Trade Policy Liberalization & Non-Plantation Agriculture in Sri Lanka

New Strategies for Development

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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 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 international 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 Development[1]

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. regionalizaiton 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 macroeconomic 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 tarrifying 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 sectorss. 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-plantation[2] 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. tarrification); 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 reforms[3] including changes in trade, monetary and fiscal policies and other micro policy reforms, during the last two decades 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 mission[4] 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).

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.**

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 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 agricultural 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 Somaratne[5] (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 reservoir[6], 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 coefficients[7] 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 erosion[8]. 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 numereire 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) model[9] 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 budget[10] 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 lands[11] 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).

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.

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 (ie. 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 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, polytunnels, and drip and sprinkler irrigation systems) and internationally improved 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 marketing 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.

Appendix Table 1: Rates of Import Tariff Imposed on Selected Non-Plantation Agricultural Crop Sectors in Sri Lanka (198688-2001)

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

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 net works 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 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)

[2] 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.

[3] 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).

[4] 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 guesstimates" 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 (Somartane, 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 libealisation 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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