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Trade Facilitation in Developing Countries

by

Chris Milner, Oliver Morrissey and Evious Zgovu

Abstract

Measures to actively facilitate trade are increasingly seen as essential to assist developing countries in expanding trade and benefiting from globalisation. Although often viewed as narrowly concerned with the ease and speed of Customs procedures, even greater trade cost reductions and trade and welfare benefits may be reaped from a broader view of trade facilitation (TF) that incorporates transportation, distribution and communication issues. A number of TF reforms are particularly beneficial: improving procedures, especially Customs clearance; introducing automation and use of information technology; reducing excessive documentation requirements; addressing lack of transparency in import and export requirements; addressing lack of modernisation of and cooperation between Customs and other government agencies. The review identifies the types of TF reforms that could address these problems and deliver a return in terms of increased revenue collection efficiency, reductions in trade costs and promotion of greater regional cooperation (at least in Customs and transport, especially as many TF measures are appropriate for inclusion in regional integration agreements).

Key Words: Trade Facilitation, Regional Integration

***JEL* Classification:** F14, F15, F17

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Outline

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1. Introduction

Measures to actively facilitate trade are increasingly seen as essential to assist developing countries in expanding trade and benefiting from globalisation. The WTO website defines trade facilitation as 'the simplification and harmonisation of international trade procedures … for collecting, presenting, communicating and processing data required for the movement of goods in international trade'. In reference to trade facilitation, the Doha Declaration refers to 'expediting the movement of, release and clearance of goods, including goods in-transit'. In different contexts (e.g. World Bank and APEC), trade facilitation refers to a much broader spectrum of issues including technical barriers to trade (TBT), competition policy, government procurement and transparency in general. Following the existing empirical literature, we adopt a relatively narrow definition of trade facilitation (TF) which focuses on measures that essentially ease and speed the process of importation (e.g. reforms to valuation and Customs procedures), although we also consider issues relating to transportation. In many cases there will also be benefits for exporters, such as through improved port clearing procedures, especially for landlocked countries (e.g. exports benefit from improved Customs procedures in their own and transit countries).

Most serious analyses of costs and benefits of trade facilitation have focussed on transaction costs. A survey of literature on trade facilitation by OECD (2002) showed that trade transaction costs differ depending on the efficiency and integrity of interacting businesses and administrations, characteristics of the goods involved, and the size and type of business. Transaction costs comprise both direct and indirect elements. Direct costs include mostly compliance costs related to supplying information and documents required for the movement of goods or related means of payment, and charges for trade-related services (e.g. trade insurance, port management).

Indirect costs include procedural delays (time for customs clearance and cargo handling) related to the market life of products, e.g. spoilage of agricultural products, product cycles for technology-intensive products. They also include the lack of predictability in the nature, application or interpretation of regulations, formalities and contracts, and costs of lost business opportunities, such as due to delays in a given country affecting the whole global production chain (these are rather difficult to measure). Although indirect costs are difficult to measure, hence potential benefits are difficult to assess, in practice savings may confer important long-run gains.

This paper addresses four issues. First, Section 2 provides a broad review of the types of costs addressed under TF and how these relate to trade, and second, considers evidence on the effects of improvements in TF (e.g. on trade flows or revenue efficiency). Third, Section 3 gives some examples of particular measures to improve TF, illustrating how effective such reforms can be, typically increasing revenue and collection efficiency and reducing Customs clearance times. Fourth, Section 4 briefly considers transport costs as an element of trade costs; although not usually included under TF, institutional reforms in transport and distribution systems can have a major impact in reducing costs and facilitating trade, and are especially relevant for exports. Section 5 offers brief conclusions, considering how TF measures can be incorporated in regional integration agreements, in particular the Economic Partnership Agreements (EPAs) being negotiated between the EU and regional groups of ACP countries (Morrissey and Zgovu, 2007). To the extent that TF facilitates competitiveness improvements may make a country more attractive to foreign investors, enhancing the potential impact of EPAs on investment in ACP countries (Morrissey, 2008).

2. Trade Effects of Trade Facilitation

Trade facilitation can be viewed in narrow or broad terms, and in unilateral or multilateral terms. In narrow and unilateral terms, improving the movement of goods through one's own customs appears to be improving the importation of goods rather than the exportation of goods. Even in this limited perspective, however, trade facilitation can have important implications for the ease and efficiency of exporting. Customs clearance efficiency affects imports and exports, while exports from land-locked countries flow through Customs in neighbouring countries. Furthermore, competitive exporting is likely to require efficient access to imported intermediate goods and capital goods. In a multilateral context the benefits of trade facilitation for exporting become even more transparent. Reciprocated efforts at trade facilitation benefit exporting in a multilateral sense. Of course, the idea of reciprocal lowering of barriers to trade having pro-export effects has even more relevance when all types of policy and other barriers are considered. In this regard barriers other than customs procedures (e.g. transport infrastructure and competitiveness of transport and other services) may be more important for some countries.

Qualitative costs and benefits of trade facilitation

International trade involves transaction costs; while these costs are essentially unavoidable, it is possible to reduce the level of costs (or the inefficiencies that effectively increase costs), so that some excess costs are avoidable. However small avoidable costs can be, they represent a significant bias against trade (which can be likened to an implicit trade tax or non-tariff barrier). Any savings of such avoidable transaction costs are savings which can have a big impact directly, and through the dynamic effects of chain linkages.

Saving avoidable costs entails some costs (e.g. equipment, training and for implementing new procedures) and even infrastructure (such as computerisation for Customs or road improvements to increase transport efficiency) but it can be assumed that the overall net effects of trade facilitation over time are positive. This is possible through increased trade in goods and services; lower implicit trade costs increase competition thus enhancing efficiency in the use of resources, encouraging technology transfer and realisation of productivity gains; increasing the incentive for international investment, contributing to economic growth and higher living standards. Trade facilitation involving automation of customs procedures (combined with training of customs officials) can also lead to improved controls and other government functions, reduced administrative costs, can overcome technical constraints, reduce opportunities for corruption, and promote a culture of cooperation between government and business.

Quantitative costs and benefits of trade facilitation

According to Kleitz (2003), attempts at measuring the costs and benefits of trade facilitation have used three approaches, namely (a) inventories of business complaints, (b) detailed firm-level analyses and (c) modelling trade and welfare effects. The Inventories approach entails listing particular procedures considered costly or inefficient. This provides a useful starting point for understanding the scale of the issue but does not provide any usable quantitative estimate about costs and benefits (and typically relies on anecdotal information).

Detailed firm-level surveys provide a fuller and more systematic picture of administrative and procedural barriers. This approach allows one to take into account a wide range of important factors, such as particular cost elements, product life for an indication of sensitivity to delays, extent of intra-firm trade

(important for reducing transaction costs), country characteristics and proportions of foreign trade. While modelling trade and welfare effects is inherently desirable to estimate potential impacts, significant data problems have limited work along these lines. Existing analyses use computable general equilibrium models, in particular Global Trade Analysis Project (GTAP) models, to estimate the impact of automating customs procedures or to assess the cost of delays in particular countries (see examples below).

Benefits of Trade Facilitation

Efficient trade facilitation (e.g. increasing the efficiency of border procedures) can help lower trade transaction costs hence reduce the margin between domestic and international prices to benefit consumers and producers. In some case increasing efficiency of border procedures may require simple re-organisation of tasks and procedures, whilst in others it might require investment in infrastructure and human resources. The cost of implementing improvements (reform and modernisation) in customs procedures varies according to the size of the customs service, existing customs infrastructure and human resources. The general economic environment also plays an important role – for example, the availability of functioning basic infrastructure such as communication facilities and stable energy supply.

OECD (2005c) examines the economic impact of trade facilitation and in particular the link between trade facilitation and trade flows, government revenue and foreign direct investment. The paper finds strong positive causal links between improvement in trade facilitation with trade flows and government revenue (mostly for developing countries by implementing customs modernisation programmes that result in more efficient collection of trade taxes). Furthermore, OECD (2005c) demonstrates that facilitated cross-border movement of goods would have a positive effect on the ability of a country to attract foreign direct investment and better integrate in international production supply chains.

The link between trade facilitation and welfare effects has also been investigated in several studies using CGE models. The studies analyse the welfare effect of marginal reductions in trade transaction costs (TTCs). Table 1 presents a selection of some of the recent studies. The findings show that improvements in trade facilitation (e.g. from faster and more efficient border crossings of goods) would significantly increase global welfare. APEC (2002) found that reducing TTCs by five per cent in the APEC region would lead to an increase of US$ 154 billion to member economies. APEC (1997) compared the average gains from trade facilitation in the Asia-Pacific region with potential gains from tariff liberalisation. The results showed that gains from the former were almost twice the size of potential gains from tariff liberalisation.

Table 1 Examples of Effects of Trade Facilitation Measures

Study	Effects of TF
OECD (2003a)	CGE (GTAP) model estimates that a one per cent reduction of trade costs for goods will benefit all countries, e.g. as share of GDP: MENA (0.27 percent) and SSA (0.18 percent).
APEC (2002)	CGE model estimate that a five per cent reduction in trade costs for goods will raise APEC's GDP by 0.9 percent.

Source: Appendix Table A1.

3. Evidence on the Impact of Trade Facilitation Improvements

Table 2 presents a summary of the main findings of selected recent quantitative estimates and surveys, each exploring the link between trade facilitation and trade flows, and Table 3 lists country examples. The studies in Table 2 use either gravity models or computable general equilibrium (CGE) models to estimate the effect on trade of improvements in customs procedures and ports. The APEC region is well represented in the studies – the region only covers 21 countries but represents around half of world trade and includes a number of developed and developing countries. The studies typically have to make assumptions to facilitate analyses, e.g., Wilson *et al* (2003, 2004) assume that countries that are below-average in border infrastructure (customs and ports) will be able to raise their efficiency half-way to the APEC average. APEC (1999) assumes there is a fixed across-the-board reduction in TTCs while Kim *et al* (2004) and APEC (2004a) assume other types of customs administration improvements.

Table 2. Examples of Trade Effects of Trade Facilitation

Study	**Region and Effects**
APEC (2004a)	Gravity model for APEC: improved customs procedures by 10% boosts intra-APEC imports by 0.5%.
Kim et al. (2004)	Gravity model APEC: improvement in customs performance by 50% would increase imports by 1.7-3.4% in industrialised to 7.7-13.5% in industrialising APEC economies.
Batra et al. (2003)	Survey results from 80 countries find 'customs/foreign trade regulations' the second most serious "tax and regulatory constraint" on business.
Wilson et al. (2003)	Gravity model for APEC: enhanced port efficiency has a greater positive effect on trade even than improvements in customs.
Hummels (2001)	Each day saved in shipping time is worth 0.8 percent ad valorem for manufactures.

Source: Appendix Table A2

Table 3. Country Experiences with Trade Facilitation

Angola	Customs expansion and modernisation programme in 2000. Half-way through the five-year programme, revenue receipts had increased by 150% and customs processing time had been reduced to 24 hours for correctly submitted documentation.
Bangladesh	Customs modernization programme in 1999. By 2000, customs revenue was up 14% year-on-year and clearance times were reduced to 1-3 days for imports and 3-8 hours for exports.
Bolivia	Customs reform project 1997. By about 2000, both corruption and customs clearance times had been substantially reduced; despite an economic slowdown, decline in imports exceeded the decline in customs revenue; customs collection up by 11 percent (25 percent allowing for tariff reductions).
Ghana	Capacity enhancing reforms during the 1990s and a Customs ICT network in 2001. By 2003, government revenue collected from airport traffic increased by approximately 30 percent on a yearly basis. Customs clearing times were significantly reduced (e.g. from three days to four hours on average in the airport).

Mozambique	1997 programme focused on improving the customs legislation, systems and procedures, management and organisation. During the first two years of the programme, imports increased by 4 percent while customs revenue increased by 58 percent despite significant duty rate reductions; marked reduction in the clearance time of goods at the country's principal points of entry. Initial investments in the customs administration were recovered within 14 months from additional revenue receipts.
Peru	Customs administration reform in 1990s. Despite a reduction in average tariff level, customs revenue increased by 327 percent in 1990-1995 whereas the value of imports increased by 175 percent. Customs release time fell from a range of 15-30 days to 2 hours - 2 days.
Uganda	Comprehensive reform programme in the 1990s which aimed at trade liberalisation and customs modernisation. Revenue increased from 7.7 percent to 13.0 percent of GDP in the ten-year period to 2002.
Jamaica	Initiated reforms in 1993 including customs automation, implementation of a single-point clearance mechanism, the introduction of risk assessment procedures. Between 1998 and 2001, customs revenue increased by 110 percent.

Source: Appendix Table A3

Table 3 reports case studies where improvements in trade facilitation led to positive impacts on government revenue generation, typically through significant improvements in collection efficiency. The evidence on increases in revenue is encouraging given that impacts are likely to be evident only in the medium and long-term whereas some of the reforms are relatively recent; many of the countries are still in the process of implementing their customs reform programme. Furthermore, some studies only take into account revenue collected at a particular customs point (e.g. airports in Ghana). Furthermore, there is widespread evidence that improving clearance procedures leads to dramatic reductions in the time taken for goods to pass through Customs, implying dramatic reductions in trade costs.

The main conclusions reached from the studies reviewed here are: (even modest) improvements in trade facilitation have a positive significant effect on increased trade flows; increases in trade flows would be higher in developing countries than in developed countries (because developing countries are initially in a worse position); and between exporting and importing countries (both benefit from increased trade flows but the country that improves its border procedures most benefits more). There is some evidence that increasing port efficiency provides larger trade benefits than increasing efficiency of customs procedures (although it is the latter that contributes to increased revenue). However, it should be acknowledged that there is a wide gap between the actual and potential trade and growth benefits given inefficient movement of goods across borders.

Magnitude of Trade Costs

To assess the potential benefit of TF in reducing trade transaction costs (TTCs) one needs some estimate of the initial magnitude of TTCs. Estimates do exist, mostly for developed countries, although Kleitz (2003) notes that one should interpret the findings of studies estimating TTCs with caution as the available studies are based on unclear data and methodologies. The studies that seem most valid are limited in focus to particular costs in special circumstances and

generally draw on limited surveys. The findings are diverse, reflecting the restricted scope and parameters of the studies. Some findings for developed countries are reported in Appendix Table A4. Intra-EC direct costs are estimated to lie between 1.5 and 15 per cent (although the methodology used in the study yielding the upper estimate of 15 is unclear). UNCTAD (1994) estimates direct costs ranging between seven and ten per cent for the world. Given the inherent poor resource-base, structural rigidities and bottlenecks of many developing countries it is likely that estimates of transaction costs involving least developed and developing countries would be much higher than those for (mostly) developed countries given in Table A4.

As TTC costs are generally considered to be quite high, and are almost certainly higher in poorer developing countries, TF can be expected to yield significant net benefits. However, there are (up-front) costs associated with implementing TF measures that must be acknowledged (see Table A5). Some idea of the scale of costs of improving trade facilitation can be taken from World Bank adjustment loans with components addressing customs reforms. For example, the World Bank provided US$78 million to six south-eastern European countries towards customs improvements, and US$35 million to Tunisia for export development. A five-year (1999-2004) project for customs modernisation in Bolivia cost US$38 million, out of this US$25 million was spent on institutional improvements and US$9 million on system computerisation (Gutierrez, 2001).

Customs automation is one of the major cost elements of investment towards customs improvements. Automating customs procedures could cost as much as US$20 million provided that countries develop their own systems and less than US$2 million for the widely-used Automatic System for Customs Data (ASYCUDA) (UNCTAD, 2002). Customs automation cost US$5 million in Chile in the early 1990s (WTO, 2000), and in Jamaica it cost US$5.5 million – covering technical needs assessment, development of software suites, data communication equipment and computers (Grant, 2001).

In addition to initial investment outlays such as those outlined above countries have to meet operating expenses, which can be met by the consumers in the form of higher user fees or financed from the government budget. Moreover, systems need to be updated from time to time to reflect the latest technological developments. The post-installation costs can be of similar magnitudes as initial investment. For example, updating air cargo clearance system in Chinese Taipei cost US$5 million in 2004; in Philippines cost of updating the existing automated system from a DOS to Window-based platform cost about 40% of the original system installation (Bhatnagar, 2001).

Table 4: Perceived Effect of Customs-related TF on Reducing TTCs

	(weighted average of responses, % TTC reduction)		
APEC Country group	Minimum	Maximum	Median
Industrialised APEC countries	2.9	7.4	5.2
Newly industrialised APEC countries	5.3	10.7	7.8
Industrialising APEC countries	6.6	14.8	10.7

Source: APEC (2002).

A business survey in the APEC region found that traders expected the largest benefits from hypothetical Customs-related trade facilitation measures that would reduce transaction cost by 50 per cent to materialise in the lower-income

countries within the region (see Table 4). On the basis of median responses, trade facilitation would reduce TTCs by 10.7 per cent in industrialising APEC countries, compared with 7.8 per cent in newly industrialised countries and 5.2 per cent in industrialised APEC countries. Studies measuring the potential gains from trade facilitation report estimates of between two and three per cent of the total value of traded goods (UNCTAD, 1994; APEC, 1999). APEC (1999) predicts much larger gains for particular countries or regions. The gains vary significantly across countries and regions, sectors and characteristics of traders. Greater scope for reducing TTCs exists in many developing countries where they are substantially above those found under best practices.

The potential savings of modernising from paper-based to a paperless customs administration system are reported in Table 5. The savings range from 1.5 per cent for bulk sea shipment of coal to 15 per cent for air freighting fresh asparagus. The savings are partly due to the fixed costs of completing documentation manually, estimated at between US$75 and US$125 per transaction regardless of transaction size.

Table 5: Estimates of Savings from Changing to Paperless Customs System

				Estimate of Savings	
Product and transport mode		Typical volume	Cargo value (cif) (US$)	Value US$	Per cent
Coal	– bulk by sea	10,000 tons	520,000	7,800	1.5
Rice	– bulk by sea	1,500 tons	810,000	17,820	2.2
Machine parts	– by sea	20 ft container	175,000	5,425	3.1
Sugar	– bagged by sea	1,500 tons	273,000	12,012	4.4
Fresh asparagus	– by air	45 kg	1,370	206	15.0

Source: APEC (2002).

Another source of savings from trade facilitation is the creation of a single window border automation system. A single window system can minimise documentation costs by streamlining paperless processing needs of various regulatory agencies. Experience with such a system, the so-called TradeNet in Singapore, helped reduce the documentation costs borne by government and business by half (APEC, 2003). Further benefits from trade facilitation are associated with reductions in import clearance times. In Japan the average air-cargo import processing time fell from 53 hours in 1991 to 26 in 2001, while for sea-cargo the lead times were reduced over the same period from 168 to 74 hours.

Impact of Trade Facilitation on Exports

Nordas, Grosso and Pinali (2006) analyse the relationship between time for exports and imports, logistics services and international trade. They draw a distinction between the effect of 'trading time' on the probability of entering the market and the trade volume once entry is made. Time to market depends on adequate transport and logistics services and timely, transparent and predictable administrative procedures related to exports and imports. For example, exporters in remote countries tend to ship goods by air to a much larger extent than exporters closer to the market, while exporters in remote countries with weak air transport infrastructure and related services tend not to export time-sensitive goods. In some developing countries the time for administrative procedures related to exports and imports *alone* prevents local manufacturers from exporting time-sensitive products. For entrepreneurs in these countries time for imports and exports constitutes a substantial disincentive to invest in quality and upgrade

their products, since they cannot be sure that their product will arrive on the market in time to reap the price premium that new and differentiated products command.

In addition to econometric analyses, Nordas *et al* (2006) also consider four case studies. Two cover the effect of short lead times in Bulgaria and the Dominican Republic on export volumes and specialisation in fast fashion products that command a price premium in the market, where they are competitive in spite of higher production costs compared to, for instance, China. This means that improvements in logistics services are necessary for the two countries to stay competitive in the market. The third case study is Kyrgyz Republic, a landlocked country in a relatively stagnant region where transit arrangements with neighbours are crucial for export performance. Regional trade is impeded by high levels of administrative corruption and state capture, poor quality of physical infrastructure and related services, inefficient institutional arrangements, and non-tariff trade barriers. Clearly trade facilitation programs aimed at addressing these weaknesses would greatly improve efficiency and facilitate gainful trade (exporting and importing).

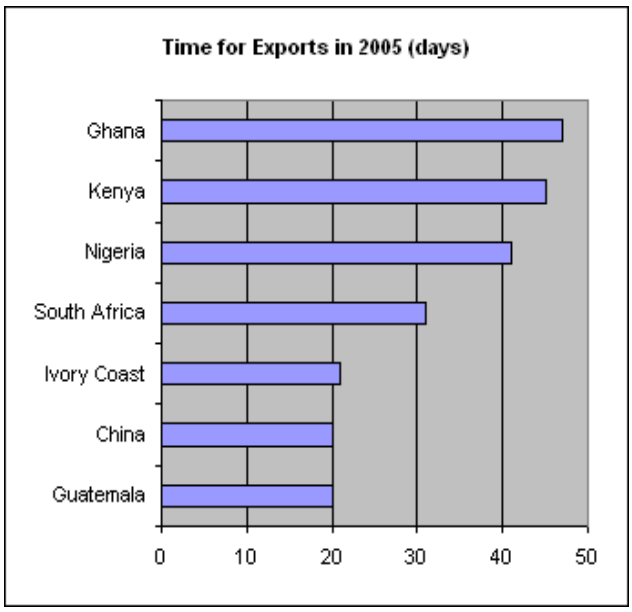
The fourth case study concerns exports of cut flowers from Kenya. The case study starts by demonstrating how trade in transport services - in this case air transport - allows Kenya to exploit its comparative advantage in floriculture. At first flowers were transported by passenger flights, creating linkages between the tourism and the floriculture sectors. As export volume grew, dedicated cargo flights have become commercially viable. However, south-bound flights run almost empty due to lack of demand for time-sensitive imports in Kenya. This could become a constraint on future expansion in floriculture as competition increases. Recent developments towards direct imports by retailers are also a challenge to Kenyan exporters because this would shift more of the logistical activities, including packaging and testing, to exporters. This is where the improvements in trade facilitation could play an important role in increasing efficiency and competitiveness of Kenya's cut flower sector.

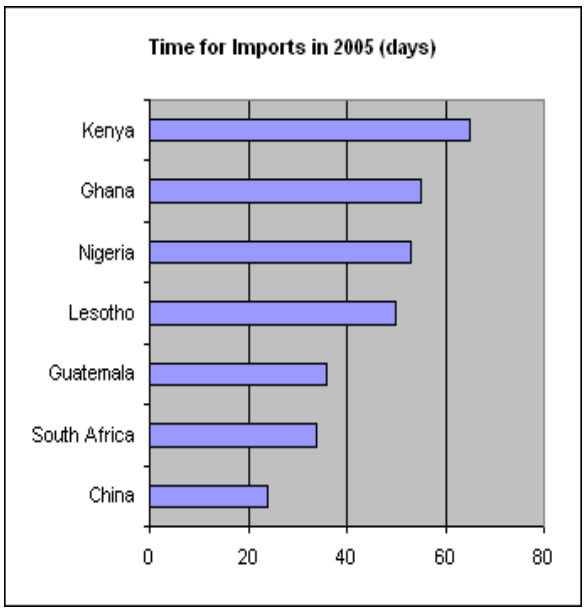
Results from econometric analysis of the impact of time on the probability to export and on trade volumes for total merchandise trade, trade in intermediate inputs, fashion clothing and electronics, showed that time has a large and robust impact on the probability to export, and the impact is strongest in the electronics sector. Time also has a large impact on trade volumes, and again the effect is strongest for electronics. For fashion clothing, time appears to affect the probability to export, but not the trade volume. The study also identifies developing and emerging economies that would benefit the most from reforms that would shorten time for exports and imports. Among these are Albania, Kenya, Romania, Tanzania, Ukraine and Vietnam. The findings underscore the importance and the positive impact that trade facilitation can have on trade in general and exports in particular. Removing unnecessary barriers to timely delivery is of utmost importance for developing countries. For sustainable results a trade facilitation program needs to be complemented with liberalisation of logistics services such as services auxiliary to all modes of transport services, other related logistics services and non-core freight logistics services.

Subramanian and Matthijs (2007) identify five critical factors for effective participation in global network trade: price, speed-to-market, labour productivity, flexibility and product quality. Speed-to-market crucially depends upon the quantity and quality of trade and trade-related institutions and physical infrastructure. It is critical for Sub-Saharan Africa countries, especially landlocked countries, to have modern and efficient trade facilitating institutions and physical infrastructure to be able to compete successfully in global markets where growing value is being placed on fast order-to-delivery cycles. The current state for some African countries is illustrated in Figures 1 and 2. Taking these countries as

representatives of SSA, it can be seen that there is a wide gap (of not less than 20 days vis-à-vis China) in export-days and import-days with some of the competitive exporting countries. Given that the countries shown have seaports (except Lesotho) the situation is potentially worse for landlocked countries. Through trade facilitation SSA countries have the opportunity to shorten the number of exporting and importing days.

Figures 1 and 2: Time (days) for Exports and Imports in 2005





Source: World Bank & IFC, *Doing Business in 2006*, Creating Jobs, pp. 104-106

Soloaga, Wilson and Mejía (2006) apply gravity models to estimate the impact of improvements in trade facilitation by Mexico and Mexico's trade partners and find that Mexico's unilateral improvements in trade facilitation measures are expected to increase manufacturing exports by $31.8 billion, equivalent to 22.4% of the average export level for 2000-03. Soloaga *et al* (2006) also report that improvements in trade facilitation in Mexican partners would increase Mexican exports by $2 billion (1.4% of Mexican exports). Combining both impacts gives a total expected increase in Mexican exports of $33.8 billion, equivalent to 23.8% of Mexican average exports level for 2000-03.

Other studies have also found evidence that shows that trade facilitation benefits trade and exports in particular. For example, USAID (2003) show that the dramatic growth of export from Mauritius from $89 million in 1970 to $2.8 billion in 2000 is partly attributed to trade facilitation measures, which reduced the cost and risk of exporting. Another case cited in the literature is that of vegetable exports from Zimbabwe (landlocked but, at least until recently, with reliable air and land transport, chilled storage and good communications network). In the 1990s, farmers near the capital supplied fresh vegetable to the London market by picking them, immediately trucking them to the airport and flying them overnight to London where they were put on shelves ready for sale in the morning. This required cheap and modern telecommunications because the shipments were delivered to order.

3. Nature of Trade Facilitation Programmes

In this section we review the experience of trade facilitation/customs modernization initiatives. Many countries have undertaken customs reforms, often with the support of development agencies such as the World Bank. De Wulf and Sokol (2004) argue that the outcomes of these programmes of reform/support have been mixed. It will be constructive therefore to identify the types of reforms/modernisation that have been undertaken, the degree of progress in improving customs procedures and administration, the lessons to be drawn from the successes and failures of these reform programmes, and whether there are cases studies or examples of good practice that could be drawn upon by countries incorporating TF within regional integration agreements.

Two useful sources of information on the nature of trade facilitation programmes and types of customs and other reforms involved are the World Bank's Project and Operations database and the case studies reported in DeWulf and Sokol (2004). Examples are illustrated in Table 6.

The TF reform programmes differ according to economic and institutional context, objectives and financial/technical support. However, the content of TF reforms typically all cover, to varying degrees:

(i) management and staffing (training, remuneration, etc)

(ii) infrastructure (e.g. roads, ports, airports)

(iii) information technology (computerisation)

(iv) procedures (valuation, pre-shipment, special import regimes, clearance, etc)

Table 6: Examples of Trade Facilitation Programs

Countries and Costs	Programme and Objectives	Illustrative Components
Benin (US$22.0) Ghana (US$46.0) Ivory Coast (US$3.0) Nigeria (US$63.0) Togo (US$2.0) Total cost = US$136.0 million	Abidjan-Lagos Transport and Transit corridor Project (2008-…) **Objectives** To enhance economic growth in Western Africa by facilitating movement of goods and people along the coastal corridor and increasing regional integration.	Support to customs modernisation and administration; Support to reduce number of road blocks; Support to harmonisation of legislation for truck operating rules and travel documentation; Improvement of access, procedures and security at the ports of Lagos (Nigeria), Cotonou (Benin) and Takoradi (Ghana);
Moldova (US$9.7 million)	Trade & Transport Facilitation in Southeast Europe Project (2003) **Objectives** (i) to reduce non-tariff costs to trade and transport; (ii) to increase revenue and compliance, and reduce smuggling and corruption at border crossings.	Establishing programs to implement new border processing procedures and practices; Providing technical assistance and training; Installation and Implementation of ASYCUDA (Automated System for Customs Data) clearance system; Improvement of border crossing facilities.

Source: Appendix Table A5.

Initiation of trade facilitation and customs reforms has fairly extensive coverage across developing countries, especially medium-size and larger developing countries. The sustainability and effectiveness of these reforms seems to vary significantly across countries. A number of factors appear to account for this, in particular variations in the precision in which objectives were specified, variations in the degree of commitment to reform, variations in the resourcing of programmes, variations in the effectiveness of staffing reforms (release of existing staff, hiring of new staff, salary restructuring, training of staff), and variations in the effectiveness of measures to eradicate corruption.

Table 7 provides a 'before and after' overview of customs reform in Peru comparing 1990 with 2002. Although this was a period of significant import liberalisation, revenue collected increased dramatically. Computerisation and other efficiency changes reduced significantly the numbers employed by Customs, but procedures were streamlined and simplified. One obviously important result was a drastic reduction in customs clearance times from over 20 days to within one day.

Appendix Table A7 summarises the customs reform and modernisation programme adopted by Turkey (as there is no *ex post* evidence, we do not discuss the example in detail), to bring its legislation and administrative structures and procedures in line with EU standards and to automate its customs procedures. De Wulf and Sokol (2004) view the establishment of an independent project implementation and monitoring unit, combined with strong political support and commitment management by the Turkish Customs Administration (TCA) as critical elements in the effective adoption and coordination of new structures, procedures and automated systems. These features were complemented by staffing and physical infrastructure improvements, although some reservations or concerns were expressed about the TCA's lack of autonomy in recruitment and salary setting. The basic elements were similar to those in Peru, and suggestive of what to include in any programme.

Table 7 Customs Administration Reform in Peru

1990 (pre-reform)	2002 (post-reform)
Tariff and trade regime	
• 39 tariff rates, 14 surtaxes	• 4 rates (7 rates including surtax)
• Range of rates: 10–110	• Range of rates: 4–25
• Prohibitions: 539 items	• Prohibitions: in1997: 25 items
Personnel and training	
• Total staff: 4,700	• Total staff: 2,540
• Professionals: 2.5 percent of staff	• Professionals: 60 percent of staff
• No training program	• One-year full-time course at the National Customs School.
Computerization	
• No computerization	• All customs functions and operations computerized
Customs control and clearance process	
• Paper declaration and clearance	• Electronic declaration lodging and processing
• 100 percent physically checked	• Based on risk analysis, 15 percent physically checked
• Payment at customs	• Payment at bank, electronic or otherwise
• Clearance times: over 20 days	• Clearance times: 1 to 24 hours depending on goods category
Revenue collection	
• US$626 million	• US$2,403 million
• 23 percent of budgetary revenue	• 36 percent of budgetary revenue

Source: Appendix Table A6.

The principal issues for reform with respect to trade facilitation in SSA countries, broadly representative of ACP, include (Gakunu, 2003):

- reducing excessive documentation requirements,
- addressing lack of automation and insufficient use of information technology
- addressing lack of transparency – unclear and unspecified import and export requirements
- improving procedures, especially Customs clearance – lack of audit-based controls and risk-assessment techniques
- addressing lack of modernisation of and cooperation between Customs and other government agencies, which interferes with efforts to increase trade flows effectively.

The types of TF reforms discussed previously could address these problems and would probably deliver a fairly quick pay-off in terms of increased revenue collection efficiency, reductions in trade costs and promotion of greater regional cooperation (at least in Customs and transport).

4. Transport Costs and Trade Facilitation

Transport costs are clearly an important element of trade costs and amenable to addressing under TF reforms, although transport itself is not often explicitly included (the first example in Table 6 is an exception). Transport costs are likely to be relatively high for ACP countries: in the Caribbean they are mostly small island economies, in the Pacific they are additionally remote, and costs in Africa are known to be especially high. Recent studies have estimated the level of transport costs in Uganda (Milner *et al*, 2000; Rudaheranwa, 2006) and Tanzania (Kweka, 2006). The implicit subsidy (effective protection) on imports and implicit tax on exports due to transport costs is calculated and compared for the early/mid-90s and early 2000s. The results show that transport costs remain very high, and in particular are a significant cost (tax) to exporters, although there are instances of reductions in freight charges and, more importantly, of significant reductions in transport times.

- Overall transport costs have fallen since the mid-1990s; in Uganda, freight costs for a 20-foot-container fell from US$ 3,750 in 1995 to US$ 1,850 in 2003 (about 50% decline) and from US$ 5,700 in 1995 to US$ 3,100 in 2003 in the case of the 40-foot-container (about 46% decline). However, there is considerable variation by mode of transport. Uganda faces the highest transport costs, and although land freight costs fell, sea freight costs through Kenya rose. The situation is different in Tanzania as sea freight costs fell but land (rail) freight costs rose.
- Transport costs remain very high and overall effective protection due to transport costs remains around 15% on average. Even in the early 2000s, effective taxation of exports due to transport costs remains around 40% for Tanzania and Uganda.
- Although not accounted for in the measures reported, transport times have been reduced through improvements in Customs and port clearance procedures. Transit time, which used to range from 39 to 46 days between Kampala and Mombasa for import shipment before 1994, fell to between 12 to 15 days for road and 18 to 21 days for rail transport, based on information available in October 2003. The transit time for exports used to be between 40

and 44 days, but has been reduced to as little as 4 to 7 days by October 2003.

A number of policy issues related to facilitating trade (reducing costs) can be highlighted relating to the four modes of transport - road, rail, sea and air - (Morrissey, 2007).

First, data and information are particularly scarce with respect to road freight. Estimates of land transport costs have been either based on rail freight charges (Tanzania) or projected from estimates for the early 1990s (Uganda). Road freight is a private sector activity, but increased investment in improving the quality of roads would have the greatest impact if concentrated on integrating major production areas, markets and ports. There are potentially high gains at relatively a low cost if the practices and efficiency of freight companies can be improved as part of private sector development initiatives.

Second, rail freight appears to be more expensive and less efficient than road. Rail freight is important for bulk commodities (e.g. cotton in Tanzania), but freight costs are increasing. The region suffers from both poor quality of rail infrastructure and a very restricted rail network, but there is also an absence of competition (as is often the case for rail). Investment could have a significant impact, but efforts concentrated on improving the quality of the existing network and rolling stock may be more effective than attempting to expand the network. The most effective interventions would be those that improve the operating efficiency of rail freight companies (which need not imply privatisation).

Third, investment in improved port facilities could be of great impact, as this is a major component of export costs. Improvements in Dar-es-Salaam port, in particular dredging and improved operating practices to increase turnaround times, appear to have reduced sea transport costs for Tanzania. By 2004, Dar es Salaam port was considered to be the most efficient port in the East and Southern Africa region in terms of container handling and shipment time, and the value (and speed) of goods shipped has been increasing.

Fourth, air freight is especially important for major non-traditional exports such as fish, horticulture and floriculture. Investment in storage, freezing and processing facilities may be of greatest benefit in these sectors. As in the case of road freight, the most effective interventions in this area should be part of a private sector development strategy.

5. Concluding Comments

Supporting and promoting trade facilitation has become an important feature of development policy in recent years, and has even given new meaning to the term 'aid for trade' (it now means financial support for TF, whereas it used to mean using aid to support donor' trade interests). Some of the emphasis has been on investment in infrastructure to reduce trade costs (e.g. Commission for Africa, 2005, especially Chapter 7). More broadly, it is recognised that speeding up administrative procedures could have a major impact in reducing the costs and time required to distribute goods. Reducing barriers to trade, promoting regional integration, reducing transport costs, trade facilitation and improving the environment for farmers and firms are all seen as necessary to enhance the capacity for trade (Commission for Africa, 2005, p.262). The review above establishes that there is a body of evidence to show that improved trade facilitation can:

- Significantly lower trade costs, especially reducing time;

- Bring about significant increases in the volume of trade, imports and exports, that may be even greater than the direct gains from trade policy reform;
- Allow for increases in government revenue and collection efficiency;
- Generally contribute to welfare improvements and economic growth.

These benefits, of course, have to be viewed against the costs of implementing the institutional, infrastructure, human and resource upgrades required to achieve the appropriate level of reform. Here too there is empirical and case study evidence that the benefits are likely to considerably exceed the costs (although financially constrained developing countries may still require aid and external assistance to meet the costs).

This review draws on a range of empirical and case study evidence illustrating the characteristics of more and less effective and efficient trade facilitation programmes. There is therefore evidence and experience that can be drawn on to incorporate trade facilitation within regional integration agreements as there are evident benefits from regional cooperation and coordination (e.g. in Customs and port procedures, and investment in infrastructure). Although often viewed as narrowly concerned with the ease and speed of Customs procedures, improvements in which lie at the heart of trade facilitation, the review shows that even greater trade costs reductions and trade and welfare benefits may be reaped from a broader view of trade facilitation that incorporates transportation, distribution and communication issues.

There are a number of ways in which TF is relevant in the context of regional integration, and in particular EPA negotiations. First, in broad terms, reducing the costs of trade will tend to stimulate increased trade; this may have the most immediate impact on imports but should also benefit exporters (e.g. improved Customs clearance or port handling reduces delays, which is especially beneficial for perishable exports, and exporters often import intermediate inputs), especially in landlocked countries. For example, Nordas *et al* (2006) identify exporting gains. Second, it supports regional integration as many of the measures relate to border procedures and/or would be more effective with regional coordination and cooperation. In this way improved TF in the context of regional integration supports investment measures in EPAs (Morrissey, 2008). Third, measures related to Customs procedures tend to increase the efficiency of revenue collection and are therefore typically associated with increases in revenue. Under EPA transition arrangements, implementing such measures could ensure that revenue (collection efficiency) increases in the period (some ten years) before tariffs on some 80% of imports from the EU are eliminated. It may also make it easier to substitute Sales taxes or Excise Duties for tariffs (even if tariffs are reduced to zero, it may still be expedient to levy taxes on imports at the point of entry). Finally, some EU measures or provisions may have impacts on TF. For example, simplified Rules of Origin or requirements to comply with product standards can reduce trade costs.

It may appear that trade facilitation is likely to have asymmetric effects in an EPA context, i.e. the most immediate and largest effects will be on ACP imports rather than on exports. This can largely be avoided to the extent that TF measures are incorporated in the regional integration agreements between ACP countries that precede the EPAs themselves, and hence precede any liberalisation with respect to imports from the EU but are coincident with improved market access for exports to the EU. The ACP countries are the developing countries with the greatest need and scope for improving trade facilitation (narrowly and broadly defined). Even if the most immediate direct effects are on importation (and revenue collection), there are also potential large export-side benefits to be had for ACP countries. The most important of these are associated with the clearance

of export goods through Customs, borders and ports (in less time and at lower cost), but export producers also gain from access to cheaper and more timely imported intermediate and capital goods. Furthermore, for landlocked ACP countries (or small islands whose trade may be shipped through a larger neighbour) improved (cheaper and more rapid) transit of goods through neighbouring countries will be a stimulus to exporting. These benefits are more likely to be realised at relatively lower cost if TF measures are incorporated in regional agreements.

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APPENDIX TABLES

Table A1 Welfare Effects of Trade Facilitation Measures

Author	Key findings
Francois et al. (2005)	Based on a CGE model exercise, the authors estimate that world annual income will increase by USD 72 billion (USD 151 billion) following a 1.5 percent (3.0 percent) reduction in TTCs for goods trade. In proportion to national income, most of these gains would benefit developing countries. All regions or major trading nations would benefit except China in the 1.5-percent reduction scenario. All countries/regions would benefit in the 3.0 percent, or "full liberalisation", scenario.
OECD (2003a)	Based on a CGE (GTAP) model exercise, the authors estimate that a 1-percent reduction of TTCs for goods trade will bring annual gains of about USD 40 billion on a world basis. Most of these gains will benefit developing countries in relative terms. There are no losers. Estimates as share of GDP reveals that Middle East & North Africa (0.27 percent), Non-OECD Asia Pacific (0.25 percent), OECD Europe (0.19 percent) and Sub-Saharan Africa (0.18 percent) would be particularly well off.
APEC (2002)	Based on a CGE model exercise for APEC economies, the authors estimate that a 5-percent reduction in TTCs for goods trade will raise APEC's GDP by USD 154 billion, or 0.9 percent.
Commonwealth of Australia (2002)	The authors estimate that in terms of annual increases of real incomes measured in 1997 prices, gains from reforms of customs procedures are estimated to be USD 0.4 billion in the Philippines, USD 2.3 billion in Singapore and USD 1.2 billion in Thailand.
UNCTAD (2001)	A 1-percent reduction in the cost of maritime and air transport services in developing countries could increase global GDP by USD 7 billion (1997 value).

Source: OECD (2005c)

Table A2. Trade Facilitation and Trade Flows

Author (year)	Key findings
APEC (2004a)	Based on a gravity model exercise for APEC economies, improved trade facilitation by 10 percent boosts intra-APEC imports by a minimum of 0.5 percent in the area of customs procedures.
Dollar et al. (2004)	Based on survey results from 7,302 companies in eight developing economies (including Brazil, China and India), customs clearance times for both imports and exports have a significant negative effect on exportation.
Kim et al. (2004)	Based on a gravity model exercise for APEC economies, an improvement in customs procedures performance by 50 percent would increase imports by 1.7-3.4 percent in industrialised APEC economies, 2.0-4.5 percent in newly industrialised APEC economies, and 7.7-13.5 percent in industrialising APEC economies.
Wilson et al. (2004)	Based on a gravity model exercise for 75 countries, improvements in port efficiency and customs administration for below-average efficient countries half-way up to the global average would increase trade flows by USD 107 billion and USD 33 billion respectively. Improvements in customs administration and port efficiency would benefit developing countries significantly.
Batra et al. (2003)	Based on survey results from 8,560 companies in some 80 countries, 'customs/foreign trade regulations' were identified as the second most serious "tax and regulatory constraint" on operations and business growth/trade in Latin America, Africa, Developing East Asia and the Middle East.
Fox et al. (2003)	Based on GTAP-model estimates, the authors conclude that a removal of the frictions in border crossings (delays) between Mexico and the United States would lead to a USD 7 billion rise in trade, with southbound trade estimated to increase by USD 6 billion and northbound trade by USD 1 billion. Welfare would increase by USD 1.8 billion in Mexico and by USD 1.4 billion in the United States.
Wilson et al. (2003)	Based on a gravity model exercise for APEC economies, enhanced port efficiency has a large and positive effect on trade. Improvements in customs significantly expand trade but to a lesser degree. If port efficiency and customs environment in below-APEC-average members were brought half-way to the initial APEC-average, intra-APEC trade is estimated to increase by 11.5 percent. A 9.7 percent gain (USD 117 billion) is expected from increased port efficiency and 1.8 percent (USD 22 billion) from an improved customs environment.
Hummels (2001)	Each additional day spent in transport reduces the probability that the US will source from the country by 1–1.5 percent for manufactured goods (no effect for commodities). Each day saved in shipping time is worth 0.8 percent ad valorem for manufactures.
APEC (1999)	Based on CGE analysis, a 1 percent reduction in import prices (from reduced TTCs) for Korea, Chinese Taipei and Singapore, and a 2 percent reduction for the other developing countries yield an increase in APEC merchandise trade of 3.3 percent.

Source: OECD (2005c)

Table A3. Country Studies on Trade Facilitation

Angola OECD (2005b)	Following years of civil war and a poorly operating customs administration, Angola adopted a customs expansion and modernisation programme in 2000. Crown Agents were hired to help design and introduce a thorough reform programme. The reforms focused on institutional weaknesses of the customs authority and six priority areas were identified. These included a reorganisation of the customs authority, the design and introduction of a new customs legislation framework, investments in HR management and training, the introduction of new customs procedures, financial management practices and the implementation of new information technology equipment. Half-way through the five-year programme, revenue receipts had increased by 150 percent and customs processing time had been reduced to 24 hours for correctly submitted documentation.
Bangladesh Abid Khan (2004), Draper (2000)	In mid-1999, Bangladesh initiated a customs modernization programme after domestic and international pressure had heightened awareness of the poor state of the customs administration. The first wave of reform saw the implementation of ASYCUDA + +; a simplified tariff schedule; the introduction of PSI; and strengthening of training and competence building. Despite some significant operating problems, six months after the start of the programme customs revenue was up by 14 percent year-on-year and Draper concludes that the scheme was at least in part responsible for this increase in import tax revenue. Customs clearance times were reduced to 1-3 days for imports and 3-8 hours for exports.
Bolivia Escobar (2004) Gutiérrez (2001)	In 1997, Bolivia introduced a customs reform project aimed at a total reengineering of the customs organisation, staffing, and its processes and procedures to restore institutional credibility, improve tax collection, and reduce high levels of corruption. The reform processes included the implementation of a new legislative and regulatory framework, a new organisational structure with previously corrupt customs official made redundant, and replacement of around 80 percent of staff. Wages were significantly raised and ASYCUDA + + was implemented. Despite certain setbacks and shortcomings, two years after the reform process was initiated, both corruption and customs clearance times had been substantially reduced. However, following the economic slowdown, there was a reduction in imports and private investment. The drop in imports exceeded the decline in customs revenue. In 2000, customs collection was up by 11 percent or 25 percent if account is taken for tariff reductions.
Bulgaria WTO TPR (2003)	Bulgaria has drastically reformed its customs administration since 1998 when it harmonised its customs legislation with that of the European Union. Most restrictions to the importation of goods were removed and in 2001, all specific registration requirements for customs purposes were eliminated. Bulgaria also introduced a single administrative document for customs declaration and a number of other measures to tackle the problems with administrative and operational capacity. The senior management of the Customs Agency was changed in 2002 and a three-year programme of customs reform was initiated with the assistance of the U.K. Crown Agents. This programme aimed to improve the customs legislation and management practices, train customs officials and improve customs controls and anti-smuggling activities through the deployment of "mobile assurance teams". The World Bank assisted the work with institutional reform and trade facilitation. It also helped to improve the Bulgarian Integrated Customs Information System. Since September 2002, when mobile assurance teams were introduced, there has been a steady increase in customs revenue. In January-May 2003, revenues increased by 158% year-on-year.

Table A3. ***continued***

Ghana De Wulf (2004)	During the 1990s, Ghana introduced a number of reform initiatives to improve capacity and efficiency at its customs authority and the country also started to implement a more open trade policy agenda. In early 2001, Ghana introduced a customs ICT network based on a model of Singapore's TradeNet. The customs system was initiated as a public-private partnership with a number of stakeholders offering experience and competence while sharing costs and risks. In mid-2003, the network covered 90 percent of Ghana's total trade flows and government revenue collected from airport traffic had increased by approximately 30 percent on a yearly basis when checked for currency changes and an increase in imports. In addition, customs clearing times were also significantly reduced. For example, at the main international airport, average customs clearance time was down from three days to four hours.
Jamaica Staples (2002), UNPAN (2002)	In 1993, Jamaica's government initiated a reform programme following complaints about widespread corruption and poor administrative practices. The reform programme included the implementation of a single-point clearance mechanism, the introduction of risk assessment procedures and the publication of a customs manual of procedures setting out all customs rights and responsibilities in export clearance. A customs automation service was later introduced and Crown Agents was contracted to implement software components for risk analysis, intelligence collection and data processing for valuation purposes. As a result of these initiatives, there was a steady and significant increase in revenue collection despite little or no economic growth in the country. Between 1998 and 2001, customs revenue increased by 110 percent.
Morocco Steenlandt and De Wulf (2004)	In 1996, Morocco's customs administration was highly inefficient: in the main port of Casablanca, releasing a container took on average 18-20 days. A reform process was initiated and covered all aspects of customs operations, including an overhaul of the customs code, the implementation of the Customs Valuation Agreement of the WTO, new staff incentives and training, and focus on information and communication technology. The results were impressive. Imports (other than for home consumption) increased by 48 percent between 1996-02 while customs revenue increased by 8 percent between 1998-02 despite progressive tariff reductions. Customs clearance times were reduced to an average of 1-2 hours in 2001-03.
Mozambique OECD (2005b), Mwangi (2004)	In 1997, Mozambique introduced a new customs programme – including a PSI scheme – which thoroughly reformed the customs administration. The reforms focused on improving the customs legislation, systems and procedures, HR management, organisation, IT and financial management. Crown Agents had also been hired in 1996 to help manage the customs authority. During the first two years of the programme, imports increased by 4 percent while customs revenue increased by 58 percent despite significant duty rate reductions. There was also a marked reduction in the clearance time of goods at the country's principal points of entry: in the capital Maputo, 80 percent of road imports and 62 percent of imports by sea are cleared by customs within 24 hours of correctly submitted documentation. Initial investments in the customs administration were recovered within 14 months from additional revenue receipts.

Table A3. ***continued***

Peru Goorman (2004)	Following an economic crisis in 1990 and a number of failed attempts at reforming its customs administration, Peru finally managed to implement a customs reform programme in the beginning of the 1990s. It reduced the number of tariff levels from 39 to 2, initiated competence enhancing programmes and brought in automation systems and best practices in line with international standards. Despite a reduction in the average tariff level and the number of staff (from 3,800 to 2,600), customs revenue increased by 105 percent between 1990 and 1992 (327 percent in 1990-1995) whereas the value of imports increased by 37 percent over the same period (175 percent in 1990-1995). Customs release time dropped from a range of 15-30 days to 2 hours - 2 days.
Philippines Keen (2003), Bhatnagar (2001)	In 1995, the Philippine customs authority decided to implement ASYCUDA + + for payment, risk assessment, clearance processing and shipment release from customs control. The initiation was a response to fraud in the customs administration and unduly long clearance times due to highly bureaucratic control procedures. One of the goals was also to raise government revenue and the cost of the project was approximately USD 27 million. The results were positive: customs clearance time was reduced from an average of 8 days before the automation to 4 hours – 2 days following the introduction. The Philippine customs authority experienced significant problems during the implementation phase and the Asian financial crisis also affected trade in the country. Nevertheless, the net present value of increased revenue was considerably higher than the expenditure and customs was able to meet revenue targets in three of six years. Between 1990 and 1996 imports grew by 160 percent while revenue grew by 60 percent.
Singapore United Nations (2002)	In 1989, Singapore introduced TradeNet, a highly efficient electronic trade document system which cost the country S$ 20 million to develop. The system linked trade parties – including 34 government units – to a single point of transaction for most trade-related activities. These activities cover customs clearance, payments of duties and taxes, processing of import and export permits and certificates of origin, and the collection of trade statistics. Studies suggest that the new system reduced trade documentation processing costs by 20-35 percent for traders. Singapore is the largest trader in the world when trade flows are measured in relation to GDP and government revenue is not linked to trade taxes. Nevertheless, Singapore claims that properly applied trade facilitation is saving it in excess of 1 percent of GDP each year.
Uganda De Wulf (2004)	Uganda undertook a comprehensive reform programme in the 1990s which aimed at trade liberalisation and customs modernisation. The initiatives included the establishment of an independent revenue agency to improve revenue collection. Again, as in the case of Angola and Mozambique, the reforms included an overhaul of the entire customs authority including significant changes to the tariff schedule, improvements of the customs legislation, emphasis on HR management, implementation of ICT through ASYCUDA + +, and simplification of customs procedures. The reform programme brought considerable results. Revenue of the Uganda Revenue Authority increased from 7.7 percent to 13.0 percent of GDP in the ten-year period to 2002.

Table A4: Estimates of Trade Transaction Costs (TTCs) from selected studies

Study	Country/ Region	Import/ Export	DIRECT COSTS	
			Scope	Costs (%) [1]
US-NCTID (1971)	USA	Avge. of import & export costs	Documentation; finance and insurance; carrier; and forward broker	7.5%
SWEPRO (1985)	Sweden	Avge .of import & export costs	Documentation costs	4%
Ernst & Whinney (1987)	Intra-EC	Import & export costs combined	Customs compliance costs	1.5%
EC (1989)	Intra-EC	Import & export costs combined	Documentation costs	3.5 to 15%
UNCTAD (1994)	World		Costs for finance, customs; business information; transport & telecom	7 to 10%
METI (1998)	Japan	Import costs only	Costs for border procedures	0.5 to 2.4%
Haralambides & Londoño-Kent (2002)	Between USA & Mexico	Import & export costs combined	Costs for handling, inspection, etc for a) southbound, b) northbound	a) 0.8 to 2.1% b) 0.6 to 1.1%
JETRO (2002)	Japan	Import costs only	Costs for import and port-related procedures: a) EDI-use b) Non-EDI use	a) 0.5 to 0.8% b) 1.2%

Table A4 *Continued….*

Study	Country/ Region	Import/ Export	INDIRECT COSTS Scope	(%) [2]	Remarks
US-NCTID (1971)	USA	Avge. of import & export costs			Based on business survey
SWEPRO (1985)	Sweden	Avge .of import & export costs			Based on data from customs and business
Ernst & Whinney (1987)	Intra-EC	Import & export costs combined	Delays for road haulers & lost business	1 - 3%	Reservations expressed on the survey on lost business & road haulers. Indirect costs calculated by WTO Secretariat
EC (1989)	Intra-EC	Import & export costs combined			Methodology unclear
UNCTAD (1994)	World				Uses US-NCITD (1971), EC(1989) and other information sources. Coverage of direct and indirect costs
METI (1998)	Japan	Import costs only			Based on a survey of Japanese manufacturing and trade firms
Haralambides & Londoño-Kent (2002)	Between USA & Mexico	Import & export costs combined	Time delay	a) 1.6 - 4% b) 0.1 - 0.5%	Costs of delays calculated based on Hummels (2001)
JETRO (2002)	Japan	Import costs only			Figures calculated by WTO Secretariat

Notes: [1] Due to differences in methodology and differing time periods during which particular studies were carried out, the estimates are not directly comparable. In particular, TTCs have been reduced over time in many countries as a result of trade facilitation efforts and technological progress, so that comparisons of TTC across time will tend to be misleading. Hence, the table serves to report on the different approaches to measuring TTCs and not to evaluate particular studies and their findings against each other.
[2] Percentages in terms of traded goods' value.

Source: OECD Secretariat. (2002)

Table A.5: Nature of Trade Facilitation Programs

Countries and project Costs	Programme Name and Objectives	Component Details
Benin (US$22.0) Ghana (US$46.0) Ivory Coast (US$3.0) Nigeria (US$63.0) Togo (US$2.0) Total cost = US$136.0 million	Abidjan-Lagos Transport and Transit corridor Project (2008-…) **Objectives** To enhance economic growth in Western Africa by facilitating movement of goods and people along the coastal corridor and increasing regional integration.	**- Trade Facilitation Component (US$19.0 million), with sub-components:** (a) Support to customs modernisation; (b) Support to connectivity between customs administration along the corridor; (c) Support to improve legal awareness and free access to legislation information on Trade and Transport Facilitation (TFF); (d) Support to reduce number of road blocks; (e) Support to harmonisation of legislation for truck operating rules and travel documentation; (f) Improvement of access, TF procedures, and security at the ports of Lagos (Nigeria), Cotonou (Benin) and Takoradi (Ghana); Allocations: Benin (US$6.0 million); Ghana (US$3.0 million); Ivory Coast (US$3.0 million); Togo (US$2.0 million); and Nigeria (US$5.0 million) **- Road Corridor Component (US$117 million), with sub-components:** (a) Technical and design studies; (b) Execution and supervision of civil works for road rehabilitation; (c) Improvement of access roads between Lagos and the federal highway; (d) Provision of technical assistance, material and equipment for road safety Allocations: - Benin (US$16.0 million); Ghana (US$43.0 million); Nigeria (US$58.0 million)
Burundi African Trade Insurance Agency (US$12.5 million)	Regional Trade Facilitation Project (ATI) Supplemental Credit **Objectives** To improve access to financing for productive transactions and cross-border trade, mainly through the provision of political and credit risk insurance.	- Political Risk Insurance Facilities (PRIF) - Technical Assistance - Start-up operational costs of ATI

Table A5: continued

Countries and project Costs	Programme Name and Objectives	Component Details
Azerbaijan (US$102.0 million)	Rail Trade and Transport Facilitation **Objectives** To improve sustainably the competitiveness, commercial orientation and efficiency of Azerbaijan Railway (ADDY)	- Modernisation of Infrastructure (US$40 million) - Replacement/Rehabilitation of locomotives and upgrading rolling stock (US$59 mln) - Advisory services (US$2 million) - Project implementation (US$1 million) Total cost: US$102.0 million
Bulgaria EUR40.9 million (World Bank); EUR13.7 million (Bulgaria)	Trade and Transport Facilitation Project (2006) **Objectives** To facilitate trade by improving the capacity, efficiency and quality of services at (future) EU external border crossings with particular focus on the Trans-European Transport Network.	- Improvement of physical capacity and working condition at future EU external border crossings (EUR36.0 million). This involves upgrading physical infrastructure (EUR24.0 million) and improving customs infrastructure and equipment (EUR12.0 million) - Access road to Kapitan Andreevo border crossing point (EUR10.0 million) - Sharing of relevant border crossing data and streamlining operational procedures of border crossing agencies (EUR8.0 million) - Project implementation (EUR0.6 million) -Capacity building for the trade community (EUR1.0 million, not included in total project cost)
CEMAC region, Africa (US$166.0 million)	CEMAC – Transport-Transit Facilitation (2007) **Objectives** To enhance regional trade and integration and sub-regional cooperation between CEMAC and ECCAS member states, and specifically provide landlocked countries of Central African Republic (CAR) and Chad with better access to the Port of Douala	- Transport Facilitation Investments. Sub-components include: (a) Communication between stakeholders, especially within the Port Community (IT interfacing); (b) Border Crossing Improvements (Joint Interconnections and Cargo Tracking, Border Posts); (c) Port Safety and Security; (d) Improvement of intermodal interfaces - Customs and Transport Sector Institutional Strengthening and Capacity Building. Sub-components include: (a) CEMAC Customs Union and National Customs Strengthening; (b) Institutional Support for transport facilitation institutions; (c) Management of the program components - Roads and Railway Infrastructure Improvement

Table A5: continued

Countries and project Costs	Programme Name and Objectives	Component Details
Pakistan (US$25 million)	Trade and Transport Facilitation (2007) **Objectives** To improve the performance of the trade and transport logistics system and bring it up to international standards with the aim to reduce the cost of doing business in Pakistan and ultimately enhance trade competitiveness and the country's industrialisation	- Capacity development in the entities directly concerned with the implementation of NTCIP (National Trade Corridor Improvement Program) - Support for implementation of NTCIP through analytical work on trade procedures and trade supporting infrastructure and services needs (including roads, railways, ports and shipping, aviation and energy sub-sectors) - Further strengthening of the private sector participation through TTFU (Trade and Transport Facilitation Unit) and NTTFC (National Trade and Transport Facilitation Committee) - Establishing sustainable monitoring and evaluation system to evaluate impacts of NTCIP – including coordination, monitoring and evaluation of the social and environmental safeguard issues - Manage the external communications strategy for the NTCIP
Cambodia (US$10.33 million)	Trade Facilitation and Competitiveness **Objectives** To reduce transaction costs associated with trade and investment, introduce transparency in investment processes, and facilitate access of enterprises to export markets	- Installation of appropriate IT to border management activities to streamline operations, improve the level of transparency and accountability and facilitate the achievement of all border related government objectives. - Technical support to the Ministry of Commerce's Department of Export Promotion to establish the exporter technical assistance window, and Technical assistance matching grant facility that would cover 50 percent of the cost of achieving market standards, or evidence of compliance with those standards - Private Participation in Infrastructure and Investment (financing capacity building to implement the Law on Concessions and the Amended Law on Investment) - Establishment and maintenance of a website in the Khmer language to make readily available to the public the final judgments of all cases in the Supreme Court and in the Court of Appeal; the establishment and maintenance of a website to ensure the electronic publication of all Cambodian laws, related regulations and draft legislation in the commercial law field, broadly defined; and training to utilize the established systems

Table A5: continued

Countries and project Costs	Programme Name and Objectives	Component Details
Moldova (US$9.68 million)	Trade & Transport Facilitation in Southeast Europe Project (2003) **Objectives** (i) to reduce non-tariff costs to trade and transport; (ii) to increase revenue and compliance, and reduce smuggling and corruption at border crossings.	Component 1 - Automating procedures to collect management data in order to monitor performance indicators - Establishing programs to implement new border processing procedures and practices - Providing technical assistance and training; re-engineers procedures by providing technical assistance to MDC to improve control over goods in transit (reinforcing the border, automating data exchange between customs locations, integrating trade and transit data, and interagency coordination); - Streamlining declaration and transit procedures, and strengthening valuation and post-release activities. Component 2: - Installation and Implementation of ASYCUDA (Automated System for Customs Data) clearance system - Technical assistance - Training and Purchase of Equipment for the Moldovan Department of Customs Component 3: - Implementation of a transit and inland control system mobile intervention squads Component 4: - Improvement of border crossing facilities including procurement of small equipment, supporting minor repairs, and setting up secondary inspection areas. Component 5: - Strengthening the private-public partnership and improving performance of trade facilitation agents.

Source: World Bank's Projects and Operations database.

Appendix Table A6: Peru - A Comparison of the Customs Administration, before and after the Reform, 1990 and 2002

1990	2002
Objective of customs	
Revenue collection; no explicit or implicit objective to facilitate trade	Revenue collection and trade facilitation
Legislation	
Tariff and trade regime	
• 39 tariff rates, 14 surtaxes, combining to 56 different rates	4 rates (7 rates including surtax)
• Range of rates: 10–110	Range of rates: 4–25
• Prohibitions: 539 items	Prohibitions: 1997: 25 items
Administration (laws and regulations)	
• Contradictory and dispersed	Clear and coherent
Organization and management	
No autonomy; public sector regime	Administrative and technical autonomy
No institutional development plan	Institutional development plan in place
	Structure adapted to the needs of a modern customs administration and the dynamics of foreign trade, with clearly established functions for each organizational subdivision and unit
Inadequate and bureaucratic structure	Delegation of functions and responsibilities
Budget depends on the MEF and determined through a national budgetary process; no investment budget	Budgetary, financial, and economic autonomy; 3 percent of customs revenue to finance customs operations and investment
Precarious or nonexistent infrastructure	Modern physical infrastructure
No annual investment plan	Annual investment plan
No acquisition program	Existence of an acquisition program
Personnel and training	
Total staff: 4,700	Total staff: 2,540
Professionals: 2.5 percent of staff	Professionals: 60 percent of staff
Recruitment: no strict requirement	Recruitment: rigorous evaluation process
Low salaries	Salaries equivalent to those in the private sector
No career plan	Career plan
No training program	One-year full-time course at the National Customs School as a condition of entry; special and refresher courses during career; 1,573 staff trained at the National Customs School by 1999 and 2,240 by 2002; training under the PSI program
No training provided to customs agents	One-year full-time course at the National Customs School for customs agents required for certification
Computerization	
No computerization	All customs functions and operations computerized; 1,600 computers and 50 servers; interconnection of all customs offices through an e-mail system; interconnection with foreign trade operators online through electronic data interchange and e-mail
Huge delays in trade statistics and obsolete when ready	Statistics in excellent shape and produced rapidly

Table A6: continued

1990	2002
Customs control and clearance process	
Incoherent procedures	Uniform, computerized procedures
Paper declaration, clearance process, and transactions	Electronic declaration lodging and processing
Control system based on suspicion	Good faith principle
100 percent of shipments checked	Selective checking based on risk analysis; by law maximum of 15 percent of shipments physically checked; in 2001, 18.9 percent were physically checked, documents were checked for 44.4 percent, and 36.7 percent were not checked
Multiple procedural steps	Automated procedure
Payment at customs	Payment at bank, electronic or otherwise
Process discretionary and unpredictable	Predictable, set rules and procedures virtually without discretion
Multiple contact with foreign trade operators No facilities for reliable foreign trade operators	Little or no contact of customs officer with importers or exporters Facilities for reliable importers and exporters: advance declaration system, temporary admission regime for export processing
Clearance times: over 20 days	Clearance times: red channel 24 hours, orange channel 12 hours, green channel 1–2 hours
Revenue collection not effectively controlled	Revenue collection tightly controlled
Poor quality of service	Quality certified (ISO 9000)
Post-release audits	
No post-release audit; customs control system relies on 100 percent checking at time of clearance	Customs control system relies heavily on post-release audit; audit function established and fully operating with a staff of 50 based on the audit selection system and audit program
Valuation	
Brussels definition of value system	WTO Agreement on Customs Valuation introduced in 2000
Valuation discretionary and subjective	Strict valuation methods and rules
No valuation data bank	Valuation data bank operated by customs on the basis of PSI and other data
Revenue collection	
US$626 million	US$2,403 million
23 percent of budgetary revenue	36 percent of budgetary revenue

Notes: a. Although the law stipulates that no more than 15 percent of shipments should be checked physically, achieving exactly 15 percent in practice is difficult. The 18.9 percent rate resulted from adjustments of the declaration or the duty liability in 6 percent of cases.

Source: Table based on International Standards Organization (ISO) assessment reported by Goorman, A. (2004).

Table A7 The Turkish Customs Administration (TCA)'s Four-Year Action Plan

Year 1	Year 2
1. Prepare the plan for modernising the Customs Code. The plan needs to deal with the simplification of procedures; a) Production of new forms required by these simplified procedures. b) Development and acquisition of a computer system. c) Training of customs staff. d) development of public information program to acquaint traders and their brokers with the new procedures, in particular, the use of computerised system. 2. Decide on the hardware, software, and telecommunication requirements of the IT system. 3. Prepare and issue tender documents for the hardware and software 4. Acquire the electronic customs management system and begin development of the electronic import declaration processing system (e-base system).	1. Complete development of the e-base system and launch it in a pilot office. 2. Assess the ability of customs facilities to operate the proposed IT system efficiently. 3. Develop and implement the public information campaign. 4. Develop and implement training for the e-base system. 5. Acquire hardware and software. 6. Roll out the e-base system in the largest locations. 7. Develop and implement simplified manual procedures for the sites that have not been automated. 8. Develop the remainder of the customs IT system, particularly the components related to export declarations, revenue accounting, manifest declaration, transit, and warehousing.
Year 3	**Year 4**
1. Complete implementation of the hardware and software in the remaining smaller locations. 2. Complete the roll out of the e-base system. 3. Gradually phase in the modules of the overall customs IT system as they become available.	1. Pilot test the computer system with the brokerage community. 2. Offer the computer system to all brokers. 3. Complete implementation of the computer system, including participation by other government departments, banks, and transport companies.

Source: Based on TCA documentation reported by Oktem (2004).