27.53	27.48	21.02	21.00	32.96	32.98	30.41	30.37	41.20	41.18
May	27.28	26.94	33.87	33.92	32.84	32.86	29.12	29.07	50.15	50.15	43.56	43.75
June	28.52	27.82	31.78	31.78	32.50	32.48	38.00	37.96	45.69	45.69	51.89	51.92
July	24.46	24.12	18.15	18.10	33.25	33.18	31.00	31.00	38.77	38.80	46.52	46.54
August	24.21	23.90	20.00	20.00	30.61	30.62	31.97	31.94	30.58	30.60	33.42	33.41
September	21.05	20.85	23.93	23.93	23.39	23.39	29.00	28.00	31.91	31.98	30.67	32.98
October	19.72	19.62	23.13	23.13	20.76	20.82	26.78	26.82	32.59	32.66	32.92	26.91
November	22.70	22.46	23.86	23.87	26.19	26.19	36.67	37.47	38.23	38.20	26.93	26.91
December	20.57	21.41	26.07	25.98	27.11	27.11	39.82	39.82	26.02	26.06	40.49	40.51
An. Average	23.07	22.87	24.93	24.89	26.15	26.15	34.37	34.35	34.66	34.68	35.45	35.13

Source : Marketing & Food Policy Division - HARTI

Table : 15.6
PER CAPITA CONSUMPTION OF BEANS PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	2.90	2.20	4.90	2.60
1981/82	3.20	2.40	6.20	2.80
1986/87	4.69	3.29	6.99	3.84

Primary Source : Central Bank of Sri Lanka

Table : 15.7
PER CAPITA CONSUMPTION OF BEANS PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	7.9	1.96	-	3.28
101-200	3.42	2.69	-	2.94
201-400	2.84	2.24	3.59	2.51
401-600	4.48	1.95	7.18	2.46
601-800	3.59	2.40	9.07	2.82
801-1000	2.59	2.37	7.12	2.81
1001-1500	3.40	2.58	6.75	3.14
1501-2000	3.77	3.38	6.45	3.77
2001-3000	4.61	3.44	7.87	4.02
3001-5000	5.38	4.39	6.30	4.78
5001-10000	5.41	4.70	8.53	5.02
OVER 10000	5.49	5.29	8.57	5.40
Overall Avg.	4.69	3.29	6.99	3.84

Primary Source : Central Bank of Sri Lanka

16. CARROT

I. Introduction

Carrot (*Daucus carota*) can be grown in all agro-ecological regions. Well drained soils are suitable. The promising varieties are cape market and top weight. The time for maturity ranges from 75-90 days. The yield is 35-40 tons/ha in the upcountry and 15-20 tons/ha. in the mid-country.

II. Production

II.I Major Producing Districts

According to the five-year average (1991-95) of carrot production, Nuwara Eliya accounts for 82% of the total production in the country, while Badulla is the next important district accounting for 16% of the production. In terms of the extent cultivated, Nuwara Eliya district accounts 70% and Badulla 26%.

II.II Seasonality of Production

The major portion of production (more than 70%) was received in Maha season during 1973-77. Thereafter Yala became the major producing season during 1978 to 1987 (more than 50% of production) The production in Maha season was higher during 1988-1993. Again Yala became the major producing season. This was mainly due to changes in the extent cultivated and average yields in the season during different periods.

II.III Trends in Production, Cultivated Area and Average Yields

Generally production, cultivated extent and the average yield of carrots had increased during the period 1973-1996. This increase was 138% in respect of production and 333% relating to the extent during 1973-1996. The increase in average yields has been 242%, but with much fluctuations unlike in production and extent.

II.IV Review of Agricultural Inputs

According to the Department of Agriculture the cost of cultivation of carrots was Rs.45,300 per acre in Nuwara Eliya during 1992/93 Maha and it was Rs.44,877/- in 1994/95 Maha season. As revealed by the data in 1994/95 Maha season in Nuwara Eliya labour was the highest cost item (49%) fertilizer being the next (30%). According to the same data the net return per acre for 1994/95 Maha season was Rs.13,444 including the imputed cost and Rs.22,106 excluding the imputed cost.

III. Domestic Marketing

III.I Marketing Channels

The marketing channels of carrots are the same as in the case of other vegetables.

III.II Price Behaviour

The annual average wholesale as well as retail prices have increased during the reference period (1991-95). The annual average wholesale price was Rs.13.02/kg in 1991 and it increased to Rs.20.42/kg in 1995. The annual average retail price has increased from Rs.22.58/kg in 1991 to Rs.37.84/kg in 1994. Higher prices observed during the period December to February and May to July and the lower prices recorded during August to November are relatively lower during March to April.

IV. External Trade

Carrots are also exported. Maldives is the major importing country. Some other countries including Malaysia, Netherlands, U.A.E. and Baharain were also important in different years as export markets.

Exports do not seem to have been stable. During the reference period (1991-95) the export quantity has been declining substantially. The decline between 1991-93 was 81% and between 1993-95 it was 98%. With the declining of the quantity, the export value has also declined.

V. Consumption

The per capita consumption increased steadily from 1.47 grams per day in 1978/79 to 2.40 grams/day in 1990/91. The highest consumption of carrots is observed in the urban sector. The per capita consumption in the urban sector is 1.5 kg/annum, whereas it is 64 grams in the rural sector and 63 grams in the estate sector. The highest consumption was observed in income groups Rs.5,001-10,000 for the urban and rural sectors, while in the estate sector it was in the income group of over Rs.10,000.

VI. Government Policy

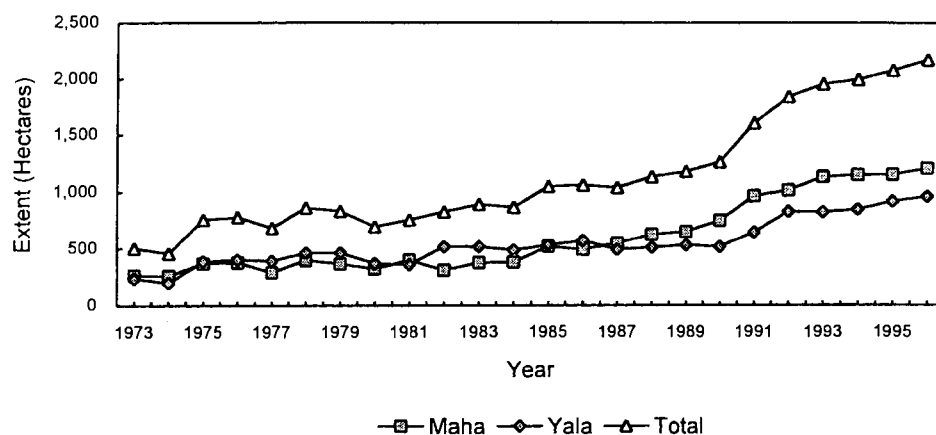
The government policy for carrots is the same as for other vegetables, which is reviewed under beans.

Table 16.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF CARROT - SRI LANKA

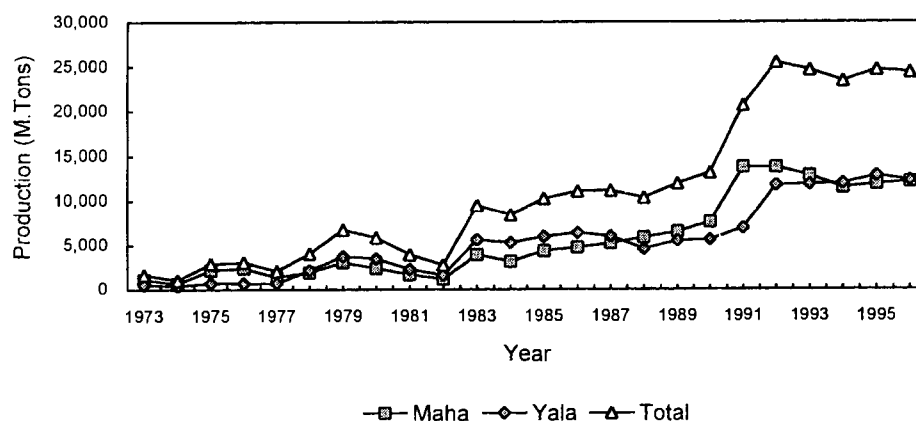
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1973	265	236	501	1,106	541	1,647	4,174	2,292	3,287
1974	260	198	458	632	399	1,031	2,431	2,015	2,251
1975	369	386	755	2,155	714	2,869	5,840	1,850	3,800
1976	377	401	778	2,353	682	3,035	6,241	1,701	3,901
1977	291	393	684	1,363	672	2,035	4,684	1,710	2,975
1978	399	464	863	1,909	2,111	4,020	4,784	4,550	4,658
1979	367	464	831	3,021	3,694	6,715	8,232	7,961	8,081
1980	322	371	693	2,364	3,450	5,814	7,342	9,299	8,390
1981	397	359	756	1,643	2,272	3,915	4,139	6,329	5,179
1982	310	517	827	1,147	1,594	2,741	3,700	3,083	3,314
1983	375	516	891	3,879	5,545	9,424	10,344	10,746	10,577
1984	380	486	866	3,112	5,247	8,359	8,189	10,796	9,652
1985	518	531	1,049	4,286	5,924	10,210	8,274	11,156	9,733
1986	490	571	1,061	4,696	6,342	11,038	9,584	11,107	10,403
1987	547	491	1,038	5,155	5,956	11,111	9,424	12,130	10,704
1988	623	511	1,134	5,813	4,524	10,337	9,331	8,853	9,116
1989	649	530	1,179	6,454	5,453	11,907	9,945	10,289	10,099
1990	748	515	1,263	7,569	5,552	13,121	10,119	10,781	10,389
1991	964	644	1,608	13,715	6,886	20,601	14,227	10,693	12,812
1992	1,015	829	1,844	13,719	11,720	25,439	13,516	14,138	13,796
1993	1,133	824	1,957	12,799	11,822	24,621	11,297	14,347	12,581
1994	1,151	848	1,999	11,487	11,928	23,415	9,980	14,066	11,713
1995	1,155	921	2,076	11,869	12,799	24,668	10,276	13,897	11,882
1996	1,208	962	2,170	12,111	12,263	24,374	10,026	12,747	11,232

Source : Dept. of Census & Statistics

Graph 16.1
EXTENT OF CARROT



Graph 16.2
PRODUCTION OF CARROT



Graph 16.3
AVERAGE YIELD OF CARROT

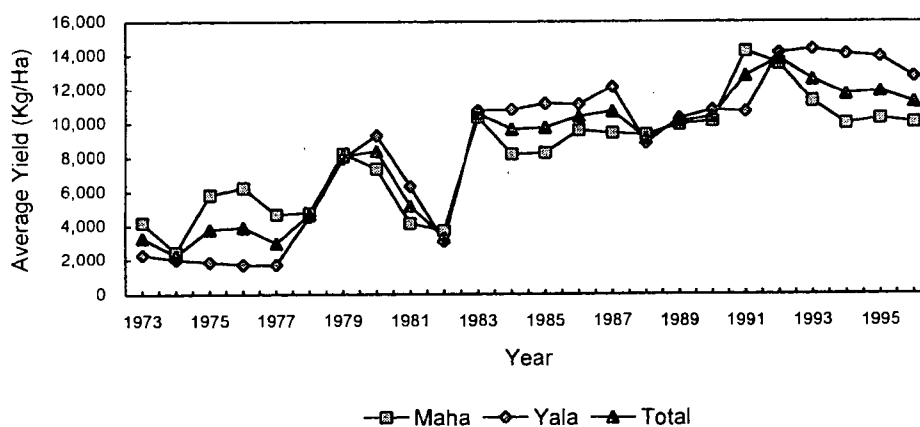


Table 16.2
EXTENT OF CARROT BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
NUWARA ELIYA	Maha	207	151	413	587	736	747	792	793	795	773	69.8
	Yala	271	154	330	355	448	567	560	562	622	552	
	Total	478	305	743	942	1,184	1,314	1,352	1,355	1,417	1,324	
BADULLA	Maha	102	88	79	2	190	211	274	288	278	248	24.9
	Yala	80	123	179	126	168	220	227	248	261	225	
	Total	182	211	258	128	358	431	501	536	539	473	
OTHER *	Maha	60	83	26	159	38	57	67	70	82	63	5.2
	Yala	35	94	22	34	28	42	37	38	38	37	
	Total	95	177	48	193	66	99	104	108	120	99	
SRI LANKA	Maha	369	322	518	748	964	1,015	1,133	1,151	1,155	1,084	100.0
	%	48.9	46.5	49.4	59.2	60.0	55.0	57.9	57.6	55.6	57.1	
	Yala	386	371	531	515	644	829	824	848	921	813	
	%	51.1	53.5	50.6	40.8	40.0	45.0	42.1	42.4	44.4	42.9	
	Total	755	693	1,049	1,263	1,608	1,844	1,957	1,999	2,076	1,897	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Table 16.3
PRODUCTION OF CARROT BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
NUWARA ELIYA	Maha	1,344	571	3,480	6,519	12,065	12,129	10,142	8,741	9,138	10,443	82.3
	Yala	517	922	4,182	4,190	5,376	9,833	9,809	9,889	10,547	9,091	
	Total	1,861	1,493	7,662	10,709	17,441	21,962	19,951	18,630	19,685	19,534	
BADULLA	Maha	670	719	672	724	1,527	1,458	2,289	2,372	2,304	1,990	15.9
	Yala	153	730	1,702	1,204	1,381	1,712	1,852	1,861	2,070	1,775	
	Total	823	1,449	2,374	1,928	2,908	3,170	4,141	4,233	4,374	3,765	
OTHER *	Maha	141	1,074	134	326	123	132	368	374	427	285	1.9
	Yala	44	1,798	40	158	129	175	161	178	182	165	
	Total	185	2,872	174	484	252	307	529	552	609	450	
SRI LANKA	Maha	2,155	2,364	4,286	7,569	13,715	13,719	12,799	11,487	11,869	12,718	100.0
	%	75.1	40.7	42.0	57.7	66.6	53.9	52.0	49.1	48.1	53.6	
	Yala	714	3,450	5,924	5,552	6,886	11,720	11,822	11,928	12,799	11,031	
	%	24.9	59.3	58.0	42.3	33.4	46.1	48.0	50.9	51.9	46.4	
	Total	2,869	5,814	10,210	13,121	20,601	25,439	24,621	23,415	24,668	23,749	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ratnapura, Kandy, Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Matale, Ampara, Hambantota & Killinochchi districts and special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 16.4
COST OF CULTIVATION PER ACRE OF CARROT (IRRIGATED) BY INPUTS
IN NUWARA ELIYA (Rs/Acre)

INPUT	92/93 Maha	93/94 Maha	94/95 Maha	91 Yala
Labour	18145	NA	22039	13071
Seed	1950	NA	1953	2890
Fertilizer	17240	NA	13426	8818
Agro-Chemicals	4165	NA	7459	1629
Draught Power- Machinery & Equipment	3800	NA	-	-
Total	45300	NA	44877	26408

NA - Not available
Source: Dept. of Agriculture

Table 16.5
NET RETURN PER ACRE OF CARROT (IRRIGATED) BY
SEASONS IN NUWARA ELIYA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
91 Yala	28,870	33,799
92/93 Maha	43,530	48,768
93/94 Maha	NA	NA
94/95 Maha	13,444	22,106

NA - Not available
Source: Dept. of Agriculture

Table 16.6
MONTHLY AVERAGE WHOLESALE PRICE OF CARROT - PETTAH MARKET
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	16.09	16.99	13.27	29.69	25.82	14.59
February	13.85	12.72	13.48	30.34	19.61	8.27
March	13.02	17.27	9.90	25.65	17.40	9.29
April	13.31	17.79	10.29	20.76	16.57	14.76
May	15.52	16.87	15.15	18.66	25.99	36.56
June	19.11	24.42	27.21	16.73	40.24	49.45
July	17.72	22.63	26.65	12.74	24.56	32.26
August	11.74	10.88	15.31	11.74	15.69	19.76
September	7.90	10.94	10.04	9.53	10.58	13.23
October	7.06	13.75	9.44	10.42	12.59	13.44
November	8.56	15.75	13.88	20.89	16.05	17.68
December	12.30	16.79	22.67	31.70	19.91	18.10
An. Average	13.02	16.40	15.61	19.90	20.42	20.62

Table 16.7
MONTHLY AVERAGE RETAIL PRICE OF CARROT - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	24.35	26.28	24.94	48.29	47.01	31.27
February	23.20	21.17	23.25	47.38	34.90	24.77
March	22.24	25.97	19.37	42.17	31.95	23.45
April	23.35	26.97	20.32	37.84	32.23	32.26
May	25.54	26.82	26.51	32.15	46.21	47.37
June	28.21	33.63	35.84	32.84	61.47	66.29
July	27.84	32.94	39.93	27.00	43.15	53.85
August	22.33	21.40	28.22	27.27	30.32	38.93
September	17.58	20.81	22.13	23.03	28.56	30.77
October	15.95	21.82	20.45	24.54	30.14	28.80
November	17.81	24.86	25.54	35.57	33.95	33.07
December	22.61	28.13	35.25	47.68	34.22	36.10
An. Average	22.58	25.91	26.81	35.48	37.84	37.24

Source : Marketing & Food Policy Division - HARTI

Table 16.8
EXPORTS OF CARROT BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
Maldives	32,862.00	897.30	24,660.00	665.20	6,158.00	231.20	21,884.00	786.10	142.00	3.60	-	-
Malaysia	258.00	6.60	70.00	1.70	45.00	3.70	-	-	-	-	55.00	1,211.00
Netherlands	-	-	-	-	-	-	65.00	2.10	-	-	-	-
U.A.E.	45.00	1.40	-	-	-	-	-	-	-	-	-	-
Baharain	-	-	480.00	14.00	-	-	-	-	-	-	-	-
TOTAL	33,165.00	905.30	25,210.00	680.90	6,203.00	234.90	21,949.00	788.20	142.00	3.60	55.00	1,211.00

Source : Dept. of Customs

Table : 16.9
PER CAPITA CONSUMPTION OF CARROT PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.90	0.40	0.60	0.50
1981/82	1.00	0.40	0.40	0.50
1986/87	1.50	0.64	0.63	0.80

Primary Source : Central Bank of Sri Lanka

Table : 16.10
PER CAPITA CONSUMPTION OF CARROT PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	0.43	-	0.33
101-200	1.82	0.19	-	0.75
201-400	1.93	0.28	0.54	0.46
401-600	1.39	0.21	-	0.28
601-800	0.79	0.36	0.15	0.39
801-1000	0.35	0.30	0.58	0.33
1001-1500	0.81	0.40	0.58	0.46
1501-2000	1.01	0.47	0.86	0.59
2001-3000	1.32	0.71	0.54	0.80
3001-5000	1.57	1.09	0.75	1.21
5001-10000	2.41	1.46	-	1.84
OVER 10000	2.09	1.63	8.57	1.88
Overall Avg.	1.50	0.64	0.63	0.80

Primary Source : Central Bank of Sri Lanka

17. CABBAGE

1. Introduction

The cabbage (*Brassia oleracea Ver capitata*) is suitable for production in all agro-ecological regions in the country. The Lanka Gova variety can be grown up to an elevation of 350 m. and will flower and set seeds above 1,000 m. At an elevation above 350 m. this variety does not produce compact heads. Other varieties do not flower under local conditions. Well drained soils are suitable for cabbage.

The varieties such as KY cross, Lanka Gova, Exotic F1, Talix are suitable for the low country and mid-country Wet Zone, the K-Y cross, Gloria F1, Hercules, Lanka Gova (only for seed production) are suitable for the upcountry. The A-S cross and Brunswick are suitable for Jaffna area. The yield rate is 40-60 tons/ha.

II.II Seasonality of Production

Normally cabbage is available throughout the year. However, according to production statistics, production in Maha as well as in Yala season was higher at different periods of time. For example, during the period of 1973 to 1978 and 1985 and 1996, Maha season was the major contributor to the total production. However, during the period 1979 to 1984 period, Yala season was dominant.

II. Production

II.I Major Producing Districts

According to the average production for the period of 1991-95, Nuwara Eliya was the major producing area which contributed 51% of the national production. Badulla (39%), Matale (3%) and Kandy (3%) are the other important districts which contributed a substantial quantity to the national production of cabbage.

According to the same five year average of the extent cultivated, Nuwara Eliya (48%) and Badulla (30%) are the prominent districts in production. Unlike in production, Kandy district takes the third place in the extent cultivated by accounting for 13% of the total extent.

II.III Trends in Production, Cultivated Area and Average Yields

Between 1973-78 there was a stagnation in production. During this period the per year production was around 11,800 mt.-15,500 mt. After 1978 production went up (by 169%) rapidly within one year from 15,123 mt. in 1978 to 40,644 mt. in 1979. This increase is solely attributed to the sudden increase in yield level (by 188%). After 1979 generally a long term stagnation period in production has prevailed irrespective of the fluctuation of the production on some occasions. For example, in 1985 it went upto 50,643 mt. As indicated by the extent data, there has not been any significant change in the extent cultivated between 1973-1996 except for some fluctuations in some years between 2,275 ha, which was the minimum level and 3,242 ha, which was the maximum level, during the referred period.

The yield data indicate a stagnation in yields between 1973-78, where 5,188 kg/ha was the average yield. A sudden increase (by 188%) was recorded within a year from 5,304 kg/ha in 1978 to 15,268 kg/ha in 1979. After 1979 to 1985 within seven years an increase in yield was experienced (upto 17,726 kg/ha in 1985) and thereafter the yield started declining. The average yields was 12,180 kg/ha during the period 1991-95.

II.IV Review of Agricultural Inputs

According to the Department of Agriculture, the cost of cultivation of cabbage, under irrigated conditions was Rs.31,972 during 1993 Yala season in Nuwara Eliya District. Out of this 36% goes for labour and 53% goes for seeds, fertilizer and agro-chemicals.

The net return per acre of cabbage (under irrigated conditions) in Nuwara Eliya in 1993 Yala season was Rs. 54,980 including the imputed cost and Rs.57,629 excluding the imputed cost.

III. Domestic Marketing

The marketing channels for cabbages are the same as for other vegetables. Although cabbage is available throughout the year, the prices are higher during May to August and November to December due to short supplies. The prices are relatively lower in January to April and September to October due to peak harvesting periods of Maha and Yala. The producer, wholesale and retail prices increase during this period. The annual average producer prices have increased from Rs.7.18/kg in 1991 to Rs.12.48/kg in 1995. The annual average retail prices increased from Rs.16.31/kg in 1991 to Rs.26.65/kg in 1995. The highest prices observed during June (Rs.26.25/kg) and lowest observed during October (Rs.19.54/kg) were in 1995.

IV. External Trade

Cabbage has been exported in small quantities. Simultaneously imports have also been made. The major export market is the Maldives which accounted for nearly 98% of the export quantity. Cabbage has been exported in small quantities to other countries such as Malaysia, Norway and U.A.E.

Cabbage has been imported mainly for tourist hotels in small quantities. The countries from which Sri Lanka imported cabbage were Australia (40%), U.S.A. (35%), Singapore (16%) and New Zealand (7%).

IV.II Trends in Imports/Exports in Quantity, Value and Price

The statistics related to exports during the period 1991-95 indicate that exports were not stable and after 1992 the quantity exported has severely declined from 37,824 kg., which was highest quantity exported in the reference period, to 315 kg. in 1995.

The income earned by exporting cabbage has decreased from Rs.1.0 million in 1991 to Rs.0.8 million in 1992 and it was only Rs.7,000 in 1995. This decline was due to decreases in the quantity exported and the export prices. For example in 1991 the export price was Rs.27/kg. but in 1992 it was the Rs.20.85/kg. and 1995 it was Rs.23.49/kg.

IV.III Export Trade Regulations

The trade regulations regarding cabbage are also the same as in the case of beans.

V. Consumption

The consumption of cabbage is low when compared with beans. The proportion of consumption of cabbage to the total expenditure on food was 0.26% per household per month in 1990/91. The per capita consumption per annum was 2.6 kg. in 1978/79 and it was 2.3 kg. in 1981/82 and 2.08 kg. in 1986/87.

The consumption was higher in the estate sector compared with other sectors. For example, in 1986/87 per capita consumption per annum in the estate sector was 4.88 kg. but in rural and urban sectors it was 1.77 kg. and 2.08 kg. respectively. According to the data pertaining to 1986/87, the consumption of cabbage was above 1.94 kg. per annum in income groups of Rs.1001 and upwards.

VI. Government Policy

The government policy pertaining to cabbage is the same as in the case of beans (Cabbage has also been selected by VPTF to develop it).

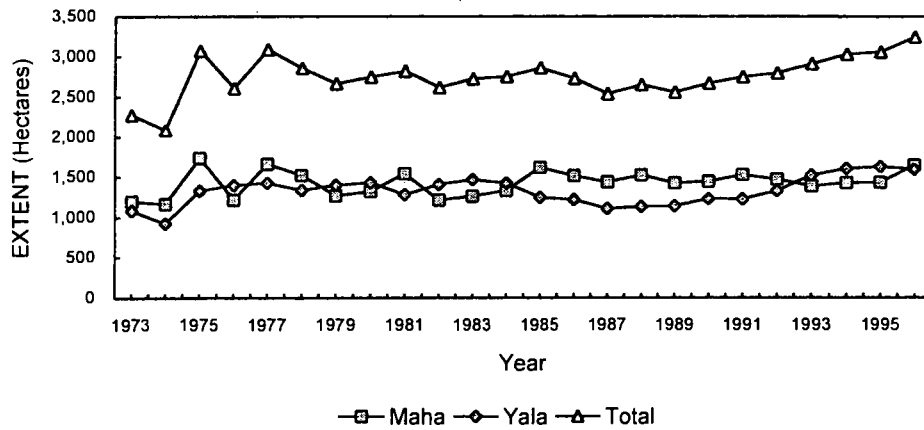
Table 17.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF CABBAGE IN SRI LANKA

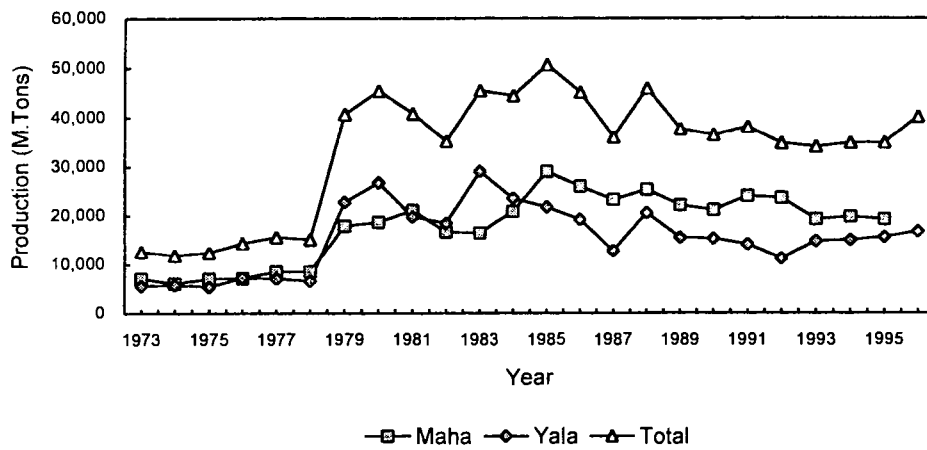
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1973	1,194	1,081	2,275	7,056	5,561	12,617	5,910	5,144	5,546
1974	1,163	925	2,088	6,065	5,775	11,840	5,215	6,243	5,670
1975	1,737	1,331	3,068	7,010	5,424	12,434	4,036	4,075	4,053
1976	1,215	1,395	2,610	7,168	7,187	14,355	5,900	5,152	5,500
1977	1,660	1,426	3,086	8,515	7,082	15,597	5,130	4,966	5,054
1978	1,518	1,333	2,851	8,531	6,592	15,123	5,620	4,945	5,304
1979	1,265	1,397	2,662	17,863	22,781	40,644	14,121	16,307	15,268
1980	1,319	1,429	2,748	18,677	26,694	45,371	14,160	18,680	16,511
1981	1,537	1,280	2,817	21,031	19,747	40,778	13,683	15,427	14,476
1982	1,211	1,406	2,617	16,646	18,442	35,088	13,746	13,117	13,408
1983	1,259	1,462	2,721	16,435	28,977	45,412	13,054	19,820	16,689
1984	1,331	1,420	2,751	20,867	23,504	44,371	15,678	16,552	16,129
1985	1,613	1,244	2,857	28,924	21,719	50,643	17,932	17,459	17,726
1986	1,511	1,217	2,728	25,926	19,151	45,077	17,158	15,736	16,524
1987	1,433	1,104	2,537	23,208	12,749	35,957	16,195	11,548	14,173
1988	1,519	1,130	2,649	25,315	20,564	45,879	16,666	18,198	17,319
1989	1,422	1,135	2,557	22,131	15,449	37,580	15,563	13,611	14,697
1990	1,439	1,228	2,667	21,103	15,275	36,378	14,665	12,439	13,640
1991	1,522	1,225	2,747	23,969	14,084	38,053	15,748	11,497	13,853
1992	1,467	1,325	2,792	23,581	11,151	34,732	16,074	8,416	12,440
1993	1,386	1,521	2,907	19,247	14,774	34,021	13,887	9,713	11,703
1994	1,424	1,602	3,026	19,775	15,006	34,781	13,887	9,367	11,494
1995	1,429	1,624	3,053	19,265	15,571	34,836	13,481	9,588	11,410
1996	1,646	1,596	3,242	23,365	16,749	40,114	14,195	10,494	12,373

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

Graph 17.1
EXTENT OF CABBAGE



Graph 17.2
PRODUCTION OF CABBAGE



Graph 17.3
AVERAGE YIELD OF CABBAGE

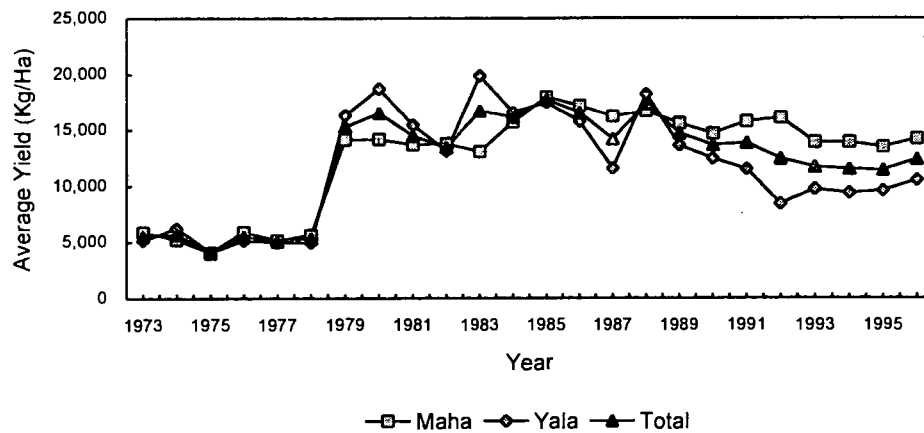


Table 17.2

EXTENT OF CABBAGE BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
NUWARA ELIYA	Maha	478	325	598	586	684	725	728	732	719	718	48.1
	Yala	509	354	487	578	575	655	689	728	756	681	
	Total	987	679	1,085	1,164	1,259	1,380	1,417	1,460	1,475	1,398	
BADULLA	Maha	734	674	636	556	592	529	375	387	374	451	30.3
	Yala	633	614	455	380	371	423	426	458	460	428	
	Total	1,367	1,288	1,091	936	963	952	801	845	834	879	
KANDY	Maha	133	230	146	72	121	80	94	128	144	113	12.6
	Yala	108	386	151	174	176	170	308	313	302	254	
	Total	241	616	297	246	297	250	402	441	446	367	
MATALE	Maha	48	11	28	32	42	45	62	55	73	55	3.5
	Yala	25	19	34	55	52	45	47	45	45	47	
	Total	73	30	62	87	94	90	109	100	118	102	
OTHER *	Maha	344	79	205	193	83	88	127	122	119	108	5.5
	Yala	55	56	117	41	51	32	51	58	61	51	
	Total	399	135	322	234	134	120	178	180	180	158	
SRI LANKA	Maha	1,737	1,319	1,613	1,439	1,522	1,467	1,386	1,424	1,429	1,446	100.0
	%	56.6	48.0	56.5	54.0	55.4	52.5	47.7	47.1	46.8	49.8	
	Yala	1,330	1,429	1,244	1,228	1,225	1,325	1,521	1,602	1,624	1,459	
	%	43.4	52.0	43.5	46.0	44.6	47.5	52.3	52.9	53.2	50.2	
	Total	3,067	2,748	2,857	2,667	2,747	2,792	2,907	3,026	3,053	2,905	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ratnapura, Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara, Hambantota & Killinochchi districts and special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 17.3

PRODUCTION OF CABBAGE BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
NUWARA ELIYA	Maha	3,195	446	14,972	8,840	11,870	12,496	11,583	12,481	12,010	12,088	
	Yala	3,525	5,928	12,299	6,358	5,165	5,171	6,116	6,532	6,788	5,954	
	Total	6,720	6,374	27,271	15,198	17,035	17,667	17,699	19,013	18,798	18,042	51.1
BADULLA	Maha	3,125	12,538	9,986	9,970	10,665	9,809	5,934	5,574	5,454	7,487	
	Yala	1,246	11,988	8,041	6,827	6,804	1,992	7,317	7,115	7,474	6,140	
	Total	4,371	24,526	18,027	16,797	17,469	11,801	13,251	12,689	12,928	13,628	38.6
MATALE	Maha	66	28	267	288	396	457	678	607	677	563	
	Yala	35	35	370	537	514	401	449	501	463	466	
	Total	101	63	637	825	910	858	1,127	1,108	1,140	1,029	2.9
KANDY	Maha	141	5,155	1,909	274	493	203	241	308	332	315	
	Yala	537	8,264	1	1,276	1,260	381	588	531	502	652	
	Total	678	13,419	1,910	1,550	1,753	584	829	839	834	968	2.7
OTHER *	Maha	483	510	1,790	1,731	545	616	811	805	792	714	
	Yala	81	479	1,008	277	341	3,206	304	327	344	904	
	Total	564	989	2,798	2,008	886	3,822	1,115	1,132	1,136	1,618	4.6
SRI LANKA	Maha	7,010	18,677	28,924	21,103	23,969	23,581	19,247	19,775	19,265	21,167	
	%	56.4	41.2	57.1	15,275.0	63.0	67.9	56.6	56.9	55.3	60.0	
	Yala	5,424	26,694	21,719	15,275	14,084	11,151	14,774	15,006	15,571	14,117	
	%	43.6	58.8	42.9	42.0	37.0	32.1	43.4	43.1	44.7	40.0	
	Total	12,434	45,371	50,643	36,378	38,053	34,732	34,021	34,781	34,836	35,285	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Moneragala, Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ratnapura, Ampara, Hambantota & Killinochchi districts and special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 17.4
COST OF CULTIVATION OF CABBAGE (IRRIGATED)
BY INPUTS IN NUWARA ELIYA (Rs/Acre)

INPUT	93
	Yala
Labour	11,558
Seed	2,560
Fertilizer	8,407
Agro-Chemicals	6,100
Other Inputs	3,347
Total	31,972

Source: Dept. of Agriculture

Table 17.5
NET RETURN PER ACRE OF CABBAGE (IRRIGATED) BY SEASONS
IN NUWARA ELIYA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
93 Yala	54,980	57,629

Source: Dept. of Agriculture

Table 17.6
MONTHLY AVERAGE WHOLESALE PRICE OF CABBAGE - PETTAH MARKET
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	5.19	5.07	9.10	11.48	12.21	3.35
February	5.39	4.76	6.14	15.58	7.92	2.29
March	7.21	6.94	4.29	19.23	7.86	3.64
April	7.16	6.21	3.71	15.53	6.89	5.55
May	9.30	6.52	4.98	12.52	14.14	17.15
June	8.88	11.38	8.99	8.68	19.24	19.91
July	7.04	7.24	10.98	4.96	18.06	14.48
August	5.32	7.20	14.30	4.36	9.66	11.24
September	4.55	8.63	8.41	4.27	7.10	10.05
October	4.23	9.30	5.29	4.64	10.59	10.84
November	5.97	9.21	8.88	9.12	8.66	12.66
December	6.84	8.65	9.19	13.28	7.12	10.36
An. Average	6.42	7.59	7.86	10.30	10.79	10.13

Table 17.7
MONTHLY AVERAGE RETAIL PRICE OF CABBAGE - COLOMBO & SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	15.21	15.06	20.45	27.41	29.34	19.60
February	15.47	14.10	17.97	33.07	26.05	27.35
March	16.16	16.70	13.87	37.07	23.14	17.40
April	16.88	17.50	13.42	34.94	23.83	23.00
May	19.12	16.88	15.67	30.06	33.61	31.76
June	20.88	22.81	20.14	27.40	40.03	42.27
July	18.66	20.15	23.72	20.74	37.78	34.57
August	15.43	17.98	29.22	19.66	30.76	29.67
September	13.15	18.57	23.22	18.06	28.30	27.30
October	13.51	18.60	18.11	18.70	28.80	27.86
November	15.01	20.54	22.15	24.70	30.82	30.08
December	16.31	21.19	24.53	31.20	26.05	27.93
An. Average	16.32	18.34	20.21	26.92	29.88	28.23

Source : Marketing & Food Policy Division - HARTI

Table 17.8
EXPORTS OF CABBAGE BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)	Qty. (Mt)	Value (Rs.Mn)
Maldives	36,664.00	995.50	37,784.00	787.80	5,822.00	186.70	3,140.00	76.50	315.00	7.40	1,173.00	44.01
Malaysia	297.00	7.40	40.00	1.60	-	-	-	-	-	-	-	-
Norway	-	-	-	-	90.00	2.10	-	-	-	-	-	-
U.A.E	5.00	0.40	-	-	-	-	-	-	-	-	-	-
TOTAL	36,966.00	1,003.30	37,824.00	789.40	5,912.00	188.80	3,140.00	76.50	315.00	7.40	1,173.00	44.01

Source : Dept. of Customs

Table : 17.9
PER CAPITA CONSUMPTION OF CABBAGE PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	2.20	2.30	5.70	2.60
1981/82	2.40	1.90	6.20	2.30
1986/87	2.08	1.77	4.88	2.08

Primary Source : Central Bank of Sri Lanka

Table : 17.10
PER CAPITA CONSUMPTION OF CABBAGE PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	0.86	-	0.6
101-200	1.79	1.35	-	1.50
201-400	1.95	1.15	1.13	1.23
401-600	1.55	1.40	2.39	1.48
601-800	2.01	1.51	3.14	1.64
801-1000	2.06	1.23	4.89	1.62
1001-1500	1.52	1.62	4.60	1.95
1501-2000	2.11	1.82	5.01	2.21
2001-3000	2.41	1.97	5.78	2.37
3001-5000	2.02	2.12	4.82	2.23
5001-10000	2.22	1.73	2.84	1.94
OVER 10000	1.94	2.30	-	2.11
Overall Avg.	2.08	1.77	4.88	2.08

Primary Source : Central Bank of Sri Lanka

18. BRINJAL

1. Introduction

Brinjals (*Solanum melongena*) as well as tomatoes belong to the same family. Hence the method of cultivation of both is very similar. Picking can commence 2 1/2 months to 3 months after transplanting and may be continued for 2-3 months. There are some local varieties of brinjals; such as Jaffna long, Department of Agriculture purple and the Lena-Hiri.

II.I Major Producing Districts

Considering the 1991-95 average production, the major producing districts were Hambantota (12%), Kurunegala (9%), Moneragala (7%), Badulla (7%), Ampara (7%), and Matale (7%) which accounted for 49% of the national production. The other important districts were Ratnapura (6%), Batticaloa (5%), Nuwara Eliya (5%) and Anuradhapura (5%). In terms of the extent cultivated, different districts have gained prominence than the districts referred to from the point of view of production. Accordingly Kurunegala (11%), Hambantota (9%), Anuradhapura (7%) and Matale (7%) took the prominence. The other important districts in this regard were Badulla (6%), Ratnapura (5%), Moneragala (5%) and Kandy (5%).

II.II Seasonality of Production

The Maha production is fairly high (60%) according to the five year average in the referred period. Normally Maha production comes to the market mainly in February, March and April and Yala production in August and September.

II.III Trends in Production, Cultivated Area and Average Yields

The production of brinjals has increased by 203% between 1973-1982 and thereafter a rapid increase (206%) of production was again indicated in the three year period 1982-85 which was 90,279 mt. Since then there was a declining trend in production.

In terms of the extent cultivated a different picture is shown. The extent cultivated increased rapidly (51%) from 1973 to 1975. Thereafter it declined drastically up to 1980. Since 1980 the extent cultivated was stable.

The yield also increased (634%) from 1,250 kg/ha. in 1973 to 9,180 kg/ha. in 1984. This increased yield has been the reason for the production increase in mid-1980s. Thereafter yields have declined slowly.

Data relating to the cost of cultivation of brinjals are not available.

III. Domestic Marketing

III.I Marketing Channels

Vegetable marketing channels shown in annex II are applied for this crop also.

III.II Price Behaviour

The prices indicated the seasonality of the crop. Normally lowest prices are recorded in March (Rs.14.26/kg. retail in 1995) and the highest prices are recorded in June (Rs.34.52/kg. retail in 1995) Both the wholesale and the retail prices have increased from 1991 to 1994 by 51% and 45% respectively.

IV. External Trade

IV.I Major Import/Export Countries

Brinjals are mainly exported to Maldives, Saudi Arabia, U.K. and Kuwait. Qatar also imported brinjals in small quantities. There were no recorded imports.

IV.II Trends in Exports/Imports in Quantity, Value and Price

During the period of three years (1991-93) the quantity exported has increased by 10% and thereafter it has declined by 67% in 1995. The highest export earnings were recorded in 1994 (Rs.324,000).

V. Consumption

The per capita consumption of brinjals was 3.2 kg. in 1978/79 and it has declined to 3.12 kg. in 1986/87. The consumption level was higher in the estate sector (4.72 kg. in 1986/87). According to the data pertaining to 1986/87, there is no clear pattern of consumption among the different income groups in all three sectors.

VI. Government Policy

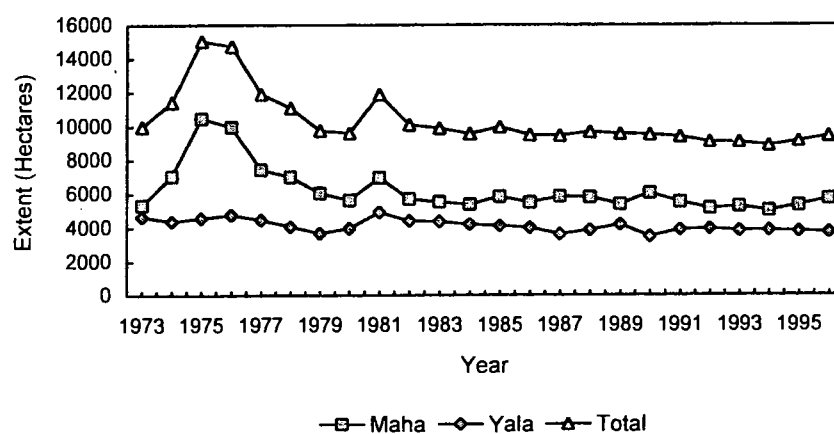
Under the vegetable seed production programme, the Department of Agriculture has produced brinjal seeds to encourage local farmers towards cultivation. The production of seeds was 24kg. in 1994 and it has increased to 1852 kg. in 1991. Brinjals were also selected for development under the Task Force on Vegetables and Potatoes (VPTF) in 1995. The role and function of the VPTF are mentioned under beans.

Table 18.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF BRINJALS - SRI LANKA

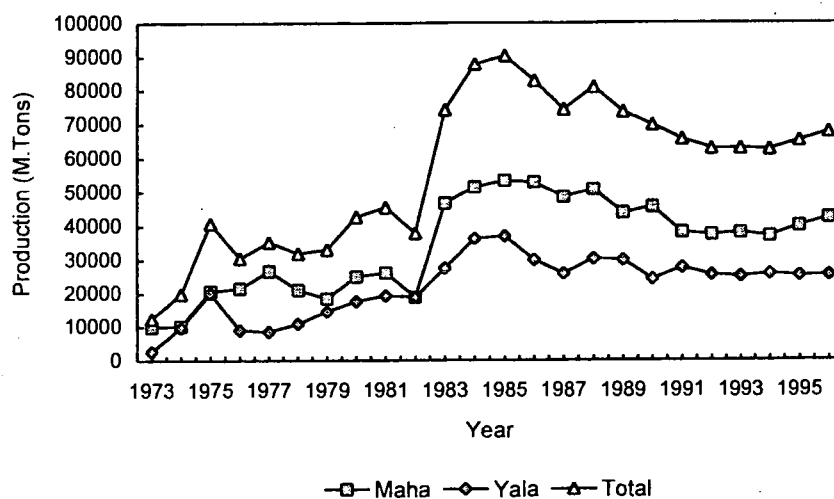
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1973	5,331	4,644	9,975	9,863	2,610	12,473	1,850	562	1,250
1974	7,048	4,382	11,430	10,134	9,732	19,866	1,438	2,221	1,738
1975	10,472	4,563	15,035	20,646	20,076	40,722	1,972	4,400	2,708
1976	9,981	4,760	14,741	21,479	8,946	30,425	2,152	1,879	2,064
1977	7,424	4,479	11,903	26,668	8,523	35,191	3,592	1,903	2,956
1978	7,005	4,080	11,085	20,998	10,862	31,860	2,998	2,662	2,874
1979	6,048	3,693	9,741	18,494	14,470	32,964	3,058	3,918	3,384
1980	5,636	3,965	9,601	24,997	17,600	42,597	4,435	4,439	4,437
1981	6,949	4,909	11,858	26,122	19,340	45,462	3,759	3,940	3,834
1982	5,678	4,403	10,081	18,874	18,874	37,748	3,324	4,287	3,744
1983	5,525	4,361	9,886	46,668	27,546	74,214	8,447	6,316	7,507
1984	5,361	4,193	9,554	51,496	36,205	87,701	9,606	8,635	9,180
1985	5,833	4,126	9,959	53,392	36,887	90,279	9,153	8,940	9,065
1986	5,484	4,000	9,484	52,835	29,897	82,732	9,634	7,474	8,723
1987	5,832	3,615	9,447	48,405	25,863	74,268	8,300	7,154	7,862
1988	5,789	3,862	9,651	50,691	30,215	80,906	8,756	7,824	8,383
1989	5,366	4,168	9,534	43,775	29,856	73,631	8,158	7,163	7,723
1990	6,019	3,474	9,493	45,533	24,192	69,725	7,565	6,964	7,345
1991	5,491	3,872	9,363	37,964	27,619	65,583	6,914	7,133	7,004
1992	5,127	3,935	9,062	37,337	25,487	62,824	7,282	6,477	6,933
1993	5,235	3,820	9,055	37,892	24,949	62,841	7,238	6,531	6,940
1994	4,994	3,838	8,832	36,898	25,703	62,601	7,388	6,697	7,088
1995	5,314	3,785	9,099	39,905	25,253	65,158	7,509	6,672	7,161
1996	5,686	3,722	9,408	42,272	25,381	67,653	7,434	6,819	7,191

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

Graph 18.1
EXTENT OF BRINJALS



Graph 18.2
PRODUCTION OF BRINJALS



Graph 18.3
AVERAGE YIELD OF BRINJALS

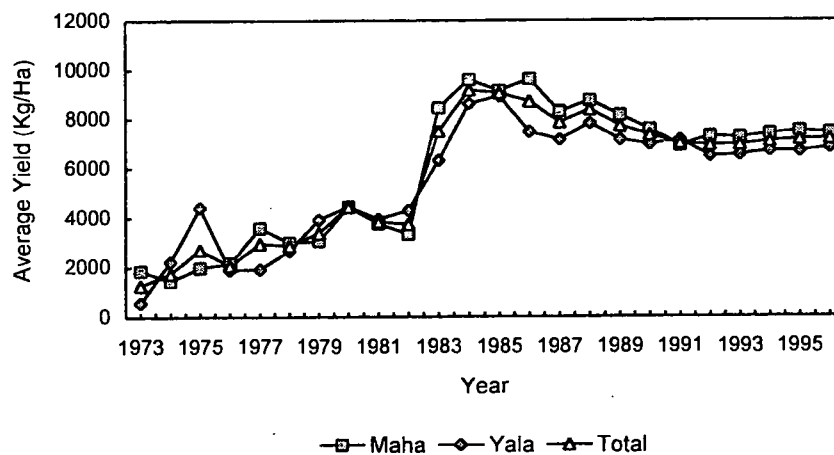


Table 18.2
EXTENT OF BRINJALS BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	PERIOD	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-92)	%
KURUNEGALA	Maha	798	380	552	536	558	567	603	492	491	542	
	Yala	462	239	449	467	446	463	432	427	381	430	
	Total	1,260	619	1,001	1,003	1,004	1,030	1,035	919	872	972	10.7
HAMBANTOTA	Maha	659	394	497	845	561	570	420	427	454	486	
	Yala	533	324	258	267	371	347	340	363	384	361	
	Total	1,192	718	755	1,112	932	917	760	790	838	847	9.3
ANURADHAPURA	Maha	572	420	524	613	477	352	557	571	571	506	
	Yala	89	76	110	139	145	122	113	123	120	125	
	Total	661	496	634	752	622	474	670	694	691	630	6.9
MATALE	Maha	697	499	324	442	459	324	388	382	392	389	
	Yala	402	332	369	295	296	216	189	197	193	218	
	Total	1,099	831	693	737	755	540	577	579	585	607	6.7
BA	DULLA	Maha	378	575	334	263	320	302	256	244	254	275
	Yala	332	361	277	229	283	300	247	289	290	282	
	Total	710	936	611	492	603	602	503	533	544	557	6.1
RAT	NAPURA	Maha	263	294	449	164	167	202	242	318	291	244
	Yala	270	112	318	158	164	272	255	264	281	247	
	Total	533	406	767	322	331	474	497	582	572	491	5.4
MONERAGALA	Maha	1,267	741	466	325	437	388	272	317	408	364	
	Yala	300	414	141	86	151	107	129	127	107	124	
	Total	1,567	1,155	607	411	588	495	401	444	515	489	5.4
KANDY	Maha	437	235	296	278	278	219	212	183	187	216	
	Yala	350	370	233	228	238	234	227	204	204	221	
	Total	787	605	529	506	516	453	439	387	391	437	4.8
OTHER *	Maha	5,401	2,098	2,391	2,553	2,234	2,203	2,285	2,060	2,266	2,210	
	Yala	1,825	1,737	1,971	1,605	1,778	1,874	1,888	1,844	1,825	1,842	
	Total	7,226	3,835	4,362	4,158	4,012	4,077	4,173	3,904	4,091	4,051	44.6
SRI LANKA	Maha	10,472	5,636	5,833	6,019	5,491	5,127	5,235	4,994	5,314	5,232	
	%	69.7	58.7	58.6	63.4	58.6	56.6	57.8	56.5	58.4	57.6	
	Yala	4,563	3,965	4,126	3,474	3,872	3,935	3,820	3,838	3,785	3,850	
	%	30.3	41.3	41.4	36.6	41.4	43.4	42.2	43.5	41.6	42.4	
	Total	15,035	9,601	9,959	9,493	9,363	9,062	9,055	8,832	9,099	9,082	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kegalle, Nuwara Eliya, Jaffna, Vavuniya, Mullativu, Mannar, Polonnaruwa, Trincomalee, Batticaloe, Ampara & Killinochchi districts and special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 18.3
PRODUCTION OF BRINJALS BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
HAMBANTOTA	Maha	4,604	2,207	4,844	6,492	4,328	6,649	4,165	4,701	5,170	5,003	12.3
	Yala	4,083	1,179	2,726	2,998	4,394	2,372	2,081	2,743	2,585	2,835	
	Total	8,687	3,386	7,570	9,490	8,722	9,021	6,246	7,444	7,755	7,838	
KURUNEGALA	Maha	2,849	5,117	5,439	4,100	3,883	2,417	2,975	3,594	3,622	3,298	9.3
	Yala	2,630	3,217	3,217	3,500	2,900	3,007	2,596	2,484	2,187	2,635	
	Total	5,479	8,334	8,656	7,600	6,783	5,424	5,571	6,078	5,809	5,933	
MONERAGALA	Maha	3,780	2,676	2,710	2,417	4,085	3,802	2,647	3,179	4,147	3,572	7.3
	Yala	1,399	465	2,571	864	1,259	928	1,166	1,151	1,032	1,107	
	Total	5,179	3,141	5,281	3,281	5,344	4,730	3,813	4,330	5,179	4,679	
BADULLA	Maha	442	3,324	2,652	1,950	2,330	2,429	2,063	1,886	2,103	2,162	7.2
	Yala	561	2,728	2,896	2,119	2,482	2,238	2,272	2,575	2,585	2,430	
	Total	1,003	6,052	5,548	4,069	4,812	4,667	4,335	4,461	4,688	4,593	
AMPARA	Maha	147	1,116	1,716	2,561	2,175	3,127	3,500	2,572	2,671	2,809	6.8
	Yala	74	448	622	1,170	1,227	1,744	1,619	1,587	1,433	1,522	
	Total	221	1,564	2,338	3,731	3,402	4,871	5,119	4,159	4,104	4,331	
MATALE	Maha	706	669	3,578	5,640	3,558	2,011	2,424	2,565	2,447	2,601	6.5
	Yala	587	649	3,060	1,590	1,872	1,396	1,568	1,577	1,456	1,574	
	Total	1,293	1,318	6,638	7,230	5,430	3,407	3,992	4,142	3,903	4,175	
RATNAPURA	Maha	1,598	1,979	6,460	1,288	1,262	1,513	1,748	2,309	2,256	1,818	5.7
	Yala	1,863	754	4,554	1,306	1,312	2,021	1,836	1,834	2,047	1,810	
	Total	3,461	2,733	11,014	2,594	2,574	3,534	3,584	4,143	4,303	3,628	
BATTICALOE	Maha	509	1,097	1,801	981	1,066	1,752	2,959	1,973	1,865	1,923	5.2
	Yala	66	631	1,627	0	1,158	1,213	1,321	1,672	1,597	1,392	
	Total	575	1,728	3,428	981	2,224	2,965	4,280	3,645	3,462	3,315	
NUWARA ELIYA	Maha	323	122	2,546	1,985	2,071	2,087	1,505	1,600	1,883	1,829	4.6
	Yala	128	134	1,774	1,495	1,674	995	1,024	955	959	1,121	
	Total	451	256	4,320	3,480	3,745	3,082	2,529	2,555	2,842	2,951	
ANURADHAPURA	Maha	2,443	515	3,216	4,586	2,700	1,530	2,493	2,458	2,101	2,256	4.6
	Yala	4,547	239	1,302	908	749	643	645	645	688	674	
	Total	6,990	754	4,518	5,494	3,449	2,173	3,138	3,103	2,789	2,930	
OTHER *	Maha	3,245	6,175	18,430	13,533	10,506	10,020	11,413	10,061	11,640	10,728	30.5
	Yala	4,138	7,156	12,538	8,242	8,592	8,930	8,821	8,480	8,684	8,701	
	Total	7,383	13,331	30,968	21,775	19,098	18,950	20,234	18,541	20,324	19,429	
SRI LANKA	Maha	20,646	24,997	53,392	45,533	37,964	37,337	37,892	36,898	39,905	37,999	100.0
	%	50.7	58.7	59.1	65.3	57.9	59.4	60.3	58.9	61.2	59.6	
	Yala	20,076	17,600	36,887	24,192	27,619	25,487	24,949	25,703	25,253	25,802	
	%	49.3	41.3	40.9	34.7	42.1	40.6	39.7	41.1	38.8	40.4	
	Total	40,722	42,597	90,279	69,725	65,583	62,824	62,841	62,601	65,158	63,801	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kegalle, Kandy, Jaffna, Vavuniya
Mullativu, Mannar, Polonnaruwa, Trincomalee & Killinochchi districts and special project Mahaweli H
Primary Source : Dept. of Census & Statistics

Table 18.4
COST OF CULTIVATION PER ACRE OF BRINJALS (IRRIGATED)
BY INPUTS IN ANURADHAPURA (Rs/Acre)

INPUT	93 Yala
Labour	12,235
Seed	480
Fertilizer	2,606
Agro-Chemicals	2,708
Draught Power - Machinery & Equipment	1,306
Total	19,335

Source : Dept. of Agriculture

Table 18.5
NET RETURN PER ACRE OF BRINJALS (IRRIGATED) BY SEASONS
IN ANURADHAPURA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
94/95 Maha	15,269	24,429

Source: Dept. of Agriculture

Table 18.6
MONTHLY AVERAGE WHOLESALE PRICE OF BRINJALS - PETTAH MARKET
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	8.38	9.72	10.28	18.32	5.88	7.47
February	4.96	4.61	8.57	16.71	5.07	4.80
March	4.87	8.78	7.27	13.66	4.34	3.90
April	6.07	10.54	5.91	11.67	7.82	8.60
May	8.46	8.59	10.38	10.48	12.31	11.82
June	12.39	10.00	14.48	10.42	18.82	19.22
July	6.28	12.60	11.47	8.59	15.75	11.33
August	6.37	8.69	11.26	9.19	13.09	8.16
September	7.08	11.76	10.37	9.72	13.93	9.61
October	8.94	14.09	10.76	7.61	14.90	11.02
November	10.15	14.66	11.95	10.17	13.71	14.46
December	7.28	17.98	14.39	12.11	10.31	12.54
An. Average	7.60	11.00	10.59	11.55	11.33	10.24

Table 18.7
MONTHLY AVERAGE RETAIL PRICE OF BRINJALS - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	20.23	21.22	23.67	34.21	22.59	24.11
February	17.15	17.06	21.40	34.28	15.43	36.60
March	16.11	19.59	18.43	31.55	14.26	17.98
April	17.42	22.57	18.54	30.46	21.30	26.66
May	19.74	21.38	22.75	27.09	28.95	30.64
June	25.09	21.91	27.48	28.70	34.52	39.70
July	21.15	23.18	27.49	23.80	33.61	32.21
August	18.75	19.95	27.06	24.41	28.93	25.34
September	18.26	21.60	25.25	23.41	30.67	26.10
October	20.16	23.13	24.86	24.49	31.33	29.28
November	21.08	25.51	26.82	28.76	34.45	30.96
December	20.20	28.37	30.18	30.37	29.62	32.37
An. Average	19.61	22.12	24.49	28.46	27.16	29.33

Source : Marketing & Food Policy Division - HARTI

Table 18.8
EXPORTS OF BRINJALS BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)
Maldives	3636.00	77.90	1072.00	21.60	2658.00	43.90	701.00	15.80	1299.00	29.60	-	-
Kuwait	-	-	1030.00	25.10	-	-	-	-	-	-	-	-
Quatar	-	-	-	-	593.00	9.40	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	780.00	9.60	505.00	11.40	-	-	-	-
U.K.	-	-	-	-	-	-	1068.00	294.10	30.00	2.40	810.00	15.10
Germany	-	-	-	-	-	-	-	-	-	-	411.00	43.02
Bahrain	-	-	-	-	-	-	-	-	-	-	360.00	5.92
Other Countries	10.00	0.30	40.00	0.70	-	-	5.00	3.00	-	-	24.00	0.67
TOTAL	3646.00	78.20	2142.00	47.40	4031.00	62.90	2279.00	324.30	1329.00	32.00	1605.00	64.71

Source : Dept. of Customs

Table : 18.9
PER CAPITA CONSUMPTION OF BRINJALS PER ANNUM
BY SECTORS (Unit : Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	2.20	2.30	5.70	2.60
1978/79	2.20	3.30	5.10	3.20
1981/82	2.60	3.10	4.90	3.60
1986/87	1.83	3.07	4.72	3.12

Primary Source : Central Bank of Sri Lanka

Table : 18.10
PER CAPITA CONSUMPTION OF BRINJALS PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	2.14	0.34	-	0.74
101-200	0.28	2.86	-	1.97
201-400	1.13	3.78	3.32	3.49
401-600	0.97	2.96	3.21	2.85
601-800	1.90	2.93	4.98	2.95
801-1000	1.64	3.19	3.23	3.07
1001-1500	1.41	3.45	4.26	3.36
1501-2000	1.79	3.24	4.52	3.19
2001-3000	1.48	3.40	6.01	3.28
3001-5000	1.82	3.14	4.96	2.86
5001-10000	2.48	3.37	7.08	3.03
OVER 10000	2.17	2.17	4.28	2.17
Overall Avg.	1.83	3.27	4.72	3.12

Primary Source : Central Bank of Sri Lanka

19. LADIES FINGERS

I. Introduction

Ladies fingers (*Okra*) are botanically called *Hibiscus esculentus*. The main varieties are MI-5, MI-7 (both are bred varieties) and Bandakka VT. MI-5 and MI-7 start flowering in 1 1/2 - 2 months while VT is an earlier cropper. The age of the MI varieties are 150 days and the average yield is 19,000 kg/ha.

II. Production

In terms of production, the major producing districts based on the five-year (1991-95) average were Hambantota (13%), Kurunegala (11%), Ratnapura (7%), Matale (7%), Galle (5%) and Ampara (5%). These areas produce 48% of the total production.

The extent cultivated in Kurunegala (11%), Hambantota (10%), Matale (8%), Ratnapura (7%), Anuradhapura (6%), Kalutara (5%) and Kandy (5%) accounted for 52% of the total extent cultivated.

II.II. Seasonality of Production

Ladies fingers are also a seasonal crop. The main seasons are March to April, August to September and December to January. According to the distribution pattern of production between the two major seasons, Maha accounts for 56% of the production.

II.III Trends in Production, Cultivated Area and Average Yields

Production has increased considerably in 1979 and in 1983. Since then the production was more or less stable. The extent cultivated increased in 1980 and 1988. Thereafter it was stable. The trend in the average yield is also very similar to that of production.

III. Domestic Marketing

III.I Marketing Channels

The marketing channels are the same as for other vegetables.

III.II Price Behaviour

Prices have shown the seasonal nature of the crop. The lowest wholesale as well as retail prices prevail in March to April, August to September and December to January.

Prices have shown an upward trend between 1991-94 and a downward trend thereafter. As revealed by statistics in 1985 retail prices ranged between Rs.7-13/kg. and in 1995 they ranged between Rs.22-39/kg. Compared to the period before 1991 the fluctuation of prices was very high after 1991.

IV. External Trade

Ladies fingers have not been imported or exported though trade regulations are similar to other vegetables.

V. Consumption

The per capita consumption in 1978/79 was 1.10 kg. per annum and it increased to 1.30 kg. by 1981/82 and again it decreased to 1 kg. in 1986/87. Per capita consumption is high both in the lowest and higher income groups of the urban and the rural sectors and only in higher income groups of the estate sector.

VI. Government Policy

Under the policy of the government, farmers are encouraged to grow vegetables. Hence cultivation of ladies fingers has also been encouraged by supplying seeds. According to the Department of Agriculture, the production of seeds has dramatically increased from 3,628 kg. in 1984 to 11,149 kg. in 1988 (a 207% increase) and to 13,100 kg. in 1993 (further 17% increase).

Ladies fingers have also been selected to be developed by the Task Force on Vegetables and Potatoes (VPTF) appointed in 1995 (the role and functions of the VPTF are mentioned under beans).

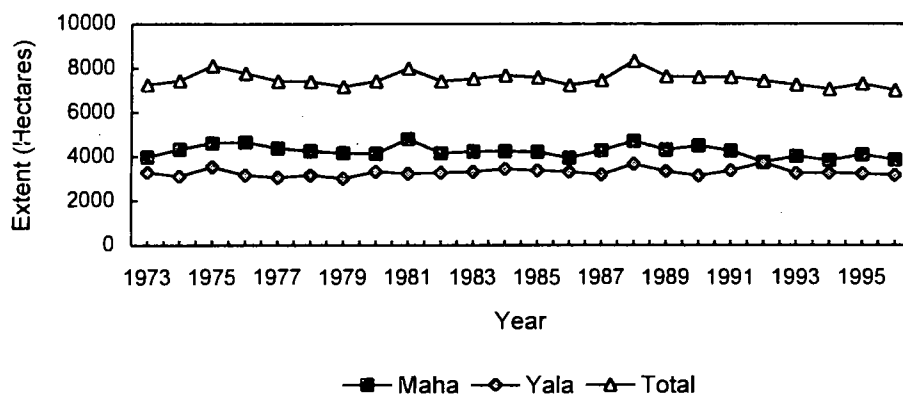
Table 19.1
EXTENT PRODUCTION AND AVERAGE YIELD OF LADIES FINGERS - SRI LANKA

YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1973	3,970	3,276	7,246	5,417	4,740	10,157	1,364	1,447	1,402
1974	4,318	3,108	7,426	5,792	919	6,711	1,341	296	904
1975	4,596	3,516	8,112	5,409	4,136	9,545	1,177	1,176	1,177
1976	4,628	3,141	7,769	5,420	3,914	9,334	1,171	1,246	1,201
1977	4,358	3,038	7,396	4,640	4,473	9,113	1,065	1,472	1,232
1978	4,233	3,150	7,383	4,874	7,993	12,867	1,151	2,537	1,743
1979	4,146	3,007	7,153	10,418	12,580	22,998	2,513	4,184	3,215
1980	4,108	3,300	7,408	13,794	10,049	23,843	3,358	3,045	3,219
1981	4,775	3,212	7,987	13,215	9,535	22,750	2,768	2,969	2,848
1982	4,142	3,261	7,403	11,112	7,621	18,733	2,683	2,337	2,530
1983	4,209	3,302	7,511	23,660	13,889	37,549	5,621	4,206	4,999
1984	4,233	3,441	7,674	25,736	18,575	44,311	6,080	5,398	5,774
1985	4,203	3,368	7,571	23,578	20,128	43,706	5,610	5,976	5,773
1986	3,923	3,300	7,223	23,309	18,093	41,402	5,942	5,483	5,732
1987	4,260	3,179	7,439	26,181	18,373	44,554	6,146	5,779	5,989
1988	4,684	3,644	8,328	26,372	16,948	43,320	5,630	4,651	5,202
1989	4,292	3,324	7,616	23,139	17,106	40,245	5,391	5,146	5,284
1990	4,473	3,123	7,596	22,306	17,663	39,969	4,987	5,656	5,262
1991	4,239	3,345	7,584	21,475	17,324	38,799	5,066	5,179	5,116
1992	3,718	3,705	7,423	18,814	19,135	37,949	5,060	5,165	5,112
1993	4,004	3,236	7,240	22,118	15,738	37,856	5,524	4,863	5,229
1994	3,803	3,243	7,046	21,245	16,408	37,653	5,586	5,060	5,344
1995	4,075	3,217	7,292	22,565	16,151	38,716	5,537	5,021	5,309
1996	3,841	3,152	6,993	20,960	16,060	37,020	5,457	5,095	5,294

Source : Dept. of Census & Statistics
Data Development Unit of ARTI

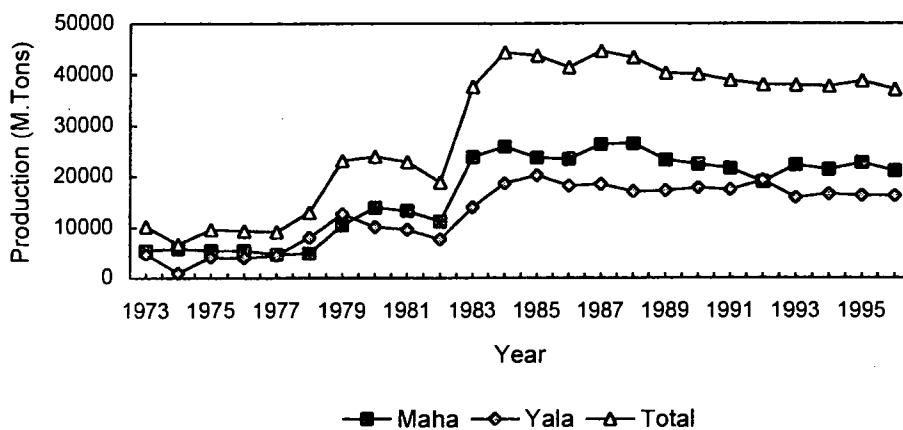
Graph 19.1

EXTENT OF LADIES FINGERS



Graph 19.2

PRODUCTION OF LADIES FINGERS



Graph 19.3

AVERAGE YIELD OF LADIES FINGERS

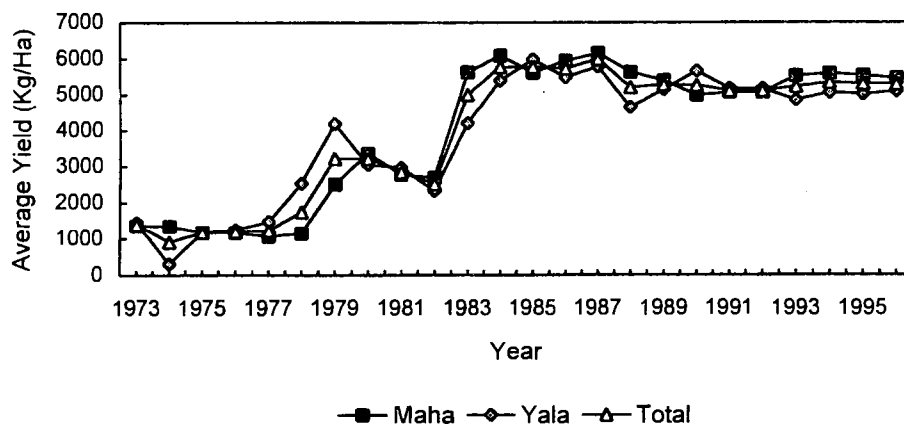


Table 19.2
EXTENT OF LADIES FINGERS BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	Maha	566	399	496	448	486	333	349	335	380	377	10.5
	Yala	274	298	431	406	392	401	395	389	377	391	
	Total	840	697	927	854	878	734	744	724	757	767	
HAMBANTOTA	Maha	363	197	288	353	397	400	315	310	383	361	9.8
	Yala	276	118	242	233	317	369	314	410	355	353	
	Total	639	315	530	586	714	769	629	720	738	714	
MATALE	Maha	367	299	180	301	274	208	234	213	278		7.5
	Yala	268	376	341	298	324	453	255	260	252	309	
	Total	635	675	521	599	598	661	489	473	530	550	
RATNAPURA	Maha	196	352	369	240	238	225	255	277	242	247	6.7
	Yala	313	215	242	223	209	263	230	256	258	243	
	Total	509	567	611	463	447	488	485	533	500	491	
ANURADHAPURA	Maha	539	321	250	329	284	277	405	403	403	354	5.7
	Yala	74	81	56	58	53	70	59	60	60	60	
	Total	613	402	306	387	337	347	464	463	463	415	
KALUTARA	Maha	138	187	252	266	270	193	192	183	174	202	5.3
	Yala	146	190	228	229	212	193	178	184	178	189	
	Total	284	377	480	495	482	386	370	367	352	391	
KANDY	Maha	257	189	237	238	204	167	169	144	132	163	5.0
	Yala	217	537	235	215	220	223	192	177	183	199	
	Total	474	726	472	453	424	390	361	321	315	362	
GAMPAHA	Maha	NIL	284	365	227	216	183	177	138	144	172	4.8
	Yala	NIL	189	289	227	233	214	171	144	151	183	
	Total	NIL	473	654	454	449	397	348	282	295	354	
GALLE	Maha	136	149	180	214	191	183	168	157	190	178	4.8
	Yala	207	148	182	193	204	180	168	163	164	176	
	Total	343	297	362	407	395	363	336	320	354	354	
MATARA	Maha	142	101	153	221	167	185	173	172	130	165	4.5
	Yala	112	119	156	180	185	202	149	152	142	166	
	Total	254	220	309	401	352	387	322	324	272	331	
OTHER *	Maha	1,892	1,630	1,433	1,636	1,512	1,364	1,567	1,471	1,619	1,507	35.4
	Yala	1,629	1,029	966	861	996	1,137	1,125	1,048	1,097	1,081	
	Total	3,521	2,659	2,399	2,497	2,508	2,501	2,692	2,519	2,716	2,587	
SRI LANKA	Maha	4,596	4,108	4,203	4,473	4,239	3,718	4,004	3,803	4,075	3,968	100.0
	%	56.7	55.5	55.5	58.9	55.9	50.1	55.3	54.0	55.9	54.2	
	Yala	3,516	3,300	3,368	3,123	3,345	3,705	3,236	3,243	3,217	3,349	
	%	43.3	44.5	44.5	41.1	44.1	49.9	44.7	46.0	44.1	45.8	
	Total	8,112	7,408	7,571	7,596	7,584	7,423	7,240	7,046	7,292	7,317	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Puttalam, Kegalle, Nuwara Eliya, Jaffna, Vavuniya, Badulla, Moneragala Mullativu, Mannar, Polonnaruwa, Trincomalee, Batticaloe, Ampara, Killinochchi districts & special project Mahaweli H.

Table 19.3
PRODUCTION OF LADIES FINGERS BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
HAMBANTOTA	Maha	143	661	1,750	2,945	2,789	2,959	2,092	1,979	2,450	2,454	13.2
	Yala	686	397	1,434	1,430	2,101	2,641	2,589	3,151	2,388	2,574	
	Total	829	1,058	3,184	4,375	4,890	5,600	4,681	5,130	4,838	5,028	
KURUNEGALA	Maha	66	2,683	2,622	2,460	2,454	1,925	1,997	1,867	2,149	2,078	10.6
	Yala	176	2,003	3,247	2,583	2,053	2,135	1,902	1,887	1,857	1,967	
	Total	242	4,686	5,869	5,043	4,507	4,060	3,899	3,754	4,006	4,045	
RATNAPURA	Maha	240	788	2,595	1,263	1,354	1,208	1,504	2,038	1,430	1,507	7.3
	Yala	857	482	1,675	1,572	1,397	1,510	1,006	1,225	1,237	1,275	
	Total	1,097	1,270	4,270	2,835	2,751	2,718	2,510	3,263	2,667	2,782	
MATALE	Maha	495	258	1,117	1,017	1,370	860	909	868	1,164	1,034	6.6
	Yala	274	655	2,846	2,246	1,636	2,356	1,074	1,246	1,113	1,485	
	Total	769	913	3,963	3,263	3,006	3,216	1,983	2,114	2,277	2,519	
GALLE	Maha	218	524	1,450	1,021	985	886	1,091	1,239	1,384	1,117	5.4
	Yala	255	518	953	1,237	1,244	1,045	833	773	761	931	
	Total	473	1,042	2,403	2,258	2,229	1,931	1,924	2,012	2,145	2,048	
AMPARA	Maha	217	473	662	867	974	1,184	1,740	1,432	1,452	1,356	4.9
	Yala	23	210	303	627	580	631	479	430	513	527	
	Total	240	683	965	1,494	1,554	1,815	2,219	1,862	1,965	1,883	
OTHER *	Maha	4,030	8,407	13,382	12,733	11,549	9,792	12,785	11,822	12,536	11,697	52.1
	Yala	1,865	5,784	9,670	7,968	8,313	8,817	7,855	7,696	8,282	8,193	
	Total	5,895	14,191	23,052	20,701	19,862	18,609	20,640	19,518	20,818	19,889	
SRI LANKA	Maha	5,409	13,794	23,578	22,306	21,475	18,814	22,118	21,245	22,565	21,243	100.0
	%	56.7	57.9	53.9	55.8	55.3	49.6	58.4	56.4	58.3	55.6	
	Yala	4,136	10,049	20,128	17,663	17,324	19,135	15,738	16,408	16,151	16,951	
	%	43.3	42.1	46.1	44.2	44.7	50.4	41.6	43.6	41.7	44.4	
	Total	9,545	23,843	43,706	39,969	38,799	37,949	37,856	37,653	38,716	38,195	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Matara, Puttalam, Kegalle, Kandy, Nuwara Eliya, Jaffna, Vavuniya, Badulla
Moneragala, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe & Killinochchi districts & special project Mahaweli H districts.

Primary Source : Dept. of Census & Statistics

Table 19.4
MONTHLY AVERAGE WHOLESALE PRICE OF LADIES FINGERS - PETTAH MARKET
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	7.87	9.30	11.47	11.06	13.12	4.88
February	8.88	9.67	13.16	17.39	12.07	6.89
March	10.71	12.18	8.31	19.53	7.36	7.74
April	9.61	11.96	5.78	16.94	7.55	10.80
May	11.90	14.50	10.55	14.20	15.08	16.02
June	12.11	16.88	15.57	11.98	21.13	23.37
July	9.52	10.71	15.42	10.73	17.86	14.89
August	8.49	4.85	15.65	11.67	9.48	7.95
September	7.78	9.44	10.12	10.49	6.49	6.06
October	8.09	9.94	9.53	11.39	8.50	12.07
November	13.62	13.94	13.91	15.36	11.01	14.38
December	9.29	12.83	8.05	13.74	6.34	13.24
An. Average	9.82	11.35	11.46	13.71	11.33	11.52

Table 19.5
MONTHLY AVERAGE RETAIL PRICE OF LADIES FINGERS - COLOMBO AND SUBURBS
UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	19.40	21.17	24.08	25.72	30.19	19.20
February	20.63	21.60	25.96	33.21	27.02	21.59
March	20.93	24.12	21.34	35.14	22.19	23.94
April	21.12	24.65	18.52	32.16	22.57	28.14
May	24.42	26.84	24.12	29.66	32.28	33.46
June	26.05	29.13	28.33	29.10	39.16	43.15
July	21.95	22.89	29.02	26.01	35.15	35.04
August	20.29	16.25	29.33	25.84	27.58	25.65
September	14.74	21.13	23.65	24.11	24.67	23.14
October	18.86	21.63	23.21	25.95	26.88	26.46
November	22.84	25.09	26.70	30.66	29.82	30.81
December	20.88	25.37	24.09	30.90	24.47	37.23
An. Average	21.01	23.32	24.86	29.04	28.50	28.57

Source : Marketing & Food Policy Division - HARTI

Table : 19.6
PER CAPITA CONSUMPTION OF LADIES FINGERS PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	1.00	1.10	0.80	1.10
1981/82	1.10	1.40	0.70	1.30
1986/87	0.96	1.07	0.81	1.03

Primary Source : Central Bank of Sri Lanka

Table : 19.7
PER CAPITA CONSUMPTION OF LADIES FINGERS PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	1.44	-	1.12
101-200	1.38	0.45	-	0.77
201-400	0.54	0.39	0.27	0.38
401-600	0.64	0.81	-	0.74
601-800	0.46	0.93	0.82	0.88
801-1000	0.53	0.79	0.82	0.77
1001-1500	0.69	0.89	0.64	0.84
1501-2000	0.69	0.97	0.77	0.91
2001-3000	0.82	1.22	0.97	1.13
3001-5000	1.12	1.43	1.10	1.33
5001-10000	1.36	1.31	2.86	1.34
OVER 10000	1.15	1.28	4.28	1.22
Overall Avg.	0.96	1.07	0.81	1.03

Primary Source : Central Bank of Sri Lanka

20. TOMATO

I. Introduction

Tomato (*Lycopersicum esculentum*) belongs to the brinjal family. Hence the method of cultivation is also very similar. The introduced varieties Marglobe, Eilon and Roma are recommended for the dry upcountry and the low country dry zone under irrigation. The wilt-resistant tomato is recommended for the low wet and mid-country.

II. Production

II.I Major Producing Districts

According to the five year (1991-1995) average of production, Badulla (26%), Matale (18%), Nuwara Eliya (10%), Hambantota (11%) and Kandy (9%) accounted for 74% of the total production. In terms of the extent cultivated, Badulla (18%), Matale (16%), Kandy (12%), Nuwara Eliya (10%), and Hambantota (7%), covered 62% of the total area cultivated. From the point of view of production, Nuwara Eliya took the third place on priority, but in the extent cultivated Kandy took the first place.

II.II Seasonality of Production

This is also a seasonal crop and the produce comes to the market in February through April and again in August through September. Production as well as the extent data indicated a fairly equal distribution of production between Maha and Yala seasons. However, production and the extent cultivated in Maha were high in 1970s (60% and 56% respectively in 1975) and it has declined slowly in 1990s (to 49% and 46% in 1995).

II.II. Trends in Production, Cultivated Area and Average Yield

The production has shown an increasing trend up to 1988 (from 7 mt. in 1973 to 35.1 mt. in 1988, an increase of four times) and since then it had a slight decline until 1995. Again the year 1996 recorded the highest production of 42.4 mt.

The extent cultivated has increased by 72% between 1974 and 1976 from 3.6 ha. to 6.2 ha. From 1977 to 1995 the extent was stagnant. The highest extent cultivated was recorded in 1996 (6,718 ha.)

The average yield has increased since 1983. The highest average yield was recorded in 1992.

II.IV Review of Agricultural Inputs

According to the Department of Agriculture more than half of the production cost goes to labour for cultivation both under irrigated and rainfed conditions.

The cost of production in the Matale district under both rainfed and irrigated conditions had been around Rs.12,000/acre during Yala seasons from 1991 to 1994. It doubled in Badulla during 1992 Yala under irrigated conditions, but in Maha season the cost was higher, nearly Rs.27,000 to Rs.36,000/acre between 1992-95.

The data on the net return varied considerably according to the seasons, years, districts and the mode of irrigation. For example, in Matale under rainfed conditions in Yala 1991, the net return including the imputed cost was Rs.3,652/acre, while that of Yala 1993 under irrigated conditions was Rs.36,103/acre including the imputed cost.

III. Domestic Marketing

III.I Marketing Channels

The main marketing channels are identical to those of vegetables.

III.II Price Behaviour

The average wholesale and retail prices have increased by 70% and 61% respectively from 1991 to 1995.

Normally the prices are low in February to April and August to September. Prices are up in May to June and November to December and reach the maximum in December when the highest prevails.

The cost of marketing is high compared to other vegetables because it needs craters to dispatch the produce from farmer to consumer.

IV. External Trade

Both exports and imports of fresh tomatoes have not taken place, but tomato juice is imported for the processing industry. The juice imports have increased from 3,883 kg. in 1990 to 43,225 kg. in 1994. The major countries from which imports were made are Australia, UAE and Thailand.

V. Consumption

The per capita consumption has increased from 0.09 kg. per annum in 1978/79 to 0.49 kg. per annum in 1986/87. The highest consumption was in the estate sector followed by the rural and the urban sectors.

According to the available data in 1986/87, the consumption in the rural and estate sector has increased with the increase of incomes. However, consumption in the urban sector was high even among lower income groups.

VI. Government Policy

One way the government had encouraged increased production of tomatoes is by supplying seeds through the government farms at the beginning and later through government farms and contact farmers. The seed supply was 2,061 kg. in 1985 and this was reduced considerably because of the privatization of the seed industry. The supply of seeds by the government was one of the reasons for the expansion of the production.

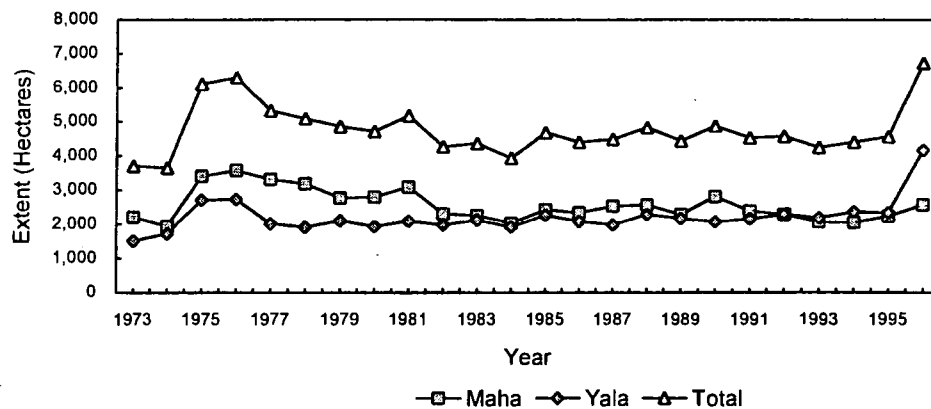
Tomatoes have also been selected by the Task Force on Vegetables and Potatoes (VPTF) to be developed (The role and functions of the VPTF are mentioned under beans).

Table 20.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF TOMATO - SRI LANKA

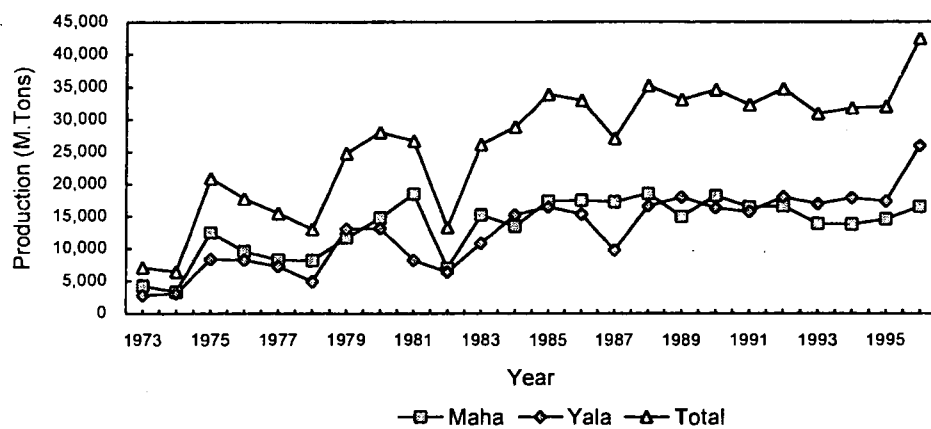
YEAR	EXTENT (Ha)			PRODUCTION (M.Tons)			AVERAGE YIELD (Kg/Ha)		
	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
1973	2,201	1,500	3,701	4,257	2,818	7,075	1,934	1,879	1,912
1974	1,934	1,715	3,649	3,315	3,106	6,421	1,714	1,811	1,760
1975	3,406	2,704	6,110	12,537	8,356	20,893	3,681	3,090	3,419
1976	3,568	2,724	6,292	9,550	8,235	17,785	2,677	3,023	2,827
1977	3,311	2,002	5,313	8,234	7,257	15,491	2,487	3,625	2,916
1978	3,180	1,902	5,082	8,144	4,919	13,063	2,561	2,586	2,570
1979	2,762	2,085	4,847	11,655	13,080	24,735	4,220	6,273	5,103
1980	2,790	1,921	4,711	14,790	13,194	27,984	5,301	6,868	5,940
1981	3,086	2,078	5,164	18,480	8,187	26,667	5,988	3,940	5,164
1982	2,293	1,964	4,257	6,968	6,365	13,333	3,039	3,241	3,132
1983	2,251	2,105	4,356	15,273	10,836	26,109	6,785	5,148	5,994
1984	2,011	1,913	3,924	13,540	15,280	28,820	6,733	7,987	7,345
1985	2,412	2,256	4,668	17,395	16,469	33,864	7,212	7,300	7,254
1986	2,326	2,068	4,394	17,521	15,424	32,945	7,533	7,458	7,498
1987	2,516	1,963	4,479	17,283	9,776	27,059	6,869	4,980	6,041
1988	2,551	2,271	4,822	18,567	16,615	35,182	7,278	7,316	7,296
1989	2,273	2,154	4,427	15,018	18,013	33,031	6,607	8,363	7,461
1990	2,807	2,060	4,867	18,196	16,332	34,528	6,482	7,928	7,094
1991	2,375	2,143	4,518	16,490	15,744	32,234	6,943	7,347	7,135
1992	2,284	2,282	4,566	16,627	18,081	34,708	7,280	7,923	7,601
1993	2,065	2,181	4,246	13,941	16,991	30,932	6,751	7,790	7,285
1994	2,045	2,360	4,405	13,825	17,921	31,746	6,760	7,594	7,207
1995	2,228	2,332	4,560	14,618	17,368	31,986	6,561	7,448	7,014
1996	2,560	4,158	6,718	16,525	25,890	42,415	6,455	6,227	6,314

Source : Dept. of Census & Statistics
Data Development Unit of HARTI

Graph 20.1
EXTENT OF TOMATO



Graph 20.2
PRODUCTION OF TOMATO



Graph 20.3
AVERAGE YIELD OF TOMATO

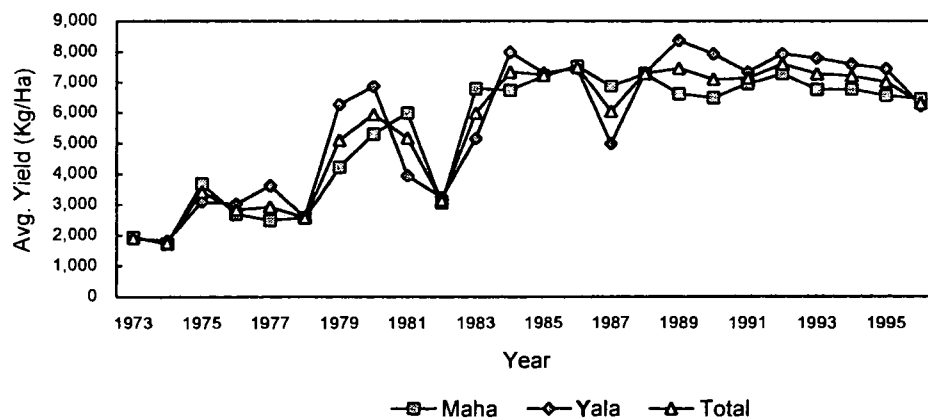


Table 20.2
EXTENT OF TOMATO BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
BADULLA	Maha	185	185	565	663	666	628	424	465	173	471	17.8
	Yala	159	183	501	474	501	99	459	497	56	322	
	Total	344	368	1,066	1,137	1,167	727	883	962	229	794	
MATALE	Maha	367	409	180	262	205	169	176	175	185	182	15.5
	Yala	302	458	416	467	490	543	432	571	507	509	
	Total	669	867	596	729	695	712	608	746	692	691	
KANDY	Maha	598	250	286	170	160	133	135	161	161	150	12.2
	Yala	349	299	364	350	355	380	427	403	411	395	
	Total	947	549	650	520	515	513	562	564	572	545	
NUWARA ELIYA	Maha	144	59	99	221	212	216	175	185	217	201	9.5
	Yala	229	66	205	205	219	223	220	231	231	225	
	Total	373	125	304	426	431	439	395	416	448	426	
HAMBANTOTA	Maha	613	274	178	263	260	305	126	137	180	202	6.8
	Yala	694	126	129	81	124	119	95	105	74	103	
	Total	1,307	400	307	344	384	424	221	242	254	305	
RATNAPURA	Maha	127	174	132	60	66	71	117	129	149	106	5.4
	Yala	216	0	101	77	67	144	144	153	165	135	
	Total	343	174	233	137	133	215	261	282	314	241	
ANURADHAPURA	Maha	399	255	171	490	186	158	226	236	199	201	5.1
	Yala	366	188	41	58	47	25	21	21	22	27	
	Total	765	443	212	548	233	183	247	257	221	228	
MONERAGALA	Maha	539	274	209	158	234	184	131	96	173	164	5.0
	Yala	73	126	72	81	66	51	53	60	56	57	
	Total	612	400	281	239	300	235	184	156	229	221	
OTHER *	Maha	434	910	592	520	386	420	555	461	791	523	22.6
	Yala	316	475	427	267	274	698	330	319	810	486	
	Total	750	1,385	1,019	787	660	1,118	885	780	1,601	1,009	
SRI LANKA	Maha	3,406	2,790	2,412	2,807	2,375	2,284	2,065	2,045	2,228	2,199	100.0
	%	55.7	59.2	51.7	57.7	52.6	50.0	48.6	46.4	48.9	49.3	
	Yala	2,704	1,921	2,256	2,060	2,143	2,282	2,181	2,360	2,332	2,260	
	%	44.3	40.8	48.3	42.3	47.4	50.0	51.4	53.6	51.1	50.7	
	Total	6,110	4,711	4,668	4,867	4,518	4,566	4,246	4,405	4,560	4,459	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ampara, Killinochchi, Jaffna, Vavuniya, Mullativu, Mannar, Polonnaruwa, Trincomalee & Batticaloe districts and special project Mahaweli H.

Primary Source : Dept. of Census & Statistics

Table 20.3
PRODUCTION OF TOMATO BY MAJOR PRODUCING DISTRICTS (M.TONS)

DISTRICT	SEASON	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
BADULLA	Maha	412	834	4,275	5,665	5,748	5,529	2,776	3,401	2,934	4,078	
	Yala	63	651	4,753	4,690	4,438	4,301	3,900	4,042	4,534	4,243	
	Total	475	1,485	9,028	10,355	10,186	9,830	6,676	7,443	7,468	8,321	25.7
MATALE	Maha	669	959	1,543	1,851	1,424	1,164	1,211	1,216	1,230	1,249	
	Yala	613	4,268	3,629	3,706	3,675	5,237	4,306	5,482	4,713	4,683	
	Total	1,282	5,227	5,172	5,557	5,099	6,401	5,517	6,698	5,943	5,932	18.4
NUWARA ELIYA	Maha	321	75	509	1,381	1,384	1,398	1,331	1,629	1,834	1,515	
	Yala	327	83	1,504	1,160	1,384	1,774	1,714	1,844	1,849	1,713	
	Total	648	158	2,013	2,541	2,768	3,172	3,045	3,473	3,683	3,228	10.0
HAMBANTOTA	Maha	2,732	2,979	1,167	2,472	5,748	2,993	1,532	1,501	1,707	2,696	
	Yala	3,944	680	1,239	1,278	438	977	899	1,026	644	797	
	Total	6,676	3,659	2,406	3,750	6,186	3,970	2,431	2,527	2,351	3,493	10.8
KANDY	Maha	812	4,198	2,298	518	433	321	135	382	1,230	500	
	Yala	1,018	1,930	620	2,247	2,276	2,630	427	2,285	4,713	2,466	
	Total	1,830	6,128	2,918	2,765	2,709	2,951	562	2,667	5,943	2,966	9.2
MONERAGALA	Maha	4,787	1,196	886	826	1,457	1,323	983	709	1,262	1,147	
	Yala	6	3,656	787	767	588	432	404	570	517	502	
	Total	4,793	4,852	1,673	1,593	2,045	1,755	1,387	1,279	1,779	1,649	5.1
OTHER *	Maha	2,804	4,549	6,717	5,483	296	3,899	5,973	4,987	4,421	3,915	
	Yala	2,385	1,926	3,937	2,484	2,945	2,730	5,341	2,672	398	2,817	
	Total	5,189	6,475	10,654	7,967	3,241	6,629	11,314	7,659	4,819	6,732	20.8
SRI LANKA	Maha	12,537	14,790	17,395	18,196	16,490	16,627	13,941	13,825	14,618	15,100	
	%	60.0	52.9	51.4	52.7	51.2	47.9	45.1	43.5	45.7	46.7	
	Yala	8,356	13,194	16,469	16,332	15,744	18,081	16,991	17,921	17,368	17,221	
	%	40.0	47.1	48.6	47.3	48.8	52.1	54.9	56.5	54.3	53.3	
	Total	20,893	27,984	33,864	34,528	32,234	34,708	30,932	31,746	31,986	32,321	
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Total of Colombo, Gampaha, Kalutara, Galle, Matara, Puttalam, Kurunegala, Kegalle, Ampara, Killinochchi Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee & Batticaloe districts special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 20.4
COST OF CULTIVATION PER ACRE OF TOMATO (RAINFED)
BY INPUTS IN MATALE (Rs/Acre)

INPUT	91 Yala	92 Yala
Labour	7,413	7,926
Seed	430	450
Fertilizer	2,454	2,691
Agro-Chemicals	1,219	1,390
Draught Power- Machinery & Equipment	865	800
Total	12,381	13,257

Table 20.5
COST OF CULTIVATION PER ACRE OF TOMATO (IRRIGATED)
BY INPUTS IN MATALE (Rs/Acre)

INPUT	93 Yala	94 Yala
Labour	7,302	6,937
Seed	512	554
Fertilizer	2,316	3,583
Agro-Chemicals	1,655	349
Other Inputs	NA	301
Draught Power- Machinery & Equipment	231	NA
Total	12,016	11,724

Table 20.6
COST OF CULTIVATION PER ACRE OF TOMATOE (IRRIGATED) BY
INPUTS IN BADULLA (Rs/Acre)

INPUT	92/93 Maha	93/94 Maha	94/95 Maha	92 Yala
Labour	12,401	16,897	19,432	10,049
Seed	656	832	587	716
Fertilizer	5,361	8,012	6,205	6,897
Agro-Chemicals	6,089	4,327	4,711	4,863
Other Inputs	3,147	4,936	5,200	2,225
Draught Power- Machinery & Equipment	NA	1,502	NA	NA
Total	27,654	36,506	36,135	24,750

NA - Not Available

Source: Dept. of Agriculture

Table 20.7
NET RETURN PER ACRE OF TOMATO (RAINFED) BY SEASONS
IN MATALE

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
91 Yala	3,652	9,472
92 Yala	(4,444)	1,706

Table 20.8
NET RETURN PER ACRE OF TOMATO (IRRIGATED) BY SEASONS
IN MATALE

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
93 Yala	36,103	42,877
94 Yala	44,531	45,585

Table 20.9
NET RETURN PER ACRE OF TOMATO (IRRIGATED) BY SEASONS
IN BADULLA

SEASON	NET RETURN PER ACRE (Rs.)	
	Including Imputed Cost	Excluding Imputed Cost
92 Yala	33,210	42,097
92/93 Maha	27,771	40,454
93/94 Maha	67,482	79,212
94/95 Maha	56,506	68,906

Negative returns are given in paranthesis
SOURCE: Dept. of Agriculture

Table 20.10
MONTHLY AVERAGE WHOLESALE PRICE OF TOMATO - PETTAH MARKET

UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	17.31	19.14	20.98	30.32	19.19	10.94
February	14.62	12.54	13.41	31.82	19.74	13.22
March	14.75	15.67	13.54	41.78	14.82	17.85
April	13.86	13.74	11.66	21.45	12.63	24.40
May	13.39	19.28	13.03	19.17	46.21	37.20
June	18.71	29.52	23.14	12.76	57.17	34.87
July	17.40	15.00	35.04	11.41	31.39	24.75
August	10.36	6.15	23.66	10.68	12.23	14.66
September	10.38	12.44	21.75	12.56	10.23	6.17
October	16.43	19.00	21.91	23.19	13.73	18.03
November	11.21	28.20	35.26	38.47	19.19	28.86
December	10.69	42.52	40.04	45.77	31.14	21.73
An. Average	14.09	19.43	22.79	24.95	23.97	21.06

Table 20.11
MONTHLY AVERAGE RETAIL PRICE OF TOMATO - COLOMBO AND SUBURBS

UNIT : Rs/Kg

Month	1991	1992	1993	1994	1995	1996
January	31.92	34.89	40.44	54.90	42.33	30.81
February	29.38	26.59	28.64	55.80	38.29	23.81
March	27.98	30.46	27.35	70.77	35.50	34.92
April	28.83	30.28	26.89	52.39	32.21	50.97
May	24.43	34.54	30.32	40.43	86.28	66.85
June	34.73	51.40	40.65	32.15	89.77	61.51
July	34.32	34.18	59.87	26.96	57.02	48.82
August	27.21	19.76	46.24	25.72	31.45	36.53
September	25.17	22.19	38.72	26.71	27.91	19.12
October	29.70	36.41	40.27	39.77	33.1	31.78
November	26.03	46.43	55.54	65.36	40.75	50.98
December	29.83	66.44	70.35	75.38	56.4	43.76
An. Average	29.46	36.13	42.11	47.20	47.58	41.66

SOURCE : Marketing & Food Policy Division - HARTI

Table : 20.12
PER CAPITA CONSUMPTION OF TOMATO PER ANNUM
BY SECTORS (UNIT: Kg)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.60	0.90	1.50	0.90
1981/82	0.70	0.80	0.80	0.80
1986/87	0.49	0.60	0.67	0.58

Primary Source : Central Bank of Sri Lanka

Table : 20.13
PER CAPITA CONSUMPTION OF TOMATO PER ANNUM
BY INCOME GROUP & SECTORS - 1986/87 (Kg)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	-	0.51	-	0.39
101-200	1.45	0.40	-	0.53
201-400	1.02	0.76	0.27	0.75
401-600	1.08	0.53	0.66	0.58
601-800	0.50	0.54	1.34	0.58
801-1000	0.20	0.51	0.24	0.46
1001-1500	0.29	0.53	0.52	0.51
1501-2000	0.41	0.56	0.98	0.59
2001-3000	0.35	0.64	0.63	0.59
3001-5000	0.57	0.63	0.64	0.62
5001-10000	0.66	0.68	-	0.65
OVER 10000	0.72	1.39	4.28	1.04
Overall Avg.	0.49	0.60	0.67	0.58

Primary Source : Central Bank of Sri Lanka

21. BANANA

I. Introduction

Banana is one of the cheapest, plentiful and most nourishing fruits amongst all other fruits. It contains nearly all the essential nutrients including minerals and vitamins and has several medicinal properties.

There is little doubt that the banana was one of the first foods of man, and was among the first plants cultivated. Alexander the Great found bananas growing in the valley of the Indus River as early as 327 BC. The earliest reference to bananas was also found in the writings of Young dated about 200 AD, who was an official of Han Dynasty (China).

The edible banana is believed to have originated in the hot tropical regions of South-East Asia.

Bananas can be grown in almost all types of soils subject to the availability of adequate soil moisture. It is basically a plant of the humid tropics, but adapted to a wide range of climatic conditions ranging from wet tropical to dry tropical. Bananas can be grown from mean sea level to an altitude of 1,200 meters. It grows well in temperatures ranging between 10°C and 40°C. The growth of bananas get retarded at temperatures of 20°C and less and more than 35°C.

II. Production

Banana is one of the main fruit items in Sri Lanka. The average production of bananas per year for the period 1991-95 was 35.7 million bunches.

II.I Major Producing Districts

Kurunegala is the major producing district which contributes 20% to the national production, accounting for 25% of the extent cultivated. The next important districts in terms of their production are Gampaha (10%), Ratnapura (9%), Moneragala (8%), Kegalle (7%), Hambantota (6%) and Matara (6%) which together contribute 40% of the national production. In terms of the extent, all these districts account for 39% of the total area cultivated.

II.II Seasonality of Production

Bananas are available throughout the year. The highest supply is observed during the month of June and the lowest in December.

II.III Trends in Production, Cultivated Area and Average Yield

Looking at the banana production as well as the extent cultivated during the last two and half decades (1973-1996), generally it indicates an increase in production as well as in the extent cultivated. Regarding production, a rapid increase (over three times) is indicated during the period 1973-1980. Thereafter it has declined by 70% during the 1980-85 period and remained stagnant in later years. Regarding the extent, it has increased by 53%, at a very slow rate during a long period of time from 1974 to 1996.

III. Domestic Marketing

The private sector plays a dominant role in banana marketing. The role of the government in banana marketing is negligible.

III.I Marketing Channels

Generally the collectors buy bananas from farmers and sell them to wholesalers.

The important channel of banana marketing according to priority is as follows:-

1. Farmer -> Collector -> Wholesaler -> Retailer -> Consumer

III.II Price Behaviour

The wholesale and retail prices of all banana varieties increased during the reference period (1991-95).

Mainly there are five varieties of bananas in the market such as Ambul, Ambun, Kolikuttu, Seeni and Anamalu. Ambul variety constitutes more than 50% of total available stocks in the Colombo and suburb markets. Ambul and Seeni are cheaper than other varieties. The annual average retail prices ranged between Rs.1.67-2.13/fruit for Ambul, Rs.3.41-4.20/fruit for Kolikuttu, Rs.3.60-4.16/fruit for Ambun, Rs.1.00-1.36/fruit for Seeni and Rs.3.11-4.14/fruit for Anamalu in 1995.

III.III Review of Marketing Cost

Generally, the collectors go directly to the producing areas once a week or within a considerable period of time by their own or hired vehicles with one or two labourers in order to collect the produce. The transport cost per bunch from producing areas to the Pettah wholesale market is as follows: Rs.5.00/bunch from Rambukkana and Kurunegala, Rs.7.00/bunch from Balangoda, Rs.10.00/bunch from Moneragala, Wellawaya, Alawwa and Suriyawewa, Rs.12.00/bunch from Deniyaya and Urubokka (Matara District). Bananas, in most cases are transported in immature and unpacked form. Sometimes, they are wrapped with banana leaves. The fee for unloading is cents .50/bunch. The transport costs per bunch from Pettah market to other retail markets are Rs.3.00/bunch to Thotalanga(Grand Pass) and Nugegoda, Rs.4.00/bunch to Kiribathgoda, Dematagoda and Borella. Rs.5.00/bunch to Kadawata and Wellawatta. The wholesalers get 10% commission on sales.

IV. External Trade

There is a huge demand for bananas in the international market. Sri Lanka exports bananas mainly to Korea, Maldives, U.A.E., Switzerland, United Kingdom and Germany.

The growth of our exports do not seem to be stable and they are small in quantity and value. However export earnings increased from Rs. 0.1 million in 1990 to Rs.0.2 million in 1994. During this period Switzerland was the major export market. The problems faced by exporters were the same as is the case of mangoes.

The normal tariff rates applicable to the importation of fruits is also applicable to bananas. Accordingly, there is 35% custom duty, 10% turnover tax and 4.5% national security levy. There is no restriction or duty on exports.

V. Consumption

The consumption of bananas is higher than in the case of other fruit varieties. The proportion of consumption of bananas to the total expenditure on food was 0.61 percent per household, per month. The consumption of bananas has not changed significantly over the years. It was 0.13 grams per day in 1973, 0.15 g./day in 1986/87 and 0.12 g./day in 1990/91. The highest consumption was observed in urban areas with an average of 7.60 g./day. The rural sector consumption rate was 3.90 g./day. The consumption among the income groups above Rs.3,001 is higher than the average consumption rate.

VI. State Policy

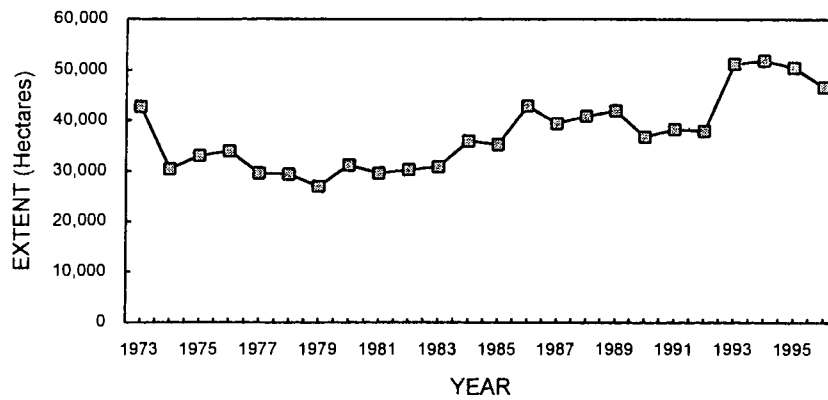
Under the National Agricultural Policy of the People's Alliance Government, 12 fruit crops including bananas have been selected for the national production programme under which these crops will be developed initially to meet the local demand, followed by exports. The crops selected under this programme receive priority attention and a separate task force has also been appointed (task force for fruits) in order to make these objectives a reality.

Table 21.1
EXTENT, PRODUCTION AND AVERAGE YIELD OF BANANA - SRI LANKA

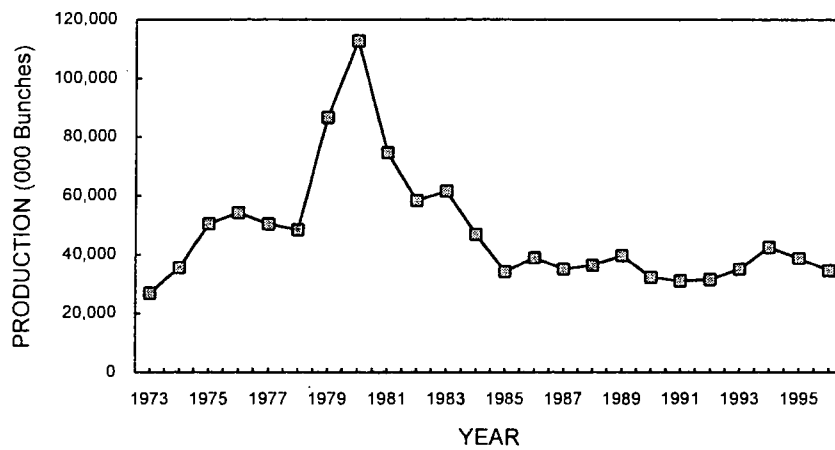
YEAR	EXTENT (Hectares)	PRODUCTION (000 Bunches)	AVERAGE YIELD (Bun./Ha)
1973	42,757	26,873	629
1974	30,429	35,475	1,166
1975	33,008	50,425	1,528
1976	33,913	54,305	1,601
1977	29,606	50,394	1,702
1978	29,361	48,463	1,651
1979	26,917	86,713	3,221
1980	31,143	112,694	3,619
1981	29,600	74,562	2,519
1982	30,308	58,381	1,926
1983	30,854	61,469	1,992
1984	35,884	46,940	1,308
1985	35,197	34,155	970
1986	42,866	38,915	908
1987	39,367	35,019	890
1988	40,887	36,236	886
1989	41,923	39,633	945
1990	36,699	32,162	876
1991	38,222	30,972	810
1992	37,869	31,440	830
1993	51,277	35,004	683
1994	51,900	42,453	818
1995	50,488	38,636	765
1996	46,665	34,397	737

SOURCE : Department of Census & Statistics

Graph 21.1
EXTENT OF BANANA



Graph 21.2
PRODUCTION OF BANANA



Graph 21.3
AVERAGE YIELD OF BANANA

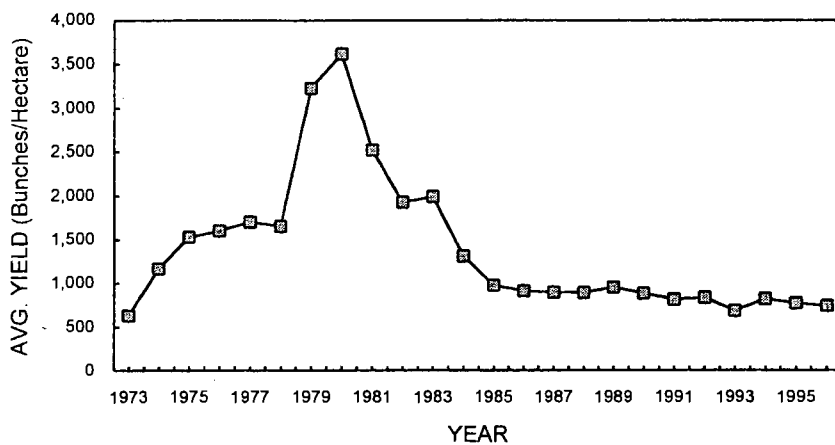


Table 21.2
EXTENT OF BANANA BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	4,414	3,329	6,598	7,303	7,242	7,242	15,136	15,532	13,282	11,687	25.4
GAMPAHA	-	2,295	2,698	2,571	2,598	2,652	4,732	4,693	4,877	3,910	8.5
MONERAGALA	3,814	2,798	2,548	2,840	2,879	2,767	4,380	3,598	3,684	3,462	7.5
KEGALLE	3,710	3,050	3,920	2,462	2,589	2,798	3,905	3,899	3,923	3,423	7.4
RATNAPURA	2,477	2,874	3,172	2,786	2,902	3,348	2,970	3,781	4,029	3,406	7.4
KANDY	1,424	1,787	1,951	1,966	1,967	1,975	2,741	2,794	2,780	2,451	5.3
HAMBANTOTA	1,427	1,167	1,801	1,413	2,346	1,886	2,832	2,545	2,581	2,438	5.3
OTHER *	15,742	13,843	12,509	15,358	15,699	15,201	14,581	15,058	15,332	15,174	33.0
SRI LANKA	33,008	31,143	35,197	36,699	38,222	37,869	51,277	51,900	50,488	45,951	100.0

* Total of Colombo, Kalutara, Galle, Matara, Puttalam, Matale, Nuwara Eliya, Badulla, Jaffna Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara &

Killinochchi districts and special project Mahaweli H .

Primary Source : Dept. of Census & Statistics

Table 21.3
PRODUCTION OF BANANA BY MAJOR PRODUCING DISTRICTS (000 No.)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	13,045	5,758	6,343	4,528	3,683	3,684	4,641	14,147	10,103	7,252	20.3
GAMPAHA	-	2,578	2,228	1,108	2,465	2,306	4,103	4,826	4,561	3,652	10.2
RATNAPURA	3,705	22,968	1,910	1,839	1,807	3,713	3,459	2,786	3,367	3,026	8.5
MONERAGALA	5,749	6,935	2,605	2,866	2,636	2,506	3,309	2,898	3,064	2,883	8.1
KEGALLE	4,166	4,832	2,909	1,463	1,592	1,874	2,816	2,813	2,843	2,388	6.7
HAMBANTOTA	2,910	2,898	1,378	2,591	3,039	2,503	1,846	1,502	1,611	2,100	5.9
MATARA	2,872	2,420	2,393	3,454	1,808	2,193	1,769	2,168	1,907	1,969	5.5
KALUTARA	673	1,214	1,875	1,540	1,775	1,457	1,682	1,652	1,623	1,638	4.6
OTHER *	17,305	63,091	12,514	12,773	12,167	11,204	11,379	9,661	9,557	10,794	30.2
SRI LANKA	50,425	112,694	34,155	32,162	30,972	31,440	35,004	42,453	38,636	35,701	100.0

* Total of Colombo, Galle, Puttalam, Kandy, Matale, Nuwara Eliya, Badulla, Trincomalee Jaffna, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Batticaloe, Ampara & Killinochchi districts and special project Mahaweli H .

Primary Source : Dept. of Census & Statistics

Table 21.4
MONTHLY AVERAGE WHOLESALE PRICE OF BANANA - PETTAH MARKET UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1991 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1992 AMBUN	KOLIKUTTU
January	0.70	1.17	2.05	2.12	2.06	0.61	1.05	1.86	1.95	2.23
February	0.56	1.07	1.93	1.94	2.44	0.77	1.15	1.97	1.84	2.08
March	0.64	1.13	1.88	1.93	2.10	0.63	1.21	1.96	1.95	2.12
April	0.67	1.21	2.15	2.18	2.23	0.60	1.42	1.70	2.10	2.28
May	0.54	0.98	1.79	1.84	1.93	0.63	1.11	1.95	1.87	2.09
June	0.68	0.96	1.71	1.71	2.12	0.69	1.29	2.17	2.18	2.47
July	0.59	1.01	1.58	1.65	1.85	0.82	1.44	2.26	2.27	2.66
August	0.67	0.79	1.98	1.97	2.15	0.87	1.43	2.29	2.31	2.64
September	0.78	1.17	2.05	2.08	2.37	0.70	1.26	2.11	2.10	2.30
October	0.71	1.06	2.00	1.97	2.23	1.01	1.15	1.89	NA	2.04
November	0.71	1.08	2.02	2.04	2.24	0.66	1.35	1.92	NA	2.18
December	0.66	1.06	2.01	2.03	2.21	0.80	1.15	2.28	NA	2.55
An. Average	0.66	1.06	1.93	1.96	2.16	0.73	1.25	2.03	2.51	2.30

Table 21.4 (cont.)
MONTHLY AVERAGE WHOLESALE PRICE OF BANANA - PETTAH MARKET UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1993 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1994 AMBUN	KOLIKUTTU
January	0.86	1.27	2.72	2.56	2.58	0.98	1.43	2.39	2.34	2.86
February	0.90	1.74	2.97	2.76	3.05	0.96	1.41	2.38	2.51	2.68
March	0.94	1.76	2.63	2.66	2.82	0.93	1.52	2.41	2.46	2.69
April	1.03	1.87	2.58	2.61	2.89	1.17	1.72	3.10	2.96	3.05
May	0.97	1.48	2.50	2.55	2.60	0.70	1.21	2.38	2.46	2.44
June	0.70	1.31	2.29	2.32	2.42	0.72	1.26	2.16	2.23	2.48
July	0.92	1.41	2.50	2.34	3.03	0.81	1.23	2.10	2.09	2.38
August	1.06	1.47	2.61	2.63	2.92	1.03	1.48	2.61	2.71	2.96
September	1.01	1.61	2.70	2.69	2.96	0.88	1.42	2.65	2.80	2.81
October	0.89	1.49	2.51	2.54	2.73	0.80	1.51	2.71	2.80	2.88
November	0.90	1.35	2.16	2.19	2.59	0.72	1.30	2.48	2.80	3.02
December	1.04	1.38	2.20	2.25	2.64	0.77	1.43	2.72	2.99	3.16
An. Average	0.94	1.51	2.53	2.51	2.77	0.87	1.41	2.51	2.60	2.78

Table 21.4 (cont.)
MONTHLY AVERAGE WHOLESALE PRICE OF BANANA - PETTAH MARKET UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1993 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1994 AMBUN	KOLIKUTTU
January	0.73	1.32	2.22	2.66	2.68	0.95	1.96	3.18	3.02	3.05
February	0.81	1.26	2.19	2.58	2.48	0.88	1.76	2.99	2.95	2.95
March	0.76	1.12	2.23	2.33	2.08	0.82	1.60	2.85	2.81	2.85
April	0.80	1.52	2.26	2.26	2.02	0.93	1.72	3.26	3.17	3.22
May	0.72	1.53	2.06	2.06	1.88	0.84	1.58	3.03	3.04	3.07
June	0.73	1.27	2.07	2.05	1.95	0.83	1.46	2.95	2.94	2.95
July	0.86	1.46	2.24	2.22	2.17	0.88	1.40	2.89	2.85	2.99
August	0.94	1.69	2.62	2.75	2.75	1.02	1.59	3.18	3.21	3.33
September	0.92	1.89	2.68	2.79	2.98	0.99	1.69	2.19	3.21	3.28
October	0.93	1.93	3.10	3.07	3.28	1.00	1.75	3.32	3.31	3.39
November	0.88	1.49	2.80	2.95	3.06	1.05	1.91	3.55	3.53	3.78
December	0.98	1.84	3.07	3.07	3.05	1.40	2.15	3.92	3.88	4.18
An. Average	0.84	1.53	2.46	2.57	2.53	0.97	1.71	3.11	3.16	3.25

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 21.5
MONTHLY AVERAGE RETAIL PRICE OF BANANA - COLOMBO AND SUBURBS UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1991 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1992 AMBUN	KOLIKUTTU
January	1.04	1.61	2.72	2.74	3.02	1.28	1.58	2.88	2.88	3.24
February	1.12	1.52	2.72	2.77	3.17	1.35	1.57	2.95	2.95	3.41
March	1.09	1.65	2.86	2.76	3.25	1.20	1.59	3.03	3.03	3.22
April	1.20	1.91	2.87	2.89	3.49	1.28	1.77	2.89	2.98	3.43
May	1.01	1.54	2.62	2.64	3.03	1.03	1.76	2.79	2.94	3.13
June	0.99	1.38	2.58	2.52	2.88	1.46	1.80	2.98	2.97	3.27
July	1.17	1.50	2.86	2.88	3.10	1.42	1.75	3.05	NA	3.44
August	1.17	1.47	2.96	3.04	3.13	1.22	1.88	2.95	NA	3.65
September	1.20	1.58	2.89	2.88	3.21	1.15	2.05	3.03	NA	3.61
October	1.22	1.60	2.88	2.84	3.14	1.11	1.60	3.03	NA	3.23
November	1.16	1.67	2.75	2.77	3.02	1.45	1.61	2.69	NA	3.03
December	1.24	1.55	2.94	2.94	3.22	1.35	1.71	3.01	3.01	3.37
An. Average	1.13	1.58	2.80	2.81	3.15	1.28	1.72	2.94	2.97	3.25

Table 21.5 (cont..)
MONTHLY AVERAGE RETAIL PRICE OF BANANA - COLOMBO AND SUBURBS UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1993 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1994 AMBUN	KOLIKUTTU
January	1.31	1.70	3.02	3.15	3.59	1.40	1.83	3.08	3.23	3.31
February	1.30	1.87	3.17	3.18	3.54	1.34	1.89	2.98	3.13	3.24
March	1.34	1.92	3.25	3.28	3.63	1.25	1.96	3.25	3.32	3.32
April	1.48	2.14	3.44	3.21	3.71	1.23	1.90	3.51	3.53	3.65
May	1.74	1.99	3.26	3.10	3.33	1.30	1.61	3.26	3.38	3.41
June	1.13	1.60	2.77	2.77	3.11	1.26	1.68	3.15	3.17	3.17
July	1.23	1.87	3.09	3.24	3.37	1.38	1.74	3.24	3.28	3.31
August	1.33	1.89	3.34	3.29	3.50	1.45	1.70	3.47	3.51	3.42
September	1.39	1.82	3.60	3.42	3.47	1.22	1.62	3.25	3.34	3.46
October	1.33	1.77	3.33	3.33	3.43	1.10	1.63	3.20	3.36	3.48
November	1.28	1.80	3.03	3.05	3.22	1.06	1.67	3.40	3.69	3.66
December	1.35	1.68	3.14	3.20	3.37	1.09	1.79	3.46	3.77	3.83
An. Average	1.35	1.84	3.14	3.19	3.44	1.28	1.75	3.27	3.39	3.44

Table 21.5 (cont..)
MONTHLY AVERAGE RETAIL PRICE OF BANANA - COLOMBO SUBURBS UNIT : Rs/Fruit

Month	SEENI	AMBUL	ANAMALU	1995 AMBUN	KOLIKUTTU	SEENI	AMBUL	ANAMALU	1996 AMBUN	KOLIKUTTU
January	1.00	1.71	3.19	3.60	3.74	1.46	2.28	4.41	4.44	4.50
February	1.29	1.94	3.36	3.70	3.66	1.54	2.10	4.37	4.37	4.66
March	1.30	1.76	3.35	3.64	3.41	1.51	1.99	4.30	4.30	4.55
April	1.17	1.81	3.59	3.68	3.59	1.77	2.50	4.66	4.67	4.88
May	1.07	1.76	3.67	3.70	3.60	1.49	2.09	4.45	4.46	4.63
June	1.08	1.68	3.65	3.67	3.47	1.35	1.98	4.31	4.33	4.47
July	1.17	1.67	3.67	3.72	3.48	1.43	2.05	4.36	4.37	4.59
August	1.18	1.76	3.82	3.84	3.65	1.70	2.47	4.81	4.83	5.10
September	1.11	1.68	3.84	3.84	3.75	1.75	2.40	4.73	4.74	4.98
October	1.15	1.90	3.92	3.95	3.85	1.75	2.43	4.73	4.76	4.99
November	1.26	2.04	4.01	4.03	4.03	1.90	2.69	4.93	4.98	5.27
December	1.36	2.13	4.14	4.16	4.20	2.28	3.05	5.40	5.40	5.77
An. Average	1.18	1.82	3.68	3.79	3.70	1.66	2.34	4.62	4.64	4.87

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 21.6
EXPORTS OF BANANA BY COUNTRY OF DESTINATION

COUNTRY	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)	Qty. (Kg)	Value (Rs000)
Republic of Korea	33,600.00	863.50	-	-	-	-	-	-	-	-	-	-
Maldives	506.00	26.10	216.00	18.40	245.00	8.00	399.00	26.50	151.00	6.40	-	-
Pakistan	-	-	NA	0.60	-	-	NA	237.20	10,000.00	48.10	-	-
Germany	NA	0.40	NA	0.10	11.00	0.40	1,968.00	495.60	14,024.00	4,339.50	-	-
U.K.	4,815.00	259.30	2,039.00	54.00	3,757.00	77.90	1,530.00	38.00	180.00	3.60	9,396.00	186.35
U.A.E.	14,625.00	396.30	NA	4.50	-	-	8.00	0.20	-	-	1,500.00	113.82
Newzealand	-	-	-	-	-	-	-	-	-	-	9,000.00	2,653.07
Other Countries	290.00	125.00	486.00	81.30	322.00	866.60	144.00	25.60	23.00	2.10	1,898.00	336.93
TOTAL	53,836.00	1,670.60	2,741.00	158.90	4,335.00	952.90	4,049.00	823.10	24,378.00	4,399.70	21,794.00	3,290.17

N.A. - Not Available
Source : Dept. of Customs

Table : 21.7
PER CAPITA CONSUMPTION OF BANANA PER ANNUM
BY SECTORS (UNIT: No)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	71.50	37.40	35.70	45.10
1981/82	70.80	42.00	40.80	48.00
1986/87	91.20	46.80	32.40	54.00

Primary Source : Central Bank of Sri Lanka

Table : 21.8
PER CAPITA CONSUMPTION OF BANANA PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (No)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	114	22.8	-	43.2
101-200	170.40	51.60	-	92.40
201-400	84.00	16.80	21.60	24.00
401-600	90.00	16.80	4.80	20.40
601-800	84.00	16.80	9.60	21.60
801-1000	28.80	25.20	33.60	26.40
1001-1500	51.60	24.00	30.00	27.60
1501-2000	45.60	33.60	34.80	36.00
2001-3000	58.80	52.80	30.00	52.80
3001-5000	109.20	80.40	52.80	85.20
5001-10000	133.20	106.80	129.60	118.80
OVER 10000	180.00	109.20	34.80	147.60
Overall Avg.	91.20	46.80	32.40	54.00

Primary Source : Central Bank of Sri Lanka

22. PINEAPPLE

1. Introduction

The pineapple (*Ananas comosus*) is considered as one of the most wanted tropical fruits. Paraguay is the place of origin of pineapple. It is one of the main fruits grown in Sri Lanka.

The Pineapple is a good source of vitamins A, B and C. It also contains calcium, phosphorus, iron and protein.

1. Production

Pineapple cultivation is performed systematically on a commercial basis. It has a good demand not only in the domestic market, but also in international market.

II.1 Major Producing Districts

According to the five year (1991-95) average of production, the two districts Kurunegala (45%) and Gampaha (25%) produce about 70% of pineapples in the country. The next important districts which contribute substantially to the national production are Badulla (5%), Kalutara (4%), Matara (4%), Hambantota (4%) and Puttalam (3%) which altogether account for 20% of the national production.

According to the extent cultivated also Kurunegala (45%) takes the priority position at the same level as in production. The next important district in terms of the extent cultivated is Gampaha, which accounts for a higher percentage (33%). Other important districts in this regard are Matara (4%), Puttalam (3%), Kalutara (3%), and Moneragala (2%).

II.II Seasonality of Production

Generally pineapples yield throughout the year. However, there are two seasons. The major season is during April to July with the peak in June. The minor season is during November to January with the peak in December. The lowest supply is recorded in the months of August and October.

II.III Trends in Production, Cultivated Area and Average Yields

Pineapple production has gradually increased between 1973-79 by 127%. The highest production so far recorded was in 1979 (69 million fruits) and thereafter production declined suddenly to the same level which prevailed in 1973. Around the decade between 1980-1991 the production was stagnant. From 1992 again it started to gradually increase.

The extent cultivated appears to increase over time (between 1973-1995) by 47% with certain declines in mid-years (from 1983 to 1988).

III. Domestic Marketing

The private sector plays a leading role in the marketing of pineapples. The participation of government agencies in pineapple marketing is negligible.

III.I Marketing Channels

The following are the most important marketing channels according to the way pineapples are disposed:

- (a) Farmer -> Collector -> Wholesaler -> Retailer -> Consumer
(Market channels for fresh fruits)

- (b) Farmer -> Collector -> Processor -> Wholesaler -> Retailer -> consumer
(Marketing channel for processed fruits)
- (c) Farmer -> Collector/wholesaler -> Exporter
(Marketing channel for exports)

III.II Price Behaviour

Pineapples are mostly available throughout the year, but the supply situation varies. Higher prices are observed during August while lower prices are observed during November to January and April to July. The lowest prices are observed during in June.

The annual average wholesale and retail prices increased during the reference period. The annual average retail prices have increased from Rs.18.75/kg. in 1991 to Rs.26.30/kg in 1995 (large size).

Pineapples are classified and sold according to the size. The monthly retail prices in 1995 ranged between Rs.24.11 to Rs.31.51/each (large size), Rs. 16.25 to Rs.26.32/each of medium size and Rs.11.32 to Rs.16.71/each for small size.

III.III Review of Marketing Cost

The transport cost ranges between Rs. 1,250-1,500/lorry (containing 3,000-3,500 nuts) from Kuliyaipitiya, Dompe, Belummahara, Yakkala, Giriulla and Pannala to the Pettah Market. The unloading cost inside the Pettah wholesale Market is Rs.5/basket (containing of 30-35 fruits). There is a 10 percent commission kept by the wholesalers. The transport costs for one basket (containing 30-35 fruits) from Pettah Market to other markets are as follows; Rs.10.00-12.00 to Thotalanga (Grand Pass), Borella, Kiribathgoda, Dematagoda and Nugegoda, and Rs.15.00 to Wellawatta, Kadawata and Kirulapana markets.

IV. External Trade

The pineapple is a main export fruit from Sri Lanka. The total export earning from pineapples increased from Rs.21.3 million in 1991 to Rs.26.45 million in 1994.

The U.A.E. is the major market for Sri Lankan pineapples. As much as 40% of the total export earnings from pineapples is derived from the U.A.E. Maldives is the second important market for Sri Lankan pineapples which contributes 23% to the export earning from there. This market indicates a non-stability. The other countries our pineapples are exported to are Saudi Arabia, Quatar, Pakistan etc.

The average F.O.B. price was Rs.26.00/kg in 1990 and it has increased to Rs.27.00/kg in 1994. F.O.B. prices differ from country to country. The highest F.O.B. prices were reported from Quatar and Maldives, eg. Rs.32.00/kg and Rs.30.00/kg. respectively, while the lowest prices were observed in Oman and Saudi Arabia in 1994, viz. Rs.19.00/kg and Rs.20.00/kg.

Certain sub-products of pineapple are also imported into Sri Lanka. For example, for importing pineapple juice Sri Lanka has spent Rs.1.2 million in 1991. These imports are mainly from Australia, Singapore and Thailand.

Import as well as export trade regulations for pineapples are the same as in the case of other fruits (see trade regulations under bananas for more details).

V. Consumption

The pineapple is one of the least consumed fruits due to various reasons. The proportion of consumption of pineapples to total expenditure on food is only 0.06% per household per month. Its per capita

consumption was 0.10 grams per day among most of income groups in urban and rural areas. There is almost no consumption in the estate sector. Higher consumption is observed among income groups below Rs.100 and above Rs.10,000 in both urban as well as rural sectors.

VI. State Policy

Since several years ago the government has been supporting the cultivation of pineapples as a way of maximizing productivity especially in coconut lands. Under this policy various subsidies and support services were provided for intercropping with pinapples.

The pineapple is one of the 12 fruit crops selected by the PA Government under its national production programme. Now pineapples have also drawn the attention of the Task Force appointed to take care of fruits.

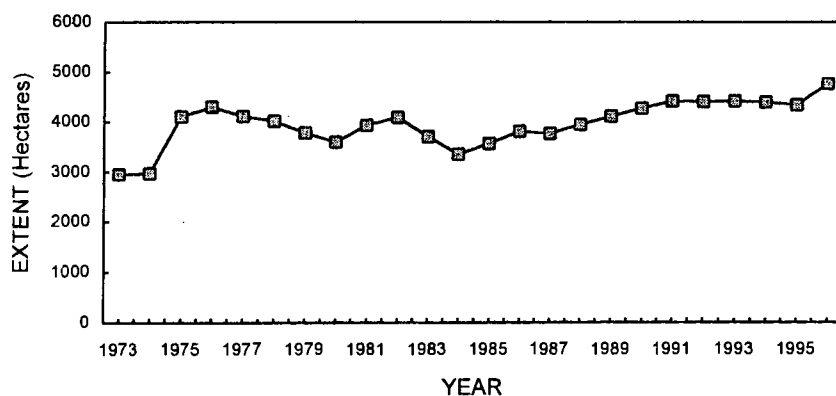
Table 22.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF PINEAPPLE - SRI LANKA

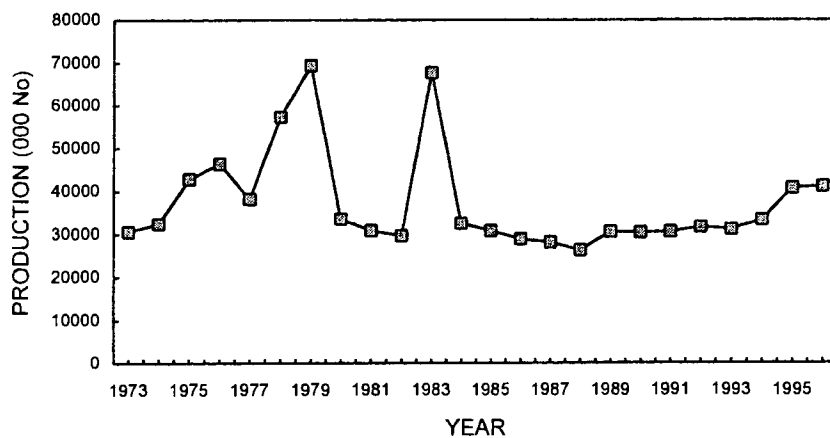
YEAR	EXTENT (Hectares)	PRODUCTION (000 No.)	AVERAGE YIELD (No./Ha)
1973	2946	30570	10377
1974	2966	32380	10917
1975	4105	42831	10434
1976	4293	46406	10810
1977	4109	38188	9294
1978	4014	57262	14266
1979	3776	69333	18361
1980	3590	33548	9345
1981	3932	30814	7837
1982	4088	29562	7231
1983	3699	67669	18294
1984	3352	32463	9685
1985	3570	30715	8604
1986	3808	28807	7565
1987	3766	28021	7441
1988	3942	26170	6639
1989	4108	30507	7426
1990	4267	30367	7117
1991	4406	30494	6921
1992	4404	31581	7171
1993	4411	31110	7053
1994	4386	33274	7586
1995	4340	40656	9368
1996	4766	41063	8616

Source : Department of Census & Statistics
Data Development unit of HARTI

Graph 22.1
EXTENT OF PINEAPPLE



Graph 22.2
PRODUCTION OF PINEAPPLE



Graph 22.3
AVERAGE YIELD OF PINEAPPLE

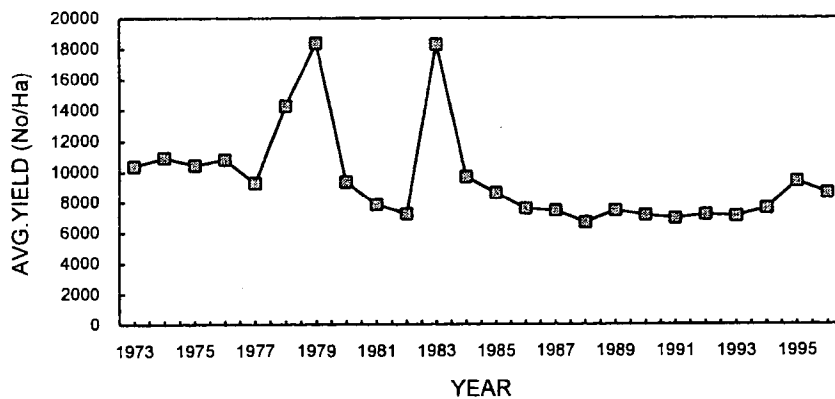


Table 22.2
EXTENT OF PINEAPPLE BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	926	1,004	1,187	1,948	1,994	1,994	2,001	2,004	1,845	1,968	44.8
GAMPAHA	-	1,346	1,055	1,295	1,202	1,272	1,550	1,512	1,620	1,431	32.6
OTHER *	3,179	1,240	1,328	1,024	1,210	1,138	860	870	875	991	22.6
SRI LANKA	4,105	3,590	3,570	4,267	4,406	4,404	4,411	4,386	4,340	4,389	100.0

* Total of Colombo, Kalutara, Galle, Matara, Puttalam, Kegalle, Matale, Nuwara Eliya, Badulla, Jaffna Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara Ratnapura, Kandy, Moneragala, Hambantota, Killinochchi districts and special project Mahaweli H .
Primary Source : Dept. of Census & Statistics

Table 22.3
PRODUCTION OF PINEAPPLE BY MAJOR PRODUCING DISTRICTS (000 NO.)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	4,910	2,978	8,254	11,484	12,400	12,637	14,365	16,147	20,331	15,176	45.4
GAMPAHA	-	14,117	4,320	8,242	7,037	7,302	8,365	8,713	10,856	8,455	25.3
BADULLA	1,361	525	2,075	1,508	1,567	2,426	1,409	1,345	1,341	1,618	4.8
OTHER *	36,560	15,928	16,066	9,133	9,490	9,216	6,971	7,069	8,128	8,175	24.5
SRI LANKA	42,831	33,548	30,715	30,367	30,494	31,581	31,110	33,274	40,656	33,423	100.0

* Total of Colombo, Kalutara, Galle, Matara, Puttalam, Kegalle, Matale, Nuwara Eliya, Jaffna Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara Ratnapura, Kandy, Moneragala, Hambantota, Killinochchi districts and special project Mahaweli H

Primary Source : Dept. of Census & Statistics

Table 22.4
MONTHLY AVERAGE WHOLESALE PRICE OF PINEAPPLE(Medium) - PETTAH MARKET
UNIT : Rs/Fruit

Month	1991	1992	1993	1994	1995	1996
January	13.63	11.69	12.48	16.90	20.05	16.87
February	10.25	13.56	15.26	21.69	20.80	16.88
March	11.98	19.10	16.08	21.90	15.98	17.68
April	11.02	19.40	15.16	16.77	15.72	17.22
May	0.29	15.82	14.69	13.78	13.48	14.84
June	6.75	14.18	15.21	15.07	13.68	15.25
July	7.10	23.13	16.36	16.85	15.22	17.20
August	9.43	38.64	17.99	15.90	17.19	20.38
September	7.97	16.02	22.04	17.65	16.13	20.26
October	12.91	19.35	23.44	19.92	19.57	19.68
November	12.80	15.88	16.67	15.86	17.68	17.66
December	9.53	12.09	13.31	18.81	15.73	15.69
An. Average	10.14	18.24	16.56	17.59	16.77	17.47

Table 22.5
MONTHLY AVERAGE RETAIL PRICE OF PINEAPPLE(Medium) - COLOMBO AND SUBURBS
UNIT : Rs/Fruit

Month	1991	1992	1993	1994	1995	1996
January	14.35	14.56	15.28	19.17	24.40	19.40
February	12.41	13.75	17.06	22.30	26.32	20.79
March	14.25	17.86	17.73	23.39	23.42	21.08
April	14.78	20.31	16.86	21.72	23.05	20.95
May	11.97	18.38	15.90	18.43	20.97	21.03
June	10.81	14.78	16.26	16.92	17.52	19.52
July	11.43	22.01	18.37	20.70	16.25	22.24
August	12.29	42.36	20.28	19.34	18.18	25.14
September	12.93	20.92	25.24	20.96	17.60	24.85
October	14.75	22.93	24.81	23.91	21.04	23.35
November	16.04	18.79	19.75	19.83	20.82	20.69
December	14.67	14.54	17.44	21.24	18.08	19.02
An. Average	13.39	20.10	18.75	20.66	20.64	21.51

Source : Marketing & Food Policy Division - HARTI

Table 22.6
EXPORTS OF PINEAPPLE BY COUNTRY OF DESTINATION

COUNTRY (MT)	1991		1992		1993		1994		1995		1996	
	Qty. (Rs.Mn)	Value (MT)	Qty. (Rs.Mn)	Value (MT)	Qty. (Rs.Mn)	Value (MT)	Qty. (Rs.Mn)	Value (MT)	Qty. (Rs.Mn)	Value (MT)	Qty. (Rs.Mn)	Value
Maldives	369.00	8.61	360.00	8.45	240.00	6.31	192.00	5.90	52.00	1.09	350.00	12.65
U.A.E.	324.00	7.80	409.00	9.82	315.00	8.26	384.00	10.44	328.00	6.96	508.00	9.11
Other M.E. Countries	109.00	4.42	133.00	4.28	126.00	3.03	270.00	6.04	290.00	6.95	353.00	6.54
Other Countries	22.00	1.00	23.00	0.29	46.00	2.03	93.00	2.96	45.00	11.45	20.00	1.30
TOTAL	824.00	21.83	925.00	22.84	727.00	19.63	939.00	25.34	715.00	26.45	1231.00	29.60

Source : Dept. of Customs

Table : 22.7
PER CAPITA CONSUMPTION OF PINEAPPLE PER ANNUM
BY SECTORS (UNIT: No)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	0.50	0.60	0.20	0.50
1981/82	-	9.60	-	7.20
1986/87	1.20	4.80	-	1.20

Primary Source : Central Bank of Sri Lanka

Table : 22.8
PER CAPITA CONSUMPTION OF PINEAPPLE PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (No)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	6.00	3.60	-	8.4
101-200	-	14.40	-	1.20
201-400	-	2.40	-	1.20
401-600	1.20	2.40	-	1.20
601-800	1.20	2.40	-	-
801-1000	-	3.60	-	-
1001-1500	1.20	3.60	-	-
1501-2000	-	4.80	1.20	1.20
2001-3000	1.20	6.00	-	1.20
3001-5000	1.20	7.20	-	1.20
5001-10000	1.20	8.40	-	1.20
OVER 10000	3.60	10.80	-	3.60
Overall Avg.	1.20	4.80	-	1.20

Primary Source : Central Bank of Sri Lanka

23. MANGO

1. Introduction

The mango (botanically named *Mangifera indica*) originated in South-East Asia at an early date. The natural spread of the mango is limited to Indo-Malaysian region, stretching from India to the Philippines and New Guinea in the East. Beside the Indian sub-continent, the mango is now found in several countries of tropical and sub-tropical world where it was introduced by Muslim missionaries, Spanish voyagers and Portuguese explorers during the 15th to 18th centuries.

The composition differs with the variety and the state of maturity. The unripe green mango is reported to have 90% moisture, 8.8% carbohydrates, 0.7% protein and 0.1% fat.

There are four main mango varieties in the market viz. *Betti*, *Kohu*, *Vilad* and *Karthakolomban*.

II. Production

II.1 Major Producing Districts

As revealed by five year (1991 to 1995) average of production of mangoes Kurunegala district contributes 26% to the national production, while Gampaha, which is next important mango producing district, contributes 11%. Among other important districts which follow include Ratnapura (8%), Matale (8%), Hambantota (6%), Mahaweli-H (5%), Moneragala (4%), Puttalam (4%), and Matara (4%).

Observing the extent cultivated, Kurunegala (25%) and Gampaha (11%) become the prominent districts at the same level as in production.

II.II Seasonality of Production

There are two seasons for mangoes. The major season is during the period May to July with the peak in June. The minor season is during October to January with the peak in December. The lowest supply is observed in the months of March and August.

II.III Trends in Production and Extent

The production statistics of the last 23 years indicate an overall increase in production in the long run (41% increase between 1973 and 1995) with some shortfalls in between.

The extent grown has tremendously increased (by 364%) during the two decades, 1973-1993. This increase was 144% and gradual between the period 1973-1992. Thereafter it increased suddenly by 90% within a period of one year in 1993 and also recorded a gradual decline in later years.

III. Domestic Marketing

The private sector plays a leading role in the marketing of mangoes. The participation of state trading agencies such as the CWE and co-operatives is very negligible.

III.1 Marketing Channels

Mostly the local collectors and traders lease in the trees during the season and pluck the fruits and sell-them to either the processors, wholesalers or exporters. Wholesalers sell the fresh fruits to the retailers. The processor sell their products to wholesalers or retailers. The exporters mostly buy fruits from collectors or wholesalers.

The following are the market channels for mangoes according to their priority.

- (a) Farmers -> Collector -> Wholesalers -> Retailers -> Consumers
(this is the most common marketing channel)
- (b) Farmers -> Collector -> Processor -> Wholesalers -> Retailers -> Consumers

(this is the channel for processed commodities; some processors sell to the wholesalers and in some cases processors themselves directly supply to the retailers)
- (c) Farmers -> Collectors or wholesalers -> Exporters
(this is the channel for export)

III.II Price Behaviour

During the reference period (1991-95) the producer, wholesale as well as retail prices have increased. For example, in 1990 producer price of per mango was 90 cts. but it reached Rs.1.23 per fruit by 1994. The annual average retail prices of all mango varieties recorded an increase. The retail price of Betti variety increased from Rs.5.48/fruit in 1991 to Rs.7.78/fruit in 1995. Similarly the retail prices of Karthakolomban increased from Rs.15.22/fruit to Rs.19.41/fruit during the same period.

Mangoes are generally very cheap during the peak season in October to January and May to July. Lowest prices are observed in the months of June and December. The highest prices are observed in the months of March and August.

IV. External Trade

The mango is an exportable fruit, and it has a good demand in the international market. Sri Lankan mangoes are exported to Maldives, UAE, Germany, Switzerland, U.K., Saudi Arabia and few other Western and Middle East countries.

Sri Lankan exports are very small in quantity as well as in value. The export earning during the period 1991-95 were below Rs.0.6 million. The highest exports so far reported were in 1991 which totalled 8.4 thousand kg. valued at Rs.0.53 million. During the reference period (1991-95) exports were unstable in quantity and in value.

The limited availability of internationally accepted varieties is the main problem in exports. Also the lack of knowledge in post-harvest care and packing methods (on the part) of our farmers is another problem.

The tariff structure applicable to the importation of fruits, which is 35% customs duty, 10% turnover tax and 4.5% national security levy, is applicable to mangoes too. No restrictions or duty is available for exporting mangoes.

V. Consumption

The consumption level of mangoes is the lowest among fruits and vegetables. The proportion of consumption of mangoes to total expenditure on food comprise only 0.10% (per household per month). The per capita consumption of mangoes varies in different periods. It was 0.02 g./day in 1978/79, 0.08 g./day in 1981/82, 0.05 g./day in 1986/87 and 0.01 g./day in 1990/91. The highest consumption was observed in the rural sector in 1986/87 (20.40 fruits/annum) 15.60 fruits/annum in the urban sector and 8.40 fruits/annum in the estate sector.

VI. Government Policy

Mango cultivation was promoted during last two decades by the government considering its nature as an important inter-crop in coconut and other lands and also as a horticultural crop. Relevant supporting

facilities including supply of highbrid plants and extension advice were provided under different projects and programmes implemented by various institutions.

Since recently, under the national agricultural policy, the present government has given more attention to mango cultivation. It is one of the fruit crops selected for the national production programme (of the PA Government which came into power in 1994). Under this programme it is expected to develop selected crops to meet the local demand and then to promote exports. In this regard a special Task Force has also been established.

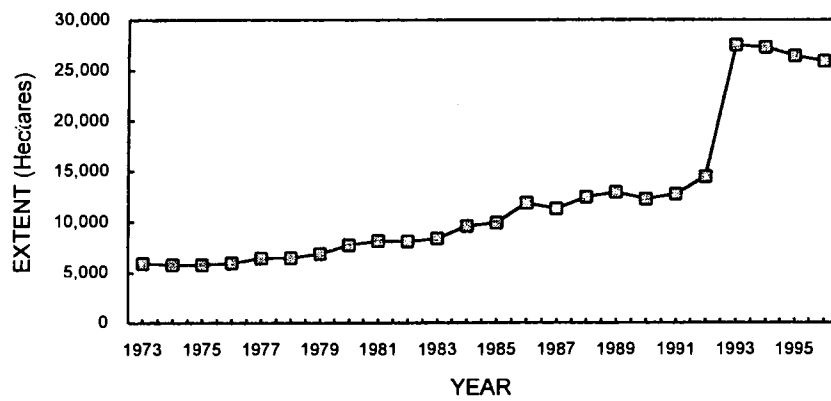
Table 23.1

EXTENT, PRODUCTION AND AVERAGE YIELD OF MANGO - SRI LANKA

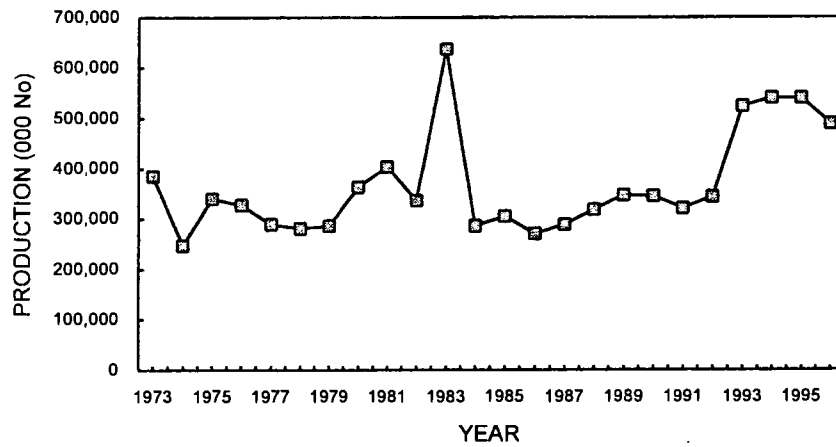
YEAR	EXTENT (Hectares)	PRODUCTION (000 No.)	AVERAGE YIELD (No./Ha)
1973	5,911	384,266	65,009
1974	5,787	246,788	42,645
1975	5,811	339,253	58,381
1976	5,962	326,774	54,809
1977	6,425	288,805	44,950
1978	6,446	280,689	43,545
1979	6,862	285,672	41,631
1980	7,706	362,012	46,978
1981	8,129	402,776	49,548
1982	8,075	335,554	41,555
1983	8,363	637,019	76,171
1984	9,576	285,396	29,803
1985	9,892	304,799	30,813
1986	11,841	270,417	22,837
1987	11,289	288,041	25,515
1988	12,420	317,608	25,572
1989	12,877	346,407	26,901
1990	12,222	344,582	28,194
1991	12,689	320,079	25,225
1992	14,432	343,084	23,772
1993	27,442	523,960	19,093
1994	27,216	540,119	19,846
1995	26,371	540,478	20,495
1996	25,852	489,683	18,942

Source : Department of Census & Statistics
Data Development unit of HARTI

Graph 23.1
EXTENT OF MANGO



Graph 23.2
PRODUCTION OF MANGO



Graph 23.3
AVERAGE YIELD OF MANGO

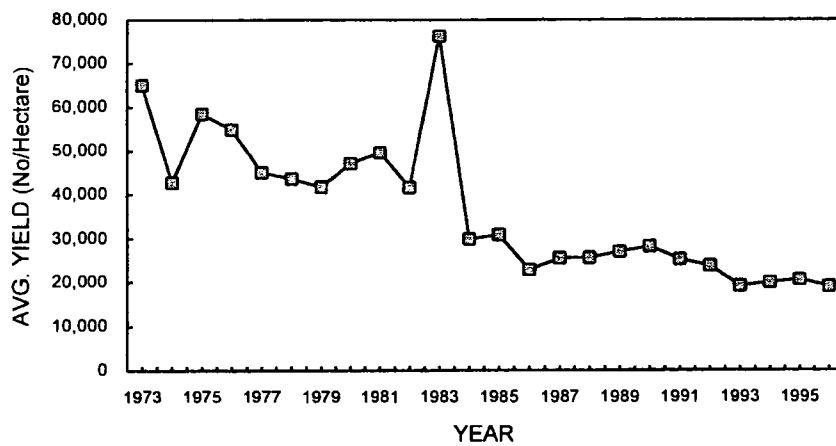


Table 23.2
EXTENT OF MANGO BY MAJOR GROWING DISTRICTS (HECTARES)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	836	1,032	1,454	3,317	2,236	2,236	7,666	7,677	6,816	5,326	24.6
GAMPAHA	-	877	1,182	1,306	1,306	1,469	3,024	3,024	3,005	2,366	10.9
MATALE	218	449	432	703	765	896	1,551	1,560	1,571	1,269	5.9
KANDY	374	450	474	486	487	512	1,559	1,571	1,557	1,137	5.3
MATARA	276	267	397	627	641	679	1,327	1,328	1,328	1,061	4.9
HAMBANTOTA	341	382	609	550	705	1,110	1,281	1,015	977	1,018	4.7
OTHER *	3,766	4,249	5,344	5,233	6,549	7,530	11,034	11,041	11,117	9,454	43.7
SRI LANKA	5,811	7,706	9,892	12,222	12,689	14,432	27,442	27,216	26,371	21,630	100.0

* Total of Colombo, Kalutara, Galle, Puttalam, Kegalle, Ratnapura, Nuwara Eliya, Badulla Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara, Moneragala, Jaffna, Killinochchi districts & special project Mahaweli H.

Primary Source : Dept. of Census & Statistics

Table 23.3
PRODUCTION OF MANGO BY MAJOR PRODUCING DISTRICTS (000 No)

DISTRICT	1975	1980	1985	1990	1991	1992	1993	1994	1995	AVG(91-95)	%
KURUNEGALA	30,742	14,032	66,159	100,695	76,314	65,111	143,330	164,992	141,484	118,246	26.1
GAMPAHA	-	22,791	7,632	34,715	27,658	27,275	65,420	66,700	59,287	49,268	10.9
RATNAPURA	33,727	22,440	30,489	36,009	21,977	38,035	41,461	44,273	45,175	38,184	8.4
MATALE	45,492	24,879	20,200	4,254	42,497	38,461	30,133	30,164	29,886	34,228	7.5
HAMBANTOTA	28,381	56,670	22,739	21,700	20,137	27,096	34,199	27,800	48,750	31,596	7.0
MAHAWELI H	-	-	5,928	12,400	15,150	15,550	12,450	27,800	48,750	23,940	5.3
OTHER *	200,911	221,200	151,652	134,809	116,346	131,556	196,967	178,390	167,146	158,081	34.9
SRI LANKA	339,253	362,012	304,799	344,582	320,079	343,084	523,960	540,119	540,478	453,544	100.0

* Total of Colombo, Kalutara, Galle, Puttalam, Kegalle, Matara, Nuwara Eliya, Badulla, Vavuniya, Mullativu, Mannar, Anuradhapura, Polonnaruwa, Trincomalee, Batticaloe, Ampara, Moneragala, Jaffna, Killinochchi & Kandy

Primary Source : Dept. of Census & Statistics

Table 23.4
MONTHLY AVERAGE WHOLESALE PRICE OF MANGO - PETTAH MARKET UNIT : Rs/Fruit

MONTH	1991				1992				1993			
	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN
January	2.06	2.68	2.63	6.26	0.97	2.81	2.31	7.42	1.92	3.65	3.44	9.62
February	3.33	2.90	5.44	11.05	2.49	3.68	4.06	13.49	3.20	10.50	7.83	23.11
March	4.11	2.95	6.48	17.63	1.81	NA	3.55	11.50	3.18	10.06	6.98	14.84
April	3.81	3.11	4.41	14.34	1.38	3.63	2.47	8.69	NA	5.10	3.97	9.91
May	1.42	2.84	2.49	8.73	1.11	3.20	2.34	5.97	1.63	4.21	2.20	7.74
June	0.90	1.53	1.59	7.02	0.88	1.96	2.06	5.35	NA	4.39	2.24	7.11
July	2.01	5.50	3.63	14.00	2.24	5.53	3.30	10.45	4.00	5.29	4.41	13.24
August	2.29	6.10	5.38	23.62	4.29	NA	7.75	18.91	5.50	7.77	6.40	22.39
September	6.67	6.04	NA	28.77	NA	NA	NA	NA	NA	7.80	NA	28.30
October	3.39	5.98	3.42	19.92	NA	8.67	NA	21.06	1.67	6.66	3.67	17.14
November	1.30	2.98	2.80	8.11	NA	5.27	4.94	16.82	2.90	4.83	2.80	8.63
December	0.89	2.48	2.11	6.62	NA	4.09	3.46	8.37	2.05	4.04	4.06	6.48
An. Average	2.68	3.76	3.67	13.84	1.90	4.32	3.62	11.64	2.89	6.19	4.36	14.04

Table 23.4 (contd..)
MONTHLY AVERAGE WHOLESALE PRICE OF MANGO - PETTAH MARKET UNIT : Rs/Fruit

MONTH	1991				1992				1993			
	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN
January	NA	NA	2.74	8.13	0.71	1.28	4.37	14.35	2.10	2.92	2.79	11.23
February	NA	NA	NA	22.94	NA	NA	8.48	22.64	3.48	3.63	4.18	15.50
March	NA	NA	11.17	24.00	NA	NA	5.64	15.26	3.96	3.99	4.50	16.09
April	7.20	NA	8.36	23.32	NA	NA	5.76	15.02	2.92	3.33	3.14	10.22
May	1.50	NA	3.75	23.69	NA	NA	6.23	13.46	2.38	2.96	2.60	8.58
June	NA	NA	3.18	9.58	1.47	1.80	2.94	10.11	2.05	2.69	2.19	7.93
July	3.50	NA	4.64	14.35	2.20	2.14	3.75	12.54	2.18	2.79	2.32	9.38
August	NA	NA	9.47	25.70	2.76	2.89	5.03	16.49	3.75	4.04	3.33	16.50
September	NA	NA	NA	22.04	NA	4.93	NA	NA	NA	NA	NA	NA
October	NA	NA	3.98	14.16	2.44	4.19	4.16	12.04	NA	NA	NA	NA
November	NA	NA	2.78	12.20	1.93	3.00	2.85	9.42	4.69	5.38	5.02	13.95
December	0.50	NA	1.34	5.63	1.88	2.72	2.69	9.63	3.52	4.16	3.73	9.71
An. Average	3.18	NA	5.14	17.15	1.91	2.87	4.72	13.72	3.10	3.59	3.38	11.91

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 23.5
MONTHLY AVERAGE RETAIL PRICE OF MANGO - COLOMBO AND SUBURBS Unit : Rs/Fruit

MONTH	1991				1992				1993			
	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN
January	1.91	3.44	3.05	7.38	NA	5.74	3.94	8.46	NA	7.99	5.14	11.80
February	3.46	5.14	4.67	12.25	NA	6.44	6.00	17.84	NA	11.86	8.30	21.43
March	4.93	7.46	9.90	17.77	NA	5.50	5.29	14.78	NA	15.32	9.53	19.10
April	6.72	9.78	8.54	19.03	NA	4.45	4.17	13.61	NA	6.88	5.44	11.76
May	2.62	5.84	4.86	11.89	1.63	3.83	3.33	8.23	NA	5.26	3.28	9.48
June	1.53	3.78	2.45	7.45	1.41	3.80	2.49	6.68	NA	4.61	2.92	9.48
July	2.64	5.46	4.77	14.61	NA	7.88	3.41	10.55	NA	6.41	5.25	14.92
August	3.98	9.68	8.15	22.43	NA	23.42	8.40	21.22	NA	7.21	8.35	26.89
September	8.34	9.25	6.53	31.90	NA	NA	NA	28.75	5.50	9.65	7.80	32.73
October	3.48	8.82	5.92	19.09	NA	11.69	NA	26.91	NA	8.41	3.00	17.40
November	2.39	4.75	3.75	10.12	NA	7.42	6.39	14.94	NA	5.88	4.72	10.76
December	1.96	3.70	3.19	8.73	NA	6.16	5.26	13.23	3.00	5.59	3.50	9.40
An. Average	3.66	6.43	5.48	15.22	1.52	7.85	4.87	15.43	4.25	7.92	5.60	16.26

Table 23.5 (contd..)
MONTHLY AVERAGE RETAIL PRICE OF MANGO - COLOMBO AND SUBURBS UNIT : Rs/Fruit

MONTH	1991				1992				1993			
	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN	KOHU	VILAD	BETTI	KARTHA-COLOMBAN
January	NA	5.48	4.24	9.93	1.44	2.21	5.09	20.48	4.67	5.48	5.49	14.82
February	NA	NA	NA	21.58	4.00	NA	10.27	30.63	6.40	6.85	7.28	19.71
March	NA	NA	16.31	27.59	4.83	5.44	9.07	23.34	6.58	6.86	7.32	21.45
April	5.31	10.00	10.62	27.36	5.71	5.32	7.98	22.75	5.18	5.26	5.52	13.96
May	6.50	6.00	6.41	20.57	NA	3.63	7.28	19.68	4.35	4.62	4.65	11.17
June	NA	9.00	4.46	12.25	2.90	3.02	5.41	15.95	4.02	4.32	4.31	10.61
July	3.50	NA	5.49	19.47	3.63	3.63	5.40	14.04	4.07	4.44	4.34	14.93
August	NA	NA	8.22	35.75	7.58	7.97	11.80	21.03	5.87	6.16	5.47	24.67
September	NA	NA	NA	28.43	NA	8.10	NA	NA	NA	NA	NA	NA
October	NA	NA	5.27	17.56	4.86	7.25	9.80	15.09	NA	NA	NA	NA
November	NA	5.00	4.23	15.97	4.93	6.84	7.68	16.30	5.66	7.12	6.73	18.02
December	0.67	1.85	2.36	8.53	4.43	6.08	5.77	14.26	4.82	5.88	5.53	13.78
An. Average	4.00	6.22	6.76	20.42	4.43	5.41	7.78	19.41	5.16	5.70	5.66	16.31

NA - DATA NOT AVAILABLE
Source : Marketing & Food Policy Division - HARTI

Table 23.6
EXPORTS OF MANGO BY COUNTRY OF DESTINATION

COUNTRY	1991		1992		1993		1994		1995		1996	
	Qty. (MT)	Value (Rs.Mn)	Qty. (MT)	Value (Rs.Mn)	Qty. (MT)	Value (Rs.Mn)	Qty. (MT)	Value (Rs.Mn)	Qty. (MT)	Value (Rs.Mn)	Qty. (MT)	Value (Rs.Mn)
Maldives	6.00	0.31	4.00	0.23	2.00	0.15	1.00	0.30	*	0.20		
U.A.E.	-	-	-	-	-	-	1.00	0.20	10.00	0.23	32.00	0.68
Other M. E. Countries	2.00	0.80	2.00	0.50	1.00	0.50	-	-	-	-		
Other Countries	*	0.13	1.00	0.70	1.00	0.28	*	0.40	4.00	1.41	8.00	1.42
TOTAL	8.00	0.52	7.00	0.35	4.00	0.48	2.00	0.90	14.00	1.66	40.00	2.10

N.A. - Not Available

Source : Dept. of Customs

Table : 23.7
PER CAPITA CONSUMPTION OF MANGO PER ANNUM
BY SECTORS (UNIT: No)

SECTORS	Urban	Rural	Estate	All Sectors
1978/79	7.60	7.40	2.00	7.00
1981/82	8.40	30.00	45.60	27.60
1986/87	15.60	20.40	8.40	18.00

Primary Source : Central Bank of Sri Lanka

Table : 23.8
PER CAPITA CONSUMPTION OF MANGO PER ANNUM
BY INCOME GROUP AND SECTORS - 1986/87 (No)

INCOME GROUP (Rs)	Urban	Rural	Estate	All Sectors
0-100	96.00	-	-	21.6
101-200	12.00	9.60	-	9.60
201-400	3.60	9.60	-	8.40
401-600	13.20	14.40	7.20	1.32
601-800	6.00	12.00	-	10.80
801-1000	7.20	15.00	6.00	13.20
1001-1500	10.80	15.60	3.60	13.20
1501-2000	8.40	19.20	8.40	16.80
2001-3000	18.00	25.20	14.40	22.80
3001-5000	15.60	27.60	8.40	22.80
5001-10000	15.60	31.20	-	25.20
OVER 10000	32.40	28.80	-	31.20
Overall Avg.	15.60	20.40	8.40	18.00

Primary Source : Central Bank of Sri Lanka

Part Two :Selected Agrarian Statistics

Appendix Table A : 1
CONTRIBUTION OF AGRICULTURAL SECTOR TO GDP AT CONSTANT (1982) FACTOR COST
PRICES

SECTOR	1992		1993		1994		1995		1996	
	VALUE (Rs.Mn.)	%	VALUE (Rs.Mn.)	%	VALUE (Rs.Mn.)	%	VALUE (Rs.Mn.)	%	VALUE (Rs.Mn.)	%
TEA	2,303	1.6	2,985	2.0	3,116	2.0	3,166	1.9	3,327	1.9
RUBBER	669	0.5	681	0.5	688	0.4	694	0.4	738	0.4
COCONUT	2,971	2.1	2,799	1.9	3,376	2.1	3,548	2.1	3,278	1.9
PADDY	5,882	4.2	6,447	4.3	6,750	4.2	7,067	4.2	5,180	3.0
OTHER	13,491	9.6	13,680	9.1	13,666	8.6	14,021	8.3	14,512	8.3
TOTAL	25,316	18.0	26,592	17.6	27,596	17.3	28,496	17.0	27,035	15.5
GDP	140,990	100.0	150,783	100.0	159,269	100.0	167,953	100.0	174,261	100.0

Source : Central Bank of Sri Lanka
Data Bank of HARTI

Appendix Table A : 2
NUMBER OF ADMINISTRATIVE UNITS BY DISTRICTS

DISTRICT	Number of Divisional Secretariat	Number of Grama Niladari Divisions
Colombo	10	558
Gampaha	13	1,139
Kalutara	10	762
Kandy	17	1,191
Matale	11	545
Nuwara Eliya	5	427
Galle	16	894
Mathara	12	650
Hambantota	11	576
Kurunegala	17	1,616
Puttalam	10	552
Anuradhapura	18	693
Polonnaruwa	6	291
Badulla	14	532
Moneragala	10	319
Ratnapura	13	575
Kegalle	10	573
Ampara	15	511
Trincomalee	11	230
Batticaloa	N.A.	N.A.
Nothern Districts	N.A.	N.A.
TOTAL	229	12,634

N.A. - Not Avaiiable
Source : Dept. of Agrarian Services

Appendix Table A : 3
AGRARIAN CENTRES AND FARMER ORGANISATIONS (1) BY DISTRICTS

DISTRICT	Number of Agrarian Centres	Number of Farmer Organisations	Funds Available (2) (Rs.000)
Colombo	7	271	383
Gampaha	26	1,064	574
Kalutara	20	622	818
Kandy	44	1,103	1,619
Matale	23	586	3,014
Nuwara Eliya	22	474	1,664
Galle	33	741	2,138
Mathara	22	644	1,681
Hambantota	16	577	4,040
Kurunegala	54	1,934	7,746
Puttalam	17	598	1,994
Anuradhapura	40	1,085	9,078
Polonnaruwa	9	205	4,289
Badulla	31	694	13,606
Moneragala	16	517	2,587
Ratnapura	30	658	2,079
Kegalle	14	602	1,356
Ampara	28	408	1,031
Trincomalee	22	208	742
Batticaloa	N.A.	N.A.	N.A.
Nothorn Districts	N.A.	N.A.	N.A.
TOTAL	474	12,991	60,441

N.A. - Not Available

(1) Progress as at 28th Feb. 1997

(2) Districtwise Figures may not add upto the total due to rounding upto the nearest hundred

Source : Dept of Agrarian Services

Appendix Table A : 4
DISTRICTWISE DISTRIBUTION OF MINOR IRRIGATION SCHEMES BY COMMAND AREA

DISTRICT	COMMAND AREA								Total
	0 - 5	5 - 10	10 - 15	15 - 25	25 - 50	50 - 75	75 - 100	Above 100	
Colombo	2	14	28	86	74	12	7	4	227
Gampaha	23	110	145	158	108	24	8	7	583
Kalutara	9	36	33	83	117	45	14	15	352
Kandy	340	491	298	312	182	46	10	20	1699
Matale	166	250	182	191	178	55	21	25	1068
Nuwara Eliya	233	273	170	159	137	39	16	20	1047
Galle	9	25	33	40	98	62	16	19	302
Mathara	27	74	82	150	249	92	35	30	739
Hambantota	35	76	78	84	118	46	13	20	470
Kurunegala	1,270	1,191	776	854	780	174	63	56	5164
Puttalam	124	152	109	171	213	37	20	32	858
Anuradhapura	44	157	227	535	832	289	177	241	2502
Polonnaruwa	-	10	8	37	75	36	22	30	218
Badulla	411	391	279	190	112	25	9	5	1422
Moneragala	74	110	92	103	110	38	17	26	570
Ratnapura	71	252	163	199	163	28	8	20	904
Kegalle	175	341	163	107	49	15	3	3	856
TOTAL	3,013	3,953	2,866	3,459	3,595	1,063	459	573	18,981

- Notes: 1. Excluding Minor Irrigation schemes in North & Eastern districts
2. Both Tanks & Anicuts maintained by the Department of Agrarian Services

Source : Department of Agrarian Services - Survey Conducted in 1990 by the Water Management Division.

Appendix Table A : 5
DISTRICTWISE DISTRIBUTION OF MAJOR IRRIGATION SCHEMES

DISTRICT	MEDIUM				MAJOR				TOTAL	
	TANKS No. Extent (Ac.)		ANICUTS No. Extent (Ac.)		TANKS No. Extent (Ac.)		ANICUTS No. Extent (Ac.)		No.	Extent (Ac.)
Colombo	2	432	-	-	-	-	-	-	2	432
Gampaha	-	-	-	-	-	-	1	9,682	1	9,682
Kalutara	1	350	-	-	-	-	-	-	1	350
Kandy	2	1,495	4	1,146	1	12,075	7	14,716		
Matale	4	824	2	798	1	2,337	-	-	7	3,959
Nuwara Eliya	1	200	9	3,788	-	-	-	-	10	3,988
Galle	-	-	2	1,385	-	-	-	-	2	1,385
Mathara	5	3,778	6	2,784	-	-	1	1,548	2	8,110
Hambantota	9	3,250	1	250	7	31,140	3	15,466	20	50,106
Jaffna	NA	NA	NA	NA	NA	NA	NA	NA	20	50,106
Killinochchi	NA	NA	NA	NA	NA	NA	NA	NA	0	0
Mannar	-	-	-	-	3	31,892	-	-	0	0
Vavuniya	5	2,322	1	600	1	4,134	-	-	3	31,892
Mullativu	NA	NA	NA	NA	NA	NA	NA	NA	7	7,056
Batticaloa	5	3,047	-	-	4	48,889	1	1,550	0	0
Ampara	7	4,854	1	596	5	112,126	1	3,550	14	121,126
Trincomalee	3	2,895	1	1,400	3	19,269	1	17,413	8	40,977
Kurunegala	11	6,680	5	1,330	5	18,451	-	-	21	26,461
Puttalam	6	4,239	2	800	2	9,058	-	-	10	14,097
Anuradhapura	80	26,138	2	1,110	9	58,401	-	-	91	85,649
Polonnaruwa	3	1,520	2	800	4	49,837	1	3,305	10	55,462
Badulla	5	3,666	6	4,927	2	6,125	3	5,024	16	19,742
Moneragala	15	6,730	8	2,779	1	2,000	2	3,283	26	14,792
Ratnapura	-	-	8	2,151	-	-	1	2,000	9	4,151
Kegalle	NA	NA	NA	NA	NA	NA	NA	NA	0	0
TOTAL	164	72,420	60	26,644	47	393,659	16	74,896	287	567,619

Notes : 1. Medium Schemes - 200 Ac-1500
2. Major Schemes - Above 1500 Ac.

Source : Department of Agrarian Services - Survey conducted in 1990 by the Water Management Division.

Appendix Table A : 6

NUMBER OF MAJOR SETTLEMENT SCHEMES AND EXTENT BY DISTRICTS

DISTRICT	Number of Schemes	Extent (in Acres)		Total
		Lowland	Highland	
Colombo	-	-	-	-
Kalutara	-	-	-	-
Gampaha	-	-	-	-
Kandy	2	5,425.0	3,454.0	8,879.0
Matale	4	7,992.0	5,290.0	13,282.0
Nuwara Eliya	1	152.0	152.0	304.0
Galle	-	-	-	-
Mathara	-	-	-	-
Hambantota	7	12,298.5	4,179.0	16,477.5
Jaffna	-	-	-	-
Killinochchi	15	9,150.0	7,027.0	16,177.0
Mannar	3	1,741.0	1,174.0	2,915.0
Vavuniya	5	6,461.5	3,460.0	9,921.5
Mullativu	10	8,812.0	11,482.0	20,294.0
Batticaloa	8	12,483.0	4,819.0	17,302.0
Ampara	1	32,643.0	11,798.0	44,441.0
Trincomalee	11	20,297.0	5,643.5	25,940.5
Puttalam	11	11,601.0	8,887.0	20,488.0
Kurunegala	10	15,172.0	9,631.5	24,803.5
Anuradhapura	9	52,038.0	23,806.0	75,844.0
Polonnaruwa	9	52,411.0	29,151.0	81,562.0
Moneragala	9	5,437.5	4,858.5	10,296.0
Badulla	9	9,564.0	4,996.0	14,560.0
Ratnapura	2	1,318.0	378.0	1,696.0
Kegalle	-	-	-	-
TOTAL	126	264,996.5	140,186.5	405,183.0

Source : Administration Report of the Land Commissioner - 1995

Appendix Table A : 7
CULTIVATION LOANS GRANTED UNDER NEW COMPREHENSIVE RURAL
CREDIT SCHEME
(Rs. Million)

Season	Paddy	Chillie & Onion	Potatoe	Vegetable	Other	Total
91/92 Maha	422.5 (81.4)	29.7 (5.7)	62.6 (12.1)	1.8 (0.3)	2.2 (0.4)	518.8 (100.0)
92 Yala	87.0 (58.9)	34.9 (23.6)	22.9 (15.5)	0.8 (0.5)	2.1 (1.4)	147.7 (100.0)
92/93 Maha	319.3 (76.9)	34.8 (8.4)	57.9 (14.0)	1.2 (0.3)	1.8 (0.4)	415.0 (100.0)
93 Yala	125.6 (59.6)	47.7 (22.6)	34.2 (16.2)	1.6 (0.8)	1.6 (0.8)	210.7 (100.0)
93/94 Maha	283.6 (73.3)	34.9 (9.0)	65.7 (17.0)	1.9 (0.5)	0.9 (0.2)	387.0 (100.0)
94 Yala	145.3 (58.0)	73.6 (29.4)	27.0 (10.8)	2.2 (0.9)	2.5 (1.0)	250.6 (100.0)
94/95 Maha	531.9 (85.9)	25.6 (4.1)	57.7 (9.3)	1.7 (0.3)	2.2 (0.4)	619.1 (100.0)
95 Yala	179.6 (64.5)	75.0 (26.9)	21.0 (7.5)	1.9 (0.7)	0.9 (0.3)	278.4 (100.0)
95/96 Maha	259.7 (75.6)	14.4 (4.2)	66.7 (19.4)	2.1 (0.6)	0.5 (0.1)	343.4 (100.0)
96 Yala	81.9 (61.7)	40.2 (30.3)	8.0 (6.0)	2.1 (1.6)	0.5 (0.4)	132.7 (100.0)

Percentages are given in parenthesis

Source :
Peoples Bank
Bank of Ceylon
Hatton National Bank
Commercial Bank

Appendix Table A-8:
NUMBER , LOCATION AND MEMBERSHIP OF GOVISEVANA CENTRES BY DISTRICTS
(As at August 1997)

District	Govijana Khendraya	No.	Location	Govisevana Centres		Total
				Male	Female	
Gampaha	Nittambuwa	1	Malwatta Pinnagolla	52	44	96
Kandy	Medapitiya	3	Narangvita	76	10	86
			Doluwa	98	13	111
			Navagurukele	60	28	88
	Ulpothagama	1	Hasalaka Town	17	20	37
Nuwara Eliya	Helboda	1	Balapokunugama	48	16	64
Galle	Walahanduwa	1	Niyagama	77	7	84
Matara	Morawaka	1	Kodikaragoda West	80	3	83
Hambantota	Weeraketiya	1	Muruthawela	61	61	122
	Weerawila	1	Pannegamuwa	171	64	235
	Bandagiriya	1	Bandagiriya DC-1-2	143	21	164
	Beliatta	1	Dammulla East	30	6	36
Kurunegala	Mahawa	1	Konwewa	35	15	50
	Bingiriya	2	Kiniyama East	51	9	60
			Wellarawa	88	36	124
			Dematawa	18	3	21
	Narammala	1	Weragala	53	7	60
	Panduwasnuwara	1	Dotella	47	1	48
Anuradhapura	Elayapattuwa	1	Ulukkulama	265	44	309
Moneragala	Bibile	1	Pitakumbura	43	40	83
	Moneragala	1	Maduruketiya	108	96	204
Badulla	Ridimaliyadda	1	Adaupotha	217	64	281
Ratnapura	Ambawila	1	Galpaya	146	10	156
Kegalle	Delivala	1	Miriyaigoda	108	34	142
	Ruwanwella	1	Siyambalawala	160	70	230

Source: Department of Agrarian Services

Appendix Table A : 9

ANNUAL ENROLLMENT OF FARMERS IN THE FARMERS' PENSION SCHEME

DISTRICT	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Colombo	552	129	80	391	1772	366	172	-	236	321
Gampaha	637	591	389	799	2119	2301	1320	174	448	2943
Kalutara	307	560	103	971	1882	863	441	717	1231	1997
Kandy	647	1,470	1,100	1477	12486	2074	797	1179	489	9329
Matale	574	541	530	1853	5775	3898	2784	569	363	3710
Nuwara Eliya	1,034	742	312	913	2605	4907	449	1073	286	1650
Galle	1,024	3,133	783	7829	9199	8455	417	361	4558	2306
Mathara	724	387	183	989	2400	1791	842	337	474	2402
Hambantota	306	731	347	3346	2299	1341	743	528	436	1202
Jaffna	15	1,957	199	57	301	1070	580	672	76	136
Killinochchi	-	116	8	1	14	-	-	298	-	-
Mannar	-	620	-	39	-	-	-	-	-	-
Vavuniya	2	259	75	10	-	213	178	60	43	49
Mullativu	-	170	77	8	-	340	57	35	15	4
Trincomalee	15	136	84	64	319	852	530	170	38	94
Batticaloa	234	188	251	109	241	135	450	149	381	323
Ampara	917	1,003	508	877	2471	1034	392	262	279	794
Anuradhapura	951	2,443	529	3493	10047	4366	416	417	741	1041
Polonnaruwa	495	756	786	2824	5788	2544	1970	826	1063	2228
Badulla	1,528	440	811	2035	2828	1387	916	887	633	1701
Moneragala	410	598	291	3532	2508	2729	395	181	573	1501
Kurunegala	978	1,664	391	2916	13400	1099	1532	552	540	6533
Puttalam	334	858	518	1261	1571	1253	415	725	922	1599
Kegalle	710	853	329	1160	999	1066	1096	466	1105	2217
Ratnapura	1,065	1,465	642	2262	6012	939	723	340	717	1324
TOTAL	13,459	21,810	9,326	39,216	87,036	45,023	17,615	10,978	15,647	45,404

Source : Agricultural Insurance Board

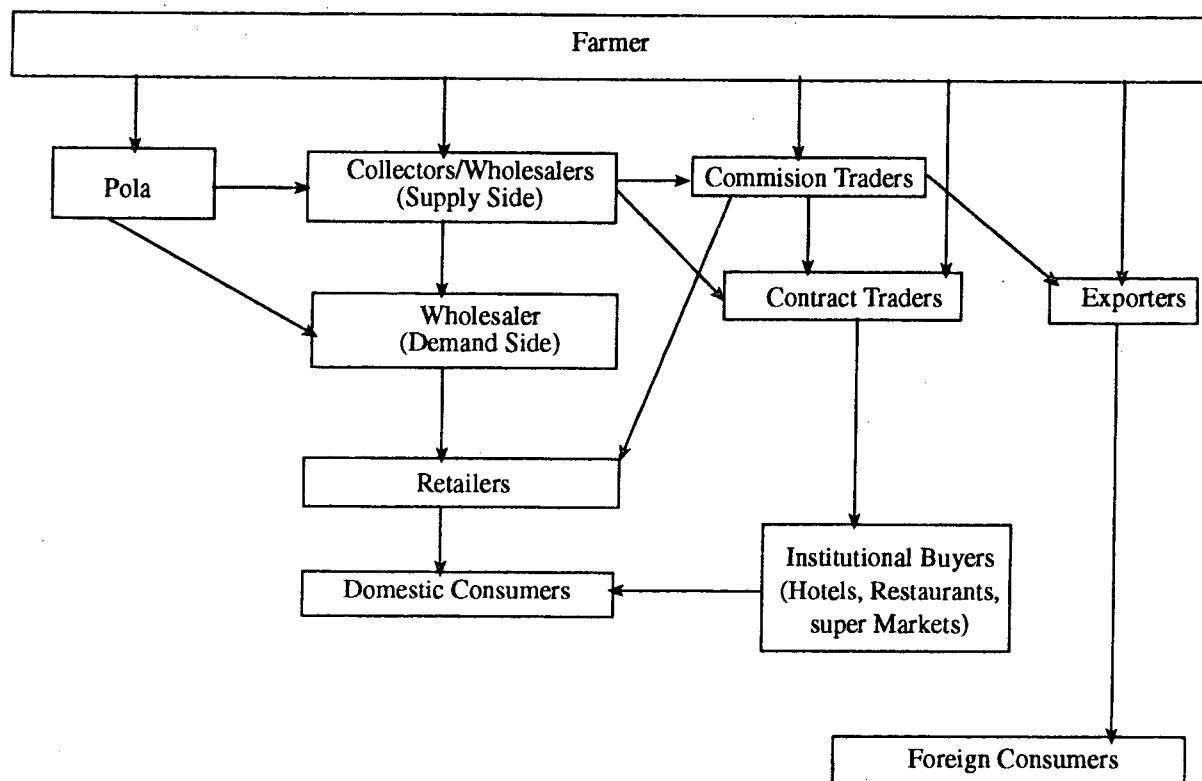
Annex I

COMPOSITION OF FOODS PER 100G/EDIBLE PORTION

	Energy kj	Energy kcal	Protein g	Fat g	Ca mg	Fe mg	Carotene ug	B1 mg	B2 mg	Niacian mg	C mg
Grains											
1. Paddy (Rice)											
- whole grain	1494	357	7.5	1.8	15	1.4	10	0.33	0.05	4.6	0
- raw, white	1507	360	6.7	1.7	10	0.9	-	0.08	0.03	1.6	0
- raw, brown	1503	395	7.1	1.1	14	1	2	0.16	0.04	2.5	0
- parboiled, white	1503	359	7.1	1.1	14	1	-	0.22	0.04	3.8	0
2. Maize	1490	356	9.5	4.3	15	2.3	270	0.45	0.11	2	0
3. Kurakkan	1390	332	6.5	1.7	350	4	60	0.35	0.05	1.5	0
Pulses											
4. Green Gram	1398	334	24	1.3	124	7.3	94	0.47	0.39	2.1	2
5. Cowpea	1432	342	23.4	1.8	76	5.7	24	0.92	0.18	1.9	2
6. Soya	1758	420	38	18	208	10.5	384	1.03	0.3	2.1	2
Tubers											
7. B'onions	167	40	1.4	0.2	32	0.5	30	0.03	0.04	0.2	9
8. Red onions	167	40	1.4	0.2	32	0.5	30	0.03	0.04	0.2	9
9. Potatoe - Irish	343	82	2	0.1	8	0.7	24	0.1	0.03	1.4	10
Sweet	490	117	1.3	0.4	34	1	36-4200	0.1	0.05	0.6	23
10. Manioc - Fresh	611	146	1.2	0.3	33	0.7	0	0.06	0.03	0.6	36
Dried	1415	338	1.3	0.3	91	3.6	0	0.23	0.1	1.4	0
Flour	1432	3423	1.5	0.3	85	2	0	0.04	0.04	0.8	0
Spices											
11. Dry Chillies	1030	246	15.9	6.2	160	2.3	345	0.93	0.43	9.5	50
12. Ginger Fresh root	280	67	2.3	0.9	20	2.6	40	0.06	0.03	0.6	6
Oil Seeds											
13. Gingelly (Sesame seeds)	2403	574	18.3	51.3	1200	9	36	1.01	0.34	4.5	0
14. Ground nuts (Peanut)	2357	563	25.6	43.4	82	2.8	28	0.84	0.12	16	0
Vegetables (Upcountry)											
15. Beans- Butter Kidney	147	35	2.1	0.9	63	1.5	362	0.7	0.12	0.4	20
Jack	356										
String	147	35	2.4	0.4	57	0.8	240	0.08	0.12	0.5	17
Winged	-	-	2.7	0.3	125	2.3	200	0.15	0.1	1.2	19
16. Carot leaves	322	77	5.1	0.5	340	8.8	3900	0.04	0.37	2.1	79
17. Cabbage	113	27	1.8	0.1	39	0.8	1200	0.06	0.09	0.4	124
Low Country											
18. Brinjal	100	24	1.2	0.2	15	0.4	-	0.04	0.05	0.6	5
19. Ladies fingers (Okra)	146	35	1.3	0.3	75	1.2	222	0.09	0.07	1	
20. Tomato -ripe	84	20	1.1	0.3	11	0.6	420	0.06	0.04	0.5	24
21. Banana (Plantains-ripe)	393	94	1.3	0.4	9	0.5	120	0.04	0.05	0.7	11
Fruits											
22. Pinapple	197	47	0.5	0.2	18	0.5	54	0.08	0.03	0.2	40
23. Mango	272	65	0.7	0.2	11	0.4	2700	0.05	0.06	0.6	48

Annex II

Major Marketing Channels for Vegetables



Annex III:

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