

International Trade & Economic Growth

A Review of Economic Growth & Trade in Sri Lanka in Relation to Non-Plantation Agricultural Sector

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This article reviews the effects of international trade on economic growth, with special reference in growth experience of non-plantation agricultural sector in Sri Lanka. The article consists of three sections. The section one describes the theoretical and background information in relation to growth and international trade. It include conceptual base for trade and growth, magnitude of international trade, past experiences of international trade as a strategy of growth. The section two presents Sri Lankan experience on trade and economic growth in the past two decades since its inception of trade liberalization in 1977. It highlights macro economic background, trade policy regimes, main policy instruments and effects and impact of international trade as a strategy of growth. The final and the section three conclude the article by summarizing the implications.

Background

International trade and economic growth are inter related factors. Expanded trade would cause to raise the level of Gross Domestic Product (GDP). Conversely, economic growth can affect the type of goods a country is able to trade. An increase in exports by utilizing unemployed resources will lead to an overall expansion of production, employment, balance of payment and living standers of people (Husted and Melvin, 2002.). International trade also allows for purchase capital goods from foreign countries and expose to technological advances achieved around the world. Thus due to the fact that tangible benefits, all developed and developing countries followed trade policies as the main strategy of development and consequently International trade, international investment and international immigration were grown rapidly over the past 200 years. As indicated in

Table 1, world trade as a proportion of world output has increased about five fold during 1950 and 1992 period while exports increased ten fold at the same period, indicating 14% increase in 1992 (Hendrik Van Den Berg, 2001).

Growing trade relationship between countries involves many things. The growth of international trade in good and services is not mean just mere the trade; it also includes flow of people and capital across the countries that make more contribution to increase world productivity. Hence, international investment, international trade and international migration become the main economic elements interdependence of the world economies, which commonly referred as globalization (Hendrik Van Den Berg, 2001). Because of the trade and growth, many developing countries peruse primary export led development strategies or outward looking policies that encourage the production of exports. Some of the countries like Korea, Taiwan, China and Singapore were in successful achieving economic development in the recent past.

Magnitude of the trade is measured by the index of openness. It is estimated as the ratio of exports to GDP or GNP multiplied by 100. The openness ratio of trade to GDP has been increased in many countries from 15 percent in 1948 to 27 percent in 1997. According to estimates of Husted and Melvin (2002), for 1980-1998 period, the ratio of exports to GDP was between 10 and 40, indicating that exports accounted for between 10 and 40 percent of the GDP. Further it indicates that the average value of ratio has increased from 29-30 in most countries. In general, countries that were closed in 1980 tended to be much more open in 1998, indicating that international trade has become increasingly important for the world economy. At the same time, the composition of world trade shifted from

agriculture to manufacturing and trade in services. In Asia, most developing countries managed to achieve the average growth rates around 5 percent to 7 percent per year since 1960s, mainly due to outward looking growth policies (WTO, 1998).

The empirical evidence on international trade and economic growth suggests that there is a positive relationship between international trade and economic growth

(Hendrik Van Den Berg, 2001). Empirical evidences were mainly based on openness to trade. According to Sebastian Edwards (1993), shows that outward oriented economies have highest rate of growth compared to moderately outward oriented and strongly inward oriented economies. Jeffery Sachs and Andrew Warner (1995) also showed a strong relationship between openness and growth in developed countries and developing countries. Thus, within the group of developing countries opened economies grew 4.49 per year and closed economies grew 0.69 per year while within the group of developed countries the open economies grew 2.29 per year and closed economies grew 0.64 per year. Rose Levine and David Renelt (1992) confirmed that positive relationship between trade and growth. Statistics show that expanding trade and capital flows, in an appropriate regulatory environment, have generally coincided with strong growth and political stability, specially for those economies which have welcomed liberalization of world trade faster than world output by a significant margin, increasing the degree to which national economies rely on international trade and foreign direct investment (FDI) in overall economic activities (ibid). Further, the short term and long term capital flows were also grown. The average daily turnover in foreign exchange markets has increased from about US \$ 200 billion in the mid 1980s to over US \$1.2 trillion in end of 1990s (WTO, 1998). The improved international transport system with information technology directly influences the growth trends in most countries. Therefore, all countries heavily rely on trade today than at any time in the history.

Theoretical background

Theoretical background of the growth and trade policies proves that the majority of economists were in favor of free international trade over protected trade. From the beginning of Adam Smith, David Ricardo in the eighteenth and nineteenth centuries, economists have developed very sound arguments to prove international trade is very effective to improve growth and human welfare. Trade permits economies to specialize in producing goods and services according to the comparative advantage of the respective country. Theoretical arguments pre-

Table 1: World Exports and per Capita Gross Domestic Product (1820-1992)

Year	World Exports (1990, \$ millions)	World GDP (1990, \$ millions)	Exports and World GDP (%)
1820	7,255	694,772	1.04
1870	56,247	1,127,876	4.99
1913	236,330	2,726,065	8.67
1929	334,408	3,696,156	9.05
1950	375,765	5,372,330	6.99
1973	1797,199	16,064,474	11.19
1992	3785,619	27,994,920	13.52

Source: Angus Maddison (1995), Monitoring the world economy 1820-1992, Paris: OECD. pp223-239

sented by classical and neo classical economists on support of free trade and economic growth could summarize as follows (Hendrik Van Den Berg, 2001, Krugman, 2000, Quiyn, 2001):

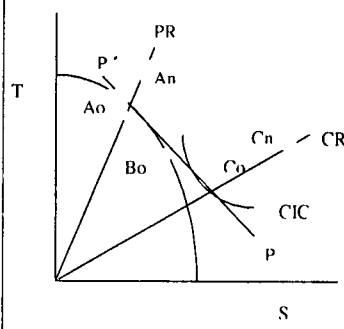
- ❖ Short run welfare gains based on the exploitation of comparative advantage theory,
- ❖ Short run welfare gains based on the exploitation of increasing return to scale,
- ❖ Medium run welfare gains based on the transition to higher steady state following the gains in production efficiency brought by comparative advantage and economic scale,
- ❖ Long run gains from acceleration of technological progress due to larger production and investment externalities following the increase of real output and investment resulting from the short run and medium run effects,
- ❖ Long run gains from acceleration of technological progress due to the expansion of R&D activity stimulated by worldwide, rather than just domestic demand for new products. The increase competing innovators in the worldwide economy, and the reduction in the cost of innovation due to international flow of ideas and knowledge.

Trade And Growth

Irrespective of any government policies and theories, there is always a tendency for economic growth to occur (Husted and Melvin, 2002). For instance, increases in population imply a growing labor force. Investment in new plant and equipment by firms implies a larger and larger capital stock. Likewise, technological advances in the world indicate that allow for higher efficiency in production. Thus, despite these general tendencies in economic growth over the world, international mobility of production factors and technological innovations were greatly influenced for development of the modern world (see Table 1). Moreover, the manner in which a country grows will also have implications for its pattern of trade. The relationship between trade and growth could explain by using a model example that based on certain assumptions. Thus, it was assumed that an economy produces two commodities (textile and Soybeans) by using only two production factors (labor and capital). It is also assumed that the economy is small and it takes world prices as given by the world market.

Economic growth can be described graphically as an outward shift in a nation's production possibility Frontier (PPF) curve (see Fig. 1). Thus, if one production factor grows, then the PPF will expand largely in the direction of commodity, which enjoys its comparative advantages.

Fig.1: Pattern of Production, Consumption and Growth



Before growth occurs the nation's production point is at A_0 and consumption is at C_0 . The international price of S is given by the slope of the price line PP . At that price, the country exports A_0B_0 unit of T and imports B_0C_0 units of S .

The lines of PR , CR & CIC show level of production, consumption and utility.

If both factors grow, then PPF tends to expand more uniformly in all directions. If two factors grow exactly the same rates, then the overall capital labor ratio will remain unchanged over time.

Growth necessarily affects both production and consumption. This is because the price line that is tangent to the PPF will also be shifting out with growth, reflecting the fact that a nation with growing endowment of productive resources is able to undertake a growing amount of consumption. Thus, since growth affects both production and consumption, it tends to affect international trade, because international trade is the difference between a nation's production and its consumption as indicated in the equation.

$$C + I + G + X = Y + IM \quad (\text{Where } C = \text{consumption, } I = \text{Investment, } G = \text{Government Expenditure, } X = \text{Exports, } Y = \text{annual income and } IM = \text{Imports.})$$

The relationship between growth, production, consumption and international trade were explained under three scenarios (Husted and Melvin, 2002).

- ❖ *Neutral Economic Growth:* A proportionate increase in all factors and consumption so that trade expands proportionately to the growth of the economy (Husted and Melvin, 2002 p. 283).

- ❖ *Protrade biased Growth:* When an economy grows because of a relative expansion in the supply of the factor used intensively in the production of exportables, there will be a tendency for the output of exportables to rise relative to the output of the importables and for international trade to rise in percentage terms by an amount greater than the percentage expansion of GDP. This type of growth is called protrade biased growth (ibid p. 287).

- ❖ *Antitrade biased Growth:* When an economy grows because of a relative expansion in the supply of the factor used intensively in the production of the importables, there will be a tendency for the output of importables to rise relative to the output of exportables and for the international trade of this country to fall. This type of trade is called antitrade-biased growth (ibid p. 287).

The relationship between growth, production and

trade is varied according to technological change and international mobility of production factors, especially labor and capital.

Technological Change.

Technological change occurs when the same amount of output can be produced by fewer factor inputs, or equivalently, when the same amount of inputs can produce a greater amount of output. As a result of innovations and Research,

& Development (R&D) activities over the world, technology becomes an important production factor, and many countries were able to receive the benefits of technological advancement, which increased the production efficiency. Technological change could occur in two ways:

- ❖ *Neutral Technical Change:* An innovation that results in an equiproportionate reduction in the use of all factors in the production of one unit of output.

- ❖ *Labour (capital) saving technical change:* An innovation that results in a more than proportionate reduction in the use of labor (capital) relative to other factors in the production of one unit of output.

Mobility of Production Factors

A country can also grow by acquiring production factors (labor and capital) from other countries. For instance, the growth of the United States in the last century was due to the considerable immigration of foreign workers and inflow of foreign capital. Factor inflows from foreign countries tend to raise welfare in the host country and to lower welfare in the source country (Husted and Melvin, 2002).

Because of the strong relationship between trade and growth, all developing countries pursue outward-looking or primary export-led development strategies that encourage the production of exports. According to past experience of newly developed countries like Singapore, Korea and Taiwan, it seems that many countries were successful in achieving development through trade.

Though there is a very strong theoretical relationship between international trade and growth, which was proven by empirical evidence, many countries follow trade restrictions due to some arguments *i.e.* strategic trade, infant industry and import substitution (Korea, 2000). Some empirical evidences also proved that many developing countries were not benefited from the trade as expected (Roy, 1999).

Trade and Growth in Sri Lanka

Sri Lanka is a semi-developed country with an area of 65,628 sq. km. and a population of 18.7 million as estimated in 2001. According to Central Bank estimates (2001), per capita income was US\$899 (Rs.68102). The agriculture sector plays a dominant role in the economy and accounts for 19 percent of gross domestic product (GDP), 19 percent of total exports and 36 percent of total employed labourforce (Central Bank of Sri Lanka, 2001). The majority (72 percent) of the people lives in rural areas and earns a livelihood from agriculture and related activities. The agricultural sector, which has the characteristics of a dualistic economy (Snodgrass, 1966), 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.** Paddy being the main non-plantation and staple food crop accounts for 25 percent of total cultivable lands and about 2 million farmer families were engaged in farming as their main occupation. More than 70 percent of paddy farmers belong to the "small farmers category" which owns less than one hectare of land.

Like many other developing countries Sri Lanka faces macro economic imbalances in spite of improvements in literacy, health and life expectancy (World Bank, 1996). The major economic problems of the country were associated with limited foreign exchange, budget deficits, unemployment, inflation, poverty and the consequence of a slow economic growth rate (Goonaratna and Wesumperuma, 1994). Hence, the development policies and programs of successive governments since independence in 1948 were targeted economic growth by overcoming macro economic imbalances.

A comprehensive body of literature is available on trade, growth and macro economic Policy reforms in Sri Lanka. Among these are the Works of Wickremaratne (1977), Goonaratna and Wesumperuma (1984), Rasaputra, Tilakaratne and Fernando (1986), Rajapathirana (1988), Bhalla (1991), Kelegama (1991,2000), Dunham (1993), Lakshman (1994), Gunawardena and Somaratna (1994) Lakshman and Tisdell (1999), Athukorala and Kelegama (2000), Mohamed and Ahamed, (2000), Henegedara (2002) and Somaratna (2000,2002,2003).

Many of these analysis concluded that though Sri Lanka has been followed liberal trade policies since 1977 as main growth strategy, real

achievements in terms of economic development are far beyond the expectations, in spite of its well improved social indicators such as education and health (Mohamed and Ahamed,2000). Though one time Sri Lanka economy was considered to be a prospective south Asian tiger economy, still tiger has not unleashed partly due to political unrest and social and institutional limitations. However, it seems that trade policies have positively affected to increase production and consumption, which were able to offset effect of general trends.

❖ Having considered essence of conclusions of many early analysis, focus of this analysis lie on assess the past experience of trade policy reforms in Sri Lanka in the non plantation sector with reference in neutral, protrade and antitrade scenarios, technological advancements and international factor mobility (labor and capital) discussed in section one.

Economic and Trade Policies

Over the past fifty years since independence (1948), three distinctive policy regimes could identified with respect in trade and economic growth in Sri Lanka, which were based on political ideologies, development strategies and priorities.

❖ *1948-1970 period:* Development policies and programs of this period was mainly based on mixed economic policies

❖ *1970-1977 Period:* This period was regarded as protectionist regime because some drastic intervention and inward looking policies were followed.

The Post 1977 Period: Since 1977, Sri Lanka has made a significant progress in moving from inward looking policies to outward looking policies. The policy changes made during post 1977 period, fall into three policy regimes such as the first wave of liberal policy reforms (1977-1988), the second wave of liberal policy reforms (1989-93) and the current policy regime: 1994 to date (Gunawardena and Somaratna, 2000).

The First Wave of Policy Reforms (1977-1988)

In this phase, the economy was transformed from a inward looking system to out ward looking system. A wide range of economic reforms was introduced during this period, aimed at increasing economic growth and improving the balance of payments. Policy reforms introduced since 1977 could be grouped under five sections: Pricing Policies (Price Liberalization), Trade Policy, Monetary Policy, Fiscal Policy and Institutional Reforms (Athukorala, 1986; Kelegama J, 1990; Somaratna and Gunawardena, 2000, Henegedara, 2002).

The Second Wave of Liberalization (1989-1993)

The second wave of liberalization reforms were

intended to overcome the macro economic imbalance due to the mismanagement of the economy and to the accelerated development programs introduced since 1977. The second wave of liberalization reforms took the form of structural adjustment programs (SAP) as recommend by the World Bank. **These included low profile adjustments such as reducing maximum nominal tariff on imports, devaluation of the rupee, high profile projects such as privatization of public corporations and enterprises and export oriented industrialization.** The private sector was recognized as the engine of growth and government intervention in production activities was limited to provide economic and social infrastructure facilities. The tariff system was altered from a six-band structure in 1988 to a three-band structure in 1992 and distortions were corrected and rigidities relaxed for agricultural and industrial commodities (Presidential Tariff Commission Tariffs Trade, 1994).

The Current Policy Regime: 1994 to Date

Policies followed after 1994 to Date were mainly focused on removing hidden discrimination and distortions of the market. Eliminate restrictions on institutional and technical barriers such as land ownership, credit and infrastructure (Policy Statement of the Government of Sri Lanka 1995). Privatization of government corporations was further promoted.

Agricultural Policy reforms

Generally, in keeping with the liberal economic policy reforms followed since 1977, agricultural policies were focused on achieving four objectives (National Agriculture, Food and Nutrition Strategy, Ministry of Finance and Planning, 1984).

1. Achievements of self-sufficiency in basic foods – rice, milk, sugar, fish and pulses.
2. Expansion of exports to increase the contribution of agriculture to the balance of payments situation.
3. The creation of new employment opportunities and the consequent enhancement of incomes in the rural sector.
4. The improvement of the nutritional status of the people.

Economic Policy instruments

Since the inception of liberal economic policy reforms 1977, Sri Lanka is implementing a variety of policy reforms including in pricing, trade, monetary and fiscal policy changes as the main strategy of economic development. The declared objective of such policy reforms were to accelerate economic growth; to achieve international competitiveness, to create employment opportunities, to increase capacity utilization, to stimu-

Table 2:
Rates of Import tariff imposed on Selected Agricultural Commodities

Products	Tariff			
	1986/88	1994	1996	1996-2001
Platoes	100	35% or Rs.12 pe Kg	35	35
Red Onions	5	35% or Rs.09 pe Kg	35	35
B Onions	5	35% or Rs.09 per Kg	35	35
Green gram	5	35% or Rs.10 per Kg	35	35
Black gram	5	35% or Rs.10 per Kg	35	35
Lentils	5	45% or Rs.12 per Kg	35	35
Others	5	35% or Rs.12 per Kg	35	35
Dried chili	5	35% or Rs.20 per Kg	35	35
Other -	-	35% or Rs.10 per Kg	-	-
Maize	5	45%	35	35
Rice	25	35% or Rs.07 per Kg	35	35
Cane sugar	-	35% or Rs.6.5 pe Kg	35	35
Beet sugar	-	35% or Rs.6.5 pe 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
Seed Anise	5	N/A	35	35
Coriander	5	N/A	10	10
Cumin seed	5	N/A	10	10
Fenel seed	5	N/A	10	10

Source: Sri Lanka Custom Notifications, Department of Customs, (1986/88, 1996, 1998), Report of the Presidential Commission on Trade and Trade-1194.

late savings and investments and to improve balance of payments (Gunawardena and Somaratna, 2000, Henegedara 2002). There are four major strategies that the Sri Lankan agriculture can pursue in reaching the above objectives (Somaratna, 2003).

- ❖ Integration in to global economy (i.e. globalization and regionalization);
- ❖ Maintenance of macro economic stability;
- ❖ Investment in people and technology;
- ❖ Market integration to improve agro enterprises.

Though there are variety of policy instruments followed since 1977 (Aberatne, 1991); this analysis focus only on trade and subsidy programs as the main policy instruments.

Trade Policy Instruments

The tariff system, which was followed as the main instrument of trade policy was replaced by introducing some quantitative restrictions (QRs) on imports. Thus most QRs on imports were replaced in 1988 by introducing a six-band duty system ranging from 0 percent tariff

for essential consumer items to 500 per cent tariff for luxury items respectively. This system was altered in 1992 and a three-band structure was introduced with rates of 10, 20 and 45% in order to relax the rigidity and correct the distortions in domestic agricultural sector (Presidential Tariff Commission on Trade and Tariff). The introduction of the three band tariff structure in 1992 helped to reduce market distortions in the non plantation sector (Gunawardena & Somaratna, 1996).

The new trade agreements on agriculture with the GATT/Uruguay Round agreement on Agriculture (GURAA) and the South Asian Preferential Trade Agreement (SAPTA) have opened new horizons and avenues for non-plantation agricultural commodities. In compliance with GURAA, Sri Lanka is bound to have all tariffs on imports of agricultural products at a uniform rate of 50 per cent (Gunawardena and Somaratna, 2000). Thus approximately 700 agricultural products including cereals, sugar, maize, spices, fruits, vegetables, juices and other fruit preparations, milk and meat will benefit under the GURAA and SAPTA agreements.

The official import duty rates imposed on paddy and other commodities were changed from time to time with change in local production and under internal political pressures. According to Table 2, the tariff structure has periodically changed since 1980s. It is expected to liberalize tariff structure further and impose a two-band tariff system for all products in line with the agreement of the WTO (Somaratna, 2002). Until 1990 the CWE had a monopoly of import rice, wheat and wheat flour. After 1990, private traders were allowed to import and to maintain buffer stocks subject to the payment of import duties when stocks were released to the local market. Licenses and seasonal restrictions were followed with respect in Potatoes, Chillies and Onions.

According to projections of the macro economic effects of tariff liberalization, tariff is likely to increase to a higher GDP. Tariff liberalization fosters economic growth and improves most macro economic variables by showing a pathway in the right direction for the sustainable development (Somaratna, 2002). However, it shows that the

impact of tariff rates on local producers and the consumers is negligible when it compared to Nominal Protection Coefficient (NPC) and the Effective Protection Coefficient (EPC)². According to HARTI statistics based on 1991/92 survey data in four major rice-producing areas, the NPC or the NPR was -8.2 at the rate of official exchange rate and -16.8 at the rate of shadow exchange rate (Wickramarachchi, 2000). It implies that the rice was negatively protected or local producers were taxed. According to the same estimates, (EPC)³ or the EPR was -9.8 and -21.6 respectively in newly irrigated and rehabilitated irrigated areas at the rate of official exchange rate. The rate was -23.2 and -32.0 respectively in newly and rehabilitated areas in terms of the shadow exchange rate (Wickramarachchi, 2000). This implies that protection had a negative effect on local producers.

Production Subsidies

Various form of production incentives such as low prices, low interest rates, and loans were considered as subsidies (Aberatne, 1991). There are two types of subsidy programs were implemented i.e. price subsidy and inputs subsidy.

Price Subsidy

Price subsidy was introduced as the Guaranteed Price Scheme (GPS) to purchase paddy (rice) from producers. Though the system was started in the late 1940s, it functioned as the main price mechanism for the purchase of paddy until early 1980s. The main purpose of the GPS was to increase the market prices of paddy and thereby improve the farm incomes (Sirisena, 1986). It was estimated that all paddy growers approximately (1.8 million farm families) would directly benefited from the scheme. The amount purchased by the GPS depended on the volume of production, availability of other food commodities, personal consumption needs and the price in the open market. The performance of the GPS over the past fifty years may be divided into four stages (Sirisena, 1986).

1. The initial stage (1948-1956). In the initial

Figure 2 Effects of Price Subsidies according to Guaranteed Price for paddy (1952-1997)

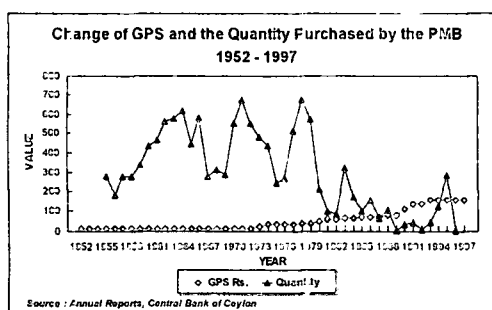


Table 3: The Impact of Agricultural Reforms on Increasing Paddy Production During Three Policy Regimes

Item	Unit	1977-88	1989-93	1994-99	% Change
Production	COO/MT	2235	2380	2557	7.4
Average Yield	Kg./Hec.	3125	3449	3555	3.1
Cost of Production of Paddy (Irrigated)	Rs./Acre	3242	8307	12350	48.8
Cost of Production of Paddy (Rainfed)	Rs./Acre	2561	6523	8725	33.8
Gross Return per Acre of Paddy (Irrigated)	Rs./Acre	2447	7362	10500	47.8
Gross Return per Acre of Paddy (Rainfed)	Rs./Acre	1923	4682	6305	34.7
Net Return per Acre of Paddy (Irrigated)	Rs./Acre	4854	11218	16243	43.0
Net Return per Acre of Paddy (Rainfed)	Rs./Acre	3025	7170	9051	26.2
Net Return per Acre of Paddy (Irrigated)	Rs./Acre	1615	2911	3683	26.5
Net Return per Acre of Paddy (Rainfed)	Rs./Acre	2295	4695	7317	55.8
Net Return per Acre of Paddy (Rainfed)	Rs./Acre	578	-211	-1857	780.1
Net Return per Acre of Paddy (Rainfed)	Rs./Acre	1102	2483	2746	10.4

Including imputed costs for labor and seeds etc.
Source: Department of Agriculture, Data Bank of HARTI

stage the GPS was able to collect a very small share of the market surplus due to market imperfections and lack of credit facilities.

2. In the second stage (1956-1971), the market share of GPS was improved since credit facilities were provided through cooperative societies in 1961. During this period the GPS was always higher than the open market prices and therefore the quantity purchased under GPS was higher (see Figure 1).

3. In the third stage (1972-1977) the Paddy Marketing Board (PMB) was established in 1972 in order to implement GPS. The paddy marketing Act No. 14 of 1971, gave wide powers to PMB in purchasing paddy.

4. In the post 1977 period, the monopoly of the PMB was abolished and the GPS was implemented as a floor price. Consequently the quantity purchased under GPS dropped from 30% (1977) to 5% (1997).

The involvement of private traders in purchasing paddy has increased since 1977 and consequently the GPS was increased from Rs. 40/= (1978) to Rs. 155/= (1995) a 300% increase over the period. But, the quantity purchased under GPS has not increased commensurate with the increase of the GPS.

According to Figure 1, the quantity purchase decreased during 1980 - 1993 and increased again in 1994 and 1995 due to intervention of the new government, but it has not increased since 1998 irrespective of an increased GPS. Since September 1999, the PMB has not functioned and the purchasing of paddy is done through the Cooperative Wholesale Establishment (CWE) and farmer organizations.

Inputs Subsidies

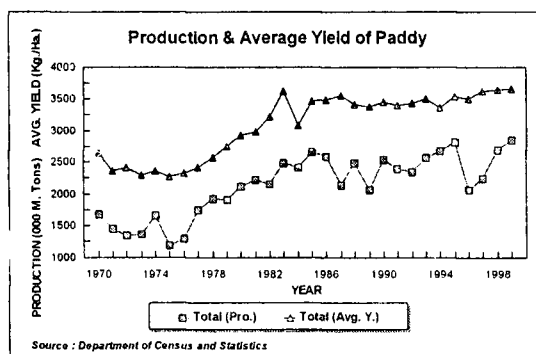
There were two main inputs subsidies given to farmers i.e. the fertilizer subsidy and the irrigation subsidy.

Fertilizer Subsidy

The fertilizer subsidy was introduced in 1962 to encourage the use of inorganic fertilizers in line with the green revolution. The subsidy was given for Urea, Triple Super Phosphates (TSP), imported Rock Phosphate, Muriate of Potash (MOP) and NPLO mixtures with 5:15:15 composition. Imported Ammonium Sulphate (AS) was not subsidized from 1981 in order to popularize local production.

The fertilizer subsidy had a positive

Production & Average Yield of Paddy



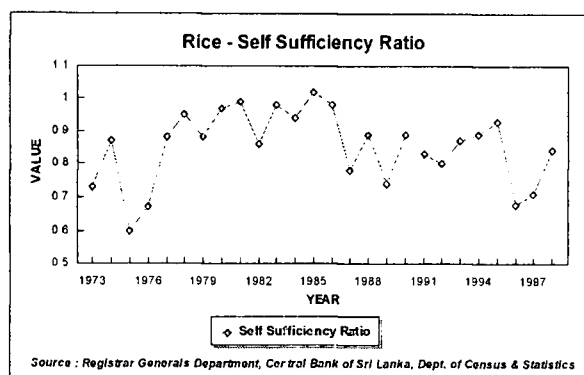
Source : Department of Census and Statistics

effect on productivity and total production of paddy (Annual reports, Department of Agriculture). The impact was very significant in the case of high yielding varieties, which were used to urea. However, the impact of reducing total production cost was marginal due to the fact that the fertilizer accounted for only 12 percent of total cost though it helped to increase fertilizer application among small producers who were not able to bear the high production costs (Henegeedara, 1989). The fertilizer subsidy was rearranged in 1994 by adjusting the prices of these varieties.

Irrigation Subsidy

Subsidized irrigation water is the main production input provided for paddy cultivation. Irrigation is provided to farmers free of charge except for a marginal levy that has been imposed for the operation and maintenance of the irrigation systems, and the acreage tax in minor irrigation schemes. There are various arguments for and against the irrigation subsidy because it is difficult to estimate irrigation costs alone (Aberatne, 1991). However, the effective irrigation subsidy has calculated in some studies (Aluvihare and Kikuchi 1991) by taking into account the operational and maintenance costs of new construction and rehabilitation irrigation projects in major and minor irrigation systems). Thus the effective irrigation subsidy for two major irrigation schemes of TIMP and Gal Oya, projects (1989) were estimated as Rs. 2,261/Ha. But it has gone up to Rs. 13,840/Ha. in the newly developed Mahaweli areas. The effective irrigation subsidy for the rehabilitation of minor irrigation

Rice - Self Sufficiency Ratio



Source : Registrar Generals Department, Central Bank of Sri Lanka, Dept. of Census & Statistics

was Rs. 1,588/Ha. (1989). According to these estimates the provision of irrigation subsidy has had a major impact on reducing cultivation cost and on increasing cropping intensity from 130m.ha to 158m.ha in the period 1988-1997.

Effects and Impact of Trade Policy Reforms

The effects and impact of trade policy reforms on non-plantation agriculture sector could assess by examining, total production, net returns, consumer welfare and self-sufficiency. However, due to the fact some limitations of the accurate data, the analysis focuses mainly on paddy.

Total Production

As shown in Table 3 the average paddy production increased during the consecutive liberal policy regimes from 2,235MT (1977-1988) to 2,557 MT (1994-1999). The average yield also increased from 3,125 Kg./he. to 3,555 Kg./he. during the same period. The gross return per acre increased from Rs. 4,854 to Rs. 16,043 in irrigated areas and from Rs. 3,025 to Rs.9,051 in rain fed areas during two consecutive periods. The net returns per acre increased by 55.8% and 10.4% respectively in irrigated and rain fed areas but showed negative results when imputed values for labour and seeds were included (Table 3). Figure 3 also indicates the trend of production and the average yield of paddy during 1978 - 1999 period.

Consumption and Welfare

Domestic rice production and consumption of imported wheat were increased during the consecutive period indicating that steady increase in total welfare, though domestic rice production has relatively declined in the recent past.

As indicated Figure 4, self-sufficiency ratio of rice production has increased that the food security and consumer welfare has improved in the society.

Economic Growth

GNP and the growth rates in the agricultural sector and the paddy-farming sector bear a close relationship to cropping intensity (Table 5). The growth rate of the agricultural sector fluctuated over the period and indicated some negative trends in 1987, 1989 and 1996. But GNP maintains steady growth indicating 4.6 average annual growth rates.

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Contd. from Page 19

Conclusion

Concluding remarks on effects of international trade and economic growth in Sri Lankan economy could summarize as follows:

Growth: The major structural change of economy is the reduction of share of agriculture in GNP and expansion of the share of manufacturing and services in GDP. The composition of agricultural exports has reduced from 70% in 1977 to 19 in 2001 while shares of industrial and petroleum exports has increased

from 15% in 1977 to 77 in 2001 respectively (Central Bank of Sri Lanka, 2001). However, importance of agriculture sector still remains, providing employment to more than 40 percent of labour force and 19 percent of export earnings. The GNP per capita income of the country has increased from US\$ 176 in 1978 to US\$ 881 in 2000, becoming a country of middle-income economies as categorized by the World Bank (see Table 1). Though the economy has changed very fast in past two decades, the agricultural sector and paddy sector growth rates increased very slowly and some instances negatively, indicating more likely the neutral growth or anti trade biased growth. However, it is clear that overall effect of economic development is not merely depending on agricultural sector. When the effects of other sectors (service and industries) are very effective, influence of agricultural sector could be minimized.

Production and Consumption: As indicated in Fig.3

Table 4: Domestic Production, Consumption and Welfare

Item	1990/95	1999/2000
Quantity of Imported Rice	136	209
Quantity of Imported Wheat	775	873
Domestic Rice production	1672	1676
Consumed total grains	2583	2758
Domestic rice production as a % of total consumption	64.7	60.8

Source: Daily Mirror (2001.11.15)

Table 5: GNP and Growth Rates of Agricultural Sector and Paddy Production

Year	Growth Rate		
	Agricultural Sector	Paddy	GDP
1983	5.3		4.9
1984	2.0	15.2	5.1
1985	9.9	-2.4	4.9
1986	2.2	10.0	4.3
1987	-8.1	-2.5	1.5
1988	3.3	-18.0	2.7
1989	-1.9	16.4	2.3
1990	10.4	16.7	6.2
1991	0.8	21.3	4.6
1992	2.4	-5.9	4.3
1993	5.0	-2.0	6.0
1994	3.8	9.6	5.6
1995	3.3	4.7	5.5
1996	-5.1	4.7	3.8
1997	3.0	-26.7	6.4
1998	2.5	8.6	4.7
1999	4.5	Na	4.3
2000	1.8	Na	6.0

Source: Central Bank of Sri Lanka and Data Bank, HARTI.

and Table 4, production and consumption major food items like paddy and wheat has increased over the period indicating increase of consumer welfare and food security.

Factor Mobility: The labour, main production factor which enjoyed comparative

advantage in the country both in terms of skilled and unskilled labour, has moved from agricultural sector to industrial and service sectors. As a consequence labour price has increased both in agricultural sector. According to recent statistics, labour rates have increased more than 250% in all agricultural areas, indicating that cost of production of many agricultural commodities also increased at least 40 percent (Henegebara, 2002). This was indirectly affected for the production and consumption of some agricultural crops

Technological Change: As a result of green revolution and research and development activities, the adoption of high yielding varieties increased from 71% in 1972 to 90% in 1997 (Dhanapala, 1997). The effect of wider spread of new technologies was greatly helped to increase the production efficiency and to offset the bad effect of increasing production inputs.

Though non-plantation agriculture indicated some negative effects, there is a possibility to product and market integration through encouraging the processing of tea, coconut and rice sectors (Somaratna, 2002). However, in summary it could be concluded that tariff liberalization foster economic growth by showing a path way in the direction for sustainable development.

Footnotes

- NPC is the ratio of domestic market price of a given commodity to its border price.
Thus: $NPC = P^d / P^b$ where P^d - domestic price of given commodity
 P^b - border price of the commodity
- The EPC is defined as the ratio between the value added in domestic market prices to the value added in world prices for a particular production process.
 $EPC = V^d / V^b$ where V^b - value added in border prices
 V^d - value added in domestic prices