

Standards, Trade and Developing Countries

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Increasing and Tightening Standards in Trade

Standards are increasingly dominating world trade and production. This is particularly important in sectors such as food and agricultural exports (Jaffee and Henson, 2005). Over the past decades food standards have increased with new regulations and requirements from national and international governments as well as from private actors and with standards focussing on different issues such as product quality, food safety and increasingly also ethical and environmental concerns. At the international level, food standards are set by the Codex Alimentarius, the International Plant Protection Convention (IPPC) and the World Organization for Animal Health (OIE); and regulated by the WTO Sanitary and Phytosanitary (SPS) agreement and the Technical Barriers to Trade (TBT) agreement. Under these agreements WTO member states still have the right to adapt and deviate from international standards as long as it is in the interest of human, plant and animal health and based on scientific principles. Most national and regional governments have their own food laws and regulations and apply their own food standards that are often stricter than international requirements.

In addition to international and national public regulations, many large food companies, supermarket chains and NGOs have engaged in establishing private food standards – that are often stricter than public requirements – and have adapted food quality and safety standards in certification protocols. Examples include GlobalGAP (formerly EurepGAP), the British Retail Consortium (BRC) Global Standards, Ethical Trading Initiative (ETI), Tesco Nature's Choice, Save Quality Food (SQV) Program, etc. Although private standards are legally not mandatory they have become de facto mandatory because of commercial pressure as a large share of buyers in international agri-food markets require compliance with such private standards (Henson and Humphrey, 2008). Private standards often go beyond food quality and safety specifications and include ethical and environmental considerations as well.

Food standards are also tightening with more stringent and strict requirements, especially for phytosanitary and hygiene requirements such as maximum residue levels and levels of contamination. For example, notifications of new SPS measures to the WTO have increased exponentially over the past 10 years (Henson, 2006). The EU General Food Law of 2002 introduced new food safety requirements and health issues such as the precautionary principle – stating that measures to protect human health are permissible on the ground of reasonable food safety concerns, even if scientific support is lacking – and traceability, implying the identification of the origin of feed and food in order to facilitate the withdrawal of produce in case of food safety hazards. Also EurepGAP requirements, which rapidly expanded internationally over the past couple of years as GlobalGAP standards, became more stringent with more and stricter compliance criteria. For example, the number of EurepGAP compliance criteria increased from 145 to 199 in just three years (EurepGAP, 2009).

Food standards have mainly emerged from high-income countries and regions, such as the EU and the US. A number of factors contribute to explaining the increase in food standards in global agri-food trade. A series of major food safety hazards in high-income countries has increased consumer and public concern on food-borne health risks and created an increased demand for food safety. In addition, rising income levels and changing dietary habits have increased the demand for high quality food. Consumers are also increasingly (made) aware of ethical and environmental aspects related to food production and trade, which has increased the need for specific standards related to these aspects. But also the increased trade in fresh food products such as fruits, vegetables, fish, and meat; which are prone to food safety risks and subject to specific quality demands by consumers; have increased the need to regulate

trade through standards. In addition, also the increased dominance of supermarkets in food chains contributes to explaining the increased importance of food standards. Large retail chains put much emphasis on freshness, product quality and food safety as a product differentiation strategy or as to reduce food safety risks and the costs related to the risk of selling unsafe food.

Concerns for Developing Countries

The increased proliferation and tightening of food standards has cast doubt on the beneficial effect of trade liberalization for poor countries. Major concerns are :

1. that standards act as new non-tariff barriers diminishing the export opportunities of the poorest countries who face multiple constraints in complying with stringent standards and upgrading their supply chains;
2. that poor farmers and smallholder suppliers are excluded from high-standards food supply chains because of their inability to comply with high standards; and
3. that these farmers are exploited in the chains because stringent standards decrease the bargaining power of small farmers vis-à-vis large food exporters and multinational food companies, and increase the possibilities for rent extracting in the chain.

Standards are therefore often seen as barriers to trade and barriers to development for poor countries. However, the arguments are subject to debate and also empirical studies have come to diverse conclusions about the effects of increasing and tightening food standards on trade and development. In the next two sections we further discuss these arguments and present some empirical evidence on the implications of increasing food standards for developing country food exports and for economic growth, rural development and poverty reduction in these countries. In the last section we specifically present case-study evidence on the implications of standards in horticultural export sectors in poor Sub-Saharan African countries.

Standards as Barriers or Catalysts to Trade?

Standards have most often been discussed to act as new non-tariff barriers to trade, diminishing especially the export opportunities of developing countries (Augier et al., 2005; Brenton and Manchin, 2002; Ferrantino, 2006). First, public regulations and standards can potentially be used as protectionist tools to bar imports and protect domestic farmers and companies (Maertens and Swinnen, 2007). Increased trade liberalization itself might create incentives for countries that see quotas removed and tariffs reduced, to (ab)use standards to bar imports (Neff and Malanoski, 1996). There is indeed evidence of effective use of parallel standards. For example, Mathews et al. (2003) find that several countries effectively discriminate by having zero-tolerance for salmonella on imports of poultry products from developing countries while not attaining or monitoring this standard for domestic supplies – which has contributed to a number of disputes raised at the WTO. Also Jaffee and Henson (2005) note an example from Australia prohibiting imports of sauces from the Philippines on the basis of containing benzoic acid while permitting imports from New Zealand of similar

products containing that additive. Moreover, Desta (2008) argues that the EU Food Safety Law with its precautionary principle results in effective discrimination against imports of livestock products from East Africa. Despite such anecdotal examples of effective discrimination, Jaffee and Henson (2005) argue that there is no systematic evidence of the discriminatory use of standards as protectionist tools by industrial countries to bar developing country imports and that many of these anecdotal cases involve at least partially legitimate food safety and agricultural health issues.

Developing countries confronted with supposed discrimination often lack the scientific and institutional capacity for WTO dispute settlement. In recent years, however, the participation of developing countries in the WTO institutional processes has improved and the number of SPS related notifications by developing countries has increased (Roberts, 2004).

Second, 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 that 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. The empirical evidence on this issue is limited and mixed. Some authors find evidence of high compliance costs and point to the fact that certification for developing country producers can only be maintained through massive donor support. However, some studies have estimated that the costs of compliance with standards are only a small fraction of total production costs and conclude that compliance cost is much lower than generally assumed. For example Aloui and Kenny (2005) estimate the cost of compliance with SPS measures to be 3% of the total cost of export tomato production in Morocco. Cato, Otwell and Coze (2005) have estimated the cost to implement compliance to quality and safety standards to be less than 3% and the cost to maintain this compliance less than 1% of the total value of shrimp exports from Nicaragua.

Third, the inability of developing countries to comply with stringent standards can be very costly and trade distorting. The inability to comply with standards can at first lead to border detentions and ultimately result in trade restrictions such as import bans for specific products. For example, in the period January – May 1999, the US Food and Drug Administration reported almost 3,000 border detentions of imported fruits and vegetables and more than 1,500 detentions of fishery products, mostly from developing countries, on the basis of contamination, pesticide residue violation and failure to meet labeling requirements (Henson et al., 2000; Unnevehr, 2000). In addition, in 1997 the EU banned fish exports from Kenya on grounds of food safety risks and from Bangladesh on the basis of incompliance with hygiene norms in processing plants.

Trade restrictions and import bans are extremely costly; in the short run in terms of immediate forgone export earnings and in the long run in terms of damaging a country's reputation and eroding its export competitiveness. For example, the EU ban on fish exports from Kenya decreased export earnings by 37% (Henson et al., 2000), and US border detentions of vegetable shipments from Guatemala made this country lose \$ 35 million annually in the period 1995-1997 (Julian et al., 2000).

This shows that the empirical evidence of standards acting as barriers to trade because of the discriminatory use of standards against developing countries and because of the high costs of compliance specifically for developing countries is rather limited. In addition, standards can act as catalysts to trade. Standards are most often in the interest of public health and can facilitate trade between countries with diverging norms. As such, standards and certification

schemes can help to reduce transaction costs, promote consumer confidence in food product safety and increase developing countries' access to international markets (Henson and Jaffee, 2008). In fact, standards provide a bridge between producers in developing countries and consumer preferences in high-income markets and could be used as catalysts for upgrading and modernization of developing countries' food supply systems and improving their competitive capacity.

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 (2005) note that the most successful countries and/or sectors have used high quality and safety standards to (re)-position themselves in competitive global markets. A key element in attaining these benefits is to be proactive in food quality and safety and facilitate business strategic responses (Jaffee and Henson, 2005; Henson and Humphrey, 2008).

Standards as Barriers or Catalysts to Development?

Understanding the link between standards on the one hand, and export 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 is generally believed to benefit economic growth (Bhagwati and Srinivasan, 2002; Dollar and Kraay, 2002 and 2004). Yet, there is a concern that the poor may not benefit proportionately from high-standards international trade. Hence, another critical policy issue is to understand the link between standards, export chains and rural incomes in developing countries. The proliferation of stringent private and public standards has caused dramatic changes in the way food production and trade are organized and governed with important implications for producers and rural households (McCullough et al., 2008; Swinnen, 2007; Wilson and Abiola, 2003). Hence, the costs and structural changes associated with standards compliance can cause significant redistribution of welfare – not only across countries but also along supply chains and in rural societies (World Bank, 2005). A key issue in understanding the local welfare implications of increasing high-standards food trade is the way in which supply chain structures and governance systems respond to increasing standards. In this section we first discuss issues of supply chain organisation and governance, and then turn to the development implications of increasing standards.

Supply chain organisation and governance

The main structural changes in food supply chains that are induced by increasing standards include

1. the increasing levels of vertical coordination (VC) in global supply chains, and
2. the ongoing consolidation of the supply base with large food companies – often multinationals – dominating the chains.

First, compliance with increasingly complex and stringent food standards and monitoring of this compliance throughout the supply chains requires tighter VC in the chains. In order to ensure large and consistent volumes of high-quality and safe produce, food traders and

processors increasingly procure from preferred suppliers or specialized wholesale markets, often on a contract basis, and thereby push the food distribution system towards more VC. Also upstream the supply chain VC is increasing. Traditional spot market trading systems with 'middlemen' are generally not effective in high-standards trade because of high transaction costs related to monitoring compliance with standards. Faced with increased standards, agro-industrial food companies and exporters are increasingly changing their procurement system towards more VC (Swinnen, 2005). This can occur through different forms of contract-farming or in the most extreme case through complete ownership vertical integration. The latter implies a shift from smallholder contract-based production towards large-scale vertically integrated estate production by agro-processing and food trading companies. This large-scale vertically integrated way of production increases the scope for standardized production and for meeting high standards at low transaction costs. However, this also entails additional risks and costs for the agro-industry – e.g. labour supervision costs.

There is a substantial amount of empirical studies demonstrating these supply chain developments. Some studies have pointed to the development of comprehensive VC schemes with extensive monitoring and complex contracting between large food companies and developing country producers as a result of increasing food standards (e.g. Gulati et al., 2007; Jaffee, 2003; Minten et al., 2006; Swinnen, 2005). Other authors have presented case-study evidence of a shift towards vertical integration in high-standards export production (Dolan and Humphrey, 2000; Maertens and Swinnen, 2009; Minot and Ngigi, 2004; Gibbon, 2003). How far-reaching the shift from small-scale contract-based production to large-scale vertically integrated industrial production strongly varies across sectors and countries and has major implications for the way in which producers and local households benefit (see further).

Second, food standards pose specific challenges – arising from financial, technical and institutional constraints – for small agro-food businesses and exporters in developing countries to stay in business in export markets. Although, in general the cost of compliance with standards might be low relative to the total export value, this cost might be very high relative to the means of small firms, leading to the market exit of small and less capitalized firms (Reardon et al., 1999). In addition, smaller businesses might be disadvantaged in contracting with overseas importers and large retail chains because they cannot guarantee the volumes required by these large buyers. Moreover, multinational holdings increasingly seek vertical integration through establishing subsidiaries in developing countries. Foreign direct investment (FDI) in food export, processing and retailing sectors in developing countries have increased tremendously in the past decade (Colen et al., 2009), which might push smaller firms with less access to capital, poorer technologies and less access to market information out of high-standards export sectors. Increasing food standards and increased FDI in the food sectors of developing countries could lead to weaker players exiting profitable export markets, and hence to consolidation at the export node of the supply chains.

The empirical literature has presented evidence of ongoing consolidation in agricultural export production in low-income countries (Dolan and Humphrey, 2000; Jaffee, 2003). For example, Maertens, Dries, Dedehouanou and Swinnen (2007) report that in the bean export sector in Senegal the number of exporting companies has dropped from 27 in 2002 to 20 in 2005 with mainly smaller exporters leaving the market and resulting in an increased market share for the three largest companies from slightly less than half to two thirds over the same time period.

Local welfare implications

As mentioned before, among the main concerns for developing countries are the issues of smallholder suppliers – and especially the poorest ones – being either excluded from or exploited in high-standards supply chains.

Concerning the issue of *exclusion of smallholder producers*; there is mixed evidence in the literature. Some studies argue that small farmers, and especially the poorest ones, are being squeezed out from high-standards export production because of high compliance costs and increasing levels of vertical coordination (Gibbon, 2003; Reardon and Barrett, 2000; Reardon et al., 1999). First, also at the farm level the individual cost-of-compliance to strict public and private standards might be prohibitively high for smallholder producers to (continue to) engage in high-standards production, especially when credit markets are imperfect and credit is rationed.

Empirical studies that have actually calculated the cost-of-compliances and certification for individual smallholder producers in high-standards supply chains mostly come to different conclusions. For example, Henson (2009) estimates that the initial non-recurrent investment costs of EurepGAP certification (type II, group certification) for smallholder contract-farmers in the Ghana pineapple sector represent less than 2% of sales value and the recurrent cost of maintaining certification less than 1% of sales value. In addition to these relatively small compliance costs the variable production costs were found to be lower due to EurepGAP certification, mainly because of better use of pesticides and other chemicals, and general improvements in agronomic practices.

Second, increasing levels of vertical coordination in food supply chains may result in a bias against the smallest and poorest farmers, either because they are excluded from contract-farming schemes with agro-processors and traders or because smallholder production is replaced by estate production in vertically integrated agro-industries. Contract-farming schemes may be biased towards relatively larger and better endowed farms because of smaller transaction costs – especially for monitoring conformity with standards, and smaller investment costs in terms of farm extension and financial assistance by the contractor firm (Key and Runsten, 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 it concerns labour intensive production – or because contract enforcement might be less costly with small suppliers.

The actual evidence on smallholder involvement in high-standards supply chains and the changes in this induced by standards is very mixed. There are cases of complete vertical integration with hardly any smallholder involvement; for example in the tomato export sector in Senegal (Maertens et al., 2008) and the fruit and vegetable export sectors in Zambia (Legge et al., 2006). On the other hand, there are also many examples of cases where export production – destined for markets where standards are high and increasing – remains

dominated by smallholders; for example the vegetable export sector in Madagascar (Minten et al., 2006) and Ghana (Legge et al., 2006). In most cases of high-standards export production there is a mix between smallholder contract production and large-scale agro-industrial production (Maertens et al., 2009). Some studies have pointed to sharp reductions in the share of smallholder production as standards increase; for example Jaffee (2003) – recognizing the limitations of the available data – estimates that for export vegetables in Kenya the share of smallholder production decreased from 45% in the mid 1980s to 27% in 2001/2002. More recent studies, however, state that these early estimates exaggerate the problem of increased smallholder exclusion and that in fact more smallholders are involved in Kenyan high-standards horticulture exports than previously estimated (Asfaw et al., 2007; Mithoefer et al., 2006). In general the figures on horticulture sectors in Africa seem to point out that there is actually much more smallholder involvement in high-standards production than would be assumed based on the above arguments. Similar observations were described for several agricultural sectors in transition countries in Eastern Europe and Central Asia (Swinnen, 2005).

Concerning the issue of *exploitation of smallholder producers*; it has repeatedly been argued that the gains from high-standards agricultural trade are captured by foreign investors, large food companies and developing country elites and that standards lead to a more unequal distribution of the gains from trade (e.g. Dolan and Humphrey, 2000; Reardon et al., 1999). On the one hand, consolidation of the export supply base and vertical coordination in the supply chains are said to amplify the bargaining power of large agro-industrial firms and food multinationals, displace decision-making authority from the farmers to these downstream companies, and strengthen the capacity of these companies to extract rents from the chain to the disadvantage of poor farmers and local households (Warning and Key, 2002). On the other hand, vertical coordination 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.

Recent empirical studies have demonstrated a beneficial effect for smallholders participating in high-standards contract production. Demonstrated benefits include productivity gains, increased household income, reduced volatility and more stable incomes, technology spillovers, etc. For example, Dries and Swinnen (2004) show that small dairy farmers gain in terms of productivity from contract production with large foreign milk processors. Gulati et al. (2005) provide similar evidence for smallholder animal production in Southeast Asia. Maertens and Swinnen (2009) show that contract-farming in the Senegalese horticulture export sector leads to very high and significant increases in household income. Minten et al. (2006) show that the vegetable exports from Madagascar to the EU are completely based on smallholder contract production, leading to more income stability for local households and technology spillovers on rice production.

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. Some recent empirical studies show that high-standards trade creates substantial employment that is well-accessible for the poor, leading to increased rural incomes and reduced poverty rates (Maertens et al., 2008). For examples, Maertens and Swinnen (2009) estimate that local poverty reduced by 12 percentage points as a result of high-standards bean export in Senegal, mainly through employment effects.

Conclusion

The main conclusion is that increasing and tightening food standards may be both barriers and catalysts for the participation of poor countries in international agricultural trade and for development in these countries. In this paper we have summarized a series of studies and have documented arguments why standards are not necessarily non-tariff barriers to trade. We also argue that the widely held belief that high-standards trade is non-inclusive and inequitable may need to be revised. There is substantial evidence that high-standards trade can benefit poor countries and smallholder farmers and rural households in those countries.

Pro-poor effects may arise because high-standards trade is also typically high-value trade and thus allows better returns for those who can participate. This, in turn, provides incentives for exporting companies to develop extensive (vertically coordinated) contracting schemes with developing country producers which includes technology transfer and input provisions. In addition, contracting problems for exporters typically lead to premia to local producers to ensure their supplies and sufficient quality of production. Rural households in developing countries may benefit either as smallholder contract farmers or through the labor market because of enhanced wages and employment opportunities in rural areas.

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