

Discussant comments on “How can trade improve food security in sub-Saharan Africa?”

Johan Swinnen, Visiting Professor, Center on Food Security and the Environment, Stanford University¹

It is a great honor to be invited to speak in this series and to follow up on the presentation by Kym Anderson. In my comments on the issue of trade and food security in Africa I attempt to be complementary to his arguments and presentation. I focus on four important aspects that draw from my own recent research.

- The focus of the trade policy debate related to food security
- Heterogeneity of impact
- Institutions and trade liberalization effects
- Food standards and global supply chains

The focus of the trade policy debate related to food security

Trade and food security discussions have changed significantly in recent years, reflecting a more general change in perspective on “the right price of food” (Swinnen 2011). Until 2007 the dominant view was that low prices for agricultural products were causing poverty and food insecurity among poor households in developing countries. Trade policy discussions emphasized the importance of reducing rich country farm subsidies and import tariffs to allow agricultural and food prices to increase.

This perspective (or at least the communication on it) changed dramatically after the food price spike in 2007-08 (Swinnen and Squicciarini 2012). In recent years the dominant concern is that high food prices are causing poverty and hunger by harming poor people who spend a large share of their incomes on food. The associated trade concern is the focus on export constraints imposed by food exporting countries.

An interesting implication of this new focus is that the issues are much more of a conflict among emerging/developing countries rather than a rich versus poor countries debate, since virtually none of the rich countries have imposed export constraints. Rather, export constraints have been implemented by countries such as China, India, Russia, and Kazakhstan.

Heterogeneity of impact

There have been a number of attempts to define “the right price of food”.² One of the more coherent is Stefan Tangermann’s (the former Director of Agriculture and Trade

¹ Swinnen is Director of the LICOS Center for Institutions and Economic Performance at the KU Leuven (Belgium) and President of the International Association of Agricultural Economists.

² The issue (and the dual role of food prices) is well captured in the book ‘Food Policy Analysis’ by Peter Timmer, Walter Falcon and Scott Pearson (1983): ‘*The incomes of the poor depend on their employment opportunities, many of which are created by a healthy and dynamic rural sector. Incentive prices for farmers are, in the long run, important in generating such dynamism and the jobs that flow from it. But poor people do not live in the long run. They must eat in the short run, or the prospect of long-run job creation will be a useless promise.*’

of the OECD) definition: “the right price of food is the undistorted price”. This is a logical and coherent definition, but it says nothing about the distributional impacts of food trade (liberalization) or about the heterogeneity of the effects – an issue that is obviously on the forefront of policymakers’ minds.

Trade (and price) liberalization may have very different distributional effects, depending on the nature of the regulations, and on the structure of the economy and the trade system.

For example, the liberalization of the trade and price regulations of the Socialist regimes in Eastern Europe, Eastern Asia and Africa had very different effects on farmers and food production, depending on whether these regulations were subsidizing them (as in Eastern Europe and the Soviet Union) or whether these regulations were taxing farmers (as in East Asia and much of Africa) (Anderson 2009; Macours and Swinnen 2002). In the former countries, farmers were hurt by the liberalization process. In Eastern Europe, the terms of trade (i.e. the ratio of output over input prices) for farmers fell by as much as 70 percent (Macours and Swinnen 2000). In the latter case, farmers benefited. The state imposed low prices on the products of poor farmers. The liberalization of prices and trade contributed to a huge reduction of poverty and enhanced food security in rural areas in Asia (Rozelle and Swinnen 2004).

Similarly, the recent food price spikes have had different effects on households and countries, depending on whether households and countries were net sellers (exporters) of food or net buyers (importers) (Aksoy and Hoekman 2010; Naylor and Falcon 2010).

Hence one should expect the removal of government trade interventions (such as import tariffs or export constraints) to have quite heterogeneous effects among poor people and poor countries. In fact, Verpoorten et al. (2013) find such heterogeneous effects among African countries and households, with rural households and food exporting countries, on average, reporting improved self-reported food security – and vice versa.

Institutions and (trade) liberalization

It is not controversial to mention that institutions matter. Yet it is not always understood very well how they impact trade and trade liberalization. One institution that we have shown to be quite important in influencing the impact of liberalization is the nature of institutions related to the exchange of goods. In particular, the effects of vertical coordination (VC) are very different from the effects of spot markets, which are the typical exchange institution used in text books and in many trade models.

In Swinnen et al. (2011) we document how various agricultural commodities in Africa have reacted quite differently to the liberalization processes in the 1980s and 1990s, and that these output and productivity responses were not consistent with the simple “getting prices right” model predictions. For example, fruits and vegetables and staple crops have performed much better than industrial crops (such as cotton, tea, cocoa, coffee, sugar). After a decade and a half of liberalization, output and productivity had

increased significantly for fruits and vegetables and staple crops. Instead, per capita output had declined for industrial crops.

The lack of output growth and productivity in industrial crops in Sub-Saharan Africa is often attributed to falling world prices for these commodities. Indeed, during the 1980s—when most Sub-Saharan Africa countries embarked on economic and agricultural reforms—prices for these commodities deteriorated sharply.

However, these price effects cannot explain the variation across commodity groups in Sub-Saharan Africa. According to a World Bank (1994) study, real producer prices for export crops rose during the 1980s in some Sub-Saharan African countries because the effects of price liberalization offset the effects of decreasing world market prices. This argument is supported by new estimates of nominal rates of assistance (Anderson and Masters 2009) indicating that the effect of the liberalization on prices was most positive for industrial crops. Taxation of industrial crops actually fell by around 30 percentage points (from ~ 40 percent to ~ 10 percent) over the decade and a half after the start of the reforms. The reduction in taxation—and hence the enhanced price incentive—was substantially lower for the other commodity groups: around 20 percentage points for fruits and vegetables and 5–10 percentage points for staple crops. If anything, these relative price changes would predict the opposite in terms of relative performance.

The differences in performance are, however, consistent with our model of vertical coordination as developed in Swinnen and Vandeplas (2011). For staples input requirements are generally low and therefore output growth has not been very dependent on VC. Instead, the sector benefited from liberalized prices and enhanced competition in spot markets, where many small private traders exchange products (Coulter and Poulton 2001; Fafchamps and Minten 2001).

In contrast, in the industrial crop sectors, the simultaneous lifting of price controls, introduction of competition, and associated collapse in state-controlled vertical coordination have caused major disruptions in input provision to farmers. These conditions led to below average output and productivity growth, despite a much stronger reduction in taxation than in other commodity groups. Input requirements are generally much higher in traditional export commodities than in staple food crops, and therefore the collapse of public input provision affected output and productivity much more.³

There was strong growth in the fruits and vegetables sector—much higher than in industrial crops. This sector grew because of two, quite different, mechanisms. First, production of low-value fruits and vegetables for the local market depended largely on labor inputs and thus benefited from the same effects as staple crops. Second, an important—and rising—part of the growth came from high-value fruits and vegetable chains for exports. This sector grew very rapidly after the reforms. The high value in these chains sustained post-reform private investments in the sector and encouraged private vertical coordination with quality upgrading, interlinking (with both large and small farms), and input provision to farmers. Several recent studies show how the vertical coordination mechanisms and their spillovers and productivity growth effects

³ This is similar as in Eastern Europe after the liberalizations in the 1990s. Unlike in Eastern Europe, however, massive private investments with contracting and input provision did not occur in the first decade of reform in African industrial crops, impeding a rapid recovery.

are similar to the growth mechanisms in Central and Eastern Europe (Maertens and Swinnen 2009; Minten et al. 2009; Maertens et al. 2011).

In summary, the different experiences of these commodities in Africa are consistent with the arguments that the nature (and the endogenous emergence) of exchange institutions are crucially important for understanding performance and poverty effects.

Food standards, trade, poverty and food security

During the past decade the requirements on product quality and food safety – and more recently also ethical and environmental concerns of food production – have increased rapidly, especially in the EU and other high-income regions. Food trade increasingly has to satisfy a series of stringent standards, imposed by public legislation as well as by private companies such as supermarkets and food processors. This is also reflected in the rapid growth of new Sanitary and Phytosanitary (SPS) and the Technical Barriers to Trade (TBT) announcements by WTO member states.

Several factors have contributed to this accelerated use of stringent food standards in recent years. The increased consumer demand for product quality and food safety has played a role as has the increased trade in fresh produce prone to food safety risks. The emphasis of large retail chains on product quality and food safety has also been an important factor.

Barriers or catalysts for trade?

Food standards have often been discussed to act as new non-tariff barriers to trade, diminishing especially the export opportunities of developing countries.⁴ Standards can potentially be used as protectionist tools to bar imports and protect domestic farmers and agri-food companies, in particular for developing countries that may lack the scientific and institutional capacity for WTO dispute settlement.

In addition, standards can act as barriers to trade because of the high costs of compliance and certification. Such costs might be high specifically for developing countries who generally lack the infrastructure, institutional, technical and scientific capacity for food quality and safety management and who face a wide divergence between national food quality and safety norms and international standards.

However, standards and certification schemes can also help to reduce transaction costs and increase developing countries' access to international markets. This process can be a catalyst for upgrading and modernization of developing countries' food supply systems that enhances their competitiveness. Some developing countries have indeed been successful in complying with increasing food standards and upgrading their export sectors as a basis for long term export growth (Jaffee and Henson 2004; World Bank 2005).

⁴ See the July 2012 special issue of the World Trade Review on “Standards and Non-Tariff Barriers in Trade” (Heckelei and Swinnen 2012).

Supply chain organization and poverty and development impacts

In fact, the proliferation of stringent private and public standards has caused dramatic changes in the way food production and trade are organized (Swinnen 2007).

Increasing standards induce increasing levels of vertical coordination in global supply chains. Empirical studies demonstrate the emergence of comprehensive VC schemes with extensive monitoring and complex contracting between large food companies and developing country producers, and the consequent shift towards vertical coordination (see case studies in Swinnen 2006, 2007).

The general view in the literature is that small farmers, and especially the poorest ones, are increasingly being squeezed out from high-standards supply chains because of high compliance and transaction costs, contributing to their marginalization (Reardon and Barrett 2000; Reardon et al. 1999). However, standards are themselves instruments for harmonizing product and process attributes over suppliers, and can as such also reduce transaction costs in dealing with a large number of small suppliers. Moreover, well-specified contracts include farm extension and assistance programs that can alleviate the financial and technical constraints small farmers face in meeting stringent standards. In fact, high-standards contract farming with tight contract-coordination and intensified farm assistance programs could provide a basis for constrained small farmers to participate in high-value export production. In addition, firms might prefer to contract with smaller farms because they might have a cost advantage – especially if the crops use labour intensive production methods with relatively small economies of scale, such as fresh fruit and vegetable production. Contract enforcement might also be less costly with small suppliers.

Empirical studies have demonstrated a beneficial effect for smallholders participating in high-standards contract production as VC schemes provide a basis for farmers to access the credit, inputs, and technology they need for upgrading their production in terms of productivity and quality and to increase their incomes and food security. An important element in this is also spillover effects on investment and food crop productivity (Dries and Swinnen 2004; Minten et al. 2009; Negash and Swinnen 2013).

Moreover, an important – and much overlooked – argument in the welfare analyses of high-standards trade is that poor households may benefit through employment effects. High-standards trade creates new employment opportunities in processing and handling of produce, and on vertically integrated estate farms and large contracted farms. These jobs are well-accessible for the poor, leading to increased rural incomes, reduced poverty and enhanced food security (e.g. Colen et al. 2012; Maertens et al. 2011). A large share of this employment is for women, creating interesting gender dynamics associated with the industrial reorganization of the supply chains (Maertens and Swinnen 2012).

In summary, understanding the link between standards on the one hand, and international competitiveness and performance of developing countries on the other hand, is crucial in the design of a broader development agenda as integration in global markets.

References

- Aksoy, M. A. and B. Hoekman (eds.). 2010. *Food prices and rural poverty*. Washington DC: World Bank.
- Anderson, K. 2009. *Distortions to agricultural incentives: A global perspective, 1955–2007*. Washington DC: World Bank.
- Anderson, K. and W. Masters. 2009. *Distortions to agricultural incentives in Africa*. Washington DC: World Bank.
- Colen L., Maertens, M., and J. Swinnen. 2012. Private standards, trade and poverty: GlobalGAP and horticultural employment in Senegal. *The World Economy*.
- Coulter, J. and C. Poulton. 2001. Cereal market liberalization in Africa. In *Commodity market reforms: Lessons of two decades*, Akiyama, T., Baffes, J., Larson, D.F., and P. Varangis P., eds. Washington, DC: World Bank.
- Dries, L. and J. Swinnen. 2004. Foreign direct investment, vertical integration and local suppliers: Evidence from the Polish dairy sector. *World Development* 32(9): 1525-1544.
- Fafchamps, M. and B. Minten. 2001. Property rights in a flea market economy. *Economic Development and Cultural Change* 49: 229-67.
- Heckelei, T. and J. Swinnen (eds). 2012. Special issue on ‘standards and non-tariff barriers in trade’. *World Trade Review* 11(3).
- Jaffee, S. and S. Henson. 2004. *Standards and agro-food exports from developing countries: Rebalancing the debate*. World Bank Policy Research Working Paper 3348.
- Macours, K. and J. Swinnen. 2000. Causes of output decline during transition: The case of Central and Eastern European agriculture. *Journal of Comparative Economics* 28(March): 172-206.
- Macours, K. and J. Swinnen. 2002. Patterns of agrarian transition. *Economic Development and Cultural Change* 50(2): 365-395.
- Maertens, M., Colen, L. and J. Swinnen. 2011. Globalization and poverty in Senegal: A worst case scenario? *European Review of Agricultural Economics* 38(1): 31-54.
- Maertens, M. and J. Swinnen. 2009. Trade, standards and poverty: Evidence from Senegal. *World Development* 37(1): 161-178.
- Maertens, M. and Swinnen, J. 2012. Gender and modern supply chains in developing countries. *Journal of Development Studies* 48(10): 1412-1430.
- Minten, B., Randrianarison, L. and J. Swinnen. 2009. Global retail chains and poor farmers: Evidence from Madagascar. *World Development* 37(11): 1728-1741.
- Naylor, R. and W. Falcon. 2010. Food security in an era of economic volatility. *Population and Development Review* 36 (4): 693-723.

- Negash, M. and J. Swinnen. 2013. Biofuels and food security: Micro-evidence from Ethiopia. *Energy Policy* forthcoming.
- Reardon, T. and C.B. Barrett. 2000. Agroindustrialisation, globalization and international development: An overview of issues, patterns and determinants. *Agricultural Economics* 23: 195-205.
- Reardon, T., Codron, J. M., Busch, L., Bingen, J., and C. Harris. 1999. Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. *International Food and Agribusiness Management Review* 2(3): 421-435.
- Rozelle, S. and J. Swinnen. 2004. Success and failure of reforms: Insights from transition agriculture. *Journal of Economic Literature* XLII (June): 404-456.
- Swinnen, J. (ed.). 2006. *The dynamics of vertical coordination in agrifood chains in Eastern Europe and Central Asia. Case studies*. Washington DC: World Bank Publications.
- Swinnen, J. (ed.). 2007. *Global supply chains, standards, and the poor*. CAB International Publications.
- Swinnen, J. 2011. The right price of food. *Development Policy Review* 29(6): 667-688.
- Swinnen, J. and P. Squicciarini. 2012. Mixed messages on prices and food security. *Science* 335(6067): 405-406.
- Swinnen, J. and A. Vandeplas, 2011, "Rich Consumers and Poor Producers: Quality and Rent Distribution in Global Value Chains", *Journal of Globalization and Development*, 2(2): 1-28.
- Swinnen, J., Vandeplas, A. and M. Maertens. 2011. Liberalization, endogenous institutions, and growth: A comparative analysis of agricultural reforms in Africa, Asia, and Europe. *World Bank Economic Review* 24(3): 412-445.
- Timmer, C.P., Falcon, W., and S. Pearson. 1983. *Food policy analysis*. Washington DC: World Bank.
- Verpoorten, M., Arora, A., Stoop, N. and J. Swinnen. 2013. Self-reported food insecurity in Africa during the food price crisis. *Food Policy* 39: 51-63.
- World Bank. 1994. *Adjustment in Africa: Reforms, results and the road ahead*. Washington, DC: World Bank.
- World Bank. 2005. *The dynamics of vertical coordination in agri-food chains in Eastern Europe and Central Asia. Implications for policy making and World Bank operations*. Washington, DC: World Bank.

Additional References

- Dries, L. and J. Swinnen. 2010. The impact of interfirm relations on investments: Evidence from the Polish dairy sector. *Food Policy* 35: 121-129.
- Maertens, M., Minten, B. and J. Swinnen. 2012. Modern food supply chains and development: Evidence from horticulture export sectors in Sub-Saharan Africa. *Development Policy Review* 30(4): 473-497.
- Maertens, M. and J. Swinnen. 2008. Standards as barriers and catalysts for trade, growth, and poverty reduction. *Journal of International Agricultural Trade and Development* 4(1): 47-62.
- Swinnen, J. and T. Vandemoortele. 2011. Trade and the political economy of food standards. *Journal of Agricultural Economic* 62(2): 259-280.
- Vandemoortele, T., Rozelle, S., Swinnen, J., and T. Xiang. 2012. Quality and inclusion of producers in value chains: A theoretical note. *Review of Development Economics* 16(1): 122-136.
- Xiang, T., Huang, J., Kancs, D., Rozelle S. and J. Swinnen. 2012. Food standards and welfare: General equilibrium effects. *Journal of Agricultural Economics* 63(2): 223-244.