

## GLOBAL FOOD INSECURITY AND THE UNEQUAL PLAYING FIELD IN WORLD AGRICULTURE

WANKI MOON\*

### **Keywords**

global food insecurity, unequal playing field in agricultural trade, pro-poor growth, development box

### **Abstract**

Global food insecurity is a challenge of grave importance that our humanity confronts still in the era of globalization in the 21st century. The article critically assesses the role of agricultural trade in coping with the challenge. In particular, it highlights how the lack of a level playing field in agricultural trade poses an obstacle in promoting global food security. Referring to institutions and rules governing international trade, the playing field in agricultural trade has grown unequal and biased against the agriculture of developing countries during the postwar period due to agricultural protection (tax) in developed (developing) countries and the current WTO trade rules. Full liberalization of agricultural trade may or may not repair the uneven playing field, hence it is not certain whether it would be effective in ameliorating the global food insecurity problem and in boosting agricultural growth in Sub-Saharan Africa and South Asia, which represent the two regions most vulnerable to food insecurity. However, agricultural trade liberalization is not expected in the future for political and other reasons. The article contends then that the next best strategy is to mend the uneven playing field by instituting a mechanism like the Development/Food Security Box which is comparable to the Green Box for the agriculture of developed countries.

---

\* Professor, Department of Agribusiness Economics, Southern Illinois University, US.  
e-mail: wmoon@siu.edu

## I. Introduction

Pundits characterize the post-war world as an era of development and globalization, implicating cooperative efforts on the part of the Western developed world in improving the living standard of the rest of the world. Despite such a supposedly cooperative period of the seven decades since the end of World War II, our world has not been very successful in delivering food security to the developing world, while facing an increasing uncertainty in the capacity of the global food system to feed the growing world population (Rosegrant and Cline, 2003; IAASTD, 2009; Godfray et al, 2010; Foresight, 2011). There are nearly one billion people suffering from the chronic lack of access to food and another billion suffering from micronutrient deficiencies. While the overall number of food insecure people has been declining over the last decades, largely thanks to the remarkable economic performances in China and India, the number of such people has increased noticeably in Sub-Saharan Africa and to a lesser extent in South Asia. Hence, global food insecurity is becoming a problem of the lack of agricultural and broader economic development in the two regions (Rao and Caballero, 1990; Collier and Gunning, 1999; Wade, 2004; Diao et al, 2007; Bezemer and Headey, 2008).

There are a number of factors contributing to global food insecurity including problems internal to the particular regions of Sub-Saharan Africa and South Asia (e.g., lack of investment in agricultural infrastructure; missing markets for inputs such as fertilizers, or credit); issues in connection with the developed world (e.g., farm subsidies); and problems at the international level such as trade and trade rules. The article aims at making contribution to mitigating the global food insecurity problem by examining rules and institutions shaping international trade in agriculture. In fact, expanding agricultural trade has been suggested as a mechanism useful for promoting global food security by many researchers and political leaders around the world. In a response, the World Trade Organization (WTO) has been making persistent efforts to reduce trade barriers in agriculture over the last decades. Proponents for such WTO efforts contend that freer trade in agriculture would contribute to growing the global economy by fostering specialization of production across the world. Studies estimate that there would be substantial increases in national incomes and welfare associated with trade liberali-

zation in agriculture for nearly all countries involved (e.g., Anderson and Martin, 2005; Hertel and Keeney, 2006; McCalla, 2003). For example, Laborde, Martin and van der Mensbrugghe (2011) show that about two-thirds of the economic costs of trade barriers at the global level are associated with distortions in the agricultural sector; nearly 70 percent of the potential benefits from liberalizing global trade would come from reforms in agricultural trade; and given that there is not much distortion to be corrected in the manufacturing sector and therefore not much to be gained from further liberalization in the sector, it is important to liberalize agricultural trade as a way of stimulating and growing the global economy.

The purpose of the article is to critically assess the role of agricultural trade in coping with the global food insecurity problem. To that end, the article undertakes the following four steps. First, the article shows how positive (negative) agricultural protection in developed (developing) countries and WTO trade rules (the traffic light box system) made the playing field in agricultural trade unequal; and demonstrates why the unequal playing field is harmful for agricultural development in the developing world and detrimental to promoting global food security.<sup>1</sup> Second, the article shows that full trade liberalization in agriculture may or may not be helpful in ameliorating the global food insecurity problem depending on whether food insecure developing countries (FIDCs) can overcome the structural disadvantages that have accumulated over the second half of the 20th century in connection with the unequal playing field. If the governments of the FIDCs can craft and implement agricultural development strategies effectively, they may develop the capacity to significantly increase agricultural production and promote global food security. Third, the article provides robust empirical evidence demonstrating that the FIDCs need to be successful in agricultural growth/development first in order to promote industrialization and overall economic development and that agricultural growth is the pro-poor growth strategy most effective in reducing poverty and hunger. The evidence explains why it is important to remove the uneven playing field in ameliorating the global food insecurity problem. Lastly, the article argues that, given there is a slim chance of liberalizing agricultural trade in the real world, the next best strategy for the promotion of global food security

---

<sup>1</sup> The playing field in agriculture refers to a set of prevailing global and domestic institutions and rules governing international trade such as domestic policies (subsidies/taxing) and WTO trade rules (the traffic light box system and special and different treatment (SDT) provisions).

is to counterbalance the extant uneven playing field by creating mechanisms like Food Security or Development Box that would generate policy space for the FIDCs to promote agricultural development and reduce poverty/hunger within the global food system.

## II. Previous Literature Review

The notion of global food security has two distinctive aspects. First, it connotes the capacity of the global food system to produce food sufficient enough to feed all people living on this planet in a sustainable manner. This definition of global food security emphasizes the supply side capacity to produce food given environmental and natural resources constraints (e.g., arable land, water shortages, soil/land degradations, carbon emissions). Second, it refers to the ability of each person on this planet to have access to nutritious food under any conditions and underlines the importance of effective distribution system within a country and across countries, more consistent with Amartya Sen's Entitlement Approach to food security. While the first type of global food security is a grave challenge that our world should cooperate to address, the more urgent problem is the second type of global food security. That is, significant portions of people in some regions of the world (particularly Sub-Saharan Africa and South Asia) live with less than a dollar per day, frequently preventing them from accessing sufficient amounts of food. The majority of them live in rural areas and their agricultural productivity is not high enough to secure sufficient quantities for domestic consumption or to earn sufficient amount of income from the sales of their commodities.

Conceptually, agricultural trade has immediate connections with both aspects of global food security. First, agricultural trade (and trade rules) can have significant effects (both positive and negative) on the capacity of the global food system to produce food via various channels such as specialization (scale economies), technological advances/transfers, land use patterns, production efficiency (both technological and organizational), and sustainability of natural resources (e.g., water; soil; land degradation; carbon emissions; biodiversity). Second, agricultural trade can have profound effects on food distribution across re-

gions/countries. We would normally conceptualize that freer trade would be more conducive to efficient food distribution across countries because countries would have better access to world agricultural commodity markets. However, the distribution issue may not be that straightforward and a number of questions may arise. What if global commodity markets are dominated by a few large multinational trading corporations and international prices significantly diverge from competitive prices? What if net food-importing countries do not have the financial means to procure food in international markets? What if natural disasters (more likely in this climate change era) hit a region of major agricultural exporting countries under a very specialized international agricultural production system? What if food-importing least developed countries cannot promote economic growth/development without first undergoing agricultural growth?

### III. The Rise of the Unequal Playing Field in Agricultural Trade

Given the important ramifications of agricultural trade in dealing with the global food insecurity problem, it would be useful to have knowledge of the determinants of international trade in agriculture. The history of agricultural trade over the last two centuries shows that the pattern of agricultural trade would be determined by two broad factors: (i) the endowments of natural and other resources and (ii) nation-states' long-term strategies/goals/policies.

#### 1. Natural Comparative Advantage

Agricultural trade has occurred in accordance with differences in the endowments of natural resources and production factors (land, soil, climate, water, labor, capital), which determined whether or not a country possesses natural comparative advantage in agriculture.<sup>2</sup> This type of trade has played an immensely important role in matching countries with food shortages to those with food surpluses. For exam-

---

<sup>2</sup> While the endowments of natural resources are likely to remain relatively unchanged over time, the quantity of other production factors such as skilled and unskilled labor and physical, human, and financial capital is expected to change substantially as economies undergo structural transformations from low-income to high-income countries. The change will then bring about a shift in the initial status of comparative advantage.

ple, countries in the temperate climate zones import tropical fruits and vegetables from countries in the tropical and semi-tropical zones. There is near complete specialization of production for tropical commodities (e.g., coffee, banana, cocoa, mango) across the world. Countries in the arid and semi-arid regions constrained by water shortages have innate disadvantages in producing food grains and therefore they import the bulk of what they eat from foreign countries. In East Asian countries such as Japan and Korea, food/feed crop production costs are significantly higher than other regions given their limited arable lands and therefore more than 70 percent for Korea and 50 percent for Japan of what they eat are imported from foreign countries.

## 2. Artificial Advantages and Disadvantages Due to Distorted Agricultural Incentives

Agricultural trade has also occurred owing to artificial advantages or disadvantages constructed during the postwar period by various types of government policies including taxing/subsidizing and public support systems (e.g., R&D investments and extension services). There is considerable literature on the political economy of agricultural protection showing how government intervention in developed countries increased domestic agricultural production, distorted international markets, depressed international commodity prices, and became the source of major international disputes through WTO multilateral trade negotiations (Swinnen, 1994; de Gorter and Swinnen, 2002; Moon et al, 2016). The total monetary amount of the distortions of agricultural trade in OECD countries has peaked at about \$300 billion in 2005 (to put the number in perspective, compare it to the size of the ODA of \$60 billion per year). The EU and the US have grown as major food grain exporters as a consequence of such subsidies coupled with extensive public investments that have strengthened agricultural infrastructure markedly during the postwar period. The extent of government intervention in developed countries has remained virtually unchanged even after the implementation of the Uruguay Agreements on Agriculture (URAA) in 1994, sustaining and reinforcing the policy-induced artificial advantages.

The political economy of agriculture in the developing world has been radically divergent from that of the developed world. Typically, developing countries have adopted farm policies biased toward urban citizens and the manufactur-

ing sector, effectively taxing their agricultural sectors (Binswanger and Deninger, 1997; Bates, 2014; Bezemer and Headey, 2008). In need of revenues and foreign exchanges, the governments of newly independent developing countries transferred resources from agriculture to manufacturing/industrial sectors so as to achieve two objectives: (i) maintain/strengthen their political power by serving the interests of the urban elites, and (ii) promote industrialization and development. Agricultural exports were the dominant source of economic activities in many developing countries and their governments used state-owned marketing boards to exploit agricultural exporting industries by procuring crops at prices well below world market prices. Worse, they have barely made investments required for building infrastructure for inputs (e.g., land; credit; fertilizers; seed) and commodity markets to function well, causing extensive market failures and keeping the agricultural sector inefficient.

### 3. The Rise and Deepening of the Unequal Playing Field

Such asymmetry in agricultural policies created and expanded differences in productivity between developed and developing countries. As a consequence, the agricultural sectors of the FIDCs fell behind developed countries in international competitiveness.<sup>3</sup> The divergence in productivity was reinforced by two changes in international rules of trade that were biased against the agriculture of the developing world: (i) WTO trade rules with the traffic light box system and (ii) the structural adjustment programs associated with the Washington Consensus in the 1980s and 1990s. These two changes in combination with the policy differences between developed and developing countries made the playing field in international markets unequal, rendering substantive advantages to the agriculture of developed countries. The unequal playing field contributed to transforming many African countries from net food-exporting countries before the 1970s to net food importing countries thereafter.

First, regarding WTO trade rules, in the face of seemingly unnegotiable conflicts of agricultural interests across diverse groups of countries during multi-

---

<sup>3</sup> Some researchers trace the origin of the current uneven playing field in world agriculture to the colonialism and imperialism era of the 18th and 19th centuries (e.g., Bertocchi and Canova, 2002; Alonso, 2011).

lateral trade negotiations, the GATT/WTO kept introducing exemptions to the principle of free trade so that various countries/regions can pursue strategies that suit their specific needs. For example, the green box system is designed to help the developed world to address issues related to the notion of multifunctional agriculture while attempting to reduce the extent of trade distortion.<sup>4</sup> If a domestic program belongs to the green box (e.g., crop insurance, environmental protection, extension services, rural development), it is supposed to be decoupled from production decisions; minimally trade-distorting; and not subject to reduction requirements (that is, WTO member countries can use unlimited amounts of fiscal outlays as payments for green box policies). In efforts to decouple their policies, developed countries have been shifting their farm policies from price supports and deficiency payments to direct payments, and from current acres/yields to historical acres/yields in calculating the amounts of payment to farm producers. Nevertheless, research shows that the effects of decoupling have been very modest and green box policies still caused overproduction, continuing to distort trade (Baffes and de Gorter, 2005). Josling (2004) points out three channels through which supposedly decoupled policies may exert influences on production decisions: (i) any payment may encourage production if it relieves income constraints on investment, (ii) even when payments are based on historical acres and yields, expectations of the eventual reassessment of those bases can cause farmers to retain land in production of particular crops, and (iii) safety-net policies that reduce the downside risk of fluctuations in income clearly can have an effect of keeping resources in farming.

As is the Green Box for developed countries, the special and differential treatment (SDT) provisions are geared for developing and least developed countries. The SDT provisions call for developed countries to provide preferential

---

<sup>4</sup> According to the WTO framework for negotiations, distortions in agricultural trade result from three primary sources: (i) export-promoting subsidies, (ii) import restrictions (market access) including tariffs and nontariff barriers, and (iii) domestic subsidies (market deficiency payment, direct payment) and supply management programs (payment for setting aside arable lands). While it is straightforward to measure trade distortions arising from the first and second sources, there could be controversies about whether and how the third source (domestic policies/programs) is trade-distorting. The WTO devised the so-called 'box system' to address such controversies. The box system divides domestic policies/programs into blue, amber, and green boxes based on whether or not farm policies are decoupled from production decisions or prices.



access to developing countries, permitting them to be to a varying degree exempted from reduction commitments in the three areas of domestic support, export subsidies, and market access. The SDT, however, suffers from problems including: (i) it is too general to be of realistic assistance to developing countries; (ii) it is only a transitory institution compared to the box system of much more perpetuity; (iii) it is concessionary; (iv) it fails to create incentives for long-term investments critical for agricultural developments in the FIDCs; and (v) it may justify the continuation of agricultural protectionism in developed countries and abate the motivation for global trade reforms (Hoekman, Michalopoulos, and Winters, 2004; Badiane, 2007; Weis, 2007). Outside of the WTO, the EU devised various preferential status rules designated for former colonies in Africa and exempting tariffs and other restrictions on imports from them. In sum, the current WTO trade rules represent a set of compromises among the ideal of free trade, special aspects of agriculture, and conflicts of national/agricultural interests across countries. Yet they are more aligned with agricultural interests of the developed world as evidenced by the transitory nature of the SDT provisions in contrast to the box system as a permanent institution permitting developed countries to use decoupled subsidies unlimited.

Second, the structural adjustment programs forced the developing world to reduce their average tariff rates significantly from 30 percent during the 1980s to 15 percent during the 1990s. They also dismantled public subsidy and support programs for their agricultural sectors, following the Washington Consensus (WC) referring to a set of guidelines for developing countries' policy reforms centered around macroeconomic stabilization, liberalization for trade and investment, privatization of state enterprises, and deregulation.<sup>5</sup> Studies show that the WC policies have failed in advancing the economies of the developing world (Stiglitz, 1998; Gore, 2000; Rodrik, 2006), prompting some researchers (e.g., Chang, 2004) to view the WC policies as like "kicking away the ladder."<sup>6</sup> For List and Chang, the

---

<sup>5</sup> The WC policies were practiced in the 1980s by the Washington-based international financial institutions (World Bank and IMF) and the US Treasury in the name of the structural adjustments program as a conditionality associated with the offering of foreign aids to developing countries.

<sup>6</sup> The phrase was used first by List in his book (entitled *The National System of Political Economy* published in 1841) to portray the behavior of Great Britain preaching to other countries (including Germany) to liberalize their economies only after it had gained

developed world's preaching of free trade and laissez-faire to developing countries is little more than concealing the protectionist policies that have worked very well for themselves. While the phrase of kicking away the ladder has been used primarily in the context of inter-state competition in promoting national economic development through their promotion of the manufacturing sector, it is equally applicable to the agricultural sector as revealed through the behaviors of developed countries attempting to convince developing countries that it would be in their best interest to liberalize their agricultural markets.

When combined, the biases in international rules of trade gave rise to the uneven playing field and further expanded the gap between developed and least developed countries in international competitiveness and their agricultural production capabilities, making many of the latter become dependent on food imports for feeding their people (Rao, 2009; Weis, 2007; De Schutter, 2009; De Schutter, 2011). The unequal playing field in world agriculture resulted in the following five disparate groups of countries in terms of agricultural production capability and international competitiveness: (i) the artificially strong agricultural sector in the EU nurtured and maintained by state intervention, (ii) naturally strong (and state supported) agricultural sectors in high-income (e.g., US, Canada, New Zealand, Australia) and middle-income countries (e.g., Brazil, Argentina, Indonesia, Malaysia, Viet Nam, Thailand), (iii) naturally uncompetitive agricultural sectors in food-importing high-income countries (e.g., Japan, Korea, Norway, Switzerland, Taiwan), (iv) net food-importing developing and least developed countries in Africa and South Asia that have the largest number of food insecure people, thereby posing the greatest challenge in promoting global food security. The five groups of countries are wildly divergent in terms of the nature of their agricultural problems, becoming the primary source of the difficulty of the WTO Doha Round to strike a multilateral deal (Moon, 2011). The last group of countries is the primary victim of the unequal playing field in the sense that they were deprived of the opportunity to nurture their agricultural sectors, while becoming the outlet for

---

competitive advantage in the manufacturing sector in the 19th century in part as a consequence of protecting it for long since the 15th century. Chang (2002) revived the same phrase in his book (entitled *Kicking Away the Ladder*) to highlight the significance of allowing some space for developing countries to use tariffs, subsidies, public investment, and export promotion as an alternative development strategy to the Washington Consensus.

surpluses from developed countries in the form of food aid and export (Gonzalez, 2002; Gonzalez, 2004; Pingali and Stringer, 2003). In short, they turned into net food-importing countries after undergoing sets of policies targeted at trade liberalization, privatization, and deregulation associated with the structural adjustment programs and became dependent on food imports for feeding their peoples.

#### IV. Possible Effects of Agricultural Trade Liberalization on Food Insecure Developing Countries

Having shown the adverse impacts of the unequal playing field on the agriculture of developing and least developed countries, the solution one can immediately think of for addressing the global food insecurity problem is to fully liberalize agricultural trade both in developed and developing countries (i.e., eliminating any tariff and nontariff barriers and domestic subsidies/programs including trade-distorting Green Box and SDT policies).<sup>7</sup> There have been studies attempting to estimate the effects of agricultural trade liberalization on various dimensions of the global food system such as world prices, trade flows, quantities traded, terms of trade, global welfare, impact on the agricultural sector, and global income (Anderson et al, 2005; Hertel and Keeney, 2006; Tokarick, 2005). Yet, assessing the effects of agricultural trade liberalization is not a straightforward task by any means (Westhoff et al, 2004; Tokarick, 2008; Ackerman and Gallagher, 2008). The task is made complicated given the need for researchers to make choices about various factors (e.g., the degree of elasticity of substitutions between imported and domestic goods; baseline/reference scenarios; groupings of countries; partial or general equilibrium model; whether to incorporate imperfectly competitive markets; whether or not dynamic). For example, concerning the impact on the developing world, studies estimate that full liberalization of trade in agriculture would confer disproportionately greater benefits to the developing world because it would have access to the agricultural markets in developed countries,

---

<sup>7</sup> We can think of trade liberalization only in developed countries, allowing food insecure developing countries to protect and nurture their agricultural sectors. We think that this will be most effective in helping the **FIDCs** to achieve agricultural development. However, we don't discuss that option in this article because it is too radical even as an idea that will never be acceptable to the farm sectors in developed countries.

thereby helping its agricultural sector to grow (Barichello, McCalla, and Valdes, 2003; Anderson and Martin, 2005). Anderson (2005) estimates that the gains to the developing world would be greater than the size (\$60 billion per year) of official development assistance (ODA) and the size (\$150 billion per year) of foreign direct investment (FDI) from the OECD to developing countries. They suggest that even unilateral liberalization by the developing world without corresponding liberalization from the developed world would generate significant benefits to itself and help to promote global food security.

However, the studies above on the developing world as a whole are not very informative in deciphering the effects of trade liberalization on ameliorating global food insecurity because the developing world consists of radically divergent/heterogeneous subgroups such as the Cairns group (middle-income large agricultural exporting countries); Sub-Saharan African countries (food-importing least developed countries); or food importing middle income countries. Hence, this paper focuses on examining the potential impact of agricultural trade liberalization on agricultural growth/development specifically in the FIDCs. Full trade liberalization will on the surface remove the uneven trade rules and create a level playing field, thereby placing every country under the same international rules. Nonetheless, the gaps in productivity and international competitiveness caused by the unequal playing field and the structural disadvantages due to the agricultural taxing and lack of investment in infrastructure may continue to linger for long. That is, the playing field may have become leveled but with unequal players competing in international markets. As noted earlier, proponents of free trade in agriculture pointed to a number of positive benefits from freeing agricultural trade including ameliorating the global food insecurity problem. The following analysis examines what would happen to the agriculture of food-insecure developing countries if agricultural trade is fully liberalized and examines whether trade liberalization is a viable option in promoting global food security.

### 1. Short-Run Effects of Trade Liberalization

Suppose that the WTO were able to abolish all tariff and nontariff trade-distorting barriers and domestic subsidies in agriculture across the world. The effects of such a sweeping liberalization could be analyzed for the short- and long-run.<sup>8</sup> In the short-run, the effects of trade liberalization would largely reflect the influence

of today's static comparative advantages or disadvantages as shaped by both natural resources and factor endowments and past government policies/strategies. Initially, thanks to the elimination of export and domestic subsidies in developed countries, production of agricultural commodities would decline there, while the elimination of tariffs would increase demand and production elsewhere (Fabiosa et al, 2005). Accordingly the prices would rise if the decreased production in developed countries is larger than the increased production elsewhere (Aksoy and Beghin, 2005). It is estimated that the prices would rise initially and increase food import bills of the FIDCs, worsening the food insecurity problem for people living with incomes less than \$2 per day (Bouet et al, 2005). Trade would expand substantially and the Cairns group countries (Argentina, Brazil, Thailand, Vietnam, South Africa) and agriculturally abundant developed countries such as New Zealand and Australia are likely to experience substantial expansions in their agricultural sectors, while other developed countries in Europe and East Asia undergoing contractions (Fabiosa et al, 2005). Many countries in Sub-Saharan Africa and South Asia are expected to experience contractions in their production, given their lack of competitiveness in agriculture at the present time that is in part the consequence of the adverse effects that the unequal playing field have imposed on them. Further, they would lose preferential (most favored nations; MFN) status to markets in developed countries, further contracting their exports. Some net food-importing developed countries in Europe and Asia would face gradual phase-out of domestic agricultural production given their structural disadvantages associated with unfavorable natural resources endowments and high cost production structure.

---

<sup>8</sup> It is widely known that international markets in agricultural commodities are oligopolistic, with multinational grain trading corporations such as Cargil, ADM, and Bunge exercising considerable market power. As such, it is necessary to examine the behaviors of multinational corporations to precisely assess the effects of trade liberalization. Studies show that the presence of market power of the trading corporations would reduce the benefits of trade liberalization of the developed world to developing countries (Sexton et al, 2007; Swinnen and Vandeplass, 2010). Hence, the incorporation of multinational agribusiness trading corporations in the analysis of this section would not change but reinforce the result that food-importing developing countries would not benefit from trade liberalization both in the short- and long-run in terms of growing their agricultural sectors. In order to highlight the role of the state in determining the effects of trade liberalization and show its impact on food-importing developing countries, the analysis in this section does not bring up multinational grain trading corporations.

## 2. Long-Run Effects of Trade Liberalization

The long-term outcomes would depend not only on today's comparative advantages but also on dynamic comparative advantages that would be shaped over time in accordance with the goals and strategies each country may pursue in the long-term. In other words, while the long-term trade pattern in agriculture would be still subject to natural comparative advantages to a significant extent, states may be able to shift it through strategic investments in agricultural infrastructure and extension services that may help reduce agricultural production costs or improve productivity significantly. Therefore, it is not straightforward to make a prediction of what agricultural trade pattern would look like in the long-term. There may be states that would be willing to allocate more resources to supporting the agricultural sector and foster more domestic production than would be under the prevailing comparative advantage. Other states may not be willing to commit to agriculture, thereby going along with whatever international markets would dictate and willing to accept potential contractions in their agricultural sectors.

In view of such substantial roles of states' goals and strategies, we can anticipate two scenarios resulting from agricultural trade liberalization in the long-term. The first scenario is that Sub-Saharan African countries would emerge as net exporters given their cheap labors; huge open markets in developed countries; and unexploited potential of agricultural production in the region at the expense of the agriculture of some developed countries in Europe and East Asia, thereby achieving greater specialization of production across the world. This prediction is contingent on proactive and effective roles of the governments of food insecure developing countries in making sustained investments in the agricultural sector in areas like helping input markets (machines; credit; chemicals) rise and function well; risk sharing; and providing elementary/secondary/tertiary education, extension services, health services and social safety nets; providing physical infrastructures (roads; harbors). Then, Sub-Saharan Africa may emerge as a competitive agricultural producing region in the future. With the markets in developed countries wide open, African agriculture can be nourished up for the task of meeting the global challenge of increasing food production by utilizing high yielding varieties seed, fertilizers, irrigation technology and infrastructure that are commonly used in other parts of the world (Thurow, 2010). Then, countries in Africa along with those in Latin America and Southeast Asia may end up taking a larger share

of agricultural exports. Australia, New Zealand, Canada, and the US are likely to strengthen their position as agricultural exporters whereas some countries in Europe and East Asia would have to depend on international markets for greater portion of their food supply.

The second scenario is that food insecure countries in Africa and South Asia remain dependent on food imports even after fully liberalizing agricultural trade, indicating that their agricultural sectors would have failed to grow to gain international competitiveness. This scenario may arise due to three possibilities: (i) the playing field may be level, but the agricultural sectors in Africa are too far behind in competitiveness to compete with the agriculture of food-exporting developed or large ag-exporting middle-income countries; (ii) inabilities or ineffectiveness of the governments of African countries or government failures in providing infrastructure needed for enhancing agricultural productivity and institutions needed for constructing markets for credits, risks, and other inputs; (iii) developed countries have greater capacity to invest in agriculture than developing or least developed countries and they have strong commitment to helping their agriculture in terms of R&D investment and extension services, hence they maintain sustainable competitive advantage in agriculture. In addition, developed countries are expected to better cope with potentially harmful effects of climate change than developing or least developed countries. This second scenario of Sub-Saharan Africa remaining dependent on food imports would not be a significant problem from the perspective of global food insecurity if Africa were able to achieve sustained economic growth as a consequence of reallocating more of their resources to manufacturing and industrial sectors.

## **V . Why Is It So Important to Eliminate the Unequal Playing Field In Promoting Global Food Security?**

The above analysis indicates that the cumulative adverse effects of the unequal playing field may pose threats to the developing world even when agricultural trade is fully liberalized. On the one hand, if the governments of food insecure developing countries adopt policies/strategies for agricultural growth rigorous enough to overcome the disadvantages incurred by the unequal playing field thus

far, their agricultural sectors would have the potential to rise as a competitive agricultural production region, thereby reducing/eliminating food insecurity in the regions. On the other hand, the harmful effects of the unequal playing field are so persistent that the agriculture of food insecure developing countries may fail to improve productivity and lose competition with foreign imports, thereby failing to initiate the process of agricultural growth. This section shows why agricultural growth is important in food insecure developing countries by presenting empirical evidence on its two crucial roles: (i) as a precondition for overall economic development, and (ii) as a strategy most effective in reducing poverty and hunger, hence called the so-called “pro-poor growth”.

Research shows that agricultural growth plays an indispensable role for industrialization. Historically speaking, all developed and middle-income countries have commonly undergone robust growths in agricultural productivity prior to or at least simultaneously with industrialization processes. African countries have unsuccessfully attempted during the 1980s and 1990s to bypass agriculture and achieve industrialization directly, causing their economies to lag far behind other developing countries. They dismantled government subsidies to the agricultural sector (credit, fertilizer, machines), and substantially reduced public investment needed for building agricultural infrastructure and support systems. The detrimental effects on African agriculture of liberalization, privatization, and lack of public efforts to build food system infrastructure have impeded industrialization and retarded the overall economy. The literature presents robust evidence underlining the need for growing the agricultural sector as a development strategy (Thirtle, Lin, and Piesse, 2003; Gollin, Parente, and Rogerson, 2002; Tiffin and Irz, 2006; Gollin, Parente, and Rogerson, 2007; and Awokuse, 2009). In particular, Gollin, Parente, and Rogerson (2002) show that agricultural productivity growth explains a substantial portion of the growth of per capita GDP for developing countries and demonstrate that per capita GDP growth can be decomposed into agriculture (54 percent), followed by sectoral shifts (29 percent) and manufacturing sector (17 percent). For developed countries, they show that improvements in the productivity of nonagricultural sectors would determine economic growth in the long-run. The studies above illustrate that the absence/lack of growth in agricultural production and productivity would result in poor performances in overall economic growth and it would not be feasible to have economic growth/development without first starting the process of agricultural growth.



Known as the pro-poor growth, agricultural growth is particularly effective in reducing the poverty/hunger rates in developing countries. With the benefits of economic growth often not transmitted to people living with less than \$1 a day and more than two-thirds of the poor people live in farm/rural areas, agriculture is an industry that can make the strongest effect on ameliorating poverty by increasing farm/rural incomes via increased agricultural production/productivity. In consideration of these multiple roles of agriculture in a development process, Timmer (2005) noted that an agriculture-driven growth strategy, if it does not sacrifice aggregate growth, directs a greater share of income to the poor; i.e. it is more “pro-poor”, thereby placing agriculture at the center of the pro-poor development strategy. In support of Timmer, empirical literature highlights positive linkage between improvements in agricultural productivity and poverty reduction (e.g., Irz, Lin, Thirtle, and Wiggins, 2001; Ravallion and Datt, 1996; Fan, Hazell and Thorat, 2000; Christiaensen et al, 2006). Given such strong quantitative/statistical evidence confirming the role of agriculture in poverty reduction, policy-makers in developing countries, donor countries, and international development organizations have started to pay renewed interest to agriculture (Timmer, 2005).

The two reasons above eloquently demonstrate why agricultural growth should be the most essential economic development strategy in the FIDCs and show why it is so critical to get rid of the unequal playing field in world agriculture and create a global environment for them to advance agricultural development.

## VI. Discussions and Conclusions

The postwar history of agricultural policies around the world in combination with the institution of WTO trade rules and the structural adjustment programs associated with the Washington Consensus in the 1980s and 1990s have resulted in the current unequal playing field in agricultural trade, which in turn was detrimental to promoting global food security. Proponents for free trade argue that trade liberalization in agriculture would be conducive to helping food insecure developing countries grow their agricultural sectors, reduce poverty, and contribute to redressing the global food insecurity problem. The argument may or may not

be valid depending on whether states can successfully guide the process of agricultural development and gain international competitiveness. There is ample evidence showing that agricultural growth requires proactive support by the state in multiple ways including the provision of physical infrastructure, irrigation, extension services, and the facilitation of the rise of the markets for credits, risks, and other essential inputs for agricultural production (Chang, 2009).

Proponents for free trade further argue that unilateral trade liberalization by the developing world would generate significant gains for itself. This argument has a major flaw. In the case of the unilateral liberalization, developing countries would receive the gains predominantly in the form of enhanced consumers' welfare that stems from a reallocation of resources more aligned with the static comparative advantage but at the expense of the agricultural production sector by exposing it to greater competition when it really needs protection and nourishment from the government. In other words, there may be short-term benefits to food consumers but in the long-term food insecure developing countries may be deprived of the opportunity to grow its agricultural production capacity and lay the groundwork for industrialization.

The mission of the WTO was to undo the interventions and distortions states have done in the postwar period (dismantle agricultural protection around the world to achieve a global system of specialized production), thereby creating a trade pattern that would be determined by natural comparative advantage. The experiences of the last few decades, however, show that the mission is a daunting task with the Doha Round multilateral trade negotiations in deadlock without much hope of making significant progress in reducing trade barriers in agriculture (McCalla, 2003). The entrenched domestic politics surrounding farm protection coupled with the diversity of agricultural roles across different regions/countries makes it extremely difficult for all countries to accept one-size-fits-all rules for trade (Moon, 2015). We contend then that the next best strategy of promoting global food security is to repair the uneven playing field and permit the governments of food insecure developing countries to subsidize and support their agricultural sector. As mentioned earlier, the special and differential treatments (SDT) provisions are temporary and not legally binding, hence a weak instrument as a mechanism that should provide food insecure developing countries with the opportunity to advance their agricultural development. We argue that the WTO should

revoke the SDT and replace it with a permanent mechanism for food insecure developing countries much like the traffic light box system, which permitted the developed world to support and subsidize the agricultural sector unlimited as long as they remain within the Green Box policies.

An example of such a permanent mechanism for food insecure developing countries could be the Development/Food Security Box, which has been proposed by groups of developing countries during the Doha Round negotiations but abandoned due to the objections from other groups of countries contending that the Development/Food Security Box overlaps with the SDT provisions, therefore redundant. According to the proponents, the Development/Food Security Box would help small scale farmers in need of resources and stable supplies of staple foods by allowing food insecure developing countries to use higher tariffs and safeguards to promote greater domestic production of staple crops while outlawing developed countries' dumping of agricultural products. The Development/Food Security Box would stand to food insecure developing countries as the Green Box stands to developed countries. In other words, as developed countries desperately need the Green Box in promoting the provision of multifunctional goods services, which is important in maintaining the social fabric between rural and urban communities, food insecure developing countries urgently need the Development/Food Security Box in order to increase agricultural production; reduce poverty/hunger; and contribute to addressing the global food insecurity problem. In the absence of the full liberalization of agricultural trade, we believe that mechanisms like the Development/Food Security Box can help leveling the unequal playing field in world agriculture and offer a promising avenue to promote global food security.

## REFERENCES

- Ackerman, F. and Gallagher, K.P. 2008. "The shrinking gains from global trade liberalization in computable general equilibrium models: a critical assessment." *International Journal of Political Economy*, 37(1), pp.50-77.
- Aksoy, M. A. and J. C. Beghin. 2005. Introduction and Overview. In *Global Agricultural Trade and Developing Countries*, Ed by M. A. Aksoy and J. C. Beghin. The World Bank, Washington D.C.
- Anderson, K. 2005. "On the virtues of multilateral trade negotiations." *Economic Record*, 81(255), pp.414-438.
- Anderson, K. and Martin, W. 2005. "Agricultural trade reform and the Doha Development Agenda." *The World Economy*, 28(9), pp.1301-1327.
- Anderson, K., W. Martin, and D. van der Mensbrugge. "Distortions to World Trade: Impacts on Agricultural Markets and Farm Incomes." *Review of Agricultural Economics* 28(2), pp.168-194.
- Alonso, J. A. "Colonisation, Institutions and Development: New Evidence." *Journal of Development Studies*. 47: 937-958.
- Awokuse, T. O. Does Agriculture Really Matter for Economic Growth in Developing Countries? Selected paper presented at the Applied Agricultural Economics Association Annual Meeting, Milwaukee, WI, July 28, 2009.
- Badiane, O. 2007. Agricultural trade liberalization under Doha. *Agricultural trade liberalization and the least developed countries*, p.153.
- Baffes, J. and De Gorter, H. 2005. Disciplining agricultural support through decoupling. World Bank Policy Research Working Paper, (3533).
- Barichello, R.R., McCalla, A. and Valdes, A. 2003. "Developing countries and the World Trade Organization negotiations." *American journal of agricultural economics*, 85(3), pp.674-678.
- Bates, Robert H. 2014. *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies*. University of California Press.
- Bertocchi, Graziella and Canova Fabio. 2002. "Did colonization matter for growth? An empirical exploration into the historical causes of Africa's underdevelopment." *European Economic Review* 46: 1851-1871.
- Bezemer, D. and Headey, D. 2008. "Agriculture, development, and urban bias." *World Development*, 36(8), pp.1342-1364.
- Binswanger, H.P. and Deininger, K. 1997. "Explaining agricultural and agrarian policies in developing countries." *Journal of Economic Literature*, 35(4), pp.1958-2005.
- Bouët, A., Bureau, J.C., Decreux, Y. and Jean, S. 2005. "Multilateral agricultural trade liberalisation: The contrasting fortunes of developing countries in the Doha round." *The World Economy*, 28(9), pp.1329-1354.

- Chang, Ha-joon. 2002. *Kicking Away the Ladder*. London, UK: Anthem Press.
- Chang, H.J. 2009. "Rethinking public policy in agriculture: lessons from history, distant and recent." *Journal of Peasant Studies* 36, 477–515.
- Chilowa, W. 1998. "The impact of agricultural liberalisation on food security in Malawi." *Food Policy*, 23(6), pp.553-569.
- Christiaensen, L., Demery, L., and Kuhl, J. 2006. *The Role of Agriculture in Poverty Reduction: an Empirical Perspective*. Policy Research Working Paper No. 4013. Washington DC: World Bank.
- Collier, P. 2008. Facing the global problems of development. In: Alexandroff, A.S. (Ed.), *Can the World Be Governed: Possibilities for Effective Multilateralism*. Wilfrid Laurier University Press.
- Collier, P. and Gunning, J.W. 1999. "Explaining African economic performance." *Journal of economic literature*, 37(1), pp.64-111.
- De Gorter, H. and Swinnen, J. 2002. Political economy of agricultural policy. *Handbook of agricultural economics*, 2, pp.1893-1943.
- De Schutter, O. 2009. Report of the Special Rapporteur on the Right to Food. UN.
- De Schutter, O. 2011. The World Trade Organization and the post-global food crisis agenda: putting food security first in the international trade system. UN.
- Diao, X., Hazell, P.B., Resnick, D. and Thurlow, J. 2007. The role of agriculture in development: Implications for Sub-Saharan Africa (Vol. 153). Intl Food Policy Res Inst.
- Fan, S., Hazell, P., and Thorat, S. "Government Spending, Growth, and Poverty in India." *American Journal of Agricultural Economics*, 82 (2000): 1038-1051.
- Foresight. 2011. The future of food and farming. Final Project Report. The Government Office for Science. London.
- Fulginiti, L. E. and R. K. Perrin. "Agricultural Productivity in Developing Countries." *Agricultural Economics* 19 (1998): 45-51.
- Gemmell, T. A. Lloyd, and M. Mathew. "Agricultural Growth and Inter-Sectoral Linkages in a Developing Economy." *Journal of Agricultural Economics* 51 (2000): 352-370.
- Fabiosa, J., Beghin, J., de Cara, S., Elobeid, A., Fang, C., Isik, M., Matthey, H., Saak, A., Westhoff, P., Brown, D.S., Willott, B., Madison, D., Meyer, S., Kruse, J. 2005. "The Doha round of the world trade organization and agricultural markets liberalization: impacts on developing economies." *Review of Agricultural Economics* 27, 317–335.
- Godfray, H.C., Beddington, J.R., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Pretty, J., Robinson, S., Thomas, S.M., Toulmin, C. 2010. "Food security: the challenge of feeding 9 billion people." *Science* 327, 812–818.
- Gollin, D. S. L. Parente, and R. Rogerson. "The Role of Agriculture in Development." *American Economic Review*, Proceedings, 92 (2002): 160-164.
- Gollin, D. S. L. Parente, and R. Rogerson. "The Food Problem and the Evolution of International Income Levels." *Journal of Monetary Economics*. 54 (2007): 1230-1255.
- Gonzalez, C.G. 2002. "Institutionalizing inequality: the WTO agreement on agriculture,

- food security, and developing countries." *Columbia Journal of Environmental Law* 27, 433 (Available at SSRN) <http://ssrn.com/abstract=987945>.
- Gonzalez, C.G. 2004. Trade liberalization, food security and the environment: the neoliberal threat to sustainable rural development. *Transnational Law and Contemporary Problems* 14 (Available at SSRN) <http://ssrn.com/abstract=987150>.
- Gonzalez, C.G. 2006. "Deconstructing the mythology of free trade: critical reflections on comparative advantage." *Berkeley La Raza Law Journal* 65.
- Gore, Charles. 2000. "The Rise and Fall of the Washington Consensus as a Paradigm for Developing Countries." *World Development* 28: 780-804.
- Hertel, T.W. and Keeney, R. 2006. What is at Stake: The Relative Importance of Import Barriers, Export Subsidies, and Domestic Support. *Agricultural Trade Reform and the Doha Development Agenda*, 37.
- Hoekman, B., Michalopoulos, C., Winters, L.A. 2004. "Special and differential treatment of developing countries in the WTO: moving forward after Cancun." *World Economy* 27, 481-506.
- IAASTD (International Assessment of Agricultural Knowledge, Science and Technology for Development): Global Report. 2009. Ed by B. McIntyre, H. Herren, J. Wakhungu, R. T. Watson.
- Irz, X., Lin, L., Thirtle, C. and Wiggins, S. 2001. "Agricultural productivity growth and poverty alleviation." *Development policy review*, 19(4), pp.449-466.
- Josling, T. 2004. Domestic farm policies and the WTO negotiations on domestic support. In: Anania, G., Bohman, M.E., Carter, C.A., McCalla, A.F. (Eds.), *From Agricultural Policy Reform and the WTO: Where Are We Heading?* Edward Elgar.
- Koning, N. 2007. What can be learned from the history of developed countries? In: Koning, N., Pinstup-Adndersen, P., 2007. *Agricultural trade liberalization and the least developed countries*. In: Koning, N., Pinstup-Andersen, P. (Eds.), *Agricultural Trade Liberalization and the Least Developed Countries*. Springer.
- Krugman, P.R. 1986. *Strategic Trade Policy and the New International Economics*. The MIT Press, Cambridge, Mass.
- Laborde, D. and Martin, W., D. van der Mensbrugge. 2008. Implications of the 2008 Doha Draft Modalities for Developing Countries. In GTAP conference paper.
- Lele, U. 1990. Structural adjustment, agricultural development and the poor: Some lessons from the Malawian experience. *World Development*, 18(9), pp.1207-1219.
- McCalla, A.F. 2003. "Liberalizing agricultural trade: will it ever be a reality?" *Journal of Agricultural and Resource Economics* 28, 410-434.
- Michalopoulos, C. 2004. Rules and options for special and differential treatment. In: Ingco, M.D., Nash, J.D. (Eds.), *Agriculture and the WTO: Creating a Trading System for Development*. World Bank and Oxford University Press.
- Moon, W. 2011. "Is Agriculture Compatible with Free Trade?" *Ecological Economics*, 71, 13-24.

- Moon, W. 2015. "Conceptualising Multifunctional Agriculture from a Global Perspective: Implications for Governing Agricultural Trade in the Post-Doha Round Era." *Land Use Policy*, 49, 252-263.
- Moon, W., Han, D.B. and Shin, H.J. 2016. "International Political Economy, the National Food Security of South Korea and the Governance of Global Agriculture in the Post-Doha Era." *Journal of Comparative Asian Development*, pp.1-21.
- Pingali, P. Agriculture Renaissance: Making "Agriculture for Development" Work in the 21st Century. *Handbook of Agricultural Economics*, Volume 4. 2010.
- Pingali, P. and Stringer, R. 2003. Food Security and Agriculture in the Low Income, Food-Deficit countries: 10 years after the Uruguay Round (No. 03-18).
- Rao, J.M. 2009. "Challenges facing world agriculture: a political economy perspective." *Development and Change*, 40(6), pp.1279-1292.
- Rao, J.M. and Caballero, J.M. 1990. "Agricultural performance and development strategy: Retrospect and prospect." *World Development*, 18(6), pp.899-913.
- Ravallion, M. and Datt, G. 1996. "How important to India's poor is the sectoral composition of economic growth?." *The World Bank Economic Review*, 10(1), pp.1-25.
- Rodrik, Dani. 2006. "Goodbye Washington Consensus, Hello Washington Confusion?" *Journal of Economic Literature* 44: 973-987.
- Rosegrant, M., Cline, S.A. 2003. "Global food security: challenges and policies." *Science* 302, 1917-1918.
- Sexton, R. J., I. Sheldon, S. McCorriston, H. Wang. 2007. "Agricultural trade liberalization and economic development: the role of downstream market power." *Agricultural Economics* 36: 253-270.
- Stiglitz, Joseph E. 1998. "More Instruments and Broader Goals: Moving Toward the Post-Washington Consensus." The WIDER Annual Lectures. Helsinki, Finland: World Institute for Development Economics Research.
- Swinnen J. F. M. "A Positive Theory of Agricultural Protection." *American Journal of Agricultural Economics* 76 (1994): 1-14.
- Swinnen J. F. M., and A. Vandeplas. 2010. "Market power and rents in global supply chains." *Agricultural Economics* 41 (s1): 109-120.
- Thirtle, C., L. Lin, and J. Piesse. "The Impact of Research-Led Agricultural Productivity Growth on Poverty Reduction in Africa, Asia and Latin America." *World Development* 31 (2006): 1959-1975.
- Tokarick, S. 2005. "Who bears the cost of agricultural support in OECD countries?." *The World Economy*, 28(4), pp.573-593.
- Tokarick, S. 2008. "Dispelling some misconceptions about agricultural trade liberalization." *The Journal of Economic Perspectives*, 22(1), pp.199-216.
- Thurow, R. 2010. The fertile continent: Africa, agriculture's final frontier. Foreign Affairs (November/December).
- Tiffin, R., X. Irz. "Is Agriculture the Engine of Growth?" *Agricultural Economics* 35:

79-89.

- Timmer, C.P. 2005. Agriculture and pro-poor growth. Center for Global Development. Working paper # 63.
- Timmer, C.P. 2010. The agricultural transformation. In: Chenery, H., Srinivasan, T.N. (Eds.), *From Handbook of Development Economics*, vol. 1. Elsevier Science.
- Wade R. H. 2004. "Is Globalization Reducing Poverty and Inequality?" *World Development* 32: 567-589.
- Weis, T. 2007. *The Global food economy: the battle for the future of farming*. Zed Books. Fernwood Publishing, London.
- Westhoff, P., Fabiosa, J., Beghin, J. and Meyers, W. 2004. "Challenges in Modeling the Effects of Trade Agreements on the Agricultural Sector." *Journal of Agricultural and Applied Economics*, 36(2), pp.383-393.
- Williamson, J. 2000. "What should the World Bank think about the Washington Consensus?." *The World Bank Research Observer*, 15(2), pp.251-264.
- Wise, Timothy A. 2009. "Promise or pitfall? The limited gains from agricultural trade liberalization for developing countries." *Journal of Peasant Studies* 36(4): 2009.

Date Submitted: Sep. 3, 2016

Period of Review: Sep. 28, 2016 ~ Mar. 16, 2017