

## Poverty impacts of agricultural trade liberalisation in Sri Lanka: A review of the literature

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### Abstract

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*Any policy reform will bring positive impacts as well as adverse impacts to the society, depending on the economy and on the characteristics of the population group. The impacts of trade liberalisation, particularly the impact of trade policies in developed countries and inequality in developing economies, is strongly debated in the international trade and development arena. Objective of this paper is to present a comprehensive review of the theoretical and empirical literature on the effect of agricultural trade liberalisation on poverty, in particular, focusing in Sri Lanka.*

*Methods used for analysing the complex poverty impacts of trade liberalisation include partial equilibrium models, econometric analysis, general equilibrium models, and micro/macro simulation models, which combine macro-level simulation with micro-level household models. Agricultural trade liberalisation in particular tends to adversely affect small farmers in developing countries while large scale farmers/producers and the farmers from developed countries gain through agricultural trade liberalisation. Therefore, agricultural trade liberalisation tends to supports consumers while adversely affecting rural producers. However, country-specific studies are needed to explore the outcomes for particular groups in particular countries. Each and every policy reform will bring positive impact as well as adverse impact to society, depending on the economy and on the characteristics of the population group.*

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### Introduction

This paper presents a comprehensive review of the theoretical and empirical literature on trade-poverty linkages in general, with a particular emphasis on the effect of agricultural trade liberalisation on poverty in Sri Lanka. The impact of trade liberalisation, particularly the impact of trade policies in developed countries and inequality in developing economies, is strongly debated in the international trade and development arena. Hence, considerable attempts have been made to explore the poverty and inequality impacts of trade liberalisation in developing countries in recent studies. Investigations have identified both positive and negative impacts of trade liberalisation (Hertel, Preckel, & Reimer, 2001; Winters, McCulloch, & McKay, 2004) and a range of different techniques has been used to capture the poverty and inequality impacts of trade liberalisation (Hertel, 2006; Hertel & Reimer, 2004a; Naranpanawa, 2005; Reimer, 2002; Winters et al., 2004).

Reimer (2002) summarized and classified literature on the poverty impacts of trade liberalisation into four methodological categories: cross-country regressions, partial equilibrium/cost-of-living analysis, general equilibrium simulations, and micro-macro syntheses. These can be further classified into two main categories: 1) the bottom-up approach which uses econometric analysis of household expenditure data; and 2) the top-down approach which uses computable general equilibrium models based on national accounts data, with both of these perspectives making important contributions to any analysis of trade and poverty (Hertel and Reimer (2005); Reimer (2002).

## **The role of trade and agriculture in poverty reduction**

As is the case with trade–poverty linkages, the economic linkages between agriculture, trade and poverty are also complex. Brooks (2003, p. 9) pointed out that agricultural trade reforms have a complex range of distributional effects. The effects are of crucial significance in economies where food and agriculture figure prominently in people’s lives, either as a main source of their livelihoods or their main component of expenditure (FAO, 2005). Hence, agricultural policies in developing nations like Sri Lanka need to focus on the incomes of rural households. More than two-thirds of the world’s poor population lives in rural areas (Brooks, 2012, p. 3) Therefore, earning higher agricultural incomes by increasing real GDP through agricultural surpluses generated by increased production, and using surplus labour from the sector are leading factors in poverty reduction (De Silva, Malaga, & Johnson, 2012).

Poverty is observed as being multidimensional and dynamic, with large numbers of vulnerable households moving in and out of poverty over time. The development literature focuses on seeking a better understanding of the links between poverty, economic growth, income distribution and trade. Since more than two-thirds of the world’s poor population lives in rural areas (Brooks, 2012, p. 3) and their main source of income is directly or indirectly related to agriculture, agricultural growth is particularly important for poverty reduction in developing countries. Furthermore, the central role of agriculture in supporting poverty reduction is underlined by the relative economic importance of the sector in developing countries (FAO, 2005)<sup>28</sup>.

The effects of agricultural trade liberalisation on household welfare through price changes of tradable goods are an important area for study. Trade liberalisation, including reductions in tariffs, may affect the prices of goods consumed and produced by households. The key issue is how the changes in tax and border prices are eventually transmitted in terms of effects on wholesale and retail prices, and thereby on household welfare. However, the effects on household welfare will not only depend on price changes and their transmission, but also on whether these households produce or consume the products concerned and to what extent.

The post-tariff border price of goods is impacted by a combination of the exchange rate and the tariff the good faces. When we add this border price to domestic taxes and transportation/distribution costs from the port to major distribution centres, we get the wholesale price. Then we obtain the retail price by adding various other taxes and regulations and the cost of further transportation/distribution. At the retail level, the goods will be distributed to households and individuals. The impact of price changes for a particular good on the welfare of the household will depend on the relative importance of the good concerned as a source of income to the household and its importance in the household consumption basket. For example, if the price of rice increases, then the net producers of rice will benefit while net consumers will lose. However, the extent of gain or loss due to price increases for rice will depend on how much the income of the household relies upon the production of rice and how important rice is in the household’s consumption basket (Abuka, Atingi-Ego, & Opolot, 2007; McCulloch, 2003). To analyse this situation for Sri Lanka, I

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[http://www.unep.org/training/programmes/Instructor%20Version/Part\\_2/Activities/External\\_Drivers/Trade/Supplemental/Poverty\\_Impacts\\_of\\_International\\_Trade\\_Reforms.pdf](http://www.unep.org/training/programmes/Instructor%20Version/Part_2/Activities/External_Drivers/Trade/Supplemental/Poverty_Impacts_of_International_Trade_Reforms.pdf)

therefore needed to consider the contribution to household income of different income sources and the household expenditure shares for different consumption items.

Mittal's (2007) analysis used an approximation of general equilibrium in four parts, emphasizing the welfare of producers and with the main focus on small farmers. The first part was the estimation of the world price effect of Organization for Economic Co-operation and Development (OECD) distortions. The second was the estimation of the effects of changes in world prices on domestic prices through a price transmission model. The third was the estimation of impact on domestic production through a supply response model. The fourth was the estimation of the effect of changes in supply and welfare on poor small farmers. The welfare results of Mittal's (2007) study in India showed that the net impact of either of the policy changes on small farmers who were cultivating rice or wheat was very small and almost negligible. His most important finding was that the policies of developed countries protecting their farming sectors critically affect the lives of billions of people who depend on agriculture in developing countries.

Summing up the literature on the poverty/inequality impact of agricultural liberalisation, Hertel (2006) argued that agricultural trade liberalisation can have an important impact on poverty and inequality. Most of the world's poor live in rural areas where the dominant livelihood is farming; therefore trade reforms that boost agricultural prices tend to reduce poverty. Hertel further emphasized that the specific impacts of agricultural reforms depend on a number of factors. In particular, the extent of price transmission from the border to local markets, poor infrastructure and high transaction costs serve to insulate rural consumers from world price changes. Households' capability to adjust to price changes will vary across countries, localities and types of households. If a farming household can increase the supply of products whose price has gone up and reduce their consumption of the same goods, then gains will be increased while losses are reduced. Besides, this gain also will be greater than their access to credit. Consequently, Hertel (2006) shows that labour markets play an important role in determining the poverty impacts of trade liberalisation in the medium run, while in the long run, poverty reductions from trade reforms hinge critically on economic growth. Furthermore, (Hertel, Keeney, Ivanic, & Winters, 2009) and Hertel, Keeney, Ivanic, and Winters (2007) analysed the impact of multilateral trade policy reforms on a sample of fifteen developing countries, employing macro-micro modelling strategy beginning with specification of utility function and an associated consumer demand system for poverty using An Implicitly Additive Demand System (AIDADS) system to represent consumer preference. Their research found that tariff cuts under the Doha reforms may hurt the poor who are working in agriculture and also argued that the Doha Development Agenda (DDA) is fundamentally less poverty-friendly than it could be, due to the absence of tariff cuts on staple food products in developing countries and proposed deeper tariff cuts in developing countries' agricultural systems to encourage being poverty-friendly.

### **CGE analysis of poverty impacts of trade liberalisation**

CGE modelling incorporates many important economic interactions and is a comprehensive way of modelling the overall impact of policy changes on the economy. These models are well suited to explain medium to long-term trends and structural responses to changes in development policy. Therefore, empirical studies have increasingly used CGE models as an analytical tool to address trade and poverty links using cross-country or/and single country data. Although there are very limited studies using CGE analysis to examine the poverty

impacts of trade liberalisation within the Sri Lankan context (Narampanawa, 2005; Perera, Siriwardana, & Mounter, 2014), there have been many studies in other parts of Asia and the rest of the world (Boccanfuso & Sevard, 2007; Cicowiez, Diaz, & Diaz, 2008; Cockburn, 2001, 2002; Cororaton, Cockburn, & Corong, 2005; Hassine, Robichaud, & Decaluwé, 2010; Hertel & Keeney, 2010; Strutt, 2008; Strutt, Hertel, & Stone, 2010). This literature indicates growing interest among various research organizations and academia in using CGE models to assess the impact of policy changes; in particular, the poverty impact of trade liberalisation.

These studies have followed a variety of model specifications to capture poverty and inequality effects (Bouet, 2006). Most of the studies have tried to develop micro-simulation CGE models to capture the country-specific nature of the poverty and inequality associated with trade reforms using household survey data (Boccanfuso, Decaluwe, & Savard, 2008; Boccanfuso & Sevard, 2007; Cockburn, 2002; Davis, 2004; Savard, 2003). Boccanfuso and Sevard (2007) constructed a CGE model of Mali, including a micro-simulation component for analysing the poverty and inequality impact of removing cotton subsidies. Their study used 17 sectors and 5000 households to construct a CGE model. They found that removing cotton subsidies contributed to significant declines in poverty in Mali. Further, their study showed that removing subsidies would marginally contribute towards the reduction of inequality in Mali. A similar CGE micro simulation study has been carried out for Nepal, incorporating survey data from 3373 households into a social accounting matrix (SAM)-based CGE Model (Cockburn, 2002). Cockburn concluded that trade liberalisation favours urban households and reduces poverty in urban areas while increasing poverty in rural areas. Moreover, he noted that the impact of trade liberalisation on income distribution and poverty is complex and that fully disaggregated models are necessary in understanding the linkages.

Aredo, Fekadu, and Workneh (2007) presented a similar study of the Ethiopian economy. They used CGE analysis based on the Ethiopian Household Income and Consumption Expenditure Survey of 1999/2000 and showed that rapid trade liberalisation may have adverse effects on domestic production and investment, due to fierce competition from relatively cheap and better quality imported goods. In particular, the textile, leather and food processing industries are likely to shrink further in the face of cheap imports. The simulation results suggest that trade liberalisation is likely to affect the prices of those commodities that constitute the bulk of the expenditure of the poor. They argue that these price increases may lead to welfare loss for the urban poor and in food deficit households. Similarly, a study conducted by Cicowiez et al. (2008) in Argentina shed light on the distributional, inequality and poverty effects of trade policies, particularly those related to agriculture in Argentina. As a large agricultural exporter, Argentina is an interesting case study for the examination of trade poverty links. The simulation followed a top-down approach combining a CGE macro model with a partly-econometric micro simulation model. This study concluded that export taxes help to reduce poverty and inequality, generating additional employment opportunities that the production and export of raw materials would not provide, and help support a more competitive exchange rate.

Mujeri and Khondker (2002) examined the poverty impacts of liberalisation through a CGE framework as a part of “Exploring the links between Globalization and Poverty in South Asia”. This work is based on a 1995/96 SAM of the Bangladesh economy. They concluded that the poverty of all household groups was reduced due to the high growth in income

resulting from the policy change. Urban households gained more than rural households and the gains in terms of poverty reduction accrued more to the relatively well-off households. They found the highest reduction in the incidence of poverty was for medium-skilled workers, followed by professionals and large farm households due to resource reallocation from the agricultural and manufacturing sectors to the services sector. Trade policy reforms which lead to changes in the world prices of agricultural commodities or domestic policies aimed at affecting agricultural prices are often seen as causing a policy dilemma: a fall in agricultural prices benefits poor urban consumers but hurts poor rural producers (Polaski, Manoj, Ganesh-Kumar, & Sherman Robinson, 2007). Polaski et al. (2007) also pointed out that poor countries have argued that they need to be able to use import protection and/or price support policies to protect themselves against volatility in world agricultural prices in order to dampen these effects. They explored this dilemma in a CGE model of India that used an SAM developed at the Indira Gandhi Institute of Development Research (IGIDR) in Mumbai. The SAM included extensive disaggregation of agricultural activities, commodity markets, labour markets, and rural and urban households. The results show that the inclusion of linkages between rural and urban labour markets is necessary to fully explore and potentially eliminate the dilemma. A fall in agricultural prices hurts agricultural producers, lowers wages and/or employment of rural labour and in some cases spills over into urban labour markets, depressing the wages and incomes of poor urban households as well. In these cases both rural and urban poverty increases. The paper explores the strength of these commodity and factor market linkages and the potential spill over effects of policies affecting agricultural prices.

Although trade liberalisation may improve economic welfare and reduce poverty, it is not a foregone conclusion and is therefore necessary to measure the impact clearly. Although there are a number of ways to measure policy reforms, the most appropriate way of assessing the consequences of the trade policy reforms on poverty is CGE modelling. The CGE literature shows that the impact of trade reforms on poverty and inequality differs according to the characteristics of the economy or the population group. One country gains through agricultural trade reforms while another country loses. At the same time, within the same country, some groups of people gain through agricultural trade liberalisation while others lose. Hence, it is still unclear whether agricultural trade liberalisation reduces poverty in all countries, and there is a need for country-specific, detailed poverty analysis.

### **Agricultural trade liberalisation and poverty in Sri Lanka**

Sri Lanka was considered a subsistence agriculture-based economy using paddy as the major agricultural crop before the Western colonial powers intervened. The structure of the agricultural sector changed during the period of colonization (1510-1948) and post-colonization (1948 onwards) (Mudalige & Somarathne, 2005, p. 1). As a result, plantation crops were introduced, contributing more to production, employment and trade in Sri Lanka.

Sri Lanka historically relied on imports to supplement domestic production of several major and basic food commodities such as rice, milk and fish. Since Independence in 1948, Sri Lanka's food security strategy has been based on three major policies: achieving self-sufficiency in basic food items; public distribution systems for procurement and marketing of paddy and other commodities; and welfare programmes involving a food subsidy, food stamps or income transfers (Kelegama, 2000). However, the Sri Lankan agricultural sector has come under heavy pressure from increasing competition arising from cheap imports due

to import liberalisation. There are reports of protests by Sri Lankan farmers who were adversely affected by cheap imports. According to Raman (2004) and a Third World Network (TWN) report (2006), in August 1999 the protests were held first by potato farmers, then by chilli and onion producers and thousands of small farmers who were worried about growing imports of chicken meat and eggs, and who took to the streets in April 1999, demanding the government place a ban on imports since these were affecting their livelihoods. The report added that with Sri Lanka's once-thriving poultry business buckling, farmers said that they were forced to sell below the cost of production. According to these studies, local farmers in developing countries are unable to produce food cheaper than their foreign counterparts and are demanding protection through higher import duties and lower local taxes and reduced tariffs on imported inputs.

Agriculture remains the way of life for the majority of the Sri Lankan population. Nearly three quarters of the population who belong to the rural sector are primarily engaged in agricultural activities as their main livelihood. Similarly, agriculture contributes one third of the total employment in Sri Lanka; this is the largest single-sector share. However, its overall relative significance in the economy is declining (Figures 4-1 and 4.2). The agricultural sector in Sri Lanka can be viewed as both socially and economically vulnerable because of the low level of commercialization, low productivity and weak market orientation, marginal uneconomical operational landholdings due to fragmentation, lack of infrastructure, heavy dependence on rainfall, susceptibility to natural calamities and the dependence of a large percentage of the population on agriculture for their livelihood<sup>29</sup>. Nevertheless, the agricultural sector in Sri Lanka has the largest potential for poverty reduction in the rural areas as it absorbs the largest proportion of the poor workforce.

There have been many studies on trade liberalisation, poverty and inequality in the context of Sri Lanka. Some of these have attempted to link poverty status with education (Athurupane, 1998) health, (De Silva, 1998; Himaz, 2008; Perera, Gunatilleke, & Bird, 2007) and growth and development (Athukorala & Jayasuriya, 1994; Bruton, 1992). Some studies have attempted to describe the characteristics and current status of income poverty and consumption poverty in Sri Lanka (Edirisinghe, 1990; Gunawardena, 2000; Lakshman, 1997; Narayan & Yoshida, 2005). Similarly, a number of studies have examined the status of income distribution in Sri Lanka (Glewwe, 1986; Narayan & Yoshida, 2005). These studies have focused on historical trends and the current status of inequality in Sri Lanka. However, quite a few recent studies have attempted to examine inequality trends and poverty determinants in Sri Lanka (Gunatilaka, Chotikapanich, & Inder, 2005). Some have looked into the implications of economic reforms and trade liberalisation (Athukorala, 2006; Athukorala & Rajapathirana, 2000).

Among the limited studies on the incidence of poverty and inequality with respect to trade liberalisation in the Sri Lankan context, Narampanawa (2005) has attempted to analyse the effects of trade liberalisation on poverty in Sri Lanka using a CGE model to provide a broader perspective for the first time. He developed a multi-sectoral general equilibrium analysis within the SAM-based Computable General Equilibrium Model. The SAM for the Sri Lankan economy was prepared using the Income and Expenditure Survey data in 1995/96. Here, he has empirically estimated income distribution functional forms for different household groups and linked these to the CGE model in a top-down mode. His

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<sup>29</sup> See [ftp://ftp.fao.org/upload/Agrippa/615\\_en.doc](ftp://ftp.fao.org/upload/Agrippa/615_en.doc) access date 19/10/2013

results show that in the short run, trade liberalisation of manufacturing industries increases economic growth and reduces absolute poverty in low income groups. Moreover, the study indicates that in the long run, liberalisation of manufacturing industries is more pro-poor than that of agricultural industries. The overall simulation results from his study show that trade reforms may widen the income gap between rich and the poor, thus promoting relative poverty. He covered macro variables, industry level variables and agricultural level variables in this analysis. However, this analysis used HIES 1995 data for the SAM. Hence, it would not capture the real impact of agricultural trade liberalisation on poverty in Sri Lanka as the WTO's Agreement on Agriculture (AoA) was established in 1995 (TWN, 2006). The AoA set up a framework of rules and disciplines and initiated a process of gradual reductions in protection and trade distortions with a view to supporting agriculture at the end of 1999. Income groups also need to vary according to their source of income to more precisely reveal which groups are most affected by trade liberalisation.

In comparison to the study by Narampanawa (2005), Weerahewa (2006), used a recent data set for her analysis, focusing only on the rice market in Sri Lanka. She employed a general equilibrium model developed for the Sri Lankan economy using the input-output table for 2000 to analyse the economy-wide impacts of various policy packages on rice and related markets, which consisted of liberal as well as protectionist elements. This model consists of 5 sectors, 2 factors of production and households in 8 representative provinces in Sri Lanka. The results of her study indicated that removal of the import tariff on rice, along with removal of the import tariff on fertilizer and/or subsidy payments on other agricultural sectors, could improve economic efficiency and household welfare across provinces. However, her study focused only on the rice market over the provinces and did not examine rice trade liberalisation effects on poverty using different income groups within society.

Rafeek and Samarathunga (2000) also explored trade liberalisation and its impact on the rice sector in Sri Lanka, using both nominal and effective protection rates that protected producers at the expense of consumers. They also showed that the area of farm land under rice decreased by 12 per cent and total production decreased by 16 per cent. Meanwhile, the demand for rice increased as a result of reduction in retail prices. Although overall welfare impacts revealed a gain to the nation, producers faced welfare losses in this study of trade liberalisation. However, Rafeek and Samarathunga (2000) did not employ CGE analysis or econometric modelling to capture the poverty and welfare effects on rice producers or the consumers. They simply relied on calculations such as the nominal protection rate (NPR) and the effective protection rate (EPR) in their methodology.

## **Conclusion**

The literature on the poverty impact of trade liberalisation that has been reviewed in this paper shows that trade liberalisation have a significant impact on poverty reduction in developing countries, but the linkages can be complex. Agricultural trade liberalisation in particular tends to adversely affect small farmers in developing countries while large scale farmers/producers and the farmers from developed countries gain through agricultural trade liberalisation. Therefore, agricultural trade liberalisation tends to supports consumers while adversely affecting rural producers. However, country-specific studies are needed to explore the outcomes for particular groups in particular countries. Each and every policy reform will

bring positive impact as well as adverse impact to society, depending on the economy and on the characteristics of the population group.

Methods used for analysing the complex poverty impacts of trade liberalisation include partial equilibrium models, econometric analysis, general equilibrium models, and micro/macro simulation models, which combine macro-level simulation with micro-level household models. Econometric analysis can be particularly useful for gaining insights into the impact of past reforms on poverty, while CGE techniques appear to have the best potential to predict poverty changes likely to result from future trade reform (Gilbert & Banik, 2010; Hertel & Reimer, 2005; Hertel & Winters, 2005).

The Sri Lankan literature on trade and poverty indicates that there have been limited studies using recent data. My thesis therefore contributes to the relatively sparse literature in the areas of econometric and field survey analysis, as well as CGE modelling of trade liberalisation impacts on Sri Lanka.

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