

# Increasing the ability to comply with standards or regulations in order to improve trade and investment

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## Question

1. *What is the key evidence examining the effectiveness of development-funded interventions aiming to change standards / regulations or ability to comply with standards / regulations in order to increase trade with / investment in developing countries, and what does it tell us?*
2. *What does the evidence tell us about design criteria for interventions in these areas to be most successful, and any major risks that can undermine success?*

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## 1. Summary

This rapid review synthesises the literature from academic, policy, and knowledge institution sources on the effectiveness of development-funded interventions aiming to change standards and regulations or the ability of companies to comply with standards and regulations in order to increase trade in low- and middle-income countries (LMICs). This review defines standard as a required or agreed level of quality or attainment; and, regulation as a rule or directive made and maintained by an authority, often a government. Standards and regulations can be found in many sectors, such as agriculture and forestry for food safety and sustainability, for responsible mining, compatibility in electronics, for tourist safety and quality in the tourism sector, and prudential regulation in finance.

In the context of LMICs, the majority of research that could be found for this rapid literature review focuses on agriculture. Most research agree that standards act both ways as a barrier and catalyst for trade. For example, stricter food safety regulations and standards are often portrayed as non-tariff barriers to trade, but they can also be a powerful catalysts for investments in improved food safety management systems, especially when incentives for these investments are lacking in domestic markets of LMICs. Therefore, a growing body of research shows the importance of compliance with food safety regulations and standards for the trade performance of LMICs.

Although research done on the trade impacts of specific interventions on standards and regulations in LMICs cannot be found in abundance, the conclusion of these studies is that technical assistance to comply with standards and regulations increase inclusive participation of SMEs and smallholder farmers in regional and global value chains. Furthermore, trade policy, standards and regulation interventions have a significant positive impact on the quality of the products, increasing access to high-end export markets. In particular, for Sub-Saharan Africa the harmonisation and simplification of documents seems to result the strongest impact on trade performance. In Asian, Latin American and Caribbean, Eastern European and Central Asian countries this is the streamlining of procedures. The AfT effect on export upgrading of some countries could be associated with export specialisation, while it could be associated with export diversification in other countries.

Improving domestic institutions and governance in recipient countries would further enhance trade impacts, for example, studies show that it depends heavily on the quality of the government's export strategy. However, research also shows that development projects need a long-term focus with an exit-strategy to guarantee continuity. Furthermore, although capacity and supply-side constraints are significant for SMEs and smallholder farmers (in particular for women), some studies emphasise that these constraints are not a causal pathway by which standards exclude SMEs from global value chains. They argue that low capacity SMEs are usually already excluded from global value chains before the introduction of standards.

However, this does not mean that trade policy, standards and regulations should deny the question of accessibility. Cost-related aspects is one of the most important factors for a successful design for standards and regulations, in particular related to its impact on competitiveness in regional and global value chains. Technical assistance and capacity building support programmes often result in lowering compliance costs for SMEs and smallholder farmers. Therefore, in the design there must be a focus on SMEs and smallholder farmers, in particular with a gender lens.

Overall, the literature shows the following design criteria for interventions:

- Facilitate access to information and technology to increase awareness, lower compliance costs and stimulate cost sharing in the value chain.
- Strengthen firm capacity to implement requirements in particular for SMEs and smallholder farmers.
- Be strategic: invest in technical infrastructure and relate this to the export strategy and priority sectors.
- Technical infrastructure investment need sound processes, including impact assessments.
- Strengthen governance, as good governance results in higher trade impacts of the interventions on standards and regulation.
- Facilitate trade through international mechanisms for better recognition and transparency and consider lead firm concept to reach out to SMEs and smallholder farmers.

## 2. The impact of standards and regulations on trade

**Research on the impact of standards and regulations on trade show that improvements in entry regulations raise export volumes and reduce distortions caused by restrictions on access to foreign markets; and that standards generally act as a barrier to developing country trade in agriculture, but have a catalytic effect in certain manufacturing sectors. High compliance costs and information asymmetries disproportionately affect SMEs and smallholder farmers.**

Despite the pivotal role of aid for trade (AFT) in international development assistance, its impact has only recently been assessed, with a focus on its effectiveness in promoting trade value of the recipients (Wang & Xu, 2018). Regulation of firms in the developing world have been researched through both cross-national and individual country research. This research has generated two general sets of facts (Hallward-Driemeier & Pritchett, 2015):

- Firms that attempt full regulatory compliance will face an extremely costly and time-consuming process, reducing their competitiveness in regional and global markets.
- Firms in developing countries are often able to sidestep the *de jure* legal rules, as many developing countries have low rankings by international standards in categories like “rule of law,” “bureaucratic quality,” “government effectiveness,” and “control of corruption.” This reduces transparency and therefore these firms are less likely to participate in global value chains.

Evidence on the *de jure* legal and regulatory requirements facing firms often draw on evidence from the World Bank’s Doing Business data.<sup>1</sup> Such evidence shows that improvement in regulations has a positive impact on trade. Busse et al. (2012) used panel data from 2004 to 2009 for 99 developing economies, including 33 of the least developed ones, to show that regulatory improvements are linked to lower trade times and financial costs. Şeker (2011) focused on the links between export volumes and regulations on trade and entry. The analysis

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<sup>1</sup> Link to the World Bank Doing Business database: <https://datacatalog.worldbank.org/dataset/doing-business>

used two Doing Business indicators — time to export and number of procedures required to start a business — for 137 economies between 2005 and 2007. Şeker (2011) found that improvements in trade facilitation and entry regulations raise export volumes and reduce distortions caused by restrictions on access to foreign markets. These findings suggest that business climate reforms help economies respond to export opportunities (World Bank, 2014).

Results from research on the impact of standards are more diverse. In an annotated bibliography of empirical literature on the relationship between standards and developing country trade, Timmis (2017) concludes that standards generally act as a barrier to developing country trade in agriculture, but have a catalytic effect in certain manufacturing sectors. On the company level, surveys and case studies illustrate that conformity assessment costs are particularly perceived as barriers to trade by low- and middle-income countries' firms. For example, Fassarella et al. (2011) found that the impact of aggregated TBT/SPS (sanitary and phytosanitary) measures on Brazilian poultry exports is insignificant. However, when the measures are disaggregated, conformity assessment costs have a negative and significant impact on export volumes, while packaging and labelling requirements and/or disease prevention measures promote trade. A World Trade Organisation analysis (WTO, 2012) supports this finding. Using the WTO's Specific Trade Concerns Database, which records SPS- and TBT-related complaints, they find that firms which raise conformity assessment concerns are most likely to exit a given export market. This effect is larger for agricultural firms, which produce perishable goods (UNCTAD, 2013). Certification procedures are associated with a significant decline in developing country firms' export volumes and export diversification into new markets, while quality standards are positively correlated with both (UNCTAD, 2013). Meeting SPS standards or overcoming TBTs often requires long-term investments that are not available to many developing country firms, particularly smaller ones.

WTO (2012) found that standards harmonisation and mutual recognition generally increase trade. Additionally, harmonisation is shown to enhance the presence of small and medium-sized firms in export markets. However, if harmonisation or mutual recognition occurs within regional trade agreements, there may be significant trade-diverting effects on countries outside the agreement. This appears to be especially the case for developing countries (WTO, 2012). Ederington and Ruta (2016) found that the trade impact of standards depends on sector, level of development, type of firms, and margin of trade. They conclude that standards not only have a more significant negative impact on trade in agriculture relative to manufacturing on developing countries' exports relative to developed countries', but also on small relative to large exporting firms, and on the extensive margin of trade relative to the intensive margin. This relates to facts that non-trade measures are most prevalent in developed countries and the agricultural sector (due to the high incidence of sanitary standards), according to data in UNCTAD's TRAINS database.<sup>2</sup> Manufacturing and intermediate sectors have lower incidences of non-trade measures. UNCTAD (2013) shows further that manufacturing industries suffer from greater informational asymmetries due to products' higher technological content and diversity. On the other hand, agricultural products are largely homogenous and therefore, in general, standards act in this sector more as a barrier.

Most research agree that standards act both ways as a barrier and catalyst for trade. Kaplinksy and Morris (2017), for example, showed that standards compliance can promote inclusion in

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<sup>2</sup> Link to UNCTAD's TRAINS database: <https://unctad.org/en/Pages/DITC/Trade-Analysis/Non-Tariff-Measures/NTMs-trains.aspx>

global value chains. However, there is evidence that standards can also exclude certain developing country producers from export markets. In particular, standards exclude small businesses, small farms, women, and older producers (Kaplinsky & Morris, 2017, p.6). Redden (2017) found that there has been exponential growth in the number of sustainability standards and regulations and compliance is unavoidable for developing country SMEs wishing to enter global value chains and access major markets. Standards are a barrier for those firms unable to comply (mostly small-scale, informal and women-owned SMEs), but a catalyst for those that can (Redden, 2017; Meliado, 2017). Wickerham and D'Hollander (2017) agree that the same applies for sub-Saharan Africa. However, exceptions include the West African cocoa producing countries where standards systems such as UTZ, Fairtrade and organic have a long-standing presence. The use of Fairtrade standards in coffee, tea and other crops has also been growing. Moïsé et al. (2013) found evidence that standards are a greater barrier to exports for low-income developing countries and smallholder farmers and SMEs. Moreover, voluntary private standards, which have become the “de facto entry requirement for trade” in many subsectors, usually have a larger scope, require higher levels of performance, and evolve more rapidly than baseline public regulations, constituting even greater barriers to trade (Moïsé et al., 2013, p.16).

Overall, the conclusion is that in particular in agriculture global value chains standards act as trade barriers. Unnevehr and Ronchi (2014) found that public food safety standards in high-income countries tend to act as barriers to developing country food exports. Non-compliance by developing country firms leads to loss of export markets, while compliance frequently increases costs substantially, thus reducing exports at the margin. The case study of Indonesia's agro-food sector in Moïsé et al. (2013) found that an increase in public and private standards applied in foreign markets has limited export margins. The review of Unnevehr and Ronchi (2014) found mixed evidence that private standards act as a greater barrier to small firms: a study of export supply chains in Peru's asparagus sector found that stringent standards led to exclusion of smallholders; but studies in Zimbabwe, Chile, Thailand and India found that smallholders were able to adapt to new food safety standards, because the scale advantages of larger farms were modest and transaction costs in supply chains declined over time.

A growing body of research shows the importance of compliance with food safety regulations and standards for the trade performance of LMICs. Broadly, these studies show that effectively competing in international agri-food trade may entail considerable compliance costs for the public and private sectors to meet the requirements of food safety regulations. While this is a well-established issue with exports to high-income countries, compliance with food safety requirements is also becoming the norm for trade between LMICs (Jaffee et al., 2019). The size of these costs is clearly an issue for export competitiveness and there is the spectre of exclusion from these markets as food safety requirements are enhanced or when food safety failures occur (Beghin & Orden, 2012). Although stricter food safety regulations and standards are often portrayed as non-tariff barriers to trade, these can act as powerful catalysts for investments in improved food safety management systems, especially when incentives for these investments are lacking in domestic markets (Jaffee et al., 2019).

A focus on export rejection rates, shows that this tend to be quite low for countries with income per capita below US\$2,000, but the rates rise among countries with income per capita of US\$3,000–US\$6,000. Jaffee et al. (2019) argue that at lower income levels, exports from LMICs tend to be dominated by a small number of lead firms that find it easier to comply with strict export food safety requirements. The ease and lower cost with which they can comply can be essential to their competitive advantage. As exports increase, however, new exporting firms

emerge, many of which struggle to achieve compliance requirements, and they experience rejections of consignments in target export markets. These firms either achieve compliance or are excluded over time, and the sector in which they operate increasingly acts collectively to upgrade standards to achieve a reputation for food safety management to lower border rejections. Jaffee et al. (2019, p.58) conclude that “[f]ood safety (and other sanitary and phytosanitary) challenges are accentuating underlying competitive advantages and disadvantages and contributing to the further consolidation of the LMIC trade in high-value foods”.

Timmis (2017, p.4) concludes, “the over-arching finding of the reviewed literature is that the impact of standards on developing country trade is highly context specific.” In order to explain the heterogeneity of these findings, Timmis (2017) found that recent empirical research focused on unearthing the causal pathways by which standards impact on trade. Effective standards systems must be responsive to international demand, adapted to local circumstances and effectively enforced. Developing countries’ relevant agencies often lack adequate expertise, resources (including equipment) and incentives to deliver these systems (Moïsé et al., 2013). Furthermore, lack of transparency appears as a key failure in the operation of several private standard schemes. SMEs lack access to information relating to compliance requirements and conformity assessment techniques for private standards, as well as to standard development processes. Research that generates evidence on the factors that lead standards to act as barriers to exports in certain contexts and catalysts in others, include inter alia (Timmis, 2017, p.4):

- Compliance costs are higher for smaller producers that lack access to inputs and economies of scale, explaining why standards may have a disproportionate impact on their export opportunities, pushing them “upstream” in supply chains or marginalising them all together from regional and national markets (Keiichiro et al., 2015; Moïsé et al., 2013; Kaplinksy & Morris, 2017). Therefore, access to technical assistance, skills, equipment, credit and other supply-side inputs are an important determinant of which countries/firms benefit from standards.
- Some research found that the availability of credible conformity assessment infrastructure, such as testing and certification services, is the most important determinant of standards’ impact on developing country trade. If conformity assessment procedures are lengthy, this adds further to compliance costs (Meliado, 2017; Moïsé et al., 2013).
- Access to knowledge or information on standards is another important factor in exporters’ ability to comply with standards (Unnevehr & Ronchi, 2014; Redden, 2017). For example, levels of education/experience, gender, membership in a farmer association and access to technical support may be the most important determinants of suppliers’ ability to comply with food safety standards (Unnevehr & Ronchi, 2014). A related issue concerns accessing information on the market access opportunities afforded by different standards.
- Differences among agricultural standards applied by importing countries can further limit developing countries’ export opportunities. This issue is most acute among African and Asian regions, which lack regionally harmonised SPS and food safety standards (Moïsé et al., 2013; Meliado, 2017). High costs in implementing foreign standards; insufficient testing, certification and enforcement capacity among supervising authorities; and variations in applied standards across importing countries all contribute to act as barriers to trade (Moïsé et al., 2013).

The review of Meliado (2017) is the only one that explicitly found that capacity and supply-side constraints are not a causal pathway by which standards exclude SMEs from global value chains. Low capacity SMEs are usually already excluded from global value chains before the introduction of standards.

### 3. Effectiveness of interventions to comply with standards and regulations

#### General impact of AfT interventions on trade

**Aid for Trade (AfT) interventions are meant to reduce trade cost and time, and increase exports. Research shows that, indeed, AfT interventions (including trade policy, standards and regulations) in LMICs reduce costs of packing, loading and shipping; reduce exporting and importing times; increase export and import; and, increase the number of destination markets. These studies do not measure if these trade impacts have welfare effects in LMICs.**

Evidence from research on the impact of AfT interventions (including interventions in regulations and standards) on trade in developing countries show that in general trade costs become lower after interventions. Cali and te Velde (2011) examined the impact of aid for trade interventions on trade costs and exports from LMICs and found that a US\$1 million increase in AfT facilitation is associated with a 6% reduction in the cost of packing, loading and shipping to the transit hub. Cirera and Winters (2015) find a positive impact on exporting and importing times, but factors other than AfT explain different experiences of structural change in sub-Saharan African countries. Arvis et al. (2013) estimate trade costs in agriculture and manufactured goods in 178 countries for the 1995-2010 period. They find that a one standard deviation improvement in the World Bank's Logistics Performance Index is associated with a trade cost reduction of 0.2–0.5 standard deviations.<sup>3</sup> Moisé et al. (2011) focus more closely on trade facilitation. Using the OECD Trade Facilitation Indicators,<sup>4</sup> they estimate a cost reduction potential of around 10% of overall trade costs. In a follow-up study, Moisé and Sorescu (2013) disaggregate the cost-reduction potential across income groups. They estimate this potential to be 14.5% in low-income countries, 15.5% in lower middle-income countries and 13.2% in upper middle-income countries.

There is also evidence that AfT in general increases trade volumes. Helbe et al. (2012) empirically assess the relationship between different AfT categories and trade performance. They find that a 1% increase in AfT facilitation could generate a US\$415 million increase in global trade. An evaluation of USAID (2010) trade assistance that focused on export expansion, trade policy reforms, increased participation in trade agreements, and efficiency gains from trade facilitation assistance, found that each additional one US dollar in assistance increases the value of developing country exports by US\$42 two years later. OECD/WTO (2013) found that one US dollar invested in AfT is on average associated with an increase of nearly US\$8 in exports from all developing countries and an increase of US\$20 in exports from the poorest countries. These effects were found to be even higher for exports of parts and components.

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<sup>3</sup> Logistics Performance Index of the World Bank: <https://lpi.worldbank.org/international/global>

<sup>4</sup> OECD Trade Facilitation Indicators: <https://sim.oecd.org/default.aspx?ds=TFI>

Persson (2013) distinguishes between the effects of trade facilitation (measured using the number of days needed to export from the World Bank's Doing Business indicators) on homogenous and differentiated products. She found that trade facilitation has a higher impact on differentiated products. Reducing export transaction costs increases the number of differentiated products by 0.7% and by 0.4% for homogenous products.

Other studies have focussed on the impact of trade facilitation interventions on the time it takes for products to cross borders. Zaki (2014) shows that the time to import and export is equivalent to a mean *ad valorem* tax of 34.2% on imports, and 17.6% on exports for developing countries. A study by Hummels and Schaur (2013) shows that each day in transit is worth 0.6%-2% of the value of the goods, and that time is particularly important for intermediate goods. However, Freund and Rocha (2011) found that when comparing the effects of transit, documentation, and ports and customs delays on trade, the most significant effect comes from inland transit delays. A result which combines the effects of time and costs is obtained by Hausman et al. (2013). In their study, a 1% reduction in processing costs/time leads to 0.49%-0.37% of increased bilateral trade. There is also firm-level evidence showing the adverse effect of customs delays on trade. Using a sample of Uruguayan firms, Volpe Martincus et al. (2013) show that exports would be 5.9% larger if all exports could be processed within one day.

Beverilli et al. (2014) show that developing countries are likely to experience a substantial increase in the number of destination markets and new export products if countries implement WTO's Trade Facilitation Agreement. For Sub-Saharan African countries, their simulations suggest that countries there could see an increase of up to 16.7% in the number of products exported by destination and an increase of up to 14.1% in the number of export destinations by product. For countries in Latin America and the Caribbean, the simulations suggest these countries could see an increase of up to 13% in the number of products exported by destination and an increase of up to 9.1% in the number of export destinations by product.

It is important to emphasise that these studies make no claim about the welfare effects of the impact on trade in developing countries after AfT interventions.

## Facilitating standard compliance and trade policy and regulations interventions

**Although research done on the trade impacts of specific interventions on standards and regulations in LMICs cannot be found in abundance, the conclusion of these studies is that technical assistance to comply with standards and regulations increase inclusive participation of SMEs and smallholder farmers in regional and global value chains. Trade policy, standards and regulation interventions also have a significant positive impact on the quality of the products, increasing access to high-end export markets. Improving domestic institutions and governance in recipient countries would further enhance trade impacts, for example, studies show that it depends heavily on the quality of the government's export strategy. However, research also shows that development projects need a long-term focus with an exit-strategy to guarantee continuity.**

The aforementioned evidence does not specifically show the impact of AfT interventions on regulations and standards on trade. There are fewer studies that measure these impacts, and they mainly include the OECD intervention category Trade Policy and Regulations (next to physical infrastructure investment and capacity building programmes). Unnevehr and Ronchi (2014), in their review of seven empirical studies that tested explicitly for the impact of (donor)

technical assistance, found positive impacts in facilitating standards compliance and market participation, though two of the studies also found that the sustainability of this impact was reduced by donor short-termism. Market returns clearly motivate compliance, but technical assistance seeks to overcome barriers to entry that might prevent inclusive participation.

Unnevehr and Ronchi (2014) included the following studies in their research and conclude that technical assistance, subsidies for initial certification costs, and managerial support were effective in Chile and Thailand in promoting market participation of smallholders (Handschuh et al., 2013). In India, government-supported cooperatives facilitated farmer compliance (Roy & Thorat, 2008). In ten Sub-Saharan Africa countries, technical assistance from the EU Pesticide Initiative Programme (PIP) was a significant determinant of whether an exporting firm was certified to GlobalGAP (Henson et al., 2011), although it had little influence beyond sales to the EU in Senegal (Caud & Jadot 2012). Interventions are not sustainable, as trade does not improve when market conditions change or support from donor institutions end abruptly (Ashraf et al., 2009). However, a review of experiences in Sub-Saharan Africa by Jaffee et al. (2011) emphasised the need to partner with buyers, who have a continued economic motivation to support farmer compliance (see also table 1).

Table 1: Studies analysed in the study of Unnevehr and Ronchi (2014) on the effectiveness of development interventions to comply with standards.

Country	Study	Technical Assistance	Impact of assistance
Madagascar	2013 Subervie and Vagneron	Donor support for GlobalGAP certification	Certified producers have better access to markets and higher prices.
Chile	2013 Handschuch, et al.	Public support for compliance with export standards	Assistance is critical to smallholder participation in markets
Thailand	2012 Kersting and Wolni	Donor support for group certification of small farmers	Support by donors and exporters enabled farmers' compliance.
SSA	2011 Henson, et al.	Compliance support for EU Pesticide Initiative Program	Firms more likely to be certified if they receive PIP technical assistance
Senegal	2012 Caud and Jadot	EU PIP support for food safety management practices	PIP has a positive effect on horticulture exports to the EU but not on total horticulture exports.
Kenya	2009 Ashraf, et al.	NGO assistance to smallholder participation in export markets.	Support for market services effective in supporting farmers' export markets shift to export crops. Exports did not continue when support ended

India	2008 Roy and Thorat	Government support for farmer cooperatives	Cooperatives result in higher net profits for farmers and facilitate smallholder inclusion.
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Source: Unnevehr, Laurian and Ronchi, Loraine. 2014. *Food Safety Standards: Economic and Market Impacts in Developing Countries*. © World Bank.

<http://documents.worldbank.org/curated/en/681851471859603213/pdf/107910-VIEWPOINT-PUBLIC-TAG-TOPIC-investment-climate.pdf> License: Creative Commons Attribution license (CC BY 3.0 IGO)

A recent study of Wang and Xu (2018) shows that overall AfT in the broadly defined areas of trade policy ('trade policy, regulations, and trade-related adjustment') has the largest positive effect on the quality of exports, and the effect increases when AfT is cumulated over time, implying that the impact takes time to come into full effect. In particular, a 50% increase in the value of AfT received from a donor for assistance in trade policy increases the recipient's export product quality by 0.5–1% for exports to both donor and other OECD markets. On average, the actual AfT received in trade policy raises the relative position of the recipient country in the quality ladder of all non-OECD countries by 2%. About half of this observed quality upgrading effect is driven by the fact that AfT raises the quality of existing products in existing markets (intensive margin), with the other half coming from higher-quality products being added to the continued markets and higher-quality continued products being exported to new markets (extensive margin).

Gnangnon (2019) investigates empirically the effect of aid for trade policies on standards and regulations on the volatility of tariffs in the recipient countries. The analysis has used an unbalanced panel dataset of 107 countries over the period from 2002 to 2015. The empirical results, based on the two-step system Generalized Methods of Moments (GMM) approach, show that aid for trade interventions on standards and regulations exerts a reducing effect on tariff policy volatility in recipient countries (Gnangnon, 2019). Additionally, the findings indicate that the better the institutional and governance quality in recipient countries, the higher is the reducing effect of aid for trade policies and regulations on tariff policy volatility. These results, therefore, suggest that a scale up of aid for trade policies and regulations to, inter alia, build the capacity of policymakers in recipient countries to contribute to reducing tariffs volatility in these countries, which would, in turn, likely benefit donor countries (Gnangnon, 2019). Furthermore, improving domestic institutions and governance in recipient countries would further enhance the reducing impact of this aid on tariff volatility, which, once again, benefits both the recipient countries and donor countries (Gnangnon, 2019).

Overall, AfT support for trade policy and regulations aims at reducing administrative costs and regulatory bottlenecks to trade (Busse et al., 2012; Cali & TeVelde, 2011). Gnangnon and Robert (2017) argue that AfT programmes related to trade policy and regulations could be associated with export concentration, export quality improvement or export diversification, depending on the national export strategy of the recipient country. In other words, the AfT effect on export upgrading of some countries could be associated with export specialisation, while it could be associated with export diversification in other countries. The final impact would depend on the main export strategy of countries contained in the sample under analysis. Gnangnon and Robert (2017) also show that there is a relation between AfT and Foreign Direct Investment (FDI) flows. They measured that if FDI increases by 1%, a 1% rise in AfT flows (% GDP) would raise the

degree of overall export diversification by 3.3 points. However, programmes emphasising trade policy and regulations in low-income countries act more as a substitute for FDI inflows in achieving higher diversification of exports at the extensive margins, while these programmes appear to be a catalyser for FDI inflows in achieving the diversification of exports at the intensive margins. Additionally, results show that LDCs need both FDI inflows and AfT inflows related to trade policy and regulations to achieve higher export quality. They conclude that AfT flows could play a catalysing role with respect to FDI inflows in contributing to export upgrading in recipient countries, in particular low-income countries. Although AfT interventions on trade policy and regulation seem less effective than capacity building and infrastructural investment interventions. “Policymakers should therefore take into account the existence of the potential interplay between these two types of external capital flows in designing both their export development strategies and their policies that affect FDI inflows into their countries” (Gnangnon & Roberts, 2017, p.35).

This resembles the conclusions of the assessment by Basnett and Massa (2015) on the effect of trade facilitation on trade. They state that interventions improving infrastructure are the most effective in increasing trade volumes and reducing trade costs, followed by reforms improving customs efficiency and then reforms improving the regulatory and business environment. However, they also conclude that a lack of published impact evaluations on aid for trade facilitation limits the ability to determine which types of intervention work best, where and why. In general, trade policy and regulations have a positive impact, although specific studies do have different outcomes. Moïse and Sorescu’s (2013) quantitative data collection and analysis found that the trade facilitation measures that have the highest impact on trade volumes are information availability, harmonisation and simplification of documents, automated processes and risk management, streamlining of border procedures and good governance and impartiality. Sector-specific analysis shows that these measures are particularly significant for manufactured goods, but less so for agricultural goods. Moïse et al. (2011) show in particular that in sub-Saharan African groups of countries the form of trade facilitation that leads to the most significant increases in trade flows is the harmonisation and simplification of documents. In Asian, Latin American and Caribbean, Eastern European and Central Asian groups of countries it is the streamlining of procedures that has the strongest impact on trade performance.

Cirera and Winters (2014) focusing on sub-Saharan African countries, found a lack of impact of AfT flows on trade costs and trade flows, with the exception of AfT programmes on trade policy and regulations that help reduce the time to export and import. Also Portugal-Perez and Wilson’s (2012) quantitative data collection and analysis, found that trade facilitation reforms improve export performance in developing countries, with the greatest impact achieved by investment in physical infrastructure and regulatory reform to improve the business environment. Massa (2013) shows that this positive impact to be strongly affected by the quality of institutions in recipient countries.

Finally, the Standards and Trade Development Facility (2018) has evaluated many projects that aimed at improving the ability of producers to comply to standards to increase impacts, like access to global and regional markets. Although impact varies per country, sector and project, it shows that positive impacts are made on competitiveness with development projects focussing on compliance for producers (See Table 2).

Table 2: Case studies on trade impacts of Standards and Trade Development Facility projects (source: STDF, 2018).

Country	Project information	Trade outcomes
<b>Nigeria</b>	Beneficiary Small-scale processors of sesame and shea nuts in Nigeria. Led by NEPC, with ITC. Time-frame October 2010 – September 2013. STDF funding US\$364,240 (total project value US\$545,040).	Manuals on safety and quality, codes of good practice and national standards were updated, and a traceability system was set up for both sesame seeds and shea nut products. Risks associated with aflatoxin contamination along the sesame and shea supply chains have been minimised, promoting exports to international markets, in line with the country's goal to become the global leader in shea exports. As a result of the project, Ifedawapo Sheabutter Cooperative in Saki (made up of 120 small-scale buyers and processors) has had product samples certified by the National Agency for Food and Drug Administration and Control and by internationally accredited laboratories. Within two years of the project, the Cooperative sold over 200 metric tons to major Nigeria and US cosmetics companies and secured additional orders for a further 500 metric tons.
<b>Sri Lanka</b>	Beneficiary Cinnamon industry in Sri Lanka, including cinnamon peelers and processors. Led by UNIDO, with The Spice Council of Sri Lanka. Time-frame July 2012 – October 2016. STDF funding US\$705,600 (total project value US\$2,205,600).	Six cinnamon processing centres have been upgraded, allowing them to obtain Good Manufacturing Practices certification. More cinnamon peelers and processors (including women) have joined the sector thanks to certified vocational training and decent working conditions. Branding and market positioning helped to stem the decline of Sri Lanka cinnamon's share in international markets, which has improved the living standards of communities across the industry. The trademark is in the process of being registered in high-end markets, including the EU, the US, Colombia and Peru. Through the public-private partnership, the project has supported the development of a roadmap for the Sri Lanka cinnamon value chain to reach the country's goal to "make cinnamon a one billion dollar industry". Because of greater global competitiveness, businesses such as Cinnamon Legends have been able to expand operations and are currently the number one exporter of "Pure Ceylon Cinnamon" worldwide.
<b>Thailand and Vietnam</b>	Beneficiary Fruit and vegetable producers, exporters and retailers in Thailand and Viet Nam. Led by MSU, with Kasetsart University and Can Tho University. Time-frame January 2011 – June 2013. STDF funding US\$581,665 (total project value US\$719,275).	Better management of food safety risks along supply chains led to reduced rejections, increased sales and better access to domestic and export markets. For instance: Fruit and vegetable exporter, Hung Phat Joint Stock Company (JSC), Vietnam gained ISO 22000: 2005 certification, opening up access to the EU, Japan and US markets. Onion cooperative, of mostly women farmers, in Vinh Chau District, Vietnam had 50% fewer produce rejections and increased incomes thanks to Good Agricultural Practices training. Retailer, SIAM-MAKRO, Thailand increased its supply from small-scale farmers and processors. All the beneficiaries gained "in terms of improved market access, higher incomes and lower levels of product rejections". Training produced under the project is now included in government extension services, private sector and local university programmes, reaching more farmers, processors and exporters. Options exist to further disseminate the training modules to promote wider uptake in Thailand and Vietnam, and support the delivery of harmonised food safety training within ASEAN.
<b>Uganda</b>	Beneficiary Flower producers in Uganda. Led by CABI and the Department	Numbers of interceptions on roses due to plant pests fell from 34 in 2013 to 18 in 2014 and to less than five in 2015 and continued to fall in 2016. The livelihoods of the majority women workers dependent on the flower

	of Crop Protection(DCP) in Uganda and UFEA. Time-frame October 2012 – March. 2015 STDF funding US\$383,495 (total project value US\$427,017).	industry stand to benefit as exports to the EU continue. Over 100 scouts across the flower sector and 10 inspectors have been trained by the Centre of Phytosanitary Excellence (COPE). Inspectors and industry showed high levels of knowledge on international phytosanitary standards and EU legislation to meet EU market demands. A streamlined inspection and export certification system was set up, together with a surveillance, monitoring and traceability system. A manual with 12 Standard Operating Procedures was developed with operations linked to the Plant Protection and Health Act 2015. Awareness on the relevant phytosanitary issues in relation to the export to the EU has increased significantly. The DCP and UFEA have since signed a new public-private partnership to sustain their collaboration and increase flower production and exports.
<b>Botswana, Cameroon, Kenya and Mozambique</b>	Beneficiary Governments and NPPOs in Botswana, Cameroon, Kenya and Mozambique Led by Erasmus University Rotterdam Time-frame February 2015 – July 2017 STDF funding US\$298,391 (total project value US\$327,959)	Analysis showed that investment to support <i>ISPM 15</i> had no negative impact on the ability of the four countries to trade. Three countries saw exports increase as a result. In Kenya, coffee and tea exports increased by 39% after meeting the standard. Costs for a wood packaging material treatment facility to meet the standard are high. However, the costs of not meeting the standard are higher in terms of loss of exports, income, and the risk of pests. Treatment facilities are profitable for countries with enough production and export volume. To sustain impact, African governments are encouraged to take on board policy solutions identified under the project to meet ISPM 15. These include: Meeting the minimum requirements for export and investing in import inspections for wood packaging material. Avoiding over-prescriptive legislation, given future revisions to the standard and new wood treatment methods. Requesting the African Union Inter-African Phytosanitary Council to promote regional cooperation and training on ISPM 15. Increasing awareness of how different ISPM 15 treatments are equally effective, and that material only needs to be treated once (unless altered in some way). Developing and using a checklist to audit wood packaging material treatment facilities and regulate repair facilities.

## 4. Lessons learned for a more effective intervention design

**The literature shows some important recommendations for intervention design. First, it is important to facilitate access to information and technology to increase awareness and lower compliance costs or increase cost sharing within the value chain. Furthermore, to strengthen firm capacity to implement requirements in particular support for SMEs and smallholder farmers. Technical infrastructure investment need sound processes, including impact assessments. Prioritise investment in technical infrastructure to export markets with higher competitiveness. Strengthen governance, as good governance results in higher trade impacts of the interventions on standards and regulation. Facilitate trade through international mechanisms for better recognition and transparency. This could also be done with lead firm SME linkages with multinationals helping SMEs to adopt their standards in supply chain.**

Countries' national technical infrastructure supporting standards and regulations refers to processes and institutions defining standards and regulations and carrying out conformity assessment. As this rapid literature review shows, creating and maintaining a well-functioning technical infrastructure is challenging for low-income countries, yet is crucial for connecting firms to regional and global markets. Demonstrating compliance is for businesses a greater obstacle

than meeting the requirements of standards and regulations themselves. In Kenya, for example, Non-Tariff Barriers to trade (NTB) Business Surveys find that exporters reported three times as many cases related to conformity assessment than to technical regulations (ITC, 2016). These conformity costs create high costs and administrative hurdles for testing and certification, or a lack of proper certifying facilities. In Rwanda, Burkina Faso, Malawi and Mauritius, the bottleneck also appears to be burdensome conformity assessments rather than technical requirements (ITC, 2016). In Mauritius, for example, laboratory equipment must be shipped to South Africa or Singapore for maintenance due to a lack of facilities to repair the equipment locally (ITC, 2016).

Therefore, cost-related aspects is one of the most important factors for a successful design for standards and regulations, in particular related to its impact on competitiveness in regional and global value chains. ITC (2016) mentions that technical infrastructure needs sound processes, such as policy/legislation, impact assessment, implementation, conformity assessment and sanctions. Usually a regulation stems from a government policy decision to intervene in the marketplace to reduce health risks or fraud. Conducting an impact assessment should be a good practice to evaluate the effect that the envisaged technical regulation will have on trade, its costs, whether all of society benefits or just a small part, and whether the result can be achieved through less onerous means. However, Basedow and Kauffmann (2016) show that there are challenges related to identifying and measuring the trade impacts and costs of regulatory divergence. From a regulatory perspective, regulatory impact assessments and other tools such as stakeholder engagement and *ex post* evaluation provide an opportunity to evaluate trade-related impacts of regulation.

Basedow and Kauffmann (2016) conclude that generally, there is a perception that lead services have to assess too many potential impacts, which may undermine the quality of regulatory impact assessments. The line ministries in charge of developing regulations and the oversight body in charge of its quality control may not have the expertise to assess the relevance for trade of a given regulatory proposal. "As guidance on the substance and methods for the assessment of trade impacts is typically limited in national guidelines, the lack of expert involvement may translate into ignoring or wrongly assessing trade impacts" (Basedow & Kauffmann, 2016, p.8). Stakeholder engagement is another tool that can be used and allows traders to voice their concerns. However, Basedow and Kauffmann (2016) mention that stakeholder engagement faces important challenges, such as the lack of inclusiveness leading to capture that make its use a difficult endeavour. *Ex post* evaluation can help to ensure that the unexpected impacts of a regulation, including from its enforcement, are captured and can feed in the revision of regulation. An integrated approach to these tools can therefore ensure a more exhaustive consideration of trade impacts in the welfare analysis that supports the development and revision of domestic regulation. They are likely to contribute to avoiding unnecessary (and unintentional) regulatory barriers to trade while promoting other public policy objectives and preserving states' right to regulate (Basedow & Kauffmann, 2016).

In many sectors, private regulation and standards constitute an important part of the regulatory framework, which largely fall outside of the traditional public sector scrutiny and accountability mechanisms. When governments decide to support training to comply with a private standard, or provide other encouragement for suppliers to get certified to a private standard, they indirectly confer legitimacy to the standards concerned. Given that the distinction between private and public standards is often blurred, and that firms and consumers may not distinguish between them, the decision of whether government support for private standards is 'legitimate' ultimately

rests on the objectives of the support, what form it takes, and the broader national context (ITC, 2016).

For example, to enter the niche markets that involve environmental and organic trade standards requires voluntary certifications. Governments can reduce the complexity and costs of compliance by aligning their own regulations with stringent environmental and organic private standards. An OECD study found that harmonisation, by aligning technical regulations with requirements in voluntary standards, can significantly reduce the complexity of compliance and open channels for governments to support the adoption of standards (Rousset et al., 2015). For example, producers that comply with such stringent voluntary standards could automatically be considered compliant with related public standards and technical regulations. This can be done by harmonising regulations to create compatibility. In the same manner, governments can provide the option of a single inspection visit that is valid for public and voluntary standards, which will reduce compliance costs (Rousset et al., 2015).

The International Trade Centre (ITC, 2016) report suggests that, in many cases, the private sector is able to pay for testing and other conformity assessment services needed for interventions. However, there is an absence of critical mass of demand in many developing countries. Hence, it is not commercially viable for private firms to offer conformity assessment services. This indicates a coordination failure – the demand for services will not develop in the absence of a conformity assessment infrastructure, and the private sector will not provide services without demand (ITC, 2016). Governments can break this cycle by supplying the initial capital to add tests to public or private labs, and gradually withdraw funding as demand for these tests increases. Another option, especially where the market for specific tests is small, is to send the test samples to a regional accredited laboratory (ITC, 2016).

The specific features of producer-friendly design, such as cost sharing, technical assistance and transparency, can increase the adoption of standards by small producers and facilitate their integration into sustainable value chains. The ITC and European University Institute (ITC & EUI, 2016) study shows that the vast majority of standards provide support through guidance tools and other documents. In addition, many standards offer technical assistance to meet standard requirements. However, significantly fewer standards provide technical assistance to improve productivity, efficiency or market access (ITC & EUI, 2016). Many standards facilitate learning, however; only a few offer financial assistance. Looking at the cost implications of these activities, the analysis found that guidance tools and support documents are mostly provided free of charge. However, technical assistance – in particular technical assistance that goes beyond meeting standards' requirements – is often not free (ITC & EUI, 2016). The analysis also showed that many standards systems offer their support activities in different languages. However, only a few adapt them to the local context, in terms of sector, firm size and level of development.

The ITC and EUI (2016) study also explores several variations in the use of cost sharing. It shows that the factors that have a statistically significant influence on the probability of cost sharing are involvement of buyers in the management of standards, ISEAL Alliance membership, location of headquarters in an OECD country, and for-profit orientation where standard setters are businesses, rather than not-for-profit organisations. One factor that stands out is membership in the ISEAL Alliance. Standards that are ISEAL full members are 52% more likely than the average standard in this sample to have a design in which the implementation costs are shared, and 37% more likely to have certification costs shared. What this means is that when it comes to costs, ISEAL membership improves the situation for producers. Another statistically significant finding is that the engagement of buyers at the board or management level also increases the

likelihood of cost sharing. Standard setters that are businesses, as opposed to NGOs, are also more likely to use a cost-sharing model, probably because they have fewer financial constraints than NGOs (ITC & EUI, 2016).

ITC (2016) shows that in the design process, it is important for resource-constrained countries (mainly low-income countries) to make strategic choices, given that building and running the technical infrastructure is costly. Public authorities can do this by (ITC, 2016):

- Aligning with national policy priorities
- Encouraging firms to meet standards and technical regulations in priority areas
- Ensuring international recognition as trading partners only recognise conformity assessment results when the bodies involved are accredited.

In general, Lammersen and Roberts (2015) shows that AfT interventions can be made more effective regarding standards and regulations. “Given the relatively small market size in many developing countries, it is clear that sustained economic growth needs to rely in part on creating larger, more viable markets through the rule-based sharing of resources and production assets” (Lammersen & Roberts, 2015, p.15). Regional AfT is hampered by many practical complications, from technical standards to financing issues, while negotiations can be bogged down by poor inter-governmental communications and sometimes by lack of trust across negotiating parties (OECD, 2014). Simplifying and harmonising procedures and standards on the regional level can increase trade. This is especially beneficial for SMEs, with fewer in-house capacities to address complex, unpredictable processes often required for cross-border trade. Reducing the number of agencies at the border lowers the resources required for customs. This reduces fixed business costs and therefore helps SMEs expand their cross-border trade. A key recommendation is therefore to establish single window to submit documents and provide information (ITC, 2016).

For example, in many countries, official responsibilities for food safety are divided among multiple ministries, departments, and agencies—depending on the product, type of hazard, stage of the agri-food value chain, and, sometimes, the destination market (Jaffee et al. 2019). Most low-income countries do not have a lead designated agency with overarching responsibility for food safety regulation, or at least for coordinating functions across the food safety area. The lack of a lead agency makes it difficult to set strategic priorities and to engage effectively with stakeholders. Administrative procedures and hierarchies can also stand in the way of the effective management of food safety (Jaffee et al., 2019).

The ITC report (2016) identifies and analyses several criteria for standards design and governance that are unambiguously beneficial for producers, including stakeholder engagement, producer support, transparency, producer-friendly aspects of conformity assessment and mechanisms for sharing certification costs between producers and other value chain actors. The availability of this information is especially important for the successful uptake of standards by SMEs and smallholders, as they reduce the costs of implementing and complying with sustainability standards, thereby making the standards more accessible and producer-friendly. SMEs tend to have limited resources and a lower threshold to absorbing risks, especially when operating in intensely competitive markets, and the fact that SMEs tend to trade smaller quantities implies that fixed trade costs often make up a larger share of the unit cost of their goods and services when compared to rivals exporting larger volumes (Jaffee et al., 2019). Therefore, in the design there must be a focus on SMEs and smallholder farmers. Furthermore, a gender lens on interventions is also necessary as impacts are different between men and

women. Often SMEs and smallholders with some education and assets (mostly men) are able to make the transition to enter value chains and meet requirements of standards (Jaffee et al., 2019).

AfT interventions in standards and regulations need to link with other development interventions that are linked with SME development in general, because to enter a value chain SMEs must be competitive first to benefit from standards. Standards are not the magic tool, but can help improve an already competitive firm to benefit from the value chain. In this sense, the concept of lead firms is often mentioned as a way forward. In some developing countries where technical infrastructure is ineffective or missing, private standards can fill a gap, with multinationals helping SMEs to adopt their standards. This also highlights the importance that research has shown to link FDI policy with standards to increase the effectiveness of the interventions and include SMEs while raising quality. This has been the case in some countries, where the standards of multinational companies have been applied to food products. Lipton, for example, decided in 2007 to source all its tea for teabags from Rainforest Alliance Certified™ farms (SustainabilityXChange, 2011). This involved obtaining certification for Lipton-owned tea farms, and also aligning the practices of smaller suppliers to the requirements of Rainforest Alliance Certification. As part of its efforts to assist such suppliers, Lipton successfully engaged the help of the Kenya Tea Development Agency.

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## About this report

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