

Journal of Economics and Business Research,
ISSN: 2068 - 3537, E – ISSN (online) 2069 – 9476, ISSN – L = 2068 – 3537
Year XX, No. 1, 2014, pp. 173-192

A Survey on Agricultural Trade Policies in Bangladesh: theoretical Insights and empirical Evidence

D. Talukder, L. Chile

Dayal Talukder

ICL Business School, Auckland, New Zealand

Love Chile

Auckland University of Technology, New Zealand

Abstract

The purpose of this paper is to review the theoretical insights and empirical evidence on agricultural trade policies and their impacts on the Bangladesh's economy, with a view to presenting both, the positive and negative effects of trade liberalization. Theoretically, while advocates of trade liberalization argue that free trade is an engine of growth and protection leads to wasteful use of resources, critics argue that openness has its costs and sometimes it could be detrimental to the economic development. The empirical evidence in Bangladesh was consistent with the ongoing debate on the effects of trade liberalization on economic development. The evidence remained mixed and loaded with criticisms on the grounds of choice of liberalization determinants, model specifications and methodology, as well as other measurement shortcomings. The review suggests that the literature is inconclusive and outcomes are largely case-specific.

Keywords: Agricultural trade policies, trade liberalization, Bangladesh

Introduction

Bangladesh is an agricultural country. More than 80 percent of its population depends directly or indirectly on agriculture, for their livelihoods. This segment of the population is also predominantly made up of rural households. The agricultural sector contributed around 20% to gross domestic product (GDP) and employed more than 60% of the total labor force of the economy in 2010 (Ministry of Finance, 2012; World Bank, 2011a, 2011b). Bangladesh went through a series of deregulation and agricultural trade liberalization measures in the late 1980s and early 1990s. As a result of agricultural trade liberalization, the economy experienced significant technological transformation and productivity growth in agriculture during 1985-86 and 2010. Despite this impressive growth performance, the rate of decline in the incidence of poverty was rather insignificant over the same period (less than 1 percent), leaving poverty at a remarkably high level – with more than 40 percent of the country's population and the majority of them in rural areas (BBS, 2007: 57; Klytchnikova and Diop, 2006: 2; Ministry of Finance, 2010: 177). Thus, a significant question arises – to what extent has agricultural trade liberalization influenced the welfare of rural households in Bangladesh?

In spite of significant structural transformation and policy changes, there was no systematic and dynamic attempt to survey the impact of agricultural trade liberalization on productivity, price change, income distribution and poverty. Furthermore, given the significant impact of agricultural trade liberalization policy-exercise on more than 80% of the country's population (dependent on agriculture and predominantly rural households); there is a strong justification for a study into its consequences and implications.

Therefore, the purpose of this paper is to review the theoretical insights and empirical evidence on agricultural trade policies in Bangladesh, with a view to comparing evidence in the context of the ongoing debate on the effects of agricultural trade liberalization on economic development. The following sections include agricultural trade policy-scenarios, theoretical insights of agricultural trade policies, empirical studies on agricultural trade liberalization and conclusion.

Agricultural Trade Policy-scenarios in Bangladesh

Like many other developing countries in the world, Bangladesh had pursued inward-looking policies and strategies for trade and development since its independence in 1971. These policies involved high government interventions in almost all economic activities including agriculture (Ahmed *et al.*, 2007: 2, 7; Draper and Sally, 2005: 3; Hoque and Yusop, 2010: 1; Rahman, 2008: 5). Bangladesh encouraged cooperative farming with a view to developing a socialist system of agriculture during the 1970s. The government controlled the procurement and distribution of seeds, fertilizers, pesticides and all other agricultural inputs and equipment (Ahmed, *et al.*, 2007: 2, 7; Ahmed and Sattar, 2004: 11; Salim and Hossain, 2006: 2568).

The government adopted import substitution policies with restrictions on imports to protect and support domestic production. It controlled the foreign trade and exchange rate system for making interventions effective (Ahmed and Sattar, 2004: 11; Krueger, 2010: 2; Nahar and Siriwardana, 2009: 327; Salim and Hossain, 2006: 2568). A series of measures including quantitative restrictions, highly differentiated tariff rates (ranging from 0 to 400 percent), huge production subsidies and overvalued exchange rates were put in place to protect domestic production from world competition (Ahmed, *et al.*, 2007: 7; Ahmed and Sattar, 2004: 11; Nahar and Siriwardana, 2009: 327; Salim and Hossain, 2006: 2568).

The government reinforced this protective environment with domestic market policy interventions in the form of credit ceilings, price controls and arbitrary licensing such as import license. These licenses were granted only when there was no domestic source of supply available (Ahmed, *et al.*, 2007: 19; Islam and Habib, 2007: 10, 14; Krueger, 2010: 2; Salim and Hossain, 2006: 2568). Moreover, traditionally, a government department – the Bangladesh Agricultural Development Corporation (BADC) had the sole authority and responsibility for procurement and distribution of agricultural inputs including fertilizers, irrigation equipment, pesticides and seeds (Ahmed, *et al.*, 2007: 19, 21; Islam and Habib, 2007: 10, 14; Rahman, 2008: 13; Salim and Hossain, 2006: 2568).

However, these inward-oriented trade policies were not successful in terms of trade expansion as well as import substitution. These policies did not result in a sustained increase in production and productive efficiency. Rather, the gap between demand for and supply

of agricultural goods widened over the years (Ahmed, *et al.*, 2007: 7; Hoque and Yusop, 2010: 39; Salim and Hossain, 2006: 2568). With a growing dissatisfaction regarding inward-looking trade and development policies, the sustainability of the government interventions towards long-term food-grain availability was questioned due to the increased inefficiency and corruption in the public management system and the heavy budgetary burden imposed by these operations (Ahmed, *et al.*, 2007: 6, 7; Dorosh and Shahabuddin, 2002: 38; Hoque and Yusop, 2010: 39; Krueger, 2010: 5; Salim and Hossain, 2006: 2569).

Realizing such inefficiencies as well as constant pressures from the donor countries and international development agencies such as the World Bank and the IMF, the government started to pursue a policy-shift from state intervention to more market-oriented policies in the mid 1980s, with a view to achieving high economic growth and reducing poverty (Ahmed, *et al.*, 2007: 9; Hoque and Yusop, 2010: 39; Hossain and Verbeke, 2010: 78; Islam and Habib, 2007: 3; Nahar and Siriwardana, 2009: 327; Rahman, 2008: 11; Salim and Hossain, 2006: 2567, 2569). Deregulation and agricultural trade liberalization generated a momentum that began in the late 1980s and peaked in the early 1990s. Major reforms in agricultural policy included liberalization of input markets, shrinking the role of government agencies in distribution of inputs, substantial reduction and rationalization of tariffs, removal of quantitative restrictions, moving from multiple to a unified exchange rate and from fixed to a flexible exchange rate system (Ahmed, *et al.*, 2007: 9; Ahmed and Sattar, 2004: 11, 12; Hoque and Yusop, 2010: 39; Hossain and Verbeke, 2010: 78; Islam and Habib, 2007: 4; Salim and Hossain, 2006: 2569).

Similarly, the government pursued a wide range of policy reforms to liberalize agricultural input markets, including privatization of the distribution system of key agricultural inputs, initiatives for deregulation measures to improve the investment climate for private enterprises, gradual elimination of subsidies on fertilizers and small irrigation equipment, and improving the maintenance of agricultural equipment through encouraging participation of the private sector (Ahmed, 2004: 11, 12; Ahmed, *et al.*, 2007: 9; Klytchnikova and Diop, 2006: 3; Salim and Hossain, 2006: 2569).

As a consequence of these reforms, the fertilizer trade was almost entirely handled by the private sector in 2005 (Ahmed, *et al.*, 2007: 19, 20; Ahmed and Sattar, 2004: 13, 19; Klytchnikova and Diop,

2006: 3; Salim and Hossain, 2006: 2569). Further policy reforms included: rationalization or elimination of import duties on agricultural inputs and spare parts, elimination of the government monopoly in fertilizer imports, abolition of standardization requirements (Ahmed, *et al.*, 2007: 19, 20; Ahmed and Sattar, 2004: 13, 19; Klytchnikova and Diop, 2006: 3; Salim and Hossain, 2006: 2569).

There were encouraging responses to these liberalization and reform initiatives from market forces. Therefore, the private sector participation in the input market rose sharply. Irrigation equipment became cheaper and farmers had easy access to the equipment. Different types of high yielding variety (HYV) seeds were available to farmers, thereby promoting both, extensive and intensive cultivation by increasing the irrigated area and use of fertilizers (Klytchnikova and Diop, 2006: 3; Salim and Hossain, 2006: 2569).

Consequently, agricultural trade liberalization generated significant impacts on economic growth through productivity improvement, in the agricultural sector. It contributed to technological innovation in agriculture, leading to the productivity improvement of agricultural inputs (Ahmed and Sattar, 2004: 19; Islam and Habib, 2007: 4; Klytchnikova and Diop, 2006: 3). The reform measures – including liberalization of the input markets for fertilizers, pesticides, irrigation equipment and adoption of high yielding variety seeds for rice production – led to major structural reforms and technological transformation, resulting in a significant increase in productivity and growth in the agricultural sector. Technological changes in agricultural production enabled the country to achieve self-sufficiency in food-grain production in the early 1990s (Ahmed and Sattar, 2004: 19; Islam and Habib, 2007: 4; Klytchnikova and Diop, 2006: 3). The rising volume of rice production was accompanied by a decline in rice prices during 1990-2009. Moreover, because of significant structural transformation and technological changes, productivity of this sector was at its highest level (BBS, 2009: 3; Klytchnikova and Diop, 2006: 2; Ministry of Finance, 2010: 84).

These structural transformations reflected the government's efforts to open the economy, liberalize agricultural trade and reform domestic markets in the 1980s and 1990s (Ahmed and Sattar, 2004: 12; Klytchnikova and Diop, 2006: 2). They enabled the economy to achieve a significant growth in the 1990s – increase in real GDP by an average of 4.2 percent per year and significant increases in agricultural

production (Klytchnikova and Diop, 2006: 2; Salim and Hossain, 2006: 2570).

Agricultural Trade Liberalization: Theoretical Insights

Trade liberalization has gained popularity since David Ricardo's analysis of *comparative advantage* which explained how trade would benefit economies with differences in opportunity costs of production (Amoroso *et al.*, 2011: 1; Rahman, 2008: 1; Whaples, 2006: 1; Zhang, 2008: 25). However, the effects of trade liberalization on development have been a subject of debate for centuries (Chang *et al.*, 2009: 1; George, 2010; Gingrich and Garber, 2010: 1; Nicita, 2004: 1; Rahman, 2008: 1). Ever since David Ricardo's critique on the Corn Laws through to the current debate on globalization, few topics in economics have been more seriously contested as the importance of trade liberalization for economic development (Chang, *et al.*, 2009: 1; George, 2010; Gingrich and Garber, 2010: 1; Nicita, 2004: 1). The arguments in favor of free trade are well known and date back at least to Adam Smith's analysis of market specialization and the principle of absolute advantage in 1776 (Chang, *et al.*, 2009: 1; Rahman, 2008: 1; Zhang, 2008: 24, 25). Classical economists argue that free trade is an engine of growth, while protection leads to wasteful use of resources, thereby adversely affecting economic development (Chang, *et al.*, 2009: 1; Krugman and Obstfeld, 2006: 218, 219; Rodriguez and Rodrik, 1999: 8; Stiglitz and Charlton, 2007: 32, 33; Stone and Shepherd, 2011: 5; UNIDO, 2010: 1). On the contrary, critics argue that openness has its costs and sometimes it could be detrimental to economic development (Chang, *et al.*, 2009: 1; Rodriguez and Rodrik, 1999: 8; Stiglitz and Charlton, 2007: 32, 33; Stone and Shepherd, 2011: 5; UNIDO, 2010: 1).

According to arguments for trade liberalization, agricultural trade liberalization was likely to direct scarce resources into areas of Bangladesh's comparative advantage, promoted specialization resulting in higher productivity and growth, accelerated investment by allowing access to bigger markets and permit economies of scale, encourage imports of previously unavailable or scarce capital goods and intermediate inputs for agriculture (Ahmed and Sattar, 2004: 1; McCulloch *et al.*, 2003: 15, 16; Montalbano, 2011: 1; Stone and Shepherd, 2011: 5; Zhang, 2008: 175). Liberalization of import markets for fertilizers, pesticides and irrigation equipment might have facilitated farmers' access to the improved production technology and enabled

Bangladesh's agriculture to reallocate resources for specialization in efficient rice crop cultivation (Ahmed and Sattar, 2004: 1; McCulloch, *et al.*, 2003: 15, 16; Montalbano, 2011: 1; Stone and Shepherd, 2011: 5; Zhang, 2008: 175). However, this argument assumes that resources such as land and labor would be fully employed in the first place, whereas in Bangladesh unemployment is persistently high. Therefore, agricultural trade liberalization could result in labor temporarily going from low-productivity protected sector to zero-productivity unemployment (Chang, *et al.*, 2009: 1; Krugman and Obstfeld, 2006: 405, 406; Panagariya, 2004: 1150; Stiglitz and Charlton, 2007: 25, 26).

Advocates of free trade argue that agricultural trade liberalization would produce a knowledge spill-over effect through technological innovation that is embodied in imported machinery, leading to higher growth in Bangladesh's agriculture. This growth would enhance returns to the economy's relatively abundant factor of production – the unskilled labor – by raising real wages for them, thereby contributing to an improvement in income distribution (Ahmed and Sattar, 2004: 2; Gabre-Madhin *et al.*, 2002: 2; Islam and Habib, 2007: 4; Klytchnikova and Diop, 2006: 6; Lee and Vivarelli, 2006: 7).

On the contrary, the critics of trade liberalization argued that trade liberalization could reduce the wages of unskilled labor, thereby widening the income gap between the rich and the poor in the economy (Acharya, 2011: 60; Hoque and Yusop, 2010). Similarly, even if agricultural trade liberalization brings about higher economic growth through technological transformation, the income gap between the poor and the rich might be widened in the long run because the poor could not afford investments associated with the adoption of new technology to increase production (Acharya, 2011: 60; Banerjee and Newman, 2004: 2; Rakotoarisoa, 2011: 147). Moreover, as the economy is open to global competition, the domestic economic factors are more likely to be influenced by international price shocks and other global variables than by domestic factors (Montalbano, 2011: 8; Sugimoto and Nakagawa, 2011: 12). Thus, there is greater pressure on policy-makers to ensure macroeconomic stability for sustaining economic growth.

Agricultural trade liberalization may not produce similar welfare impact across all rural households. In practice, some households might have experienced benefit and others might have experienced loss from this liberalization resulting in diverse distributional consequences across rural households (Hossain and Verbeke, 2010: 77, 78; Isik-Dikmelik,

2006: 3; Klytchnikova and Diop, 2006: 4; World Bank, 2008: 29, 53). The reason for such possible diverse outcomes can be explained by the fact that agricultural trade liberalization affects the prices of goods and factors. Thus, the changes in prices of goods and factors may diversely affect the welfare of rural households due to their various degrees of involvement with goods and factors markets such as producers or consumers; farm or non-farm households; and net buyers or net sellers (Hossain and Verbeke, 2010: 77, 78; Isik-Dikmelik, 2006: 3; Klytchnikova and Diop, 2006: 4; World Bank, 2008: 29, 53).

In Bangladesh, amongst agricultural products, rice is dominant in terms of staple food, volume of production and cultivated areas. Therefore, farmers use the main proportion of agricultural inputs such as fertilizers, pesticides, irrigation and seeds for rice cultivation. From the theoretical point of view, agricultural trade liberalization may affect productivity of rice farmers through technological transformation. As a result, this may improve producers' welfare through the positive effect on their profits (Anderson, 2004: 1; Klytchnikova and Diop, 2006: 5; OECD, 2010: 11). However, productivity improvement may also translate into lower output prices, which in turn have a negative effect on producer welfare (Anderson, 2004: 1; Gabre-Madhin, *et al.*, 2002: 2; Klytchnikova and Diop, 2006: 5). Some studies such as Byerlee *et al.* (2005); Islam and Habib (2007); Mendola (2007); Alauddin and Quiggin (2008) argued that gains from new agricultural technology might influence the poor directly by raising incomes of farm households and indirectly by raising employment and wages of functionally landless laborers, and also by lowering the price of food staples.

The majority of farm households in Bangladesh are involved in small and subsistence farming. Thus, at different times of a year, most of the farm households belong to two groups simultaneously: producers and consumers. However, over the course of the year they can be defined as either net sellers or net buyers of rice (Deaton, 1989: 4; Isik-Dikmelik, 2006: 3; Karfakis *et al.*, 2011: 6, 25; Klytchnikova and Diop, 2006: 5; World Bank, 2008: 109). An increase in income of net sellers due to an improvement in productivity of rice depends on elasticity of output and elasticity of price. The income of net sellers will rise as long as elasticity of output is greater than elasticity of price with respect to technological change (Isik-Dikmelik, 2006: 3; Karfakis, *et al.*, 2011: 8; Klytchnikova and Diop, 2006: 5; Yu and Fan, 2011: 448). If output increases faster than the price falls in response to technological change,

net sellers will enjoy a higher income and welfare, even if some of the gains accrue to net buyers. Therefore, the net effect will depend on whether the household is ultimately a net buyer (subsistence farmer) or a net seller (market-integrated farmer) (Isik-Dikmelik, 2006: 3; Karfakis, *et al.*, 2011: 25; Klychnikova and Diop, 2006: 5; Yu and Fan, 2011: 448).

Like many other developing countries in the world, the agricultural labor market in Bangladesh is imperfect in terms of competition and mostly seasonal in nature (Ahmed, 1978: 1281; Hossain and Verbeke, 2010: 77; Klychnikova and Diop, 2006: 6; Stiglitz and Charlton, 2007: 89). Therefore, disguised unemployment and under-employment are the common features of this labor market (Ahmed, 1978: 1281; Briones, 2006: 79; Hossain and Verbeke, 2010: 77; Klychnikova and Diop, 2006: 6). Similarly, an important characteristic of Bangladesh's agriculture is that households often work on their own farm in subsistence agriculture, rather than working for a wage in the farm or non-farm sectors. Therefore, changes in rice price and productivity induced by technological transformation can affect the implicit trade-off between family work and wage employment (Dorosh and Shahabuddin, 2002: 3; Hossain and Verbeke, 2010: 77; Isik-Dikmelik, 2006: 15; Karfakis, *et al.*, 2011: 3; Klychnikova and Diop, 2006: 6). By stimulating rice production and the demand for agricultural labor, the lower rice price may benefit the rural poor through the induced wage response and increased real income (Hossain and Verbeke, 2010: 77; Isik-Dikmelik, 2006: 15; Karfakis, *et al.*, 2011: 3; Klychnikova and Diop, 2006: 6; Ravallion, 1990: 474). From theoretical standpoints, technological improvement is likely to increase productivity of factors and volume of output. However, this increased output is often valued at a lower price, induced by productivity improvement (Gabre-Madhin, *et al.*, 2002: 3; Isik-Dikmelik, 2006: 16; Klychnikova and Diop, 2006: 6; Stiglitz and Charlton, 2007: 26). Thus, if marginal productivity of factors increases faster than prices fall in response to technological transformation in agriculture, employment and wages will rise simultaneously, benefiting agricultural wage earners (Gabre-Madhin, *et al.*, 2002: 6; Hossain and Verbeke, 2010: 77; Isik-Dikmelik, 2006: 15; Klychnikova and Diop, 2006: 6). Therefore, agricultural wage earners in Bangladesh might have benefited from technological innovation because of agricultural trade liberalization.

The impact of technological transformation on the rural livelihoods of Bangladesh's economy may come through an increase in real income resulting from productivity improvement and reduced rice prices (Karfakis, *et al.*, 2011: 4; Klytchnikova and Diop, 2006: 7; Rahman, 2000: 3, 4). With a given demand function of rice, an increase in the volume of rice production (supply) induced by productivity improvement may cause a decrease in the rice price, leading to an increase in real income. This argument is based on the fact that rice is basically a non-traded good in Bangladesh; the price of rice is thereby much more affected by domestic factors than by international price fluctuations (Hossain and Verbeke, 2010: 90; Karfakis, *et al.*, 2011: 23, 24; Klytchnikova and Diop, 2006: 7; Rahman, 2000: 3, 4). Therefore, an increase in the volume of rice production may induce a decline in the rice price, under a given domestic demand function, to attain a new equilibrium in the domestic rice market.

Agricultural trade liberalization may also affect non-agricultural markets and employment opportunities in rural areas through multiplier effects that are referred to as the consumption growth multipliers. Multiplier effects are agricultural backward and forward production linkages, i.e. increased demand for production inputs such as fertilizers, pesticides and irrigation (backward linkage) and higher demand for processing services such as rice mills and food production from rice (forward linkage) (Klytchnikova and Diop, 2006: 6; OECD, 2010: 5). This linkage-effect plays an important role in stimulating overall growth in the rural economy. Silva and Grossi (2001) found that in Brazil, the rise of rural non-farm enterprises was evident in regions that were mainly agricultural. They argued that the development of agriculture created demand for services to agriculture, leading to the growth of the non-farm sector. Hendriks and Lyne (2003) conducted a study on agricultural growth multipliers for two communal areas of KwaZulu-Natal in South Africa and found that agricultural growth significantly stimulated the development of the non-farm sector. They found that agricultural growth required the adoption of new technology and participation of new markets, leading to the growth of non-farm employment and income through multiplier effects that created both forward and backward linkages to agriculture. Similarly, Klytchnikova and Diop (2006) argued that India experienced a positive multiplier effect of the Green Revolution during the 1960s and 1970s. Similarly, other studies such as Byerlee *et al.* (2005); Valenzuela *et al.* (2005); and

World Bank (2008) found that agricultural trade liberalization had a significant impact on the development of the rural non-farm sector. Therefore, technological transformation in agriculture has the potential to stimulate overall growth of the economy through multiplier effects on rural non-farm employment and incomes as well as on consumers' demand for goods and services outside agriculture.

Agricultural Trade Liberalization in Bangladesh: Empirical Studies

Bangladesh has been pursuing the green revolution programme since its independence in 1971, with a view to increasing productivity in agriculture for attaining self-sufficiency in food production. Agricultural trade liberalization and technological transformation in the 1980s and the early 1990s generated further momentum in Bangladesh's agriculture, resulting in a significant increase in the volume of rice production which led to self-sufficiency in food-grains by the early 1990s (Ahmed and Sattar, 2004: 19; Islam and Habib, 2007: 4; Rahman, 2008: 16). Some major studies related to agricultural trade liberalization are discussed as follows.

Mujeri (2002) argued that while Bangladesh's greater integration into the world economy was generally "pro-poor", the gains were relatively small due to structural bottlenecks and other constraints. In another study, Mujeri and Khondker (2002) found that trade liberalization stimulated growth in the agricultural sector.

The World Bank (2002) showed that the benefits of economic growth during the 1990s had not been distributed evenly across the regions, suggesting an increase in inequality in the post-liberalization era. Dorosh and Shahabuddin (2002) found that agricultural trade liberalization and market deregulation contributed to rice price stabilization in the 1990s. They argued that price stabilization following major production shortfalls was largely due to private sector imports.

Hossain and Deb (2003) found that trade liberalization improved productivity in the agricultural sector, but Bangladesh did not have a comparative advantage on major agricultural products. Although it had a comparative advantage in the production of high yielding varieties (HYV) of rice, the unit cost of production was relatively high due to government policy. They argued that government should formulate policies to support farmers.

Hossain (2004) found that the long-term trend in agricultural production showed a cyclical pattern with a few years of rapid growth followed by a few years of stagnation. He argued that, since most of the land and other agricultural resources were tied up in rice production, agricultural diversification could not be achieved unless resources were released from rice cultivation.

The World Bank (2004) report showed that Bangladesh experienced a significant improvement of the rural non-farm sector in recent years. There might be a possible link between agricultural trade reforms and the development of non-farm sector through the multiplier effect of agricultural trade liberalization. The development of rural non-farm sector generated employment and income in the rural economy. In another report, the World Bank (2006) argued that trade liberalization made available cheap imports of agricultural inputs such as pesticides, irrigation equipment, fertilizers and seeds. The report claimed that the application of these inputs affected the environment adversely in the form of loss of soil fertility, loss of bio-diversity and water pollution.

Salim and Hossain (2006) found that there were wide variations in productive efficiency across farms as a result of agricultural reforms. Average efficiency increased modestly from pre-reform to the post-reform period. The efficiency differentials were largely explained by farm size, infrastructure, households' off-farm income and reduction of government anti-agricultural bias in relation to trade and domestic policies.

Klytchnikova and Diop (2006) found that reform in the agricultural sector contributed with a significant growth to the economy but, its impact on the reduction of rural poverty was considered very insignificant. They argued that agricultural trade liberalization improved the production of rice considerably, leading to a significant decrease in rice price. They found that net buyers gained and net sellers lost from this process. They argued that agricultural trade liberalization positively affected the welfare of the rural households in the form of changes in their income and livelihoods.

Rahman (2008) conducted a study on the impact of agricultural trade liberalization on sugarcane production in two villages of Veramara Upazila in the Kushtia District and on poultry farming in two villages of Savar Upazila in the Dhaka District. He found that trade liberalization adversely affected the production of sugarcane and increased dependence on sugar imports. Similarly, the previously protected

poultry sector became vulnerable because of an increase in input prices resulting from trade liberalization.

BBS (2009) found that during the last decade, significant changes took place in the agricultural sector. These changes included new production structures with a combination of irrigation, fertilizers, high yielding varieties of seeds and pesticides, mechanization in land preparation. All these changes contributed to an increase in production of food-grains in Bangladesh. This study provided basic statistical information on the number of agricultural holdings, their area and size; tenancy; irrigation status; land ownership; land use; agricultural labor force and other agricultural information such as poultry, livestock, fishery and forestry, in the post-liberalization era.

Nahar and Siriwardana (2009) conducted an ex-ante analysis using a computable general equilibrium (CGE) model and found that the complete removal of import tariffs could reduce absolute poverty for all groups, both in rural and urban areas. Hossain (2009) found that agricultural trade liberalization contributed to the development of minor irrigation dominated by shallow tube-wells leading to the expansion of Boro rice cultivation. Consequently, rice production increased significantly.

Hossain and Verbeke (2010) found that agricultural trade liberalization contributed to the integration of rice markets across the six regions (divisions) and therefore the long-run equilibrium was stable. Conversely, in the short run the market integration as measured by the magnitude of market interdependence and the speed of price transmission between the divisional markets was weak.

Alam, *et al.* (2011) attempted to analyze the welfare impact of policy interventions in food grain markets during 1980–2003. They argued that the loss in consumer surplus exceeded the gain in producer surplus from government control over food grain markets, resulting in a deadweight loss for the society. Conversely, they further argued that the gain in consumer surplus and government revenue from liberalization of food grain markets was greater than the loss in producer surplus, implying a net welfare gain to the society. Similarly, Karfakis *et al.* (2011) attempted to identify the impact of rice price changes on household welfare. They argued that rural households exhibited higher welfare losses than urban households from an increase in the rice price.

Conclusion

The above analyses suggest that the impacts of agricultural trade liberalization in all studies were mixed: some studies found positive impacts, but others found negative or insignificant impacts. Agricultural trade liberalization influenced technological transformation and productivity of agriculture. The impact of agricultural trade liberalization on poverty reduction was insignificant. Agricultural trade liberalization increased inequality and income gap between the rich and the poor, suggesting that the rich gained more than the poor from liberalization. This paper argues that mere 'price is right' or trade liberalization would not automatically promote welfare. Besides trade reform measures, there was the need for complementary policies to enhance productivity, as well as to reduce inequality between the poor and the rich. This paper argues that the effects of agricultural trade liberalization on the Bangladesh's economy were consistent with the debate regarding the effects of trade liberalization on economic development. The evidence remained mixed and loaded with criticisms on the grounds of choice of liberalization determinants, model specifications and methodology, as well as other measurement shortcomings. The review suggests that the literature is inconclusive and outcomes are largely case-specific.

References

- Acharya, S. (2011). Making Unilateral Trade Liberalisation Beneficial to The Poor. *Socio-Economic Planning Sciences*, 45(2): p. 60-71
- Ahmed, I. (1978). Unemployment and Underemployment in Bangladesh Agriculture. *World Development*, 6(11-12): p.1281-1296
- Ahmed, M. U. (2004). Socio-Demographic Correlates of Rural Poverty in Bangladesh: A Case Study of Gaibandha Sadar and Tanore Upazilas. *Bangladesh e-Journal of Sociology*, 1(2)
- Ahmed, N., Bakht, Z., Dorosh, P., Shahabuddin, Q. (2007). *Distortion to Agricultural Incentives in Bangladesh*. Agricultural Distortion Working Paper No 32, Washington DC: the World Bank
- Ahmed, S., Sattar, Z. (2004). *Trade Liberalization, Growth and Poverty Reduction: The Case of Bangladesh*. World Bank Policy Research Working Paper 34204, Washington DC: The World Bank
- Alam, M. J., Buysse, J., Begum, I. A., Wailes, E. J., et al. (2011). The Welfare Impact of Policy Interventions in the Foodgrain Markets

- in Bangladesh. *Journal of Economic Policy Reform*, 14(3): p. 215-225
- Alauddin, M., Quiggin, J. (2008). Agricultural Intensification, Irrigation and the Environment in South Asia: Issues and Policy Options. *Ecological Economics*, 65(1): p. 111-124
- Amoroso, N., Chiquiar, D., Ramos-Francia, M. (2011). Technology and Endowments as Determinants of Comparative Advantage: Evidence from Mexico. *The North American Journal of Economics and Finance*, 22(2): p.164-196
- Anderson, K. (2004). *Agricultural Trade Reform and Poverty Reduction in Developing Countries*. World Bank Policy Research Working Paper 3396, Washington DC: The World Bank
- Banerjee, A., Newman, A. (2004). *Inequality, Growth and Trade Policy*. mimeo: MIT
- BBS. (2007). *Report of the Household Income and Expenditure Survey 2005*. Dhaka: Bangladesh Bureau of Statistics, Government of Bangladesh.
- BBS. (2009). *Preliminary Report on Agriculture Census 2008*. Dhaka: Bangladesh Bureau of Statistics (BBS), Government of Bangladesh
- Briones, R. M. (2006). Employment Generation for the Rural Poor in Asia: Perspectives, Patterns and Policies. *Asian Development Review*, 23(1): p. 87-116
- Byerlee, D., Diao, X., Jackson, C. (2005). *Agriculture, Rural Development, and Pro-poor Growth: Country Experience in the Post-Reform Era*. Agricultural and Rural Development Discussion Paper 21, Washington DC: the World Bank
- Chang, R., Kaltani, L., Loayza, N. V. (2009). Openness can be Good for Growth: The Role of Policy Complementarities. *Journal of Development Economics*, 90(1): p. 33-49
- Dorosh, P., Shahabuddin, Q. (2002). *Rice Price Stabilization on Bangladesh: An Analysis of Policy Options*. MSSD Discussion Paper No. 46, Markets and Structural Studies Division, International Food Policy Research Institute
- Draper, P., Sally, R. (2005). *Developing Country Coalitions in Multilateral Trade Negotiations: Aligning the Majors?* The South African Institute of International Affairs (SAIIA)
- Gabre-Madhin, E., Barrett, C. B., Dorosh, P. (2002). *Technological Change and Price Effects in Agriculture: Conceptual and*

- Comparative Perspectives*. Washington DC: International Food Policy Research Institute (IFPRI)
- George, C. (2010). *The Truth about Trade: The Real Impact of Liberalization*. Zed Books
- Gingrich, C. D., Garber, J. D. (2010). Trade Liberalization's Impact on Agriculture in Low Income Countries: A Comparison of El Salvador and Costa Rica. *Journal of Developing Areas*, 43(2): p.1-17
- Hendriks, S. L., Lyne, M. C. (2003). Agricultural Growth Multipliers for two Communal Areas of KwaZulu-Natal. *Development Southern Africa*, 20(3): p. 423-444
- Hoque, M. M., Yusop, Z. (2010). Impacts of Trade Liberalisation on Aggregate Import in Bangladesh: An ARDL Bounds Test Approach. *Journal of Asian Economics*, 21(1): p. 37-52
- Hossain, M. (2004). *Poverty Alleviation through Agriculture and Rural Development in Bangladesh*. CPD Occasional Paper Series 39, Dhaka: Center for Policy Dialogue
- Hossain, M. (2009). *The Impact of Shallow Tubewells and Boro Rice on Food Security in Bangladesh*. IFPRI Discussion Paper 00917, International Food Policy Research Institute (IFPRI)
- Hossain, M., Deb, U. K. (2003). *Trade Liberalization and the Crop Sector in Bangladesh*. CPD Occasional Paper Series 23, Dhaka: Center for Policy Dialogue.
- Hossain, M. I., Verbeke, W. (2010). Evaluation of Rice Markets Integration in Bangladesh. *The Lahore Journal of Economics*, 15(2, Winter 2010): p.77-96
- Isik-Dikmelik, A. (2006). *Trade Reforms and Welfare: An Ex-Post Decomposition of Income in Vietnam*. World Bank Policy Research Working Paper 4049, Washington DC: the World Bank
- Islam, M. J., Habib, S. M. A. (2007). *International Financial Institutions in Bangladesh: Implications of Selected Policies for Agriculture Sector and Rural Livelihood*. Dhaka: Development Research Network.
- Karfakis, P., Velazco, J., Moreno, E., Covarrubias, K. (2011). *Impact of Increasing Prices of Agricultural Commodities on Poverty*. ESA Working Paper No. 11-14, Agricultural Development Economics Division, Food and Agriculture Organization of the United Nations

- Klytchnikova, I., Diop, N. (2006). *Trade Reforms, Farms Productivity, and Poverty in Bangladesh*. World Bank Policy Research Working Paper 3980, Washington DC: the World Bank
- Krueger, A. O. (2010). Trade Liberalisation and Growth in Developing Countries. In J. J. Siegfried (Ed.), *Better Living Through Economics*. Cambridge, MA: Harvard University Press
- Krugman, P. R., Obstfeld, M. (2006). *International Economics: Theory and Policy*. New York: Addison-Wesley
- Lee, E., Vivarelli, M. (2006). *The Social Impact of Globalisation in the Developing Countries*. CSGR Working Paper No 199/06
- McCulloch, N., Winters, L. A., Cirera, X. (2003). *Trade Liberalization and Poverty: A handbook*. London: Centre for Economic Policy Research
- Mendola, M. (2007). Agricultural Technology Adoption and Poverty Reduction: A Propensity-Score Matching Analysis for Rural Bangladesh. *Food Policy*, 32(2007): p. 372-393
- Ministry of Finance. (2010). *Bangladesh Economic Review*. Dhaka: Ministry of Finance, the Government of Bangladesh
- Ministry of Finance. (2012). *Bangladesh Economic Review 2012*. Dhaka: Ministry of Finance, the Government of Bangladesh
- Montalbano, P. (2011). Trade Openness and Developing Countries' Vulnerability: Concepts, Misconceptions and Directions for Research. *World Development*, 33(9): p.1489-1502
- Mujeri, M. (2002). Globalization-Poverty Links in Bangladesh: Some Broad Observations. In R. Sobhan (Ed.), *Changes and Challenges: A Review of Bangladesh's Development 2001*. Dhaka: Center for Policy Dialogue/University Press Ltd
- Mujeri, M., Khondker, B. (2002). *Poverty Implications of Trade Liberalization in Bangladesh: A General Equilibrium Approach*. Dhaka: Bangladesh Institute of Development Studies
- Nahar, B., Siriwardana, M. (2009). Impact of Trade Liberalization on Poverty in Bangladesh. *South Asia Economic Journal*, 10(2): p. 325-369
- Nicita, A. (2004). *Who Benefited from Trade Liberalization in Mexico? Measuring the Effects on Household Welfare*. World Bank Policy Research Working Paper 3265
- OECD. 2010. *Transformation of Food Production and Distribution Systems*. Organisation for Economic Co-operation and Development (OECD), Trade and Agricultural Directorate

- Committee for Agriculture Working Paper:
TAD/CA/APM/WP(2010)10/FINAL
- Panagariya, A. (2004). Miracles and Debacles: In Defence of Trade Openness. *World Economy*, 27(8): p.1149-1171
- Rahman, T. (2008). *Political Economy of Trade Liberalisation in Bangladesh: Impact of Trade Liberalisation on Bangladesh Agriculture*. Jaipur: CUTS International
- Rakotoarisoa, M. A. (2011). The impact of Agricultural Policy Distortions on the Productivity Gap: Evidence from Rice Production. *Food Policy*, 36(2): p. 147-157
- Ravallion, M. (1990). Rural Welfare Effects of Food Price Changes under Induced Wage Responses: Theory and Evidence from Bangladesh. *Oxford Economic Papers, New Series*, 42(3): p. 574-585
- Rodriguez, F., Rodrik, D. (1999). *Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence*. NBER Working Paper 7081, Cambridge: National Bureau of Economic Research
- Salim, R., Hossain, A. (2006). Market Deregulation, Trade Liberalization and Productive Efficiency in Bangladesh Agriculture: An Empirical analysis. *Applied Economics*, 38(21): p. 2567-2580
- Silva, J. G. D., Grossi, M. E. D. (2001). Rural Non-farm Employment and Incomes in Brazil: Pattern and Evolution. *World Development*, 29(3): p. 443-453
- Stiglitz, J. E., Charlton, A. (2007). *Fair Trade for All: How Trade can Promote Development*. New York: Oxford University Press
- Stone, S. F., Shepherd, B. (2011). *Dynamic Gains from Trade: The Role of Intermediate Inputs and Equipment Imports*. OECD Trade Policy Working Paper No. 110
- Sugimoto, Y., Nakagawa, M. (2011). Endogenous Trade Policy: Political Struggle in the Growth Process. *Structural Change and Economic Dynamics*, 22(1): p.12-29
- UNIDO. (2010). *Growth, Exports and Technological Change in Developing Countries: Contributions from Young Scholars*. Research and Statistics Branch Working Paper 26/2009, Viena: United Nations Industrial Development Organisation (UNIDO)
- Valenzuela, E., Ivanic, M., Ludena, C., Hertel, T. W. (2005). *Agriculture Productivity Growth: Is the Current Trend on the*

- Track to Poverty Reduction?* Paper presented at the American Agricultural Economics Association annual meetings, Providence, Rhode Island, July 24-27
- Whaples, R. (2006). Do Economists Agree on Anything? Yes! *The Economists' Voice*, 3(9): 1-6, (Article 1)
- World Bank. (2002). *Poverty in Bangladesh: Building on Progress*. Economic Management Sector Unit Report, Washington DC: the World Bank
- World Bank. (2004). *Promoting the Rural Non-Farm Sector in Bangladesh*. Report No. 2971-BD, Washington DC: the World Bank
- World Bank. (2006). *Bangladesh: Country Environmental Analysis*. Bangladesh Development Series Paper No. 12, The World Bank Country Office, Dhaka: the World Bank
- World Bank. (2008). *World Development Report 2008: Agriculture for Development*. Washington DC: the World Bank
- World Bank. (2011a). *World Development Indicators 2011*. Washington DC: the World Bank
- World Bank. (2011b). *World Development Report 2011*. Washington DC: the World Bank
- Yu, B., Fan, S. (2011). Rice Production Response in Cambodia. *Agricultural Economics*, 42(3): p. 437-450
- Zhang, W. B. (2008). *International Trade Theory: Capital, Knowledge, Economic Structure, Money, and Prices over Time*. Springer-Verlag Berlin Heidelberg.

