

Special Double Issue

ECONOMIC REVIEW

May/Aug. 2002

AGRICULTURAL SECTOR - Shifting Focus

Featuring

- * Micro-Scale Irrigation
- * Financial Intermediation
- * Employment in Sri Lanka
- * World Food Security
- * Co-op Rural Banks

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OVERVIEW

Agriculture is generally the dominant sector of most Less Developed Countries (LDCs), measured either in terms of the proportion of GDP originating in the sector or in terms of its contribution to total employment, or both. In LDCs the share of agricultural output in total real GDP generally varies from 35 to 90 per cent, clearly, because of its vast and varied contribution to GDP, the performance of the agricultural sector can be a overwhelming help or hindrance to overall economic development.

Importance of the agricultural sector can be analysed in several ways. The growth of the non-agricultural sector in LDCs is crucially dependent on the steady rise in food supply as it keeps inflation and wage costs down. In addition, many industries in those countries depend upon agriculture for the supply of raw materials. Agriculture also provides labour for the growth of the non-agricultural sector of the economy. Such a labour transfer is of mutual benefit to both sectors in labour surplus economies when the marginal productivity of labour is low. An efficient agriculture is also necessary to make the food supply more elastic, reduce the rate of increase in wages in the other sectors thereby to control the inflationary pressure on the economy.

The agricultural sector could make a substantial contribution to reduce the balance of payment either by raising a country's earning from agricultural exports or by producing agricultural import substitutes. Export of agricultural goods can also help to earn valuable foreign exchange to pay for imports of machinery or other capital goods to develop the industrial and service sectors for the economic development.

In this context Sri Lanka's case too remains very much similar to that of other LDCs. In spite of the focused attempts made by the successive governments in Sri Lanka since 1950s to widen the country's industrial base through sustained policy initiatives towards industrialisation so as to diversify the economy and gradually reduce the dependency level on agriculture, the agriculture sector has remained the single largest contributor to the GDP over the years. The contribution made by the agriculture sector to the GDP remains around 20% at present and while its contribution to employment and foreign exchange earnings is approximately 37% and 21% respectively.

Therefore, in a sense, the sustainable development of agricultural sector remains a prerequisite to successfully achieve the declared policy objectives of the economic reform process initiated by Sri Lanka in late 1970s. Given the relative importance of this sector in the economy, the *Economic Review* in its various past issues has presented indepth analyses of various issues related to the paddy and plantation agriculture sectors. Issues related to subsidiary food crops also have been dealt with extensively in our issues.

In this special double issue we focus our attention to an equally important sub sector of the agriculture i.e. non-plantation sector, which covers approximately 174,000 hectares of country's total cultivated land and merits the urgent attention of the authorities and policy makers in the context of the emerging trends in the

world market for products such as fruits, vegetables and spices, the main components of this sector.

Dr. W G Somaratne in his contribution stresses the need to formulate micro level agricultural policies complementary to macro economic policies to maintain longterm sustainability of non-plantation agriculture in Sri Lanka. Such micro level policies suggested by him include advancement of land saving new technologies for targeted tradable products, establishment of an effective institutional mechanism to encourage foreign direct investment into tradable non-plantation agricultural sectors (eg. Horticulture, floriculture and spices) for market integration in line with the existing incentive packages formulated for agriculture by the Board of Investment.

Mr. G V Chandrasena draws our attention to the challenges thrown up by globalisation to our export agriculture other than the plantation sector and concludes that if Sri Lanka is to fall in line with the speed of globalisation of her economy it is quite imperative that she should transform her agricultural policy to accommodate any macro level global adjustments without which her products will be highly uncompetitive and of very low quality.

From time immemorial Sri Lanka has been a favoured destination for the seekers of high quality spices with a unique indigeneous flavour. However, due to various reasons the country has not been able to reap maximum benefits from this trade. Mr. Anura Herath argues in his paper on spice sector that in order to transfer this biological wealth into monetary value, the final products of spices must be of admiring quality, which is not the current situation, while listing out a number of opportunities arising from the new trade agreements he recommends a few measures to capture the full advantage of these opportunities.

As in the past, livestock farming activity of Sri Lanka remains an integral part of agriculture and contributes to the growth and development of the sector. Dr. A O Kodithuwakku while pointing out that except poultry production other livestock activities have not kept pace with the rate of increase with the human population and the demand for meat products cites various reasons such as lack of longterm policies for development of the sector, unfair competition through free trade where local farmer receive a lower price for his products, inactivity of the private sector except in the poultry production, poor quality of available feed resources and the dependency of imported feed ingredients. He also presents various alternatives and solutions to make livestock industry a potential one in the years ahead.

Ms. Sharmini Dharmalingam and Renuka Weerakkody in their contribution on Organic Agriculture throws light on an emerging worldwide trend in agriculture, in the context of the ever increasing ecological degradation and elaborate the main principles and benefits of this aspect agriculture.

Mr. L P Rupasena in his paper on Food Marketing asserts that one of the major reasons for poor performance of food production sector is ignorance of importance of marketing in development and states that many in our country do not understand that marketing is an input that stimulates production like irrigated water. In the context of open economy marketing plays a key role in economic development and hence it is considered as an engine of the growth in the economic development today. He addresses the acute marketing problems of the food production sector and presents some solutions to tackle that issue.

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CONTENTS

Features

K.K. Saman Udayakantha	41	The Effects of Financial Liberalisation on Market Structure
N.P. Dhammika Padmakanthi	47	Employment in Sri Lanka & Its Recent Trends
K.M.R. Karunarathna	52	World Food Security & Sri Lanka
R.D. de Livera	58	Co-operative Rural Banks
	64	Diary of Events

**SPECIAL REPORT
AGRICULTURAL SECTOR
Shifting Focus**

W.G. Somaratne	02	Trade Policy Liberalization & Non-Plantation Agriculture in Sri Lanka
G.V. Chandrasena	09	Export Crop Agriculture other than the Plantation Sector
Anura Herath	12	Spice Sector of Sri Lanka
L.P. Rupasena	22	Food Marketing
A.O. Kodithuwakku	28	Livestock Industry in Sri Lanka
Sharmini Dharmalingam & Renuka Weerakkody	34	Organic Agriculture
G.M. Henegedara	37	The Role of Farmer Companies
P.B. Dharmasena	39	Micro-Scale Irrigation Systems

**Next Issue
Transportation**

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Trade Policy Liberalization & Non-Plantation Agriculture in Sri Lanka

New Strategies for Development

Sri Lanka has implemented far-reaching macroeconomic policy reforms including in trade, monetary and fiscal policy changes, during the last two decades. The declared objectives of such policy reforms were to accelerate economic growth; to achieve international competitiveness; to create employment opportunities, to increase capacity utilization; to stimulate savings and investments, and to improve the balance of payments (Somaratne, 2000; and Gunawardana and Somaratne, 2000). The achievement of sustainable and equitable agricultural development will be a major challenge for Sri Lanka for the next decade. There are four major strategies that the Sri Lankan agriculture can pursue in reaching the above objectives. These strategies include integration into the global economy (i.e. globalization and regionalization); maintenance of macro economic stability; investments in people and technology; and improving the climate for agro-enterprises through market integration.



This paper analyzes the likely effects of trade policy liberalization particularly tariff policy reforms in non-plantation agriculture in Sri Lanka. In this analysis, an appropriately modified computable general equilibrium (CGE) model of the Sri Lankan economy was used to analyze the economywide effects.

Results show that trade policy reforms in non-plantation agriculture (i.e. removing tariff on non-plantation agriculture) result in likely benign macroeconomic effects such as improving government budget position and aggregate real household consumption, reduced

Dr. W.G.Somaratne*

price indices, increased aggregate employment and real gross domestic product (GDP) and reduced aggregate environmental damages. The advantage of such tariff policy liberalization in non-plantation agriculture is a possibility of gaining win-win solutions and encouraging market integration within agriculture, though nominal household income and consumption will be reduced.

It has shown that policy failures and institutional failures have hampered the growth in the non-plantation agricultural sector, though macroeconomic policy reforms have been introduced. A national agricultural policy (NAP) framework should be developed in order to deal with the interests of the 'non-plantation crop industry' including the interests of farmers, wholesalers, processors, exporters, consumers and all other participants who engage in market integration through technological advancements and to incorporate the dynamism in future national and inter-

national policy environment. It is necessary to gear the macro level programmes to improve the over all growth in the economy to gain advantages to improve the level of percapita income and thereby to increase the demand driven push for increasing prices of non-plantation crops including food crops.

It is further suggested that formulation of micro level agricultural policies complementary to macroeconomic policies is necessary to maintain long-term sustainability of non-plantation agriculture in Sri Lanka. Some micro level policies suggested are: advancement of land saving new technologies (eg. greenhouses and poly-tunnels) for targeted tradable products, establishment of an effective institutional mechanism to encourage foreign direct investment (FDI) into tradable non-plantation agricultural sectors (eg. horticulture, floriculture and spices) for market integration in line with the existing incentive packages formulated for agriculture by the Board of Investment (BOI). The strengthening of input delivery systems (seed, fertilizer, agro-chemicals, micro irrigation, and extension) on a competitive basis with the state and private sector organizations could be initiated with the participation of grass-root level farmer or user organizations. The regional specialization drive should be initiated by establishing Agricultural Productivity Villages (APV) and Export Promotion Villages (EPV) for targeted exportable horticultural, floricultural and spice products by the state in collaboration with the private sector to pool resources in the region, diffuse new technologies, to increase the productivity levels and

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identification of new targeted tradable products (eg. 'green and organic' vegetables and spice products) within the sector. The establishment of contract farming and futures marketing programmes are the viable options for integration through the regional specialization drive.

Trade Policy Liberalization and Non-Plantation Agriculture in Sri Lanka: New Strategies for Development¹

Introduction

The achievement of sustainable and equitable economic development will be a major challenge for Sri Lanka for the next decade. The World Bank in its Development Report of 1991 identified four major strategies as market and people friendly approaches to development. These strategies include integration into the global economy (ie. regionalization and globalization); improving the climate for agro-enterprises, investment in people and technology; and maintenance of macro economic stability (World Bank, 1992). Although the desirability of development through a market-friendly approach is accepted in most developing countries, recent years have witnessed a growing concern about whether macro-economic policy liberalization including trade, monetary, fiscal and flexible exchange rate regime will improve the all spheres of development through market integration. In the Sri Lankan case, there are macroeconomic policy-induced implications on the non-plantation agricultural sectors.

Sri Lanka has implemented major trade policy reforms including tariffing the trade by removing most non-tariff measures (NTMs), during the last two decades. The main objective was to create international competitiveness (ie. efficiency) for Sri Lankan agricultural products. However, there has been growing concern about the economic and environmental impacts of such policy reforms.

In the analysis, we focus on highland, midland and lowland regional non-

plantation agricultural sectors. Based on analysis, it is anticipated to suggest strategies to improve the efficiency in non-plantation agriculture in Sri Lanka.

The rest of the paper is organized as follows: Section 2 presents a brief overview of trade policies and the non-plantation² agricultural sectors. Section 3 reviews the present trade policy measures particularly import tariff structure in relation to the Sri Lankan non-plantation agricultural sectors. Section 4 explains the basic features of the computable general equilibrium (CGE) model developed for the Sri Lankan economy. Section 5 examines the tariff policy liberalization-induced likely macroeconomic and mesoeconomic (ie. sectoral) effects. Conclusions, policy implications and strategies proposed are included in the final section.

Trade Policies and the Non-plantation agriculture

It is increasingly recognized that macroeconomics via its impacts on the level and structure of economic activities in a country has multitude of direct and indirect economic and environmental impacts. Stabilization programmes are likely to encompass demand management policies, like fiscal policy measures that regulate domestic budget balance and improve the balance of payments. Devaluation of national currency and maintaining positive real rate of interest are typical elements of these programmes. The main macroeconomic policy devices include: trade policy liberalization (ie. tariffication); financial deregulation (including credit market reforms); public sector reforms; tax, price control and subsidy reforms; monetary reforms; exchange rate adjustments (eg. flexible exchange rate regime, unification and devaluation); and complementary micro policy and institutional reforms and capacity strengthening. These measures are virtually aimed at restoring macroeconomic stability in the economy.

Sri Lanka has implemented far-reaching macroeconomic policy reforms³ including changes in trade, monetary and fiscal policies and other micro policy reforms, during the last two de-

cadecades to liberalize the economy, mainly under the structural adjustment policy package introduced. The policy reform 'packages' included the reduction of protection provided to import competing sectors including agriculture, exchange rate adjustments from a fixed exchange rate to a flexible exchange rate regime, fiscal and monetary reforms, liberalization of domestic factor and product markets, and privatization of selected government owned business enterprises. The main declared objectives of the policy liberalization package are to remove imperfections and impediments in trade (through tariffication – removing non-tariff measures – NTMs); to accelerate economic growth; to achieve international competitiveness; to create employment opportunities; to increase capacity utilization; to stimulate savings and investments; and to improve the balance of payments (Gunawardana and Somaratne, 2000; and Somaratne, 2002).

In line with the policy reform process and the rapid growth of world demand, tradable products including food products (eg. fresh or processed and organic or 'green') inevitably will gain the advantages to integrate into the international niche markets. In line with the mission⁴ of the Ministry of Industrial Development, it is expected to create an investor friendly environment to integrate with globally competitive agro-based and industrial products. It would gain new impetus to agriculture by encouraging market integration. The increased consumer income will fuel for more domestic demand for types of value added and 'green' products in the agricultural sector. The future of agricultural and agro-based product sector in Sri Lanka, which is a dynamic sector, will respond positively to changes in the international policy environment – 'globalization', and regionalisation (ie. Indo-Lanka Free Trade Agreement – FTA) and the changes in policy liberalization in the national economy. The reforms in global and national policy environment entail demand driven elements in horizontal and vertical integration in

the whole process of production and marketing to increase the level of efficiency and competitiveness. In line with the neo-liberal policy environment, the role of the private sector can not be negated and it should consider as the 'driving force' in the economy. The role of the state sector would be to facilitate the development process by formulating complementary strategies and other mechanisms (for investment and technological advancement) to enhance the growth in the economy. Based on macroeconomic indicators in

the Sri Lankan economy, it has shown that economic fundamentals were robust and the economy was moving in a right direction (Soma-ratne, 1998, 2000). However, the rate of growth in agricultural sectors was shown very high fluctuations and maintained less than 2 percent rate of growth per annum, during the last decade (Central Bank of Sri Lanka, 2000). Further, in the end of year 2001, Sri Lanka has experienced a negative rate of economic growth in the Sri Lankan history with the sudden changes in variables of international (ie. bombing at the world trade centre in USA) and national (ie. bombing at the Katunayake international airport) economic equations (Central bank of Sri Lanka, 2002).

Though, Sri Lanka has implemented successful macroeconomic policy reforms, the agricultural sectors including non-plantation agriculture in Sri Lanka suffered from stagnation in production and market integration during the last two decades (Somaratne and Ratnayake, 2002). There were two sets of national agricultural policy (NAP) frameworks formulated by the Ministry of Agriculture (1995) and the National Development Council (1995), identifying the food security and commercialization of agriculture as the main

Table 1: Projections of the Effects of Tariff Reduction in Non-plantation agriculture on Macro Variables in Sri Lanka

Variable Description	Percentage Change	
	Policy 1*	Policy 2 #
A. Government Budget Position (Rs Million)	110	5033
B. Household Consumption and Disposable Income		
i. Aggregate nominal household consumption	-0.43	-2.9
ii. Aggregate real household consumption	0.04	1.2
iii. Nominal household disposable income	-0.44	-4.1
C. Price Indices		
i. GDP deflator	-0.46	-5.1
ii. Consumer price index	-0.48	-4.1
D. Aggregate Employment	0.11	2.15
E. Gross Domestic Product		
i. Nominal GDP	-0.44	-4.14
ii. Real GDP	0.03	0.98
F. Aggeragte Land Degradation	-0.25	-1.13

* 50% tariff reduction in non-plantation agriculture.

50% across-the-board tariff reduction.

thrust areas. Further, it has shown that though these sectoral policies were implemented, the expected sectoral growth in the agricultural sectors including non-plantation agriculture sector (ie. paddy/rice, potatoes, chillies, B'onion, red onion, cowpea, greengram, maize and blackgram; and vegetables and fruits); was not achieved along with market, policy and institutional failures (Somaratne, and Ratnayake, 2002). The impact of this was mostly felt on farmers operating smallholdings and investors who are dealing with functions of market integration. Therefore, the achievement of sustainable and equitable economic development will be a major challenge for Sri Lanka for the next decade. There are four major strategies opened for the Sri Lankan agriculture, which can pursue in reaching the objectives of policy liberalization. These strategies include integration into the global economy (ie. Regionalization and globalization); maintenance of macro economic stability; investments in people and technology; and improving the climate for agro-enterprises through market integration.

Trade Policy Measures and Non-plantation agriculture

Since 1977, trade policy measures particularly import tariff protection provided to Sri Lankan non-plantation ag-

ricultural sectors has been gradually reduced in line with the liberalized trade and other agricultural reform policies. The main objective of tariff reforms was improving the international competitiveness for the Sri Lankan agricultural products to maintain efficiency in the process. Once the trade barriers relating to agriculture became an internationally prominent issue, Sri Lanka's tariff and related protectionist policies were the subject of critical analysis. In this context, quantitative restrictions (QRs), import tariffs,

export taxes, export subsidies and exchange controls were reduced or dismantled and other institutional reforms were undertaken which were conducive to economic growth in Sri Lanka. In 1977, most QRs in international trade of manufacturing and agricultural product sectors were replaced by a six-band tariff regime, ranging from 0 to 500 percent. These rates were imposed even on non-plantation agriculture, considering various commodity specific tariff rates. The Sri Lankan tariff structure has been periodically reviewed since 1980, and successive changes toward a lowered tariff structure have been implemented (Ratnayake, 1993; Report of Presidential Commission on Tariff and Trade, 1994). It is expected to liberalize tariff regime further and impose a two-band tariff regime for all products including products in the non-plantation agriculture in Sri Lanka by the year 2005 in line with the agreement of World Trade Organization (WTO).

During the period 1994-2001, the tariff rates imposed on non-plantation crops (ie. paddy/rice, chillies, onions, potatoes, greengram and blackgram) and other varieties of food imports, which are not grown in Sri Lanka, were ranged from 10 to 35 percent (see Appendix Table 1). The

35 percent import tariff rate on the CIF price was imposed on rice, sugar, potatoes, red onions, B'onions, greengram, blackgram, dried chillies, maize and split lentils. The 20 percent tariff rate was applied for wheat and the 10 percent tariff rate was claimed for condiments like coriander, cumin seed, and fennel seed. However, the United National Front (UNF) government came to power in end of 2001, have proposed to increase existing tariff rates in non-plantation agriculture on imports of rice, B'onions, chillies and potatoes. This sort of tariff protection may safeguard the farmers' interest in the short run but other macroeconomic distortions and issues in inflation and externalities may hamper the agricultural development process and lead to macroeconomic instability in the economy. However, the tariff structures assist to distort resource allocation in between plantation and non-plantation agriculture and between agriculture and other manufacturing and service sectors. Furthermore, tariff protection appears to have increased the environmental cost, including cost of land degradation-induced on-site and off-site environmental damages. For example, a higher rate of import tariff protection was given to highland and midland non-plantation crops (ie. potatoes, onions, chillies, maize sub-sectors), despite these non-plantation crops being the most soil erosive crops in the Sri Lankan agriculture (Somaratne, 1998).

A CGE Model of the Sri Lankan Economy

A recent phenomenon in the economic modeling arena, was the development of a class of computable general equilibrium (CGE) policy models, which are mainly employed to evaluate the likely economy-wide effects on a wide range of policy issues. These models provide an internally consistent economy-wide framework for policy analysis, in considering internal and/or external

shocks to an economy on macro and microeconomic variables.

Particularly, the CGE model developed by Somaratne⁵ (1998), the relationship between tariff policy reforms and the issues on externalities in agriculture, (ie. land degradation-induced off-site effects, and aggregate and sectoral level of soil erosion) was considered. Although modeling of all land degradation-induced effects is an extremely difficult task, efforts have been made to evaluate the policy-induced economywide effects of land degradation, including on-site cost of land degradation and off-site impacts of irrigated agriculture, hydro-power generation, flushing cost of Kothmale reservoir⁶, operation and maintenance cost of highland and midland road network, and other cost of health hazards and purification of water. In addition, the CGE model requires various elasticity parameters, namely substitution elasticities between domestically produced and imported commodities (ie. Armington elasticities); own, cross price and expenditure elasticities for Sri Lankan consumers; foreign demand elasticities for Sri Lankan exports; substitution elasticities between primary factors in each industry and investment parameters for each industry. In this model, the elasticity coefficients⁷ are taken from the model developed by the CIE.

In this model, land mobility is allowed between regional crop industries in upland, midland and lowland regions. The relative price changes of products resulting from changes in economic policy framework influence the land use patterns in the economy, which in turn affects rates of soil erosion⁸. Changes in levels of soil erosion linked to changes in land use patterns in the upland and midland regions have both on-site and off-site consequences. The main off-site impact of land degradation is the reduction of the productivity of physical structures for the storage and delivery of water for irrigation and hydropower generation. An increase in sediment delivery rate to these water storage tanks in the lowland areas directly increases the costs in irrigated agriculture and hydropower generation. The on-site productivity impacts from soil erosion and the off-site impacts of reduction in irrigation capacity for crops and hydropower generation are modeled to estimate the value of depletion of natural capital in the Sri Lankan economy, based on Bandara et al. (1995) model.

In all policy experiments of tariff liberalization, a model closure is employed in which real wages and balance of trade are fixed. Accordingly, shifts in labour demand are absorbed by quantity adjustments (endogenous labour supply), and aggregate net income changes appear as changes in real household consumption. In addition, the nominal rate of foreign exchange remains fixed, as a numeraire of the model. Any movements in domestic price levels change the real exchange rate, which is defined as the ratio of an index of the border prices of tradeables to an index of domestic prices. The small country assumption is employed and world prices of imports are treated as exogenous. In this analysis, it is assumed that real wages are fixed and allowed determine endogenously the level of aggregate employment in the economy. The rate of soil ero-

Table 2: Projections of the Effects of Tariff Reduction in Plantation & Non-plantation agriculture on Production, and Exports of Agricultural Crops

Crop Sector	Classification (X/M/N)##	Percentage Change	
		Policy 1 *	Policy 2 #
Production			
Plantation Crops			
Tea - Highgrown	N	0.34	2.93
Tea - Midgrown	N	0.29	2.80
Tea - Lowgrown	N	0.68	4.63
Rubber	X	0.36	3.42
Coconut	X	0.15	1.79
Export Agriculture	X	0.28	2.30
Forestry	N	0.04	0.58
Non-Plantation Crops			
Non-plantation - Highland	M	-0.67	-0.56
Non-plantation - Midland	M	-0.68	-0.59
Non-plantation - Lowland	M	-0.59	-0.16
Potatoes - Highland	M	-1.18	-1.07
Agro-Based Products			
Coconut Processing	X	0.57	5.89
Rice Processing	M	1.80	2.70
Exports			
Processed Tea	X	0.53	4.15

* 50% tariff reduction in non-plantation agriculture.

50% across-the-board tariff reduction.

X: Exportable; M: Importable; N: Non-tradable

Table 3: Projections of the Effects of Tariff Reduction in Plantation and Non-plantation Agriculture on Factor Demand

Crop Sector	Percentage Change	
	Policy 1*	Policy 2 #
A. Labour Demand		
Plantation Crops		
Tea - Highgrown	0.34	3.55
Tea - Midgrown	0.28	3.42
Tea - Lowgrown	0.68	5.25
Rubber	0.50	4.85
Coconut	0.22	2.68
Export Agriculture	0.88	7.15
Non-plantation		
Non-plantations - Highland	-1.51	7.52
Non-plantations - Midland	-1.43	7.70
Non-plantations - Lowland	-2.01	5.04
Potatoes - Highland	-2.14	6.88
B. Land Use		
Plantation Crops		
Tea - Highgrown	0.46	1.98
Tea - Midgrown	0.39	1.81
Tea - Lowgrown	0.92	4.25
Non-plantations		
Non-plantations - Highland	-0.65	-3.11
Non-plantations - Midland	-0.69	-3.22
Non-plantations - Lowland	-0.38	-1.74
Potatoes - Highland	-1.29	-3.75

* 50% tariff reduction in non-plantation agriculture.
50% across-the-board tariff reduction.

sion at both sectoral and for the economy as a whole is an endogenous variable in the model.

Tariff Reduction – Induced Macro-economic and Environmental Effects

Particularly, tariff liberalization in regional non-plantation agriculture (ie. in upland midland and low land regions) was analyzed, considering two trade policy liberalization scenario, namely partial tariff reduction (ie. 50 percent tariff reduction in upland and midland non-plantation agriculture and upland potatoes sector), and 50 percent across-the-board tariff reduction in all import competing sectors. A comparative static Computable General Equilibrium (CGE) model⁹ was used to evaluate the likely economy-wide effects of tariff liberalization in non-plantation agricultural sectors in Sri Lanka.

Macroeconomic Effects

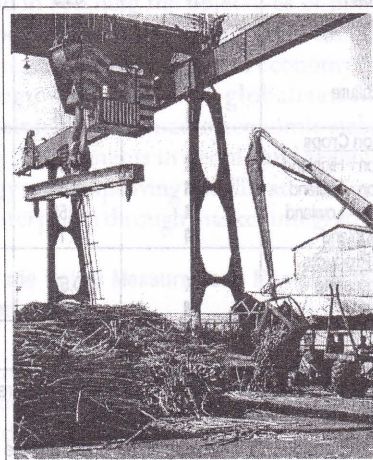
The projections of the macroeconomic effects of tariff liberalization under two scenarios mentioned are presented in Table 1. The results show that tariff liberalization is likely to increase to a higher real GDP. When the rate of tariff reduction in the non-

plantation agriculture increases, it increases the growth rate of real GDP, by stimulating output in the tradable (ie. exportable) agricultural and industrial sectors. Moreover, while fostering economic growth, the induced changes in land use in agriculture lead to a higher economic growth in the economy. However, greater growth benefits can be secured with across-the-board tariff reduction in all import competing sectors, rather than sector specific tariff reduction.

Further, both partial and across-the-board tariff reductions increase the level of aggregate employment in the economy and reduce the aggregate price level, and thereby improve the aggregate real household consumption. Tariff liberalization further stimulates trade, leading to higher imports and exports and thereby improves the balance of trade. At the same time, it also leads to an improvement in the government budget¹⁰ along with partial and total tariff liberalization in non-plantation agriculture, through fiscal expansion particularly in the export-oriented product sectors (Table 1). In summary, tariff liberalization fosters economic growth and improves most macroeconomic variables by showing a pathway in the right direction for sustainable development.

Mesoeconomic Effects

The tariff liberalization-induced mesoeconomic effects are explained in the following sections.



Sectoral Production and Exports

The proposed tariff liberalization in non-plantation agriculture (either sector specific or across-the-board) creates direct impacts on import competing sectors and indirect impacts on other export (or non-import competing) industries. In the tariff reduction policy experiments, the effects on individual commodities depend on their export orientation - output increases in export-oriented products and declines in import competing products. As illustrated in Table 2, all non-plantation agriculture are vulnerable to increased competition, while exportable plantation and agro-based industries tend to benefit from liberalization through market integration. In particular, the low-grown tea sector expands at the expense of food crops. Exportable products, such as other manufacturing and agro-based products (including processed tea, coconut and rice) will also be stimulated.

Changes in Factor Demand & Land Use

The tariff reduction in non-plantation agriculture encourages a shift of lands¹¹ in an environmentally friendly direction. It increases land use in low soil erosive plantation crops like tea in high and mid elevations, and reduces cultivation of highly soil erosive non-plantation (eg. potatoes and other annual food crops in highland and midland regions) (Table 3). Further, it encourages to absorb labour releasing from non-plantation agriculture to plantation agricultural sectors in the high, mid and low land regions and thereby leading to ease the vulnerability of loss of farmer income at the farm level (see Table 3).

Changes in Rate of soil Erosion / Land Degradation

Tariff liberalization encourages exportable agricultural crops by shifting lands from high soil erosive to low soil erosive agricultural crops in all regions. Consequently, it substantially reduces the sectoral level of soil erosion in non-plantation agriculture through changing land use pattern as

well as the level of aggregate soil erosion in the economy (see Table 4).

Conclusions and Policy Implications

This paper has examined the trade policies particularly tariff reduction and their likely impacts on the non-plantation and other agricultural sectors and the Sri Lankan economy. Sri Lanka has been implementing major policy reform programmes, including trade policy liberalization in the non-plantation sectors in Sri Lanka, since 1977, which was a paradigm shift in the right direction.

Two policy experiments including partial (i.e. sectoral) and across-the-board tariff reduction were carried out using a CGE model. The model outcomes generated a range of macroeconomic performance indicators. Further, our results provide a reliable basis for drawing some robust conclusions about the likely impact of future tariff liberalization in non-plantation agriculture as a green policy device, and its macroeconomic and mesoeconomic (or sectoral) effects. Though non-plantation agriculture is affected negatively, there is a possibility to improve product and market integration through encouraging the processing of tea, coconut and rice sectors.

Trade reforms reduce policy distortions which tax less soil erosive crops like tea, rubber and coconut and management practices in the upland and midland regions and turn incentives away from more erosive food crops. There is a clear need for formulation of complementary microeconomic policies in the non-plantation sector in line with the 'green box' of GATT/Uruguay round agreement on agriculture (GURAA), which would enhance incentives for food security, productivity, technology, marketing infrastructure and market integration, social welfare and environmental improvements in order to minimize the policy-induced diseconomies at the farm level.

The formulation of a National Agricultural Policy (NAP) framework is

Table 4: Projections of Tariff Reduction in Non-plantation agriculture-Induced Effects on Rate of Soil Erosion/Land Degradation

Crop Sector	Percentage Change	
	Policy 1*	Policy 2#
Plantation Crops		
Tea-Highgrown	0.46	1.98
Tea-midgrown	0.39	1.81
Non-plantations		
Non-plantations - Highland	-0.65	-3.11
Non-plantations - Midland	-0.69	-3.22
Potatoes - Highland	-1.29	-3.75
Aggregate Soil Erosion	-0.25	-1.13

* 50% tariff reduction in non-plantation agriculture.

50% across-the-board tariff reduction.

an absolute necessity to avoid policy and institutional failures in the Sri Lankan agriculture in general and in the non-plantation agriculture in particular. It will be able to change the orientation from small holder farmer to the non-plantation crop industry, identifying the scenario of market integration. It is expected to achieve both the long-term vision of the non-plantation agriculture (i.e. integration) and improve the level of farmers' social welfare through the NAP. It is impossible to create an environment to protect farmers within the non-plantation sector itself. It is further, necessary to gear the programmes to improve the overall growth in the economy as well to enhance the level of per-capita income and thereby to increase the demand driven push for increasing prices of non-plantation crops. Within the NAP framework there is a possibility to formulate strategies with considering a long-term vision and the dynamic international environment for market integration within the strategy of regionalization and globalization.

Within the NAP framework, it is advisable to identify the 'regional specialization' strategy considering advantageous exportable food crops and other products for Sri Lanka (ie. green and organic spices, horticultural and floricultural products - 'bell pepper', strawberries, cut flowers, cut foliage and other - beetle, arecanut and ornamental fish) within the non-plantation agriculture. The provision of improved land saving technologies (e.g. green houses, poly-tunnels, and drip and sprinkler irrigation systems) and internationally im-

proved planting materials should be facilitated and encouraged even through the private sector to generate new investment and employment opportunities within agriculture and to use natural resources (land, and water) efficiently. Further, within the NAP, it will be possible to formulate strategies to invest on demand driven research and development (R&D) projects rather than traditional supply driven R&D projects. It is possible to initiate contractual arrangements (i.e. contract farming) for production and market-

ing either with domestic or international investors, which can be facilitated through proposed institutional mechanism.

Further liberalization of tariff policies in relation to non-plantation agriculture in Sri Lanka is economically viable. There is a possibility of gaining 'win-win' solutions by enhancing the rate of economic growth and reducing the cost of land degradation-induced externalities. Considering above, if policy distortions (i.e. tariff protection) in non-plantation agriculture continue further, lucrative producer benefits in the short-run will be maintained at the enormous expense of long-run off-site cost of externalities as well as other diseconomies in the economy.

Government sector also has a dynamic role to play in facilitating the process by formulating complementary micro economic policies to shift the land use pattern from traditional food crops to internationally tradable crops through integration like commercial plantation forestry, floricultural and cut-foliage products and organic spices with the scenario of 'consumerism'. Through the export promotion drive, it can be possible to gain more net foreign exchange. Particularly tea sector can be encouraged to produce organic tea, by promoting tea as a 'health drink' and a 'herbal drink', which has a greater demand in the international market. Moreover, the role of private sector has to be redefined in line with the

dynamism in national and international policy environment (i.e. 'globalisation') to attract global technology and capital. Incentive packages should be reformulated for targeted non-plantation agricultural crop sectors including food crops to encourage investment for integration, considering the similar incentive packages formulated in the manufacturing sector (i.e. BOI incentive packages). The strengthening of input delivery systems (seed, fertilizer, agro-chemicals and extension) on a competitive basis with the state and private sector organizations should be initiated with the participation of grass-root level farmer companies or user organizations.

It is necessary to strengthen the existing institutional mechanism or to build a new institutional mechanism as a 'One Stop House' to popularize and build awareness on investment opportunities in agriculture and incentive packages designed by the Board of Investment (BOI), among targeted or prospective domestic or international investors in agriculture. For this purpose information technology (IT) and trade and technology networks for integration should be used to inform the target. It will attract investment into agriculture and thereby improve the sectoral growth in agriculture. This institutional mechanism can be used to build awareness on potential of agricultural market integration among prospective investors, to conduct monitoring and evaluation of investment projects, and to carry out agricultural policy evaluation considering likely effects of each policy measure in the short, medium and long-run. Further the proposed 'one stop house' can be facilitated to achieve the ISO standards for Sri Lankan agricultural products and 'green' products, which is absolutely necessary for exports of agricultural

Appendix Table 1: Rates of Import Tariff Imposed on Selected Non-Plantation Agricultural Crop Sectors in Sri Lanka (1986/88-2001)

Products	Tariff Rate (%)			
	1986/88	1994	1996	1998-2001
Potatoes	100	35% or Rs. 12.00 per kg.	35	35
Red Onions	5	35% or Rs. 09.00 per kg.	35	35
B'Onions	5	35% or Rs. 09.00 per kg.	35	35
Greengram (Moong)	5	35% or Rs. 10.00 per kg.	35	35
Blackgram (Oorid)	5	35% or Rs. 10.00 per kg.	35	35
Split Lentiles	5	45% or Rs. 12.00 per kg.	35	35
Other	5	35% or Rs. 12.00 per kg.	35	35
Dried Chillies	5	35% or Rs. 20.00 per kg.	35	35
Other	-	35% or Rs. 10.00 per kg.		
Maize	5	45%	35	35
Rice	25	35% or Rs. 07.00 per kg.	35	35
Cane Sugar		35% or Rs. 06.50 per kg.	35	35
Beet Sugar		35% or Rs. 06.50 per kg.		
Wheat	25	N/A	20	20
Ginger	60	N/A	35	35
Turmeric	60	N/A	35	35
Saffron	60	N/A	35	35
Seeds of Anise	5	N/A	35	35
Coriander	5	N/A	10	10
Cummin Seed	5	N/A	10	10
Fennel Seed	5	N/A	10	10

Source: Department of Customs, Sri Lanka (for 1986/88; 1996; 1998)
Report of the Presidential Commission on Tariffs and Trade - 1994, (for 1994);
N/A: Not Applicable

products after the year 2005. Finally, it would be able to avoid institutional failures in agriculture.

The regional specialization drive can be initiated by establishing Agricultural Productivity Villages (APV) and Export Promotion Villages (EPV) by the state in collaboration with the private sector to pool resources in the region, diffuse new technologies, to increase the productivity levels and identification of new targeted tradable products (eg. 'green and organic' vegetables and spice products) within the sector. The establishment of contract farming and futures marketing programmes are the viable options for integration through the regional specialization drive.

(Footnotes)

- The earlier version of this paper was presented at the seminar on 'Macroeconomic Policies and Their Implications on Food Crop Sector', Organized by the Council for Agricultural Research Policy (CARP), SLAAS Auditorium, Colombo, 25th January 2002.
- For the purpose of this paper the crops produced in the non-plantation agriculture are categorized as: (a) subsistence food crops - paddy/rice, manioc (cassava), sweet potatoes, kurakkan (finger millet); (b) commercial food crops (cowpea, green gram, onions, potatoes, chillies, vegetables and fruits), and (c) agro-industrial crops (maize and sugar).
- See Athukorala and Jayasuriya (1994), Gunawardana and Somaratne (2000), and Somaratne (1998, 2002) for comprehensive details on policy reforms and their impacts on the Sri Lankan economy.

⁵ The mission of the Ministry of Industrial Development is "to foster and facilitate the development of the industrial sector in an investor friendly environment so as to ensure that products and services are globally competitive, and leading to sustainable socio economic development in Sri Lanka", (AgEnt, 1999, p5)

⁶ All of the CGE models developed are neo-classical, comparative static models, the structure of which is based on the traditional ORANI model of the Australian economy (Dixon, et al., 1982). There were five CGE models recently developed for the Sri Lankan economy by Bandara (1989), Centre for International Economics (CIE) (1992), Herat (1994), Bandara et al., (1995), and Somaratne (1998) to evaluate the economy-wide likely impacts of various policy issues including external shocks, 'Dutch disease' type policies, technological change, and other trade policy issues.

⁷ Kothmale is the first reservoir built for hydropower generation within the Mahaweli multi-purpose development project.

⁸ The CIE has used elasticity coefficients in its model drawn from existing literature on the subject and based on "best estimates" utilizing data for comparable situations from developing countries in the Asian region.

⁹ The crop specific rate of soil erosion (mt/hectare/year) is higher on food crops compared to plantation crops (Somaratne, 1998).

¹⁰ See Somaratne, (1998) for comprehensive details on the CGE model theory and its applications in relation to analysis conducted in non-plantation agricultural sectors in Sri Lanka.

¹¹ Note that in the base model there was a deficit in the government budget. However, partial and total tariff liberalisation in non-plantation agriculture and across-the-board tariff reduction in all import competing sectors assists to reduce the budget deficit.

¹² Land is considered as a mobile factor in each region (ie. upland, midland and lowland) and allowed to move between crop sectors within each region.

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Contd. on Page 21

Export Crop Agriculture other than the Plantation Sector- The Challenges under Globalization

Introduction

Today the word Globalisation has become a fashionable specially in the field of international trade. International trade after formation of World Trade Organization (WTO) successor to the GATT focused its attention on globalisation of international trade. Recently concluded Uruguay Rounds of GATT has highlighted several issues of agricultural trade in the following manner:

- Improvement of market access for international trade in agricultural commodities through reducing import barriers.
- Improving the competitive environment by increasing discipline including phased reduction in the use of direct and indirect subsidies.
- Minimising the adverse affects that sanitary and phytosanitary measures can have on international trade.

The above central theme of the Uruguay Rounds allures the entry of the idea of globalisation of the international trade in agricultural products.

Conversely globalisation offers the idea of free flow of trade without any hinderence. If the trade is protected the national cost of such protection will be a disastrous outcome. For example the budgetary cost of the US farm programme in 1986 was nearly US \$ 700 for each non-farm family. Consumers in Japan are paying food prices about 60 per cent higher than they would if internal prices reflected the fall in world prices and the appreciation of the Yen since 1980.¹

So the idea of globalisation in respect of trade is a removal of all barriers affecting the free and fair movement of trade in international markets and avoid any undue competition by the suppliers.

Export Agricultural Crops of Sri Lanka

At present Sri Lanka exports a wide range of agricultural products such as fruits, nuts and vegetables (fresh and processed) floricultural products (cut flowers and foliage and aquatic plants) a wide range of spices, herbal/medicinal herbs, herbal preparations, marine products, cereal products such as rice, oil seeds and pulses, essential oils and oleoresins.

G.V. Chandrasena*

These export crops other than plantation crops have contributed 2.80 per cent share of the total exports in the year 2000. The export earnings by this sector is much more higher than the export earnings by mineral products exports and some sectors of the industrial sector as well as by some plantation crops.

Product Sector	Value (US \$ Mn.)
Minor Agricultural Products	165
Rubber	33
Coconut	129
Petroleum Products	74
Ceramic Products	49

Source: Central Bank

The above table shows the significance enjoyed by this sector as a single uniform product sector helping Sri Lanka to earn net foreign exchange.

Should we analyze this sector in more detail we could find the following table showing the present circumstance:

Product Sector	Value (Rs. Mn.)
Spice & Allied Products	6750.0
Fruits & Vegetables	952.8
Cut Flowers & Foliage	723.0
Betal Leaves	126.5
Arecanuts	43.9
Sesame Seed	6.0
Total :	8607.2
	=====

Source: Central Bank

It is evident that spices and allied product sector plays a bigger role within the other export crops sector as a single uniform product. Five major products of spices i.e. pepper, cinnamon, cloves, nutmeg & mace and cardamom cover an area of 39,000 hectares of land in cultivation. Although, the other crops are cultivated in home gardens a considerable amount of acreage is allocated for those crops also. The total acreage under non-plantation crops roughly around 1,74,633 hectares.

Challenges under Globalisation

As mentioned in the introduction the globalisation of trade warrants free movement of trade and services without any hinderences. This concept is based on the free trade which is an outcome of absolute product advantage. Trade liberalisation can be linked to a journey that begins with little more than an intense desire to leave where one happens to.² The trade liberalisation is the fundamental step for leading to a globalization. There are 3 steps as far as the liberalisation is concerned.

- The exploitation of increasing returns to scale in a large market as Adam Smith emphasised.
- Specialisation in accordance with comparative advantage as David Ricardo elucidated.
- Fiercer competition which encourages and breaks down institutional obstacles to change, as Mancur Olson has expounded.³

Now we shall see how these principles have an influence on our trade.

In the process of globalisation of trade exploitation of increasing returns to scale would be an integral part. The globalisation process starts with specialisation of products and ser-

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VICES. For instance Bill Blass a top US fashion designer will examine woven cloth made from Australian wool with printed designs prepared in Italy. He will design a dress and fax a drawing to a Hong Kong agent who will place the order with a Mainland China Factory. The finished dress will be air freighted to New York where they will be re-distributed to department stores.

In the global economy products and services have been specialised to a greater extent as a result a final product is an output of the contribution of several countries. This feature can also be found in the field of agriculture too. For instance tea bags consumed in the Western countries or elsewhere in the world is a product using raw materials of several countries. Again the spice trade is highly globalised trade. Large processors and packers such as Mc Cormick in USA imports pepper and similar spice processes them in their factories and distribute. Except fresh fruits and vegetables all processed food materials undergo this process. Most of these agricultural products have been processed in countries where they are not grown or cultivated. The processing industries of these Western countries have been specialised purely due to two economic advantages which the producing countries do not have. They are:

1. Technological advantages
2. Marketing advantages

As far as the technological advantages are considered this feature is not readily found in producing countries. For instance, oil extraction industry can be cited. The oil such as sesame, sunflower, soya are extracted by using modern technology (cold pressed). The machinery used in the processes are very expensive in value terms too. Large quantities of raw materials are required for the processing and also to keep the machine out-perturbed uninterrupted.

So the high cost of machinery will be a major challenge for the countries like Sri Lanka. For instance an obvious example is as mentioned earlier the machinery needed for oil extraction. The complete set of machine including laboratory equipments and the bottling plant will be cost approximately Rs. 8.0 Mn. (US \$ 84,000). The local companies are unable to bear the total cost of such operation. Therefore, oil processing industries have been located in



wealthy Western and Eastern countries. They buy one MT of sesame at a rate of US \$ 500 extract oil and sell an ounce of sesame oil at US \$ 7.00 in USA. This is one of the live example which can be produced as an evidence for establishing the challenges countries like Sri Lanka faces. So the real advantage is accorded to the processor but not for the cultivator or producer.

The second aspect which goes side by side with this technological advantage is the quality parameters set by the developed countries. Well known ISO 9000 series as well as IFOAM quality standards in Europe, Food & Drug Administration Law operated by USA are few of these categories. These quality standards really affect the processing industries in developing countries. But developing countries cannot find fault with these regulations since they may affect the health of consumers if inferior quality food products are consumed.

The marketing advantage possessed by the developed market economies against the raw material producing countries is the biggest challenge which

would not be easy matter to overcome. More than roughly 90 per cent of the world economy is controlled by well organised multi national corporations which have their fullest control over IT industry, auto industry, energy, food and so on. Similarly the processed food industry is also totally in the hands of multi national corporations such as Nestle, Mc Cormick and Master Foods (Mars).

If we analyse few of the product sectors we would be really be able to consider the impact of these challenges on our exportable products.

Desiccated coconut is one of the major food ingredients we export. Our major markets for D.C. exports and their shares are given below:

Market	Share (Percentage)
Egypt	11
U.A.E.	11.7
Germany	7.3

Earlier our major markets for D.C. were countries like U.K. and Europe but it seems that the new trend of market orientation is towards Middle East. Of the coconut products, desiccated coconut has a major share in our exports nearly 39 per cent.

Spice is the next important sector which constitutes a share of 14.7 per cent of our total exports of non-plantation crop exports. The pattern of market distribution for our spice is also little out of the traditional market orientation but 18 per cent of our total spice products goes to India in raw form where they are processed and exported to various destinations.

Our fruits and vegetables exports take a different turn as far as the other sectors are concerned. More than 30 per cent of our vegetable exports go to Maldives while around 14 per cent to Middle East. Fruits sector also takes a similar shape. India being the largest buyer while Maldives and Middle East enjoying the next respective positions.

Cut flowers and foliage sector is also a significant non-plantation export crop. In 2001 Sri Lanka exported Rs. 723 Mn. worth of floricultural products primarily to the Netherlands, Japan and U.S.A.

Although export turnover of perishables is somewhat 4 per cent of our total agricultural products which sector brings 99 per cent net foreign exchange earnings into the country.

One biggest challenge which hampers the export growth of the perishable products such as fruits and vegetables, cut flowers and foliage and betel leaves is the heavy freight charges imposed by the air lines. This is sometimes reached to 40-50 per cent share of the CIF or C&F value of perishable items. Therefore, exports of perishable items specially to Europe and Japan confronting a biggest hurdle for the exporters who are involved in this trade. In the circumstances our exporters are more concentrating new markets such as Middle East and other emerging markets such as Russia and Eastern Europe instead of this traditional market place.

The process of globalisation poses several challenges for the products and services exported from Sri Lanka. Since the globalisation process is also partly based on the theory of survival of the fittest it will be an arduous task for developing countries like Sri Lanka to prepare for these challenges.

Sri Lanka gradually loosing its market share of most agricultural exports to India, Vietnam or China. Vietnam is the latest challenge now Sri Lanka faces. Vietnam also grows almost all the agricultural products we grow here but at a very low cost. Although Sri Lanka is unable to supply large quantities Vietnam is in a position to meet any supply schedule. Vietnam by its massive rice production has now reached the mark of the second largest producer of the world. Therefore Sri Lanka will have to change her agricultural policy in order to face the new challenges.

If we are going to face the new challenges invariably it will be associated with our cost of production. The cost of production of our agricultural produce is very high when compared with the other countries, like Vietnam, Malaysia, Indonesia and Thailand. They have lowered their cost of production by introducing large scale production and new varieties of plants as well as new technology. In Sri Lanka we have been unable to do so due to our land distribution pattern. Our rural farmers who contribute approximately 20-30 per cent to our economy is suffering under dire poverty. Therefore, their contribution towards the development of the agriculture is not much impressive in the context of foreign trade. Hence, the government should encourage the private sector participation in the field of agriculture.

If Sri Lanka is to be fallen in line with the speed of globalisation of her economy it is quite imperative that she should transform her agricultural policy to accommodate any macro level global adjustments without which her products will be highly uncompetitive and of very low quality. Should the government make the policy environments to embrace the idea of agri business instead of agriculture it would pave the way for development. Engagement in the extensive farming methods even in the field of export related agriculture is the only solution to sort out a multitude of social and economic problems of the country.

The intensive or small scale forms will bring no effective solution to the changing scenario of the global trade. In the context of globalisation the biggest problem we face is the high cost of production associated with low supply capabilities. Therefore, if we are to remain competitive in the global market it is essential that we should consider reducing our cost of production. (specially chemicals and agricultural machinery etc.). This target would not be able to achieve through disintegrated farming system like what we have today in Sri Lanka.

The next biggest threat or challenge is the marketing. Sri Lanka does not have

the necessary marketing capabilities to compete with powerful countries. Therefore, Sri Lanka could adopt a policy of Strategic Alliance in order to overcome this problem even to a certain extent. Dr. Mahathir Mohommed of Malaysia adopted this policy and has been able to control the activities of rubber trade to a certain extent. Similarly, what Sri Lanka require at this juncture is to develop her marketing skills in overseas countries. If this shortcoming could be rectified we would be able to face any challenge emanating under globalisation.

The marketing challenge I am stressing here is the processing capacity of our own raw materials upto value added products and distribution capabilities. If we cite an example we do not have any power to decide our own distribution other than leaving same to buyers or importers. We would not be able to acquire such status for our country under the present circumstances. If the government could consider assistance towards a viable distribution system which could be operated in a small way such as opening up of store houses or small scale shops in developed market economies our exporters can retain a bigger mark up which at the moment is absorbed by the existing marketing channels.

For instance Indians who are living in U.S.A. and Europe have opened their own shops. They operate their own restaurants which buy the ingredients exported from their own origins. This may be a small step towards challenging the established distribution system but progressively this system would be able to maintain a certain level of consistency in our export agricultural products.

Footnotes

- 1 Delbert Fitbett – agriculture – The Uruguay Round - a Hand book on the multinational Trade Negotiations - World Bank
- 2 Martin Wolf – Why Trade Liberalisation is a good idea.
- 3 Olson Mancur – The rise and decline of Nations' Economic Growth Stagflation and Social Rigidities

Spice Sector of Sri Lanka

Issues, Challenges & Opportunities for Next Decade

Abstract

Humanity is confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health, and illiteracy, and the continuing deterioration of the ecosystem. Combating these difficult situations needs correct identification of issues, challenges and opportunities of various sectors in developing countries. Agriculture is one important sector. This paper addresses these issues focusing on the spice sector of Sri Lanka.

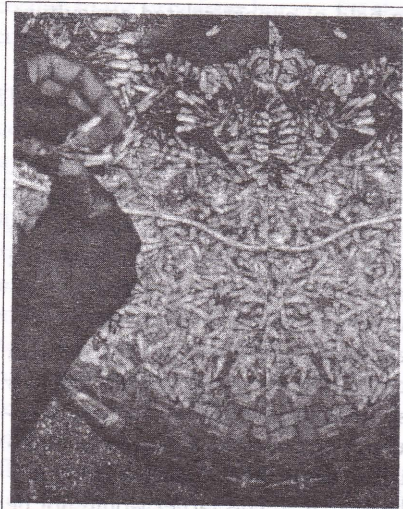
The major issues concerning the production aspects of spices include high cost of production, small size of cultivation, improper quality of spices and the competition for land from other commercial crops. Number of interrelated factors contribute to these issues. The important factors are low yield, under-utilisation of land, senility of cultivations, and low rate of replanting, subsistence nature of cultivations, and market disincentives. Trade liberalisation under Uruguay round of GATT agreements poses several issues and challenges for the spice sector. The major one is the restrictions emanated from the sanitary and phytosanitary measures. As the current level of quality of many spices exported is below the expected level, it is imperative that the quality issue should be addressed effectively and measures should be taken to improve the quality. The agreement on TRIP will also impose a challenge to us. It is necessary that Sri Lanka should introduce high yielding varieties and also other cost minimising technologies. Technology sharing is definitely a promising way of expediting this process. The limitations imposed by TRIP should

be taken into consideration in this aspect.

The most glaring opportunity available to the spice sector is the intrinsic quality of many spices brought about by the superior genetic base of the cultivations. In order to transfer this biological wealth into monetary values, the final products of spices must be of admiring quality, which is not the current situation. Along with the challenges arising from new trade agreements, they provide a number of opportunities too,

Anura Herath*

namely (a) doors of more and more international markets will be opened, (b) a short term price increase could be expected, (c) more trading opportunities will be available for value added products, and (d) foreign direct investment could be expected in the spice sector due to more liberal marketing and increased transparency.



Clove earns good income today

In order to capture the full advantage of these opportunities, the paper recommends (a) adopting measures to reduce cost of productions and

scientific post harvest measures, (b) to take measures in participating commodity futures (pepper in particular), (d) to place emphasis on policy, research, information communication, training, extension and testing directing towards improving quality standards, (e) to orient growers to produced "naturally clean" spices rather than "cleaned" spices, (f) to establish National Enquiry Points to obtain information on sanitary and phyto-sanitary measures and (g) to impose compulsory pre-shipment inspection process at least in the short run to ensure the quality of exports.

Introduction

Development of humanity across the nations is a new global challenge faced by us as well as all other developed and developing nations. No nation can face this challenge on its own. A global partnership for sustainable development is the need of the day. Agenda 21 focuses on this issue and emphasises the importance of globalisation process of development issues.

Globalisation process in general requires the realisation of achieving a more efficient and equitable world economy, keeping in view the increasing interdependence of nations and sustainable development as a priority item of the development efforts. The development process will not gather momentum if the global economy lacks dynamism and stability, and is beset with uncertainties. Neither will it gather momentum if the developing countries face barriers restricting access to markets and if commodity prices and their terms of trade remain depressed.

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Agriculture related issues in the process of globalisation are crucial for many developing countries, as agriculture is the basis of sustainable economic development. Sri Lanka, like most of the other developing countries, has a few sub-sectors of the agriculture sector, namely plantation sector, food crop sector and the export agriculture crop (EAC) sector. EAC sector has close linkages with the world market and is thus widely open for globalisation process. This paper focuses on the spice sector of the export agriculture crop sector to assess its strengths and weaknesses to enter into the globalisation process. With this general background, the paper addresses the main issues, challenges and opportunities of the spice sector in facing the globalisation process. Specifically, the paper has the following objectives.

1. To provide a brief overview of the spice sector of Sri Lanka and its place in the world market;
2. To highlight the main issues influencing the sustainability and growth of the sector;
3. To present the new challenges faced by the sector as a results of close linkages with overseas buyers and consumers, and also because of the nature of resource use in the domestic agriculture sector;
4. To address the opportunities and potentials available with growers, traders and exporters to face the identified challenges and influence the development of the sector; and
5. To propose policy recommendations in facilitating various interventions to harness the potentials in developing the sector.

2. Spice Sector of Sri Lanka

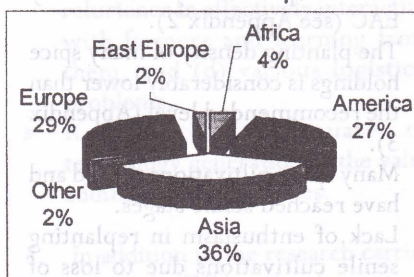
The International Spice Group defines spices as any of the flavoured or aromatic substances of vegetable origin obtained from tropical or other plants, commonly used as condiments or employed for other purposes on account of their fragrance, preservative or medicinal

qualities. Among several spices¹ Sri Lanka currently emphasises on cinnamon, pepper, clove, cardamom, nutmeg and betel. Spices are important commodities both in domestic and overseas market historically as well as currently. In addition to that spices are important in the economy of Sri Lanka due to the following reasons.

- It contributes about 0.5.% to the total GDP and 1.3.% to the total foreign exchange earnings by generating over Rs 5000 million
- Sri Lanka export spices to about 70 countries in total and about 20 of them are major importers thereby having a very stable overseas market
- Over 50,000 ha of wet zone land is under spices (Figure 1 for a comparison of land use by other crops).
- There are over 200,000 small-scale growers² involved in cultivating spices and thus the sector has a small farm orientation.
- Further, there are about 10,000 people involved in various activities connected with the process from cultivating to shipping of spices and thus generating employment.
- Cultivation and processing are labour intensive and in that women labour has a substantial role to play. Sri Lanka and other countries have shown that labour cost is over 50% of the total cost of production (62% in Indian pepper, 65% Indian clove, 51% Indian cardamom).
- Spice growers operating about two acres obtain about 30% of their family income from spices.

Recognising the importance of the sector, the Government of Sri Lanka has provided various types of incentives for

Figure 1: Comparative Picture of Land Use in Spices, Other EAC and Plantation Crops



Source: Central Bank of Sri Lanka, 1996.

cultivation and processing of spices since 1972 with the inception of the Department of Export Agriculture (Appendix 1 lists the current incentives provided by the government for the sector). Meanwhile, the prices of spices escalated excepting clove prices, the cultivated extent of spices expanded from 30,240 ha in 1980 to 53,640 ha in 2000, the total spice export grew from 10,301mt in 1980 to over 20,000 mt in 2000, and the foreign exchange earning from spices increased from Rs 512 million in 1980 to over Rs 4000 million in 2000. These statistics show the growth of the spice sector.

Despite the performance, the sector is facing new challenges attributing to the very nature of its interactions with international trade floors. In order to develop the sector on a sustainable basis, key stakeholders need to be aware of the main issues and challenges, and the ways of facing such challenges by optimising the opportunities available in the sector. The policy intervention is a key prerequisite in this endeavour.

3. World spice trade

The origin of world spice trade dates back to early civilisation. In Sri Lanka too the agreement between the King Sri Wickrama Rajasinghe and the Dutch gave a special prominence to spices. Importance of the world spice trade has declined to some extent in the developed world with the expansion of other commodities and manufactured products. The total world import of spices (this include all the spices listed) is in the order of 500,000 MT valued at US \$ 1.5 – 2.00 billion (UNCTAD/WTO – (ITC), 1996). According to the International Trade Centre, the average global imports of spices has been increasing from about 220,000 MT during 1970-75 to about 500,000 MT during 1993-95. Further more considering the value addition and the marketing margin at retails and domestic markets, the value of trade exceeds US \$ 10 billion.

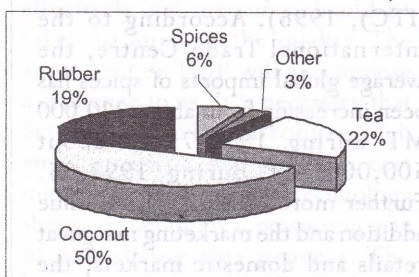
The growth rate in volume terms is estimated at 3-4% annually.

The major importers of spices include Mexico, United States of America, Europe, Asia, and East Europe. Figure 2 shows market proportion of spice imports to the world market in value terms in the major importers. Asia has the highest percentage in the imports indicating Asian regional co-operation is worthwhile for the improvement of the Sri Lankan spice sector.

Many developing and developed countries produced and export spices. Even US, being one of the largest importers, produces spices. India with about 2.2 million MT of production and 2 million MT of consumption is the largest producer and consumer of spices. Developing and least developed countries in the tropical region are the leaders of spice production and exports. They have a proportion of 68% of the world export of spices in 1992 (UNCTAD, 1994).

The global trend in the spice market is promising despite the fact that it has new challenges as discussed later. The promise stemmed mainly because of the growth of the food processing industry and the food service industry in the world. An analysis of the US markets showed that the per capita spice consumption has increased from 2.33 pounds during 1980-85 to 3.19 pounds during 1990-94. Not only the developed countries, but also the developing country markets in the

Figure 2: Value of Spice Imports in the World Distributed by Importers (total is US \$ 1.6 billion - 1992)



Source: UNCTAD Commodity Yearbook, 1994

Asia-Pacific region are witnessing a rapid growth in the food-processing sector. Food companies, particularly those in the snack food and ready-to-eat food business, catering to these markets need to introduce new flavours regularly. Spices are the most essential ingredients in this process. At the same time the demand for spices of this nature naturally requires high-standardised quality. This is the main challenge faced by many exporters.

The major importers of Sri Lankan spices are Mexico, USA, and India. Out of them Mexico took the lead in 1996 in importing spices worth Rs 960 million. In terms of total volume of spice imports developed countries are the leaders. Adoption of quality that is acceptable to them is therefore the main issue faced by our growers.

4. Issues and Challenges in the spice sector

There are a number of development issues concerning the spice sector. DEA addressed and documented many of these issues. The issues and challenges, though they are slightly different in nature, are taken together in this section for the convenience of the analysis and are categorised into four groups according to the nature of the issue.

4.1 Production Based Issues

The production-based issues emanate due to the nature, efficiency, scale, and the management level of the spice cultivation. The major issues with implication on policy are listed below.

1. The most alarming issue in the sector is the high cost of production of spices. This is due to many reasons namely:
 - The farmers' yield is notably lower than the potential yield of many EAC (see Appendix 2).
 - The planting density of many spice holdings is considerably lower than the recommended level (Appendix 3).
 - Many spice cultivations are old and have reached senile stages.
 - Lack of enthusiasm in replanting senile cultivations due to loss of profit.

- Recommended improved practices are not adopted due to (a) inadequate knowledge; (b) many recommendations are for pure cropping but farmers have mostly mixed cropping; and (c) lack of financial resources.
- A larger proportion of the production base consists of low yielding varieties.
- The agriculture sector in general is facing a scarcity of labour, which results in disproportionate increase in the cost of labour.

2. The second important issue is the small size of the spice cultivation. Almost all the holdings are less than two hectares in size (see Appendix 4 for distribution of holding sizes of cardamom, cinnamon, pepper and clove). When farm size is too small to generate an adequate income, various problems relating to non-commercial or subsistence agriculture arise. Although the nature of crops is commercial, the type for farming is basically subsistence. This brings about several unfavourable situations for spice growers namely:

- Broad based intervention policies such as low interest capital, subsidised inputs (eg fertiliser) etc. transfer financial benefits to commercial agriculture in general, and thus small scale spice growers have limited impact of these policies.
- Subsistence farming lacks credit worthiness in the eyes of commercial banks of Sri Lanka. Thus the ready availability of credit in this sector is limited.
- Since attitudes of the growers are more of subsistence in nature, improvement of quality and exploiting the market advantages are not their priorities. This finally affects the quality of spices.

3. The third issue is the improper quality of spice products. A larger proportion of spices leaves the farm-gate with a quality that is far below the expected level of the final overseas consumer. This is due to a number of reasons, namely:

- Many producers do not have proper processing facilities and are also not aware of the quality parameters.
- Small-scale producers sell small quantities of spices to finance daily domestic requirements. It is not economically viable for them to process these small quantities to expected qualities.
- For the same reason mentioned above, many growers harvest spices pre-maturely. Such raw products do not give the proper quality.
- There are no attractive and differentiated farm-gate prices for better quality products.
- Processing technology appropriate for small-scale producers are lacking.

4. Competition for land from other crops such as tea and semi-perennial crops like banana and pineapple is also a limitation for the expansion of the production base of the spices.

4.2 Issues relating to value addition

Value addition is an important area in the development of the spice industry due to the potential of employment generation and increasing foreign exchange earning. However, the sector is facing the following issues and challenges in this area.

1. The main issue is the lack of regular supply of spices in the country. The amount is also small so that the advantage of economy of scale is lost for investors in value addition.
2. New technology for value addition is seriously lacking in the country. India, for instance, is several steps ahead of Sri Lanka in this respect. Technology can be imported and that process will be relatively cheaper than generating locally although they are covered under TRIP.
3. Cost of energy is the other important issue. Value addition needs mechanisation. With the high cost of raw spices, high cost of energy is a limitation for establishing value-adding processes.

4.3 Institutional Based Issues

The institutional issues originate due to various deficiencies existing in institutions concerning the spice sector. The main government institution mandated to promote the sector is the Department of Export Agriculture (DEA). The Sri Lanka Export Development Board (SLEDB), Sri Lanka Standard Institution, Spice and Allied Product Marketing Board, SAPPTA, CISIR and IDB etc. are the other institutions with a stake in the sector. Issues relating to these institutions are listed below.

1. Spice sector occupies a small proportion of land (Figure 1) in the country and the total production takes a small proportion of the agricultural production. Their contribution is insignificant from the point of view of food security. Hence the emphasis made by the government and other financial institutions are not at their best possible level.
2. There is inadequate appropriate research input into the spice sector arising due to many factors namely:
 - Up-to-date grower-extension-research links, which reflects the grower-demanded issues in the research agenda, have been made use of to a marginal extent.
 - Research policy and the nature of many research projects, excepting the research on post harvest technology, have very little market orientation.
 - Research efforts have spread very thinly on too many commodities without appreciating marketing potential and current challenges.
 - A limited number of research projects are carried out in farmers' field due to (a) lack of funds, (b) lack of interest of researchers, (c) reluctance in effectively interacting with farmers and learning from them, and (d) various logistical problems.
 - Research is inadequate on technology generation in the value addition aspect of spices.
3. In addition to the research carried out in the DEA, other institutions

such as Coconut Research Institute, Tea Research Institute and the Universities carry out research on spices. Since there is no co-ordination among these institutions, findings of these researches have limited use for the growers.

4. There is no formal mechanism to transmit research findings directly to traders.

4.4 Domestic Trade Issues

There are various issues and limitations concerning the domestic trade of spices. The bases of many of these limitations are the low quality of the product and unorganised nature of marketing and production of spices. The issues related to these aspects are discussed in the following section.

1. Many spice producers and even exporters are not fully aware of the quality requirement of the final consumer. It is expected that the information on quality trickle down to the producers through the trade channel. On the contrary, exporters have not taken much interest in understanding the quality and overseas importers have also not effectively conveyed the quality norms fully to their suppliers. As a result Sri Lanka has experienced rejections of spice consignments and further negotiations on price adjustments on several occasions.
2. Since farm-gate quality of spices does not match with any standard quality, there is a considerable amount of "cleaning" and processing carried out through out the trade channel. These increase the cost of marketing and also affect the final quality of produces.
3. The private sector does almost all of the marketing of spices. The contribution of the Spice and Allied Product Marketing Board in marketing is negligible. Thus there is no coherent marketing strategy, and even though there is one, it is very difficult to implement it within the current market structure. There are no market-driven production plans

and no consistency in exports volumes.

4. Very frequent price fluctuations in the spice markets are a manifestation of the volatility in both export and domestic markets. This is a situation by which many countries suffer.

5. The overall price structure of the spice sector is a deterrent for investors to establish value-added product. The farm-gate prices of many spices and the retail prices are very close to the world market price on average terms (see Appendix 5). Although this is a favourable situation for growers, relatively high prices of raw spices discourage investment in value addition.

4.5 World Trade Issues

The issues and challenges arising due to the factors related to world trade of spices are many. It is very important to face them to develop the industry. The list below highlights them briefly.

1. The most intractable general issue arising from the world trading is the quality. ISO 9000 certification and Hazard Analysis at Critical Control Points (HACCP) are becoming essential tools in the management of food processing industries. Governments and Association of Industries in most developed countries have approved industry standards, which require strict management controls for procurement of raw material and other inputs. Spice is one important item. These requirements are all focusing on stringent quality standards for exporters.

2. HACCP strategy could in turn have major implications on the following aspects of spice production, which are not merely technology issues. These aspects relate to management, type and efficiency of labour use, farm practices.

> Type of and proper manner in application of agro-chemicals

(pesticides, weedicides and chemical fertiliser) for spices. The aim is to minimise the trace element in the final product.

> Proper harvesting, processing, storage and packing.

> Proper screening of material to remove extraneous matter and hygiene of processing units and factory workers (this is prescribed by ISO 9000 standards).

3. The next major issue is the impacts of GATT Uruguay round agreements on spice trade. This is a complex issue with many variables. There are four basic rules namely (a) protecting the domestic industry by tariff only, (b) tariffs should be reduced and bound against further increase, (c) trade according to the most-favoured national clause, and (d) national treatment³ on which the agreements are based. The spice trade will be completely under control of all four principles. They provide both advantages and disadvantages to the Sri Lankan spice sector in terms of maintaining the industry. The crucial challenge is to try and minimise the disadvantages as soon as possible. The following section briefly lists the impacts of three agreements on spice trade.

⊙ *The Agreement on Agriculture*

The aim of the agreement is to establish a "fair and equitable market-oriented agriculture trading system". In doing that GATT expects to minimise (a) use of border measures to control imports, and (b) use of export subsidies and other subsidies that government grants to support the prices of spices (agriculture products) and assure a reasonable income to farmers. The following specific areas are relevant to the spice trade, which are covered and disciplined under this agreement.

⊙ *Domestic Support Provision:* This falls into two categories: those that are non-trade distorting and thus not disciplined (Green Policies⁴); and those that are trade distorting and thus subject to gradual reduction

(Amber Policies). Under the provision the trade distorting subsidies will be subject to 20% reduction. Sri Lanka, being a developing country, is exempted from any obligation to reduce its subsidies if the total non-product specific domestic subsidy is below 10% of the value of total agricultural production (base period for calculation is 1986-87). The implications of this provision are the following.

⊙ There are financial assistance schemes such as cultivation grants implemented by the government (through DEA) to finance farm inputs such as fertiliser and planting material. However, the total value of these assistance programmes is well within the permissible level of internal support provision. Therefore the present scheme of assistance in the EAC sector will have no room whatsoever for disciplining under the GATT provision.

⊙ Other assistance schemes such as research, extension etc. are green box policies.

⊙ *Export Subsidy Provision:* According to the provision all practices considered to be direct export subsidies will be disciplined. Developing countries are required to cut export subsidies by 24% in budgetary terms and 14% in tonnage terms. The policies that are considered to be export subsidies include (a) direct subsidies, (b) disposal of government stock below market prices, (c) producer - financed export subsidies, (d) marketing subsidies and (e) subsidies for commodities contingent on their incorporation in exported process product. There are no assistance programmes in the spice sector falling into this category.

In the event that the producer - financed export subsidies are disciplined in other producing countries there will be a decline in the prices in the long run. The inefficient producers, many of the Sri Lankan spice producers fall

into this category, may not be able to face these lower prices. Therefore it is imperative that the production base of EAC has to be improved from the less efficient productivity stage to a more efficient one. The institutional support and a fresh approach to the challenge are urgently required.

● *The Agreement on Sanitary and Phytosanitary Measures*

Sanitary and phytosanitary measures (SPS) refer to a procedure or requirements taken by governments to protect human, animal or plant life or health from the risks arising from the spread of pest or diseases or from additives or contaminants found in food and beverages. This is enforced to maintain the food safety.⁵ These measures are likely to become the biggest non tariff barrier to export growth and market access. The final act, however, establishes a multinational mechanism to ensure that health related measures are not used as disguise barriers to trade. The implications of this agreement are the most formidable challenge to be faced by the sector.

Almost all the EAC products (coming from plantations / cultivation), which are exported at present have inorganic compounds such as remnants of inorganic fertilizer, pesticide, etc. Inorganic substances are used in the processing of almost all the EAC products exported as semi-processed commodities (i.e. dried, fermented or distilled). Unless there is a transfer from inorganic farming to organic farming, it is almost impossible to eradicate chemical substances in the final product. Similarly, unless very advanced techniques of processing and storing are used, the EAC commodities will contain minute amounts of chemical substances. When these commodities are exported, even a micro trace of inorganic substances

could be considered as harmful. In this regard the provision can be rather restrictive.

At present most spices face the problem of maintaining International standards. In the event of the standards under SPS being stricter, it will be very difficult for Sri Lankan exporters to meet the SPS requirements. Since the agreement does not provide a period within which a country can progressively increase the restrictions, the developing countries like Sri Lanka will face a problem of improving quality standards within a very limited period. This may result in losing some of the international markets for spices, which will in turn affect local prices and supply conditions.

● *Agreement on Trade Related Intellectual Property Rights (TRIP)*

This provision, very briefly, allows countries to patent new inventions including life forms such as new plant varieties, new breeds etc. The rationale of this provision is to make sure of an adequate financial return to the investment, which is being made in plant genetic research by biotechnology companies and public institutes. This is an extension to existing Intellectual Property Rights (IPR) measures.

The extension of IPR to biological products raises new economic and farming system problems. Two forms of IPR are relevant to plant genetic resources: patents and plant breeders' rights. A patent protects a product or process, which is the result of an inventive step and which is new, useful and non obvious. The relevant products in the spice sector are new selection of pepper varieties called "Swarna Lanka" and selection of low elevation cardamoms. Patents usually permit the holder to forbid commercial use, sale or manufacture of the protected product or process by others for a period of 17 - 20 years.

Plant breeders rights allow a protected variety to be used without permission from the holder and

without a payment of royalty for the purpose of breeding other varieties. Under the new patent law of GATT this right is not exclusively preserved. This will have a negative impact on the development of new high breed varieties, because a variety, which is required as a parent, could be obtained only after a payment of royalty to the holder. Particularly, a public institute such as the DEA will have difficulties in securing funds for royalty payments. The immediate result will be a limited access to a common pool of genetic resource, which is an essential condition for plant breeding.

According to the provision, in a patenting application, protection can be claimed even for individual genetic characteristics. A situation could arise where, if a protected gene finds its way into another variety, the patent holder could exercise their claim over the resulting variety. This rather restrictive provision limits both the flow of acceptable varieties to farmers and contribution to biodiversity. A possible implication of this condition is that about 45,000 Sri Lankan growers of "Panniyur" and "Kuching" varieties of pepper would have to pay a royalty to Indian pepper breeders! This calls for a provision to maintain the farmers' privilege of permitting farmers to plant either with saved seeds in successive season or with vegetative propagation methods such as propagation through plant cuttings, tissue culture etc. (both are relevant to the spice sector).

4. With the intervention of GATT, Sri Lanka will not be able to administer measures like minimum export prices, voluntary export restraints etc. to stabilise the prices. Hence volatility and price fluctuation will continue to be the ground situation in the future.
5. As mentioned earlier, Sri Lanka needs improved varieties in terms of yield although our spices have

high intrinsic quality. The accessibility to varieties and germ plasm from other countries to meet this need will be difficult, because in view of the provisions of the Agreement on TRIPS, most countries would amend their Trade mark Acts, Patents Act and would also introduce a "Sui generis" system of protection of Plant varieties.

6. Cleaning of spices by the importing countries will be another important issue. Cleaning of contaminant is traditionally done by irradiation. However, this will be permitted only with strict conditions. Being a highly emotive consumer issue, and given that the increasing share of spice use in food industry, guidelines are expected to be strict and monitoring stricter. Food companies may decide, as a matter of business strategy, not to use irradiation at all, even if legally permitted. This will be a challenge for Sri Lanka as a considerable amount of spice exported has microbial contamination. Even though other spice producing countries generate new methods of sterilisation, importation of them will be expensive under Patent laws.

5. Opportunities and potential in the spice sector

The opportunities and potentials available for the sector are very marginal. The following sections briefly address the opportunities and potentials.

5.1 Opportunities Relating to Production Base and Local Trading

1. The most attractive potential available for Sri Lankan spice sector is the intrinsic quality of the production base. Very specific genetic make-up of almost all the spices cultivated in Sri Lanka contribute to this factor. This has been experimentally proved in the case of pepper, cinnamon and cardamom. The production base is

therefore suitable for improving quality, supplying as raw materials for quality value added products.

2. The bottom layers of the marketing channel of the spice sector represent a near perfect competition condition although this situation gradually transforms into an oligopolistic situation in the higher levels of the channel. Having a near perfect competition has advantages for producers in terms of getting a competitive price.

3. The spice cultivation is a tradition in Sri Lanka and hence familiarity with crops and awareness of most of the management practices, albeit the modernity of the technology, is not a limitation. Thus the production base can be expanded with little effort.

4. Although the cost of production (COP) is high, net foreign exchange earning from spices is substantial because spice production and processing uses very little or no imported items.

5. Another important opportunity of the sector is that the Government is now emphasising on diversification of plantations (tea, rubber and coconut) with spices and also establishing plantation level spices cultivations. There are grant and loan schemes available for these activities. This attempt, to some extent, will ease the problems relating to small-scale nature of spice production.

6. The DEA programmes have so far given a marginal emphasis on the development of the local trading sector relating to spices. Through the new assistance schemes, there are various assistance programmes available for spice traders to improve their technology, and other trading requirements.

5.2 Opportunities Relating to world Trading

These are arising mainly as a result of trade liberalisation under Uruguay round of GATT and are briefly listed below.

1. With the removal of arbitrary import regulations, more and more international markets will open up for spices. Sri Lanka can benefit out of this trend.

2. At present there are export subsidies for clove and pepper in Indonesia, which is the largest producer of these two commodities in the world. The gradual removal of these subsidies would increase the world prices of clove and pepper at the initial period. This is a positive gain for Sri Lanka since we are a net exporter. However, this will be an advantage in the short run.

3. With tariffs being brought down consistently over a period of time and bound at certain levels, more opportunities will emerge for adding value particularly in the areas of grinding, packaging, spice blends and oil and oleoresins. Appropriate processing and sustainable quality are the key requirements to capture this opportunity.

4. With the option of shifting production base to countries and regions, which is a result of regional co-operation, global companies may decide to invest in production and processing in the spice sector to take the advantage of (a) raw material, (b) cheap labour and (c) competitive freight facilities. For instance global spice companies have made investments in spice growing countries such as India, Indonesia, China etc. Sri Lanka needs to have economic policies, which will stimulate such investments.

5. Global spice trade is now operating with increased transparency and under much more certainty than before the Uruguay round regulations. This is conducive for investment in the spice sector. This opportunity will have to be properly made use of by our spice sector.

6. Recommendations for exploiting opportunities

The following are some of the recommendations to minimise the negative aspects of issues arising from

globalisation of the spice sector of Sri Lanka and also to make use of the opportunities available for the sector:

1. Growers should be made aware of the importance of reducing and controlling cost of production of spices to be competitive in the world market.
2. Sri Lanka needs to adopt more scientific post harvest technology practices and processing technology to be able to take advantage of the market access opportunities.
3. Sri Lanka should be in the direction of adopting options such as commodity futures for selected spices. Pepper is a promising commodity. International Pepper Community (IPC), of which Sri Lanka is a full member, has already mooted a proposal to set up an International Pepper Futures Exchange (IPFE). FAO has reported that futures and option markets, which were traditionally adopted by the developed countries, have shown a significant growth in developing countries.⁶
4. Emphasis should be placed on the possibility of exchanging genetic material and plant varieties since introduction of such items from other countries to Sri Lanka will be difficult under TRIPS protection that would exercise by other countries. Sri Lanka should also introduce a "Sui generis" system of protection of spice genetic material. This requires high level expertise and may be beyond the resources and technical know-how available to us. Thus necessary steps should be taken to carry out collaborative work with other spice producing countries such as India and world organisations such as WTO, and FAO.
5. Sanitary and phytosanitary measures may become the biggest non-tariff barrier to spice exports. Along with the increased awareness of these aspects, programmes should be developed to improve the capability to detect and eliminate contaminants, to

process spices to acceptable standards, and proper packaging etc. The minimum or no usage of agrochemicals in spices is an important aspect to maintain sanitary and phytosanitary standards. Research should focus on such methods. A well formulated strategy including policy, research, information communication, training, extension, and testing facilities is a urgent need to face this challenge.

6. Article 9 – Technical Assistance under SPS measures states that "Members agree to facilitate the provision of technical assistance to other Members, especially developing country Members, either bilaterally or through the appropriate international organisations. Such assistance may be in the areas of processing technologies, research, infrastructure including the in the establishment of national regulatory bodies, and may take the form of advice, credit, donations, and grants". The government should take necessary steps to make use of these provisions and expedite the process.
7. Sri Lanka has to evolve appropriate technologies to reduce contamination at the harvest and post harvest stages to maintain competitiveness. Our advantage would be in producing, "naturally clean" spices rather than "cleaned" spices. This would require major efforts in post harvest technology, training and warehousing.
8. The government should take, at policy level, the adequate steps to enforce the provisions of the Agreement on TRIPS so that private sector and even the state sector can invest on research and development in the spice sector without the fear of the results being copied unfairly by other countries.
9. It is important for Sri Lankan exporters, traders at all level and growers to know the details of the SPS regulations, mandatory standards and in certain cases voluntary standards in target export markets. The government should establish National Enquiry Points facilitating the flow of timely and reliable information on SPS.

10. Although GATT agreements initiate liberal trade, they same time provide special safeguards, granting domestic and export subsidies, countervailing duties, and anti dumping measures to control unfair trade. These provisions will be thoroughly understood and implemented if need arises. A proper trade monitoring system should be adopted to pick up related issues for exploration.

11. It is apparent that improvement of quality of export destined spices is an urgent requirement. As a short-term measure, until the market forces establish the proper quality standards, it is proposed that the SLSI should be given the authority and also the required facilities to carry out pre-shipment quality testing of every consignment of EAC destined for export. The standard practices of quality testing can be adopted by the SLSI and issue a certificate to the effect that a particular consignment is of a particular quality. The quality certification is especially important for bulk exports. The certification should be done prior to export and carried out by the officials of the SLSI as required by the custom authorities.

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Appendix 1: Current Incentive Schemes for the Spice Sector

1. Cultivation Grant Scheme

Crop	Type	1997		1998	
		Total Subsidy (Rs./Ac.)	No. of Instalments	Total Subsidy (Rs./Ac.)	No. of Instalments
Cocoa	NP	—	—	25,000	4
Cocoa	RP	26,750	4	36,750	4
Cinnamon	NP	—	—	35,000	4
Cinnamon	RP	40,000	4	55,000	4
Cardamom	NP	25,000	4	33,300	4
Cardamom	RP	—	—	35,000	4
Cardamom	UR	—	—	35,000	4
Pepper	NP	30,000	4	45,000	4
Coffee	NP	25,000	4	33,700	4
Citronella	RP	10,000	2	15,700	2

APPENDIX

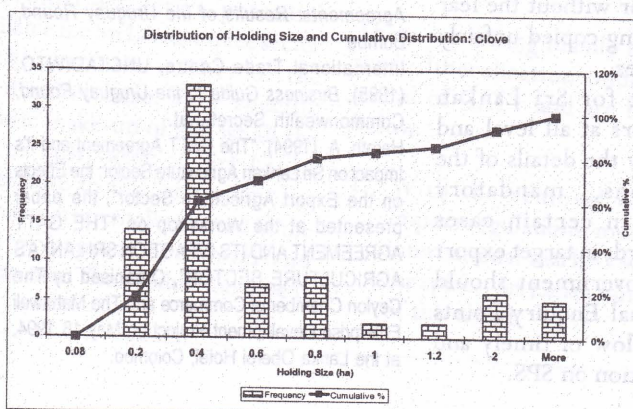
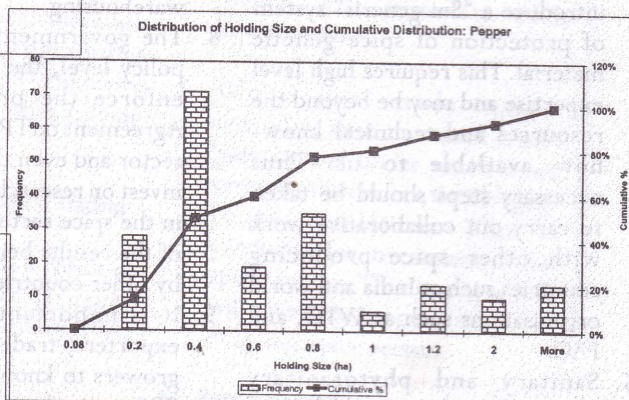
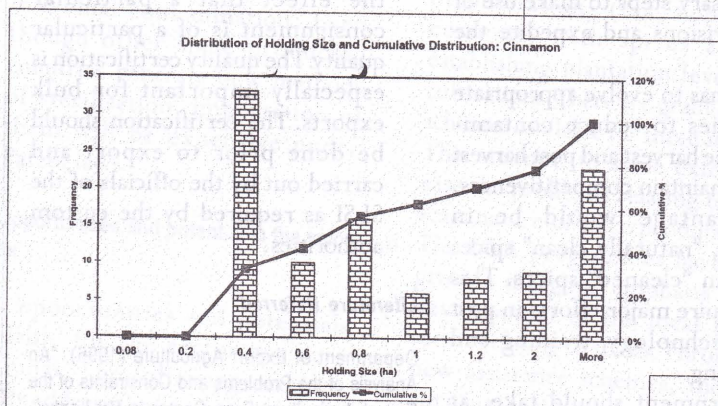
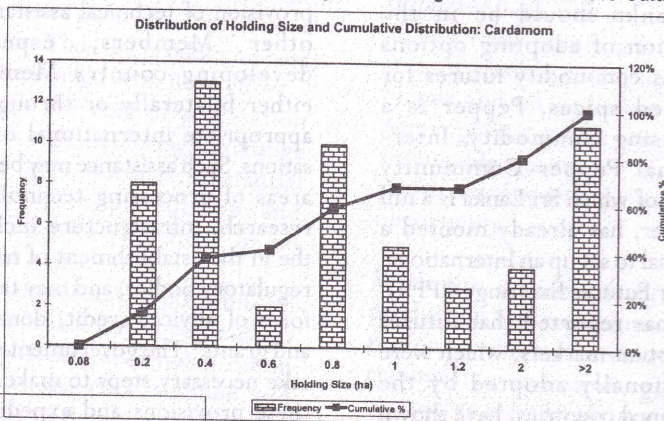
Appendix 2: Research Yield, Farmers' Yield and Achievable Yield with Improvements

Crop	Potential Yield under Research Conditions (Kg/ha/Year)	National Average Yield: Earnings' Yield (Kg/ha/Year)	Targeted Yield with Improvement (Kg/ha/Year)
Pepper	2000	350	1000
Cinnamon (Quills)	1200	600	1000
Cardamom	200	70	100
Nutmeg	1000	475	800
Clove	450	300	400
Betel (1000 vines/ 2-weeks)	40000	20000	30000

Appendix 3: Planting Density of Farmers' Field and Recommended Planting Density of Spice Crops

Crop	Farmer' Field Density	Recommended Density
Coffee	735	3,000
Clove	167	250
Nutmeg	104	250
Cocoa	857	1,100
Pepper	1,032	1,700
Cinnamon	5,677	14,000
Cardamom	1,284	2,000
Citronella	23,923	28,000

Appendix 4: Distribution of Spice Holdings According to the Size of the Cultivation



APPENDIX

Appendix 5: A Comparison of World Prices, Average Exporters' Prices and Farm-Gate Prices of Spices in Sri Lanka

COMMODITY	1991-94 Average (Rs/kg)				1995-97 Average (Rs/kg)			
	World Price (WP)	F.O.B. Price	Farm-Gate Price (FG)	WP FG	World Price (WP)	F.O.B. Price	Farm-Gate Price (FG)	WP FG
CINNAMON Bark	65.22				83.79			
CINNAMON Quills		183.70	170.28			214.84	193.75	
CLOVE	51.93	78.35	64.53	-12.60	62.62	68.98	52.44	10.18
PEPPER (Black)	67.55	66.07	50.45	17.10	163.65	168.35	136.03	27.62
Pepper (White)	96.45				248.11			
CARDAMOM	510.32	371.46	347.42	162.90	582.72	610.29	373.25	209.47
NUTMEG	135.42	51.13	24.63	110.79	136.06	70.82	50.24	85.82
MACE	191.19	103.47	75.46	115.73	289.52	244.49	240.59	48.93

Footnotes

- According to this definition, the spices include, inter alia, pepper, cinnamon and cassia, clove, cardamom, nutmeg, pimento, vanilla, turmeric, spice seed (aniseed, badian, caraway, coriander, cumin, dill, fennel, fenugreek, and juniper), saffron, laurel leaves, and spice herbs. This paper however focuses on a selected number of spices which are the major commodities in the Sri Lankan spice trade namely pepper, cinnamon and cassia, clove, cardamom, nutmeg and mace. Sri Lankan spice sector is a component of the Export Agriculture Crop (EAC) sector which includes in addition to the spices cocoa, coffee and citronella. The content of this paper, however, broadly covers the common issues of the whole EAC sector giving special emphasis on spices.
- Whole EAC sector has over 400,000 growers.
- The entire structure of GATT's open and liberal multilateral trading system is built on these four basic rules.

The 1st rule, while recognising that it is important for member countries to follow liberal trade policies, permits them to protect domestic production from foreign competition, provided that such protection is extended only through tariff and is kept at low levels. Importantly, it prohibits countries from using quantitative restrictions, except in specified cases.

The 2nd rule provides for the reduction and elimination of tariff and other barriers to trade through multilateral negotiations. The tariffs so reduced are listed and they are known as bound rates. Countries are under obligation not to increase tariffs above the bound rates shown in their schedules.

The 3rd rule requires countries to conduct their trade without discriminating among countries from which goods are imported or to which goods are exported. This rule is embodied in the most-favoured-nation (MFN) principle. An important exception to

this rule is permitted in the case of regional preferential arrangements.

The 4th rule requires countries not to impose on an imported product, after it has entered their domestic market on paying custom duties at the border, internal taxes such as sales or value-added tax at rates higher than those levied on a similar domestic product (UNCTAD/WTO, 1995, *Business Guide to the Uruguay Round*).

- Green box subsidies are those which have no or at most minimal trade distorting effects on products and do not provide price support to producers. Examples are state expenditure on research, extension, inspection and grading of products, marketing and promotion services, income support, insurance, structural adjustment expenditure and payment under environmental programme.
- The food safety standards enforced by major importing countries consists of five categories namely (a) macro cleanliness, (b) microbial load, (c) mycotoxins particularly aflatoxin, (d) trace metal contamination, and (e) pesticide residues. The cleanliness specifications for spices enforced by American Spice Trade Association are presented in Appendix 10. According to United State Food and Drug Administration the pesticide residue tolerances in ppm for pepper is as follows: Aldrin: 0.05 ppm earlier and 0 now, BHC: 0.05 & 0 now; DDT, TDE, DDE: 0.1 & 0 now, Chlordane: 0.1 & 0 now; Dieldrin: 0.05 & 0 now; Mepthachlor: 0.1 & 0 now.
- FAO has observed that "the considerable redistribution of price risks internationally and naturally following liberalisation raises questions on the economic and social consequences of exposing agricultural producers to world price volatility, in addition to the often more substantial risks than run from natural factors which affect the year-to-year quantity produced. Exposing farmers and small traders to the full brunt of the world market price volatility is not only detrimental to them, but to the economy as a whole. The alternative to state intervention to protect farmers and small traders from price volatility lies in the use of so called market based risk management instrument (FAO Commodity Review and Outlook, 1994-95).

Appendix 6: Cleanliness Specification for Spices Adopted by American Spice Trade Association

Cleanliness Specifications	Whole insects dead	Excreta mammalian	Excreta other	Mold	Insect infested	Extraneous matter
Name of Spice, seed or herb	By count	By mg./lb	By mg./lb	%by wgt.	%by wgt.	%by wgt.
Cardamom	4	3	1.0	1.00	1.00	0.50
Cinnamon	2	1	2.0	1.00	1.00	0.50
Cloves	4	5	8.0	1.00	1.00	1.00
Mace	4	3	1.0	2.00	1.00	0.50
Nutmeg (broken)	4	5	1.0	SF(4)	SF(4)	0.50
Nutmeg (whole)	4	0	0.0	SF(5)	SF(5)	0.00
Black pepper	2	1	5.0	SF(6)	SF(6)	1.00
White pepper	2	1	1.0	SF(7)	SF(7)	0.50
		Aflatoxin	DDT etc.	Radiation	Solvent residues	
For all	4 ppb	1- 0.5 ppm		10-6%	1 ppm	

Contd. from Page 08

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FOOD MARKETING

Problems, Constraints & Solutions



Introduction

Despite the structural changes being taken place in the economy since 1977 the agricultural sector still contributes about 20 percent to the Gross Domestic Production (GDP), 37 percent to the employment and 21 percent to the foreign exchange earnings. Nevertheless, growth rate in this sector remains very low level with an annual growth of 1.6 percent as against a 6 percent of overall economic growth during the decade of 1990. The situation in the domestic food production sector is worse recording a negative growth rate of 2.3 percent per annum during the period 1980 – 2000. One of the major reasons for poor performance of food production sector is ignorance of importance of marketing in development. Many do not understand that marketing is an input that stimulates production like irrigated water. In the context of open economy, marketing plays a key role in economic development and hence it is considered as an engine of the growth in the economic development today. As a result of neglecting marketing sub sector in the development agenda in connection to the food production sector marketing problems have been acute right now and they have become one of the major issues addressed in the political campaigns during the election periods. The objective of this paper is to address pressing marketing problems. The paper consists of three sections: (1) marketing problems, (2) marketing constraints and (3) solutions to the problems.

Marketing Problems

Different market participants have different marketing problems. For example, farmers complain about low prices while consumers com-

plain about high prices at the same time. Further traders and processors complain about low quality of produce. In this section, major marketing problems cited by various market participants will be reviewed. Identification of a problem is a key to solve the problem. Today, many decisions are taken to solve problems without understanding of the problem. Many solutions link with results of the problem but not the roots of the problem. Setting up cold storage and processing factories to solve the over production is an example. The root of the

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problem is absence of production planning. The result of the problem is over production. If the problem is not addressed properly, some other problems would arise from the solution. In relation to the above example, problems are difficulties in selling of products either processed or stored in cold rooms and underutilization of factories due to lack of raw materials when the glut is over. The end result is closing down such factories / stores. Examples are vegetable cold stores set up under the MARD project at Piburattawa in Pollonnaruwa, the food-processing factory at Embilipitiya and the tomato-processing factory at Yodakandiya in Tissa.

Low market price for farm products is the problem always cited by the farmers. This problem has two aspects. One is that price received by the farmer does not cover the cost of production. This happened for chillies, onions and potatoes after liberalization of imports. Producer price potato dropped to Rs. 20/kg at the time when cost was Rs.25/kg; producer price of dried chillies came down to Rs. 45/kg when the cost was Rs.60/kg; and producer price of big onion was down to Rs.8/kg

whereas cost was Rs.10/kg. Other aspect of the low price is in relation to the input prices and non-farm commodity prices. When producer prices are analyzed relative price of food commodities have declined which means that both input and other commodity prices have increased at a higher rate than farm prices. Results of the analysis of relative price of paddy are given in Table 1. As shown in the table, the cost of labour per day was equivalent to a value of 11.19 kg of paddy in 1990 whereas the figure for 2000 went up to 28.18 kg meaning that cost of labour has increased at a higher rate than that of paddy. Similarly, price of one liter of kerosene oil was equivalent to a value of 1.07 kg of paddy in 1990 and it went up to 1.96 kg in 2000. This analysis reveals that farmers are paying more than what they are gaining. Finally farmers' well being is deteriorating over time causing a social unrest among the farming community. This has been a severe problem today because farmers' needs have increased within the context of open economy on the one hand and farmers' net return has declined on the other hand.

A variety of reasons attribute to low farm price. The major reason is over supply where buyers are not com-

Table 1: Relative Price of Paddy and Rice

Items	1990	1995	2000
Fertilizer (V) kg	1.33	1.55	1.95
Labour (man-day)	11.19	17.88	28.18
Sugar (kg)	4.13	4.50	3.83
Sunlight (Piece)	0.68	1.38	1.35
Kerosene Oil (liter)	1.07	1.56	1.96

* Relative Price = Price of the commodity concerned / Price of paddy

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Table 2: Seasonal Price Index for Selected Food Items

Month	Rice Nadu	Dried - Chillies	Potato	Green - Gram	Vegetables	
					Beans	Brinjal
January	109	102	98	89	116	96
February	102	99	82	84	97	77
March	93	90	77	93	85	60
April	92	90	93	103	88	85
May	93	85	98	96	114	110
June	92	97	110	103	121	130
July	94	104	121	99	109	108
August	98	107	105	105	106	98
September	97	105	88	109	94	108
October	102	103	87	101	89	121
November	112	111	115	109	91	98
December	115	108	125	109	90	109
% Increases to the lowest	25	30	62	30	42	116

Source: MFPD/HARTI

peting each other in pricing and offering low prices. Farmers do not attempt to control the market supply through holding stocks, staggering harvesting and controlling cultivation by changing the crops. Similarly, government does not attempt to develop such areas by investing to educate farmers and to set up stores at farm level. In addition, competitiveness in the farm markets has been curtailed due to number of factors such as prevalence of few traders and absence of alternative marketing channels. There are some villagers where only few traders are involved in purchasing farm products because new traders do not visit due to absence of access roads or poor road conditions. Farmers in the Hambantota areas do not have alternative market outlets except selling in the fairs (polas). Even their, farmers cannot sell directly to traders because of brokers who take money from traders visiting fair in the morning and purchase produce from farmers at a low price and sell to traders at a higher price in the fair itself. It was observed that a broker purchased green chilies from a farmer at Rs. 18/kg at the Pannegamuwa fair and sold to a trader at Rs. 35/kg on the same day at the same place. In case of input market, farmers have to pay higher prices for inputs such as seeds, fertilizer and agrochemicals due to oligopolistic market structure where supply is in the hand of few companies and they determine the price. In these circumstances, farmers are price takers in both input and output markets.

A sharp price fluctuation in food prices has been observed; prices drop drastically during the harvesting season and increase rapidly during the off-season. This can be analyzed using a seasonal price index, which is often calculated getting average of five-year monthly prices. The annual price is calculated adding monthly averages and divided by 12. The value for each month is worked out taking the annual price equal to hundred. Table 2 presents seasonal price indexes for selected commodities. Index values could be interpreted in two ways. One-way is examining deviation of monthly values from hundred which shows percentage change compared to the annual price. For example price of Nadu becomes lowest in April and June with the lowest index value of 92, which means a 8 percent below the annual price while the highest price reported in December with the highest index value of 115, which means a 15 percent increase against the annual

price. Other way is comparison of the lowest price with the highest price in percentage form. In the same example, the figure is 25 percent meaning that price of Nadu increases by 25 percent in December compared to the lowest price reported in April and June. The high price fluctuation was observed for potato and vegetable. Price of brinjal is over 100 percent increase compared to the lowest price.

Market supply pattern could be identified through analyzing index values. If the values are below hundred this implies supply exceeds demand and vice-versa. Accordingly index value of price of Nadu remains below hundred during the period March to September in the year. March and April is the main harvesting period of Maha paddy crop and hence index values become the low. Since Maha season is the major season with 65 percent of the total production, its production is adequate to meet the demand till the Yala crop is harvested in August and September. Index values therefore do not go above hundred till October. After completion of Yala harvest prices commence increasing because millers purchase and hold bulk of the Yala paddy crop in stores in order to release in November – January period where prices often go up. Due to this, index values are increasing after September in the year. In case of vegetables index values are above hundred during the period of May to July or August with the highest value in July. A sharp price in-

Table 3: Price Spread (Rs/Kg), 2001

Month	Rice (Nadu)			Beans			Brinjal		
	R-P	W-P	R-W	R-P	W-P	R-W	R-P	W-P	R-W
January	7.18	4.90	2.28	20.97	3.64	17.33	30.39	6.74	23.65
February	7.15	4.76	2.39	29.63	15.18	14.45	30.66	6.03	24.63
March	9.97	6.81	3.16	22.56	9.30	13.26	24.59	5.60	18.99
April	10.46	6.44	4.02	24.03	7.36	16.67	30.95	5.96	24.99
May	9.61	4.92	4.69	24.14	9.35	14.79	34.00	7.86	26.14
June	8.74	3.76	4.98	22.15	5.35	16.80	34.41	7.23	27.18
July	6.99	3.24	3.75	27.26	14.30	12.96	32.55	5.22	27.33
August	7.37	4.56	2.80	27.17	11.21	15.96	31.90	6.76	25.14
September	9.77	5.61	4.16	23.50	3.91	19.59	33.86	9.83	24.03
October	8.63	4.68	3.95	23.09	4.93	18.16	32.97	9.08	23.89
November	7.94	5.87	2.07	27.65	8.25	19.40	33.31	6.80	26.51
December	9.73	6.61	3.12	31.57	9.35	22.22	29.59	6.19	23.40
Average	8.63	5.18	3.45	25.31	8.51	16.80	31.60	6.94	24.66

R = Retail Price, W= Wholesale Price, P=Producer Price

crease was observed in May compared to April. There is a scarcity of vegetable supply in May and June in the year. Vegetable prices are low February to March due to Dambulla vegetable season. Vegetable prices commence in declining after June due to supply coming from Hagurnakethe areas this trend often continue till October due to arrival of vegetables from Welimada and Bandarawela areas from August. Chilli prices remain low from March to June due to market arrivals from Maha season harvests. In the past, prices were low in September and October due to supply from Mahaweli H area which accounted for 30 percent of the total supply but chili cultivation drooped drastically due to importation of chillies at a low price.

High price spread between producer and consumer level is a problem cited by many including media personnel. This is evident in vegetable prices as shown in Table 3. Price difference between retail and producer is Rs.25/kg for beans and Rs.31/kg for brinjal on average. This is called marketing cost or distribution cost which is often higher than producer price. It was estimated that farmers' share of the consumer price is less than 50 percent for vegetables. This means that farmer get less than 50 cents from every rupee paid by the consumer. Many believe that wastage is the contributing factor for this situation due to the nature of perishability.

However, an analysis of marketing margins shows that major reason for high price spread for vegetables is retailers' margin, which remains above one-fourth of the consumer price as shown in Table 4. This is due to small-scale business. There are a large number of vegetable retailers in markets and they have specialized few vegetables as well. It was observed that the number of vegetable retailers is further increasing due high unemployment among the youth. Over 50 percent of the vegetable retailers are below 30 years old in many market places.

Entering into vegetable retailing is simple due to low working capital and easy access to marketplace. When the number of traders increases, daily turnover curtails. Hence retailers have to maintain high mark up, always over 50 percent of the buying price to cover daily expenditure of the family.

In addition to many retailers, there are different types of intermediaries involved in distribution of agricultural commodities that also affects the wide price gap for agricultural commodities. Unlike in industrial commodities, collectors are existence at farm level to collect produce from small-scale producers and sell to traders. In some instances, brokers exist to link producers with traders. Since either farmers or collectors do not distribute produce to retailers, wholesalers exist to undertake this activity. Another problem is lack of backward linkages among the market participants to inform the requirements in advance. Consequently price risk is high. Similarly, there is no market orientation among market participants. All these contributed wide price gap between producer and consumer levels.

High post-harvest losses are another marketing problem. Losses are two-fold; quantitative and qualitative. Quantitative losses were estimated 30 – 40 percent for fruit/vegetables, 15 percent for rice, 17 percent for pulses and 35 percent for onions. Figures are not available for qualitative losses referred to value losses due to quality deteriora-

tion. Traders reported that value losses are high due to supply of produces without cleaning and sorting by the farmers. Food losses occur mainly due to ignorance of post-production activities. As such handling, packing, storage and transporting remain at rudimentary level causing losses in distribution of foods to the end users. Absence of production planning in line with market demand is also attributed to post harvest losses. When there is oversupply in the market losses are high due to difficulties in selling and careless handling. Post harvest losses reduce the farm price and increase the consumer price.

Marketing infrastructure and marketing support services have not developed yet to establish an efficient food marketing system. Marketing infrastructure mainly consists of market places, farm roads and storage facilities while support services include mainly credit, information and transport. Agricultural markets, especially fairs lack basic facilities such as water, toilets, fence, electricity, parking and access roads. Similarly, many agricultural markets are poorly designed with two–three stories building along with huge structure and wrongly located without a proper pre-assessment. Hence, many markets have been "white–elephants". Examples are public markers located at Thotalanga, Maradana, and Delkanda in Colombo. Access roads are lacking in farming areas and main-

Table 4: Analysis of Marketing Margins, Sri Lanka, (Rs/100 kg)

Item	Beans		Cabbage		Tomato		Raddish	
	Rs.	%	Rs.	%*	Rs.	%	Rs.	%
Producer's price	3100.00	52.00	1550.00	44.30	3350.00	62.00	550.00	25.00
Transport to Dambulla	62.50	01.00	62.50	01.79	156.25	02.90	93.75	04.26
Commission	50.00	00.84	50.00	01.43	50.00	00.94	50.00	02.27
Parking	00.75	00.01	00.75	00.02	00.75	00.01	00.75	00.03
Meals	25.00	00.42	25.00	00.71	25.00	00.46	25.00	01.14
Margin (collector)	361.75	06.02	161.75	04.62	418.00	07.75	180.50	08.20
Retailer's buying price	3600.00	60.00	1850.00	52.90	4000.00	74.00	900.00	40.91
Transport to Bakamoona	20.00	00.33	20.00	00.57	50.00	00.93	30.00	01.36
Market levy	25.00	00.42	25.00	00.71	25.00	00.46	25.00	01.14
Loading/Unloading	20.00	00.33	20.00	00.57	50.00	00.93	30.00	01.36
Wastage	360.00	06.00	462.50	13.21	400.00	07.41	180.00	08.18
Meals	150.00	02.50	150.00	04.29	150.00	02.78	150.00	06.83
Margin (retailer)	1825.00	30.42	972.50	27.78	725.00	13.43	885.00	40.23
Consumer price	6000.00	100.00	3500.00	100.00	5400.00	100.00	2200.00	100.00

Source: Study of vegetable production and marketing, HARTI, 1998



tenance of existing farm roads are poor. Hence, transport cost is considerably high at farm level compared to wholesale and retail level. Further, traders are reluctant to visit areas where roads are bad, so that competition in the farm market is limited lowering farm price. Storage is essential for low perishable commodities such as grain and pulses to control market supply. Due to lack of storage facilities either at farm level or traders' level supply exceeds demand considerably at harvest time, which results in dropping market prices even below the cost of production and increasing prices during the off-seasons.

As regard to support services, there is no efficient and effective market information system to gain access to information to the stakeholders in the food marketing system. Farmers need price and production information to decide what to grow, when to plant, where to sell and what price. Traders need information for pricing, purchasing and stock piling. Consumers need information to decide what to buy, from whom to buy and what price. Government requires information for formulating food marketing and trading policies. In case of credit, although accessibility of credit to the farmers has increased considerably during the past two decades, many farmers still depends on traders in borrowing money mainly because many lending institutions do not provide credit to those who have become defaulters once. Today, many farmers become defaulters due to the reasons beyond their controls such as ad hoc

imports, drought and damage made by wild animals. Traders often provide credit to defaulters and allow to pay due loans when the next crop is harvested without any interest. Traders provide interest free loans as well. As regard food transport, much of the vegetable is damaged in improper transportation. There is no special truck to transport perishable products such as vegetables. Over loaded in trucks is common. Transporters are not organized. No air and sea transportation is used for food transportation. Land transportation is limited to trucks. Hence distribution time is long and quantity and quality losses are high due to keeping vegetables in long hours in trucks.

It is always criticized about lack of consistency government policy on agriculture in general and marketing in particular. During last two decades government adopted reactive approach rather than proactive approach. When the food prices are high government decides to import foods at cheaper price by reducing or removing import duty. In most cases, imports reach the market at the time of harvest. It is also true that government decides to import certain food items such as rice and dried chillies despite the adequate supply in the country due to absent of commercial stock assessment system. Government trader policy appears to be biased towards the consumers and hence price of imported rice, potatoes, big onion and dried chillies has reduced even below the cost of production. The present government once again is going to introduce high tariff for rice chillies, onion and potatoes since June as indicated in the budget proposals for 2002. In

the presence of ad hoc policies production and marketing risk is high which results in absence of long term investment for the sector development.

Marketing constrains

In this section limitations affecting in establishing an efficient and effective food marketing system is discussed. An understanding of the limitations/constrains is essential for selecting appropriate solution/s to the identified problem. In most cases solutions are suggested and implemented without proper understanding of constraints. For example use of plastic craters to reduce the post harvest losses could be presented. This solution does not workable due to handling of products several times in marketing chain; product move from farmers to collector, from collector to main wholesaler, from main wholesaler to sub wholesaler and sub wholesaler to retailer. Another reason to fail usage of plastic craters is involvement of a number of intermediaries who have different interest. Transporters want to load maximum amount possible in a truck to increase revenue and market labourers take two bags on head in loading and unloading when charges are made on bag basis, which is common in Sri Lanka. Hence transporters and market labourers do not like to use craters. Even wholesalers in public markets do not like them due to limited space in market stalls. This is only an example and there are lots where failures occur due to lack of understanding of the constraints prevailing in the system. One must understand that theoretical explanation and practical situation are too different things.

Small-scale production - Food production takes place on a small scale with many plots less than one acre. Farm size is further declining due to land fragmentation. Small farm size creates a number of problems in developing commercial farming system: high cost of production due to lack of economic of scale, low prices due to price takers in the market, inability to develop vertical and horizontal

integration and difficulties in application of modern post-harvest techniques such as plastic crates. In addition, social unrest has been created due to inadequate income to meet the family requirements, which is increasing over time in the open economy.

Production oriented farming system

Though economic transformations taken place towards market economy after 1977, agricultural sector has not undergone structural changes towards agricultural commercialization. Sri Lanka has not been able to transfer agriculture into agribusiness yet. Farmers cultivate convenience crops, look for market after harvest and depend on government for marketing. In these circumstances farmers are risk averse. Also agricultural markets are spot markets where gluts and scarcity are common due to absence of backward linkages from traders to farmers instead of forward linkages from farmers to traders. In the spot market farmers are often losers and traders are often gainers.

Involvement of a large number of intermediaries

There are a large number of traders who are involved in food marketing. Collectors purchase farm products from farmers at village level and sell them to traders who come and purchase. These traders are town wholesalers who sell to the retailers in the town. In some locations, there are brokers who link farmers with outside traders. In addition to traders there are people who carry out support services such as transporting, loading and unloading. In case of industrial products manufacturers themselves or through agents distribute to the retail points. Due to involvement of large number of people, marketing cost is high which results in low farm price and high consumer price. Wastage is also high due to long distribution chain. Similarly, almost all intermediaries are sales oriented instead of market oriented. As such long term investments are lacking, meaning that no market innovations take place.

Production oriented extension system – The present extension system aims at improving land productivity, which is called “land based extension system”. In this system farmers educate to get maximum possible yields from a given land. No attention is paid to maximize the return through reduction of cost or obtaining maximum price possible. This is applicable when demand exceeds supply as in the period 1970–1977. In this situation producer is the key person in the marketing system. After 1977 the situation has been changed with the import liberalization. Food supply has been increased through imports and domestic production has to be competed with imports. Consumers play a major role instead of producers. As such market determines what to produce, how much to produce and what price.

Lack of information – Department of Census and Statistics is the main responsible agency for collection and compilation of agricultural data. However, it still collects data on extent under cultivation and production on seasonal basis not monthly. Hence, data is available for public after production. Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) is the government agency involved in collection and dissemination of market information. The Market Information System (MIS) was set up in HARTI in 1979 with the technical assistance from USAID. MIS further strengthened with the assistance from UNDP/FAO from 1994–1997. Nevertheless, data collection is limited to prices. There is no system for commercial stock assessment or crop monitoring. Therefore government has to take ad hoc policy decisions on food imports when prices are high. In most cases, imports reach the market at the time of harvesting crops.

Inadequacy of the private sector participation - It was observed that private sector involvement in agriculture is mainly limited to the low risk areas with quick returns such as food imports, wholesaling and retailing. As regard to retailing, there are too many retailers wherein return is inadequate to invest for further improvement of the system. Investments in agro-processing, storage,

transportation, packing, are hardly seen. The major reason for low private sector participation is high risk due to uncertainty of the government policy. The best example is collapsing of the paddy milling industry due to ad hoc imports. For example government announced at the harvest time in February 1999 that rice imports would be banded that year. Consequently, millers purchased and stocked paddy. Prices went up due to high competition among millers. However government reduced the duty and made imports at cheaper price at the latter part of the year despite the high stocks with millers due to bumper harvests.

Low government investment - After 1977 with the introduction of open economic policy, the government policy was export led industrial growth. This is evident in 1990s. Hence agriculture was neglected, Government investment in agriculture declined from 18 percent of total investment in 1989 to 10 percent in 1999. Further investment in domestic food production sector dropped to Rs.4,479 ml in 1999 from Rs.5,719 ml in 1989 recording a 22 percent decline within a decade. Due to low government investment, infrastructure and support services in agriculture were weak that affects the development of food marketing sub sector.

Solutions for food marketing problems

Proper problem identification is needed to make suggestions to solve the problem. Above two sections have devoted to identify problems and constraints in the food marketing sector. In this section, solutions to the food marketing problems will be discussed. In preparation of implementation programs to act solutions, it is required to consult the stakeholders such as farmers, traders, processors, transporters, and market labourers who are well aware of operation of food marketing system. Involvement in project beneficiaries at the time of project design is hardly seen in this country.

Development of market driven production system – There could not be a good marketing system without a good production system. Market research is required to identify commodities that can be marketed domestically and internationally and the quantity required to meet the market demand. Farmers should be allocated resources after selection of crops. Suitable locations for each crop should be identified and assistance such as quality seeds and technical know-how should be provided to targeted farmers.

Establishment of strong market structure – Reduction of middlemen through farmer grouping is required. Also vertical integration such as production, storage, transporting and selling and horizontal integration such as processing is essential. Further education of market participants on marketing orientation is prerequisite for strong market structure. Accordingly, application of modern business techniques such as increase profit through cost minimization, market expansion through customer satisfaction, establishment of backward linkages with market participants and production of quality product at a low price is feasible in food marketing sector. Product differentiation is also needed to establish strong market structure. It can be done by the origin of the product (location) such as Tissa Kakulu, size such as small, medium and large and colour such as green beans. Making heterogeneous of the product has an advantage in obtaining higher price through catering specific customers.

Development of food marketing infrastructure and support services – Rather than spending money on direct purchasing it is worthwhile to invest money in this area. Indian government has identified the need to develop farm roads to enhance market competition at farm level by bringing more and more traders to the villages. In construction of markets it is required to consult market users at the designing stage. Strengthening of farm level storage for non-perishable products such as grains and pulses is needed to control the price decline. It is obvious that farmers sell their produce

soon after the harvest due to meet immediate cash requirements. Hence introduction of storage credit system is useful. It is low risk compared to cultivation loans because production is visibly available. In some African countries, private personnel have stores to store farm produce. After storing, farmers are given receipts that can be used to obtain credit from the bank. Banks often provide credit up to the half of the value of the product at current market price.

As regard to support services, there should be a strong data-base to take policy decisions. In this regard, crop monitoring surveys and commercial stock assessments surveys require to be undertaken, as do many other countries such as India, Philippines and Malaysia. As regard to stock assessment the stockholders are bound to provide accurate information to the Ministry of Agriculture every fortnight in some countries. If the information is incorrect, business licence is cancelled. In connection with extension, marketing extension system needs to be set up and added it to the present extension system to advise farmers on what to grow, when to plant, how to sell, when to sell, where to sell and what price. Similarly, information should be made available to traders to take decisions on purchasing, pricing and stock filing. To speed up data dissemination modern communication techniques such as E-mail and web-site should be used. In addition to information system, marketing intelligence service is needed to set up to advise to stakeholders.

Use of market driven treatments for post harvest loss prevention - Most post-harvest loss prevention methods are not market driven. They are very expensive and consumers cannot afford them. Similarly country like Sri Lanka where meals consists of rice and curries, do not need high quality products. In preparations of curries, vegetables are cut into small pieces and applied condiments such as chillie powder, and turmeric and cooked. In this process, the original colour and the size disappear. Also in developing post-harvest techniques, consumer taste is important. For example recently introduced a new variety of snakegourd, which is short in length enabling easy handling and with

hard surface skin in order to keep longer shelf-life but it cannot be marketed due to different consumer preference compared to the long length varieties. Training on post harvest management is needed because one of the major reasons for post harvest losses is improper harvesting and poor handling/packing.

Increase market demand for local foods – Demand for fresh products and healthy foods are increasing in the world market. There should be a programme for the development of a positive image for farm products locally produced. Nutritional values of the farm products should be highlighted. Expansion of demand for food items is required in a country like Sri Lanka where market is small and export potential is limited.

Preparation of agricultural development policy document/action plan – Application of the system approach, which includes input supply, production and marketing lacks in preparation of agricultural development programmes. Though these items are interrelated programmes are prepared and implemented separately. Marketing is often ignored. In fact it should be the starting point in planning process because anything does not last unless it is market driven. Role of Government in agriculture should be focussed on investment, information, institutions, innovations and incentives. Continuous monitoring of each and every activity in the action plan is required and the plan should be flexible to accommodate the necessary changes.

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LIVESTOCK INDUSTRY IN SRI LANKA

Present Situation, Constraints, Alternatives & Solutions Required to Make it a Potential Industry

The economy of Sri Lanka is dependent on the agriculture sector, with 72% of its population living in rural areas. Livestock farming activity of Sri Lanka is highly integrated with Agriculture. Out of the total land area of 6.5 million hectares 35% of land is used for agriculture and of which 75% is under small holdings. About 70% of the small holdings are less than 1 ha in extent and one third of these are involved with livestock either in combination with crops or as the sole enterprise. An estimated 3.5 million people in the country are involved with livestock.

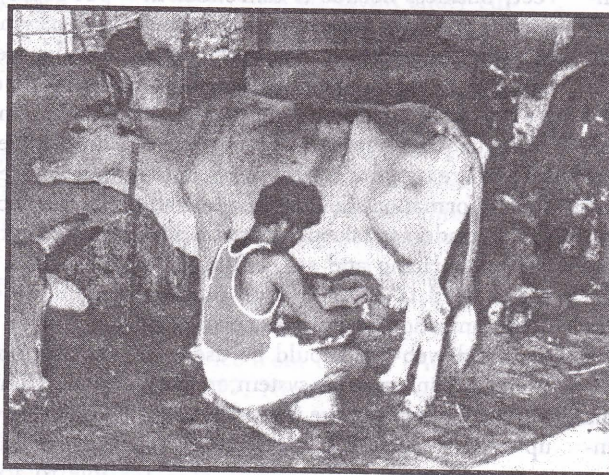
Out of all livestock activities only poultry production has kept pace with the rate of increase with the human population and the demand for meat products. There are several constraints facing the livestock industry in the country such as lack of long term policies for development of the sector, unfair competition through free trade where local farmer receive a lower price for his products, inactivity of the private sector except in the poultry production, inadequate supply of breeding materials, poor quality of available feed resources and the dependency of imported feed ingredients.

Livestock farming activity of Sri Lanka is an integral part of Agriculture and contribute to the growth and development of the sector. Livestock help improve food and nutritional security by providing nutrient rich food products, generate income and employment and acts as a cushion against crop failure, provide draught power and manure inputs to the crop sub sector. Even at low productivity

and off-take rates, with production concentrated among small land holders livestock helps to improve income distribution. Sri Lanka's progress is dependent on the development of agriculture to enhance food production and ensure food security for the entire nation.

Dr. A.O. Kodituwakku*

Cultivated land in Sri Lanka is estimated at about 2 million hectares, or about 30% of the total land area. Seventy five percent of this land area is estimated to be under small holdings and the rest is



under the plantation estates. About 90% of the small holdings are less than 2 ha in extent and one third of these are involved with livestock either in combination with crops or as the sole enterprise. Ad hoc development programs with no proper land utilization policy had led to the creation of limitation to land and water resources available for food production. Out of the total farm population in the country, an estimated 3.5 million people are involved with livestock.

Agriculture provides income to 70% of Sri Lanka's population, and contributed

19.4% towards National GDP in year 2000. The livestock sector contribution to the GDP is around 6% which is very low compared to other Asian countries such as Pakistan and Philippines, where livestock sector contributes 18% and 30% respectively. Livestock as a component of agriculture provides employment and is a component of rural household income generation, where nearly 32% workforce in rural and plantation sector are employed directly and / or supplement their income from livestock.

The national livestock population in Sri Lanka in year 2000 is estimated to be 1.5 million Cattle, 0.7 million Buffaloes, 0.5 million Goats, 0.07 million Swine and 10 million Poultry. The total annual milk production is estimated to be 345 million litres of which about 1/3rd is collected for processing. Sri Lanka also imported 49,000 mt of milk powder in year 2000 costing around Rs. 9 billion. The annual poultry egg and meat production in 2001 has been estimated to be 1,055 million eggs and 64,000 mt of poultry meat.

Role of Livestock in the Economy of Sri Lanka

Livestock products such as meat, milk and eggs are important sources of high quality protein, minerals and vitamins, especially for children and pregnant and nursing mothers. Livestock are also valuable for their hides and skins and for the manure they produce which helps replenish soil fertility and improve soil structure and water-holding capacity for the benefit of crop enterprises.

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In addition, cattle and buffalo are still primary sources of renewable and low-cost traction and power for ploughing and other tillage activities, for transport, and for harvest operations like threshing. In these ways, livestock increase the productivity of the farm lands. For many smallholder farm families, livestock are also a "living bank", serving as a financial reserve during periods of economic distress. As such, investments in livestock tend to cushion against the many environmental risks associated with crop production.

The contributions by livestock are important in Sri Lanka because, despite the significant structural transformation over the last three decades, the agricultural sector still contributes around 20 percent to the national gross domestic product (GDP) and provides employment for about 40 percent of the labour force. This surpasses the employment contribution from any other sector.

There have been slight increases in cattle and goat populations over the last decade in the country. Data on livestock numbers also indicate tendencies toward regional specialization by species, influenced by agro-ecological factors and socio-economic considerations.

Cattle and buffaloes are the most evenly distributed species. In the hill and mid-country regions and the Jaffna Peninsula, cattle are raised primarily for milk production and are of upgraded stock. In the low country wet zone and the Coconut Triangle, cattle and buffaloes are an integral part of local agricultural systems, providing draft power for paddy cultivation and haulage and manure for coconut plantations. In the dry zone, both cattle and buffaloes are regarded mainly as a source of wealth and insurance against crop failure. Although most of the animals in the dry zone are not milked on a regular basis, some milk is collected and marketed where milk collection and dairy processing facilities are available.

Buffaloes are used primarily for draft purposes in paddy cultivation. Herd sizes vary from two to four animals up to 40 to 50 in a herd. Some farmers maintain buffaloes for production of curd, a product with high demand throughout the country. In such enterprises, while farmers raise either pure-bred dairy-type buffaloes - i.e., Murrah or Nilli-Ravi or crosses of these breeds with indigenous stock.

The productivity of cattle in different agro-climatic zones show variations. Average production of a cow per day is 7-8 litres in the wet zone, 5-6 litres in the wet intermediate zone, 4-5 litres in the dry intermediate zone and 1.5-2 litres in the dry zone. The average yield of a buffalo also varies between 2-3 litres a day.

Goats are found primarily in the dry zone. They are raised for meat on communal grazing lands. Dairy goats, however, are becoming more popular, particularly in peri-urban areas, in response to changes in food consumption habits.

Pig production is concentrated in the coastal region of Sri Lanka. Both intensive and semi-intensive enterprises are found in these areas. Semi-intensive enterprises usually consist of one or two sows kept in a smallholder subsistence operation. More commercially-oriented enterprises keep pigs under breeding and fattening regimes using concentrate feeds supplemented by local by-products.

Poultry production is practised extensively throughout the country. Farmers who raise poultry for commercial purposes use mainly deep litter systems. The majority of commercial farms buy their poultry rations from local feed mills, but almost all of the local poultry breeding operations and a few commercial farms mix their own feeds.

REVIEW OF PAST AND PRESENT STATUS

Dairy Sector

Dairy Sector is by far the most important sub-sector of the livestock industry in Sri Lanka. Since independence successive governments have tried to develop the local dairy industry by es-

tablishing large state farms without much emphasis on the constraints faced by the small scale milk producer. The emphasis had always been to satisfy the consumer and this had led to large scale imports of milk powder resulting in shrinking of the local industry. Nearly 300,000 rural dairy producers are presently trying to earn a living out of dairying. They supply nearly 300,000 litres of fresh milk everyday for the dairy processors, and receive nearly Rs. 1.3 billion a year as payments for milk.

The total annual milk production in the country in 1989, was estimated to be 275 million litres. The milk production in the country has increased during the last 10 years, and in 2000 the milk production was estimated to be 345 million litres, an increase of 20% over the past ten year period.

The milk produced in the country is either collected by large scale as well as small scale milk processors and converted into pasteurized milk, sterilized milk, full cream milk powder, yoghurt, curd, butter, cheese etc., or is consumed at home, hotels, restaurants, tea kiosks and in the neighbourhood. Nearly 40 percent of the milk that is collected from the farmers by the processors is arranged through dairy cooperative societies operating in the milk producing areas.

One striking feature observed in milk marketing in the recent past is the increase in the share of milk utilized by the small scale milk processing sector, hotels and restaurants, other private traders and consumers in the neighbourhood. They use nearly 50 percent of the milk entering the milk market. The milk that is collected by this group is generally converted into simple products such as curd, ghee and yoghurt at village level. In the hotels and tea kiosks however the main use of milk is for tea whitening.

In spite of the growth in the domestic milk production, there is an increasing trend in the import of milk powder and other dairy products such as butter and cheese in to the country. This is causing a severe strain

on balance of payments position of the economy. At present the formal milk market in Sri Lanka is heavily dependent on imported milk powder, and the share of the local milk in the formal milk market is estimated to be only 20%.

Poultry sector

Of the different livestock species, the poultry sector is the one, which has shown the highest growth rate in the recent past. The egg and broiler industries have developed over the last two decades from backyard and semi-intensive production to commercial intensive systems of production. Unlike the other animal industry sectors, this sector is dominated by the private entrepreneurs with little government involvement and control. The industry is comprised of capital intensive breeder farms, hatcheries, feed mills, processing units, and a large number of farmers using labour intensive methods either for fattening poultry for meat or keeping poultry for production of eggs.

The incentives such as duty concessions on import of day old chicks, feed ingredients and equipment provided by the government have resulted in several modern poultry abattoirs & further processing facilities established in the country, and thus helping to increase the quality of processed chicken. It has also helped some firms securing few export orders for poultry meat.

The growth of the industry can be shown by the procurement of chicks by the hatcheries. The import of broiler parent chicks which was 193,384 in 1991 increased to 718,895 during 2001. The production of broiler chicks from the imported parents were estimated to be 15 million in 1991 and increased to 64 million in 2001. This has resulted the per capita availability of chicken meat to increase from 1 kg in 1991 to 3.5 kg in 2001.

Similarly the procurement of layer parent stock increased from 39,000 in 1991 to 98,000 in 2001 resulting

in the increase of production of layer chicks from 4.2 million to 6 million during the corresponding period. During this period the per capita availability of eggs increased from 48 to 57 eggs.

The increase in numbers of chicken raised was also accompanied with an increase in the productivity of poultry rearing, thereby more or less stabilizing the poultry product prices. It has also resulted in an increase in the number of retail outlets by way of several 'Farm Shops' in many parts of the country, and in a number of 'Fast-food Chains' specially in Colombo.

The poultry sector has become a self-sustaining industry, and presently the government's role has been limited to the monitoring and control of the disease situation of the poultry sector. The increase in imports of day-old chicks, although helped to increase the poultry production, has caused problems regarding the island's poultry health status. Likewise the liberalization of import of feed ingredients may act as a disincentive to the local production of those ingredients such as maize and soya bean etc. A situation has developed where the industry is dependent on imports and world market manipulations. Therefore it is very important to encourage local production of poultry feed ingredients to safeguard against price fluctuations.

Swine industry

Pig production is another important activity for supplying the animal protein to the local population. Swine farming is popular in the coastal belt region of Sri Lanka, and provides employment to nearly 5,000 low income families. About 60 % of the swine farms are small scale farms while 25 % medium and 15 % large-scale operations.

The main intervention by the state in this sector is breed improvement by supplying good quality breeding pigs to the multiplier and commercial farmers. However, the initiatives made by the government have encouraged the private sector also to get involved in pig breeding. There are religious as well as

socio cultural constraints affecting the pig keeping and only a small number of farmers mostly from the coastal belt practise pig keeping. Expansion of pig production is also constrained by the low demand for fresh pork. Pig meat is generally consumed in Sri Lanka in the -processed form. The monopolistic structure of the meat processing industry therefore is also a constraint for the expansion of pig industry. The domestic annual pig meat production is estimated to be around 10,000 mt and the production has remained same up to now because of low demand.

Goat sector

Goat husbandry is a traditional form of livestock production among the farmers in the dry and dry-intermediate zones of Sri Lanka. In this region, the farmers follow traditional methods of goat husbandry using local breeds and scrub jungles as forages. Only about 10% goats are of the improved types raised for milk production and rest are indigenous types kept only for meat. In the recent past the demand for goat meat has increased as a result of the shift in demand from beef by the consumers. Goat farming therefore has a good potential for meeting the requirement of meat and also providing a regular income for goat farmers.

Goat meat production as well as the goat numbers have not changed much over the last decade. The estimated goat meat production in year 2000 is around 2,100 mt and at the same time the country has imported 81 mt of goat meat and 520 mt of sheep meat during the same period.

While cattle and goats can be reared to a large extent on green material, concentrate feeds are required for the poultry and pig industries. About 90% of the animal feeds so prepared are for poultry feeding and the ingredients such as maize, soya bean, fish meal etc. are imported to the country spending valuable foreign exchange. About 350,000 mt of animal feeds, valued at about Rs. 5 billion, is produced annually.

MAJOR CONSTRAINTS

Policy constraints

Many planning documents, seminar and workshop reports have identified a number of constraints to the development of the livestock industry in Sri Lanka. However, of primary importance is the lack of a clear consistent, long-term government policy for approaching sectoral problems and constraints. This along with the fact that various activities associated with livestock production and development are fractionated between several different ministries and agencies of the government, decisions on sector activities have been *ad-hoc* and made by institutions operating independently from one another and often without consultation, leading to unplanned development processes.

A major issue facing the development of the livestock industry is the lack of a policy on import of livestock products into the country. After the opening of the economy in mid 1970s, the free trade policy of the government did not favour the development of the livestock industries in sectors such as the dairy, goats and the swine sector. The state involvement in these sectors was also very big, and this was a further obstacle, which prevented the private sector involvement in the above sectors.

The poultry sector was an exception, and this sector has shown remarkable growth after the opening of the economy. In the case of the poultry sector, there was adequate protection through tariff and hence no significant import of poultry produce entered the country from outside. At the same time, with the opening of the economy, there was a remarkable flow of private sector investments, including foreign investments, to the poultry sector and thus making it one of the fastest growing sectors in the Sri Lankan agriculture sector.

Free trade is good provided there is a level playing field for the different players to compete. However, virtually all livestock products and spe-

cially the dairy products that reach the Sri Lankan market from outside enjoy various forms of subsidies and therefore have an edge over the comparable products produced locally. As a result of this unfair competition through free trade, the local livestock producer is compelled to receive a lower price for its produce and is not in a position to expand its production or acquire new technologies to improve profitability of livestock production.

The introduction of GST (Goods and Services Tax) on animal feed and exempting the products such as chicken, other meats and eggs from GST has also created a situation where imports of such produce have an advantage over the locally produced. It is too early to see the effect of the introduction of the VAT as proposed in the new budget on the livestock sector.

The next major issue is the policy of government involvement in the livestock sector activities. At present the state is involved in the facilitation and regulation of the livestock sector, but there is also state involvement, in certain commercially oriented livestock sector activities such as maintaining poultry hatcheries, pig breeding units, and goat breeding farms, where similar activities are also undertaken by the private sector. The performance of private sector, in such livestock activities are sometimes even better than is done by the state sector. It is therefore necessary that there is a rationalization of the state sector activities in the livestock sector so that they become complementary and facilitatory to the private sector functioning and not competitive towards the private sector initiatives.

Marketing of livestock products

Lack of an assured and remunerative market for the primary livestock products appears to be another important constraint to livestock development in Sri Lanka, especially in the dairy sector. The low prices paid to the dairy farmer for their milk is the main constraint for development of the sector. The free market forces do not determine the price for milk. The local producer has to compete with the cheap imported

milk powder and the price paid to the local milk is influenced indirectly by the price at which the imported milk powder is sold in the market. The dairy farmer therefore is not induced to invest on their enterprises.

The high yielding crossbred and purebred cows have to be maintained by feeding concentrate feed to explore their full potential in the absence of good quality pasture. But the farmers cannot feed their animals to their requirement because of high cost of concentrates. This results in decline in the profitability. In certain rural areas milk is collected only once a day, and as a result there is no incentive for the farmers to intensify their dairy operations. Also the milk marketing network is sometimes very thinly spread, and the dairy farmers are forced to travel long distances to dispose their milk. Lack of facilities at village level to test the composition of milk and therefore to pay for the milk according to quality is yet another constraint.

In the case of eggs the market has very wide price fluctuations because of several structural distortions in the market structure. The small farmer is the ultimate victim of these market behavior and this is a major issue in developing the egg industry. Poor quality of local products compared to imported products due to inadequate quality assurance schemes, is also an emerging issue. Today's consumer demands higher quality, especially for livestock products. Media propaganda regarding the superiority of imported products and their health benefits is posing major challenges for the local livestock produce.

On farm development of livestock production

There is an inadequate supply of high quality breeding material adapted for different climatic conditions of the country. This is a major constraint for the expansion of the dairy industry. Many lending agencies have set aside funds in the past for dairy development in the country. However every such credit program was a failure and

one of the principal reasons for such failures have been the non availability in sufficient numbers of good quality dairy cattle in the country. Poor quality feed resources for dairy cattle, and the heavy dependence of poultry and other non ruminant feeds on imported feed ingredients are also important issues in the livestock sector.

Although pasture and fodder are available in plenty during the wet season they are of low quality and therefore needs high level of supplementation to achieve reasonable levels of milk production. During the dry season there is a general scarcity of fodder and therefore dairy producers have to resort to the use of high levels of concentrate feed to sustain milk production. In both instances high levels of concentrate supplementation will lead to an increase in cost of production of milk, which in turn will reduce the profit margin realized by the farmer.

The non ruminant feeds are compounded using high levels of imported feed ingredients. Even the principal ingredient in such feeds namely the maize is also largely imported to the country. The imported feed ingredients are subjected to world market changes and exchange rate fluctuations. The feed ingredient prices are therefore very important determinants in the competitiveness of the domestic livestock systems.

Quality of livestock products

In Sri Lanka there is a lack of quality control of livestock products, which has led to wide spread adulteration of milk and meat products. There is also unsanitary and unhygienic conditions at all stages of production, collection and processing of livestock products. This is a major issue to be considered in exporting animal products as in the case of poultry products and value added dairy products. The importing countries would demand very high standards of quality and hygiene and the authorities would have to consider this aspect to meet future demands.

OPPORTUNITIES AND STRATEGIES FOR DEVELOPMENT

The opportunities and strategies discussed here are mainly concerning the dairy industry which is the most important livestock sub sector in the country. Certain facts discussed are also common to all sub sectors. Though there are certain specific problems concerning the other sub sectors those are not acute as in the case of the dairy industry.

Delivery of Inputs and Services

The Government presently provides the delivery service through 214 Veterinary offices with around 600 middle level technicians. Arrangements are being made to increase the number of Veterinary offices to be in par with the number of Divisional Secretary areas in the country. On the average one veterinary officer services 7,000 cattle and 3,300 buffaloes. One field level technician services around 3,700 cattle and buffaloes which is a very difficult task. The coverage become more acute in the dry zone where more than 70% of the animals are present.

This is an area where the private sector could come in and invest to increase the coverage of veterinary service, since expansion of this service is not possible under the present trend of reducing government expenditure.

The Government's present investment in infrastructure facilities and personnel to support nation-wide disease control program is not being effectively utilized, therefore, major opportunities exists in cost effective livestock development from the control of specifically identified livestock diseases.

The country has a good net work of farmer organizations, Rural Development Societies, Non Governmental Organizations and there are opportunities to supply the services and inputs through these organizations which could include advisory and extension, artificial breeding service, marketing and supply of inputs such as animals, feed, insurance and credit. Even Private Companies and Entrepreneurs with resources can be encouraged to venture into above activities. These Institu-

tions and individuals should be encouraged to employ veterinary surgeons, field level trained technicians for artificial insemination, first aid treatment of animals and extension and advisory work.

Promote setting up of mobile veterinary services through private veterinarians in areas where dairy animals are concentrated. They could be entrusted with additional government work on breeding and animal health.

Supply of Breeding Materials

Another constraint faced by the farmer is the non-availability of breeding materials. What is being supplied by the National Livestock Development Board (NLDB) is inadequate. Therefore opportunities lies for the private sector to produce the required breeding materials.

The heifer calf salvage scheme operated by the Department of Animal Production and Health (DAPH) had supported to raise around 30,000 crossbred heifer calves during the last decade and this program has been terminated due to want of funds. It has also been estimated that 70,000 crossbred females have joined the milk-producing stream from artificial insemination. Therefore, private sector could take up the Challenge by salvaging the heifer calves and delivering the AI services.

A special contract-breeding scheme where owners of good quality dairy animals undertake to provide heifers at agreed prices to other farmers could be initiated.

Low interest credit should be provided initially to the dairy farmer directly or through farmer organization for purchase of cattle, construction of sheds and cultivation of improved varieties of grass and legumes.

Insurance cover for dairy animals by agriculture insurance board and other state and private sector insurance companies through group insurance schemes with attractive incentives should be encouraged. Promotion of organization of livestock markets for

sale of animals is being done in other countries can be practiced in areas where there is demand for high producing animals.

Livestock Disease Prevention and Control

It is becoming increasingly difficult for the DAPH to carry out the disease prevention and control activities due to shortage of staff and funds. Regular Immunization of cattle and buffaloe against diseases of economic importance is very important to prevent economic losses. It has been envisaged that this activity could be implemented through private sector participation by way of giving sub contracts to increase the vaccination coverage leading towards eradication of certain diseases.

If the essential vaccines, biologicals and pharmaceuticals can be produced in Sri Lanka through joint venture collaboration it would save valuable foreign exchange. The infrastructure facilities, laboratory equipment and technical personnel of the state sector can be utilized for this purpose. Joint collaboration with private sector for livestock diagnostic activities which cannot be performed efficiently under the existing institutional set up can be done through accredited private laboratories.

Veterinary Research Institute and universities should be assisted with research grants for specific research studies of relevance to major problems faced by the industry. Further research organizations should be encouraged to transfer new technology through mass media to farmers and other end users.

Livestock Feed Production

Poor nutrition is a major factor in causing low productivity of livestock, particularly ruminants in Sri Lanka. Under poor nutritional regimes, even animals with high genetic capacity for efficient production are not able to attain their inherent potentials. Therefore a concentrated effort should be made to improve utilization of available forages and concentrate feed resources in ways that reduce unit feed cost in production enterprises.

At present there are lot of unutilized state land which could be used for pasture and fodder production. The state will have to actively support the pasture and fodder production for ruminant feeding. Encouragement also has to be given for domestic production of raw materials required for the compounded feed industry. If an arrangement could be made for the compounded feed manufacturers to obtain sub grade cereals, flour, milk powder etc from the state wholesale establishments it could minimize the cost of manufactured feed.

Controlling of export of oil cakes, rice bran, wheat bran etc could also be done to utilize these raw materials to make animal feed. Effort could also be made to utilize fruit cannery waist and other non conventional feed material such as brewery waist, manioc leaves, rubber seed, mango seed etc such as being done in neighboring India.

Marketing of Livestock Products

Unfavourable ratio between farm gate price of milk and the cost of production has resulted most of the small scale dairy farmer to give up dairying. The main reason is the high cost of concentrate feed and the high cost charged by the collection, marketing and processing channel. The farmgate price should be based on quality and composition. Further, to boost up the industry the farmers should be paid more for each litre of milk supplied to the processor. It has been suggested that a cess should be levied from milk powder imports and channel that money for extra milk payment and other dairy development activities. But this would result in the increase of the price of powdered milk in the local market. Though this has been suggested many times it has not materialized due to consumer consideration.

Though it is difficult with the media advertisements on milk powder the state institutions should make an attempt to popularize the consumption of liquid milk as a means of improving the nutrition of the rural population. When there is more local demand for fresh milk farmers also may attempt to increase production.

It is known that there is a fierce competition by milk processors to collect milk from the locations where there is easy milk. Some times two or three collectors ply on the same milk route. The best solution would be to encourage demarcation of milk collecting areas and allocate to one particular processor who has a strong collecting network in that area. This has to be done on a mutual understanding and for that all the processors should discuss and make a genuine attempt.

Like in the poultry industry where the farmers are linked with the processors on a buy back scheme, the dairy farmers also could be organized into a contract milk production scheme linked to the processors for an assured market.

In conclusion I wish to emphasize that the livestock sector is an important sector in the rural economy of Sri Lanka. This sector plays a major role in rural employment generation and provide additional income to rural women. Meaningful strategies and programs has to be developed with more private sector participation to develop the livestock sector in Sri Lanka so that the products would be within the reach of the ordinary consumer.

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ORGANIC AGRICULTURE

A Workable Path for Sustainable Agriculture

Introduction

Organic agriculture is a production system that avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes and aspects of biological pest control to maintain soil productivity, to supply plant nutrients and to control insects, weeds and pests (CDD, 1998). This alternative system of production is now recognized worldwide as a answer for sustainable agricultural production and enhanced productivity.

Organic farming/agriculture approach is an integrated living system where one develops and enhances the biological cycles involving micro-organisms, soil life, plants and animals. The main principles of organic agriculture are; produce food of optimum quality and quantity, *work with rather than dominate natural systems*, sustain soil fertility, minimize damage to the environment and minimize the use of non-renewable resources.

Benefits of Organic agriculture

Balanced Environment

Indiscriminate use of agro-chemical has negative effects on beneficial insects creating a natural imbalance in the ecosystem and thus destroying biodiversity of an area/land. It has been realized that for agricultural sustainability biological diversity is a must. Like in the Western world and more developed nations Sri Lanka too has recognized the danger of chemical farming stating that "agrochemical (insecticides, fungicides and herbicides) which are widely used, of-

ten in excess in the country, causes serious environmental and health hazards with long term consequences. For instance, rice (being the main/staple food of Sri Lanka) pests are controlled by highly toxic organophosphorous systematic formulations (National Policy framework, 1995). In the recent past, the indiscriminate use of agrochemicals in gherkin cultivation also created a debate with regard to increased, frequent and over high use of strong pesticides, occurrence of new pests and disappearance of predators and health hazards to the farmers. But this has not been curtailed or banned, as there is no recog-

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nized policy. Pest and disease control in organic farming completely relies on natural measures, which balance the environment, protect the predator populations and reduce the susceptibility of the crop through maintaining diversity in the environment.

Healthy Foods for Consumers

Provision of non-poisonous foods for the people is the most noteworthy feature of the organic production system. Evidence proves that most of the food products available in the market are contaminated with poisonous residues i.e. in Sri Lanka over 90% of vegetables and grain contain poisonous agrochemical residues and are unsuitable for consumption (Upawansa, 1998). In the organic production system pest and disease control is accomplished through maintaining healthy predator populations in the balanced environment while using some natural extracts which work by contact action and breakdown rapidly leaving no residues. This process assures the healthiness of the food products.

Sustained Soil Fertility

While the traditional practice of using organic manure has disappeared with adverse effects, intensified agriculture without conservation measures has led to degradation of soil gradually through the years leading to decline in productivity. In organic agriculture, the basic concern is to "feed the soil but not the plant". Manure and other crop residues that has been composted and nitrogen fixing legumes are the main sources of organic fertilizers. Unlike in chemical fertilization where fertilisers bypass the soil life, nutrients contained in organic sources are slowly discharged to the soil due to microbial action in naturally balanced proportions. The better soil structure, which results due to above biological process, ensures water retention, drainage, and aeration and a much greater resistance to erosion (Blake, (1993)). Such a soil environment is highly conducive for better root development as well as for a healthier growth of the plant.

Market Choices and Economic Gains to the Producers

Organic agriculture is a difficult production system since it is largely labour intensive. But in the countries where organic agriculture is more developed demand for organic products is very significant. In Europe the demand for organic products outstrips supply, so that prices tend to demonstrate a significant premium. It is recognized that the market can stand 20% premium with out causing any significant resistance from the consumers. (Blake, 1993). In developing countries like ours, organic farming is yet to be developed to that an extent so as to occupy a large market, which could ensure premium prices. However, rising cost of production and low profitability due to increasing cost of inputs, in particu-

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The GSS has a model farm where organic farming techniques such as compost production, biogas utilization, soil and water conservation and crop livestock integration are demonstrated. Other functions of the farm are conducting of training programmes and the production and distribution of natural pesticides and bio fertilizers. The GSS have organized their organic tea and vegetable producers to form small farmer groups, these groups are provided with loans for cultivation and other self-employment projects such as animal husbandry and bee keeping. The GSS facilitates vegetable marketing locally and finds export market for organic tea. The GSS has established a network with other organizations and individuals involved in organic farming at different localities in the country. The network has monthly meetings at which future programmes and activities are discussed and an annual workshop, which aims at knowledge dissemination and exchange of experience among members.

lar agrochemicals is a big burden for the local farmers (category of small farmers) involved in conventional farming. To them organic farming is a possible option to be self-sufficient in agricultural production process. Moreover, in the present day scenario when local farmers are adversely affected by unpredictable market prices and when they have less control over market choices with the implementation of regional trade arrangements (South Asian Free Trade Area) (SAFTA), production of healthier food items could contribute to ensure the market share for local products.

Organic Movement in the Country

In Sri Lanka, our traditional farming system involved nature friendly techniques. With the introduction of green revolution in the '60s, there was a push for intensified and export oriented agriculture and therefore the use of inorganic chemicals for farming increased. The present day concerns of the 21st century are for more healthier and environmental friendly food/products thus there is a search for an alternative agriculture system which is organic farming.

Development NGOs in Sri Lanka have played a key role towards the development of organic farming for the last two decades. Gami Seva Sevana (Box 1) and Eco conservation based in Kandy, PALM Foundation (Participatory Action and Learning Methodology) and Future in Our Hands (Badulla) are such organizations. These organizations are involved

in a variety of activities pertaining to promotion and popularization of organic farming among farmers within the vicinity of their establishments. The laborious procedure involved in organic farming and the constraints faced by organic farmers in organic vegetable gardens in Nuwara Eliya illustrates the shape of organic farming system in the country (Weerakkody, 1999).

Crop Diversification

Multiple cropping is one of the distinguishable features of organic vegetable gardens. Instead of monocropping which is characteristic to upcountry vegetable gardens, organic farmers grow several crops. Crop diversification has provided them with several advantages, the most important of which is risk aversing due to pest and diseases. Meanwhile different crops planted at different times provide the farmers a continuous income and variety of food items for family consumption while ensuring the optimum utilization of manure, labour and water. Variety in the supply of vegetables to the market has helped farmers to derive benefits of price fluctuations through the supply of vegetables at higher prices when demand increases. They have also been able to minimize the variation in farm income when there is a failure of a particular crop, which is then, compensated by other crops they have grown.

Crop Rotation

Another distinct feature of the system is the practice of crop rotation. Instead of planting the same crop, as usually done in the market gardens, the farmer

has learnt to achieve maximum utilization of resources such as soil nutrients and water existing in different soil depths through crop rotation. The four year crop cycle employed by the farmers includes 8 cropping seasons at the frequency of 2 seasons/year, as one particular crop comes on the same field after 4 years. According to some farmers they have practised crop rotation for last two seasons depending on the soil characteristics of the farm, weather condition and the availability of water and labour.

Fallowing

In general, farmers keep 3-4 plots fallow every season mainly for the purpose of providing a habitat for natural predators such as frogs, birds, and garden lizards (*Sceloporus undulates*). Weeds grown on fallow plots are utilized for animal feeding and manure production as well. In certain seasons farmers find difficulties in cultivating the whole farm due to scarcity of resources such as labour, water and in particular manure, therefore leaving 2-3 plots fallow. Unlike in market gardens, which practice intensive land utilization, fallowing has only permitted the cultivation of two crops per year in each plot. This avoids soil fertility depletion due to intensive cropping and provides time for rehabilitation of soil.

Soil Conservation

The initial operation for soil conservation is the preparation of contour terraced plots in steep lands. Each plot is surrounded by pasture that prevents soil erosion from the particular plot. The main drainage channel with silt pits serves the purpose of collecting soil washed away from the land. The water is diverted from the channel to the fishpond. Few large trees in the lowest portion of the farm also serve as a source of soil and water conservation purposes. Unlike market gardeners, these farmers refrain from weeding, land preparation and harvesting during rainy seasons. Wherever possible, minimum tillage is practised using only mamoty forks instead of mamoties

in order to protect both soil organisms and soil structure. Through a well-distributed cropping pattern farmers have been able to cover most of the plots with vegetation which avoids exposure of soil to the direct rainfall. Harvesting schedule based on clients demand, restricts harvesting of whole produce of the farm at once, therefore at a given time the entire land is not exposed to rain, wind and sunlight thus leading to both soil and water conservation. Live fence around the farm and hedgerows around plots have provided the overall protection to whole farm.

Organic Fertilization

The use of organic fertilizers varies. Liquid fertilizer prepared with herbs, compost produced with farm yard manure using different methods of production, bio slurry taken from the bio gas unit, crop residues and green manure harvested from live fence and trees are some of the organic manure that have proven to give the best results.

Pest Management and Bio Diversity Conservation

All possible biological interactions are adopted for the control of pests. Discontinuation of spraying of chemicals has enhanced pest predator relationship ensuring the environment required for the growth and behavior of natural enemies. The trees, live fence, hedge rows and fallow plots providing habitats for natural enemies serve this important purpose. Cultivation of plants such as Marigold and Coriander which have pest repelling qualities when leaves are crushed are found sometimes. Colorful flowers of the Marigold plant also encourage the behavior of useful insects in the field. Manual destruction of pests such as snails and slugs and use of sound making instruments for Bandicoots (*Perameles nasuta*) have been ef-

The main problem of organic growers attached to PALM foundation is transport and limited demand from the ECOSHOP which is the retail outlet of the organic products situated in Nuwara Eliya. Only 8.5% of the total harvest was sold at ECOSHOP while the rest was sold as inorganic products in 1997 (PALM Foundation, (1998)). In 1999 only 12% of organic growers are involved in the ECOSHOP accounting for the collection of 50% of the total produce. Therefore the current arrangements in this regard seem extremely unsatisfactory.

fective techniques in pest control. Once the above methods are not practicable, farmers use organic pesticides prepared with margosa (*Azadirachta indica*), and garlic. Bordure mixture is the mainly used fungicide.

Constraints for Farmer Adoption

Even though this difficult production system provide many socio-economic and cultural benefits it is unfortunate that the number of farmers involved in organic agriculture in developing countries is very few. Many constraints appear to contribute to the lack of interest and enthusiasm of farmers in adopting this farming system.

Organic Market

Marketing is the main constraint that has contributed to poor adoption of farmers.

Poor consumer awareness is a major setback for marketing of organic produce. This factor has led to farmers not obtaining the premium prices for organic products when compared to prices obtained on conventional products. The 'Future in Our Hands' currently has three sales outlets for organic products operating in Badulla, Badalkumbura and Malambe. Even though these outlets are operating for a period of more than one year, marketing is still a constraint. At the Malambe outlet the prices are higher but there is very little gain to farmers due to cost incurred in transportation from producing areas based in Badulla.

Certification and Labeling

Certification and labeling are two important aspects in the production and marketing of organic products, which build consumer trust towards particular food, which is found in countries favoring organic products. Organic producers in developing countries have limited access to such guaranteed certification service which lead to lack of consumer trust towards organic products.

Attitudes

Farmers view conventional farming as far superior to organic farming as the produce obtained from organic farming is generally sufficient for household consumption with a small quantity as surplus for marketing. This attitude and lack of knowledge has curtailed the spread of this system of farming. In addition, another factor is the huge investment of multinationals dealing in agrochemicals in the advertisements and promotion of the use of agrochemicals coupled with policies of fertilizer subsidies which have established the "chemical message" in the minds of farmers.

Labour Intensive Practices

Involvement of time consuming practices such as production of organic manure and bio pesticides and the need for live stock rearing in the farming system has caused a decrease in farmer interest. In Sri Lanka, most of the households in the farming community depend on both farm and off farm sources of income. Therefore, when household labour is allocated for other sources of employment, the labour intensive practices in organic farming become less profitable.

Non-availability of Organic Manure

Organic manure is not abundantly available in many areas. In such circumstances, integrated farming has

Contd. on Page 51

THE ROLE OF FARMER COMPANIES

A Review

The article reviews recent performance of Farmer Companies with special reference in origin, process, need and role of farmer companies. It concludes that establishment of Farmer companies should be initiated by farmers with clear vision and business programme.

Sri Lanka is a developing country with an area of 65,628 sq.km. and a population of 18.7 million as estimated in 2001. The majority (72 percent) of the people live in rural areas and earn a livelihood from agriculture and related activities. The agricultural sector consists of two sub sectors, the non plantation or domestic food crop sector and the plantation sector. The non plantation sector which mainly consists of paddy, other food grains, maize, soybean, vegetables and perennial crops accounts for 76 percent of the total cultivable lands while the plantation sector consisting of tea, rubber, coconut accounts for 24% of the total agricultural land.

As a result of liberal economic policy reforms introduced in the past two decades and globalization effects, the agriculture sector faces many challenges today in maintaining efficient and profitable farming system, especially in non-plantation sector. These challenges are mainly related with commercialization and diversification of agriculture. Hence farmer companies were introduced as a strategy to transform farming community from volunteer farmer organizations to business firms. Therefore, an attempt has made in the article to review role of farmer companies (FCs) in transforming small farmers from subsistence farming to commercial agriculture. The article consists of four sections. The section one presents background information; the section two highlights origin and process of establishing FCs. The section three examines the need for FCs and the section four shows the role of farmer companies. Finally the section four presents constraints in implementing FCs.

The Origin

Though the establishment of company or private/public business venture is not a new idea to Sri Lankan economy, farmer company (FC) was introduced in 1990s as a business firm to promote small farmers for commercial farming. Thus, farmer companies were established by transforming voluntary farmer organizations into business organizations. These FCs were based on shares of farmers and the initial capital granted by the government. The basic structure of the FCs were based on two pilot projects started by the International Water Management Institute

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(IWMI) in 1994 under Shared Controlled of Natural Resource Project (SCOR) in Hiraluwewa and Nilwala river basin areas.

However, the history of farmer organizations goes back to 1950s. In the post independent era Vel Vidane (irrigation head man) system was practised in irrigated areas to distribute water. This system was changed in 1950s by introducing cultivation committee system which cover irrigation and all other agricultural activities. The cultivation committee system also changed in 1970s introducing Agricultural Productivity Committees (APC) after establishing Agrarian Services Centers. These committees were formed to strengthen government delivery services, but once introduced of bottom-up and participatory development approaches in 1980s, farmer organizations were formed to empower isolated small farmers with a view to develop rural areas through active farmer participation.

At the end 2001, about 12,000 farmer organizations were registered and about 7,000 farmer organizations were functioning countrywide to receive farm inputs, credit and marketing services. According to past performance, many of these organizations were able to enhance production of small farmers and to empower them towards participatory irrigation management and group marketing (Henegedara, 1987, Chandrasiri, 2000)

Even though farmer organizations were implemented successfully in some irrigation schemes under certain conditions, it was unable to face new challenges emerged from open economic policies, and international trade agreements such as World Trade Organization (WTO) and South Asian Preferential Trade Areas (SAPTA). Therefore, thoughts were developed in 1990s to diversify role of farmer organizations towards farmer companies to adjust with liberal and global economic reforms. Instead of farmer organizations, the idea of farmer company was emphasized due to few factors (Batuwitige: 2000).

1. Farmer company will find solutions for market manipulation and exploitative behaviour of private traders
2. It will bring investment to farm lands by mobilizing technology and productive resources.
3. To give human face to open economy which was the main political slogan in 1996 election.
4. Farmers will become shareholders of farmer companies and creates dignity of labour by moving towards dynamic production activities.
5. Farmer company will allow better gender relations for women with equal distribution of shares of farmer companies.

Under new agricultural policies introduced in 1996, FCs were consid-

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ered as main institutional strategy of agriculture and irrigation development. Thus FCs were established in major and some minor irrigation schemes by Irrigation Management Division, Department of Agrarian Service, Agricultural Development Authority and Mahaweli Development Board. At present about 85 farmer companies are implemented in the country.

Process of Establishing FCs

Like formation of private business firms, establishment of FCs is not an easy task. According to past experience of SCOR pilot projects, five major stages have to be followed in the process of establishing FCs (Wijayarathna, 2000).

- ❖ venture seeking stage,
- ❖ company formalizing stage,
- ❖ market links building/expanding stage,
- ❖ (strategic) planning for long-term sustainability,
- ❖ sustainable business operations (high degree of autonomy and self-reliance).

The structure of the FC consisted of three partners such as shareholders, board of directors and body of management. Numbers of shareholders depend on the amount of shares issued and Board of Directors select from shareholders. The body of management consists of professionals recruited by the company. The Board of Directors function as the chief executive body of the company.

The Need

The need for establishment of farmer companies in Sri Lanka was emphasized considering few factors.

i. According to new agricultural policy introduced since 1996, the government of Sri Lanka emphasis the commercialization of agriculture with a view to shifting from inefficient subsistence farming to viable commercial farming system. Thus strategies were followed to set up farmer companies and programmes were implemented for commercial-

ization and diversification of agricultural crops.

ii. Due to supply oriented production system, farmers face many difficulties in marketing their products and consequently they receive low income from farming. Except for some vegetables and fruits, cultivation of paddy and subsidiary crops became unprofitable business (HARTI Commodity Review, 2000). Therefore, establishment of farmer companies were considered as an essential requirement to uplift the production process.

iii. As a result of liberal economic policies the government intervention in providing subsidies and price incentives were decreased during the past 20 years. It has been affected badly for small farmers in receiving fertilizer and chemical in time. Therefore, establishment of farmer companies were encouraged to ascertain supply of production inputs in time at reasonable prices.

iv. The majority (65 percent) of farmers in Sri Lanka belongs to small farmer category that average land holding size is two or less than two acres. Due to subsistence farming, many of these farmers qualified for poverty subsidies (Samurthi). Bargaining power of these farmers is very low and depend on private money lenders. Therefore, concept of farmer companies was promoted to enhance bargaining power of small farmers.

v. According to WTO and SAPTA, small farmers of Sri Lanka have to compete not only with local farmers but also with foreign farmers. Therefore, farmers should encourage using efficient production technologies so as to compete with foreign farmers. Such an effort could be performed only through farmer companies with clear vision for market oriented production programme.

vi. Crop diversification is an essential and important activity in commercializing agriculture. It could be efficiently done through farmer companies rather than an individual effort.

Role of Farmer Companies

Although the role and functions of farmer companies were not clearly documented, all farmer companies have deliberately attempted to achieve one

coherent objective of organizing small farmers for commercial agriculture and facilitating them by providing inputs, technology and services so as to compete with local and international markets. However, it is noted that role of farmer companies are depend mainly on the needs and priority of farmers in particular areas where companies established.

According to past experience of pilot projects and performance of ongoing farmer companies, the role of farmer companies could summarise under following activities:

1. *Produce to market:* Encourage farmer to produce demand driven high value products. Thus some FCs engaged in supplying demand driven high quality rice varieties, chillies and potatoes.
2. *Input Supply:* Many FCs involve in selling fertilizer and agro chemicals on low interest rates. Thus, shareholders or member farmers get discounted price lower than the market price.
3. *Partnerships with the organized private sector:* Farmer companies maintain regular contacts with organized private sector to find out market opportunities. Thus many companies made contacts with companies involved in vegetable exporting and tourist hotels in advance.
4. *Credit Supply:* Many FCs provide credit facilities to members on low interest rates and credit in kind.
5. *Mobilizing Investment:* Raised company capital from equal shares of member farmers and funds provided by the government and stakeholders. Minimum value of each company share is Rs. 10/- and it varies up to Rs. 15/-. Each member should purchase at least 10-100 shares.
6. *Maintain Credit Worthiness:* Since many FCs received loans from Commercial Banks, all loans should be settled in time.
7. *Providing Technology:* Many farmer companies involve in providing new technologies to improve production efficiency of farmers. It includes: provision of market information to share holders, Train share holders and

Contd. on Page 57

MICRO-SCALE IRRIGATION SYSTEMS

Water is considered a scarce resource in Sri Lankan agriculture. The annual water resource of the island has been estimated to 4.32 mil,ha.m and present withdrawal is about 20 per cent mainly for agricultural purposes. This is the highest among countries such as Nepal, Madagascar, Philippines, Vietnam, Bangladesh, Thailand, Japan etc. If the irrigated area is kept without expanding, rice production requirement in 2025 could only be achieved by increasing the irrigation effectiveness, yield and the cropping intensity. This brings us the message that with increasing demand for food production under limited resource situations, agriculture becomes more and more intensive and competitive. Cultivation must be geared to achieve high productivity (yield per unit land and/or water resource) in order to meet the market demand on commodity. In this context, management of all the inputs in agricultural production system is vital. Water is one of the basic requirements that plants require to obtain high productivity. The agriculture, which depends purely on rainfall, will not be a viable venture since we cannot totally rely on the rainfall, which is beyond our control. Therefore, irrigation plays an important role in modern agriculture.

Supply of water to the plant with correct amount at the correct time without creating any hazardous effect to the soil plant environment is considered as good irrigation. In most of the cases efficiency of irrigation is low due to absence of proper management of water, and the soil-plant environment is deteriorated due to absence of proper drainage. As a consequence agricultural productivity of the system would be diminished. Therefore, suitable method of irrigation and proper drainage are considered as the key factors to a successful irrigated farming system.

Irrigation can be practised by using various methods. Cheapest and most widely used method is flood irrigation (surface irrigation). Majority of the surface irrigation systems in Asian region only bears 35-50% efficiency. Apart from that, the uniformity of application in surface irrigation is very low. Therefore, surface irrigation will not be a right choice in a situation where agriculture is expanding while water resources are diminishing. Under such circumstances, strategies need to be adopted to increase the irrigation efficiency and uniformity. One of the best methods to increase the efficiency and the uniformity of irrigation is the use of micro scale or localised irrigation techniques for irrigating

the agricultural lands. In micro irrigation, water will be supplied on demand to the plants with high efficiency.

In rainfed agriculture, plants grow entirely under conditions imposed by the nature, or slightly manipulated by man. The surrounding environmental factors such as soil, climate, pest, disease, human activities etc. affect the growth of plants. This fact is true at varying degrees even to the irrigated agriculture as there is a wide range of irrigation strategies which has been innovated to address the problems associated with irrigated farming in various environments. Thus, in selecting the type of irrigation to be adopted, the most important aspect to understand is why the prevalent environ-

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ment and what environmental factors are to be adjusted or managed to achieve a successful crop production. Most important factors are discussed below:

Water for irrigation

Type of water source, its supplying capacity, quality and the cost involved are the basic considerations to be made in planning an irrigation system at any scale. The elevation of the water source with respect to the field is one of the primary factors influencing the choice of irrigation method. Where water is supplied at a small static head above the level of land, surface irrigation is the most feasible. The use of a booster pump to draw water from a canal and irrigate by sprinklers is possible, but would have to be amply justified by other criteria. If the water comes from a source much higher than the field, there is a greater potential for drip and sprinkler systems in order to conserve water. In the case, where the water originates below the field and is delivered under pressure, it is logical to use pipe-distribution systems, if the additional head to operate the sprinklers or drips is a relatively small part of the total head delivered by the pumps. This situation occurs in pumping from wells and where the irrigable lands lie well above the river or reservoir. In such a case the cost of water is usually quite high and greater effort to use it more efficiently would be justified.

The distance of the water source from the field has an indirect but important influence upon the choice of an irrigation method. In cases where the water

is close to the field the choice is open, and other factors govern. If the water is brought from considerable distance the type of conveyance, which is most economical for the particular terrain may often dictate the method of irrigation.

When the available discharge at the head of the field is relatively small (less than 100 cubic meters per hour or 28 litres per second), sprinkler systems can however, be operated with even smaller flows. Medium size discharges are from 100 to 400 cubic meters can be efficiently handled with normal equipment by one man for either gravity or sprinkler installations. Drip systems are the best in a situation, where both total supply of water and the discharge are small.

Water moves through micro-outlets in drip and sprinkler systems, therefore presence of sediments, silt, algae, or other suspended material is not desirable to use in sprinklers and drips, unless special desilting or filtration processes are employed. When the water contains salts there is a possibility of clogging the outlets and development of high salt concentration in soil. In such cases most suitable method is to use large size sprinklers or border flooding.

The cost of water is a vital factor in the ultimate economic analysis and has a direct bearing upon the need for selecting a method that gives the highest irrigation efficiency under given conditions. High water costs would favour sprinkler or drip irrigation systems. Irrigation efficiency should not, however, be considered simply as the amount of available moisture added to the root zone of the plants, as compared to the amount delivered to the field. Equal consideration must be given to the highest possible yield per unit area resulting from a certain water application. In cases of very costly water with less limited land resources an even more important criterion is the yield per unit volume of water applied.

Soil condition

At present, the trend towards intensive and profitable agriculture calls for high input practices, therefore, it is important to understand characteristics of soil especially those affect irrigation and fertigation. Although we expect high productivity from the soil, when it is cultivated continuously the fertility gradually declines. If the soil is deteriorated it will be expensive to move to another soil or to transport good soil

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from elsewhere. Therefore, it is of utmost importance, that those soils that are utilized for micro scale irrigated farming warrant high economic returns. Some important soil characteristics are described below:

Soil texture is the composition of solid materials in the soil. It determines absorption, movement and holding capacity of water. It will also influence the inherited soil fertility. Medium to

soil is too shallow it is advisable to avoid any soil movement and select the type of irrigation system suitable to the sloppy land.

Crop growth is severely affected if the soil – water environment hears high concentration of salts. Such situation can occur due to high water tables, impeded water movement through soil due to poor land and water management and high concentration of salts in irrigation water. The situation may

In a country like Sri Lanka where the rainfall pattern divides the year into two distinctive periods, irrigation has an important part to play in agricultural crop production. Even during the rainy season there may be a period of several weeks when rainfall is inadequate and may cause crop failures. Such droughts are unfortunately a common occurrence and are of the major limitation to our agriculture. Therefore, micro scale irrigation is an important strategy to overcome our rainfall uncertainty problem as it assures a great security to valuable crops.

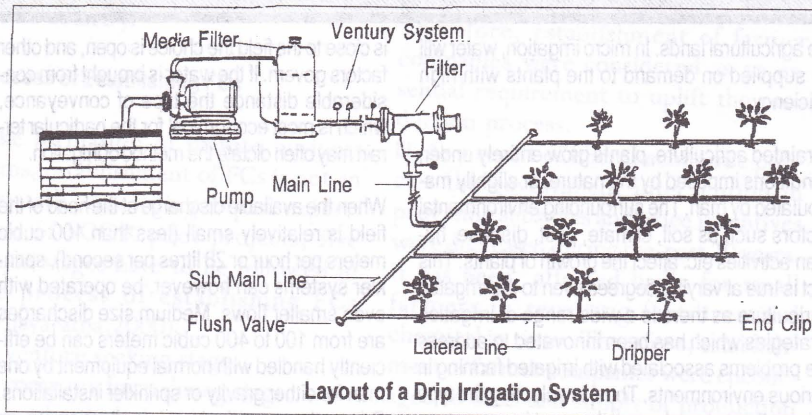
There are two monsoonal and two inter monsoonal seasons in the rainfall pattern of Sri Lanka. The regional distribution of rainfall is determined by the interaction between this seasonal weather pattern and the configuration of mountainous highlands in the country. Agricultural is adjusted in different regions of the country according to the distribution of rainfall. There are excessively wet periods in the dry zone and excessively dry periods in the wet zone. Crops in the open fields under rainfed conditions are affected both by excess and deficit of soil moisture due to these rainfall variations. Therefore, both irrigation and drainage are equally important and planned accordingly in open field irrigated farming. By understanding the rainfall pattern it can be possible to plan micro scale irrigation in the open field, protected houses and semi-protected areas. Humid conditions of the atmosphere follows a seasonal pattern which closely follows the rainfall pattern, but with a diurnal variation caused by warming effect of the sun during the day and cooling during the night.

In designing sprinkler irrigation systems, wind direction and velocity are important factors to be considered. For the island as a whole the seasonal wind pattern is largely determined by the monsoons. The presence of strong and varying winds decreases greatly the uniformity of distribution of sprinkler systems, and may consequently reduce the irrigation efficiency. This can be partly overcome by means of closer spacing of the sprinklers and by irrigating only by during those hours of the day or night when the winds are known to lower. Most recent development to overcome the wind problem is the innovation of micro-sprinklers, which have very low riser heights and wetting diameters. Such micro sprinklers are suitable for irrigating both field crops and orchards.

Cost and Benefit

In general, micro-scale irrigation systems are expensive therefore, return should compensate the additional cost. However, economic analysis of irrigation methods becomes very complex as it is based upon a variety of factors, which are constantly changing. The final analysis, however, should be reached by a simple comparison of the cost of each method of irrigation with the value of the irrigated crop.

Contd. on Page 46



fine textured porous soils (sandy loam to friable clay) are good for irrigation. Coarse textured soils (sandy loam to friable clay) are moderately good and loamy sand to friable or very fine clay soils are marginal for irrigation.

Depth of soil available for plant growth is a main factor, which determines the available soil moisture content, allowable irrigation depth and the supplying capacity of nutrient. It is generally, the depth at which gravel, laterite or rock is encountered. This factor determines irrigation and fertigation frequencies and also the type of crops, which could be grown without any limitation for the root development. The effective depth should be above 90 cm for a soil to provide a favourable soil environment whereas soil is considered marginal when soil depth is 30 – 60 cm.

Infiltration rate of water into soil is influenced by texture, structure, type of clay and any disturbance to the soil such as compaction caused by cultivation. This factor is important for any type of irrigation because if the rate of water supply exceeds the infiltration rate then excess water moves out without any use for the crop. Higher infiltration rates will cause more percolation and such water would no longer be available to the plant. Therefore, soils that bear final infiltration rate between 10-25 mm/hour are considered favourable for irrigation.

The degree of land slope affects the infiltration rate, available moisture capacity, erodibility, external drainage and consequently the length of runs and field layout. Land levelling procedure for preparing the land to reduce slope and make a uniform bed is to be carefully undertaken because heavy soil movement will lead to expose the subsoil, which is less fertile both physically and chemically. When the effective

be further aggravated with high evaporative demanding conditions. Alkalinity occurs due to high content of Na cations etc. in the soil and salinity is due to build up of salts of Ca, K and Na. Irrigation can also be used to reduce the soil salinity or be used as an alternative to create a favourable soil environment in salt affected soils (drip irrigation).

Climatic environment

Growth of a plant is directly proportional to the rate of evapo-transpiration from the plant environment. This is determined mainly by climatic factors and the type of plant. Most important climatic factors with respect to micro-scale irrigation are briefly discussed below:

Radiation energy available for plant growth in Sri Lanka is very favourable in terms of total annual amount, its seasonal distribution and its direction of incidence. However, intra-plant shading or shading from any structure should be avoided. This aspect is important especially in planning structures for micro-scale irrigation.

There are little or no regional temperature variation in Sri Lanka due to difference in latitude. However, there are regional and seasonal variations due to altitudes and seasonal shift of the sun northwards and southwards. Temperature increases towards lower altitudes. Relatively high temperatures are recorded in July and it drops to a minimum in January. Three elevation zones defined in Sri Lanka is lowland (<330m), midland (330 – 1000 m), and upland (>1000m) can effectively be considered as three temperature zones as hot lowland, warm midland and mild upland. However, these temperature variations alone do not affect much the crop growth, but diurnal variations alter other growth performances such as flowering, fruit setting etc. and incidence of pest and diseases.

The Effects of Financial Liberalisation on Market Structure, Financial Intermediation & Savings Mobilization *The Case of Sri Lanka*

In early 1970s government heavily intervened in economic and monetary management. In Sri Lanka until 1977, like in several developing countries, the financial system was highly restrictive, characterized by severe credit and interest rate controls. However, by the mid 1970s most developing countries had realised that government interventionist policies in the financial system and in development had not produced results. These policies had disrupted the economies of many less developed countries. This situation was called "Financial Repression" by Mckinnon and Shaw (1973) who provided an alternative financial liberalisation paradigm. They argued that financial repression in developing countries had retarded economic growth.

To maintain a significant growth rate in an economy the banking sector can provide an efficient and valuable contribution to the needs of production sectors. After 1977, the Sri Lanka government introduced financial liberalisation, or financial sector reforms as an integral part of an economic policy package and the restrictions on credit and interest rates were eliminated and it created exceptional conditions for the finance and banking system to function effectively. The structure of the financial system and its role in savings mobilisation and intermediation has been analysed in many studies in Sri Lanka and overseas.

The main objective of the study is to examine the impact of financial sector reforms on savings mobilisation, financial intermediation and market structure in the formal banking sector in Sri Lanka within the framework of the Mckinnon-Shaw hypothesis.

Financial sector reforms helped to eliminate government intervention in the financial system and has led to financial deepening resulting in increased savings mobilisation. In particular, it has improved the efficiency of the financial system, resulting in lower intermediation margins, increased the flow of funds between various segments of the financial system, provided greater access to finance for hitherto marginalised borrowers and an increasing role for the financial sector (Aryeetey, 1997).

Liberalisation resulted in a change in several policy variables, such as the interest rate structure, the structure of assets and liabilities of commercial banks, investment decisions by banks and the cost structure. We are testing the following financial liberalisation hypothesis: relating to an increase in savings mobilisation, a decline in intermediation margins, an increase in lending to previously neglected sectors of the economy and a decrease in the monopoly powers of banks.

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This study is organised as follows: It begins with an overview of the structural characteristics and financial sector reforms of the formal banking system in Sri Lanka. Section 3 mainly reviews the financial repression and financial liberalisation hypothesis following Mckinnon (1973) and Shaw (1973). Section 4, presents the methods of analysis and the data sources and the impact of financial liberalisation. Finally, section 5, deals with the concluding remarks and policy implications.

Structure of the Banking System and Financial Sector Reforms

2.1 Structure of the Banking System

The banking system in Sri Lanka can be divided into two sectors, i.e. formal and informal. In Sri Lanka the formal banking sector before 1977 consisted of the two state owned banks and eight foreign banks (which declined from 10 to 8 in 1970) and their limited number of branches, most of which were in the urban sector. As a result, over 75 per cent of the population had access to a restricted banking service and only limited transactions were possible. However, commercial banks had played a vital role providing finance to potential investors for a long time.

After 1977, in a broad sense, banking services have expanded rapidly with a wide range of new arrangements and products. Improvements to the banking services have been available to the rural sector, as well as to entrepreneurs in the metropolis. The new development policies emphasised the allocation of financial resources for short and long-term loan projects. Due to the new economic

policies the structure and the organisation of the banking sector broadened significantly. The new institutions included foreign commercial banks, development banks, finance companies and savings institutions. These banks are classified into two categories, and they are, commercial banks and non-bank financial institutions – NBFIs.

Prior to the liberalisation the financial system consisted of a limited number of government owned financial institutions and foreign commercial banks. After liberalisation many new commercial banks commenced operations under private ownership. Banking business was largely associated with new deposit mobilisation strategies. The State owned commercial banks have dominated deposit mobilisation and they still have a large share of total deposits. The approximate share of deposits of these commercial banks is 50-55 percent. Several new domestic and foreign commercial banks and their branches have expanded rapidly after 1977 throughout the Island, except in the North and the East. Deposits in non-bank financial institutions have progressively increased since 1977 and at the end of 1999 their share was 47.2 percent of total deposits. They have provided loans and advances to key sectors of the economy and cleared the way for potential investors.

2.2 Legal Framework and Monetary Policies

A legal framework acts as a very strong and sufficient safeguard for the finance and banking system, it can contribute to efficient and better banking. The first major legislation was the Monetary Law Act of 1950, which established the Central Bank of Sri Lanka. Since then several new legislative enactments relating to the financial sector and covering a large area of the banking sector and as well as non-bank financial institutions have been passed. As a result in the period 1950-1988 the organisation and management procedures in the banks and financial institutions have improved considerably.

Before 1977, the intensive supervision of banks was not urgently needed. With new

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developments and the increasing complexity and sophistication of the financial system, it has become necessary to supervise and regulate the banks more closely. Moreover, non-bank financial institutions were also regulated and supervised by the Control of Finance Companies Act No. 27 of 1979 and the Finance Companies Act No. 78 of 1988. In addition, the Monetary Board of the Central Bank has issued a wide range of directives and rules for all non-bank financial institutions. With the ongoing process of financial sector reforms important legislative enactments and amendments were introduced and these included The Local Treasury Bills Ordinance, the Stock and Securities Ordinance, Insurance Act, The National Savings Bank Act and the Auditing and Accounting Standards Act.

2.3 Financial Sector Reforms in Sri Lanka

The two main components of the economy the public and private sectors have contributed to increase the growth rate rapidly by initiating new policy measures. Despite these new measures and the healthy performance of these two sectors severe frustrations and failures could be seen in our economy. This emphasises the need for well-balanced policies. Accordingly, the authorities had to use monetary policies which resulted in a more active and viable contribution to economic management. The monetary authority has deployed the instruments of monetary policy in a systematic manner taking into account the emerging financial problems.

In Sri Lanka the initial experience with monetary policy has revealed that there was limited scope for monetary management before 1977 in a restrictive economy. After liberalisation, monetary policy was freely used with the activation of a market economy. During the period 1977-1982 the authorities had to resort to a tight monetary policy as there were large inflows of foreign capital and considerable domestic borrowings by government and the private sector from the commercial banks. Furthermore, excess liquidity and the high liquidity in the market also eventually contributed to a sharp increase of the prices. The Central Bank used interest rates as a major monetary policy tool till 1988. While Bank rate, penal rates and statutory reserve requirements also significantly contributed to reduce the monetary expansion and the increase in prices.

However, some of these are conventional instruments were unable to mop up excess liquidity continuously. Therefore, the Central Bank recently began to use open market

operations framework. However, in the 1980s the Central Bank had reduced its holdings of Treasury Bills. After 1993 the Central Bank began to use repurchases of bills to influence market liquidity and interest rates. Meanwhile the Central Bank used its own securities in the mid of 1980s, 1993-94 and 1997 for open market operations.

There have been major changes in monetary policy since 1997. In any case, in some years monetary policy tools have been relaxed slightly due to the reduced inflationary pressures and has encouraged economic recovery substantially. But external and internal conditions have at times created numerous difficulties in the economy. It has at times, reduced statutory reserve requirements which increased bank liquidity and enhanced the supply of credit and reduced the cost of funds. With the use of monetary policy the Central Bank was able to do away with direct controls and move towards market oriented policy along with credit planning.

It is also important to note that government has been implementing these financial reforms within a very unstable macro economic environment since 1977. They are high rates of inflation, structural rigidities of the economy, devaluation of currency, large budget deficits, high government borrowing from the banking sector and balance of payments instability etc. Inflation has been high (except in a few years) even after liberalisation. In the 1970s inflation averaged from 5.9 percent in 1970 to 1.2 percent in 1977. However, price instability increased during the adjustment period with inflation ranging from 12.1 percent in 1978 to 9.4 percent in 1998. The budget deficit (before grants) as a share of the gross domestic product averaged 9.3 percent between 1970 and 1977. After liberalisation the budget deficit was 23.1 percent in 1980. Besides, during the period 1981-1989 the budget deficits were higher than 10 percent. Thereafter it declined gradually from 9.9 percent in 1990 to 9.2 percent in 1998. The share of public sector credit from banking system has followed a declining trend since 1995. The experience of Sri Lanka, as in the case of most developing countries, has revealed that continued adoption of an appropriate fiscal and monetary policy mix in the context of overall macro economic policies is essential to secure any positive results from economic liberalisation (Colombage, 1993).

3. A Review of Financial Repression and Financial Liberalisation Hypothesis

The financial sector can play a significant role in rapid and sustainable economic growth and development. However, the growing theoretical literature has not been able to provide a satisfactory framework for enhancing economic growth in most developing countries. The past experience in a number of less developing countries (LDCs) has revealed that government intervention approaches

in the financial systems and the development of new markets have been vigorously misdirected at the end of the 1960s. In the late 1970s, following liberalisation, McKinnon and Shaw (1973) provided a paramount paradigm instead of financial repression.

Low interest rates, through administered measures, did not make a successful contribution to increase deposits, while savings were confined to a narrow range of financial instruments. Government influence on interest rates on loans and deposits raised the demand and curtailed the supply of funds. According to Aryeety (1997) the unsatisfied demand for funds have forced financial intermediaries to ration credit by means other than interest rates, while the informal market develops uncontrolled rates.

Financial repression also leads to large differences between deposit and lending rates of interest (Shaw, 1993). Monetary authorities have also imposed high reserve requirements in most developing countries. Seek and Eiliv (1993) assert that the wide spread between lending and deposits rates can be viewed as an implicit tax through high reserve requirements on the banking sector by the monetary authority. Such high liquidity reserve requirements encourage crowding out of private sector investments. However, experience of most LDCs have revealed that prevalent financial repression causes widespread distortions and confusions and these were similar characteristics in the most LDCs financial systems.

Chirwa (1999) notes that the role of an efficient banking system in economic growth and development lies in savings mobilisation and intermediation. Banks as financial intermediaries channel funds from surplus economic units to deficit units to facilitate trade and capital formation. Thus Ncube and Senbet (1994) argue that an efficient financial system is not only required for domestic capital formation, but it also serves as a vehicle for gaining competitive advantages in the global market for capital.

In an efficient financial system interest rates function as the healthy instrument for depositors as well as borrowers. If the latter are charged reasonable interest rates for loans it means that the monetary authorities have recognised that the collection of deposits and the distribution of resources have been done in a satisfactory manner. The financial characteristics of LDCs imply that policy makers always intend to generate positive gains from the measures that they take. Many empirical studies show that the real deposit rate of interest positively influences the rate of accumulation of cash balances and a high deposit rate will generate

resources and encourage investment. Eventually investment and savings are thus encouraged and contributes to increase economic growth.

However, past financial reforms have revealed that difficulties have often to be confronted with. To avoid the misconceptions in regard to vital components in financial liberalisation packages Mckinnon (1986), Abeyon (1997), World Bank (1989) have recommended key pre-requisites to the success of liberalisation, which include macro economic stability and adequate prudential supervision of banks. Liberalisation policies have created problems in many LDCs, such as sharp increases of interest rates, widespread bankruptcies of financial institutions, worsening inflation, widening external deficits and unstable exchange rates etc. In several instances governments have had to intervene to rescue collapsing domestic banks and re-impose controls on financial institutions.

Many studies have noted that liberalisation can lead to instability and inefficiencies of credit allocation in the financial system. Experience with liberalisation in many developing countries suggests that it promotes macro economy instability. The concept of financial repression employed in the literature appears to be too broad, encompassing both positive and negative aspects of government intervention in the financial markets, that may mask the need for institutional development (Chiwa, 1997).

Under these circumstances we expect several benefits from financial liberalisation for economic growth and development as on going measures in Sri Lanka.

First, financial sector reforms lead to financial deepening. This simple indicator is the money/GDP ratio, which measures monetization in the economy. Money is the principal instrument in payment and saving services.

Second an improvement of financial intermediation following financial liberalisation leads to reduced intermediation margins of the banking sector. Competitive financial markets play a crucial role and it provides for sound banking and financial market development. It helps to decrease the spread between deposits and lending rates.

Third, liberalisation gives the lead for a viable allocation of resources to various sectors. In a broad sense it is the financial markets that provide mechanisms for the flow of savings.

Fourth, financial liberalisation has a direct impact on local capital markets and creates new opportunities for enhancing savings and specialisation in investment in the economy. Aryeety (1997) notes that in this context financial liberalisation is expected to lead to a diminishing role of the informal financial sector.

Though countries have experienced difficulties in South America and Africa where liberalisation has ended in disarray. A number of studies have suggested that financial liberalisation policies have been more successful in Asia than in the above countries. In particular macro economic instability has created many difficulties among these countries.

4. Empirical Evidence on the Financial Liberalisation Hypothesis

The data used in this analysis is for the period between 1970 and 1999, although financial sector reforms were initiated at the end of 1977. In our analysis to test the financial liberalisation hypothesis. We divide the data into two sub samples, the period before liberalisation (1970-1977) and the period after liberalization (1978-1999). We use the test of the difference between two means to establish the statistical significance of the changes in the performance impact of policy variables. Occasionally we have computed the simple correlation to determine the statistical association between variables.

4.1 Savings Mobilisation and Intermediation

The formal banking sector has been a successful mobiliser of funds. Among them the commercial banks have played a significant role in several areas along with other deposit-taking institutions and long term lending institutions. Total deposits of the formal banking sector have gradually increased throughout the whole period. The contribution of deposit taking institutions have grown rapidly mainly after 1977 following privatisation policies, when several private domestic commercial banks opened branches and expanded business islandwide, and this helped to raise the contribution of the formal banking system. The share of

business of the NBIs has grown considerably since 1986. The financial interrelation ratio (FIR) is defined as the ratio of deposits of non-bank financial institutions to deposits of commercial banks. FIR suggests the importance of the NBIs. The FIR averaged 36.2 per cent in the 1970s but in the 1980s had decreased to 30.9 percent and increased again to 32.7 percent in the 1990s. Table 1 presents the effect of liberalization on financial deepening, savings mobilisation and intermediation. Changes in the ratio of money supply (M1 and M2) to GDP reflects the degree of financial deepening.

The ratio of M1 to GDP fell from 14.71 to 13.08 per cent in the period before 1970. But the ratio of broad money supply (M2) to GDP increased significantly at 01-per cent levels from 23.05 per cent before liberalisation to 34.14 per cent after liberalisation. The financial inter-relation ratio which is the ratio of deposits of non-bank financial institutions to commercial bank deposits declined from 0.98 per cent before liberalisation to 0.83 per cent after liberalisation. This decline was significant at the 5 per cent level. The elimination of barriers to formal banking entry sharply increased competition among these financial institutions. The composition of demand deposits to total deposits also demonstrates a rising trend from 1528.6 in the period before liberalisation to 19261.3 in the period after liberalization. This was significant at 01 per cent level. The policy reforms persuaded depositors to increase their long-term liabilities in the banking system and it is clearly evidenced in the savings and time deposits behaviour, which increased from 3386.6 before liberalisation to 141277 after liberalisation. These changes indicate a depositor's preference for conversion of their savings from short term to long term. Financial deepening and savings mobilisation figures explain a policy of successful intermediation after liberalisation and the reduction of financial repression in the financial system.

4.2 Interest Rates and Intermediation Margins

Changes in interest rates and intermediation margins are presented in Table 2. In the 1970s and 1980s the average savings rate rose from 80.06 per cent in 1970 to 16.2 per cent in 1980, but later declined to 14.6 per cent in 1990. However, in the period after liberalization interest rates on savings rose sharply averaging 15.1 per cent as shown in Table 2, from 6.45 per cent in the period before liberalization to 15.11 per cent after liberalisation. Similarly lending rates also increased sharply from 8.63 per cent to 18.06 per cent in these two periods. Both deposits and lending rates are significant at 01 per cent. (Table 1)

Table 1
Changes in Financial Deepening and Savings Mobilisation 1970-99

Variable	Before	After	t-value	Change
Financial Deepening (per)				
M1/GDP	14.71	13.08	2.45b	Negative
M2/GDP	23.05	34.14	-8.23a	Positive
Structure of Deposits				
Demand Deposits	1528.6	19261.3	-5.73a	Positive
Savings and Time Deposits	3386.6	141277.3	-4.54a	Positive
NBIs/CBs Deposit Ratio (FIR)	0.98	0.83	2.62b	Positive

a = significant at 1 per cent, b = significant at 5 per cent, c = significant at 10 per cent

Liberalisation policies leading to greater competition should reduce intermediation margins as financial institutions compete for funds and increase efficiency. Smaller spreads mean greater competition and financial deepening. But the test of the two means show that the intermediation margins increased in the period before liberalisation from 1.58 per cent to 2.68 per cent in the period after liberalization, although in Sri Lanka intermediation margins are uncertain and no significant trend can be seen throughout the period and this is clearly proved by the significant level of t-values. (Table 2)

Table 2
Changes in Interest Rates and Intermediation Margin 1970-99 (percentage)

Variable	Before	After	t-value	Change
Nominal Rates				
Deposit Rates	6.45	15.11	- 6.23a	Positive
Lending Rates	8.03	18.06	-12.99a	Positive
Intermediation Margin	1.58	2.68	- 1.18	Positive
Real Rates				
Deposit Rates	0.66	3.05	- 0.95	Positive
Lending Rates	3.13	6.32	- 1.54c	Positive
Intermediation Margin	1.72	0.83	0.59	Negative
Inflation Rate				
	6.75	11.98	- 2.82a	Positive

a=significant at 1 percent, b=significant at 5 percent, c=significant at 10 per cent

Although a simple correlation analysis revealed a positive relationship between profitability measures, return on assets (ROA) and return on capital (ROC), this relationship is significant at 5 per cent and for the whole period of analysis the correlation was 5 per cent. Actually the underdeveloped nature of the money and capital markets have severely affected this low relationship. Though the correlation coefficient between the intermediation margin and profit measures in the post liberalisation period were 40 per cent and 39 per cent for ROA and ROC respectively, changes in the interest in the period after liberalisation induced financial institutions to adjust their intermediation costs.

However, in real terms the deposit rates and lending rates were positive. It means that in the period before, to that after liberalisation costs have increased tremendously. But the lending rate is only significant at 5 per cent, although the real intermediation margin is negative. The growing inflation rate has affected both deposits and lending rates. This means that commercial bank deposits and lending rates have had an impact on inflation.

Table 3
Intermediation Changes in Assets Structure and Credit Allocation for Main Sectors 1970-99

Variable	Before	After	t-value	Change
Asset Structure (Banking Industry)				
Loans and Advances	3144.2	97719.8	-5.03a	Positive
Treasury Bills	164.25	6997.0	-4.92a	Positive
Cash and Reserve Bank Balances	605.7	15459.8	-4.78a	Positive
Fixed Assets	606.8	2863.3	-3.86a	Positive
Sector Allocation of Credit				
Private Sector	2212.1	87462.0	-4.83a	Positive
Public Sector	159.5	9268.4	-3.38a	Positive
Sector of Credit Allocation (Commercial Banks only)				
Agricultural Sector	451.3	6889.9	-7.61a	Positive
Industrial Sector	662.6	12664.2	-7.3a	Positive
Commercial Sector	1318.5	40756.8	-5.83a	Positive

a = significant at 1 percent, b = significant at 5 percent, c = significant at 10 percent

4.3 Shift in Sector-wise Allocation of Domestic Credit

The banking system and in particular the commercial banks can promote economic development by providing credit to various sectors and this was done after liberalisation. The financial system was given a great opportunity to establish new institutions and to extend new bank branches islandwide. Thereafter all domestic as well as foreign banks started to provide substantial credit facilities to well established enterprises and to the small and large-scale ventures in the private sector. Agriculture, industries and trading sectors received loans and advances and these credits have grown substantially.

In the 1970s the share of domestic credit to the private sector averaged 69.5 per cent. Throughout the period the private sector received approximately, 60.0 – 65.0 per cent of the loans and advances from the commercial banks. Before liberalisation the loans and advances to the public sector declined, in contrast to after liberalisation (In 1994 the new government stated that the quantum of loans and advances increased appreciably and the loans and borrowings by the public sector from the banking sector were too high). The public sector was forced to increase borrowings from the banks mainly due to a decline in the inflow of external resources.

Table 3 gives the direction of the domestic credit allocation sector-wise. This is an important measurement of the performance of the banking system. In Sri Lanka commercial banks have given loans and advances to agricultural, industrial, commercial and the other sectors. In the period before liberalisation

loans and advances to these sectors were 18.5, 27.2 and 54.3 percent respectively. Loans for agriculture declined after liberalisation from 18.5 percent to 15.3 percent, but commercial sector loans increased from 54.3 to 56.6 percent at the end of the period.

Test of the difference between two period means show that credit allocations for industry and commerce increased significantly. Under the new policy reforms government implemented market oriented policies which contributed to diversify the loans and advances for industrial (like manufactures), commercial and agriculture (commercial crops) sectors. Moreover, commercial banks preferred to enhance credit facilities to the main sectors rapidly and dynamically.

The impact of intermediation on the financial sector is presented in Table 3. With respect to the structure of assets, loans and advances as a share of total assets suggests an unprecedented increase from 3144.2 in the period before liberalisation to 97719.8 in the period after liberalisation. This rising trend is significant at 01 percent. Other variables have contributed as well. Savings mobilisation has increased since liberalisation and this has been accompanied by an increase in the proportions of assets that financial institution lend to the private sector.

According to the past experience of the banking industry, the management of excess liquidity is an extremely important matter in Sri Lanka. This is important because in the period after liberalisation the required reserve ratio fluctuated between 10-15 percent for demand and time and savings deposits. For instance commercial bank's deposits with the Central Bank and cash and reserve bank balances with other banks were only 605.7 percent of total assets before liberalisation, but increased to 15459.8 percent in the period after liberalisation. Nevertheless this situation is significant at the 1 percent level. The wide range of loans provided is indicated by the asset structure of the banking industry.

With the implementation of privatisation policy reforms, private sector (domestic and foreign) activity gradually increased in the economy. In the allocation of credit the private sector has been dominant and the share of credit has been higher than to the other sectors. Before the liberalisation commercial banks delivered 71 percent of the credit to the private sector and after the liberalisation it reached to 83 percent. Similarly, the share of the government sector also increased slightly from 3 percent to 9

percent during the period. An increase in the distribution of loans to the two major sectors is implied by the test of means and is significant at 1 percent. Moreover, the increase in the share of commercial banks credit facilities to all sectors is implied in the means test (Table 3). These figures illustrate the strategy of focusing on key sectors of the economy and prudent credit risk management policies. The direction of bank credit has implications for banks' profitability performance. (Table 4)

Table 4
Changes in Market Structure and Profitability

Variable	Before	After	t-value	Change
Indices of Market Concentration				
CR1	1724.7	45334.7	-5.74a	Positive
CR2	2083.2	37902.4	-5.39a	Positive
CR3	344.5	12485.4	-3.47a	Positive
Profitability				
ROA	0.72	0.85	-1.25a	Positive
ROC	2.15	6.68	-5.11a	Positive

a = significant at 1 percent, b = significant at 5 percent, c = significant at 10 percent

Particularly, the return on assets is positively associated with agriculture, industry and commercial sector at 45 percent, 43 percent and 07 percent respectively (at 5 percent level of significance). Further these results show that statistically all are significant. However, simple correlation analysis between the direction of credit to public and private sectors (for main sectors) and the measures of profitability (ROA and ROC) suggests insignificant relationships and unimportant conditions in these relationships.

4.4 Deposits and Market Structure and Profitability

Earlier only a few banks dominated the commercial banking system, but new policy reforms eliminated the barrier for bankers. At that time it was an exceptional performance under generally gloomy circumstances but banks had maintained a high level of performance.

The one-firm concentration ratio (CR1) implies that one bank dominates the share of deposits in the banking system. The contribution of each bank to the total deposits clearly shows the degree of monopoly power in the banking system, i.e. the share of the largest banks has been falling gradually since 1988. Especially the well-established two banks (Bank of Ceylon and People's Bank), some monopoly power has also prevailed among other banks after they were allowed to expand business.

In the period 1970 to 1978 three banks dominated the market for deposits, which is reflected in their monopolistic power position, but after liberalisation the results suggest a reduction in monopoly power. Major changes in banking monopoly power is clearly seen in figure 1, CR1, CR2 and CR3 the three largest firm concentration ratios are based on the increases in deposits over the period. It clearly depicts that the three banks behaviour by test of means is significant at 1 percent.

Besides, we also observe a significant increase in the level of profitability as measured by the return on assets during the whole period. This seems to be a perverse performance hypothesis. Generally the increase in profitability in the post liberalisation period is the outcome of many factors, they are a reduction in costs, increase in productivity and efficiency, the quality of the portfolio, market expansion and effectiveness of competition and relaxation of the bank regulation etc. Chirwa (1998) suggests that in a regression analysis of the determinants of commercial banks' profitability (return on assets, return on equity and return on capital) and market concentration are significant determinants of profitability.

Liberalised policies permitted new bankers to open and expand their operations for on going economic growth. As a result monopoly power gradually declined and increased competition sharply among banks. This was furthered by the implementation of privatisation proposals since 1987. Every bank and non-bank institution changed their credit operations in accordance with the trends in the economy. This has increased the level of competition in the banking system. It induced financial institutions to offer very high interest for deposits. Similarly in the context of the experiences of Sri Lanka banking industry, Gibson and Tsakalotos (1994) note a number of consequences that have followed from increased competition.

First, there is a deterioration in the risk-return relationship and loosening of credit limits as banks compete with one another to maintain, if not increase, their market share.

Secondly, increasing competition may lead to falling profits as some banks may be willing to accept short run losses in the hope of future monopoly profits as competition stifles.

5. Concluding Remarks

This study primarily provides empirical evidence on the financial liberalisation hypothesis with respect to financial intermediation and savings mobilisation and market structure. The

characteristics of financial repression in the banking system, changed significantly after liberalisation (since 1978). Empirical evidence is provided by changes in numerous important variables.

This study has proved that there were significant increases in financial deepening and an increase in the share of demand deposits, an increase in the share of commercial bank credit to the manufacturing sector and a decrease in the monopoly power of banks. These results have helped the financial liberalisation hypothesis.

Liberalisation policies have clearly had a favourable impact on the banking system. Meanwhile financial repression has been eliminated and the administration has embarked on policies, which have brought back profound changes in the banking system. There has been an increase in the share of loans to the private sector rather than to the public sector. This shows that the private sector has been the major source of investment even though the public sector could still play a major role in the economy.

The study also finds through a simple correlation analysis that there is a low correlation between bank profitability and the direction of the credit, an unimportant condition throughout the period. Financial reforms in the Sri Lanka's formal banking industry are almost complete. However, if further fruitful advantages are to be secured by these reforms government needs to develop and improve the money and capital markets. Meanwhile, government should make an effort to achieve macro-economic stability and sound and prudential banking by better bank supervision and new bank regulations.

Besides Sivaganathan (1994) makes an extraordinary suggestion for the future development of banking services he says "Information technology plays an important role in the infrastructure development of commercial banks and by their becoming financial conglomerates with investment companies, merchant banks and other subsidiaries, banks have diversified investments. The lower interest margin and unsatisfactory performance of their assets is moving the banks towards the concept of fee-based financial services, and the concentration in the future by commercial banks would be towards business outside the core business of conventional banking. The changing face of technology has made in roads into financial services."

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Contd. from Page 40

The actual cost of installing an irrigation system varies greatly from time to time and place to place, and no specific figures can be quoted which have general application. In the case of sprinkler or drip irrigation planning, the cost includes the well or other water supply, pump and motor, permanent pipes and fittings, portable pipes, sprinkler or drip outlets (emitters, nozzles, risers etc.) and filtering and controlling devices. In highly developed installations there may also be the cost of machinery to move the pipes around the fields.

For sprinkler and drip irrigation systems the maintenance costs include wear and tear on the pump, motor, pipes and sprinkler and drip outlet devices, replacement of corroded or calcified pipelines, and maintenance of other structures. Operating costs include energy for pumping water and the labour for setting up and moving the portable lateral lines. The depreciation for the various parts of each system needs to be calculated on the basis of the initial cost and the useful life span of the system. The cost for labour in micro-scale irrigation can be greatly reduced by the use of less portable and more permanent pipes, but such installation can be more costly than the labour use.

Micro-scale irrigation systems are more suitable for high value crops. The value varies not only with the crop and variety but also with quality, seasonality, total supply and demand and marketability. These complex factors are variable and often difficult to predict. With respect to the choice of an irrigation method, however, it can only be stated that where any of these price factors are favourably influenced by a certain method of irrigation, a relatively greater expense for that method can be justified. For example, if the tomatoes, which can be raised under a system of permanently installed sprinkler pipes are of better quality and can be matured in a season of relatively scarce supply, the profit would justify the high cost of installing the said irrigation system. If, on the other hand, high value crops can be raised almost as well by a lower cost surface irrigation system, use of sprinklers would be unjustified.

Advantages and limitations

Drip/Trickle Irrigation Systems

Drip or trickle irrigation is a method to apply water to soil through emitters (or applicators) located at selected points along the water delivery lines. Emitters have orifices through which a limited volume of water is discharged. Emitted water moves within the soil as an unsaturated flow. Wetted soil area of an emitter is normally elliptical in shape, and real shape is determined by textural composition of the soil.

Drip irrigation is not suitable for broadcasted crops. It is recommended for fruit trees, grapes, flower plants, vegetables and other high value crops cultivated in rows. When irrigation water is of poor quality drip irrigation can be used to avoid the yield reduction in salt sensitive crops.

Drip systems can control the rate of water application to achieve application efficiency as high as 90-95%. It could reduce evaporation from soil as well as evapo-transpiration from the crop. As the entire soil surface does not get wet, weed growth is not promoted by drip systems. The system is excellent for soils with low infiltration rates. Unlike surface and sprinkler irrigation, the drip systems can keep the water content always near the field capacity without creating any soil moisture deficit to the crop. Drip or trickle irrigation systems are designed to apply only the required amount of water, therefore, it would minimize water losses as runoff, percolation and seepage. Land levelling or grading is not an essential component in this system, and it requires very low labour for operation and maintenance. Most important advantage of this system is that fertilizer can be injected to the irrigation water (fertigation). Further, it avoids high concentration of salt due to frequent application of water.

However, there are limitations too in drip irrigation systems. Most serious problem is clogging (blocking) of emitters due to insufficient filtration of water. During irrigation, excess salt accumulates near the soil surface and moves towards the edges of the wetted soil. Rain can bring these into the root zones. Investment cost is high and technology is sophisticated. Conveying pipes or tubes can be easily damaged.

Micro-sprinkler irrigation systems

Sprinkler irrigation is the transport of water through a system of pipelines under pressure and the release of water in the form of spray. Water dynamically moves from the water source through the pump to the pipe network and is released through sprinkler nozzles into the air at a high velocity, where it breaks up into droplets and falls to the soil or crop surface. Micro-sprinklers are also similar to sprinklers but riser height is low with comparable application radius.

Sprinklers are suitable for a wide range of crops - field crops, vegetables, orchards etc. but some crops are affected as the entire crop gets wet usually. This is an advantage in one way because it reduced the insect damage.

Micro-scale irrigation systems can be selected when one or more of the following conditions prevail:

- ❖ Land bears undulating topography and soil is shallow,
- ❖ Land slope is too steep and levelling or grading is not economical,
- ❖ Soil is coarse textured and surface irrigation would cause high losses,
- ❖ Water is scarce and expensive therefore should be efficiently utilized,
- ❖ When labour cost is high many parts of the micro-scale irrigation systems can be permanently installed,
- ❖ When water supply needs high assurance especially for high value crops micro-scale irrigation is the best.

Finally, it is worthwhile to note that the adoption of micro-scale irrigation systems should not be a fashion or a sign of modernization. If the investment costs are not economically justified; for example in case of low income generating crops, it is useless to think of expensive micro-scale irrigation systems. However, there are low head, simple drip systems are available in the market and these small units are recommended for backyard cultivation. If the condition for surface irrigation is favourable (water and labour are not limiting) micro-scale irrigation systems are not economical. Energy for lifting and pressurising to apply water is very high in micro-scale irrigation. Most important point is that the user of the micro-scale irrigation systems should have an adequate knowledge on how to operate, maintain and service and repair the system.

EMPLOYMENT IN SRI LANKA AND ITS RECENT TRENDS

Labour resources in a country play an important role in the achievement of an economic growth and proceed towards economic development in consequence to it. In the discussion of labour resources in a country two factors indispensably inter-linked are the employment and unemployment.

What is employment? And what is unemployment? What are the different characteristics of unemployment? and what are the advantages and disadvantages of unemployment? In this paper attention will be drawn to both the recent trends in unemployment situation in Sri Lanka as well as the actions that can be adopted to reduce unemployment.

EMPLOYMENT

Although generally the term employment is used in relation to the factor of labour it can be used to explain the employment of any factor of production. A main difference in labour is its ability to determine the price obtainable by it. Consequently in determining the policies relating it holds a special position in relation to social, economic, and political factors.

As the definitions given to labour changes from time to time, it is not easy to agree on a general definition of the term labour.

According to the definition used in the labour-force survey conducted by the Department of Census and Statistics an employee is one who has worked for an hour or a longer duration to earn an income to the family without obtaining a wage, profit or payment, one week before the date on which the survey is conducted. Those who are temporarily out of employment owing either to sickness, adverse weather conditions, or labour disputes are also considered as unemployed. The employees broadly consist of state employees, employers, self-employed persons and unpaid family workers.

UNEMPLOYMENT

Although an explicit definition of this term is not available, it is possible to form an opinion about it considering the definitions given from time to time. Those who are unable to find employment or suitable employment while they are willing to work, and accept the wage offered to them in consideration of their training can be considered as unemployed.

While it is difficult to find data on unemployment in the pre 1946 period, it should be noted that the bases used in the definitions given to the term have changed from time to time.

In the 1953 Census, the term unemployed has been used to identify those who are presently unemployed but were employed prior to the date of collection of data. Those who are looking for employment to the first time were treated not as unemployed but as dependents. By 1955 the above definition did not undergo significant change and those who were looking for employment were treated as dependents.

Providing a wider definition for the term "unemployment" in the Census of 1971, even those who were able to work, but were not actually looking for employment were treated as unemployed. In the Census of 1981 the balance between the total labour-force and the employed was treated as unemployed.

N.P. Dhammika Padmakanthi *

In the series of Household Consumer and Finance surveys conducted by the Central Bank those who were unemployed during given period but are willing to work and were actively looking for a job were defined as unemployed. As a result of the difference in these definitions, it is not possible to compare the results of the surveys conducted by the Department of Census and Statistics with that of the Central Bank of Sri Lanka under the Census of Population and Household Surveys in the 1990 period.

CATEGORISATION OF UNEMPLOYMENT

The term unemployment can be discussed under two categories. They are:-

1. Voluntary unemployment.
2. Involuntary unemployment.

VOLUNTARY UNEMPLOYMENT

A person has the ability to find a job but does not accept the employment he finds, owing to various reasons. This may be in the hope of a better employment or he may not agree to the place of work, conditions of labour, payments, or to the risk involved in the job. The term voluntary unemployment is used in the sense that where one is satisfied with all the above matters still prefers not to engage in the employment. This may give the impression that any form of unemployment is voluntary unemployment. In this regard the absenting from employment that can be performed by those who consider that such work can be performed even without qualifications and training manually, is known as voluntary absenting from employment. However a counter argument to this is that people should not be persuaded to any sort of menial work and that in the case of voluntary unemployment it should be defined on the basis of qualifications and training.

INVOLUNTARY UNEMPLOYMENT

Although this implies keeping away from work involuntarily in fact it carries a broader meaning. Involuntary unemployment is absenting from work by reason of the job being not up to the training or skills, or carrying a lower wage and qualifications.

However there is no device to identify when unemployment is voluntary or involuntary. There is no universal measurement. While the existing wages are not corresponding to qualifications and labour is often a attitudinal issue.

In addition to above basic categories of unemployment it can also be classified on the following basis:

1. Temporary Unemployment.
2. Structural Unemployment
3. Seasonal Unemployment.
4. Cyclical Unemployment.

TEMPORARY UNEMPLOYMENT

What is meant by this is the unemployment resulting from day to day incidents. This can be due to the withdrawal of firms from the market or entry of new firms or labour moving out of the market in search of new jobs. Employees when appear for interviews etc makes them unemployed for a certain period of time. This shows that temporary unemployment does not create deep rooted economic problems.

STRUCTURAL UNEMPLOYMENT

This type of unemployment can result from the structural changes in the economy. An example is the obsolescence of certain categories of labour as a result of rapid technological advancement. Certain employees may be in excess when modernising the manually operated billing and cash collection functions in shops. Such employment can occur even in very sound economic environment.

SEASONAL UNEMPLOYMENT

It is seen that certain industries are engage to meet the seasonal demand. The unemployment so created is known as seasonal unemployment.

CYCLICAL UNEMPLOYMENT

Unemployment created by cyclical decline in business is known by this term. Business cycles are the fluctuations and depressions that occur in the economy periodically. These result from both internally and externally generated forces. In a depression the main features are

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the decline in the profits of a business and excess of labour leading to termination of employment. In a depression it is the category of untrained and under-trained labour that is axed first. If the depression continues for a longer period closure of factories and large scale termination of employment can be experienced. Unless the economic policy makers take urgent and intelligent action such a situation can lead to fundamental problems in the economy. It may cause social, and political issues also. As a result of this more and more unskilled employees could be exposed to the problem of unemployment and the gap between income groups can widen.

RATE OF UNEMPLOYMENT OF LABOUR

Rate of Employment of Labour (As a Ratio of labour)

Year	Male	Female	Total	Total excluding unpaid Family workers	Total period of survey
1990	11.8	23.4	15.9	18.0	17.4
1991	10.2	32.0	14.7	16.0	16.1
1992	10.7	22.9	14.6	16.1	16.2
1993	9.7	20.17	13.8	15.1	17.5
1994	9.7	20.1	3.1	14.3	12.9
1995	8.8	18.8	12.3	13.4	12
1996	8.5	18.0	11.3	12.4	11.8
1997	7.7	16.1	10.5	11.5	11.6
1998	6.5	14.0	9.2	10.5	10.4
1999	6.7	13.0	8.9	10.0	9.1
1999 -1st Quarter	6.8	11.8	8.6	10.0	8.2
1999 -2nd Quarter	6.3	13.0	8.5	9.6	9.0
1999 -3rd Quarter	7.4	12.6	9.1	10.2	10.2
1999 -4th Quarter	6.3	14.7	9.2	10.2	9.9
2000	5.9	11.0	7.7	8.7	8.4
2000 -1st Quarter	6.4	11.0	8.0	9.1	8.8
2000 -2nd Quarter	5.3	10.1	7.0	8.1	7.8
2000 -3rd Quarter	6.0	11.8	8.0	8.9	8.6

FULL EMPLOYMENT

Source:- Department of Census and Statistics, Central Bank of Sri Lanka.

Employment is employing resources in the provision of services. However the term full employment does not practically denote the meaning of engaging total resources in employment at a given point of time. Some factors by their nature, cannot be employed at all. In case of labour even temporary unemployment may be found even during a prosperity. Because of this under what is meant by full employment is that all employable factors have been employed under existing conditions. An important concept that emerges from this is that a can be seen varying percentage of unemployment, depending on the type of economy. This considered as natural unemployment. According to different economies there can be slight variations in this percentage. What is meant by this is that in situations where major set backs or stimulations are not present and all employable factors have been employed such variations in the percentages can be seen.

RECENT TRENDS IN THE EMPLOYMENT IN SRI LANKA

In reviewing the employment situation in Sri Lanka only after late '50s unemployment became a significant issue. According to the Consumer -Finance Survey of 1956 the rate of unemployment was 16.6% In response to this the government gave an important emphasis to the policies aimed at creating employment.

As a result of low rate of growth in employment opportunities in the context of arising labour force by 1970s, the unemployment heavily expanded and developed into a serious problem thereafter. According to the Consumer Finance Survey conducted by the Central Bank in 1973 ,the rate of unemployment was 24%. It was the highest rate of unemployment so far reported.

With the relaxation of economic policies in 1977 the rate of unemployment declined considerably. According to the 1978/79 Consumer Finance Survey it had declined to 14.8% and this declining trend continued till the early part of 1980s. The factors that led to the decline in the unemployment situation during this period were the launching of a state investment program in the Mahaweli Development Project, Export promotion Zone, and the Urban and Housing Development Program. A marked characteristic of this period was the lessening of unemployment among those having higher educational qualifications.

According to the 1986/ 1987 Consumer Finance Survey the rate of unemployment rose to 15.5%. There are several factors that led to this. They are:-

1. Decline in the labour absorption capacity which was caused by the slow economic growth, that resulted from the civil unrest in the post 1983 period.
2. Completion of major development projects.
3. Decline in the private sector investment as a result of the indecisive conditions created by the unrest in the South in the latter half of 1980s in addition to the Northern crisis.

In 1990s the rate of unemployment began to decrease. According to the Quarterly Labour Force Survey by the Second quarter of 1997 rate of unemployment had decreased to 10.2% Compared to this the rate in 1990 was 16.3%.

When the position during the first three quarters of 2000 is consid-

ered it is apparent that the rate of unemployment is at a relatively low level compared to that of 1999. This resulted from the rising rates of employment both in the state and private sectors. The rate of unemployment which dropped to 8.9% in 1999 from 15.9% in 1990 dropped to 7.6% during the first three quarters of 2000. One reason that affected the decline in estimates of unemployment since 1998 was the absorption of certain categories of unpaid family workers to the labour force anew. This was very much contributed by the changes given to the definition of the term "employee". However declining trends in the rate of unemployment can be clearly seen, even when it is calculated excluding the unpaid family workers as employed.

family workers as employed.

The rate of unemployment calculated excluding the unpaid family workers was 10.0% in 1990 and this has been estimated as 8.7% in 2000. The pre-adjustment rate of unemployment indicates a decline of 1.0% between 1999 and 2000. Further the Labour Force Survey identified the employed and unemployed on the basis of the availability of persons for work during a period of one year. According to this definition the unemployed were considered to be those who were having work for a period exceeding 26 weeks during a period of 12 months.

DIFFERENT TRENDS IN UNEMPLOYMENT IN SRI LANKA

Unemployment by Age Groups

Unemployment (As Percentage of Labour Force)

Year	Age Group					Total
	15-19	20-29	30-39	40-49	50 or above	
1990	40.1	30.3	8.4	4.3	2.1	15.9
1991	37.6	27.5	9.1	3.6	1.0	14.7
1992	39.1	27.5	7.8	3.5	1.4	14.6
1993	38.4	25.2	8.4	3.3	1.5	13.8
1994	40.7	24.5	7.6	2.5	1.2	13.1
1995	60.5	31.7	8.0	2.9	0.4	12.3
1996	36.5	22.0	6.0	1.9	0.5	11.3
1997	34	21.9	5.2	1.7	0.6	10.5
1998	27.3	19.3	4.9	2.0	0.7	9.2
1999	28.4	18.9	4.4	1.6	1.0	8.9
1st Quarter	25.5	20.2	4.0	1.1	0.8	8.6
2nd Quarter	29.5	17.3	4.2	1.7	1.4	8.5
3rd Quarter	3	18.9	5.3	1.3	0.8	9.1
4th Quarter	27.2	19.3	4.2	2.2	1.0	9.2
2000	22.0	17.9	3.6	1.3	0.9	7.7
1st Quarter	22.1	19.0	3.8	1.1	0.7	8.0
2nd Quarter	22.5	15.0	3.6	1.6	0.9	7.0
3rd Quarter	21.3	19.7	3.3	1.2	1.0	8.0

Source:-Department of Census and Statistics.

According to this definition also the rate of unemployment dropped from 17.4% in 1990 to 8.4% in the first three quarters of 2000.

In analysing the various trends in unemployment in Sri Lanka it is necessary to consider the variations in unemployment by age groups, level of education, sex and the regions

A conspicuous feature of the unemployment situation in Sri Lanka by age groups is the higher rate of young people seeking employment as new entrants to the labour market.

According to the Consumer Finance Surveys of 1963, 1973, 1978/79, 1981/82, and 1986/87 over 70% of the unemployed belonged to the age group of 15-29 years of age and a marked decline has been recorded in the post thirty year-age group. More over it appears that the rate of unemployment in the age group of 15-19 years has considerably dropped since 1999. The unemployment rate in this age group which was 40% in 1990 dropped to 22.0% in the first three quarters of 2000. Further the rate of unemployment in the age group of 15-19 indicates a sharp drop in relation to the drop in the rate of unemployment of the age group of 20-29 from 30.0% in 1990 to 18.1% in 2000.

The rate of unemployment is highest among those possessing higher educational qualifications of GCE(O/Level) and GCE (A/Level) and above in the age group of 20-29. The rate of unemployment in this group was 14.6% in the first three quarters of 2000. Higher age of entry and leaving the universities that prevail in the present education system, failure of the education intimated to them to satisfy the demand in the labour market and involuntary unemployment in this age group, have led to the high level of unemployment in this age group.

A marked feature in the rate of unemployment by level of education in Sri Lanka is that it rises as the level of education goes up. It is among the category of persons with GCE (O/Level) or above that the rate of unemployment is highest. According to the surveys mentioned above over 40.0% of the unemployed was from the category having an education of GCE (O/Level) or above.

During the first three quarters of 2000, the rate of unemployment among those having a higher level of education remained low. Existence of a higher rate of unemployment among the educationally qualified was partly due to failure of the traditional education system which imparted a knowledge in traditional subjects, to supply the persons with knowledge in English, qualifications in computer science, financial management, and mar-

keting which was required by the private sector labour market. While the school and higher education system should be restructured, in keeping with the demand for labour from the private sector, it is expected that the recently introduced educational reforms would meet this challenge and thereby rate of unemployment among the educated could be brought down.

The unemployment pattern by sex indicates a difference. In Sri Lanka there is a higher rate of unemployment among the females than males while there is a declining trend in the case of both sexes.

The rate of unemployment among female which was 22.0% in 1993 dropped to 16.3% in 1997. The rate of unemployment among male population dropped from 9.7% to 7.2% during this period. The rate of unemployment among women with a higher level of education remains at a higher level.

During this year a rapid drop in the rate of male unemployment, relative to that of female could be experienced. The rate of female unemployment dropped from 23.4% in 1990 to 13.0% in 1999 and further to 11.0% in the first three quarters of 2000, while that of male unemployment rate dropped from 11.8% in 1990 to 5.7% in 1999 and stood at 5.9% in the first three quarters of 2000. The increase in employment opportunities for women in recent years in manufacturing and trade and hotel sectors has contributed to the sharp drop in the female employment rates.

In response to the concept of locating garment factories in rural areas by 1992 the employment opportunities for women rose in this sector exceeding the figure of 0.3 Mn. In the state and private sectors the tendency of women moving to the traditionally female jobs so far performed by men contributed to further increasing the female job opportunities. This is affected both by cultural attitudes and economic difficulties.

Various differences in the rate of unemployment can be seen by regions also. In this regard it should be noted that the highest rate of unemployment of 15.0% is reported from the Southern Province. The major contributors to the difference in rates of unemployment by both regional and Urban and rural areas are the economic factors. This is mainly due to the disparities in distribution of infrastructure and service centers in regions and rural areas. The existence of this situation is also fostered by the natural and physical forces.

In reviewing the unemployment in Sri Lanka, it is apparent that it stands comparatively high despite the indications of a decline in the rates of unemployment. If the situation is that it is useful to consider the advantages and disadvantages of unemployment of labour.

DISADVANTAGES OF UNEMPLOYMENT OF LABOUR

The advantages and disadvantages of unemployment of labour can be clearly seen in an unemployed person. The loss of income he would have earned is a direct disadvantage. Another direct disadvantage is the welfare expenditure the government has to incur for him. Had it been not so such expenditure could have been utilised for other productive activities.

Government welfare expenditure is earned from two ways. One of them is taxation which is an additional burden to the tax payer. The other is the policy of deficit budgeting whereby money supply has to be increased to meet the deficit. This is known as bridging the gap by expansionary methods as this money goes to the public through the operation of the economy, thereby raising their purchasing power. If the supply of goods and services cannot be proportionately increased in such a context prices

would move in an upward trend. It is harmful to the whole economy. As the numbers unemployed swell, the adverse impacts also would be aggravated. If the unemployed could be engaged in employment, it could add certain amount of wealth to the national economy. However the unemployment prevents it. The income thus lost can be identified as an opportunity cost of unemployment of labour.

SOCIAL COST

Although this cannot be quantitatively measured, it should be a subject of close attention of a government. In economies where unemployment rates are high suicidal rates have gone up due to inability to afford for daily needs. Another form of social cost is the rise in the anti-social activities. Decline in health conditions due to mental dis-

UNEMPLOYMENT BY LEVEL OF EDUCATION

Unemployment by Level of Education (as a percentage of labour force)

Year	No Schooling	Grade 0-4 Year 1-5	Grade 5-9 year6-10	GCE (O/L) NCGE	GCE (A/L) HNCE	Total
1990	3.3	5.1	17.2	23.9	29.4	15.9
1991	3.9	4.9	14.9	25	24.6	14.7
1992	3.0	4.7	15.9	22.2	22.4	14.6
1993	3.1	4.9	13.7	21.3	23.3	13.8
1994	2.6	5	13.0	19.6	23.7	13.1
1995	1.8	3.4	12.8	18.4	20	12.3
1996	2.8	3.4	12.2	16.4	19	11.3
1997	2.0	2.4	10.6	15.9	19.3	10.5
1998	1.0	2.4	9.0	13.7	17.5	9.5
1999	0.4	1.9	8.2	13.6	17.9	8.9
1 st Quarter	0.1	1.7	8.0	12.4	19.6	8.6
2 nd Quarter	0.1	1.7	8.2	12.5	15.8	8.5
3 rd Quarter	0.3	2.2	9.1	13.8	16.9	9.1
4 th Quarter	0.1	2.1	7.3	15.6	19.3	9.2
2000	1.4	1.1	7.4	11.5	14.6	7.7
1 st Quarter	1.3	1.1	7.9	11.2	15.4	8.0
2 nd Quarter	1.8	1.1	6.8	11.4	13.1	7.0
3 rd Quarter	1.2	1.0	7.6	12.0	15.2	8.0

Source:-Department of Census and Statistics

tress resulting from the compulsion to dispose one's real assets such as house and property and the rise in indebtedness and the adverse effects on the future generations are the other disadvantages.

ADVANTAGES OF UNEMPLOYMENT

Although the unemployment does not bring long term advantages it is not totally devoid of advantages. In a high unemployment environment the employers have a chance to select the best labour. At the same time it promotes discipline among the remaining employees. In a full employment situation the chances for disputes over higher wages and better working conditions are high. However on the contrary when the supply of labour increases, their power to influence higher labour is low. Despite these minor advantages in general the unemployment of labour is not a healthy situation. On the whole the disadvantages of this are greater and one of the major objectives of a government is to keep the resources employed as much as possible.

STEPS THAT SHOULD BE ADOPTED TO OVERCOME UNEMPLOYMENT OF LABOUR IN SRI LANKA

Although every country in the world experiences an unemployment of labour in the developing and under-developed countries this has a greater weight on the economic development. For this problem of unemployment in Sri Lanka it is necessary to find suitable solutions to deal with the question of annual addition of labour to the market. Unless such steps are taken there is the possibility of such situations aggravating to political uprising levels by the unemployed which would exert unbearable pressure on the economy. This prevents the accomplishment of an economic growth in the context of a new world economic order. This demands a discussion as to how solutions and proposals can be found to this in the present globalisation process.

UNEMPLOYMENT BY SEX

Unemployment by Male & Female
(Period of review one week)

Year	Male	Female
1990	11.8	23.4
1991	10.2	23.0
1992	10.7	212.9
1993	9.7	21.7
1994	9.7	20.1
1995	8.8	18.8
1996	8.5	18.0
1997	7.7	16.1
1998	6.5	14.0
1999	6.7	13.0
1 st Quarter	6.8	11.8
2 nd Quarter	6.3	13.0
3 rd Quarter	7.4	12.6
4 th Quarter	6.3	14.7
2000	5.9	11.0
1 st Quarter	6.4	11.1
2 nd Quarter	5.3	10.1
3 rd Quarter	6.0	11.8

Source:-Department of Census.

In case of Sri Lanka in the endeavor to find solutions to bring down the rate of unemployment of labour, the main thrust should be on the causes leading to an unemployment situation and the major sectors of such unemployment and to provide remedies thereto. A major point of attention in an attempt to bring down unemployment in Sri Lanka is the education sector.

An education policy should not only continue to improve the people's knowledge and understanding alone but also should aim at promoting positive impacts on the economy. What this means is that the education also should keep phase with the world socio-economic trends. When the education cannot satisfy the national, social and economic demand it leads to many problems. The education should make a direct contribution to the accomplishment of economic development. Unless this is done it could result in lower rates of labour participation and thereby inevitably bringing down the national product. Therefore rise in unemployment can be explained as a product of the failure to restructure the educational policies to serve the national, economic demand in the context of the globalisation process.

The education should be geared to provide not an employment that suits the education, but an education that suits the employment. The new educational reforms are a result of the socio-economic demand. In this regard it is important to give solutions to this by adding to the curriculum a vocational training inputs in line with the identified skills of the students after completing formal education. It is possible to produce a courageous citizen possessing a vocational security in a reinforced surrounding instead of a citizen who is isolated after leaving the school education, by promoting vocational education either through direct intervention of the state or by extension of state assistance to the private sector for this following the formal education.

It is necessary to find alternative solutions to the problem of unemployment of labour as it is difficult to find remedies to it. Special attention should be given to increasing employment opportunities in the private sector and to achieve this our education should be reformed to suit this sector. What it means is that both the university as well as school education should be modernised to provide an adequate knowledge in areas such as the economic environment, international trade, world economic relations, international cooperation, development administration, management, technology,

UNEMPLOYMENT BY PROVINCES

Unemployment Provinces

Province	Total	Male	Female
Western	11.4	8.3	17.8
Central	12.2	10.0	17.0
Southern	10.6	6.9	17.4
North Western	14.8	10.6	22.7
North Central	8.3	5.4	15.2
Uva	8.1	5.1	14.9
Sabaramgamuwa	9.1	7.5	12.2
	12.2	7.8	20.8

Source:-50 Years of Economic History.

use of computers, and English. At the same time vocational training centers should be established countrywide adequately for the school leavers. This will help to give an opportunity to employ large numbers in the private sector, which prefers trained labour. Although the urban sector is furnished with such facilities to a certain extent as the facilities available to the rural sector is very minimal attention should be given to do justice to this sector. Not only that, action should also be taken to direct school leavers to such training. If the government alone cannot shoulder the total cost of essential vocational education the private sector should be given direct incentives and financial assistance to persuade them to invest in such activities as private vocational training institutions. This will help a trainee to gain a training he desires at low cost and find an employment opportunity thereby. Employment opportunities will increase by creating new industries based on modern technology. Therefore the technological base of education should be widened to meet the new demand in technology. Educational facilities should be increased in the fields of computer education, and information technology. Investment in education should be made meaningful as a sector that fosters national development.

An equally important aspect in overcoming unemployment is to emphasize on the political influence. The political sector that determines the policies in a country is directly tied to the unemployment. It is important for an economic system that can reduce unemployment, to have a diplomatic environment that can do implement a valid and locally and internationally acceptable economic program and to have a stable government. It is to such an attractive political and economic environment that the domestic and foreign investors as well as tourists pay more attention. As the politics in Sri Lanka determines all aspects in the country, this political factor is very important. Therefore by the establishment of an honest political system that can elect honest politicians as well as a good government that can effect economic growth in the country not only solutions to the problem of unemployment could be found but also a healthy environment for economic development can be created. To prevent the country from slipping into a precipice with the contributions made by an ethnic conflict, civil unrest, corruption and terror, it is essential for Sri Lanka to have a stable government led by honest politicians. This has been taught and convinced to us by history. For a country it is healthy to have a high quality democracy.

Another factor affecting the unemployment in Sri Lanka is the attitudes of the people. Some people do not like to be employed in certain sectors. For example the reluctance of women to be employed in the garment sector can be cited. Therefore an unemployment situation has arisen among them despite the availability of jobs, as they refrain from taking up such occupations. A fact that influence the existence of unemployment specially among the educated is their reluctance to take up certain jobs with

the feeling that such jobs do not suit them or with the hope of getting better standard jobs.

The reluctance of the youth to be employed in the agricultural or rural sector due to their sole desire to maintain relations with the urban society and the expectation of urban sector jobs have made them unemployed. Traditional thinking and ideologies as well as the feeling that the women are not capable of properly performing their duties are the main contributory factors to their level of unemployment. Overcoming these approaches that prevail among the people is very important in to increase employment opportunities in Sri Lanka.

Further, the expansion of facilities required for taking up self employment activities which have

already drawn much attention could be of very much assistance in increasing employment opportunities. In this regard it is necessary to expand concessionary credit facilities, provision of carrier guidance services, and expansion of marketing opportunities.

Further the investors are reluctant to move to certain areas owing to poor infrastructure facilities available in such areas. In some of these areas labour is available in abundance. Therefore action should be taken to attract investors by providing adequate infrastructure to such areas. Then it easy to attract labour into these investment industries and thereby reduce unemployment.

In addition it is important to assist the individuals to improve their talents in creative art and technological knowledge by evaluating them.

Not only that proper action should be taken to put the so far idling land into proper use. This also is important in increasing job opportunities in the agricultural sector.

When the unemployment situation in Sri Lanka is comparatively analyzed, it is apparent that, although the problem of unemployment has not taken serious proportions it stands at a higher rate. Further it is also apparent that the chances available to expand employment opportunities or overcome the problem of unemployment also are high. However the problem is that opportunities that can be utilised to successfully implement such programs have been obstructed by some factors which are not per se economic.

Contd. from Page 36

been seen as essential for organic farming to be a success. However, in areas like Nuwara Eliya where land scarcity is severely experienced, organic farming is not a feasible option for every household. Shortage of labour further aggravates the situation.

Another constraint specific to some farms is scarce availability of suitable leguminous varieties for green manure purposes, which has restricted the production and utilization of high quality organic manure. Farmers also find difficulties in obtaining particular raw materials such as ash, dried leaves and poultry manure in the process of organic manure production.

Pest and Diseases

In general pest and disease problems are supposed to be comparatively less in this farming system. However, difficulties in the management of some uncontrollable pests, for instance bandicoots and some soil borne fungal diseases with available bio pesticides has caused a decline in farmers interest.

Unlike in chemical fertilizers which when applied to soil are rapidly releases nutrients to the soil solution, nutrients from organic manure are gradually released to the soil solution due to the microbial action which has to take place. Therefore farmers

do not derive the best results possible from organic farming when farms are converted from chemical to organic methods. This has resulted in negative effects on the farmer adoption.

All these constraints have contributed to low income from organic farming, which has been the major cause for poor farmer adoption for this nature friendly farming system. For the promotion and adoption of this farming system developing countries like Sri Lanka has to come up with more effective strategies and methods.

Concluding Remarks

Significance of sustainable systems such as organic farming is becoming more and more important in Sri Lanka due to adverse consequences of conventional farming. Except for the role played by development NGOs in the promotion of this system, policies and programmes of the government sector to develop a viable organic farming system is insufficient.

Some innovative farmers, though in minority, have succeeded in achieving the environmental, health and economic benefits through the integration of organic concepts and practices in their farming systems. However, despite proven aspects of sustainability, the progress in farmer adoption has been constrained by several factors. Discouraging attitudes, information gap, scarcity of resources such as labour and land, less productivity of current organic farming systems, pest and diseases, lack

of certification services, marketing problems and poor consumer awareness are among such constraints.

Research, information and communication, training, certification and raising consumer awareness are all crucial for further development of the organic sector. Therefore, holding consultations with various government and private sector agencies and individuals to assess and evaluate how present efforts could be improved and made more effective may have a significant impact in this regard. Moreover, coordination of all existing efforts and giving organic farming a strong emphasis through the declaration of policy of the government to promote, propagate and assist the practice has been timely need in the context of sustainable agriculture development.

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WORLD FOOD SECURITY & SRI LANKA

Many experts have warned about an impending global food crisis during this millennium. Most of the countries have given an importance to food and self-sufficiency during the middle phase of the 20th century. This circumstance was clearly experienced, particularly after the post 2nd world war. The prominence of reaching to self-sufficiency and food security were gradually deteriorated under the concept of globalization and regionalization, which creates the world to a single "global city". But it was made rational to import goods, which are found to be comparatively disadvantageous to be produced within the country, but the specialized in certain goods that are advantageous, under trade liberalization. Under these circumstances, it is the high time to examine the nature of global food security and particularly how far this is relevant in the context of Sri Lanka as a developing country.

What is Food Security?

There are different definitions of food security have been put forwarded, certain important definitions is as follows:

Food security is defined as access to food for a healthy life by all people at all times. (NAM 1994 Non Aligned Movement).

It recognized that, in spite of substantial increase in the world's food output and number of people suffering from hunger and malnutrition has increased during the last decade in many developing countries. That is why Mr. Bali affirmed that; food security should be a fundamental goal of development policy as well as a measure of its success.

In order to get a meaningful of the term of food security, it is necessary to break down the concept of food security in to several components as follows. Here, the five dimensions listed below can be applied in evaluating food systems at diverse levels of ranging from households and communities to nations and groups of nations.

1. A food system offering security for its portico pants should have the capacity to produce, store, import or otherwise acquire sufficient food to meet the needs of all members at all times.
2. It should provide maximum autonomy and self-determination (without implying autar-

chy), thus reducing vulnerability to market fluctuations and other social and political pressures.

3. It should be reliable, so that seasonal, cyclical and other variations in the access to food are minimal.
4. A secure food system should be equitable meaning, as a minimum, dependable access to adequate food for all individuals and groups both now and in the future.
5. Finally, it should be socially and environmentally sustainable, so that the ecological systems on which all societies food production depend are protected and enhanced over time.

These five criteria can be broadly divided in to 3 components-

- I. Food availability
- II. Food stability
- III. Food access

According to above explanations we can simply come in to a point that the food security mean, the right of the all people who are being healthy and active manor at all time.

K.M.R. Karunarathna *

Food security in a country can be measured by the household food security index which incorporate above three component food availability in country is ensured by domestic production and imports.

Stability is ensured by the uninterrupted supply and prices. Although an adequate of supply of food provides food security in a country it does not guarantee household food security the population could raise the theta of food security. Available food should reach the people who should have the access to it. Effective maintenance of accessibility depends on adequate production and stable supply. On the other hand food distribution ensures the physical and economic accessibility for food.

The world has ample food; global food production has grown faster than population since the 1950. Food production could have been grown much more rapidly if the poor had enjoyed access to sufficient resources to produce or incomes to purchase all the economically and sustainable increase in per capita food supplies significantly in the foreseeable future. Inspire of these favourable conditions, about one fifth of humanity suffering from starvation.

As the population in every country is growing there is an increasing demand for food, as the development process unfolds, a larger share of food is consumed in places far away from where it is produced due to the urbanization and migration for employment. As this process promotes increasing food production, people become more dependent on markets for inter food consequently; people need an efficient guaranteed food distribution system. A well-organized distribution system consists of services to producers, processors and customers. Efficiency of the distribution system depends on the efficiency of the marketing system.

Access of farmers or producers to the market crucially depends on the infrastructure such as a network of roads. Poor infrastructure slows down transport and increases the losses due to the perishable nature of some commodities, causes increase in transport costs increases wear and tear of vehicles used and finally increases cost of the commodity transported to the consumer.

It may useful to consider over the production of some countries. There may be over-production of some kind of food in some country. To hold in constant of prices of some goods countries, which produced over production, try to destroy their production. This may be to west our production. Eg: Destruction causes of over wheat production in USA.

The food distribution system in country places a major role in food security. Although an adequate supply of food could provide food security in country, if it does not guarantee household food security, the population could face the threat of food should insecurity. Available food should reach the people who should have the access to it. Affective maintenance of accessibility depends on adequate production and stable supply. Distribution ensures the physical and economic accessibility for food. Sufficiency in food does not mean that it ensures food security. Food should satisfy the basic and physiological needs of human beings by supplying nutritionally balanced food. By a proper distribution system food is brought near to the household and made available at affordable prices. Household food security must by the making food accessible to the population, specially its ample segments. In this context, therefore, food distribution plays a major role.

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As the population every country is growing, there is an increase in demand of food. As the development process unfolds, a larger share of food is consumed in places far away from where it is produced due to the urbanization, regeneration and globalization. As this process promotes increasing food production, people become more dependant on markets for their food. Consequently, people need an efficient guaranteed food distribution system. Efficiency of the distribution system depends on the efficiency of the marketing system.

Trend in Food Security in the World

As a consequence of instant population growth and less agricultural productivity particularly, after the Second World War, the price of food drastically increased. Because of the above several countries of the world had to focus their mind to increase productivity, as follows:

1. By introducing scientific crops, which was response to the chemical fertilizers,
2. By investing massive stock of capital to build, irrigation system and infrastructure.

World Bank and other financial institutes helped to these projects when we consider about all over the Asian countries, huge part of their investment had engaged to progress of agriculture related irrigation systems. As a result of these by now prices of rice and wheat have decreased in double fold.

Within 1960 and 1990 grain production of the world has doubled on the other hand due to green revolution precipitate food possibility and per capita calories possibility in the world increased 37 and 35 percentage respectively. Precipitate food supplies in the developing world rose from 1900 calories per day in the early 1960s to 2500 calories in the early 1990s, even though the population doubled during this period. However, these figures disguise the fact that not all people in developing countries shared this progress.

According to the International Food Policy Research Institute (IFPRI) and The Food and Agriculture Organization (FAO) year 2020 vision in 1995 the out look in global terms is projected as an increase in world population by about 2.2 billion between 1996 and 2020, with 94 percent of the increase being in the developing world. The demand for food grains is projected to grow at 4.0 percent per annum and demand for livestock products by 18 percent per annum. Demand is projected to grow faster in the developing than the developed world with the Sub-Saharan Africa being the exception.

The global food situation is characterized as being relatively good, although it is suggested that growth in food production has begun to lag. The rate of growth of global grain production is estimated to have dropped from 3 percent in the 1970s to 1.3 percent in the 1983 - 93 period, and the amount of grain produced per person is

Table 1
Population Growth: 1900 - 2100

Category	Population (Billions)					Increase (%)	
	1900	1950	1990	2025	2100	1950 - 1990	1990 - 2100
Developed Countries	0.56	0.84	1.24	1.40	1.50	44	150
Developing Countries	1.07	1.68	4.08	7.10	10.20	143	24
World	1.63	2.52	5.30	8.50	11.70	110	121

Source: Population and Food in the Early Twenty First Century

reported to have fallen in the past decade. However, the future aggregate global food supply position is expected in agricultural research and infrastructures are maintained. The real world prices of most food commodities are expected to decline this suggested pressure on world food supplies exerted by rising food population and increasing incomes could be contained.

The projected situation in respect of South Asia and Sub-Saharan Africa is not as rosy as the global situation leads one to expect. Supply and effective demand for rice are expected to be in balance in South Asia while wheat imports are expected to grow. The expansion in the feed industry is also expected to lead to major problem confronting countries in this region, posing what is referred to as the central paradox in the world food situation declining world food prices co-existing with sustained or increasing malnutrition in much of the world.

The foregoing represents what is referred to as the base scenario. Depending on the methodologies used and assumptions made, these scenarios can change. Nothing exemplifies this better than the case of China. The recent studies would have China as major exporter or major importer of grain in the twenty-first century with major consequences for world prices, with driving down or forcing up world prices significantly (Mei, 1995: Brown, 1994). Thus projected world trends, as reported above could change with changes in the underlying assumptions. A low population growth scenario will improve food security and result in fewer malnourished children. On the other hand, a low investment, slow growth scenario will lead to an

increase in food insecurity and the number of malnourished children. A high investment, rapid growth scenario results in significant improvements in per capita demand for food and sharp declines in the number of malnourished children. (IFPRI 1995)

These scenarios are not without significance in considering the Sri Lankan situation. But before moving to Sri Lanka, references are made to one of the major conclusions of the FAO World Food Summit (FAO, 1996). It is that as long as the essence of the world food problem is the high incidence of food insecurity and under nutrition precisely in the countries with low per capita food supplies and high dependence on agriculture, there can be no appropriate policy responses to it that do not include a hefty dose of measures to improve agricultural and rural development in order to increase both demand for and supply of food in those very countries. Unfortunately, Sri Lanka is among those countries with per capita food availabilities less than 2500 calories per day and rural population of over 75 of the total population.

1. Population Growth in the World

The clear-cut characteristic can be figured out, when studying population growth is the intense difference between developed and developing countries. The following table shows the population growth since 1900 - 2100:

According to the table 1 from 1950 to 1990 the growth of population in developing countries is 143% while it changes from 44% in devel-

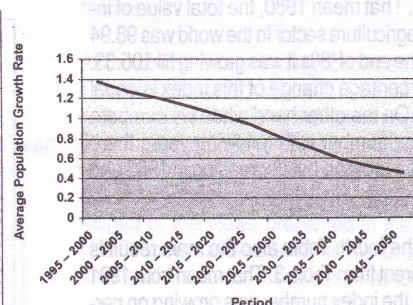
Average Population Growth Rate - Medium Variant

Table 2

Period	Average Population Growth Rate
1995 - 2000	1.37
2000 - 2005	1.27
2005 - 2010	1.20
2010 - 2015	1.12
2015 - 2020	1.03
2020 - 2025	0.94
2025 - 2030	0.81
2030 - 2035	0.70
2035 - 2040	0.59
2040 - 2045	0.51
2045 - 2050	0.45

Source: World Population Prospects

Chart 1



Per capita of Agricultural Production

Average Population Growth Rate from 1950 – 1955 to 1990 – 1995

Table 3

1979 – 1981 = 100

Year	Agricultural Pro. Per Capita
1980	98.94
1981	100.97
1982	102.56
1983	100.60
1984	104.29
1985	104.29
1986	104.21
1987	103.19
1988	103.42
1989	104.67
1990	105.53

Source: FAO Bulletin of Statistics 1992

Table 4

1989 – 1991 = 100

Year	Agricultural Pro.
1991	99.6
1992	100.3
1993	99.4
1994	100.8
1995	101.4
1996	104.1
1997	105.1
1998	104.9
1999	105.1

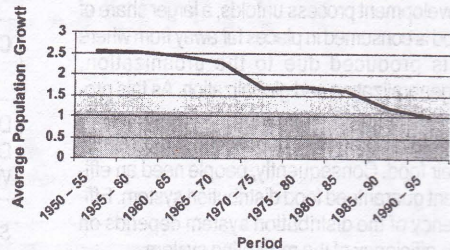
Source: FAO Bulletin of Statistics 2000

Table 5

Period	Average pop. Growth
1950 – 55	2.55
1955 – 60	2.51
1960 – 65	2.43
1965 – 70	2.28
1970 – 75	1.67
1975 – 80	1.71
1980 – 85	1.61
1985 – 90	1.21
1990 – 95	1.00

Source: World Population Prospects 1996

Chart 2



* Secure access to available supplies especially to the low income sectors of the population.

Many factors interact to create food insecurity, namely; poverty, low agricultural productivity, high rate of population growth, insufficient infrastructure for food production, flow of supplies and distribution, ecological and geological constraints, natural disasters, civil disturbances, inappropriate policies, etc.

oped countries. That is 3 times faster rate than the rate of population growth in developed countries.

Relevant to the same table between the year 1990 and the year 2100, the population will grow at the rate of 121%. So that the population growth of developing countries will be as 6 times as the growth of developed countries. Following table represent the annual average population growth between the periods of 1995 – 2000 to 2045 – 2050. In this period the population growth rate will be steadily decrease.

2. Food Changes in the World

When agricultural products are taken to account since the times of World War II as continuous growth can be observed, subjecting to various changes meantime. Further the agricultural sector shows an intense growth since '60s decade and a low, though considerable growth is '80s decade.

Here mentioned about last two decades per capita of agricultural production in the world (Tables 1 and 2). It has been divided in to two parts to analyze those data (due to change of base year of index).

Under Table 3 there was an increase in the world on per capita income of agricultural production. That mean 1980, the total value of index on agriculture sector in the world was 98.94 and at the end of '80s it was growing till 105.53. The percentage change of this index is equal 6.67%. On the other hand when we compare the index number with following years there was not a growing but decreasing in 1983 and 1987.

Under the fourth Table also the main result is not different from Table 3. That mean from 1991 to 1999 the index number was growing on percentage 5.5%. Here also there was a decrease in 1993 and 1997.

The figures conclude that the world population growth continuously decreasing in regular manner unlike in past. Even though the per capita production should accelerate than, that for the preservation of the growing population. So that the "productivity" likely to be an attractive concept in the context.

Food Security in Sri Lanka

1. Introduction

Every human being needs adequate food for its up keep of life and maintenance of health "food for all" for the well-being of the society is vital in building up of a healthy and intelligent work force for the nation. The two essential elements need to be fulfilled are the availability of food and the people's ability to acquire it.

Food availability is achieved when sufficient quantities of the necessary types of food are consistently available to the individuals within the country. Access to food and people's ability to acquire are ensured when households have adequate resources within them to obtain appropriate food for nutrition and satisfying diet enabling them to lead an economically productive and healthy life. Food security has many face cuts and dimensions. In order to ensure food security, the food system within a country needs to,

* Ensure adequate food production, maximum stability of supplies and prices,

2. Population Growth

The population of Sri Lanka is recorded as 19.6 million in 2000 and has recorded an expansion of 12 million persons since independence. The rate of increase has been 22% in the first decade and then shot up to 31% in the second and stood below 20% there after. Nearly 250,000 persons are added per annum to the population at present average population growth depicted in following table.

According to the Table 5 and figure 2 the increasing population growth rate of Sri Lanka has begun to fall steadily since the time period of 1960 to 1965. This situation from the decade 1940 is fundamentally due to the slow, gross birth rate comparing to the accelerating fall of gross death rate 1940 decade. The relevant preface to the population growth of Sri Lanka is coinciding in table 6 and Chart 3.

Thus the Sri Lankan population can be predicted for the year 2050 as 0.41, while a de-

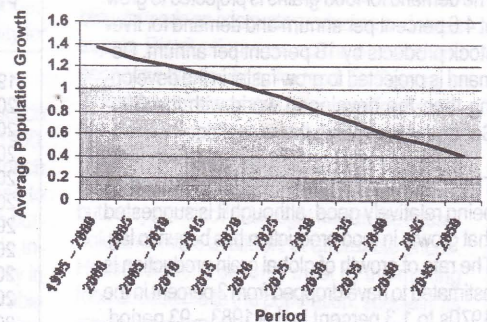
Average Population Growth Rate – Medium Variant

Table 6

Period	Avg. population Growth
1995 – 2000	1.37
2000 – 2005	1.27
2005 – 2010	1.20
2010 – 2015	1.12
2015 – 2020	1.03
2020 – 2025	0.94
2025 – 2030	0.81
2030 – 2035	0.70
2035 – 2040	0.59
2040 – 2045	0.51
2045 – 2050	0.41

Source: World Population Prospects 1996

Chart 3



Agriculture Product per Capita

Table 7

1980 – 1990 = 100

Year	Agriculture Product per Capita
1980	100.68
1981	99.98
1982	96.13
1983	102.27
1984	95.64
1985	100.58
1986	98.39
1987	86.72
1988	88.68
1989	84.63
1990	91.29

Source: FAO Bulletin of Statistics 1992

Table 8

1991 – 1999 = 100

Year	Agriculture Product per Capita
1991	99.5
1992	94.6
1993	101.3
1994	107.8
1995	110.6
1996	100.6
1997	103.2
1998	105.6
1999	104.6

Source: FAO Bulletin of Statistics 2000

creasing growth is estimated all over the period.

3. Agricultural Production

The agriculture products of Sri Lanka gained a steady growth afterwards of independence. Particularly the agriculture in association of irrigation, takes an important role in conforming the food preservation of government. In 1980 it was at the level of 15% - 20%. Agriculture which records an average annual growth rate of 2.6 during the post-independent era has been the mainstay of the Sri Lankan economy agricultural performance has drastically dropped to 21.1% of the Gross Domestic Production which was 35% in 1950.

In the mid 1980s, 550,000 hectares of land remained under irrigation, which it was 750,000 hectares of land at the beginning of 1990. On the other hand a considerable productivity growth caused to this difference particularly in the production of paddy.

Here mentioned about last two decade per capita of agricultural production in Sri Lanka. It has been divided in to two parts to analyze those data. (Due to the change of base year of the index)

Table 10

Progress of Paddy Sector During Last Six Decades in Sri Lanka

Decade	Annual Land Utilized ('000 ha)	Average Yield (t ha ⁻¹)	Annual Production ('000 ha)	Rice Imported %
40 - 49	397	0.650	262	60
50 - 59	393	1.730	687	50
60 - 69	503	2.090	1065	40
70 - 79	623	2.480	1564	25
80 - 89	708	3.312	2372	10
90 - 99	807	3.500	2460	5

Source: ASDA 2000

Average Population and Rice Production Growth Rate Periodically

Table 9

Period	Average Population Growth Rate	Average Rice Production Growth Rate
56 - 60	2.84	14.14
61 - 65	2.42	12.90
66 - 70	2.32	12.76
71 - 75	1.52	6.48
76 - 80	1.78	11.20
81 - 85	1.82	7.44
86 - 90	1.42	-6.54
91 - 95	1.28	4.14

Source: Independence Economic Progress in Sri Lanka

The inspection of 89 statistics clears that in this time period per capita of agriculture production has been subjected to a considerable variation. This situation explains it more clearly with the comparison of world agricultural products.

Though in the decade '80 it doesn't show the steady growth as of the decade 1990, it existed in some way. That is, the growth until 1995 began to worsen since 1996. It's worthy inquiring this situation with each particle deeply. A special attention is leveled at the paddy production here. (Table 7 and Table 8)

Rice Growing Sector

In Sri Lanka successive governments have given priority to increase food production. With respect to the production of rice, which is the staple food a remarkable progress has been achieved. In 1950 nearly 71% of the total rice consumed in the country was imported but the country was self-sufficient in rice by 1993.

Out of total agricultural land, 42% is under paddy cultivation has been doubled during the past 5 decades. The maximum paddy production was reported 2.9 million metric tons in which is three folds growth when compared with paddy harvest of 1960. As far as the production trend is concerned, it is clear that there was remarkable growth of paddy until '80s decade. But 1986 onwards, the growth of productivity was stagnated. The causal factors of growth in paddy production during the time period 1976 - 1986 were effects of green revolution and accelerated Mahaweli development

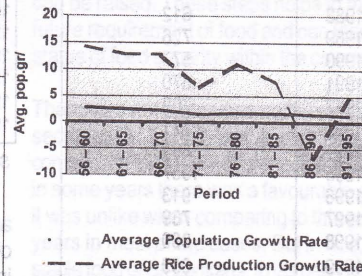
Table 11

Estimated Rice Demand by Year

Year	Demand (Million Mt)
2000	1.87
2005	1.92
2010	2.02
2015	2.24

Source: ASDA 2000

Chart 4



projects which enables the former to access new potential lands. As a result, the average harvest increased from 2.3 Mt in 1976 to 3.4 Mt in 1985. (Table 9 and Chart 4)

If a country produce goods exceeding population, the country is likely to attend toward food preservation. In that sense Sri Lanka as a country whose staple consumption is rice, has squired this target. This situation has happened in a great number except during 1986 - 1990. However the following (Table 10) statistics explain the factors that support to achieve the growth.

These statistics show that -

- Amount of cultivated lands,
- Rising of productivity.

seems to have affected equally in growth of rice production of Sri Lanka the productivity of paddy per hectare is grown from metric tons 0.65 to metric tons 3.5 today. Though the growth of amount of lands is not comparatively considerable within the period. It remains around 103% and it is obvious the main reason for the wondrous production growth of paddy is due to growth of its productivity. Estimated rice demand in Sri Lanka is as follows: (Table 11)

Rice import in Sri Lanka has been decreasing from independence to recent. In 1995 the quantity of rice imported is zero. Rice import as a percentage of total in Sri Lanka is shown as follows:

All the above data analyzing concludes that Sri Lanka has the ability to attend to be preserved with rice. If we compared with future population growth and with developing countries is not unsatisfactory. The existing regimes take all possible needs to attend self-sufficiency. An extract of the views presented in the report (1995) about national policy-frame for agricultural land and forest resources, is as follows:

Paddy is the staple carbohydrate of the Sri Lankans and its importance to the nations economy via saving of foreign exchange

Table 12
Wheat Imported

Year	Wheat Imported (Mt)
1987	578
1988	612
1989	726
1990	577
1991	670
1992	709
1993	771
1994	865
1995	1057
1996	913
1997	789
1998	880
1999	859

Source: Central Bank Reports

thought import substitutions and employment of a large segment of the rural population cannot be over emphasized. About 1.8 million farmers or 10% of the total population are engaged in paddy cultivation. Rice accounts for 45% and 40% of per capita calories and protein respectively in the Sri Lankan diet. Hence food security, by pursuing policy towards achieving self-sufficiency in the major staple, rice should be a major policy goal. (Randolph Barker, M. Samad, *Economic Review*, March 1998)

Wheat Production

The next highest consumed cereal, which is wheat, is imported, as Sri Lanka is not a wheat growing country. The wheat grain is imported and milled at the wheat-milling complex at Trincomalee and distributed throughout the country through the cooperative network, which has more than eight thousand outlets. Wheat flour has become the second staple food next to rice, due to its easy availability, convenience in preparation and lower price, as it is sold at a subsidized price by the government. Wheat import in Sri Lanka in the post several years as follows: (Table 12)

According to this statistic table past a great amount of wheat imported was recorded in 1995. The government reduction of flour prices may be cause to that.

Milk Production

Milk occupies an important place in the human diet. The annual milk production of the country is about, 325 million liters, which accounts about 20% of the national milk requirement, at a very low level of consumption of 32 ml of milk per person per day. The balance 80% of the country's requirements is met by imports. Milk production in Sri Lanka in the past several years as follows: (Table 13)

Fish Production

The fish production in the county in 1999 is recorded as 280,000 Mt. accounting for 78% of the total fish supplies. The balance requirement is met by imports. The main products imported

Table 13
Milk Production in Sri Lanka

Year	Production (Million liters)	Year	Production (Million liters)
1988	226	1994	333
1989	238	1995	253
1990	288	1996	331
1991	281	1997	331
1992	302	1998	341
1993	320	1999	342

Source: Central Bank Reports

are dried and salted fish, canned fish and small quantities of fresh fish. Fish production in Sri Lanka in the past several years are as follows: (Table 14)

Fish production was growing during the past decade. Although there is a possibility to upgrade this sector, it has faced some constraints such as lack of government policy towards this sector, Northeast war etc.

Egg Production

Egg requirements are met locally. Egg production in Sri Lanka in the past several years are as follows: (Table 15)

As far as egg production is concerned the most observable characteristic is that the production remains at a constant level over a period of time (except 1994). Since the local production of eggs are well matched with local demand and it is irrational to import.

Meat Production

The meat production is relatively small section in the Sri Lankan food scenario. The total production recorded in 1996 is 67,500 Mt and accounts for 98% of the available supplies.

Per Capita Food Supplies

The annual per capital availability of rice has fluctuated from 80.3 kg and 113.0 kg. While per capita availability of wheat flour has fluctuated between 21.2 kg and 42.8 kg during the period 1950 and

Table 15
Egg Production

Year	Production (Millions)
1990	818
1991	844
1992	794
1993	857
1994	563
1995	862
1996	856
1997	850
1998	876
1999	898

Source: Central Bank Reports

Table 14
Fish Production

Year	Sub sector		Production Mt. '000
	Marine	Inland	
1990	136	31	177
1991	174	24	198
1992	185	21	206
1993	203	18	221
1994	212	12	224
1995	218	20	238
1996	206	22	228
1997	213	27	240
1998	240	30	270
1999	248	31	280

Source: Central Bank Reports

1995. Neither the per capita availability of rice nor wheat shows a specific terms pattern, but appear to be well correlated with period of low availability of rice coinciding with period of higher availability of wheat flour and vice versa. With the development of the industry, availability of fish shows a marked increase from 7.2 kg/ year in 1980 to 11.4 kg in 1995 while meat has marginally increased from 2.6 kg/ year in 1950 to 4.0 kg/ year in 1995. Per capita availability of milk and milk products has increased from 13.3 kg/ year in 1950 to 15.3 kg/ year in 1995, on account of the developments the dairy industry and also due to liberalized imports of milk and milk products.

Food Imports

The main food imports are wheat, milk powder, dried fish and salted fish, canned fish, cooking oil and other minor food ingredients. There has been an increase in the imports of wheat and sugar. Food production, availability and imports in Sri Lanka are as follows: (Table 16)

The above data vividly highlights that Sri Lanka has almost reached to the status of self-sufficiency in main food production. It is also not impossible, reached to self-sufficiency due to the increasing trend in main food production. But certain other productions are highly dependent on imports.

Table 16
Food Production, Availability & Imports '96

	Production	Percentage of Country's Requirement	Imports
A. Cereals			
Rice	2683.7	97.3	3.1
Other	38.8	27.8	73.2
Wheat	-	-	100.0
B. Roots and Tubers	440.0	99.9	0.1
C. Sugar	73.6	13.4	89.3
D. Pulses and Nuts	47.2	32.6	68.4
E. Vegetables	637.7	100.00	-
Onion			
Fruits	82.9	62.3	37.7
F. Meat	132.9	93.3	8.7
G. Meat	66.2	98.2	1.4
H. Eggs	48.9	100.0	-
I. Fish	240.1	79.8	20.4
J. Milk (Fresh)	286.7	16.23	83.6
Whole Dried	8.9	19.9	80.3
K. Oils & Fats	125.4	175.0	6.6
Coconut	894.0	101.0	-

Food Sufficiency Levels in Sri Lanka

During the last few decades, achieving self-sufficiency in rice has been the key goal of the agriculture sector. Increase in rice production, has been the result of both increased productivity in existing farms and the expansion of cultivation to new areas. The country is now at the threshold of achieving self-sufficiency in rice. The required deficit is imported by the private sector.

Total requirement of wheat are imported to the country under PL 480 Food Aid Assistant schemes. Local production of roots and tubers, vegetables and eggs meet the country's consumption requirements. Main food imports are wheat (100%), sugar (85%), pulses (approximately 80%), milk products (approximately 80%), fish (approximately 22%) and cooking oils (approximately 7.5%).

Malnutrition in Sri Lanka

Although the average per capita availability of calories exceeds the minimum level, 45% of the households in 1990/91 it has been found to be energy deficient, thus indicating a heavily

skewed distribution, implying that nearly half of the households consume more food than is needed while the other half less than what is needed, mainly due to the lack of adequate resources to acquire the food. The people who are below the poverty line have no purchasing power to acquire their daily requirement of food.

To Meet Food Requirements

With the growth in population, the food requirements are increasing. The land area available in Sri Lanka for food production is almost stagnant or in fact, decreasing due to the takeover of the land for various other development projects.

This challenge the growth rate of population and satisfaction of food necessity through limited resources should be needed the principal problem found in agricultural sector at present is the higher level of cost of production than the other countries. So the profit range happened to be sectary. The desertion of youth from the agriculture sectors also probably a reason. In the context government intervention is a must. On the other hand encourage to cultivate the uncultivated land as well as encourage private sector in large-scale agricultural businesses should bring about an equality control over the fertilizers and pesticides within the

country is necessary. The steps that lead to a productivity can be taken by holding researches time to time. Through upgrading providing farmers with loan facilities etc. land consumption can be raised. These steps helps to meet the future requirement of food and can lead to the status of food security within the country.

There was not a steady growth in agriculture sector in Sri Lanka for the past decades in comparison to the growth of population. Though, in some years there was a favourable growth, it was unlike when comparing to this previous years in most of the cases. But in rice, as the staple food of Sri Lankans, it has been achieved an accelerating growth for the past decades.

However among the food requisites of Sri Lanka, some amount depends on imports, particularly wheat flour represents the lions share in corn consumption.

The dependency on wheat importation is threat to the food preservation. To control these factors the rice production should raise. The country has its ability in producing the other imports too and the facilities and incentives should be enhanced in relevant sectors.

Contd. from Page 38

members for new techniques of production, conduct demonstrations on new high yielding varieties and introduced low cost cultivation methods and farming practices.

8. *Product Diversification*: Since product diversification is one of the most important factor in commercial agriculture, many FCs involve in diversifying production by introducing value added products and high value crops.

9. *Business Management*: All FCs should initiate programs to promote small and medium farmers/producers for Agri Business. However, many FCs were unable to initiate or forward business contacts due to lack of experts for marketing and business development.

Constraints

According to past performance, role of many FCs were limited to provide production inputs rather than implementing a comprehensive business program to enhance income of small producers. It seems that many FCs

were implemented without clear vision and business plan. It also shows that many FCs were formed without proper assessment of market opportunities and potential products. Causes and effects affected for this situation could be summarized as follows:

1. *Political influences*: Even though FCs were formed by government organizations, it is dominated by the politicians. Some FCs were formed by politicians.
2. *Low participation of member farmers*: It is seen that many share members are not actively involved in decision making, planning and programme implementations
3. *Lack of entrepreneur skills*: Management of many FCs were consisted of political appointments and they were not trained to bear the risk of business in order to compete with private sector.
4. *Lack of coordination among stakeholders*: Even though, establishment of FCs is a grouping of traders, officers and farmers, these parties were not actively involved in business activities.
5. *No systematic approach*: Many FCs were not followed the process of establishing FCs discussed in section 2.1 and consequently it was faced greater difficulties in implementing business plan

6. *The need and priorities*: Though the establishment of FCs should be based on needs and priorities of farmers, many FCs were based on priorities of officers and implementing agencies.

Conclusion

According to performance of FCs in the past five years, many FCs were not reached the overall objective of organizing small farmers for commercial agriculture as anticipated by policy makers. Still many FCs act as farmer organizations with limited funds of shareholders. This was happened mainly due to the fact that many FCs were formed by officers and politicians for their interest rather than needs and priorities of farming communities. Therefore, finally, I like to conclude that we cannot create business ventures unless it come from shareholders or final beneficiaries of the business. Therefore the existing system of establishment of FCs by the government organizations should be changed. FCs should emerged from farmers and the role of government should limited to direct FCs in proper channels.

COOPERATIVE RURAL BANKS

Left in a State of Isolation

Introduction

The People's Bank was established by Act of Parliament No 29 of 1961, with a mandate "to develop the cooperative movement of Ceylon, rural banking and agricultural credit." The Cooperative Rural Bank (CRB) project, installed in March 1964 was the basic strategy adopted by the Bank's inaugural Board of Directors, for carrying out this mandate. The rationale of the CRB has been interpreted by the Cooperative Commission of 1970 in the following terms:

The People's Bank has taken the view, and in our opinion quite correctly that developing the credit departments of multipurpose cooperatives is the best approach to developing rural banking and agricultural credit.

However, in promoting the project the Bank's Directorate had to contend with the Bank's own top executive management, a point which the Commission had not taken into account. The Bank's top executive management comprised mostly of archetypal commercial bankers who were deeply skeptical about the capacities of village cooperatives to handle the tasks entrusted to them under the project.

In the circumstances, conflicts and disagreements between the Directorate and the Bank's top executive management were the order of the day. It seemed very much like a carryover of the acrimonious and protracted parliamentary and national debate, which culminated in the absorption of the former Cooperative Federal Bank by the People's Bank.

Significantly, the conflicts over the CRB were compounded by the fact that the views of the Bank's top executive management about the CRB were shared by influential voices at both Ministry of Finance and Central Bank levels. It even led to a ban on the CRB by the Minister himself, in June 1964, which resulted in the exit from the Bank of the Chairman and chief architect of the CRB, Vimaladharma Subasinghe.

The divisions created by this crisis were papered over at the time but in the event, never bridged. Although the Ministerial ban was lifted in September 1964, and the CRB expansion programme resumed, the distancing of the Bank

from the CRB and the Cooperative movement as a whole, which this episode triggered, proved to be an irreversible process.

At the same time, the CRB, left to fend for itself, developed "its own dynamics and leadership from within", and its history throughout has been one of rapid and sustained growth, both in terms of numbers and volumes. This is evidenced by the CRB's summarised statistical history presented in the annexed Table No 1. To cite an example. The fact that at end-2000, as shown in this Table, there were over 5.5 million "micro" account holders with total balances exceeding Rs 14,807 million, is a mea-

R. D. de Livera *

sure of the confidence that the CRB has generated among village communities.

Besides, there are two other aspects in the CRB's track record which need emphasis. One is the quantum leap it has made when compared with the record of cooperative banking before its arrival. Statistically it dwarfs the earlier record. For example, at end - 1956, cooperative membership numbered 473,614, while the CRB clientele at end - 1999 comprised 5.3 million depositors and 1.2 million borrowers. Loans outstanding of Rs 23.2 million at end - 1956 were funded by government to the tune of Rs. 15.3 million. By contrast, loans outstanding of Rs 7232 million at end - 1999 were funded entirely by the CRB's own mobilised resources without any borrowings from government. (Sources : Agricultural Plan 1958 and Central Bank report 1999)

The second aspect is the CRB's role as a latterday pioneer, influencing other institutions directly or indirectly to tread its path as providers of micro banking services in the village. The Central Bank has presented comparative statistics of deposits and advances of seven institutions of this genre at end - 2000. They all post-date the CRB, and include Bank of Ceylon sub-offices at Agrarian Services Centres, the Regional Rural Development Banks launched by the Central Bank in 1985, the revival of the "born-free" Pre-World-War-Two cooperatives commencing 1978 under the banner SANASA, and SEEDS, a member of the Sarvodaya Group. SEEDS has a visible link with the CRB in that, its Chairman Sarath Hewagama is in fact one of the

pioneers of the system having helped in the establishment of the very first CRB, Menikhinna in 1964.

To be sure, these successes and influences of the CRB have to be weighed against its negative factors. Regrettably there is no recent publication of this aspect of CRB performance, either by the Department of Cooperative Development or by any of the movement's apex institutions. However, there is on record a negative forecast about the future prospects of the CRB by the Central Bank, and I shall use this as the reference point in this presentation.

Review

In an all - too - brief review in its report for 1999, the Central Bank (CB) has sounded a warning "about the viability and solvency in the long run" of the country's Cooperative Rural Bank (CRB) system. Tucked away, as it were, in the voluminous pages of the CB report, this brief review has apparently escaped the notice of most co-operators judging from the absence so far of any public reaction on the part of the CRB leadership to CB's warning.

However, this is not a warning that could possibly be ignored bearing in mind the very strategic position the CRB has assumed today in the village economy. The accompanying Table No 1 giving a summary of the CRB's statistical history amply illustrates this point. Besides, Table No 2 which provides comparative figures of loans and deposits of the CRB and other leading micro banking institutions, underlines the CRB's leadership in the field.

In this context the issues raised by the CB's review need to be urgently addressed by the players concerned, principally the Ministry for Cooperatives and the apex body of the CRB, namely the Sri Lanka CRB Federation Ltd. It is also hoped that the special Presidential Commission which probed the workings of the cooperative movement recently, has taken due cognizance of the CB review and its implications.

Ironically the CB begins its review with a manifestly upbeat appraisal of CRB performance, highlighting especially the scale of the expanse and the penetration it has achieved "over the

* Text of a presentation made at a Micro-Finance Network Meeting of the United Nations Development Programme held in Colombo on 18 December 2001: The Author, a former General Manager of the People's Bank was actively involved in the development of the Cooperative Rural Banking System, from its very inception in his official capacity. He has extensively written on this subject in various publications including Economic Review.

entire rural areas." Extracts from the review in this regard are reproduced below:

CRBs have spread themselves over the entire rural areas, making them accessible to the rural population. During 1999, 1418 such CRBs operated in the country under 299 multi purpose cooperative societies. At end- 1999 CRBs had over 5.3 million savings accounts, recording an increase of 12 per cent during the year. The deposits of CRBs increased by 15 per cent from Rs 11,234 million to Rs 12,914 million [Rs 14,806 million as of end -2000] i.e. a micro deposit of Rs 2420 per depositor. On the loan portfolio side a similar picture was shown with 1.2 million borrowers receiving an average loan of Rs 5,874 per borrower. The pawning activities of CRBs increased from an outstanding level of Rs 2,332 million in 1998 to Rs 2,864 million in 1999, an increase of 21 per cent during the year [CB-1999].

Having delivered this appreciation of CRB performance, CB has proceeded without further ado, to forecast an unequivocal end - of - the - road scenario for the CRB, as articulated in the following passage:

Though it is encouraging for CRBs to cater to the lowest stratum of the depositors and borrowers in the village, the high administration costs of handling such a voluminous number of accounts will undoubtedly erode the viability and solvency of CRBs in the long run [Idem].

CB has not presented an explanatory analysis of these "high administration costs". Whatever they may be, CB's diagnosis has seemingly dismissed the assumption of analysts, that the relatively low overhead costs of a village cooperative give it a comparative advantage over conventional banking institutions in the administration of rural credit.

Be that as it may, CB's message is clear. Given the country - wide expanse of the CRB network and the multitudes of village people who comprise its clientele, the repercussions in the village of any major failure of the system could be near catastrophic. Of particular concern is the safety of depositors who at end - 2000 were 5.5 million in number with total deposits exceeding Rs. 14,806 million. (CB 2000)

To be sure, cooperators have their own fears about the CRB's future, but for reasons more complex than the one CB has identified. Cooperators have indeed agonized for years over shortcomings of CRBs in the areas

of planning, operations, supervision and loan portfolio management. These have been documented in a number of studies, a selective list of which is given at the end of the paper.

However, cooperators have been even more disturbed about another dimension of these shortcomings over which they have no control. These are briefly, (a) the deep structural imbalances inflicted on the CRB by the shifts in the politics and policies vis-à-vis cooperatives by successive Sri Lankan governments, and (b) the absence of a consistent and constructive approach on the part of CB - the putative regulatory authority on finance and banking - in addressing CRB issues.

The focus of this paper will be on this dimension of the problems which weigh on CRBs, as well as on the causal factors which have brought these problems into existence. It is also intended to preface the exercise with a brief note on the origins and rationale of cooperative banking, so that the issues could be viewed from a wider perspective.

The Rationale

Cooperative banking had its origins, beginning in Germany, in the backwash of the rampaging capitalism, and the scramble for colonies and markets, which seized the nations of the western world in the latter half of the nineteenth century and in the early decades of the twentieth. As phrased by Gooneratne (1966) "It was the response of the weaker units of society in their unequal struggle," in the fiercely competitive environment which the onrush of capitalism had brought about.

Survival in this environment demanded that the weaker units combine in cohesive, mutualistic, pooled resources linkages, as the obviously pragmatic option. This led sequentially to the construction of federal structures encompassing national borders, commencing with village cooperatives grouping together in formations at district, provincial or regional lev-

els, which in turn were affiliated to an apex institution at national level.

These federated structures unified and fortified the village cooperatives in the country, affording them the economies of scale while also preserving the cohesive democratic participation of the membership at all levels of the "pyramid".

These structures which constituted the foundation of the highly successful agricultural credit movement pioneered by Germany, also served as the model for the agricultural credit systems of other countries in western Europe, in Asia and in other parts of the world.

In Sri Lanka, the British colonial administration which formally established cooperative banking in 1911, adopted this model in 1926, "with primary cooperatives at the village level affiliated to secondary banks at provincial levels, ultimately to be united by an apex bank for the whole island" (Ceylon Sessional Papers No XXIV of 1926)

Growth was slow considering the low levels of literacy and the feudalistic elitism which characterized the village communities during colonial rule. At end-1942 there were 2,036 primary cooperatives affiliated to three co-operative provincial banks with a membership of 91,928 and loans outstanding Rs.2.32 million (Cooperative Commission 1970)

Nevertheless, the system's contribution to the monetisation of the rural economy, and the institutionalisation of rural credit and savings, within an autonomous and democratic framework, was well received in the village. From the standpoint of performance the village cooperatives maintained high standards, even during the Great Depression of the 1930s. The following extract from the report of the Registrar of Cooperatives for 1931 to 32 underscores this point.

But the societies have refused to be depressed by the Depression. Repayment cannot have been easy, but they have chosen this of all years to produce the lowest percentage of default, which we have ever achieved in Ceylon. The percentage of default for the whole Island in primary credit societies only is only 13.88 percent (Registrar of Cooperative 1930/31)

A Command Economy

Japan's air attacks on Colombo and Trincomalee in April 1942 following its dramatic entry into World War II in December 1941, were fated to bring to an

Table No 01
Cooperative Rural Banks

Rs. Million

Year	Deposits		Advances	
	No. of Accounts	Amount (Rs.'000)	No. of Accounts	Amount (Rs.'000)
1967	- NA -	1371	- NA -	20, 662
1977	805,921	175,462	348,886	104,793
1987	2,239,371	1,560,178	513,646	708,782
1997	4,517,749	10,063,549	1,129,740	5,736,709
1999	5,336,501	12,914,748	1,231,194	7,232,458
2000	5,524,751	14,806,829	722,027	6,187,518

Source: Central Bank, People's Bank

end the laissez-faire policies of government. It brought the War to the very shores of Sri Lanka, virtually shutting out the shipping services and hence the imports of strategic foods such as rice, flour and sugar on which the country was heavily dependent.

In mobilizing the population to confront the long and severe food crisis that ensued, the form of organization of the government's choice was the cooperative. However, given the prevailing wartime exigencies the government found it expedient to create special cooperatives for the purpose, which it could control and direct, in preference to the "born-free" cooperatives operating at the time.

The consumer cooperatives launched in 1942 and the Cooperative Agricultural Production and Sales Societies (CAPS) launched in 1947 were the first of the new breed of government directed cooperatives. The Multi-Purpose Cooperative Societies (MPCSS) launched in 1957 absorbing the consumer and the CAPS societies, continue to dominate the scene up to the present day.

Manifestly these wartime changes constituted a volte-face in government policy, and an abandonment of the concept of the cooperative as "a voluntary people's movement developing its own dynamics and leadership from within." (Cooperative Commission 1970)

These were tantamount to the creation of two systems. While the new government-directed cooperatives occupied the center, the "born-free" cooperatives of the pre-war vintage found themselves relegated to a backseat, reduced in numbers and influence but with their autonomy intact. (Their resurrection decades later in the wake of the post-1977 market liberalization reforms, under the banner SANASA, was continuing proof of the relevance of the "born-free" cooperatives to the Sri Lanka rural economy.)

Government proceeded to rationalize its volte-face with the claim that "the role of the cooperative society, particularly in the less developed countries was one of being an active partner of the state in the task of national development." (Ministry of Agriculture and Food 1957)

However, the partnership concept proved to be a mirage in the Sri Lanka experience, because in the highly politicised programmes such as was the case in the government-sponsored

agricultural credit programmes through cooperatives, lasting from 1947 to the mid-1990s, electoral politics virtually hijacked the credit decision making processes. Besides, the issue of fresh loans even to wilful defaulters – a practice which successive governments frequently adopted – undermined the credibility of cooperatives among village communities.

The following extracts from the report of the Cooperative Commission of 1970 succinctly sums up the dependent status to which cooperatives were reduced under the post-war regime of government controls and directives.

Reviewing the history of the cooperative movement in Ceylon of the past sixty years brings into focus one fact above all. Government, acting in the earlier period as trustee and guardian, has ended up in the firm control of what was intended to be a voluntary movement. Cooperation has now become the handmaid of the state and cooperatives are virtually agencies directed to carry out government policy (Cooperative Commission 1970)

Among these agencies one that has constrained the scope and development of the CRB has been the use by government of the MPCS as its agent in the distribution of strategic foods to the population. The task became particularly burdensome after the government-directed MPCS amalgamations of 1971. In the original CRB project launched in 1964, it was agreed that the CRB would be given the central position in the MPCS hierarchy. This was brushed aside in the amalgamation exercise, and the MPCS' consumer trading department was given the central position.

Prior to the amalgamations the primary MPCS was only a retailer in consumer trading while the wholesale side of the business was handled by 124 secondary level MPCS Unions. Under the amalgamations the 124 Unions were dissolved, and the newly created primary MPCS entrusted with both consumer retailer and wholesaler func-

tions. In this situation the time and energies of the MPCS management personnel were performed focussed on these very politically sensitive functions resulting in the relative neglect of the CRB function.

Delinking the CRB from the MPCS

As a remedial measure the People's Bank proposed in 1976 that the CRB be delinked from the MPCS, and registered as a separate banking cooperative. This proposal was echoed ten years later by the Sri Lanka Institute of Cooperative Management, in a study made in 1986. In 1991 the Presidential Commission on Finance and Banking made the following recommendations on the issue:

- Delink the CRB from the MPCS
- Ensure the autonomy of the CRB
- Give CRBS the status of banking institutions within the meaning of the Monetary Law Act.
- Provide for the prudential supervision of CRBS by the Central Bank.
- Strengthen the audit procedures carried out by the Commissioner of Cooperative Development in collaboration with the Central Bank.

The delinking of the CRB from the MPCS should also be seen as a crucial prudential measure against the risks arising from its link with the MPCS. Not being a legal entity in its own right it is liable for losses incurred by other departments of the MPCS as well.

It is well known that over many years the CRB had been the major - if not the only - profit earning department of the MPCS. MPCSSs have regularly bolstered their sagging financial structures by investing CRB deposit surpluses in income yielding investments in both state and private sector institutions. At the same time according to market sources, some of these investments had been in institutions of doubtful standing which

Table No 2
Deposits and Advances at End 2000 Selected Rural Sector Institutions

Rs. Million

Janasakthi Banking Hambanthota	Cooperative Rural Banks	Bank of Ceylon Sub-offices	Regional Rural Development Banks	Sanasa Cooperatives	Sarvodaya (Seeds)	Sanasa Development Bank Ltd
Deposit						
46	14,807	353	4995	1235	626	1178
Advances						
1189	6187	159	4043	2235	749	387

Source : Central Bank

interalia, reveals the lack of effective supervision of the CRB by reliable higher level agencies.

The following observations of the Sri Lanka Institute of Cooperative Management (SLICM) show the inequities the CRBs suffer by these faulty policies:

It is true that MPCs are performing a most valuable public service through their consumer trading department, but it is essentially a task imposed on them in terms of government policies for the performance of which they are not sufficiently equipped either resource-wise or management-wise. It would not be fair to sacrifice on behalf of this department, the one activity - the CRB - which has been able to operate on its own with a measure of success (SLICM - 1986)

CRB - Genesis

The year 1961 in which the People's Bank commenced business was a time when the decline of cooperative banking as an autonomous institution, triggered by the compulsions of World War II, had sunk to its very nadir. Three features in particular associated with the establishment of the new bank accentuated this trend, and gave rise to certain misconceptions as regards the scope of the activities of the Bank", as asserted by the People's Bank Commission of 1966.

There was the name-change, to begin with. Originally designated "Cooperative Development Bank" by the government elected in 1956, its establishment was shelved in 1958 due to political conflicts, and the government elected in June 1960 resolved to set it up, but with the name changed to "People's Bank". There was secondly, the appointment of commercial bankers without any exposure to cooperative banking or cooperative training to the top executive management.

The third and most far-reaching was the rejection by government of the archetypal federal design of standard cooperative banking systems, in setting up the new bank. Its decision, based on the recommendation of the Central Bank [BS/25/53 of 22 March 1955], was the adoption of the standard centralized organizational design of commercial banking systems.

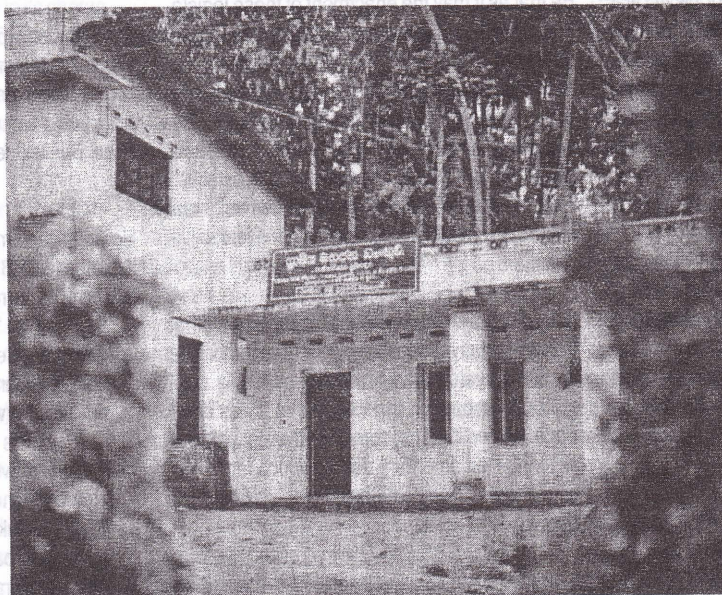
This involved importantly, the conversion of the then-existing cooperative provincial and district banks into ordinary branches of the new bank.

To be sure, cooperators were very much dismayed by these changes though they found some consolation in the fact that the new bank, unlike its predecessor, the Cooperative Federal Bank, was endowed with commercial banking and branching powers, providing it thereby with the potential to enhance its resource base.

Despite this plus point, cooperators feared that in the absence of the standard federal design, the Bank could drift away from its cooperative moorings, and focus overly on its commercial banking opportunities.

The People's Bank Commission of 1966 articulated these fears with remarkable prescience of "things to come", in the following passage:

While we agree that "commercial business is a legitimate operation for the People's Bank to under-



The First Cooperative Rural Bank established by the People's Bank at Menikhinna in the Kandy District in 1964.

take under the Act, its rapid expansion had within it the danger that what was intended to serve only as the means by which these purposes might be achieved might become its main objective. In other words, the People's Bank which was erected as primarily a bank for the development of the rural economy, might constitute itself as yet another commercial bank on the conventional pattern [People's Bank Commission 1966]

The Bank's inaugural Board of Directors shared these fears with cooperators, and the CRB project installed in March 1964 was their alternative to the

federal design. In other words, the CRB was intended to be the Bank's basic strategy for the pursuit of its statutory objectives namely "the development of the cooperative movement of Ceylon, rural banking and agricultural credit."

Essentially it sought to bring about a partnership between the Bank's network and the village cooperative in the extension of "micro" banking services in the village. The village cooperative with its easy access to village level credit intelligence and low overhead costs was seen as an institution well positioned to deliver micro-banking services, provided it was guided, supervised and monitored by the Bank's network. Supervision was to include off-site surveillance as well as on-site inspections. This multi-functional role of the Bank was seen as a sine-qua-non for successful operation of the project.

The CRB project also sought to bring about a division of labour, as it were, in the matter of lending. In terms of this concept "micro" loans were to be handled exclusively by the CRB, leaving the Bank-branch freed from the workload of "micro" lending to focus aggressively on its commercial banking opportunities.

FRUSTRATIONS

The project was launched in March 1964 but given the prevailing scepticism in official circles about the capacities of village cooperatives, it was cold-shouldered at both Ministry of Finance and Central Bank levels. It came even under a Ministerial ban, as stated earlier

Despite these birth pangs the project did not falter for two reasons. The first was the positive response of village communities, and

the other was the rapport and reach which the Bank's field staff achieved in the village. The Central Bank has made the following observations on the progress made in the early years.

CRBs were nurtured by the Bank providing a host of services, banking facilities, supervision of activities, training personnel and the absorption of funds. Hence CRBs continued to play a vital role in retailing agricultural credit among farmers as a junior partner of the Bank [Central Bank 1999]

Having made these complimentary observations the Central Bank proceeds to make the following charge against the People's Bank.

However, this relationship came under strain after the People's Bank gradually moved into commercial banking proper leaving CRBs in a state of isolation [Idem]

The Central Bank's charge that the People's Bank had left the CRB "in a state of isolation" is not disputed but it needs to be pointed out that the Bank's move was a direct response to a drastic shift in policy vis-a-vis cooperatives which government adopted in the post - 1977 years. In terms of this policy shift government sought to terminate the Bank's special relationship with the cooperative movement - a fact which inexplicably, the Central Bank has failed to note in its review.

Government's strategy to bring this about is embodied in three legislative measures summed up below:

- (a) People's Bank (Special Provisions) Law No. 25 of 1978. The purpose of this Act was to secure the complete control and management of the Bank for government. It effected this by providing for the appointment of all eight members of the Bank's Board of Directors by government and abrogating the right that the cooperative movement had to elect three directors to the Board.
- (b) People's Bank Act No. 61 of 1980 which enabled government to replace the cooperatives as the major shareholder of the Bank.
- (c) People's Bank (Amendment) Act No. 32 of 1986 which eliminated the exclusivity which the cooperatives had enjoyed with regard to the purposes of the Bank.

In moving the second reading of the first of these enactments in the national legislature, the Prime Minister made the following policy statement:

This is a bill to provide for the appointment of directors to the People's Bank. As you are aware the People's Bank was created to serve the cooperative movement. It has grown and developed into a commercial bank in the country. The government strongly feels that we must create a cooperative bank which will cater to the needs of the cooperative movement but the People's Bank has now gone beyond that sphere, and the intention of the Finance Minister and the government is to allow the People's Bank to continue to develop on the lines, and on the same basis as other commercial banks and compete with them [Hansard June 22-1978]

The Prime Minister completed his statement with the following undertaking

At the same time action is being taken to create a real cooperative bank to service and cater to the needs of the cooperative movement and the bill provides for that. [Idem]

Admittedly, the evidence is very clear that in the growth of the Bank's business volumes, the cooperatives have lagged behind the other sectors. The statistics presented in Table No III annexed to this paper reflect this process. For example, advances to cooperatives by the People's Bank, which constituted 24.8 percent of its total advances at end - 1965, had slumped to 2.7 percent at end - 1998.

The counterpoint to this has been a correspondingly progressive growth in the Bank's appetite for business in sectors other than the cooperatives. For example, during this same period, the Bank's advances to the private sector as a percentage of total advances had soared from 58.7 percent to 92.5 percent.

Be that as it may the enactment of these legislative measures caused much dismay among co-operators. There were fears that government had an undisclosed agenda in bringing about this severance in the special relationship between the cooperatives and the People's Bank. Its failure subsequently to live up to its undertaking to establish what the Prime Minister had described as "a real cooperative bank", added fuel to these fears.

It may be stated parenthetically at this point that these legislative measures were enacted before the CRB system had made the strikingly conspicuous impact on the village that it has done since. Indeed it did not come into the reckoning at all in the Parliamentary debate which led to the enactment of People's Bank (Special Provision) Law No 25 of 1978.

It was the sharp and sustained escalation in CRB growth, particularly in its mobilization of deposits, witnessed in the post - 1986 years which signified its presence in the village. As depicted, the growth of CRB deposits since then has been of such an order that cooperatives as a group have in effect become a net creditor of the People's Bank. For example at the end - 1992 cooperative borrowings which stood at Rs. 1,785 million were backed by CRB deposits of Rs. 3424.3 million.

ROLE OF THE CENTRAL BANK

This "decampment" of the People's Bank from the cooperatives was indeed a serious setback for the CRB. It has meant that since that time the CRBs

have been functioning without the guidance and supervision of a higher level institution. The potential risks of loss and failure to which the CRB has been exposed by these changes, have been commented upon in several studies, and need no further elaboration in this essay.

In this context the hopes of the CRB leadership were uplifted in the first flush of an announcement made by the Central Bank in 1986 reading as follows:

Given the preponderance of the agricultural sector in the economy, the Central Bank has from its inception provided leadership and direction in evaluating the problems and enhancing the availability of credit to the rural sector. Since the Monetary Law Act of 1949 required the Central Bank to regulate the monetary system, the provision of adequate rural credit is a vital component of this responsibility [Functions and Working - Central Bank Publication 1986]

As an earnest of its commitment to this responsibility the Central Bank gave the following undertaking.

In 1982 the Department of Rural Credit of the Central Bank commenced a programme for the comprehensive inspection of the agricultural credit portfolios of commercial banks and Cooperative Rural Banks [Idem]

However, this ambitious programme in so far as it related to CRBs proved to be a non - starter, for two obvious reasons.

- (a) Given the Central Bank's essentially centralized organizational structure it did not possess the widespread network like that of the People's Bank to reach the CRBs own network of over 1400 units with the requisite frequency and intensity.
- (b) Central Bank has its vested interest in its own micro-banking services provider, the Regional Rural Development Bank network. In this situation it seemed unlikely that the Central Bank would extend the same attention and care to the CRB which after all is a competitor of the Regional Rural Development Bank.

In any event, the Central Bank's romance with the CRB was short - lived, considering its commitment to keep in step with changing global trends, about the proper role of Central Banks in the national economy. As the Central Bank governor is reported to have stated, the Central Bank will "pay less attention to functions such as rural sector development and setting up Regional Development Banks" (Ceylon Daily News - 7 September 2001)

RESSTRUCTURING CRBs

In the circumstances the only option left for the CRB leadership was to create its own higher level structures to guide, supervise, monitor and help develop the village level CRB. It was indeed a typical cooperative solution, in line with cooperative banking systems elsewhere, as well as in Sri Lanka before government abandoned the then-existing cooperative provincial and district banks with the establishment of the People's Bank in 1961.

Acting in concert the CRB leadership commenced the exercise with the establishment of CRB District Unions to which the primary CRBs in the district were affiliated. The first Union registered was the Gampaha District CRB Union which commenced operations on 24 January 1994. By end 1999 there were 14 District Unions and these are now affiliated to the apex institution at national level namely the Sri Lanka CRB Federation incorporated in 1997.

Significantly the Central Bank endorsed this restructuring programme. Adverting to its charge that the People's Bank "left the CRB in a state of isolation", it states that "to fill the vacuum it was necessary to set up some kind of an apex institution to lead CRBs to play their role as viable retail banking institutions" (Central Bank 1999)

Central Bank also proceeded to compliment the work done by the CRBs under the programme, witness the following passage:

The CRBs have been able to maintain the same credit momentum in 1999 through the introduction of better extension and recovery services by the District CRB Unions. (Idem)

The CRB leadership may have derived some encouragement from these seemingly positive responses from the Central Bank, but they were in for a big disappointment on the issue of establishing the CRB's own apex bank.

The application to set up the bank as a licensed commercial bank in terms of the Banking Act No 33 of 1995 was submitted by the CRB Federation in mid-1999 to the Central Bank. However, according to reports the Central Bank has not yet responded either positively or negatively to the application. The long silence gives rise to the question - Has the Central Bank, like the People's Bank and government before it "left the CRB in a state of isolation?" Perhaps the CRB does not qualify according to the Central Bank. Whatever it may be, the silence has left the cooperators demoralized and clueless given the indeterminate situation in which the CRB finds itself, as a consequence.

STRUCTURAL CHANGE

- Rethinking Needed

These events should make it clear to the Federation that neither government nor the Central Bank - bound as they are by the neo-laissez-faire commitments in this age of globalization - will intervene to further the CRBs restructuring programme. The momentum and the thrust have to be those of the Federation itself bearing in mind its own priorities.

The first among these priorities is the need for the Federation to break away from the apron strings which continue to bind it to the Department of Cooperative Development. The fact that the Federation's current Chairman, however estimable he is as a person, is a Departmental officer, is a reflection of the leadership crisis which ails the Federation today.

As a corollary to this, the Federation should ensure, that the active democratic participation of the CRB membership in the decision-making processes at all three levels, - primary, secondary and apex, is an ongoing reality.

Among the Federation's other priorities should be the delinking of the CRB from the MPSC, a measure essential to preserve the system's security, viability and integrity, as proposed by a number of expert bodies.

The Federation should not be deterred by the Central Bank's seemingly unhelpful approach on the apex bank issue. An apex bank need not be treated as a sine-qua-non by the Federation. There are other options that could be explored. As the Federation is aware, in the very cradle of cooperative banking, Germany, the cooperatives had no apex bank of its own, and were served by a public bank established by the federal government in 1946.

Its focus for the present, pending the final decision of the Central Bank, should be on strengthening and professionalising the District CRB Unions, as the system's sheet anchor, advising, supervising, monitoring and auditing the village level primary CRB. Here again the German experience may be relevant in that its Regional Cooperative Banks - corresponding to the local District CRB Unions - reportedly constitute the backbone of the German system.

CONCLUSION

Dubbed "a poor man's club" cooperative banking is generally ignored by those schooled in the Economics of the Establishment. All the same it has been a standard constituent of the banking industries of countries as diverse as Germany, Japan, France, South Korea, Switzerland, India, the Netherlands and the United States of America.

In Sri Lanka too, the sustained growth of the CRB system since 1964, and the striking revival of the pre-war cooperative banking system since 1978, under the SANASA banner, provide conclusive evidence of the relevance of cooperative banking to the Sri Lankan rural economy. Of particular significance in this regard is the fact that both these institutions have been powered by the efforts of village communities without any dependence on government, financial or otherwise.

However, it is a hard but undeniable fact that in recent years, the apex institutions of the local cooperative movement have failed to capitalise on these successes of village communities, and provide them with the kind of leadership needed to consolidate their gains.

In the circumstances the conclusion is inevitable that the government should intervene as an honest broker, by providing the appropriate environment in which the CRBs can develop as autonomous institutions, free from political and other negative influences.

This is an obligation which government owes to the millions of village people who have contributed to the growth of both the CRB and SANASA institutions.

Government should also give serious consideration to have in place an appropriate regulatory authority to control cooperative banking and other micro-banking institutions, now that the Central Bank is moving away from the rural sector.

Government, it needs to be stated finally, should welcome the CRB, Sanasa and other micro-banking institutions as its allies, along with its own Janasaviya and Samudhri programs, in its war against poverty.

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Nimal Sanderatne and others

Diary of Events

May

7 A US\$ 10 million project to construct a plant to process Municipal Solid Waste for the production of organic fertilizer will commence shortly in Colombo. This will be a Board of Investment Project and a joint venture between Pasakro Recycling (Pvt) Ltd. of Sri Lanka and Bedminster Bio Conversion (Australasia) Pvt. Ltd. New South Wales.

13 The US \$ 33 million Protected Area Management and Wildlife Conservation Project was commenced in September 2001, and is being implemented through the Department of Wildlife Conservation under the Ministry of Environment and National Resources. The ADB's contribution to the loan is 8 million while the Global Environment Facility (\$ 9 million), the Government of Netherlands (\$ 4 million) and the Government of Sri Lanka (\$7.59 million) are the other loan contributors.

23 A new passenger vessel service between India and Sri Lanka will be launched to transport passengers between the two countries at a concessionary rate, shortly. The Port Development and Shipping Minister signed a memorandum of understanding in this respect with the Indian Shipping Minister. The proposed vessel service will be operated between the ports of Colombo and Tuticorin initially stated the Tamil Nadu Chief Minister.

24 The Asian Development Bank (ADB) has granted a concessionary loan of US\$ 40 million for North and East infrastructure development and resettlement for a period of five years. The largest proportion of the loan is for the education sector. Funds will be utilised mainly for infrastructure development including rehabilitation of existing buildings as well as construction of new structures.

30 The All Share Price Index (ASPI) rose to the highest mark, from 2.5 points to 685.1 points in four years, while the Milanka Price Index (MPI) rose to 1,196.3 points, the highest since its inception three years ago and up by 5.1 per cent from a day ago. The performance of the Colombo Stock Exchange was so high this year over last year that the monthly average turnover for the period from January 1 to May 29 was Rs 99.8 million while the corresponding figure for the previous year was a mere Rs 24.32 million.

June

3 The Food and Agricultural Organization (FAO) of the United Nations working towards food security and reduction of hunger worldwide expected to provide emergency agricultural assistance to another 22,000 drought hit families in the Southern Uva and Sabaragamuwa Provinces. At the request of the Sri Lankan Government, the FAO has already launched a Rs 38 million project under this programme in Hambantota, Moneragala and Ratnapura districts. Under this project, 284 metric tons of seed paddy, 150,000 banana plants, 100,000 papaya plants and 627 metric tons of fertilizer have been distributed among farmers in the area.

7 Sri Lanka's donor community numbering over 80 delegates representing 39 institutions who were in Colombo for the just concluded Development Forum which was held here for the first time, have commended the Government for its robust economic policies, reform programmes and poverty reduction.

14 The Board of Investment of Sri Lanka (BOI) has signed 13 agreements in April to the value of Rs 2,493 million of which Rs 716 million consists of foreign investment. The projected employment to be generated is 1,360. The most significant is the tourism sector with an investment of Rs 760 million from the Male based company Cyprea (Pvt) Ltd. It will employ 200 people. The investor will be taking over the assets of the Sinbad Hotels Ltd. and will upgrade it to international standards while monitoring its natural beauty.

21 The Consortium of the People's Merchant Bank (PMB) and Business Intelligence Limited (Bill) has been mandated to manage the proposed initial public offering of shares in Shell Gas Lanka Limited (SGLL). The Public Enterprise Reform Commission (PERC) granted this mandate on behalf of the Government of Sri Lanka (GOSL) and intends to divest its 49% equity stake in SGLL. PMB,

which is mainly owned by People's Bank, Hatton National Bank and DFCC Bank and will provide merchant/investment-banking expertise to this assignment.

25 Colombo Power (Pvt) Ltd (CPPL) one of the first fully owned Japanese Private Power Plants in Sri Lanka and Caltex Lubricants Lanka Limited entered into an exclusive agreement recently. Caltex secured the exclusive rights to supply lubricants to CPPL for the next two years. CPPL, a joint venture between Mitsui Engineering and Ship Building Company of Japan and the Kawasho Corporation of Japan, is the first large mounted power plant in Sri Lanka. CPPL has been in operation since July 2000 and has been a private power supplier to the Ceylon Electricity Board under the build-operate-own scheme for the past two years.

July

3 The Public Enterprises Reforms Commission (PERC) will sell a 90% stake of the profit making Lanka Marine Services Ltd., (LMS), the government owned company which has a monopoly in providing bunkering services to ships, on and all of, or nothing basis at a floor price of Rs.1.2 billion through the Colombo Stock Exchange on July 12. This 90% stake comprises 315,000 shares, with the government bench marking the price of a share at Rs 380 each.

5 The first ice cream manufacturing plant of 'Cargills Magic' ice cream was opened by Minister of Power and Energy. This factory is located in Banduragoda and is expected to maintain the highest international standards of production.

4 India will grant two loans to Sri Lanka to the value of US\$ 51 million of which US\$ 31 million will be given to purchase 300,000 tones of wheat flour. The second loan of US\$ 20 million will be granted as part of India's contribution to the IMF stand-by loan.

9 The proposed Free Trade Agreement between Sri Lanka and Pakistan will enable Sri Lanka to create a more favourable trade balance in trade between the two countries, Pakistan was keen to increase imports from Sri Lanka especially the agricultural products including tea. The value of total trade between two countries which stood at SL rupees 3,336.4 million in 1990 increased to SL Rs 8,781 million in 2001.

The Ceylon Chamber of Commerce (CCC) recently signed a Memorandum of Understanding (MOU) with the Vietnam Chamber of Commerce (VCC). The objectives in signing the MOU is to develop contacts between both institutions as a means of contributing to the further development of trade and economic relations between Vietnam and Sri Lanka.

10 The world population crossed the 6.1 billion mark last year recording a growth rate of 1.2 per cent annually. The population increases by approximately 75 million each year with a high growth rate prevailing in developed countries. The population growth in Sri Lanka is not high as in other developing countries and is 1.2 per cent per annum, states the United Nations Family Planning Association representative.

29 As a result of the talks between Minister of Power and Energy and the Chinese Foreign Minister, the Chinese Government extended an outright grant of Rs 250 million and another interest free loan for Rs 375 million to be paid within 30 years.

30 The Ministry of Fisheries and Ocean Resources will implement a rupees one hundred million Coastal Resources Development project benefitting the entire fishing community in Negombo. It will be funded by the Asian Development Bank. The project will embrace the development of 3,000 hectare Negombo lagoon and the adjoining Muthurajawela marshy land area.

August

2 Sri Lanka and Pakistan entered into three agreements including a Free Trade Agreement. The agreements were signed at Temple Trees immediately preceding bilateral talks between Pakistani President and Prime Minister. Apart from the free-trade agreement an MOU on tourism and archeology and an agreement on a cultural exchange programme were signed by the relevant Ministers of both countries.

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