Chapter 3

AGRICULTURE, FISHING AND FORESTRY

3.1 Overall Trends

Though Sri Lanka has been engaged in agriculture for centuries its agriculture sector is still heavily concentrated on a few major crops: paddy, tea, rubber, coconut and a few other field crops. This concentration, while narrowing prospects for enhancing the incomes of people, has entailed the risk of depending on a single crop's performance for their livelihood. The short-run performance of the sector depends primarily on weather conditions, security situation and international commodity prices. In the long run, the growth of the sector is determined primarily by research and development efforts, extension services, infrastructure facilities, domestic trade policy, government intervention and international trade policies on agriculture.

TABLE 3.1

Agriculture, Livestock and Fishery Sector - Production Indices (1997-2000 as base period)

Item	2001	2002	2003(a)	% Change 2002/2003
Agriculture and Fishery (Overall)	100.9	103.3	104.9	1.5
1. Agriculture	100.3	102.1	105.0	2.8
1.1 Agriculture crops	98.5	100.4	103.5	3.1
Tea	103.1	108.3	108.0	-0.3
Rubber	89.3	93.9	95.4	1.6
Coconut	99.7	86.1	92.3	7.2
Paddy	101.1	107.3	115.1	7.3
Other Crops	94.7	98.7	98.9	0.2
1.2 Livestock	116.2	117.1	117.7	0.5
2 Fishery	104.30	110.9	104.3	-6.0

(a) Provisional

Sources : Central Bank of Sri Lanka
Relevant Authorities

During the last decade, yields of major agriculture crops increased, particularly due to increasing private sector participation, but they are still below the potential yields. Liberalisation and deregulation of seed, planting material, and land acquisition to some extent, together with privatisation of state farms have paved the way for a greater involvement of the private corporate sector in agriculture production. Meanwhile, growing fiscal constraints and competing needs indicated the unsustainability of continuation of untargetted agriculture subsidies. Infrastructure bottlenecks continued to hamper the proper distribution of agricultural produce, thereby, reducing margins available to farmers. Ad hoc trade policies created uncertainty, discouraging long-term private investment in agriculture. Trade protection in some of Sri Lanka's trading partner countries, particularly import restrictions and high tariff on tea have reduced the country's ability to reap the full potential from commercial agricultural crops.

Agriculture, livestock and fisheries sector recorded an overall growth in volume terms of 1.5 per cent in 2003. Favourable weather supported the recovery in paddy and coconut sectors, but tea production, mostly in low grown areas was affected by floods in May. Paddy and other field crops benefitted from the favourable security situation in the affected areas of the North and the East after the peace process was initiated in early 2002.

Paddy, rubber, coconut and a majority of other field crops performed better and contributed to the overall growth of the agriculture sector in 2003. Paddy output reached an all time high level by surpassing the previous peak output of 2,860 thousand metric tons in 2000 by 7 per cent.

The extents sown and harvested during both Maha and Yala seasons expanded, benefiting from better monsoons and improved security situation in the North and the East. Other field crops too performed better in 2003, but potatoes and big onions failed to do likewise.

Meanwhile, the tree crop sector recorded mixed results during 2003. Coconut production increased by 7 per cent, recovering from the lowest production in 2002 that was experienced in a decade. Rubber production, responding positively to attractive prices, increased by 2 per cent. However, tea production, which had recorded, the highest ever output in 2002, suffered a setback in 2003. The Iraq war that temporarily disrupted the tea market, the mid year floods and the earth slips that adversely affected the low country tea producing areas were the main reasons for this setback. Meanwhile, sugar production, recovering from three consecutive years of declining output, increased by 45 per cent in 2003, a direct result of positive incentives that emanated from the privatisation of the majority shareholding of both Pelwatte and Sevenagala.

3.2 Agricultural Policy and Institutional Support

The policy on agriculture in any economy should aim at developing a viable and sustainable agricultural sector capable of competing successfully with competitor countries, while sustaining the farmers engaged in agriculture. A necessary requirement to attain this goal is the flexibility and adoptability of the sector to absorb new technology and raise productivity so that its average costs remain competitively low. Such

Box 7

Estimation of a Production Index for the Agriculture, Livestock and Fishery Sector in Sri Lanka

Introduction

Agriculture contains several heterogeneous sub sectors. Consequently, assessing overall performance in the sector is difficult. One way to overcome this difficulty is to compute a production index, by giving appropriate weight to each heterogeneous sub sector.

Production indices are computed for different purposes. Hence, the indices compiled by different agencies may differ from one another because of differences in coverage, weights, and the choice of base year. For example, the Food and Agriculture Organisation (FAO) computes indices of agricultural production in different countries, which show the relative level of the aggregate volume of agricultural production for each year in comparison with the base period 1989-91. The main categories of the FAO production index include cereal, crops, food, livestock and non-food items excluding fodder crops. Production quantities in the FAO indices are computed after deducting quantities used as seed and feed. Therefore the index represents disposable production for any use, excluding seed and feed. The Department of Census and Statistics of Sri Lanka computes a volume index of agriculture and livestock production, annually. They compute separate indices for tea, rubber, coconut, paddy, highland crops, livestock, minor export crops and an overall index. However, this index is computed with a lag of about two years. Hence, a need has arisen to develop an up to date index covering all major sub sectors in agriculture to evaluate the performance of the agriculture sector. The Central Bank of Sri Lanka (CBSL) undertook this task to facilitate analysis required for monetary policy purposes.

Coverage of Indices

The Agriculture Production Index developed by the CBSL covers three sub-sectors, viz; Agriculture, Livestock and Fisheries. Each sub-sector is divided into several sub-categories. The agriculture sector covers plantation crops, paddy, which is the predominant crop in domestic agriculture, other crops categories such as other field crops, vegetables, fruits, export agricultural crops, sugarcane and tobacco. The livestock sector covers meat, milk and egg production. The fisheries sector covers marine, inland and aquaculture fish production. The overall index is compiled on an annual basis. However for the plantation sub-sector is compiled on a quarterly basis while for sub-sectors such as paddy, vegetable, other field crops indices are compiled on bi-annually basis.

Method of Calculation

Average values for the period 1997-2000 were used as base values for the annual index. The average of four years was taken to eliminate seasonal production patterns and variations due to changes in the weather patterns. Base values for the half- year and quarterly indices were computed by dividing annual values and volumes into two equal parts and four equal parts, respectively.

The volume index was calculated as a Laspeyres quantity index[1]. The volume index is calculated using commodities in the primary form before any value addition. Wherever data were available in a processed form they, were converted to primary products using relevant conversion factors (eg. green leaf for tea, dry rubber content for rubber, fresh nut for coconut etc.)

The value index was computed as a simple index of the ratio of values between the current period and the base period[2].

The price index is computed as the ratio between the value index and the volume index, thus becoming the Paasche index[3].

The coverage of the index is limited by the availability of data. Production data available with the Department of

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1 The Laspeyres index for year t is given by $Q_t = \frac{\sum p_{i_0} q_{i_t}}{\sum p_{i_0} q_{i_0}} \times 100$

where p_{i_0} is base year price of the i th commodity, q_{i_0} is the base year quantity of the i th commodity, q_{i_t} is the year t quantity of the i th commodity. For individual items and sub-groups of homogenous commodities / products, current year volumes were divided by respective base volumes, to obtain indices. For heterogeneous sub- groups of items, the sub-group index was calculated using Laspeyres index.

2 The index is defined as $V_t = \frac{\sum p_{i_t} q_{i_t}}{\sum p_{i_0} q_{i_0}} \times 100$ where p_{i_t} and q_{i_t} are price and quantity of the i th commodity at time t, respectively, p_{i_0} and and q_{i_0} are the price and quantity of the i th commodity in the base period. Annual / Half year/Quarterly values of each individual commodity/ product, sub-group of items, sub- category and major category were divided by their respective base values.

3 Paasche index is given by $P_t = \frac{\sum p_{i_t} q_{i_t}}{\sum p_{i_0} q_{i_t}} \times 100$

Box 7 (contd.)

Census and Statistics do not cover all the varieties of vegetables, fruits and other crops grown in the country[1]. The producer price/ farmgate price is used wherever data are available. Where price data are not available comparable producer prices are computed using wholesale and retail prices. The average producer price of paddy is computed using district level data. The all island average producer price is used for other seasonal crops.

Analysis of Indices

The agriculture volume index largely reflects the performance of the plantation crops and paddy sector. Paddy, tea and coconut together contribute to more than 50 per cent of the agriculture production as shown in Chart 1.

Chart 1
Value Shares of Major Categories
(Avg. 1997-2000)

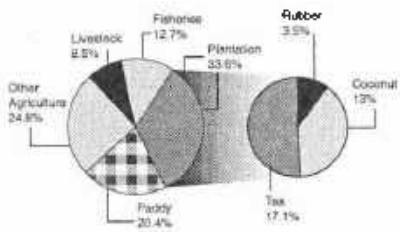


Chart 2
Annual overall Indices – Agriculture, Livestock and Fisheries
(Base 1997-2000)

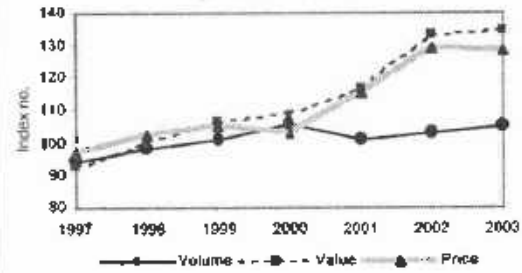


Chart 3
Annual Production Volume indices - Major categories
(Base 1997-2000)

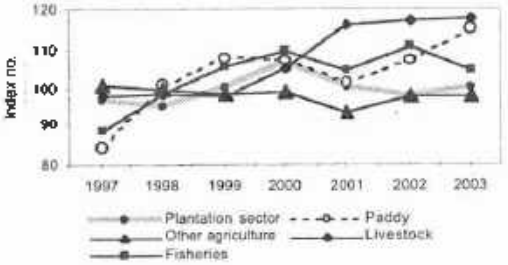
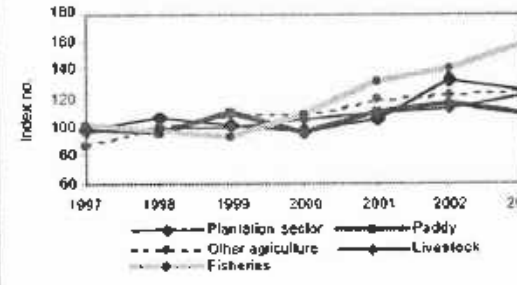


Chart 4
Annual Agriculture Price indices - Major categories
(Base 1997-2000)



The overall index shows an increasing trend and reported the highest value in 2000 mainly due to higher production of paddy, tea and coconut, despite a temporary setback in 2001 due to drought. In 2002, the sector recovered with the improved paddy harvest and a record tea crop. In 2003, the overall agricultural production index increased further as shown in Chart 2, due to a substantial increase in the paddy harvest. The volume index of the other agriculture sector has shown a decline in recent years compared to the base period as a result of decreases in the output of OFC such as chillies, onions, black gram, cowpea, green gram, maize and some varieties of fruits and sugarcane. Livestock production showed an increasing trend as a result of the active participation of the private sector in the poultry sector, which contributed increased production of poultry meat and eggs in recent years. Milk production too improved, due to the increase in the price paid for fresh milk and improvements made in the milk collection network.

In 2000 paddy prices and coconut price were relatively low due to bumper harvest as reflected in the value in price indices in 2000. Unlike in the crop sub-sector, price and value indices of the livestock and fishery sub sector increased continuously.

1 Due to lack of data, crops such as edible green leaves, herbs, flowers, foliage plants, plant material such as bamboo, rattan and fibres, condiments, forest products etc had to be excluded.

agricultural policies normally span a wide spectrum of areas such as agricultural research, new technology and its costless transfer, diversification of crops, liberalisation, deregulation and provision of incentives through privatisation, price stabilisation, input management, subsidies and extension services and environmental protection for sustainable development. All these policies should establish the necessary incentive structure so that the sector could move forward without continuous external support. The country's agricultural policy was spelled out in two statements made by the Ministry of Agriculture and Livestock (MAL), and the Council for Agriculture Research and Policy (CARP). The policy thrust was focussed on uplifting the agricultural sector whose contribution to the national economy and return to investment have been well below the potential.

The National Policy on Agriculture and Livestock (NPAL) drafted by MAL for the period from 2003 to 2010 emphasises the need for mobilising both state sector and private sector involvement and developing human resources to transform the domestic agriculture and livestock industry into a sustainable and strong economic force. As expansion of land area is limited, intensifying production technology assumes greater priority. This is complemented by the National Agriculture Research Policy formulated by CARP, which emphasises the need for demand driven research and the development of technology in areas such as plant breeding, crop improvement, hybrid seed development, integrated pest management, bio-pesticides and bio-fertiliser development, irrigation water management, soil fertility management, fruit and floriculture development, and post harvest processing. The policy also attempts at streamlining extension services and improving the process of dissemination of information and technology.

Other key reform areas identified in the NPAL are market reforms, enhancing the role of private entrepreneurship in agriculture, closer integration with the food processing industry, and conservation and sustainable use of resources.

In 2003, government efforts were focussed on productivity improvement and crop diversification, developing marketing infrastructure, increasing private sector participation, input management and agriculture price stabilisation.

With the intention of improving productivity and crop diversification, CARP awarded in 2003 Rs.118 million for 83 research projects conducted by different research institutions, universities and the private sector in areas of plant breeding, plant pathology, food technology, soil and fertiliser improvement, agronomy, horticulture, and plant protection.

To improve marketing infrastructure, two dedicated economic centres were developed at Meegoda and Embilipitiya in 2003. Those centres provided a convenient trading floor for farmers to sell their products to the retail and wholesale dealers directly, thereby realising a better price for their produce. The Central Bank of Sri Lanka continued its efforts to popularise the Forward Sales Contract Scheme. An added feature of the scheme was its facilitation to obtain credit by both the producer and the buyer through participating banks.

The Seed Act was passed in the Parliament in 2003 which will protect farmers' right to obtain good quality seeds and planting material, while improving the standards of the seed and planting material production industry.

The Sri Lanka Tea Board granted an interest subsidy of 50 per cent on working capital loans for private tea factory owners to overcome the financial difficulties faced by them due to the drop in prices at the time of the war in Iraq. SLTB also allocated Rs. 10 million to be paid among the factory owners for repairing damaged machinery and equipment from the floods. The government paid Rs. 45.7 million as compensation to tea factory owners in the districts of Galle, Matara and Ratnapura for the losses incurred in green leaf and stocks of made tea due to the floods in May 2003.

The fertiliser subsidy scheme continued to operate in 2003 where a fixed sum of Rs 6,000 per metric ton was given for Urea, irrespective of the international price. As expected, the new scheme encouraged imports when international prices were low.

The government made specific attempts to enhance the private sector participation in agriculture development. An umbrella body for the tea industry, Tea Association of Sri Lanka, was formed as a federation of six key stakeholders in the industry. The stakeholders are the Planters' Association of Ceylon, the Colombo Tea Traders Association, the Tea Exporters' Association, Sri Lanka Federation of Tea Small Holdings Development Societies, Private Tea Factory Owners Association and the Colombo Brokers' Association. The Association will be initially funded by the Asian Development Bank under the Plantation Development Project. The Parliament passed a bill to increase the number of members of the Rubber Research Board up to eleven to accommodate greater private sector participation. Of those eleven members, seven will be appointed from the private sector representing various sectors in the rubber industry.

In 2003, ten managing agents with controlling interests in 13 regional plantation companies agreed to reduce the management fees from 50 per cent to 10 - 20 per cent. The lower fee structure follows a formula based on the percentage of profit before the payment of interest, corporate tax, depreciation and amortisation and covers a period of five years beginning from 2004. The fee will be gradually reduced to a low level of 10 per cent by 2008, the final year of this agreement. Companies subscribing to the new structure will be eligible for credit under the ADB funded US dollar 135 million loan scheme provided at a concessionary interest rate.

The Cabinet of Ministers approved the restructuring of nine loss making National Livestock Development Board farms in 2003 by way of privatisation or appointing managing agents. The earmarked farms are Ridigama farm, Kandakaduwa farm (North Central), Kandakaduwa farm (Southern), Haragama

farm, Ipil Ipil farm, Martin farm, Welikanda farm, Kottukachchiya farm and Parasangahawewa farm.

On the tariff front, the specific duty on rice was raised from Rs.5 per kg to Rs.7 per kg on 5 March 2003 and then increased to Rs. 9 per kg on 21 August, 2003. With effect from 4 September 2003, the specific duty of Rs.6 per kg on big onions and Rs.3.50 per kg on sugar were raised to Rs.8 per kg and Rs.3.75 per kg, respectively.

Agriculture sector is facing new issues and challenges arising from gradual liberalisation, openness and globalisation. Policy inconsistency and the lack of a well specified time frame for liberalisation hinders investment in the sector. The shortage of agricultural labour will continue to be a serious problem. Land fragmentation will worsen this problem, as it does not permit labour substitution through mechanisation. It would be increasingly difficult to oppose any forces of creative destruction arising from evolving international and domestic developments until Sri Lanka's agriculture falls on to a self-sustainable path. However, there is a need to continue to prepare a conducive macroeconomic environment, while promoting research and development to uplift the sector from its current plight.

3.3 Export Crops

Tea

Tea production in 2003 declined by 2 per cent from the peak output of 310 million kg. in 2002 to 303 million kg. Floods and earth slips affected low elevation tea production, while the dry spell that prevailed in December 2003 affected the production in all three elevations. High grown tea production reported a decline of 6 per cent to 82 million kg, while medium grown tea output also declined marginally. The low grown teas, which accounted for over 55 per cent of the total output, declined by 1 per cent to 168 million kg. The production of cut, tear and curl (CTC) teas at 17.6 million kg declined by 1 per cent compared to 2002. In 2003 tea imports for blending and re-exports increased from 2.5 million kg to 4.5 million kg.

As in the previous year, the smallholder sector continued to play a dominant role in the tea industry contributing 62 per cent of the national output in 2003. About 82 per cent of the smallholders are concentrated in low grown areas. The average yield in smallholder sector declined by 1 per cent to 2,267 kg per ha in 2003 due to the adverse effect of floods. The estimated average yield in the estate sector in 2003 was 1,399 kg per ha, while the estimated national average yield was 1,834 kg per ha in 2003[1].

During the year, the cost of production of tea increased by 9.3 per cent to Rs 135.58 per kg due to increases in prices of inputs such as fertiliser, agrochemicals, fuel and electricity. Wage increases implemented in July 2002, also contributed to the increase in cost of production.

[1] Average yield of the estate sector is based on the bearing extents provided by the Plantation companies, while the smallholder yields are provided by TSHDA.

TABLE 3.2
Statistics of the Tea Sector

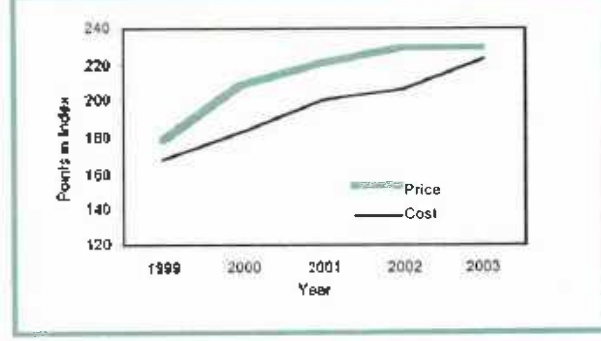
Item	Unit	2001	2002(a)	2003(b)
1. Production	kg.mn.	295	310	303
High grown	kg.mn.	75	87	82
Medium grown	kg.mn.	54	54	54
Low grown	kg.mn.	166	169	168
2 Extent				
Total extent (c)	hectares '000	180	189	188
Extent in bearing (d)	hectares '000	165	165	165
3. Fertiliser used	mt '000	167	185	187
4. Replanting	hectares	1,018	1,029	936
5. New Planting	hectares	402	562	642
6. Prices				
Colombo Auctions	Rs./kg.	143.96	149.30	149.05
Export (f.o.b)	Rs./kg.	208.89	216.26	221.01
7. Cost of production (e)	Rs./kg.	121.57	124.06	135.58
8. Exports	kg.mn.	295	292	296
9 Export earnings	Rs. mn.	61,602	63,105	65,938
	US$ mn	690	660	683
10. Value added as % of GDP (f)		2.3	2.4	2.3

(a) Revised
(b) Provisional
(c) Extents revised based on the estate sector survey conducted in 1999 by the Tea Commissioner's Division. (excludes abandoned tea lands)
(d) Based on the data provided by Plantation Companies and Tea Small Holdings Development Authority.
(e) Includes green leaf suppliers profit margin
(f) In growing and processing only

Sources: Sri Lanka Tea Board
National Fertiliser Secretariat
Tea Small Holdings Development Authority
Plantation Companies
Central Bank of Sri Lanka

Commensurate with the drop in production, the quantity of tea traded at the Colombo Auctions also declined by 2 per cent to 304 million kg in 2003. The annual average Colombo Auction price in rupee terms declined marginally to Rs 149.05 per kg in 2003, while in US dollar terms it declined by 1 per cent to US dollar 1.54 per kg. This reflects a decline in tea prices during first half of the year as a result of uncertainties caused by the war in Iraq. Furthermore, global tea prices were not very attractive during 2003 due to an increase in output in all other major producing countries. As a result of lower prices and high cost of production, many

Chart 3.1
Price and Cost of Production Indices: Tea (1990=100)



plantation companies faced financial difficulties, leading to curtail capital investment development and replanting on the estates. The delays in the availability of funds under the Asian Development Bank's Plantation Development Project (PDP) for financing, hindered the development of some tea estates under plantation companies.

Tea exports from Sri Lanka, increased by 2 per cent to 298 million kg during 2003 in comparison to the previous year, due to the running down of the carryover stocks from 2002. The total export earnings from tea in rupee terms stood at Rs. 66 billion (US dollars 683 million), indicating an increase of 4.5 per cent, compared to the previous year. The share of bulk tea exports declined from 64 per cent to 59 per cent due to an increase in value added teas such as tea packets, tea bags and instant tea. This resulted in an improvement of average export price for tea in 2003.

With a view to encouraging the development of the 'Ready to Drink' (RTD) tea, the Sri Lanka Tea Board has initiated a financial assistance scheme by way of an interest subsidy. Under this scheme, 50 per cent of the interest cost on loans obtained from banks or approved lending institutions for the procurement of necessary machinery to manufacture RTD teas is subsidised by the Sri Lanka Tea Board up to a period of five years. The maximum amount of the loan is Rs. 20 million per project.

The Tea Small Holdings Development Authority (TSHDA) continued to support the tea smallholders by providing necessary advisory and extension services and implementing tea planting subsidy schemes together with special incentive scheme for replanting. The total subsidy disbursed to small holders for replanting, new planting and infilling of tea amounted to Rs 157 million in 2003. Further, the THSDA continued the fertiliser distribution scheme under the credit facilities for the benefit of smallholders.

Rubber

For the second consecutive year, rubber production increased though marginally (1.6 percent) to 92 million kg in 2003. Attractive prices during the year encouraged growers to increase tapping intensity to raise rubber production. However, output increases fell from the potential due to a greater number of rainy days during 2003.

There was a shift from crepe rubber to the manufacture of sheet rubber in response to higher profit margins in producing sheet rubber. Consequently, sheet rubber output increased by 17 per cent and accounted for 54 per cent of the total output compared to 47 per cent reported in 2002. Crepe rubber output declined by 14 per cent and accounted for 24 per cent of total output compared to 29 per cent in 2002.

The upward trend in Colombo Auction prices, which commenced in April 2002, continued during 2003. The Colombo Auction price of all grades of rubber increased to the highest rupee prices ever on record. The average auction prices of all grades of RSS at the Colombo Auction increased by about 50 per cent in rupee terms. The annual average prices of latex crepe rose around 60 per cent.

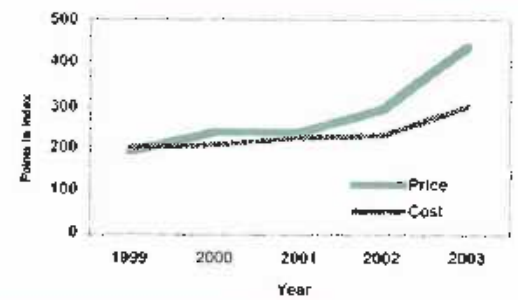
TABLE 3.3
Statistics of the Rubber Sector

Item	Unit	2001	2002(a)	2003(b)
1. Production	kg.mn.	66	91	92
2. Area (c)				
Under cultivation (c)	hectares '000	157	157	129
Under tapping (c)	hectares '000	132	125	101
3. Yield	kg./hectare	653	724	911
4. Fertiliser used	mt '000	9	7	8
5. Replanting (d)	hectares	557	712	564
6. New Planting (d)	hectares	141	141	450
7. Prices				
Export (f.o.b)	Rs./kg	66.35	69.53	105.25
Colombo (RSS 1)	Rs./kg.	54.70	68.76	102.50
8. Cost of production (e)	Rs./kg	48.00	54.00	63.30
9. Exports	kg.mn.	32	37	35
10. Domestic consumption	kg.mn.	54.4	54.4	56.8
11. Export earnings	Rs. mn	2,129	2,552	3,718
	US$ mn	24	27	39
12. Value added as % of GDP (f)		0.4	0.5	0.6

Sources : Rubber Development Dept.
National Fertiliser Secretariat
Central Bank of Sri Lanka

(a) Revised
(b) Provisional
(c) Extent under rubber has been revised based on the census of Agriculture conducted by the Dept. of Census in 2002
(d) Extents covered by cultivation assistance schemes of the Rubber Development Department
(e) COP revised in 2002 based on a survey conducted by the Rubber Development Dept. in 2003
(f) In growing and processing only

Chart 3.2
Price and Cost of Production Indices: Rubber (1990=100)



The national average yield of rubber increased by 26 per cent to 911 kg per hectare. However, this yield is still well below the potential yield of 1,500 – 2,000 kg per ha estimated by the Rubber Research Institute and the yield levels are well below those in major competing countries like Thailand (1,531 kg/ha) and Malaysia (1,047 kg/ha). The low yield levels are mainly attributed to non application of recommended levels of fertiliser, poor usage of rain guards, poor usage of high yielding clones, non adherence to systematic infilling practices, and scarcity of competent and skilled tappers. Most of the practices mentioned above are directly related to the productivity and income in the sector. Scarcity of tappers is posing a serious problem to the industry. Owing to the relatively lower wages

and the low dignity attached to the occupation, members of the younger generation are reluctant to be employed as tappers even though tapping is a skilled job.

New planting of rubber recorded more than a three-fold increase (by 219 per cent) to 450 hectares during 2003. Prevailing high prices encouraged new planting but discouraged the uprooting of mature trees. As a result replanting declined by 20 per cent to 564 hectare during the year. In 2003, Rubber Development Department disbursed Rs. 62 million and Rs. 28 million for replanting and new planting, respectively. Since the replanting subsidy covers only a small portion of the cost of replanting, the Ministry of Plantation Industries is planning to increase the subsidy.

The domestic consumption of rubber in the industrial sector increased by 4.4 percent to 57 million kg and accounted for 62 per cent of national rubber output in 2003. The amount of rubber imported to the country in 2003 increased by 85 percent to 9 million kg. The quantity of rubber exported as intermediate product declined by 4 per cent to 35 million kg due to high domestic demand.

Coconut

Coconut output in 2003 grew by 7 per cent reaching 2,562 million nuts. Improvement was seen mostly in the second half due to the lagged effect of the favourable weather that prevailed in 2002. Furthermore, the application of fertiliser was encouraged due to attractive coconut prices that prevailed in 2002.

The nut equivalent of the desiccated coconut production increased by 50 per cent to 369 million nuts reflecting the benefit of increased crop. However, the nut equivalent of coconut oil production declined by 58 per cent to 110 million nuts, the lowest level recorded in the last ten years. Oil production declined, as millers could not compete with imported edible oil after the removal of the surcharge in September 2002. Exports of other kernel products increased significantly during the year. Copra exports increased by 44 per cent, while the export of fresh nuts too rose by 42 per cent during the year. Nut equivalent of coconut cream, milk and milk powder production almost doubled to (93 per cent increase) 63 million nuts.

Chart 3.3
Price and Cost of Production Indices: Coconut (1990=100)

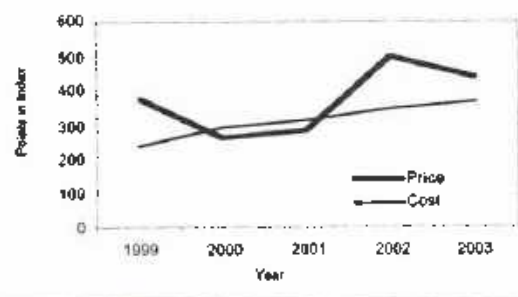


TABLE 3.4
Statistics of the Coconut Sector

Item	Unit	2001	2002(a)	2003(b)
1. Production (c)	nuts mn.	2,769	2,392	2,562
Desiccated coconut	nuts mn.(d)	408	246	369
Coconut oil	nuts mn.(d)	566	265	110
Copra (e)	nuts mn.(d)	81	71	102
Fresh nut exports	nuts mn.	28	24	34
Domestic nut consumption (i)	nuts mn.	1,786	1,815	1,634
Coconut cream and milk powder	nuts mn.(d)	30	32	63
2. Total Extent	hectares '000	439	439	439
3. Replanting/ Underplanting (g)	hectares	887	953	1,226
4. New planting (g)	hectares	993	904	1,098
5. Fertiliser used	mt '000	30	38	39
6. Cost of Production	Rs./nut	3.65	3.85	4.10
7. Retail Price of a Fresh Nut	Rs./nut	10.50	14.87	13.40
8. Average export price f.o.b. (h)	Re./nut	7.05	12.06	9.96
9. Export earnings	Rs.mn.	7,348	8,009	8,926
	US$ mn.	82	84	93
Kernel products (h)	Rs.mn.	3,639	3,957	4,601
	US$ mn.	41	41	48
Other products	Rs.mn.	3,709	4,052	4,325
	US$ mn.	42	42	45
10.Value added as % of GDP (i)		2.0	2.0	2.0

(a) Revised
(b) Provisional
(c) Estimated (breakdown does not add up to total production due to adjustments for changes in stock)
(d) In nut equivalent - converted at
1 mt DC = 8,000 nuts
1 mt Oil = 8,800 nuts
1 mt Copra = 5,775 nuts
1 mt Coconut cream/milk powder = 8,000 nuts.
(e) Net exports only
(i) Estimated on the basis of household per capita consumption of 94.8 nuts per year. Excludes industrial use.
(g) Extents covered by cultivation assistance schemes of the CCB.
(h) Three major coconut kernel products only.
(i) In growing and processing only.

Sources :Coconut Cultivation Board
Coconut Development Authority
National Fertiliser Secretariat
Central Bank of Sri Lanka

The average domestic price of desiccated coconut declined by 20 per cent to Rs. 71.36 per kg. Meanwhile the average export price of desiccated coconut in US dollar terms was 22 per cent lower than in 2002. Average domestic fresh nut (retail) prices declined by 10 per cent to Rs. 13.40 per nut in 2003 reflecting the impact of increased output.

Other Export Crops

The other export crops sector, which consists of spices and other agricultural commodities such as unmanufactured tobacco, arecanut, cashew kernels, essential oils, foliage plants and cut-flowers, reported a mixed performance in 2003. Earnings from this sector, as a whole declined (in rupee terms) by 14 per cent to over Rs.14.5 billion due to low export prices received for many commodities as well as a decline in export volumes of major commodities such as cloves, unmanufactured tobacco, pepper, arecanuts, cocoa beans and cashew kernels.

TABLE 3.5
Production of Other Export Crops

metric tons

Crop	2001	2002 (a)	2003 (b)
Coffee	2,350	2,360	3,090
Cocoa	1,275	1,100	1,100
Cinnamon	13,600	13,000	14,015
Pepper	7,650	12,600	12,660
Clove	2,700	4,100	2,360
Cardamom	60	60	64
Nutmeg and Mace	1,100	1,600	1,740
Cashew	1,239	1,292	1,645

(a) Revised
(b) Provisional

Source : Department of Export Agriculture
Sri Lanka Cashew Corporation

However, as in the previous year earnings from this sector exceeded the total export earnings from rubber and coconut.

Cinnamon is the most important crop in this sector. The extent under cinnamon cultivation is estimated at approximately 25,300 hectares. Sri Lanka is the world's largest producer and exporter of cinnamon accounting for nearly two thirds of the global output. According to estimates of the Department of Export Agriculture (DEA), cinnamon production during 2003 increased by 8 per cent, but both, farmgate prices and export prices declined marginally compared with the previous year. Export earnings from cinnamon in primary form amounted to Rs 4.3 billion, while earnings from cinnamon bark oil and leaf oil exports amounted to Rs 224 million. There has been a steady increase in earnings from cinnamon exports in the recent years and it has become the third largest export agricultural crop, next to tea and coconut since 1998. There is a considerable potential for Sri Lanka to increase value added exports from cinnamon instead of exporting it as a primary product.

According to provisional estimates, there was no change in output of pepper compared to the previous year. However, the export volume declined by 2 per cent to 7,740 metric tons. Export price too was lower than the previous year, which reduced the export earning from Rs 1.5 billion to Rs 1.2 billion.

Clove production declined by about 42 per cent to 2,360 metric tons in 2003. The drop in output is attributed to the inclement weather that prevailed in May in some parts of Ratnapura, Kalutara, Matara and Galle districts. The drop in production coupled with low export prices resulted in a significant decline in the export earnings from cloves. Exports of cloves declined by 38 per cent to 2.5 million kg, and the export earnings dropped to Rs.575 million in 2003 from Rs 2.7 billion in 2002.

Cashew kernel production increased by 29 per cent during 2003. Extents under cashew increased steadily during recent years as a result of the assistance provided by the Sri Lanka Cashew Corporation (SLCC) for cultivation, marketing and processing. Hence, as at 2003, the extent under cashew reached 35,646 ha. The organic cashew cultivation scheme initiated by the SLCC continued in 2003. In order to supply superior plants to farmers at the regional level a seed garden was established at Wilachchiya in Anuradhapura district in 2003 in addition to Eluwankulama seed garden. With the collaborative planting programmes, extension services, research and marketing programmes, it is expected that cashew industry will develop further in the future.

The foliage and cut flower sector made a significant contribution to the export earnings during the year. Export earnings from foliage plants, rooted cuttings and cut flowers rose by 17 per cent to Rs. 925 million during 2003. This sector expanded its activities with the assistance provided by the Department of Agriculture (DOA) and the Export Development Board (EDB). DOA continued to assist the floriculture sector by providing technical assistance, conducting training programmes, and issuing plant varieties though the National Botanical Gardens. EDB too assisted to develop the floriculture sector especially by providing advisory services to exporters and potential exporters by facilitating participation in international trade fairs.

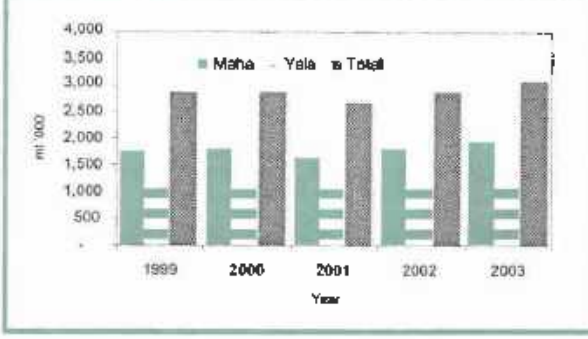
The DEA continued to play a major role for the development of the export agriculture sector by implementing subsidy schemes and providing necessary inputs, technical information and extension services in cultivating and processing spices. However, the subsidies disbursed under the Export Agriculture Assistance Scheme declined further to Rs 22.6 million during 2003 due to lack of funds. As in 2002, more than 50 per cent of the subsidy payment was for pepper. The ADB funded Second Perennial Crop Development Project (SPCDP) continued to operate its fifth year in 2003 to assist fruit crops, spices and horticulture sector by providing credit facilities through eight participatory banks. SPCDP also continued to assist DOA and DEA in the production of seeds and planting material and in supply of farm advisory, marketing and technical services through its projects.

3.4 Domestic Agriculture

Paddy

Paddy production during the 2003 cultivation year reached an all time high level of 3,071 thousand metric tons (147 million bushels) surpassing the previous peak output in 2000 by 7 per

Chart 3.4
Paddy Production



cent. Output in both seasons reached record high levels. Favourable climate as well as the cessation of hostilities in the Northern and the Eastern provinces contributed to the overall improvement. Extents sown and harvested during both seasons improved significantly. Output in the Maha Season surpassed the previous best Maha output in 2000 by 6.4 per cent. Output in Yala increased by 4.9 per cent over the previous best output reported in 1999. However, for the second consecutive year the annual average yield dropped as marginal lands came under cultivation as adequate rainfall prevailed during the two cultivation seasons. The annual average yield declined by 3 per cent to 3.8 metric tons per hectare. Even though the annual average yield of paddy declined for the second consecutive year after reaching a peak in 2001, the paddy yield in Sri Lanka is much higher than in many other countries in the region (see Box 7), though it is still below the potential yield.

Increasing costs of cultivation and the small scale of production resulted in very low average net income per paddy farmer in Sri Lanka. The cultivation unit has declined steadily because of fragmentation of holdings, which denies benefits of economies of scale and raises the cost of production. Prices of inputs such as fertiliser, agro chemicals, seed paddy, machinery and labour have been growing steadily. Labour constitutes the largest share accounting for over 50 per cent of the total cost of production. Furthermore there is a scarcity of labour during the peak planting and harvesting periods. Fertiliser accounts for about 12-15 per cent of the total cost of production.

Paddy output during the 2002/2003 Maha season increased by 7 per cent, despite a 5 per cent drop in yield, with increased extents harvested. Of the 27 agricultural districts, in 15 districts in the dry and intermediate zones production increased. All the districts in the Northern province reported increased production and accounted for 7 per cent of the total Maha output. As in the previous year, the five major paddy producing districts of Ampara, Kurunegala, Anuradhapura, Polonnaruwa and Mahaweli "H" area together accounted for more than half the Maha output (52 per cent.).

Output during the Yala season increased by 8 per cent, despite the yield dropped marginally. The extents harvested during the Yala increased by approximately 9 per cent over the previous Yala Season. Output in the Anuradhapura district increased by 72 per cent, while notable other increases were reported from Mahaweli "H" area (38 per cent), Hambantota (34 per cent) and Trincomalee (24 per cent). Three major paddy producing districts of Ampara, Polonnaruwa and Kurunegala accounted for almost half of the Yala output (49 per cent). For the tenth consecutive year, Ampara reported the highest output and accounted for almost one fifth of the total Yala production (19 per cent).

The farmgate price of paddy dropped especially during the harvesting periods. Any information on exaggerated output than actual production leads to adverse expectations on prices. Therefore, when disseminating future paddy production projections the impact on farmgate prices should be taken into account. To support farmgate price the government increased the specific duty on imported rice from Rs.5 to Rs.7 per kg with effect from 5 March 2003. Subsequently, with a significant Yala output this was increased further to Rs. 9 per kg with effect from 19 August 2003. After adjusting for seed paddy requirements and post harvest losses, the paddy production during the year accounted for 98 per cent of the domestic requirement. The balance requirement was imported and the quantity imported during the year amounted to 35 thousand metric ton compared with 95 thousand metric ton in 2002.

Two new varieties of high yielding paddy, bred at Bombuwela and Ambalanthota, were released during the year by the Department of Agriculture, which could help to increase yield in the future.

TABLE 3.6

Statistics of the Paddy Sector

Item	Unit	2002(a)			2003(b)		
		Maha	Yala	Total	Maha	Yala	Total
Gross extent sown	hectares '000	510	342	852	602	381	983
Gross extent harvested	hectares '000	499	321	820	560	352	911
Net extent harvested	hectares '000	444	290	734	499	317	817
Production	mt '000	1,774	1,086	2,860	1,895	1,177	3,071
	bushels '000	85,002	52,027	137,029	90,785	56,372	147,157
Yield (c)	kg./ hectare	3,990	3,742	3,895	3,794	3,709	3,761
Credit Granted	Rs mn.	234	315	549	445	493	938
Purchases under the GPS	mt '000	-	-	-	-	-	-
Rice imports	mt '000	-	-	95	-	-	35
(Paddy equivalent)	(mt '000)	-	-	140	-	-	51

(a) Revised.
(b) Provisional
(c) Yield per hectare for Maha and Yala are calculated using data from the Department of Census and Statistics which are based on crop cutting surveys while total yield is calculated by dividing total production by the net extent harvested.

Sources : Department of Agriculture
Ministry of Agriculture and Livestock
Department of Census and Statistics
Sri Lanka Customs
Central Bank of Sri Lanka.

Box 8

Is Sri Lanka's Paddy Yield Low?

It is often claimed that the paddy yield per unit of land area is very low in Sri Lanka. Some even advocate the abandoning of paddy cultivation because of poor productivity compared to other countries. However, a comparison of the yields in comparable countries in the region shows that the average yield in Sri Lanka is much higher than in most of those countries. For instance, yields in Sri Lanka are higher than in several major rice exporting countries such as Thailand, Myanmar and Pakistan. Sri Lanka's paddy yields cannot be compared with yields in countries like Japan or Korea because they have temperate climates and longer day lengths, which result in more photosynthetic activity and higher yields.

Yields in Major Rice Producing Countries in the Tropical Region (kg/ha)

Country	1999	2000	2001	2002
India	3,236.1	2,852.3	2,131.5	2,839.5
Indonesia *	4,251.9	4,400.7	4,387.9	4,473.2
Madagascar	2,128.4	2,050.8	2,195.2	2,196.2
Myanmar	3,240.5	3,383.4	3,417.4	3,674.2
Pakistan	3,074.4	3,031.2	2,754.2	3,017.9
Philippines	2,946.8	3,068.1	3,186.6	3,279.7
Sri Lanka	3,672.0	3,856.4	3,954.3	3,895.2
Thailand	2,424.5	2,612.8	2,618.6	2,564.1

Source: FAO database/DCS, Sri Lanka

* Certain areas in Indonesia belong to temperate zones and have longer day lengths, which results in higher yields. Further Indonesian soils are more fertile because of volcanic activity.

Other Field Crops

In 2003, the other field crops which include grain legumes, cereal crops, tuber crops and others performed better than the previous year except potato and big onion. Soya bean output increased for the second consecutive year and reported a more than two fold increase due to an increase in the extent cultivated as well as an improvement in the yield. Other grain legumes which reported improved outputs were cowpea (39 per cent), black gram (17 per cent) and green gram (10 per cent). Almost the entire improvement in the output of cowpea and green gram was due to an expansion in the extent under cultivation. Black gram output increased due to increases in both extent and the yield levels.

Output of chillies during 2003 remained at the same level as in 2002. However, chillie production declined steadily during the last decade and the present output is about one third of the output in the early 1990s. This is mainly due to the inability of domestic producers to compete with imported chillies. The cost of production of chillies has increased with escalating prices of inputs and stagnated yields. To protect the domestic chillie farmers a specific duty of Rs.30 per kg was imposed in March 2002. This specific duty was maintained at the same level throughout 2003.

Output of potato which increased steadily since 1998 reported a 19 per cent drop due to a reduction in the extent cultivated as well as a drop in the average yield. The heavy protection given to potato farming resulting in higher profitability has encouraged farmers to resort to repeated cultivation of potato in the same fields without adhering to the recommended practices of crop rotation. Continuous cultivation leads to the build up of soil borne pathogens, which is very detrimental to potato yields.

Red onion production reported an increase of 1 per cent, while big onion production declined by 2 per cent.

Reflecting the impact of domestic output decline, potato and chillies imports increased by 7 per cent 10 per cent, respectively.

Fruits and Vegetables

Overall vegetable production increased by 2 per cent to 552,000 metric tons in 2003. Both low country vegetables and up country vegetables reported production increases. The extent cultivated under vegetables increased by about 3 per cent during the year. This was the combined effect of a 6 per cent increase of the extent under 2002/03 Maha season and about 2 percent drop in the extent cultivated during 2003 Yala season. However, in spite of an increase in the output of vegetables the prices reported an increase during the year. A major portion of the production is consumed locally and exports are less than 1 per cent of the domestic production.

There was an increase in overall fruit production in 2003. The production of banana, mango and papaw increased, while pineapple production declined compared to the previous year. However, prices increased due to high demand particularly from the recovering tourist sector. During 2003, Sri Lanka imported more than 52,600 metric tons of fresh and dried fruits,

valued at Rs. 1.8 billion. Of the total volume of imports, apples accounted for 43 per cent.

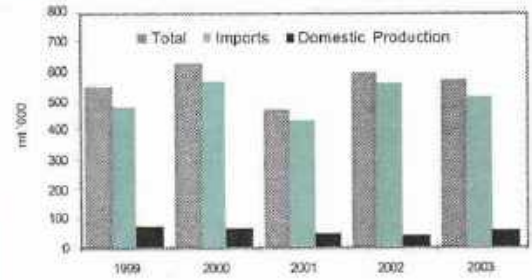
DOA has released several new varieties of high yielding fruits, vegetables, leafy vegetables, root crops, and condiments during the year and carried out several training programmes on protected agriculture and post harvest processing. The Institute of Post Harvest Technology (IPHT) introduced plastic crates for transportation of fruits and vegetables from collectors in Keppetipola, Mahaweli system G and H to wholesale market in Colombo and the Dedicated Economic Centre in Dambulla, under their 'Fresh Produce Chain' project to reduce post harvest losses during transportation, which are very high in Sri Lanka. Under this project 5,836 crates have been purchased by collectors and several such chains are now in operation. IPHT is conducting research to further develop post harvest handling. It also carried out training programmes towards upgrading the knowledge of producers, processors, traders and extension officers in both public and private sectors in the area of post harvest loss prevention and development of value added agro-processing enterprises.

During 2003, more than 9.4 million kg of vegetables and 7.7 million kg of fresh and dried fruits, valued at Rs 679 million and Rs 605 million respectively were exported. In addition, the processed fruit and vegetable exports amounted to 7.6 million kg, valued at Rs 801 million. Even though a large variety of fruits are being exported only a few export oriented commercial cultivation is done except for pineapple. Cultivation in controlled environment, using tissue culture plants would help to increase the output as well as the quality of the output.

Sugar

After the privatisation programme, consisting of a sale of 90 per cent of the government's share in Sevanagala and 53 per cent of the share at Pelwatte to the private sector in 2002, sugar production is showing positive results by way of increased outputs at both the factories. Consequently, sugar production

Chart 3.5
Total Sugar Availability



in 2003 increased by 42 per cent to 54,365 metric tons following the output declines over the previous three years. The output at Pelwatte and Sevanagala which increased by 57 per cent and 18 per cent, respectively, is attributed entirely to an increase in the quantity of cane crushed since the sugar recovery rates declined.

The quantity of cane crushed at Pelwatte increased by 67 per cent. Improvements in both own and private cane cultivation contributed towards the overall performance. At Sevanagala the cane crushed increased by 20 per cent. Domestic production caters to less than 15 per cent of the national requirement.

Although commercial sugar cultivation commenced several decades ago, the industry is beset with several structural problems. Low yields, poor recovery rates and constant labour problems have adversely impacted the industry. Furthermore, the decline in the international price of sugar also has negatively impacted the local industry. Hence, sugar production per se will not be a profitable venture. Therefore, while producing sugar the industry should also invest in the brewing of good quality alcohols and other spirits to make the industry viable.

TABLE 3.7
Statistics of the Sugar Sector

Item	Unit	Sevanagala Sugar Factory		Pelwatte Sugar Factory		Total	
		2002 (a)	2003 (b)	2002 (a)	2003 (b)	2002 (a)	2003 (b)
1. Total area under cane (with ratoons) (c)	hectares	3,885	3,500	3,988	5,060	7,873	8,560
2. Area harvested (c)	hectares	2,798	2,798	3,105	3,377	5,903	6,175
3. Cane harvested (c)	mt '000	151	196	104	212	255	407
4. Private cane purchased	mt '000	0	0	163	234	163	234
5. Quantity of cane crushed	mt '000	163	196	267	445	430	641
6. Average yield (c)	mt/hectare	54	70	38	63	43	66
7. Sugar production (without sweepings)	mt '000	14	16	24	37	38	54
8. Sugar recovery rate (d)	%	8.40	8.29	8.94	8.39	8.77	8.36

(a) Revised.
(b) Provisional
(c) Includes nucleus estates and allottees.

(d) Recovery rate = $\frac{\text{Sugar produced}}{\text{Quantity of cane crushed}} \times 100$

Sources: Pelwatte Sugar Industries Ltd.
Sevanagala Sugar Industries Ltd.

The Sugar Research Institute recommended two new varieties bred by them for commercial cultivation in 2003.

3.5 Fish and Livestock

Fish

Total fish production in 2003, declined by 5.4 per cent to 284,960 metric tons. Production in the marine sector, which accounts for 89 per cent (254,680 metric tons) of total fish production, dropped by 6.8 percent. In contrast, the inland and aquaculture fish production increased by 7.6 percent to 30,280 metric tons in 2003.

The drop in the marine sector output is partly due to the imposition of new laws that prohibited the use of certain types of fishing gear. However, the negative impact of this policy is a temporary phenomenon, as these laws will ensure sustainability in the long run by reducing over exploitation of marine resources. The loss of fishing days due to bad weather experienced in the Southern and the North Western coastal areas during the months of May and June 2003 also adversely affected the marine fish production. However, policies and regulations applicable in the fisheries sector have to be reformed to attract private investment including foreign investment in order to ensure the long-term growth in the industry. Improvement in inland and aquaculture fish production is mainly due to the increase in stocking fingerlings in the inland reservoirs.

The total volume of fish and fishery product exports, increased by 13.3 per cent to 14,714 metric tons in 2003. Crustacean exports increased by 31 percent to 6,741 metric tons accounting for 45 percent of total fish exports. Earnings from fish exports increased by 20 per cent to Rs 8,953 million. During the year, earnings from the export of ornamental fish amounted to Rs. 623 million, an increase of 18 per cent over the previous year.

An important development in the fisheries sector during 2003 is the proposed fish-canning factory, which is a joint venture between Union Fish Product Ltd of the Ceylon Fisheries Corporation and the Inform Progress Bank of Russia. This would fulfill a long-felt need of the Sri Lankan fisheries industry. According to estimates, the factory will produce 21.5 tons of canned fish per day targeting both the export market and the local market. Further, the provision of modern vessels, cold storage facilities, and extensive research in ocean resources to better use, are also essential to safeguard the country's fishing industry from the threat posed by the legal as well as illegal foreign fishing vessels and to encourage deep sea fishing, thus taking full advantages of the ocean resources surrounding the island.

TABLE 3.8
Fish Production

metric tons '000

Sub-Sector	2001	2002 (a)	2003 (b)
Marine (c)	255	273	255
Aquaculture	30	28	30
Total	285	301	285

(a) Revised
(b) Provisional
(c) Coastal and deep sea sectors

Sources: Ministry of Fisheries and Aquatic Resources Development
National Aquatic Resource Research and Development Agencys

Livestock

Dairy and poultry which are the two main sub sectors in the livestock sector performed well during in 2003 compared with the previous year. According to available estimates, cows milk production increased by 2 per cent to 156 million litres. In contrast, buffalo milk production dropped marginally (by 0.4 per cent) to 30 million litres. The producer price of milk remained unchanged at Rs.15 per litre during the year. However, the cost of production increased due to increases in animal feed prices.

The current supply of milk is adequate to meet only about 15 per cent of the country's requirement. The balance is imported mostly in the form of powdered milk. During the year 67,941 metric tons of milk and milk-based products were imported incurring import bill of Rs.11.5 billion.

Poultry meat production increased by 3.6 in 2003, while egg production declined marginally to 884.8 million eggs. High cost of animal feed and limited infrastructure facilities such as cold rooms reduces profit margins of producers. Chick production increased by 5.3 per cent to 74 million chicks.

The high cost of animal feed is one of the biggest drawbacks to developing the livestock industry. Cost of animal feed increased by over 10 per cent in 2003. At present, animal feed milling is done by utilising expensive imported raw materials. This can be minimised by encouraging the use of local raw material in the provender industry. Non-availability of good quality animals is another serious constraint for the expansion of the dairy sector. One of the principal programmes for improving dairy cattle is to upgrade the animal population with artificial insemination.

3.6 Inputs

Fertiliser

During 2003, total fertiliser sales declined by 10 per cent to 592,000 metric tons. Decline in fertiliser issued to the paddy and tea sectors were the main reasons. The rise in fertiliser prices as a result of the revision of fertiliser subsidy scheme in October 2002 with increased prices in the international market had a negative impact on fertiliser use in 2003. Fertiliser sales to the paddy sector declined by 18 per cent in 2003. The decline in the extent under paddy during 2003/04 Maha season, due to drought resulted in a reduction in fertiliser usage for paddy. Fertiliser issues to tea too declined by 7 per cent in 2003 as a result of the low prices during the first half of the year at the Colombo Auctions due to uncertainties caused by the war in Iraq. However, fertiliser issues to rubber and coconut sectors

Chart 3.6
Fertiliser Application Major Crop Categories
(1990=100)

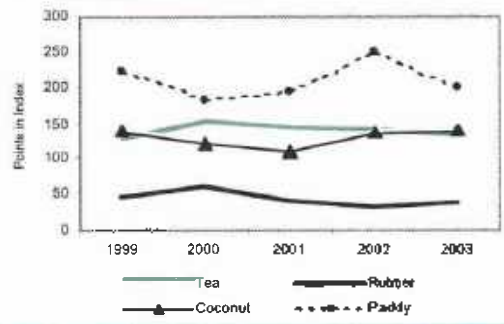


TABLE 3.9
Fertiliser Usage by Crop

metric tons '000

Crop	2001	2002(a)	2003(b)
Paddy	279	356	286
Tea	187	185	167
Rubber	9	7	8
Coconut	30	38	39
Other Field Crops	30	42	58
Other Export Crops	9	8	10
Others	36	34	24
Total	580	670	592

(a) Revised
(b) Provisional
Source: National Fertiliser Secretariat

increased due to the attractive rubber and coconut prices that prevailed during the year.

The fertiliser subsidy scheme, which was revised in October 2002, continued in 2003. As at end 2003, the total subsidy payments to urea amounted to Rs 2.5 billion. Under the revised scheme a fixed sum of Rs 6,000 per metric ton is given as a subsidy payment for urea imports. However, the international price of urea increased by 30 per cent in 2003 compared to the previous year due to the high demand from major grain producing countries as well as an increase in petroleum prices. This led to an increase in the price of urea in the domestic market.

Seed

The production of certified seeds is handled by the private sector. The DOA produces foundation seeds and registered seeds of the recommended varieties of paddy and issues them to the registered seed growers and farmer organisations for multiplication of seeds. During 2003 DOA produced 166 metric tons (8,000 bushels) of foundation seeds and 1,706 metric tons (82,000 bushels) of registered seeds of 22 recommended varieties of paddy and issued to the private sector growers and farmer organisations. The quantity of certified paddy seeds produced during the year increased by 14 per cent to 14,581 metric tons (701,000 bushels). This was sufficient only to meet 16 per cent of the total national seed paddy demand, leaving a large part of demand to be met from farmers own production, where quality could be low.

The DOA continued with the special seed potato production programme initiated to develop low cost virus free seed potatoes. Varieties of seed potato developed were issued to contract growers for multiplication. During the year seed potato imports amounted to 5,030 metric tons at a value of Rs 347 million.

DOA produced 5,500 kg of foundation seeds and 15,100 kg registered seeds of Other Field Crops (OFC) during the year for multiplication in government farms and for distribution among farmers. The amount of certified OFC seeds produced in government farms and contract farms exceeded 81,000 kg. The DOA continued to produce standard vegetable seeds for government farms and contract farmers. For both sectors standard vegetable seeds produced by the DOA was 8,900 kg in 2003. Since the liberalisation of the seed trade, almost the entire stock of exotic vegetable seeds is imported by the private sector. Vegetable seed imports during 2003, amounted to 304 metric tons at a value of Rs 167 million.

Agro-Chemicals

According to the provisional estimates of the Registrar of Pesticides, the sale volume of agrochemicals (herbicides, insecticides, fungicides) increased by 6 per cent in 2003. The quantity of herbicides, which accounts for approximately 52 per cent of the total agrochemical sales, increased by 22 per cent to 3, 441 metric tons. In contrast, the use of insecticides and fungicides declined by 7 per cent and 6 per cent respectively. The choice of herbicides by farmers' is because manual weeding is more expensive due to the scarcity of labour.

3.7 Forestry

The Forest Department continued several projects to develop the forestry sector with the assistance of foreign donor agencies. The ADB continued to fund the implementation of the Forest Resource Management Project and Upper Watershed

TABLE 3.10
Statistics on the Forestry Sector

Item	Unit	2001	2002(a)	2003(b)
1. Total Forest Cover (c)	hectares '000	2,119	1,942	1,942
Closed canopy forest (d)	hectares '000	1,583	1,471	1,471
Sparse Forest	hectares '000	464	472	472
Mangroves	hectares '000	8,687	9,504	9,531
2. Extent Deforested (e)	hectares	314	511	950
3. Extent Reforested (f)	hectares	840	661	1,057
4. Number of forest offences recorded	No.	4,344	4,157	3,093
Volume of Timber detected	cubic meters	4,201	4,527	2,789
Value of Timber detected	Rs. mn.	58.0	47.6	24.1

(a) Revised
(b) Provisional
(c) Total forest cover showed a marked decline after updating the figures using latest satellite imagery and aerial photographs in 2002.
(d) Includes mangroves
(e) Estimates
(f) Excluding extents under Participatory Forestry Project
Source : Forest Department

Box 9

Tropical Forest Conservation Act

The Tropical Forest Conservation Act (TFCA) was enacted in 1998 in the USA to convert some portions of loans given to low and middle-income countries into grants for the purpose of protection of forests. Those grants can be used for a broad variety of forest conservation activities, including forest restoration, implementation of sound natural resource management systems, establishment and maintenance of parks and protected areas, training in conservation management, protection of animal and plant species, research on medicinal uses of tropical forest plants and development and support of the livelihood of people and local communities living in or near a tropical forest.

TFCA is implemented through bilateral agreements with eligible countries. Six countries have already signed agreements with the Government of the United States. Those countries are Bangladesh, Belize, El Salvador, Panama, Peru and the Philippines. These agreements will generate over US dollars 60 million for tropical forest conservation in those countries over the life span of the agreements. Projects financed through these grants are to be administered by a body established in the beneficiary country. This body is fully accountable for the proper utilisation of funds, and consists of government representatives, representatives of environmental, community development, scientific, academic and forestry organisations of the beneficiary country and one or more government officials from the USA.

To be eligible for TFCA, developing countries must have a tropical forest of global or regional significance. Further, the governments should be democratically elected, cooperate on international narcotics control measures and have a suitable economic reform programme in place. These governments also should not support international terrorism or violate human rights. The US government has declared that Sri Lanka is eligible to receive benefits under the TFCA. However, Sri Lanka has not yet entered into any agreement.

Protection of forests is of paramount importance. Approximately half of the world's forests lie between the Tropic of Cancer and the Tropic of Capricorn and cover about 6 per cent of the Earth's land area. They contain a large number of diverse animal and plant genetic resources. Diversity is attributed to the variations in elevation, climate and soil types. There is also diversity in other life forms such as shrubs, herbs, epiphytes, mammals, birds, reptiles, amphibians and insects. Tropical forests also provide valuable products including timber, firewood, fruits and nuts, rattan, medicinal herbs, charcoal and meat. Large numbers of people depend on these forests for hunting and fishing. These forests also provide a host of other environmental benefits to mankind. For instance, the tropical forests replenish the air by absorbing carbon dioxide and releasing oxygen to the atmosphere, thereby reducing the atmospheric carbon dioxide levels and help in reducing global warming. Trees also moderate stream flow and help in reducing soil erosion and flash floods.

Sri Lanka should ensure protection of its forests from various forces of destruction. In this regard, financial assistance plays a vital role in bringing in measures for the protection of forests. However, the financial support should be conditional upon measures that promote Sri Lanka's forest protection activities with enhanced benefits to all Sri Lankans.

Management Project. Activities such as buffer zone planting, maintenance of buffer zones and timber farms, homestead development, stream reservation planting, seedling production, boundary survey and boundary marking of natural forests were carried out under these projects.

Activities such as staff training programmes, awareness programmes, and extension services were carried out during the year under the UNDP funded Global Environmental Facility Project. World Bank funded Medicinal Plant Project carried out in Anuradhapura, Galle, Matale, Monaragala and Ratnapura districts continued its activities during the year.

The Sri Lanka Australia Natural Resources Management Project, which is jointly funded by the government of Sri Lanka and the government of Australia, commenced, its pilot phase in the Kurunagala district in February 2003. The project has been designed to improve the lives and incomes of impoverished villages in the dry zone in Sri Lanka. The project will establish links with a broad range of stakeholders working in the natural resource management sector in Sri Lanka and the implementing authority for the project is the Forest Department.

Some plantation management companies have diversified their unproductive land into the planting of forest trees. The government too encouraged this diversification, as it would help generate additional income in the plantation sector, while improving environmental conditions. According to the Ministry of Plantation Industries 9,500 ha of estate land has been identified to diversify to forestry under the Plantation Development Project to be implemented under ADB and Japanese Bank for International Cooperation (JBIC) funding.

The State Timber Corporation continued to supply timber to the public and the private sector. The total output of logs, sawn timber and firewood declined by 6 per cent to 194,000 cubic meters in 2003 compared to 2002.