

Trade Facilitation and Paperless Trade: State of Play and the Way Forward for Asia and the Pacific



**TRADE FACILITATION AND PAPERLESS TRADE:
STATE OF PLAY AND THE WAY FORWARD
FOR ASIA AND THE PACIFIC**

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TRADE FACILITATION AND PAPERLESS TRADE: STATE OF PLAY AND THE WAY FORWARD FOR ASIA AND THE PACIFIC

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Executive summary

Reducing trade costs is essential for developing economies to participate in international production networks and effectively use trade as an engine of growth and sustainable development. One effective way to reduce trade costs is to tackle non-tariff barriers and address regulatory procedures and documentation requirements. Trade facilitation (the simplification and harmonization of import, export, and transit procedures) including paperless trade (the use and exchange of electronic data and documents to support the trade transaction process), has taken increasing importance as evidenced by the WTO Trade Facilitation Agreement reached in December 2013, as well as the growing number of regional and subregional initiatives aimed at facilitating the electronic exchange of trade-related information and documents along international supply chains.

This book features the results of the 2015 UNRC Joint Survey on Trade Facilitation and Paperless Trade Implementation for the Asia-Pacific Region and incorporates them into an econometric analysis estimating the impact of trade facilitation on trade costs. It shows that there is a strong, negative relationship between Asia-Pacific countries' international trade costs and their level of trade facilitation implementation. Highlights of this book include the following aspects:

- The average implementation level of all 44 Asia-Pacific countries surveyed stands at 46.5% across a common set of 31 trade facilitation measures, relatively close to the level of full implementation of the WTO TFA (which corresponds to a country reaching an implementation level of 54.8% in the UNRC Survey).
- Implementation across the region is very heterogeneous, with countries such as Australia, the Republic of Korea and Singapore achieving implementation levels higher than 85%, while other countries have implementation levels as low as 15%.
- Nearly 40% of the Asia-Pacific economies are now implementing advanced national paperless trade systems such as electronic Single Windows. However, implementation of cross-border paperless trade systems remains mostly at the pilot stage, including in ASEAN.¹
- While East Asia and South-East Asia are performing well above the Asia-Pacific average, all sub-regions still have significant room to make progress in all areas of trade facilitation, starting with institutional arrangements and further enhancing inter-agency cooperation.
- Specific WTO TFA-related measures that need the most work are: Trade facilitation measures for authorized operators; establishment and publication of average release times; and electronic Single Window systems, with all three measures featuring regional implementation levels below 50%.
- The econometric analysis shows that a 10% increase in the implementation of the comprehensive set of trade facilitation measures considered is associated with a 2.8% decrease in trade costs. Moreover, it suggests that in Asia and the Pacific, implementation of paperless trade measures have the most impact on reducing trade costs compared with other types of measures.

¹ See UNNExT Brief No. 13 on the ASEAN Single Window (May 2015). Available at <http://unnex.unescap.org/pub/brief.asp>.

- Further analysis reveals that a partial (full) implementation of binding and non-binding measures included in the WTO TFA is associated with an average 5% (11%) trade cost reduction across the 44 Asia-Pacific countries considered. Country-specific cost reductions from national implementation of TFA vary from 0% to more than 30%, depending on the current state of implementation of trade facilitation in each country.

Overall, the results suggest that many countries in the region have understood the potential benefits of trade facilitation and are thus taking concrete steps towards reducing trade costs. The negative relationship between trade facilitation implementation rates and trade costs highlights the need for Asia-Pacific countries to continue the work in streamlining trade procedures.

While implementation levels vary widely from country to country, a significant number of economies have already reached or exceeded the minimum implementation level associated with full compliance to the WTO TFA commitments. The next steps involve the development of cross-border paperless trade systems, which will enable electronic exchange of data and documents between stakeholders located in different countries along the international production chain. Regional trade gains from successful implementation of such systems would likely be in excess of US\$ 230 billion per year. Overcoming the technical and legal challenges in a sustainable and inclusive manner certainly requires strengthening regional cooperation. Timely conclusion of the ongoing intergovernmental negotiations at ESCAP on a regional framework agreement on the facilitation of cross-border paperless trade will be important in this regard.

Abbreviations

ADB	Asian Development Bank
AEO	authorized economic operator
APoA	Almaty Programme of Action
AU	Australia
ASEAN	Association of Southeast Asian Nations
ASYCUDA	Automated System for Customs Data
CA	Certification Authority
CCI	Credit Information Index
ECA	United Nations Economic Commission for Africa
ECE	United Nations Economic Commission for Europe
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ENEA	East and North-East Asia
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESCWA	United Nations Economic and Social Commission for Western Asia
EU	European Union
GATT	General Agreement on Tariffs and Trade
GVCs	global value chains
ICT	information and communications technology
IRU	International Road Transport Union
ITC	International Trade Centre
Lao PDR	Lao People's Democratic Republic
LDC	least developed country
LICs	low-income countries
LLDC	landlocked developing country
LMICs	lower-middle income countries
LSCI	Liner Shipping Connectivity Index
NCA	North and Central Asia
NTBs	non-tariff barriers
NTFC	National Trade Facilitation Committee
NZ	New Zealand
OCO	Oceania Customs Organization
OECD	Organisation for Economic Co-operation and Development
PIDE	Pacific island developing economies
RTA	Regional trade agreements
SAARC	South Asian Association for Regional Cooperation
SEA	South-East Asia
SELA	Latin American and Caribbean Economic System
SIDS	Small Island Developing States
SSWA	South and South-West Asia
TF	trade facilitation
TFA	Trade Facilitation Agreement

TFI	Trade Facilitation Indicator
UMICs	upper-middle income countries
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNCTAD	United Nations Conference on Trade and Development
UNNExT	United Nations Network of Experts for Paperless Trade and Transport for Asia and the Pacific
UNRC	United Nations Regional Commission
USA	United States of America
USD	United States dollar
WTO	World Trade Organization

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Chapter 1. Introduction

International trade touches more lives today than ever before. Technological progress combined with open economy policies have made it possible to exchange goods and services between countries that were previously unable to trade. This has also given rise to global value chains, with the manufacturing process distributed across several countries. This internationalization of production gives developing countries new opportunities to participate and benefit from regional and global trade. The Asia-Pacific region has benefitted heavily from this trend. It has experienced increasing welfare and a decrease in the number of people living in poverty in the region as an effect of the increase in investment and trade; as a result, it is now the world's largest trading region as well as the largest recipient of global inward foreign direct investment (FDI) (ESCAP, 2015).

Table 1.1. Intra- and extraregional comprehensive trade costs in the Asia-Pacific region (excluding tariff costs), 2008-2013

(Sub)Regions	ASEAN-4	East Asia-3	North and Central Asia-4	Pacific Islands-2	South Asia SAARC-4	AU-NZ	EU-3
ASEAN-4	76% (9%)						
East Asia-3	75% (5%)	51% (-5%)					
North and Central Asia-4	351% (9%)	177% (-7%)	121 (9%)				
Pacific Islands -2	175% (-11%)	174% (-9%)	368% (34%)	133% (-10%)			
South Asia SAARC-4	128% (2%)	125% (-0%)	282% (13%)	317% (2%)	114% (10%)		
AU-NZ	101% (4%)	89% (-3%)	338% (-5%)	73% (-22%)	142% (-1%)	54% (1%)	
EU-3	108% (2%)	85% (-4%)	152% (-8%)	211% (-6%)	114% (3%)	109% (0%)	43% (-4%)
United States	85% (11%)	63% (-0%)	180% (2%)	163% (-11)	109% (6%)	100% (4%)	67% (0%)

Source: ESCAP-World Bank Trade Cost Database (June 2015 update). Available at <http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=escap-world-bank-international-trade-costs> and www.unescap.org/tid/artnet/trade-costs.asp.

Note: Trade costs may be interpreted as tariff equivalents. Percentage changes in trade costs between 2002-2007 and 2008-2013 are in parentheses. ASEAN-4: Indonesia, Malaysia, Philippines, and Thailand. East Asia-3: China, Japan, and the Republic of Korea. North and Central Asia-4: Georgia, Kazakhstan, Kyrgyzstan, Russian Federation. Pacific islands-2: Fiji, and Papua New Guinea. SAARC-4: Bangladesh, India, Pakistan, and Sri Lanka. AU-NZ: Australia, and New-Zealand. EU-3: Germany, France, and United Kingdom.

As the production chain is becoming more fragmented, trade costs should be addressed to ensure that the interaction between the various stages of the production chain function as efficiently as possible, thereby highlighting the need for countries to facilitate trade and investment in an open,

predictable and transparent way (WTO/OECD, 2015). On average, developing countries have the highest trade costs, estimated at a value of 219% ad valorem tariff on international trade. In comparison, the trade cost of the same product is equivalent to 134% in developed countries (WTO, 2015). According to the latest data from the ESCAP-World Bank International Trade Cost Database, the overall cost of trading goods among the three largest European Union (EU-3) economies – tariff costs excluded – is equivalent to a 43% average tariff on the value of goods traded (see table 1.1). China, the Republic of Korea and Japan (East Asia-3) come closest to matching the low intra-European Union trade costs, with average trade costs among themselves amounting to a 51% tariff-equivalent, followed by the middle-income members of the Association of Southeast Asian Nations (ASEAN), whose intra-regional trade costs stand at 76% tariff-equivalent.

Other groups of Asia-Pacific economies face much higher costs of trading among each other, particularly in Central Asia, South Asia and the South Pacific. However, the scope for further reducing trade costs among Asia-Pacific developing economies is best understood when looking at interregional trade costs. For example, the trade costs between the neighboring Asian subregions of South-East (ASEAN-4) and South (SAARC-4) Asia (128%), are still much higher than those between ASEAN and the European Union (108%) or between SAARC and the United States (109%).²

It is well understood that a further reduction of trade costs in the Asia-Pacific developing economies is essential to enabling them to effectively participate in regional and global value chains, and to continue using trade as a main engine of growth and sustainable development. Recent studies have suggested that much of the trade cost reductions achieved during the past decade have been through the elimination or lowering of tariffs.³ Further trade cost reductions will therefore have to come not only from tackling non-tariff sources of trade costs – such as inefficient transport, and logistics infrastructure and services – but also cumbersome regulatory procedures and documentation. Indeed, trade facilitation (the simplification and harmonization of import, export and transit procedures), including paperless trade (the use and exchange of electronic data and documents to support the trade transaction process), has taken on increasing importance. This is evidenced by the successful conclusion of the negotiations on the WTO Trade Facilitation Agreement in December 2013 as well as the progress made at ESCAP on developing a complementary regional arrangement for the facilitation of cross-border paperless trade.

In that context, the ESCAP secretariat initiated a regional survey in 2012 among countries in Asia and the Pacific on trade facilitation and paperless trade implementation, which was expanded to a global effort in cooperation with all other United National Regional Commissions (UNRCs) in late 2014. Accordingly, chapter 2 of this monograph presents the regional results of the joint UNRC global survey and proposes a step-by-step approach for moving forward with implementation. In chapter 3, the UNRCs survey data are used to estimate the potential impact of the implementation of different types of trade facilitation and paperless trade measures on trade costs, taking into account other important cost

² For a more detailed discussion of these data and reducing trade costs, see ESCAP, 2015.

³ For example, see ESCAP, 2011.

factors and different implementation scenarios, such as implementation of binding or non-binding measures of the WTO TFA.

Chapter 2. Trade facilitation and paperless trade in Asia-Pacific: Current state of implementation⁴

2.1. Background and objective

For several years now, the ESCAP secretariat has systematically collected and analyzed information on the implementation of trade facilitation measures in the region, in order to provide a basis for developing more relevant capacity-building and technical assistance programs as well as for countries to design and prioritize their own trade facilitation implementation plans and strategies. Taking into account the interest of member States from the region in the application of modern information and communication technologies to trade procedures, a first regional survey on trade facilitation and paperless trade implementation was conducted in 2012, in conjunction with the Asia-Pacific Trade Facilitation Forum that is organized annually by ESCAP with the Asian Development Bank (ADB).⁵

Following a second regional survey in 2013 and extensive discussions at the Global Trade Facilitation Forum 2013⁶ on the lack of reliable, sufficiently detailed and regularly updated data on the implementation of trade facilitation in general – and Single Window and paperless trade in particular – it was decided that a global survey should be conducted jointly by all United Nations Regional Commissions (UNRCs), in cooperation with other interested international organizations.⁷

The 2015 UNRC Joint Survey on Trade Facilitation and Paperless Trade implementation covered 119 countries, which included 44 developed and developing economies from five different subregions in Asia and the Pacific. Following an introduction to the survey instrument and methodology in section 2.2, this chapter provides a region-wide overview of implementation of trade facilitation measures across countries, subregions and in countries with special needs. This is followed by a closer look at the implementation levels of various groups of trade facilitation measures as well as a review of the main trade facilitation achievements reported in Asia-Pacific economies during the past year and the key

⁴ Prepared by Yann Duval, Tengfei Wang, and Dimitra Tsoulou Malakoudi, Trade Facilitation Unit, Trade and Investment Division, ESCAP.

⁵ The scope of the survey was based on the definition and list of trade facilitation measures being discussed by the WTO Negotiation Group on Trade Facilitation, but was also extended to paperless trade measures, i.e., measures enabling trade transactions to be conducted on the basis of electronic rather than paper-based data and documents.

⁶ Organized jointly in Bangkok in November 2013 by all the UNRCs. See <http://www.unescap.org/events/global-trade-facilitation-conference-2013>.

⁷ The survey has been conducted in close collaboration with OECD, ITC and UNCTAD as well as several subregional organizations, such as SELA in Latin America and OCO in the South Pacific.

challenges faced. This chapter ends by highlighting some of the key findings and comparing the results to the WTO Trade Facilitation Agreement.⁸

2.2. Survey instrument and methodology

In preparing the survey instrument, the final list of provisions included in the WTO Trade Facilitation Agreement was taken into account as well as the content of the draft text of the regional United Nations treaty on cross-border paperless trade facilitation under negotiation at ESCAP. It covers 38 trade facilitation measures, divided into four groups, i.e., general trade facilitation measures, paperless trade, cross-border paperless trade, and transit facilitation.⁹

As shown in table 2.1, the general trade facilitation measures and transit facilitation measures are essentially measures featured in the WTO TFA. In contrast, most paperless trade and, in particular, cross-border paperless trade measures are not specifically featured in the WTO TFA, although their implementation in many cases would support better implementation of many of the general trade facilitation measures. It is worth noting that, to ensure comparability of implementation levels across countries, two of the measures classified under institutional arrangement and cooperation (No. 33, 34), one measure under paperless trade (No. 20), and one measure under transit facilitation (No. 35) are excluded from the regional analysis.

Table 2.1. Grouping of trade facilitation measures included in the questionnaire

		Trade facilitation measure (and question No.) in the questionnaire
General TF measures	Transparency	2. Publication of existing import-export regulations on the Internet. 3. Stakeholder consultation on new draft regulations (prior to their finalization). 4. Advance publication/notification of new regulations before their implementation (e.g., 30 days prior). 5. Advance ruling (on tariff classification). 9. Independent appeal mechanism (for traders to appeal customs and other relevant trade control agencies' rulings).
	Formalities	6. Risk management (as a basis for deciding whether a shipment will be or not physically inspected). 7. Pre-arrival processing. 8. Post-clearance audit. 10. Separation of release from final determination of customs duties, taxes, fees and charges. 11. Establishment and publication of average release times. 12. Trade facilitation measures for authorized operators. 13. Expedited shipments. 14. Acceptance of paper or electronic copies of supporting documents required for import, export or transit formalities.

⁸ The survey results for five subregions of Asia and the Pacific (South-East Asia, South and South-West Asia, North and Central Asia, Pacific Island Developing Economies and North-East Asia) as well as for three groups of Asia-Pacific economies with special needs – least developed countries (LDCs), landlocked developing countries (LLDCs) and Small Island Developing States (SIDs) – are discussed in more detail in separate reports to be made available online at <http://unnex.unescap.org/UNTFsurvey2015.asp>. The dataset is also available for further analysis.

⁹ The survey questionnaire is available in full at <http://unnex.unescap.org/tfforum14-survey.asp>.

	Institutional arrangement and cooperation	<ul style="list-style-type: none"> 1. Establishment of a national trade facilitation committee or similar body. 31. Cooperation between agencies on the ground at the national level. 32. Government agencies delegating controls to customs authorities. 33. Alignment of working days and hours with neighbouring countries at border crossings. 34. Alignment of formalities and procedures with neighbouring countries at border crossings
	Paperless trade	<ul style="list-style-type: none"> 15. Electronic/automated customs system established (e.g., ASYCUDA). 16. Internet connection available to customs and other trade control agencies at border-crossings. 17. Electronic Single Window system. 18. Electronic submission of customs declarations. 19. Electronic application and issuance of trade licences. 20. Electronic submission of sea cargo manifests. 21. Electronic submission of air cargo manifests. 22. Electronic application and issuance of Preferential Certificate of Origin. 23. E-Payment of customs duties and fees. 24. Electronic application for customs refunds.
	Cross-border paperless trade	<ul style="list-style-type: none"> 25. Laws and regulations for electronic transactions are in place (e.g., e-commerce law, e-transaction law). 26. Recognized certification authority issuing digital certificates to traders to conduct electronic transactions. 27. Engagement of the country in trade-related, cross-border electronic data exchange with other countries. 28. Certificate of Origin electronically exchanged between country of origin and other countries 29. Sanitary and Phytosanitary Certificate electronically exchanged between your country and other countries. 30. Banks and insurers retrieving letters of credit electronically without lodging paper-based documents.
	Transit facilitation	<ul style="list-style-type: none"> 35. Transit facilitation agreement(s) with neighboring countries. 36. Customs authorities limit the physical inspections of transit goods and use risk assessment. 37. Supporting pre-arrival processing for transit facilitation. 38. Cooperation between agencies of countries involved in transit.

The dataset was developed through the three-step approach detailed below.

Step 1. Data submission by experts. The survey instrument was sent by the ESCAP secretariat to selected trade facilitation experts (from Governments, the private sector, and/or academia) in Asia-Pacific countries as well as the participants at the Asia-Pacific Trade Facilitation Forum 2014,¹⁰ in order to gather preliminary information. The questionnaire was also made publicly available online and disseminated with the support of OECD, ITC, UNCTAD and IRU as well as the United Nations Network of Experts for Paperless Trade and Transport for Asia and the Pacific (UNNExT). In some cases, the questionnaire was also sent to relevant national trade facilitation authorities or agencies as well as

¹⁰ <http://unnex.unescap.org/tforum14.asp>.

regional trade facilitation partners or organizations. This first step took place for the most part between September 2014 and March 2015.

Step 2. Data verification by the ESCAP secretariat. The ESCAP secretariat cross-checked the data collected in Step 1. Desk research and data sharing among UNRCs and survey partners were carried out to further check the accuracy of data. Face-to-face or telephone interviews with key informants were arranged in order to gather additional information when needed. The outcome of Step 2 was a consistent set of responses per country. Step 2 took place as data was being received from individual experts, for the most part between October 2014 and April 2015.

Step 3. Data validation by national Governments. The ESCAP secretariat sent the completed questionnaire to each national Government to ensure that country had the opportunity to review the dataset and provide any additional information. The feedback from national Governments was incorporated to finalize the dataset. Step 3 took place between April and May 2015.¹¹

For the purpose of analysis and presentation of the results, the general trade facilitation measures have been further divided into three subgroups: transparency; formalities; and Institutional arrangement and cooperation (table 2.1). Based on the data collected, each of the trade facilitation measures included in the survey, and for which enough information was available, was rated either as “fully implemented”, “partially implemented”, “on a pilot basis” or “not implemented”. Definitions for each stage are given in annex 1. A score (weight) of 3, 2, 1, and zero was assigned to each of the four implementation stages in order to calculate implementation scores for individual measures across countries, regions or categories. Country groupings used in the analysis are defined in annex 2.

2.3. Trade facilitation implementation in the Asia-Pacific region

2.3.1. Overview

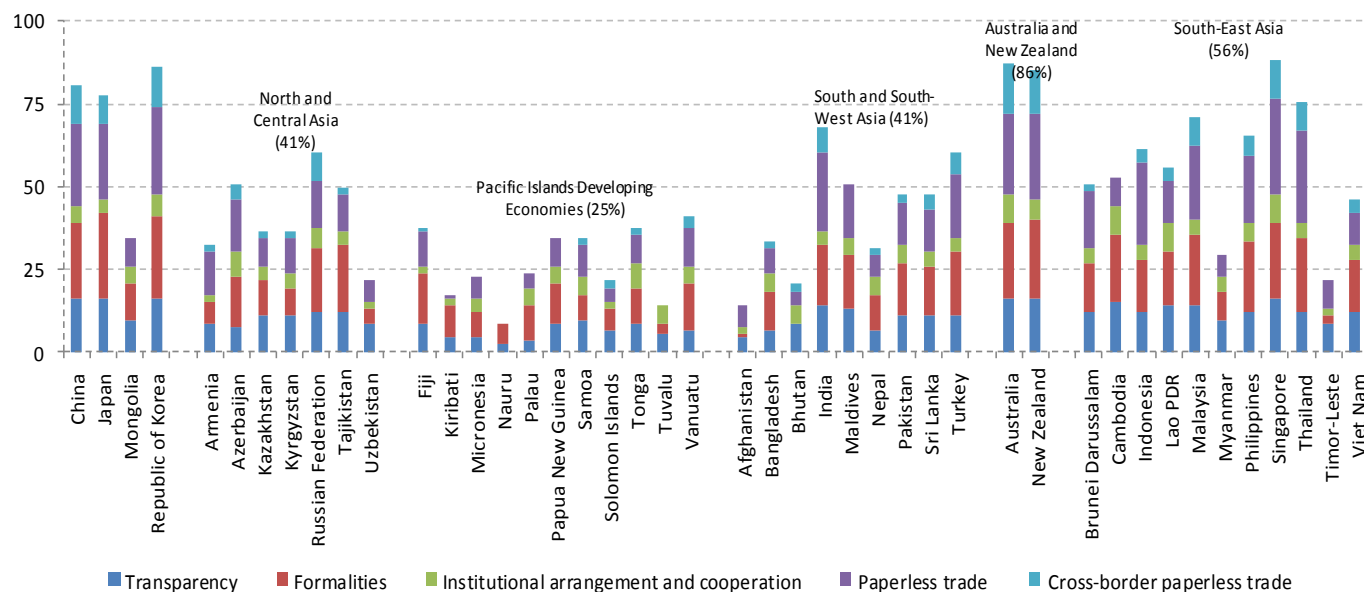
Figure 2.1 shows the overall implementation levels of all 44 Asia-Pacific countries, based on a common set of 31 trade facilitation and paperless trade measures included in the survey.¹² The regional average implementation of this comprehensive set of trade facilitation measures stands at 46.5%. The implementation of trade facilitation measures in the region is very heterogeneous. Australia, the Republic of Korea and Singapore achieve implementation rates in excess of 85%, while implementation in several other countries barely reaches 15%.

¹¹ Additional inputs on implementation of trade facilitation and paperless trade up to April 2015 in any of the countries covered are most welcome at any time in order to further improve the quality of the data and update the results to be maintained online.

¹² Among 38 trade facilitation measures surveyed, three measures – 20. Electronic submission of sea cargo manifests, 33. Alignment of working days and hours with neighbouring countries at border crossings, and 34. Alignment of formalities and procedures with neighbouring countries at border crossings – are excluded in calculating the overall score as they are not relevant to all the countries surveyed. Similarly, four transit facilitation measures are also excluded. The overall score of each country is simply a summation of the scores of implementation (3, 2, 1 or zero) it receives for each trade facilitation measure. The maximum possible (full) score of a country is 93 and the average score across all 44 countries is 43.3 (or 46.5% in percentage terms).

In general, more advanced or larger economies are at a higher level of trade facilitation than many other countries in the region, while small or less-developed countries, such as LDCs or small Pacific countries, lag behind in the implementation of trade facilitation measures, particularly those related to paperless trade. However, this is not always the case. For example, while both Cambodia and Lao PDR are LDCs, both countries achieve high scores of implementation. Similarly, Maldives achieves a relatively high score although it is a small island developing state (SIDS) that only recently graduated from the LDC group.¹³

Figure 2.1. Overall implementation of trade facilitation measures in 44 Asia-Pacific countries



Source: ESCAP, UNRC TF Survey 2015.

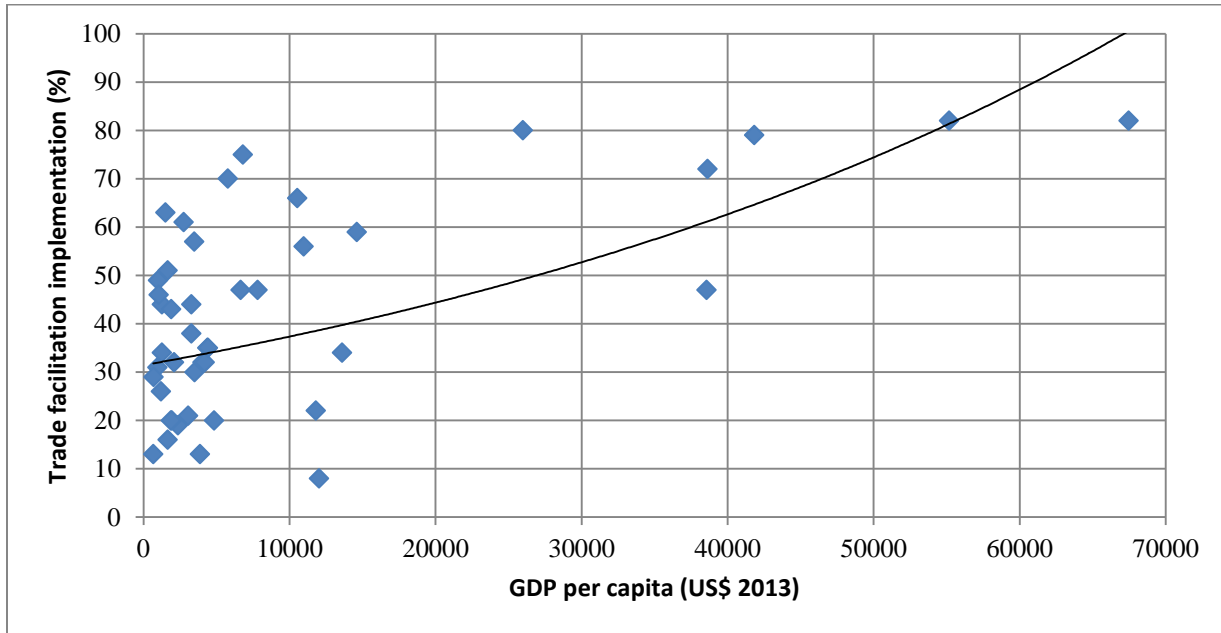
Further investigation of the level of trade facilitation implementation in relation to economic development shows that while high-income economies have systematically achieved high levels of trade facilitation implementation, the implementation levels in low-income economies differ dramatically from one country to another, ranging from less than 15% to more than 60% (figure 2.2).

2.3.2. Implementation in subregions and countries with special needs

Figure 2.3 presents an overview of the implementation of trade facilitation measures (measured by percentage) in the subregions (indicated by the blue diamonds) and the groups of countries with special needs (i.e., LLDCs, LDCs and SIDS (indicated by the green triangles) and the average level of implementation of each group of countries (indicated by the red bars). Aside from Australia and New Zealand (AU&NZ), the highest average level of implementation is obtained by East and North-East Asia (ENEA) at 70%, followed by South-East Asia (SEA), North and Central Asia (NCA), and South and South-West Asia (SSWA). The average implementation of Pacific Island Developing Economies (PIDEs) lags far behind other subregions at only 25%.

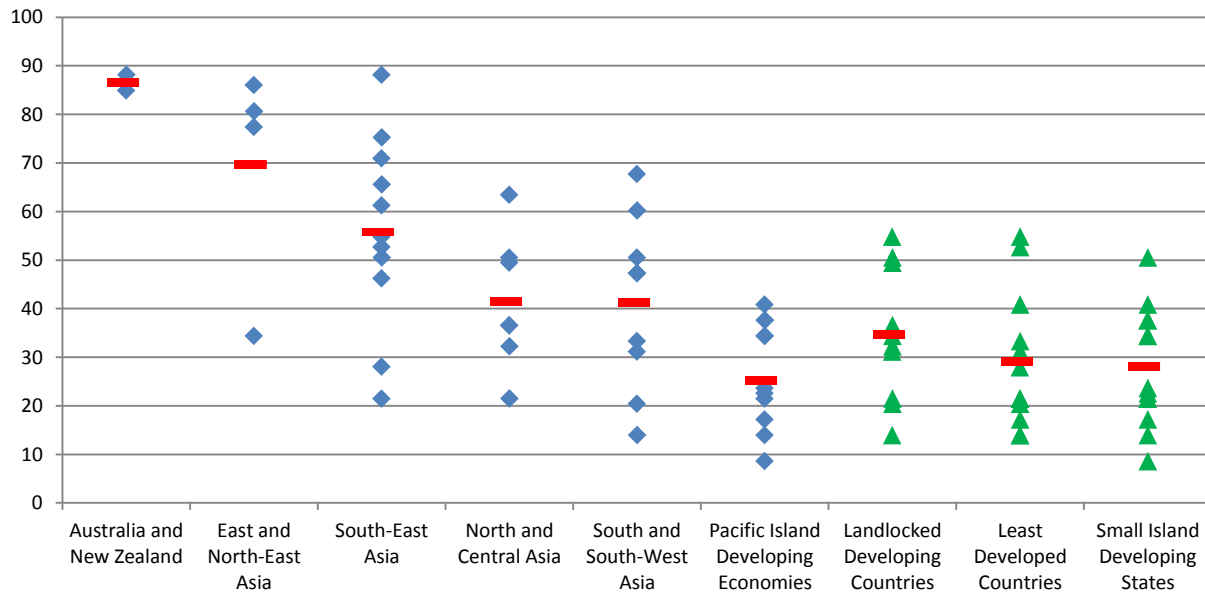
¹³ Maldives graduated in 2011. More information is available at www.un.org/en/development/desa/policy/cdp/ldc/ldc_graduated.shtml.

Figure 2.2. Trade facilitation implementation and GDP per capita of 44 Asia-Pacific economies



Sources: ESCAP, UNRC TF Survey 2015; World Bank World Development Indicators, accessed 29 May 2015.

Figure 2.3. Trade facilitation implementation in Asia-Pacific subregions and countries with special needs (Percentage)



Source: ESCAP, UNRCs TF Survey 2015.

◆ ▲ Trade facilitation implementation of individual economies (per cent).
 — Average trade facilitation implementation of the group (per cent).

In addition, trade facilitation implementation varies widely within each subregional grouping. Differences in trade facilitation implementation levels are the widest in South-East Asia, but this is essentially due to Myanmar and Timor-Leste, two economies that have only recently been able to actively engage in international trade. In fact, regional integration processes appear to have played a significant and positive role in trade facilitation implementation, as several LDCs in ASEAN – where regional cooperation on trade facilitation has long been promoted – achieving higher implementation rates than LDCs in other subregions. Differences in trade facilitation implementation levels are smallest within PIDEs, which might also be explained by the strong emphasis of ongoing economic cooperation initiatives on trade facilitation in this subregion – but arguably more likely by the fact that these small and generally isolated economies all face relatively similar implementation constraints. Countries with special needs in the Asia-Pacific region face particular challenges in the implementation of trade facilitation, particularly in the case of paperless trade and cross-border paperless trade measures. This is reflected in the average implementation levels of these countries, which varies between 25% and 35%, depending on the group of countries considered figure 2.3. Interestingly, LLDCs as a group appear to have achieved higher levels of trade facilitation on average than LDCs or SIDS. This is welcoming news, given the particular importance of trade facilitation for these economies and the strong support of development partners for the implementation of trade and transport facilitation in LLDCs, including in the context of the Almaty Programme of Action (APoA).¹⁴

2.4. Most and least implemented trade facilitation measures

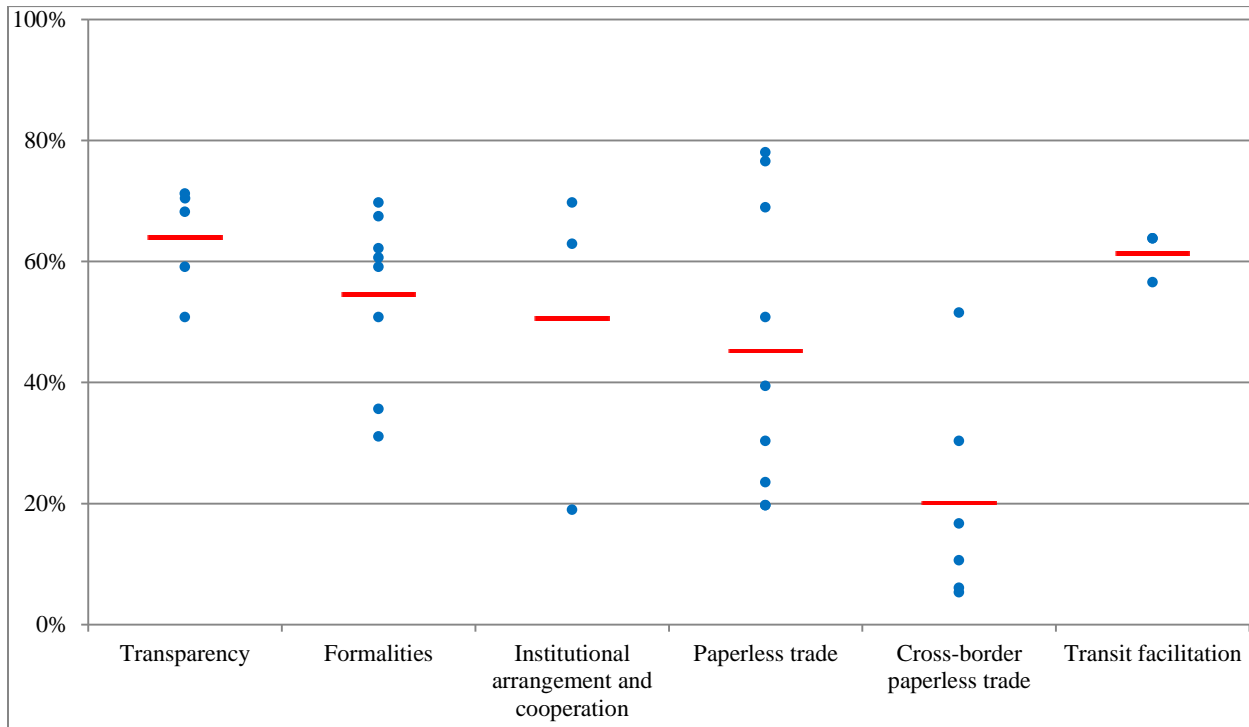
All countries are engaged in implementation of various measures aimed at enhancing the transparency of trade procedures as well as reducing the formalities associated with them. While implementation levels vary greatly across countries for all categories of trade facilitation measures, differences in overall implementation scores across countries are exacerbated by wide differences in the level of implementation of paperless trade measures, in particular cross-border paperless trade. Indeed, while all but two economies in the region have taken steps towards implementation of paperless trade, nearly a quarter of the countries have not implemented (even the pilot stage) any measures related to cross-border paperless trade, i.e., the exchange and legal recognition of electronic trade data and documents across borders with trade partners. Overall, as shown in figure 2.3 and table 2.2, “transparency” measures, such as stakeholder consultation on new draft regulations prior to implementation or publication of existing import-export regulations on the Internet, have been the best implemented (regional average implementation higher than 60%), followed by “transit facilitation” measures (57%). Measures aimed at reducing or speeding-up “formalities”, in particular implementation of risk management and pre-arrival processing of documents, have also been given serious attention in many economies of the region, with the regional average implementation rate exceeding 50% in that category. Regional average implementation has also reached 50% for measures related to “institutional arrangements and inter-agency cooperation” (50%), as many countries are working on the establishment of national trade facilitation committees.

¹⁴ www.unescap.org/events/final-regional-review-almaty-programme-action-addressing-special-needs-landlocked-developing.

The regional average level of implementation of “paperless trade” measures also stands close to 50%. However, implementation varies greatly depending on the individual measures considered. For example, while “Internet connections available to customs and other trade control agencies at border-crossings” and “electronic/automated customs system” are partially or fully implemented in nearly all countries, facilities enabling the “electronic application and Issuance of Preferential Certificate of Origin” have yet to be considered for implementation in many economies. Similarly, while many economies have developed legal frameworks to enable paperless trade, implementation of cross-border paperless trade has yet to begin in many developing countries.

The next section reviews regional implementation of the six groups of measures featured in figure 2.4 in more detail.

Figure 2.4. Implementation of different groups of trade facilitation measures: Asia-Pacific average (Percentage)



Source: ESCAP, UNRC TF Survey 2015.

Note: Blue dots show regional average implementation level of individual measures within each group.

— Average regional implementation level by groups of measures.

**Table 2.2. Most and least implemented measures in Asia-Pacific
(within each group of trade facilitation measures)**

	Most implemented	Least implemented
Transparency	<ol style="list-style-type: none"> 1. Stakeholder consultation on new draft regulations (prior to their implementation). 2. Publication of existing import-export regulations on the Internet. 	<ol style="list-style-type: none"> 1. Advance ruling (on tariff classification). 2. Advance publication/notification of new regulation before their implementation.
Formalities	<ol style="list-style-type: none"> 1. Risk management. 2. Pre-arrival processing. 	<ol style="list-style-type: none"> 1. Establishment and publication of average release times. 2. Trade facilitation measures for authorized operators.
Institutional arrangement and cooperation	<ol style="list-style-type: none"> 1. Cooperation between agencies on the ground at the national level. 2. Establishment of National Trade Facilitation Committee. 	Government agencies delegating controls to customs authorities.
Paperless trade	<ol style="list-style-type: none"> 1. Internet connection available to Customs and other trade control agencies at border-crossings. 2. Electronic/automated Customs System. 	<ol style="list-style-type: none"> 1. Electronic Application and Issuance of Preferential Certificate of Origin. 2. Electronic Application for Customs Refunds.
Cross-border paperless trade	<ol style="list-style-type: none"> 1. Laws and regulations for electronic transactions. 2. Recognized certification authority. 	<ol style="list-style-type: none"> 1. Banks and insurers retrieving letters of credit electronically without lodging paper-based documents. 2. Electronic exchange of Sanitary and Phytosanitary Certificate.
Transit facilitation	<ol style="list-style-type: none"> 1. Cooperation between agencies of countries involved in transit. 2. Customs authorities limit the physical inspections of transit goods and use risk assessment. 	Supporting pre-arrival processing for transit facilitation.

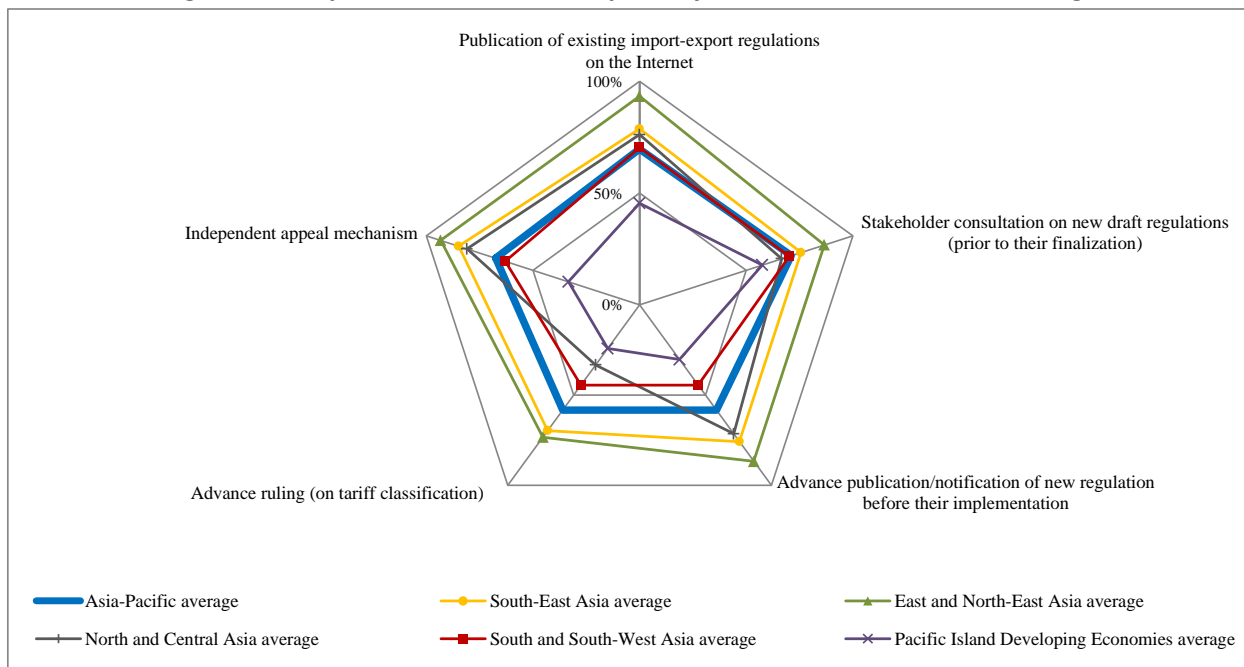
Source: ESCAP, UNRCs TF Survey 2015.

2.5. Implementation of trade facilitation measures: A closer look

2.5.1. “Transparency” measures

Five trade facilitation measures included in the survey can be categorized as “transparency” measures. They relate to Articles 1 to 5 of the WTO TFA and GATT Article X on Publication and Administration of Trade Regulations. Figure 2.5 confirms that the average level of implementation of all five “transparency” measures across the region are well in excess of 50%, indicating a significantly higher level of implementation compared with other types of measures. It also shows that implementation levels of these measures across subregions vary widely, with East Asia achieving almost full implementation. Implementation of advance rulings is found to be particularly lacking in both North and Central Asia and the Pacific Islands Developing Economies.

Figure 2.5. Implementation of “transparency” measures: Asia-Pacific average



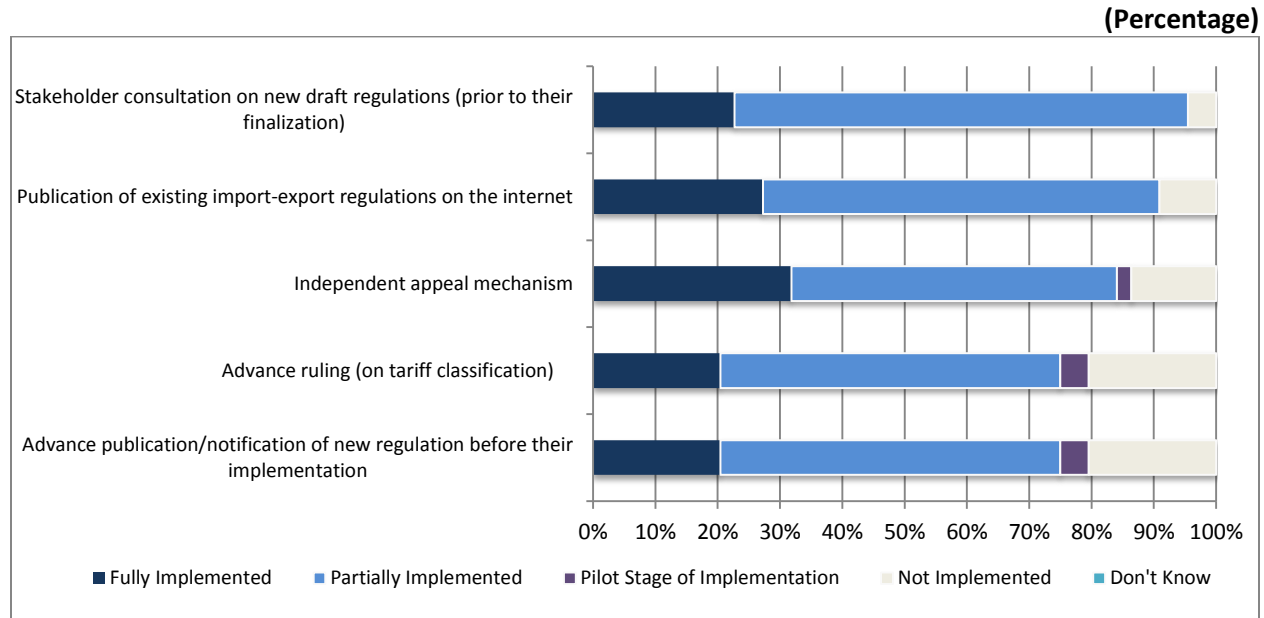
Source: ESCAP, UNRCs TF Survey 2015.

Figure 2.6 lists the number of countries that have fully and partially implemented “transparency” measures in descending order. Stakeholder consultation on new draft regulations (prior to their finalization) is the most implemented “transparency” measure in the region, as more than 95% of the 44 economies have either fully or partially implemented it.

The least implemented “transparency” measures are “advance ruling (on tariff classification)” and “advance publication/notification of new regulation before their implementation”. However, both have already been either fully or partially implemented by 75 % of the countries (33 countries) in the region. Two countries, Azerbaijan and Mongolia, are implementing these two measures on a pilot basis. Nine countries have not yet started implementing them.

The other two measures in this group, “publication of existing import-export regulations on the Internet” and “independent appeal mechanism”, have been implemented by most of the countries surveyed. Interestingly, although these two measures are not the most implemented ones in this group when partial implementation is taken into account, they have been “fully implemented” in more countries than any other measures in this group. This may be partly due to the fact that it is much easier to assess whether these two measures have been fully implemented than to determine whether sufficient and systematic consultations on trade regulations are taking place – in turn, suggesting the possible need to develop more detailed implementation criteria or guidelines regarding that measure.

Figure 2.6. State of implementation of “transparency” measures for trade facilitation in Asia-Pacific economies



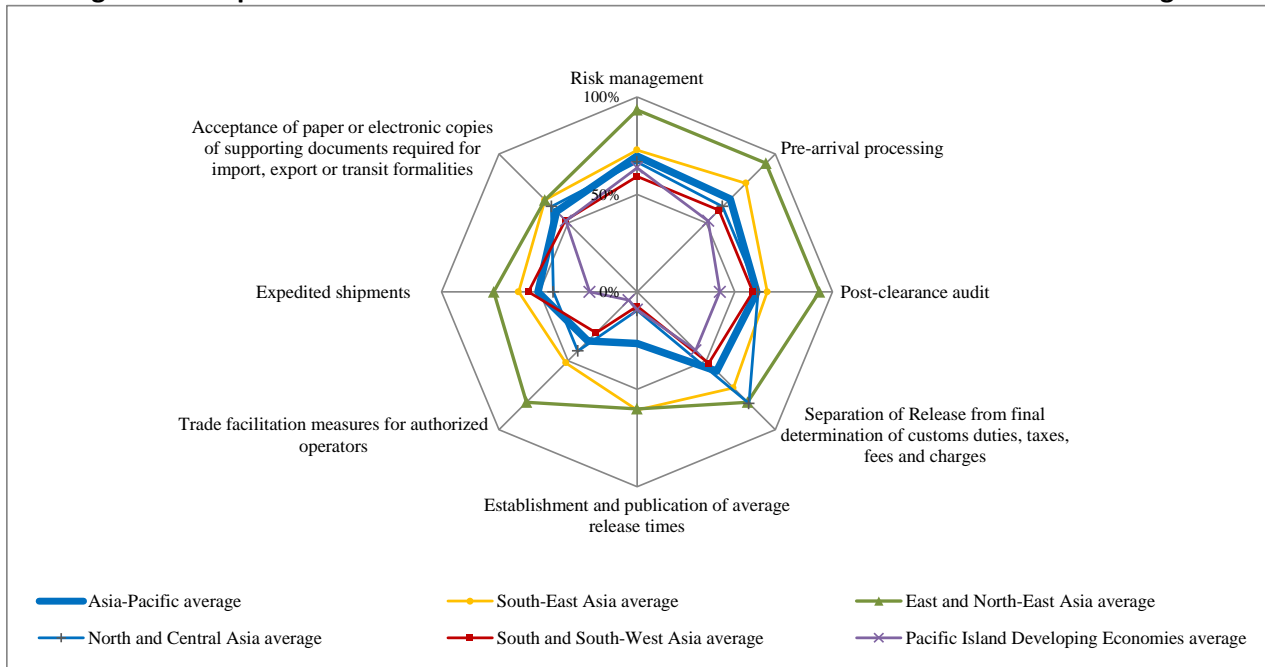
Source: ESCAP, UNRCs TF Survey 2015.

2.5.2. “Formalities” facilitation measures

Eight of the general trade facilitation measures included in the survey are categorized as “formalities” facilitation measures, which are aimed at streamlining and/or expediting regulatory trade procedures. They are related to Articles 6-10 of the WTO TFA and GATT Article VIII on “Fees and Formalities connected with Importation and Exportation”. The level of implementation at the regional level varies significantly across measures in this group (figure 2.7). Risk management, pre-arrival processing and, to a lesser extent, post-clearance audit are well on their way to being implemented. In contrast, the implementation of trade facilitation measures for authorized operators as well as establishment and publication of average release times has been generally limited, although countries in both East and North-East Asia and on South-East Asia subregions appear to have implemented both measures to a significant extent.

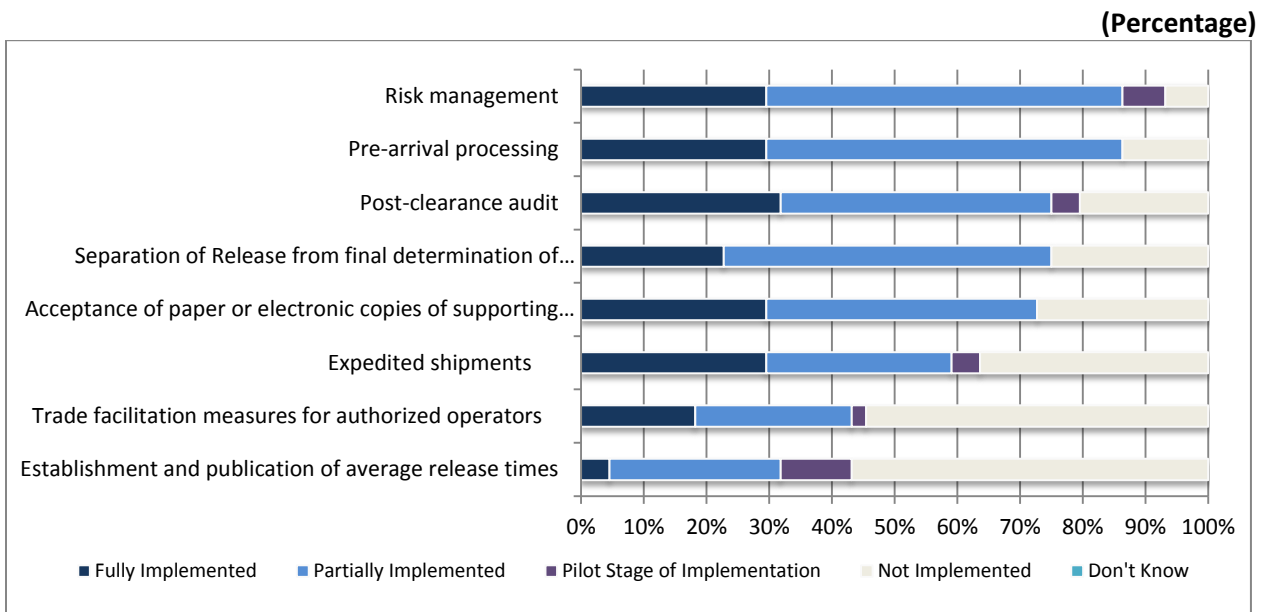
Figure 2.8 shows that risk management has been implemented by 41 countries, or 93% of the Asia-Pacific countries surveyed, although in some cases only on a pilot basis. Pre-arrival processing has been partially or fully implemented by 38 countries (more than 85% of the countries surveyed). Two other measures, post-clearance audit and separation of Release from final determination of customs duties, taxes, fees and charges have also been either fully or partially implemented by 75% of the countries surveyed. However, the latter is much less fully implemented than other popular measures in this group (i.e., by less than 25% of the countries), suggesting that relatively more support and guidance may be needed in order to complete implementation of this particular measure.

Figure 2.7. Implementation of trade “formalities” facilitation measures: Asia-Pacific average



Source: ESCAP, UNRCs TF Survey 2015.

Figure 2.8. State of implementation of trade “formalities” facilitation measures in Asia-Pacific economies



Source: ESCAP, UNRCs TF Survey 2015.

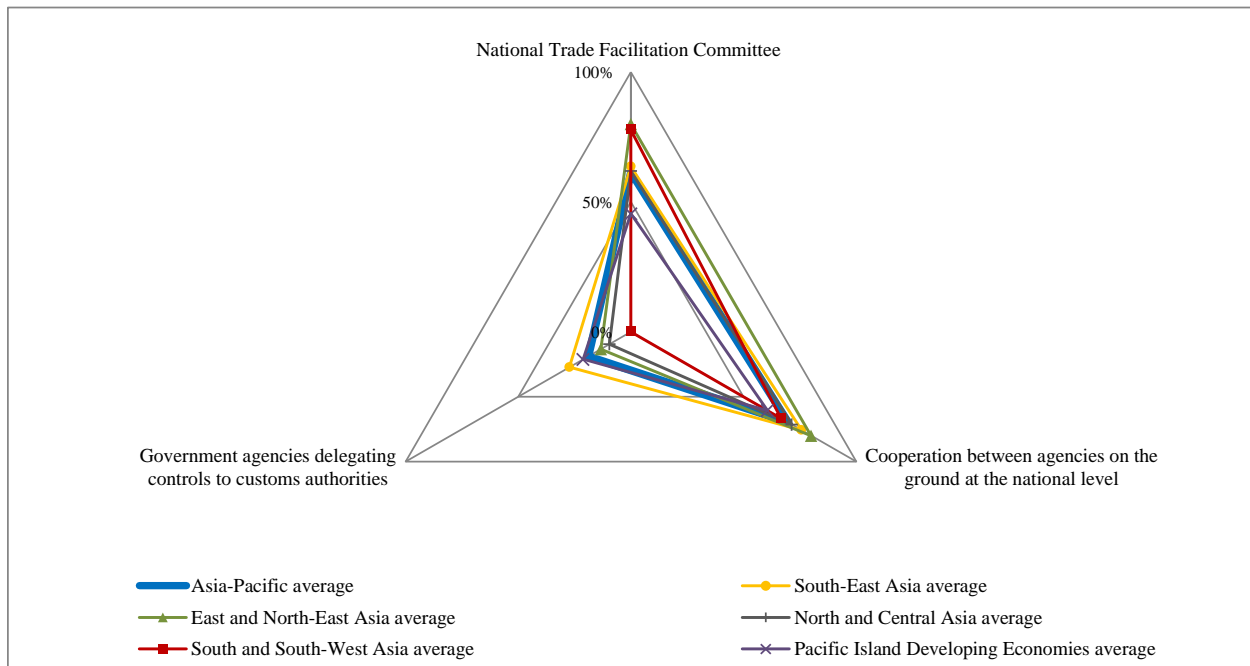
Acceptance of copies of supporting documents instead of originals as well as measures to facilitate expedited (express) shipping has been fully implemented in 30% of the countries, and is under implementation in the majority of other countries of the region. This is a welcoming finding, as both measures are particularly important facilitation measures for small and medium-sized enterprises less frequently involved in trade transactions or shipping low volumes of goods.

As mentioned above, two measures in this group particularly stand out as poorly implemented. Authorized economic operator programs have been initiated in fewer than 50% of the countries. Similarly, a majority of countries have not initiated establishment and publication of average release times, with only 14 countries considered to have partially or fully implemented this measure. However, the fact that a significant number of countries appear to have conducted time release studies on a pilot basis is encouraging.

2.5.3. “Institutional arrangement and cooperation” measures

Three trade facilitation measures featured in the survey are grouped under “Institutional and cooperation” measures. These are related to the long-standing recommendation that a national trade facilitation body and other measures are implemented to ensure coordination and cooperation among the various government agencies and other stakeholders involved in facilitating trade.¹⁵ All three measures are also specified in various Articles of the WTO TFA.

Figure 2.9. Implementation of “institutional arrangement and cooperation” measures: Asia-Pacific average

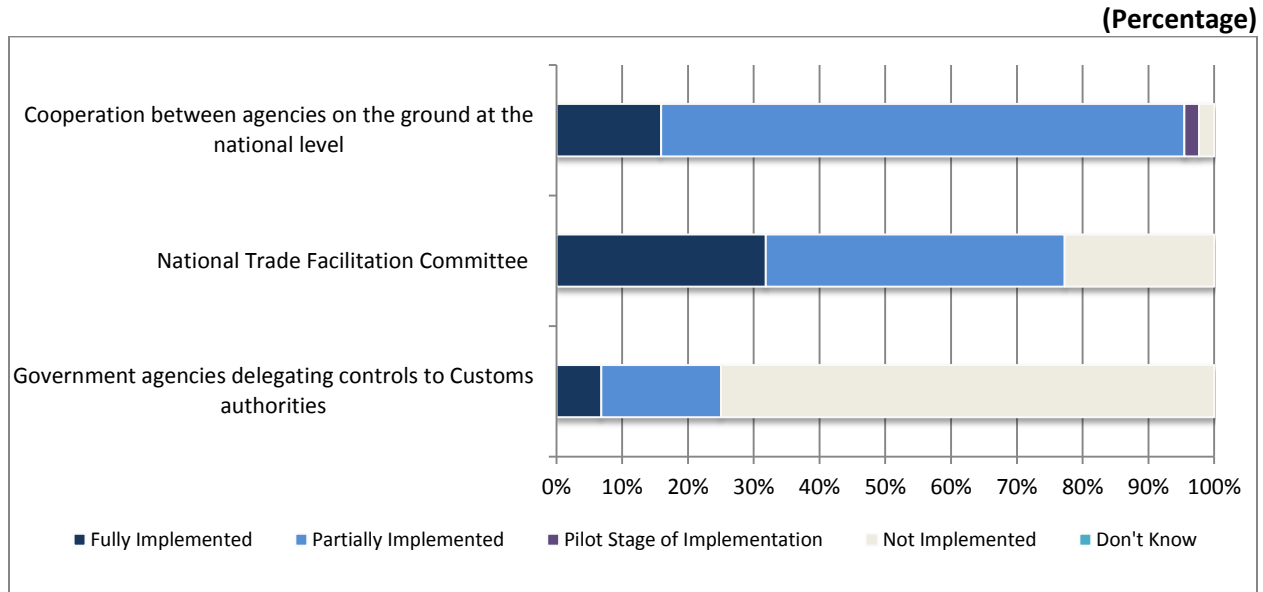


Source: ESCAP, UNRCs TF Survey 2015.

Figure 2.9 shows that two institutional arrangement and cooperation measures, National Trade Facilitation Committee and cooperation between agencies on the ground at the national level, have already been quite extensively implemented in the region and most subregions. In contrast, implementation levels of mechanisms enabling government agencies to delegate controls to customs authorities remain well under 50%. This is particularly the case in North and Central Asia as well as South and South-West Asia where the implementation level of this measure is near zero per cent.

¹⁵ See, for example, UN/CEFACT Recommendation No. 4 on establishment of national trade facilitation bodies, which was first issued in 1974.

Figure 2.10. State of implementation of “institutional arrangement and cooperation” measures for trade facilitation in Asia-Pacific economies



Source: ESCAP, UNRCs TF Survey 2015.

While cooperation between agencies is being implemented by almost all countries (97%), the results show that implementation has essentially been partial. In fact, only seven countries have fully implemented that measure, highlighting the fact that strengthening cooperation among agencies is an on-going process. Arguably, the ultimate form of inter-agency collaboration is the delegation of authority by one or more agencies to another, as suggested by the measure of government agencies delegating controls to customs authorities. Not surprisingly, this latter measure has only been implemented in very few countries, and more than 70% of the countries (33 of 44) have yet to take any action towards its implementation.

The most fully implemented measure of the three measures considered in this group is the establishment of a National Trade Facilitation Committee. Establishment of such a committee is mandatory for all countries intending to ratify the WTO TFA.¹⁶ Approximately 75% of the countries have already established such a body, although in many cases it remains unclear whether that body is fully operational or has the authority and membership necessary to support effective trade facilitation reforms.

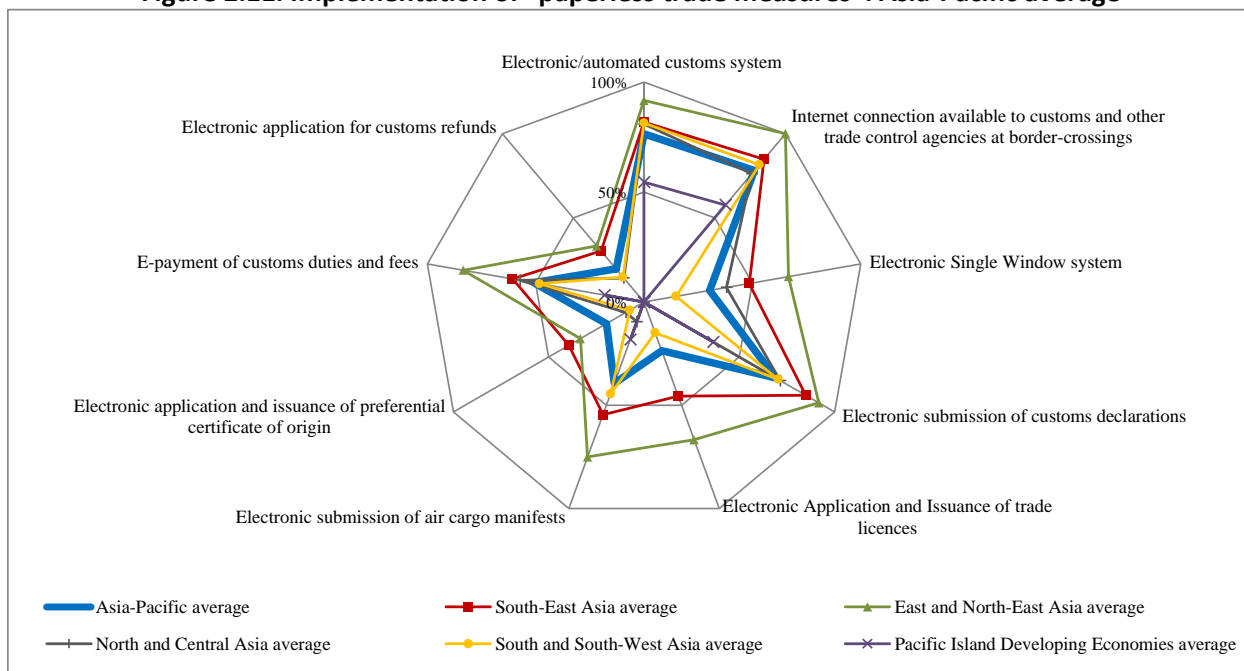
2.5.4. “Paperless trade” measures

Nine of the trade facilitation measures included in the survey are categorized as paperless trade measures. All these measures involve the use and application of modern information and communications technologies (ICT) to trade “formalities”, starting from the availability of Internet connections at border crossings and customs automation to full-fledge electronic Single Window facilities. Many of the measures featured here are closely related to those specified in the WTO TFA,

¹⁶ See Article 23.2 of the WTO TFA.

although the new WTO agreement typically only encourages economies to work towards implementation of such measures, rather than making them a requirement.¹⁷

Figure 2.11. Implementation of “paperless trade measures”: Asia-Pacific average



Source: ESCAP, UNRCs TF Survey 2015.

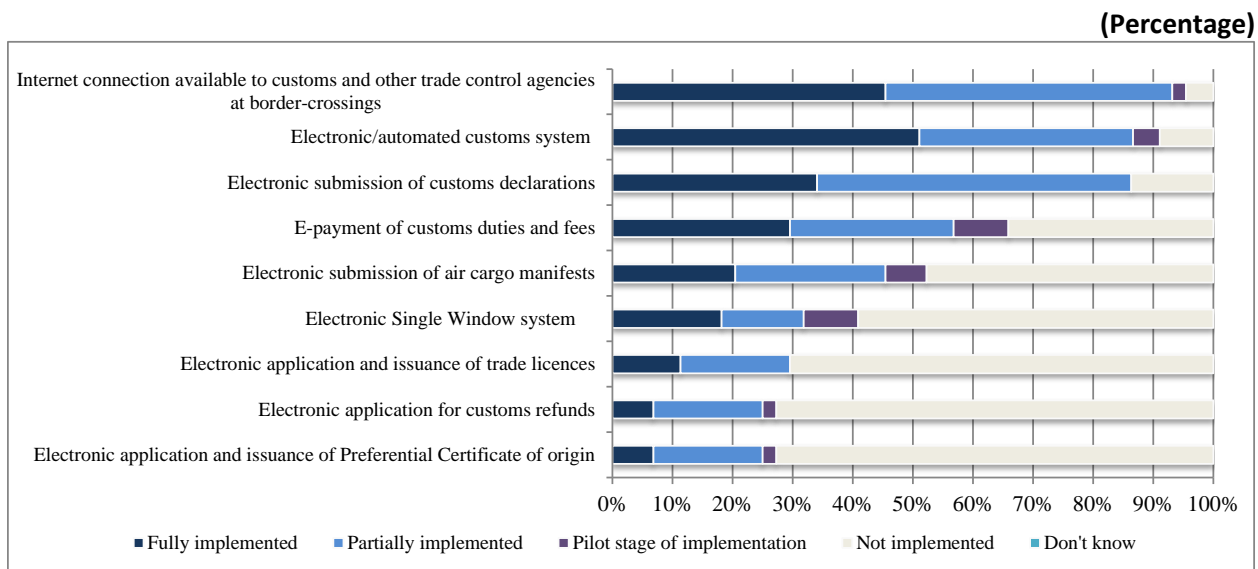
The regional and subregional average levels of implementation of the nine measures considered under paperless trade vary widely, as shown in figure 2.11. At the regional level, “Internet connection available to customs and other trade control agencies at border-crossings”, availability of “electronic/automated customs system”, together with “electronic submission of customs declarations”, are among the most implemented measures of all trade facilitation measures included in the survey. In contrast, regional implementation of almost all other measures, including “electronic application and issuance of Preferential Certificates of Origin as well as trade licences are well below the overall regional implementation average. The implementation levels of paperless trade measures in South-East Asia and East and North-East Asia exceed those in the other subregions, especially for “electronic Single Window system”, “electronic application and issuance of trade licences”, and “electronic submission of air cargo manifests” (particularly in the case of East and North-East Asia).

Recognizing the importance of having the basic ICT infrastructure and services in place to enable paperless trade, nearly all countries (96%) have fully, partially or on a pilot basis made Internet connection to trade control agencies at border crossings available (figure 2.12). Electronic/automated customs systems have been fully implemented in more than half of the countries of the region and are, in any case, available at the main customs station(s) of 39 of 44 countries included in the survey.

¹⁷ An example of this is the WTO TFA Article 10.3 on Single Windows, which states: “Members shall endeavour to establish or maintain a Single Window, enabling traders to submit documentation and/or data requirements for importation, exportation or transit of goods through a single entry point to the participating authorities or agencies... Members shall, to the extent possible and practicable, use information technology to support the Single Window.”

Similarly, electronic submission of customs declaration has been fully or partially implemented by 14 and 24 countries, respectively (86% of the countries surveyed). Electronic payment of customs duties is also at least partially available in the majority of the countries surveyed, with a significant number of countries currently pilot testing e-payment systems.

Figure 2.12. State of implementation of “paperless trade” measures in Asia-Pacific economies



Source: ESCAP, UNRCs TF Survey 2015.

Beyond the use of electronic data and documents for customs procedures, an electronic Single Window system (see box 2.1) has been implemented fully, partially or on a pilot basis by 17 countries (nearly 40% of all the Asia-Pacific countries surveyed). Clearly, benchmarked against the high implementation rate of customs automation, electronic Single Window system implementation remains at a relatively early stage, with the majority of the countries surveyed not yet having taken any significant steps towards its implementation.

Box 2.1. Electronic Single Window Implementation¹⁸

Examining the electronic Single Window systems measure in particular shows that it is “fully implemented” in around 20% of all the Asia-Pacific countries surveyed, “partially implemented” in 10% of the countries, and “at the pilot stage” in 9% of them. The survey also shows that implementation of electronic Single Window systems, together with upgrading of customs automation systems, were among the measures on which countries in Asia-Pacific focused the most on during the past year.

Twelve of the 17 countries, where a Single Window system is at least at the pilot stage, have Single Window-specific legislation in place. Similarly, 60% of these countries have already connected relevant trade facilitation stakeholders to the E-Single Window system. Table 2.3 gives information on the eight countries that have the most fully implemented systems as well as which of the seven

¹⁸ For a further discussion, see UNNEXT Brief No. 17 at <http://unnex.unescap.org/pub/Brief17.pdf>.

paperless trade procedures included in the survey that can be conducted through the Single Window in each of the countries. It shows that the Republic of Korea and Singapore use Single Windows for all seven paperless procedures, while the others use Single Windows for a more limited number of processes.

Table 2.3. E-Single Window System functionalities in eight Asia-Pacific countries

	Azerbaijan	Indonesia	Japan	Malaysia	New Zealand	Korea (Rep. of)	Singapore	Thailand
1. E-submission of customs declarations	√	√	√	√	√	√	√	√
2. E-Application and issuance of trade licences	√	√	√	√	√	√	√	√
3. E-submission of sea cargo manifests	-	√	√	√	x	√	√	√
4. E-submission of Air cargo manifests	x	√	√	√	√	√	√	√
5. E-application and issuance of Preferential Certificates of Origin	x	√	x	√	x	√	√	x
6. E-payment of customs duties and fees	√	√	√	√	x	√	√	√
7. E-Application for customs refunds	x	x	√	x	x	√	√	√

Legend: √ – “Yes”; x – “No”.

Source: ESCAP, UNRCs TF Survey 2015.

Very limited or no information is available on Single Window functionalities in countries that have partially implemented Single Windows, indicating the difficulty in actual access and use of the systems by the relevant stakeholders. In large countries such as China and India, Single Windows are often accessible and link agencies with each other; however, these systems may not be not fully integrated or interconnected at the national level (e.g., no “national” Single Window).¹⁹

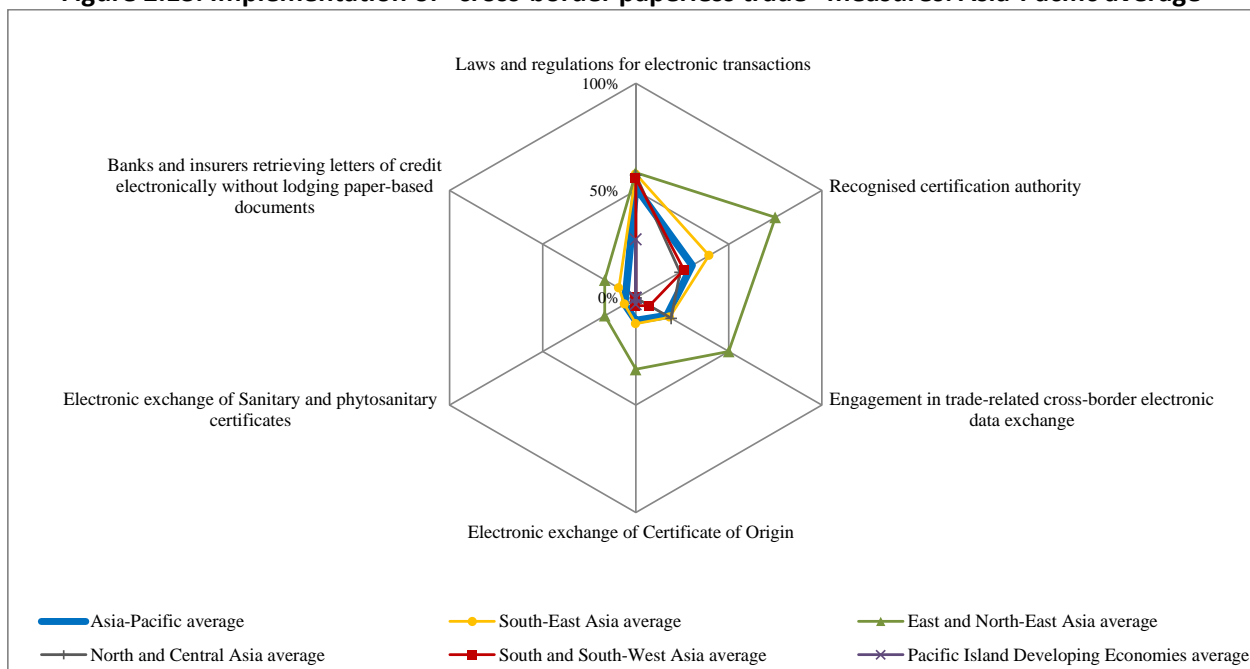
Interestingly, relatively simpler measures such as electronic application and issuance of trade licences and electronic application and issuance of Preferential Certificates of Origin are even less implemented than Single Windows. This may be explained in part by the fact that such agency-specific systems may become redundant as Single Window systems are implemented. However, this also highlights the fact that customs authorities in most countries are indeed much more advanced than other trade-related agencies in developing and using electronic and automated systems for trade facilitation and compliance.

¹⁹ The situation in China is such that it does not have a “national” E-Single Window system, but instead has many “local” Single Windows developed by its different provinces and cities (e.g., Shanghai and Xi An). Similarly, many of its busiest port and trading cities are located along the eastern coast, where the quality of trade facilitation infrastructure is much more advanced than in western regions. See also UNNEXT Brief No. 13 on China E-Port System at <http://unnex.unescap.org/pub/brief.asp>.

2.5.5. “Cross-border paperless trade” measures

Six of the trade facilitation measures included in the survey are categorized as cross-border paperless trade measures, as shown in figure 2.13. Two of the measures, laws and regulations for electronic transactions and recognized certification authority, are basic building blocks towards enabling the exchange and legal recognition of trade-related data and documents not only among stakeholders within a country, but ultimately between stakeholders along the entire international supply chain. The other four measures are related to the implementation of systems enabling the actual exchange of trade-related data and documents across borders, removing the need to send paper documents.

Figure 2.13. Implementation of “cross-border paperless trade” measures: Asia-Pacific average

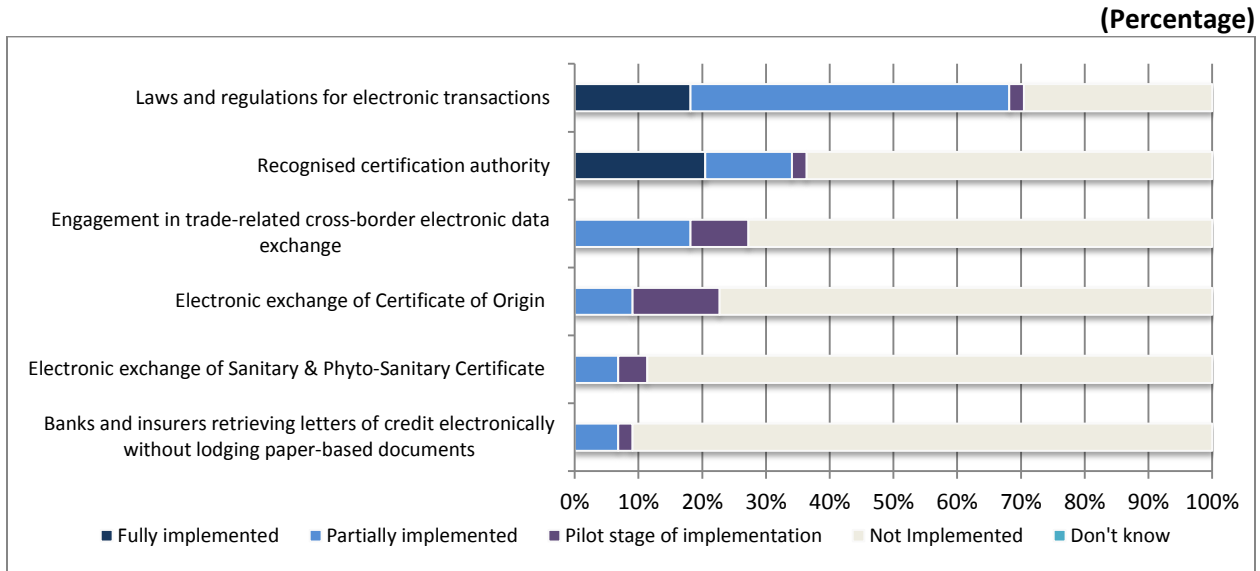


Source: ESCAP, UNRCs TF Survey 2015.

Figure 2.13 shows the average regional scores for cross-border paperless trade measures, together with the subregional ones. At the regional level, the implementation of these measures is very low with the exception of laws and regulation for electronic transactions, the implementation level of which is slightly more than 50%. The pattern is similar at the subregional level, apart from East and North-East Asia where the implementation levels far exceed those of other subregions for most of the cross-border paperless trade measures.

Figure 2.14 shows that while about 68% of the countries surveyed in the Asia-Pacific region have at least partially developed the legal and regulatory frameworks needed to support electronic transactions, that these frameworks remain incomplete and may not readily support the legal recognition of electronic data or documents received from stakeholders in other countries. This is also true for Certification Authorities (CAs) – needed to issue traders with recognized electronic signature certificates – which have yet to be established, even on a pilot basis, by a large majority of countries in the region.

Figure 2.14. State of implementation of “cross-border paperless trade” measures in Asia-Pacific economies



Source: ESCAP, UNRCs TF Survey 2015.

In part as a result of the lack of institutional and legal frameworks to support cross-border paperless trade, engagement in trade-related cross-border electronic data exchange has remained limited, typically conducted on a limited basis with a few specific trade partners, and often only on a pilot basis. Indeed, electronic exchange of Certificates of Origin and electronic exchange of sanitary and phytosanitary certificates have been implemented on a limited basis by less than 10% of the economies in the region. Similarly, in all but three Asia-Pacific countries included in the survey, it is not yet feasible for banks and insurers to retrieve letters of credit electronically without lodging paper-based documents.

Closer analysis of existing multi-agency paperless systems suggests that, overall, implementation often remains rather rudimentary, inward looking, and not developed for interoperability and connectivity beyond national borders. This is unfortunate, as paperless trade reforms hold much potential for Asia-Pacific countries (see box 2.2). Interoperability and solutions early on can help developing countries in almost all stages of development to most efficiently implement customs and other trade facilitation measures.

Box 2.2. Securing the benefits from cross-border paperless trade in Asia-Pacific²⁰

Recent analyses suggest that implementation of cross-border paperless trade measures included in the survey can potentially increase regional exports annually by US\$ 36 billion up to US\$ 257 billion. In tandem, the time required to export would fall between 24% and 44%, and the direct costs between 17% and 31%, depending on the reform scenario considered. Furthermore, the total direct cost savings across all trade in the Asia-Pacific region would be approximately US\$ 1 billion annually for partial reform, and US\$ 7 billion annually for full implementation.²¹

Given the large potential benefits associated with the implementation of these “next generation” trade facilitation measures, it is in the interest of countries to work together and develop the legal and technical protocols needed for the seamless exchange of regulatory and commercial data and documents along the international supply chain. Some work has already been done bilaterally as well as in several Asian subregions (e.g., the ASEAN Single Window). This work can be developed further at the regional level through the adoption and implementation of the intergovernmental agreement for the facilitation of cross-border paperless trade that is currently under negotiation at ESCAP.

The agreement would provide an overarching regional-level framework to facilitate the interoperability of existing and emerging bilateral and subregional cross-border paperless trade initiatives, aimed at supporting intraregional trade as mandated by ESCAP Resolution 68/3 (2012). As noted in a follow-up ESCAP Resolution (70/6), establishing a formal mechanism for its negotiation, the regional arrangement, with its wholly ICT-based trade facilitation provisions, is complementary to the WTO Agreement on Trade Facilitation. In its current drafted form, the ESCAP agreement would provide parties with:

- (a) A common set of general principles, based on which paperless trade systems could be implemented;
- (b) A dedicated intergovernmental platform to exchange best practices, request/offer capacity-building and technical assistance;
- (c) The opportunity to multilaterally develop, adopt and implement more specific and detailed technical and/or legal protocols needed to achieve safe and secure cross-border paperless trade (e.g., the exchange and legal recognition of e-Certificates of Origin or other relevant documents).

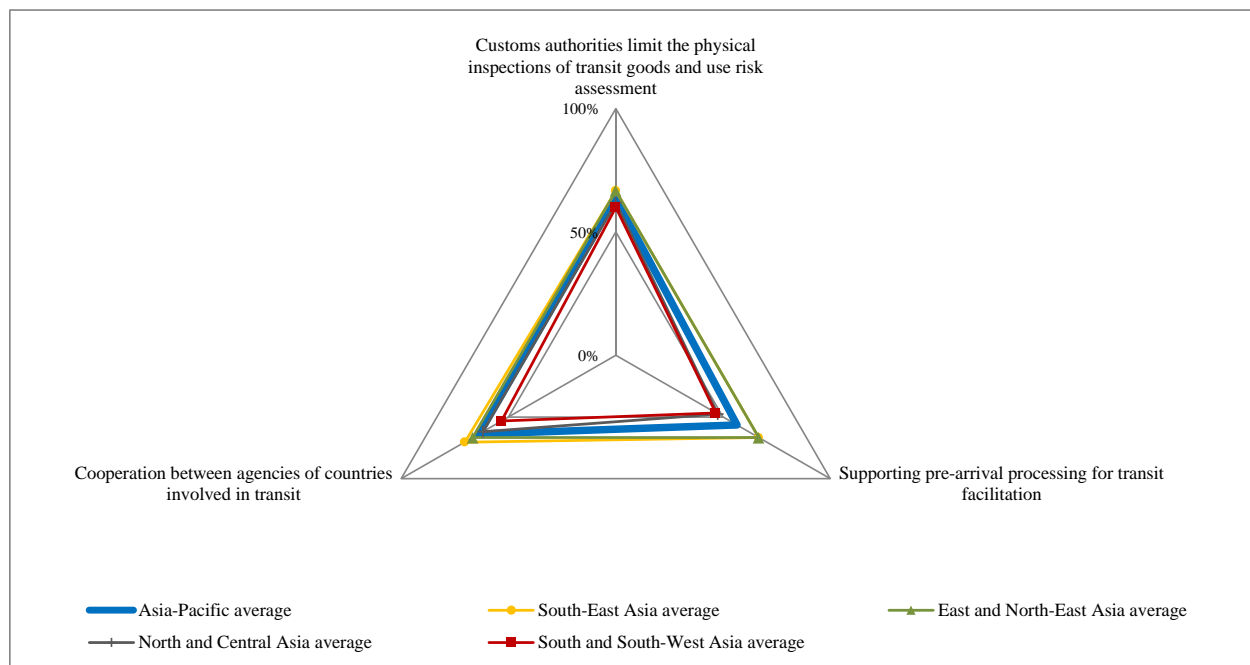
²⁰ For a further discussion see UNNExT Brief No. 17 at <http://unnex.unescap.org/pub/Brief17.pdf>

²¹ Shepherd and Duval (2014). Estimating the Benefits of Cross-Border Paperless Trade. See complete report at: <http://www.unescap.org/resources/estimating-benefits-cross-border-paperless-trade>

2.5.5. “Transit facilitation” measures

Three trade facilitation measures included in the survey are related specifically to transit facilitation and WTO TFA Article 11 on Freedom of Transit.²² The objective of these measures is to reduce as far as possible all the formalities associated with traffic in transit, allowing goods exported from one country to another country to be seamlessly transported through one or more transit countries. These measures are particularly important to landlocked developing countries, whose goods typically need to go through a neighboring country’s territory before reaching a seaport for onward transportation to their final destination.

Figure 2.15. Implementation of “transit facilitation” measures: Asia-Pacific average



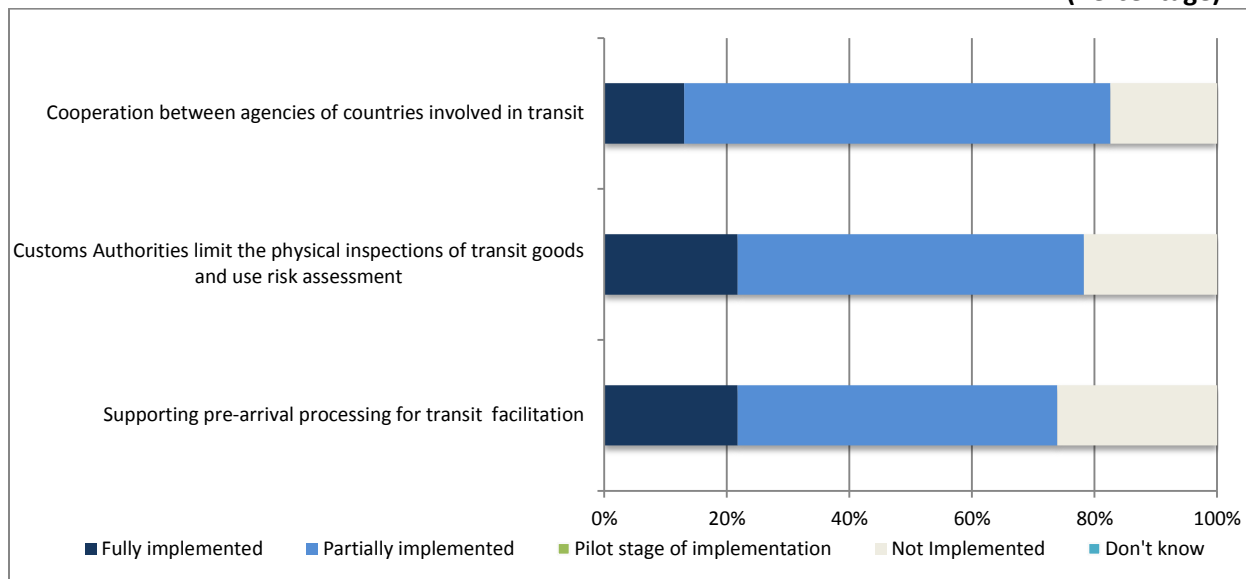
Source: ESCAP, UNRCs TF Survey 2015.

As shown in figure 2.15, the average implementation level across all measures of “transit” measures in the region slightly exceeds 50%. The same holds true in all subregions except North and Central Asia, where the implementation level is just under 50%. In South-East Asia, and East and North-East Asia, these levels are higher and fluctuate around 70%.

Unfortunately, as shown in figure 2.16, much remains to be done to achieve full regional implementation, despite the fact that most of the countries involved in transit have already concluded specific transit agreements at the bilateral or regional level.

²² These measures are not directly applicable to all countries in the region, as some countries are unlikely to see any traffic in transit in their territory. This is particularly the case with “island” countries but also with other countries facing specific geographical constraints. Therefore, only 23 of 44 countries are included in the analysis of transit measures, as follows: Afghanistan, Armenia, Azerbaijan, Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Kazakhstan, Kyrgyzstan, Lao PDR, Malaysia, Mongolia, Myanmar, Pakistan, Russian Federation, Singapore, Tajikistan, Thailand, Turkey, Uzbekistan and Viet Nam.

Figure 2.16. State of implementation of “transit facilitation” measures in Asia-Pacific economies (Percentage)



Source: ESCAP, UNRCs TF Survey 2015.

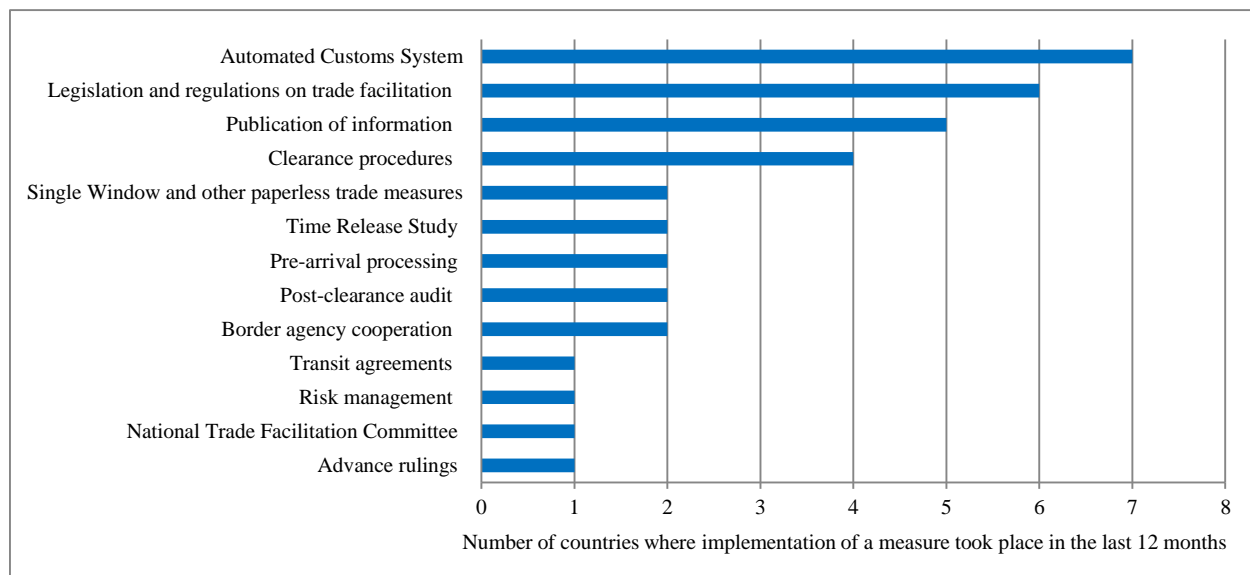
The relatively low average implementation scores for transit facilitation can be explained by the patterns in figure 2.16. Indeed, while the three transit facilitation measures have been implemented by more than 70% of the countries involved, implementation has mainly been partial. Indeed, cooperation between agencies of countries involved in transit is considered fully implemented in only 15% of the countries involved. Similarly, limited physical inspection of goods in transit as well as pre-arrival processing of documents for goods in transit are fully in place in less than 25% of the countries.

2.6. Notable achievements and common challenges in implementation

As part of the data collection process, experts were asked to identify the trade facilitation measures on which the most progress had been made by their countries during the past 12 months. Responses received from experts from 27 countries in Asia-Pacific are summarized in figure 2.17.

While remaining anecdotal in nature, the data suggest that during the past year many countries across the Asia-Pacific region had put the most emphasis on improving their automated customs systems and related risk management systems. Many also worked on implementing Single Window and other paperless trade measures, as well as on adopting new legislation and regulations for trade facilitation (e.g., adoption of new or amended customs laws). Finally, implementation of post-clearance audit, a measure very much complementary to risk management, and the establishment of National Trade Facilitation Committees, a measure required in the WTO TFA finalized in December 2013, also received particular attention during the past 12 months across the region.

Figure 2.17. Trade facilitation measures on which greatest progress has been made in Asia-Pacific economies since 2013/14

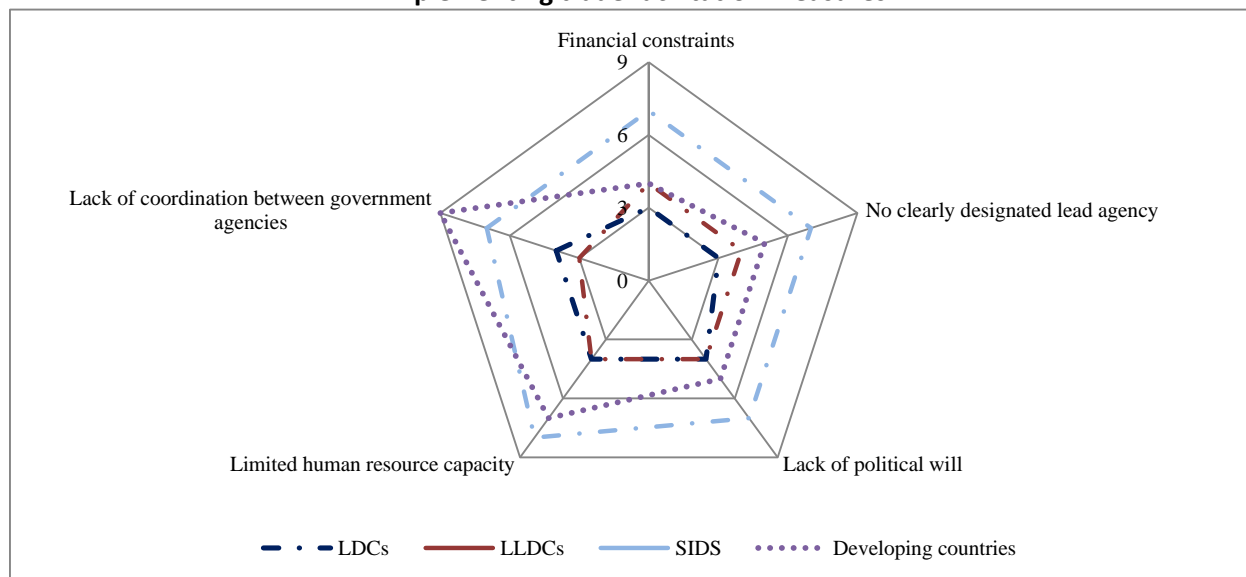


Source: ESCAP, UNRCs TF Survey 2015.

Experts involved in the survey were also asked to identify three key challenges faced by their countries in the implementation of trade facilitation measures. Responses were received from 30 countries. Lack of coordination between government agencies and limited human resource capacity were highlighted as the most serious challenges faced in the implementation of trade facilitation measures in 21 of 30 countries. Lack of political will, no clearly designated lead agency, and financial constraints were also mentioned in at least 16 countries.

Interestingly, the importance of the 5 most common challenges associated with trade facilitation varies significantly across country groups. Figure 2.18 shows that while all five challenges appear to be equally important in LDCs, limited human resource capacity appears to be relatively more important than other challenges in SIDS. In LLDCs, lack of coordination between government agencies appears to be relatively less important than other challenges, such as financial constraints or lack of political will to facilitate trade. In contrast, in other developing countries, the lack of coordination between government agencies appears to be the main challenge in making further progress on implementation of trade facilitation.

Figure 2.18. Challenges faced by Asia-Pacific LDCs, LLDCs, SIDS and other developing countries in implementing trade facilitation measures



Source: ESCAP, UNRCs TF Survey 2015.

Note: Data shown refer to the number of countries in each group where a particular challenge was identified.

2.7. Survey results in the context of the WTO Trade Facilitation Agreement

In December 2013, negotiations on the World Trade Organization Trade Facilitation Agreement (WTO TFA) concluded in Bali, Indonesia, with the agreement containing provisions for expediting the movement, release and clearance of goods, including goods in transit. It provides clearer guidance on the implementation of three specific articles of the 1994 General Agreement on Trade and Tariffs (GATT), detailed procedures for customs cooperation, and special differential treatment for developing economies that explicitly link implementation with capacity-building and technical assistance (WTO 2015). The WTO Trade Facilitation Agreement will enter into force once two-thirds of the WTO members have completed their domestic ratification process.²³ A full implementation of the WTO TFA corresponds to a country having an implementation level of 54.8% of all trade facilitation measures in this survey.²⁴ Figure 2.19 shows the 17 measures in the survey, which are directly related to the WTO TFA. A total of 14 of the 17 measures (more than 80%) have been at least partially implemented in more than half of all 44 Asia-Pacific countries surveyed, indicating that WTO TFA implementation in the region is already significantly underway. With the exception of establishment and publication of average release times, all measures have been fully implemented in approximately 15 (30%) countries.

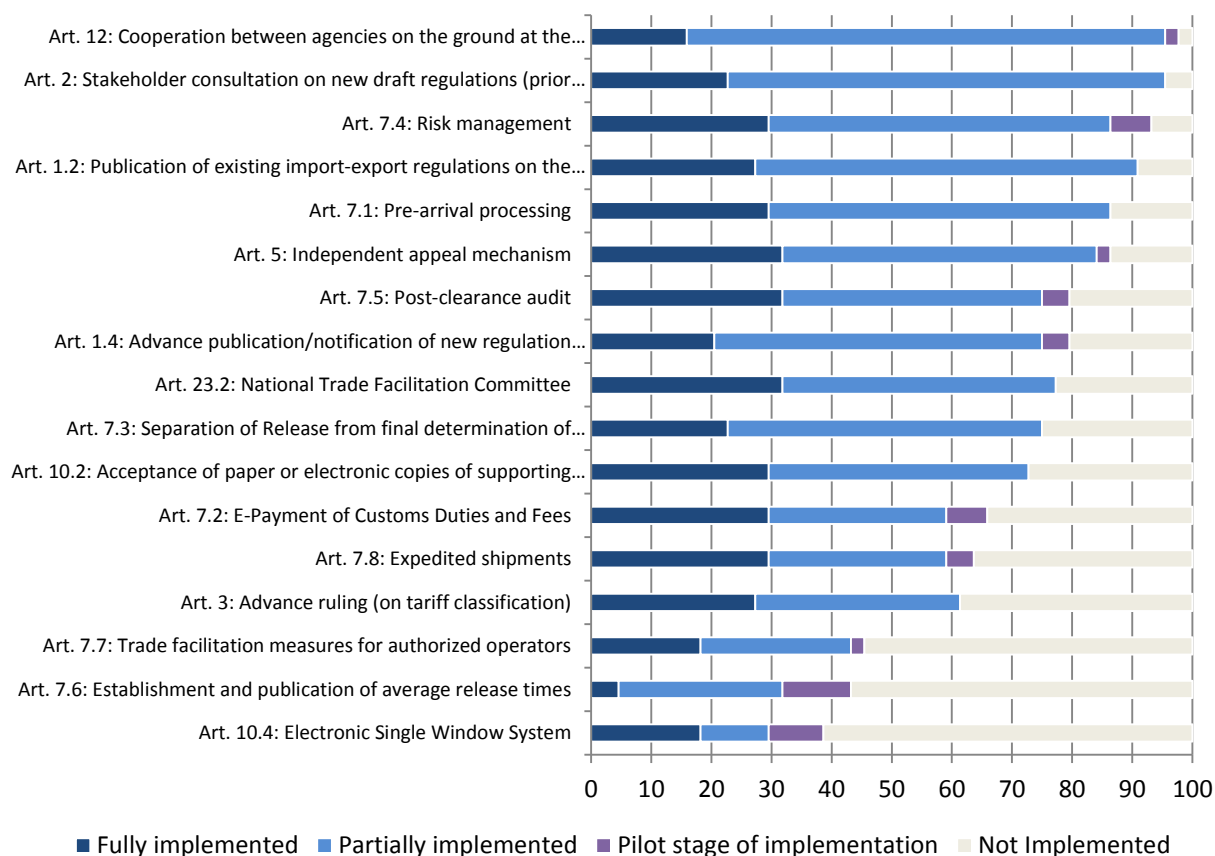
The four measures most implemented in relation to the WTO TFA (fully, partially or on a pilot basis) in Asia-Pacific countries are (a) cooperation between agencies, (b) stakeholder consultation on

²³ Following a comprehensive legal review of the text in 2014, WTO member States are now in the process of ratifying the agreement (ICCWBO, 2015). The agreement will enter into force once 107 member States have ratified it. As of 16 November 2015, it had been ratified by 52 countries.

²⁴ For reference, 17 of the 31 measures discussed in this report are directly related to WTO TFA commitments (both binding and non-binding). This implies that the minimum implementation rate that an economy would need to achieve in order to be fully compliant with WTO TFA stands at about 55% ($17/31 = 54.8\%$).

new draft regulations, (c) risk management, and (d) publication of existing import-export regulations, with implementation ongoing in 90% of the countries in the region. These four measures, however, appear to be at different stages of implementation.

Figure 2.19. Implementation of WTO TFA-related measures in Asia-Pacific, 2015
(Percentage of countries)



Source: ESCAP, UNRCs TF Survey 2015.

The three least- implemented WTO TFA measures are trade facilitation measures for authorized operators, establishment and publication of average release times and electronic Single Window systems, all of which have been initiated in less than 50% of the economies. E-payment of customs duties and expedited shipments has also been partially or fully implemented in only 60% of the Asia-Pacific economies. The implementation levels in figure 2.19 indicate that some of the more advanced measures are either in the early stages of implementation or have yet to be implemented.

The data collected from experts in 30 economies across the region also reveal that the establishment of National Trade Facilitation Committees, as required by the WTO TFA, is recently receiving particular attention across the Asia-Pacific region. Even though cooperation among agencies is one of the measures most implemented in Asia and the Pacific, it is among the least “fully implemented” measures. This indicates that many countries still have some way to go in relation to establishing a lead agency and a functioning inter-agency cooperation.

2.8. Conclusion and Way Forward

This chapter presented data on trade facilitation and paperless trade implementation collected as part of a UNRC global survey²⁵ from 44 economies across the Asia-Pacific region, covering five different subregions. The survey did not only cover implementation of general trade facilitation measures, including most of those featured in the WTO TFA, but also more advanced ICT-based trade facilitation measures aimed at making data and documents needed to support trade transactions flow seamlessly among stakeholders within a country as well as across countries.

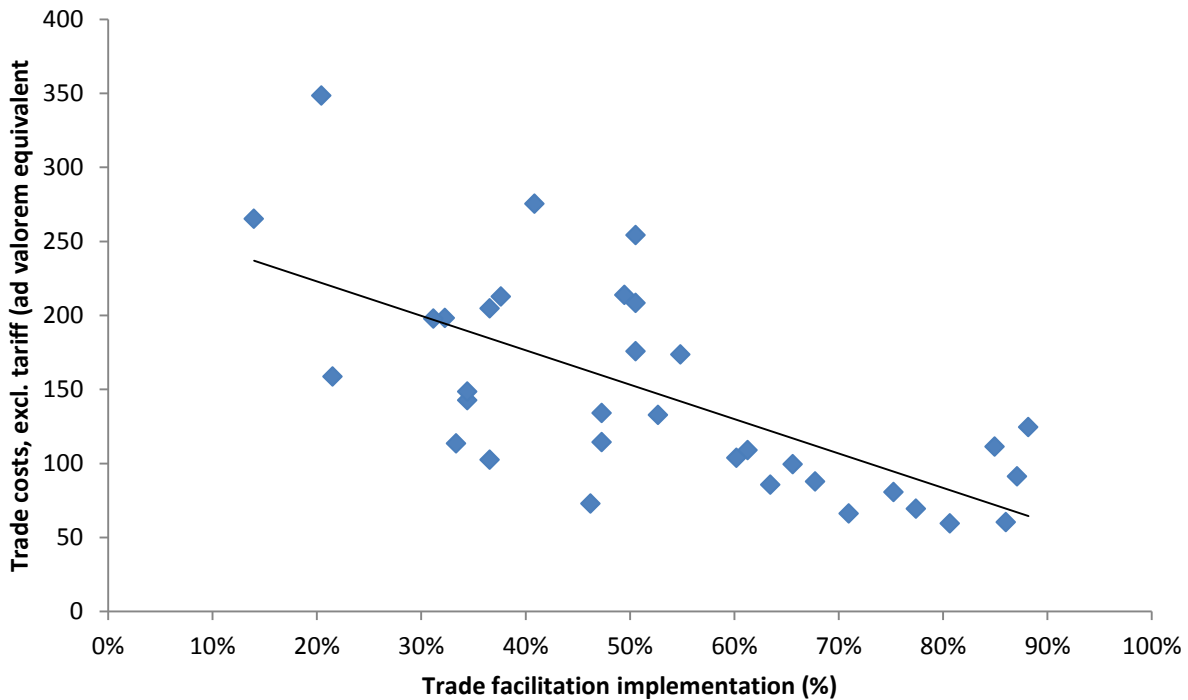
Based on an ambitious package of more than 30 trade facilitation measures included in the survey, average regional trade facilitation implementation is found to be close to 50%, suggesting that the region has not only been actively implementing trade facilitation initiatives but also that there is significant room for progress in many of the Asia-Pacific economies. The actual level of implementation across Asia and the Pacific differs widely from country to country. Economies such as Australia and the Republic of Korea all have implementation levels above 85%, whereas certain Pacific island developing economies have implementation levels closer to 15%.

The assessment confirmed that a large majority of countries in the region has been actively engaged in implementing measures to improve transparency, enhance inter-agency coordination and cooperation, and streamline fees and formalities associated with trade. While customs authorities in essentially all the countries have been actively developing paperless systems to speed up customs clearance while also improving control, nearly 40% of the economies are now also engaged in implementation of more advanced national multi-agency paperless systems, such as national electronic single windows. Figure 2.20 shows the strong negative relationship between Asia-Pacific countries' international trade costs and their level of trade facilitation implementation as revealed by the survey, providing a strong rationale for further implementation.

Remarkably, the only trade facilitation performance “monitoring” measure included in the survey (establishment and publication of average release times) is still one of the least implemented measures across the region. This is worth highlighting, as what ultimately matters is not how many measures a country implements, but how effective they are in reducing the time and cost of trade transactions. Indeed, it is important to realize that trade facilitation and paperless trade measures are very much inter-related and that the effect of a particular measure on trade transaction costs depends on whether, and how well, other measures have been implemented.

²⁵ <http://unnex.unescap.org/UNTFSurvey2015.asp>

Figure 2.20. Trade facilitation implementation and trade costs of Asia-Pacific economies (Percentage)



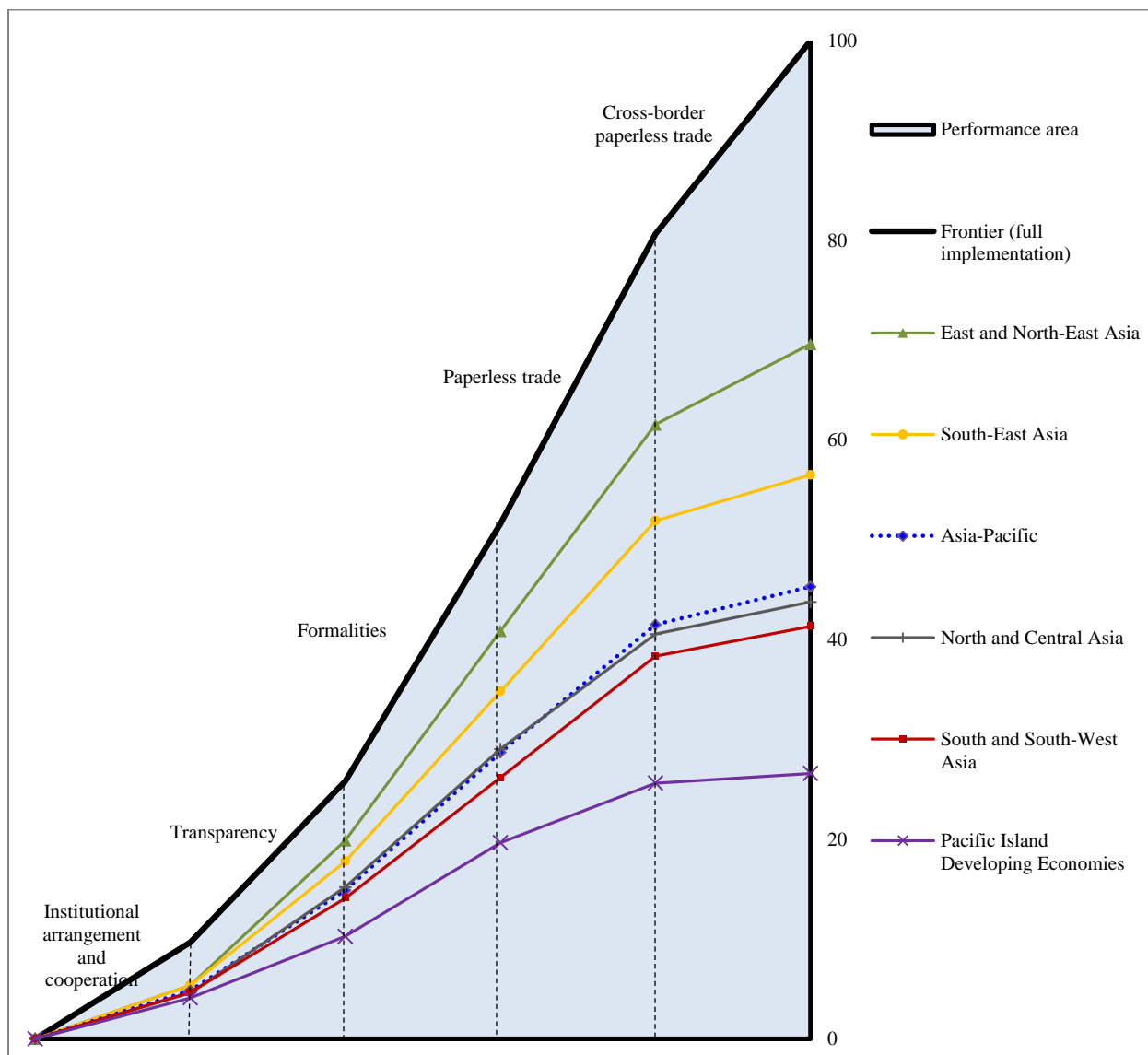
Sources: ESCAP-World Bank International Trade Cost Database and ESCAP, UNRCs TF Survey 2015

Note: Country trade costs are based on average comprehensive bilateral trade costs with Germany, China and the United States (2008-2013) and expressed as ad valorem equivalents (%).

In that context, figure 2.21 shows the implementation of trade facilitation as a step-by step process, based on the groups of measures included in this survey. Trade facilitation begins with establishing an institutional arrangement needed to prioritize and coordinate implementation of trade facilitation measures. The next step is to make the trade processes more transparent by sharing information on existing laws, regulations, and procedures as widely as possible, and by consulting with stakeholders when developing new ones. Designing and implementing simpler and more efficient trade formalities is the next step. The re-engineered and streamlined processes may first be implemented based on paper documents, but can then be further improved through ICT and the development of paperless trade systems. The ultimate step is to enable electronic trade data and documents exchange by traders, Governments and service providers within national (Single Window and other) systems to be used and re-used to provide stakeholders in partner countries with the information they need to speed up the movement of goods and reduce the overall costs of trade.²⁶

²⁶ This step-by-step process is inspired by, and generally consistent with the UN/CEFACT step-by-step approach to trade facilitation towards a Single Window environment.

Figure 2.21. Moving up the trade facilitation ladder towards seamless international supply chains



Source: ESCAP, UNRC TF Survey 2015.

Note: the figure shows cumulative trade facilitation implementation scores of Asia-Pacific subregions for the five groups of trade facilitation measures included in the survey. Full implementation of all measures = 100.

As shown figure 2.21, while the regional and subregional cumulative trade facilitation implementation levels in East and South-East Asia are well above the Asia-Pacific average, all subregions clearly have significant room to make progress in all areas of trade facilitation, starting with institutional arrangements and further enhancing inter-agency cooperation. At the same time, implementation of cross-border (bilateral, subregional or regional) paperless trade systems remains mostly at the pilot stage. This is certainly not surprising given that, on the one hand, many less advanced countries in the region are at an early stage of development of national paperless systems while, on the other hand, more advanced countries have paperless systems in place that are not fully inter-operable with each other.

Given the large potential benefits associated with the implementation of these “next generation” trade facilitation measures,²⁷ it is in the interest of all countries across the region to work together in developing the legal and technical protocols needed for a seamless exchange of regulatory and commercial data and documents along the international supply chain. Some work has already been done bilaterally as well as in several Asian subregions (e.g., in ASEAN as part of the implementation of the ASEAN Single Window). This work can be further developed at the regional level through the adoption and implementation of the intergovernmental agreement for the facilitation of cross-border paperless trade currently under negotiation at ESCAP.²⁸

²⁷ See ESCAP, 2014. Available at www.unescap.org/resources/estimating-benefits-cross-border-paperless-trade.

²⁸ Full implementation of cross-border paperless trade is expected to generate US\$ 257 billion of additional export potential annually for the Asia-Pacific region alone. See www.unescap.org/resources/estimating-benefits-cross-border-paperless-trade.

Annex 2.1. Definition of the different stages of implementation

Definition of stage of implementation	Coding/ Scoring
<p>Full implementation: The implemented trade facilitation measure is: (a) in full compliance with commonly accepted international standards, recommendations and Conventions (such as the Revised Kyoto Convention, UN/CEFACT Recommendations or the WTO Trade Facilitation Agreement); (b) implemented in law and in practice; (c) available to essentially all relevant stakeholders nationwide, supported by an adequate legal and institutional framework as well as adequate infrastructure and financial and human resources.</p>	3
<p>Partial implementation: A measure is considered to be partially implemented if at least one of the following is true: (a) the trade facilitation measure is not in full compliance with commonly accepted international standards, recommendations and conventions; (b) the country is still in the process of rolling out the implementation of measure; (c) the measure is practiced on an unsustainable, short-term or ad hoc basis; (d) the measure is not implemented in all targeted locations (such as key border crossing stations); or (e) not all targeted stakeholders are fully involved.</p>	2
<p>Pilot stage of implementation: A measure is considered to be at the pilot stage of implementation if, in addition to meeting the general attributes of partial implementation, it is available only to (or at) a very small portion of the intended stakeholder group (location) and/or is being implemented on a trial basis. When a new trade facilitation measure is under pilot stage of implementation, the old measure is often continuously used in parallel to ensure the service is provided in case of disruption of new measure. This stage of implementation also includes relevant rehearsals and preparation for the fully-fledged implementation.</p>	1
<p>Not implemented: This means a trade facilitation measure has not been implemented. However, this stage does not rule out initiatives or efforts towards implementation of the measure. For example, under this stage, (pre-)feasibility or planning of implementation can be carried out, and consultation with stakeholders on the implementation may be arranged.</p>	0

Annex 2.2. Grouping of the countries surveyed²⁹

The survey covers 44 Asia-Pacific countries, which can be divided into the following six subregions:

- East and North East-Asia (ENEA): China, Japan, Mongolia and the Republic of Korea;
- North and Central Asia (NCA): Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan and Uzbekistan;
- Pacific Island Developing Economies (PIDEs): Fiji, Kiribati, Micronesia, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu;
- South and South-West Asia (SSWA): Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and Turkey;
- Pacific developed countries(AU&NZ): Australia and New Zealand;
- South-East Asia (SEA): Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste and Viet Nam.

Analysis is also extended to the following group of countries with special needs:³⁰

- Least developed countries (LDCs): Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, the Lao People's Democratic Republic, Myanmar, Nepal, Solomon Islands, Timor-Leste, Tuvalu and Vanuatu;
- Landlocked developing countries (LLDCs): Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao PDR, Mongolia, Nepal, Tajikistan and Uzbekistan;
- Small Island Developing States (SIDS): Fiji, Kiribati, Maldives, Micronesia, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu.³¹

²⁹ This grouping is largely in line with the Economic and Social Survey of Asia and the Pacific 2015.

³⁰ More details are available at http://unohrlls.org/UserFiles/1_countries_with_special_needs.pdf.

³¹ It is important to note that Afghanistan, Bhutan and the Lao PDR are LDCs as well as LLDCs, while Kiribati, Solomon Islands, Timor-Leste, Tuvalu and Vanuatu are LDCs as well as SIDS.

Chapter 3. Impact of trade facilitation and paperless trade on trade costs³²

3.1. Introduction

In December 2013, ministers from all 160 member States of WTO concluded their negotiations on the “Bali Package”. The WTO TFA is the centerpiece of this package,³³ thus making it the world’s first truly global multilateral trade agreement concluded since the creation of WTO. The objective of the WTO TFA is facilitating the movement, clearance, and release of goods through more efficient customs and border procedures.

While the scope of the Agreement remains limited,³⁴ it provides a unique and valuable tool for Governments in developing economies to revitalize or accelerate already ongoing trade facilitation reforms aimed at reducing trade costs and enabling greater participation in global value chains (GVCs).³⁵ In terms of exports and the global macro-economy, the net economic gains from implementation of trade facilitation measures have been estimated at a US\$ 960 billion increase in world GDP, a US\$ 1.04 trillion increase in global exports and a US\$ 20.6 million increase in export supported jobs (Hufbauer and others, 2013). In terms of global trade costs, the WTO Secretariat has also indicated that “by cutting trade bureaucracy the [TFA] deal could reduce advanced economies’ cost for doing business internationally by 10%” (Azevêdo, 2014). The dearth of data on the state of implementation of WTO TFA commitments and other trade facilitation measures across countries has, however, made it difficult to reliably estimate the potential impact of such measures on trade costs, even when the scope of the trade facilitation reform envisaged had been clearly defined.³⁶

In this context, this study investigates the impact of implementing a variety of trade facilitation measures on trade costs in Asia and the Pacific, using new data from the first United Nations Regional Commission (UNRC) Global Trade Facilitation and Paperless Trade Implementation Survey. Such measures include many of those featured in the WTO TFA as well as more advanced paperless trade measures³⁷ outside the scope of the WTO TFA. Building on earlier studies (e.g., Arvis et al., 2013), trade cost models are estimated and used to examine the extent

³² Prepared by Yann Duval, Chorthip Utoktham and Aman Saggu, Trade Facilitation Unit, Trade and Investment Division, ESCAP, Bangkok.

³³ The Bali Ministerial Declaration also acknowledged the accession of Yemen, adopted decisions on 10 texts concerning the main subjects of the Bali Package: trade facilitation; agriculture and development provisions; and various other decisions such as those related to e-commerce and situation complaints (Bellmann, 2014).

³⁴ As reminded by Hoekman (2014), among others, trade facilitation reform packages supported by international organizations have encompassed, but typically gone far beyond the scope of measures specified in the WTO TFA, covering hard and soft transport, and logistics infrastructure and services issues, and sometimes extending to trade finance.

³⁵ Many international organizations, including WTO itself, have launched dedicated assistance programmes to support WTO TFA implementation. See www.tfafacility.org/.

³⁶ The policy literature on trade facilitation is notorious in using widely different definitions of trade facilitation, making any attempt to compare estimates of impact of trade facilitation across studies very challenging.

³⁷ Paperless trade refers to the conduct of trade using electronic rather than paper-based data and documentation.

to which trade costs in Asia-Pacific countries could be reduced through partial or full implementation of WTO TFA-related and other trade facilitation measures.

This study confirms a strong and statistically significant link between trade facilitation reforms and lower trade costs. Specifically, a 10% increase in the implementation of reforms relating to paperless trade, transparency, formalities and institutions is associated with a statistically significant 0.8%, 0.7%, 0.5%, and 0.1% reduction in trade costs, respectively. This suggests that paperless trade measures, which take advantage of modern information and communications technologies to replace typically cumbersome paperwork by electronic information exchange, have as much – if not more – potential for reducing trade costs than more traditional trade facilitation measures.

The counterfactual analysis conducted as part of the study revealed that a partial (full) implementation of both binding and non-binding measures in the WTO TFA is associated with an average 5% (10.5%) trade cost reduction across Asia-Pacific countries. Full implementation of a WTO TFA+ package of measures that include a number of paperless trade measures reduces trade costs by more than 12.5% on average in the implementing Asia-Pacific economies. However, country-specific reductions vary widely, ranging from zero to more than 30% for some of the LDCs and LLDCs that currently have very low levels of trade facilitation implementation. Additional simulations show that bringing the level of maritime connectivity of all the developing countries in Asia-Pacific to the regional average will reduce trade costs by more than 16%, suggesting the need for countries to carefully prioritize measures as they develop and implement trade facilitation reforms aimed at reducing such costs.

Overall, the results are in line with estimates from other studies, thus confirming that there are substantial benefits to partial or full implementation of TF reforms as specified in the WTO TFA. However, the benefits can be substantially increased by looking beyond achieving minimum compliance with the WTO TFA commitments and implementation of TF reforms, by applying modern information and communications technologies aimed at paperless trade through conducting trade procedures on the basis of electronic data and information rather than paper documents. This result is consistent with the fact that member Asia-Pacific economies of ESCAP have been committed to work together on enabling paperless trade since 2012 and are currently negotiating a regional United Nations treaty on the facilitation of cross-border paperless trade.³⁸ The results also provide strong support for an integrated cross-border approach to trade facilitation.

This chapter extends upon the scope of existing studies³⁹ by explicitly investigating the impact of implementing TF reform on trade costs, including but not limited to measures in the WTO TFA. In particular, it explores the importance of using electronic rather than paper-based data and documentation to enable paperless trade. It also addresses the lack of data on trade

³⁸ For details, refer to: <http://communities.unescap.org/cross-border-paperless-trade-facilitation>.

³⁹ Please see appendix 3.3 for a literature review of existing studies.

facilitation across countries by using the recently released United Nations Regional Commissions Global Trade Facilitation and Paperless Trade Implementation Survey 2015.

3.2. Trade cost and trade facilitation: Model and estimation results

To investigate the effect of TF implementation on trade costs across countries, this study first developed a trade cost model. The first sub-section (section 3.2.1) outlines the model and estimation methods, while the second subsection introduce the trade facilitation implementation indicators and data used in the estimation. The last sub-section discusses the estimation results.

3.2.1. Trade cost model

In line with previous studies (see Arvis et al., 2013), overall trade costs can be modelled as a function of natural geographic factors (i.e., distance, landlockedness, and contiguity), cultural and historical distance (i.e., common official language, common unofficial language, former colonial relationships and formerly same country), and the presence of regional trade agreements and liner shipping connectivity (LSCI). In addition to trade facilitation implementation indicators, an index of credit information quality and availability is included in order to capture the impact of the domestic business environment on trade costs in general as well as access to and cost of financial services in particular.⁴⁰ The trade cost model is specified as:

$$\begin{aligned} \ln(\tau_{ij}) = & \beta_0 + \beta_1 \ln(\text{gtariff}_{ij}) + \beta_2 \ln(\text{dist}_{ij}) + \beta_3 (\text{contig}_{ij}) + \beta_4 (\text{comlang_off}_{ij}) \\ & + \beta_5 (\text{comlang_ethno}_{ij}) + \beta_6 (\text{colony}_{ij}) + \beta_7 (\text{comcol}_{ij}) + \beta_8 (\text{smctry}_{ij}) \\ & + \beta_9 (\text{rta}_{ij}) + \beta_{10} (\text{landlocked}_{ij}) + \beta_{11} \ln(\text{creditindex}_i) + \beta_{12} \ln(\text{LSCI}_i) \\ & + \beta_{13} \ln(\text{TF}_i) + D_j + \varepsilon_{ij} \end{aligned}$$

Definition, data sources, and expected signs of all the factors included in the model are summarized in table 3.1. Fixed-effects for partner countries (D_j) are included in order to account for cross-country heterogeneity as well as to increase estimation efficiency. Robust standard errors are also clustered by country pairs. The model is estimated using ordinary least squares across a cross-section of 90 reporting countries. The list of reporting and partner countries included in the estimation is provided in Annexes.

⁴⁰ Duval and Utoktham (2011) found that this indicator, among other non-trade specific indicators of the ease of doing business, had the greatest effect on trade costs in Asia-Pacific countries. This is not unexpected since access to finance is an important determinant of international trade flows, as became evident during the 2008 financial crisis (Liu and Duval, 2009).

Table 3.1. Data source, definition, treatment, source and expected sign

Variable	Definition	Data Treatment	Source	Expected Sign
τ_{ij}	Comprehensive trade costs.	Average of 2012-2013	World Bank- ESCAP Trade Cost Database	N/A
$gtariff_{ij}$	Geometric average tariff factor (1+rate) that each reporting country (i) charges to its trade partner (j) and vice versa, which can be expressed by $gtariff_{ijt} = \sqrt{tariff_{ijt} \times tariff_{ijt}}$	Average of 2012-2013	World Integrated Trade Solution (WITS)	+
$dist_{ij}$	Geographical distance between country i and j.	N/A	CEPII	+
$contig_{ij}$	Dummy variable of contiguity equal to 1 if country i and j share a common border and zero otherwise.	N/A	CEPII	-
$comlang_off_{ij}$	Dummy variable of common language equal to 1 if country i and j use the same common official language and zero otherwise.	N/A	CEPII	-
$comlang_ethno_i$	Dummy variable of common language equal to 1 if a language is spoken by at least 9% of the population in both countries and zero otherwise.	N/A	CEPII	-
$colony_{ij}$	Dummy variable equal to 1 if country i and j were ever in colonial relationship and zero otherwise.	N/A	CEPII	-
$comcol_{ij}$	Dummy variable equal to 1 if country i and j had a common colonizer after 1945 and zero otherwise.	N/A	CEPII	-
$smctry_{ij}$	Dummy variable equal to 1 if country i and j were or are the same country and zero otherwise.	N/A	CEPII	-
rta_{ij}	Dummy variable equal to 1 if country i and j are members of the same regional trade agreement and zero otherwise.	Latest definition in 2014	De Sousa, J. (2012)	-
$landlocked_{ij}$	Dummy variable equal to 1 if either country i or j is landlocked and zero otherwise.	N/A	CEPII	+
$creditindex_i$	Average depth of credit information index of country i. ⁴¹	0.0001 replacement/ average of DB2013-2015	Doing Business	-
$LSCI_i$	Average scores of liner shipping connectivity index of country i.	Data filling/ average of 2012-2014	UNCTAD	-
TF_i	Percentage of TF implementation of country i, modelled as: (a) overall TF; (b) general TF + paperless trade; or (c) transparency + formalities + institutional arrangements + paperless trade).	0.0001 replacement data in 2014-2015	Global Survey on Trade Facilitation and Paperless Trade Implementation: 2014-2015	-

⁴¹ Data for credit information from the Doing Business Report is lagged one year, i.e., data from the Doing Business Report 2014 are from 2013.

Note: presents the variables, data sources, definitions, data treatment, source and expected sign from econometric estimation. Where available, the average of the most recent data from 2012 onwards is used in the estimation. Data filling for LSCI is required to ensure inclusion of landlocked economies. Port countries are used as proxies for landlocked countries' portal performance. For the TF components and credit information index, zeros are replaced by 0.0001 to prevent observations being omitted from the estimation. The lists of countries included in the analysis are presented in Annexes.

3.2.2. Data on trade facilitation implementation

The impact of trade facilitation on trade costs is captured in the model by including trade facilitation implementation rates calculated on the basis of the United Nations Regional Commissions Global Survey on Trade Facilitation and Paperless Trade Implementation (UNRCs TF Survey) conducted in 2014/15.⁴² This Survey provides data on the implementation of a range of TF measures related to the WTO TFA as well as to a complementary regional agreement on the facilitation of cross-border paperless trade under negotiation at ESCAP.⁴³

Table 3.2. Trade facilitation measures considered and their grouping

	Group	Trade facilitation measure (and question No.) in the UNRC TF Survey
General TF Measures	Institutional arrangement	1. Establishment of a national trade facilitation committee or similar body 31. Cooperation between agencies on the ground at the national level
	Transparency	2. Publication of existing import-export regulations on the Internet 3. Stakeholder consultation on new draft regulations (prior to their finalization) 4. Advance publication/notification of new regulation before their implementation (e.g., 30 days prior) 5. Advance ruling (on tariff classification) 9. Independent appeal mechanism (for traders to appeal customs and other relevant trade control agencies' rulings)
	Formalities	6. Risk management (as a basis for deciding whether a shipment will be or not physically inspected) 7. Pre-arrival processing 8. Post-clearance audit 10. Separation of Release from final determination of customs duties, taxes, fees and charges 11. Establishment and publication of average release times 12. Trade facilitation measures for authorized operators 13. Expedited shipments 14. Acceptance of paper or electronic copies of supporting documents required for import, export or transit formalities

⁴² UNRC TF Survey Dataset as of 30 June 2015.

⁴³ Implementation of each measure is rated as "fully", "partially", "on a pilot basis" or "not" implemented. More information and survey methodology and data are available at <http://unnex.unescap.org/UNTFSurvey2015.asp>.

Paperless trade	<ul style="list-style-type: none"> 15. Electronic/automated customs system established (e.g., ASYCUDA) 16. Internet connection available to customs and other trade control agencies at border- crossings 17. Electronic Single Window system 18. Electronic submission of customs declarations 21. Electronic submission of air cargo manifests 22. Electronic application and issuance of Preferential Certificate of Origin 23. E-Payment of customs duties and fees
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The list of measures and the groupings considered in the calculation of aggregate implementation rates is shown in table 3.2.⁴⁴ General TF measures are all directly related to various WTO TFA provisions and may be further divided into three types of TF measures, i.e., institutional arrangement, transparency and formalities measures. In contrast, most paperless trade measures are not specifically included in the WTO TFA, and their implementation goes beyond the commitments made under that agreement.

The resulting trade facilitation implementation rates for 102 countries divided into regions are shown in figure 3.1a. The global average rate of implementation of this set of TF measures stands at 62%. There is some cross-region heterogeneity in the rates of implementation, ranging from an average of 53% in Africa to 87% in the European Union. While there are notable exceptions, richer and larger economies generally have higher TF implementation rates than other economies. Landlocked, least developed and small island developing economies tend to lag behind.⁴⁵ This is highlighted by figure 3.1b, which shows the implementation rates across the Asia-Pacific region.

It is worth noting that the trade facilitation measures and data discussed above capture trade facilitation implementation in its narrow sense of streamlining customs and other trade control agencies procedures, in line with the general scope of the WTO TFA. However, broader definitions of trade facilitation exists, such that the UNCTAD Liner Shipping Connectivity Index and the World Bank Doing Business Credit Information Index (CII) included in the trade cost model may also be seen as capturing distinct but no less important aspects of trade facilitation.

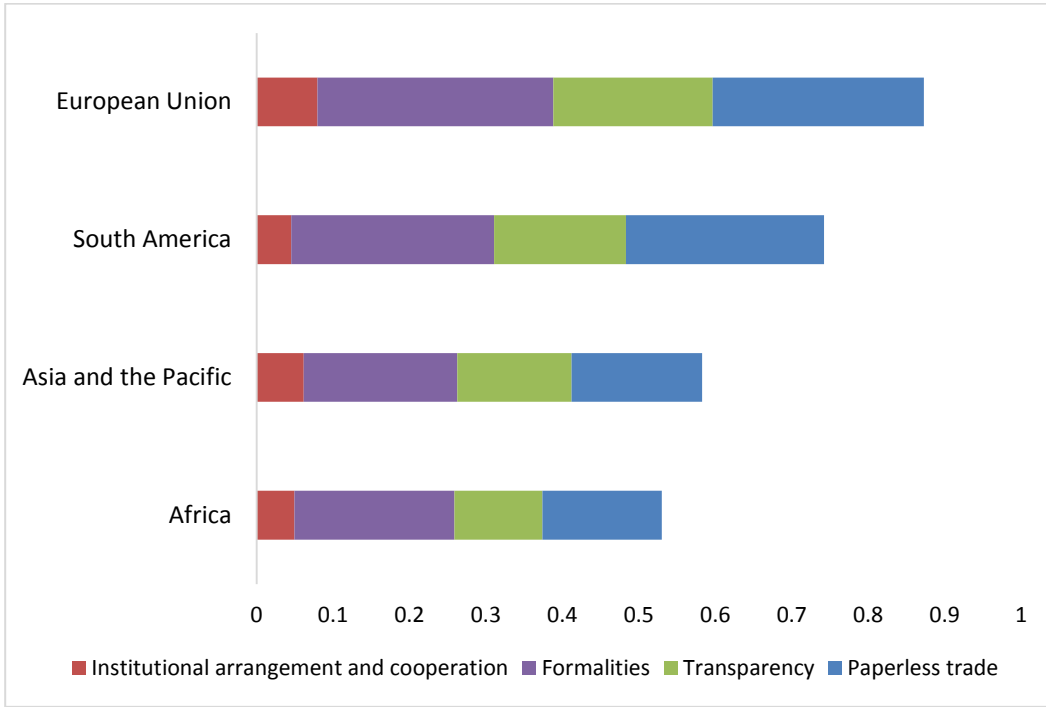
According to figure 3.2, while the Asia-Pacific region as a whole compares favorably with other developing regions in terms of maritime connectivity – largely due to China, which consistently tops the LSCI world rankings – the region is not doing as well in terms of the financing environment in which traders and other businesses operate, as suggested by low CII scores. A closer look reveals, however, that performance varies widely, depending on the subregion considered, with Pacific Island economies consistently and significantly lagging behind other Asia-Pacific subregions.

⁴⁴ For each country, the UNRC TF Survey features data on up to 38 trade facilitation measures. However, not all measures are applicable to all countries (e.g., transit facilitation measures), and data is missing for some of the more advanced measures in some countries. In order to ensure that the trade cost model estimation can be made on the basis of a sufficiently large number of countries, implementation rates are calculated on the basis of a common set of 22 trade facilitation measures only, as shown in table 1.

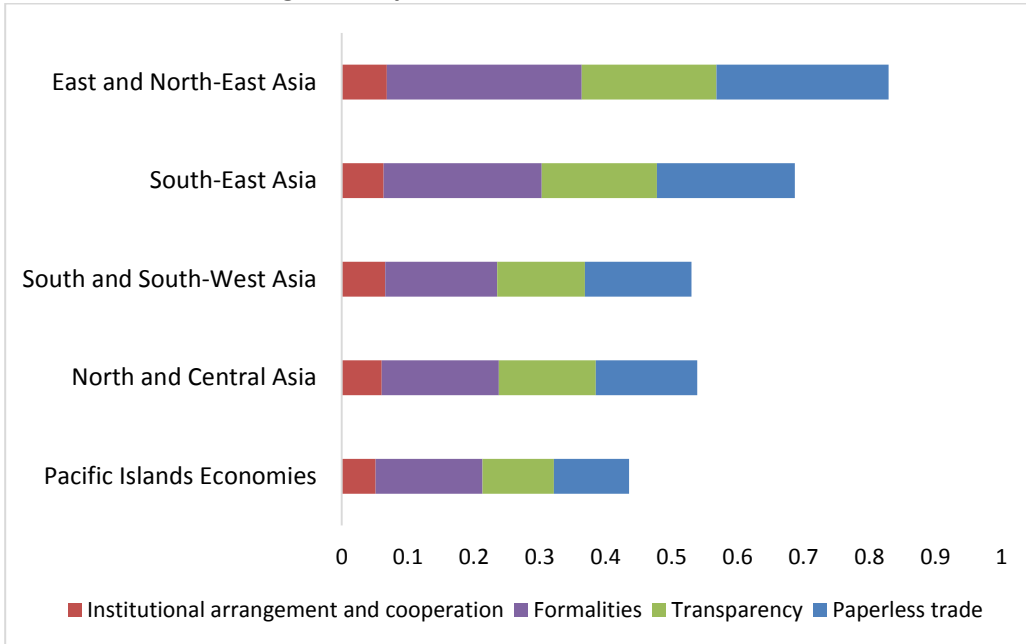
⁴⁵ For a more detailed and comprehensive discussion of the UNRC TF Survey results and data for Asia and the Pacific, please refer to UNRC (2015) or to ESCAP (2015).

Figure 3.1. Trade facilitation implementation rates*

3.1a. Regional implementation rates



3.1b. Subregional implementation rates in Asia and the Pacific

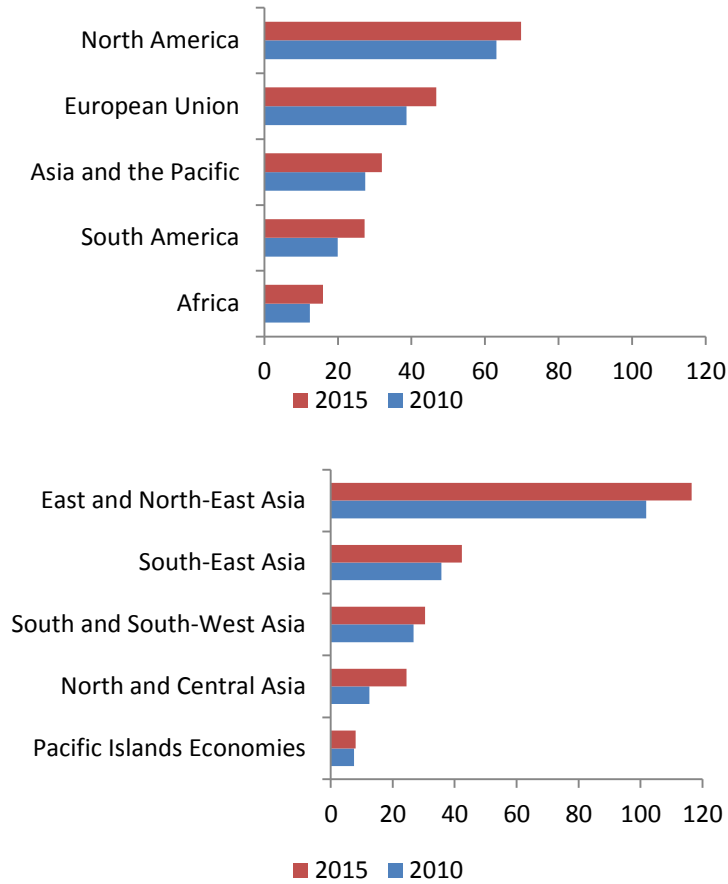


Source: Authors' compilation, based on the UNRC TF Survey 2015.

*Based on implementation rates of 22 of 38 individual trade facilitation measures included in the UNRC TF Survey. Implementation of transit facilitation and cross-border paperless trade measures are not included.

Figure 3.2. Selected broad trade facilitation indicators

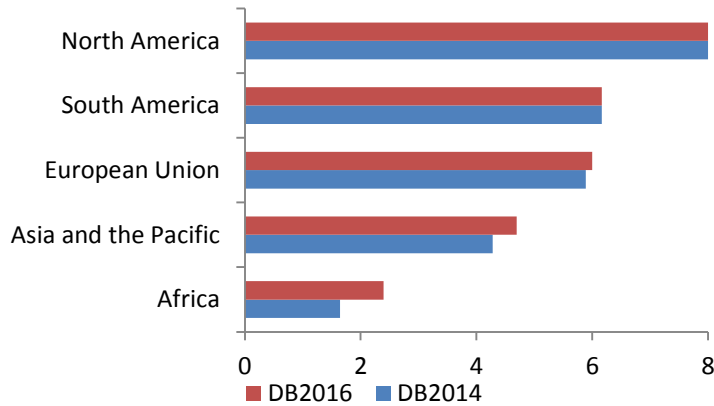
3.2a. Liner Shipping Connectivity Index (LSCI)

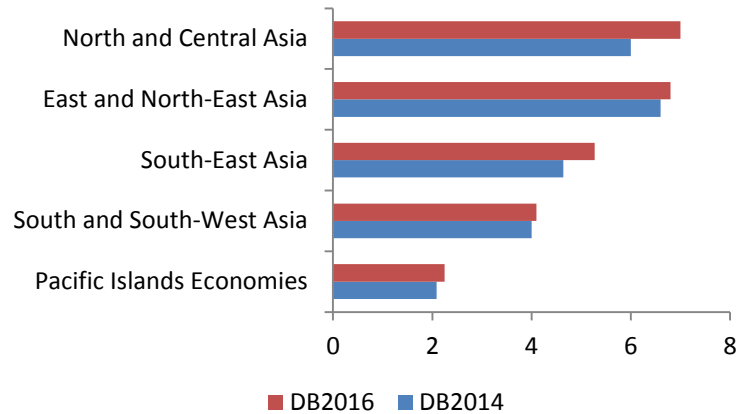


Source: UNCTAD (<http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=92>)

Note: LSCI is an indicator of maritime infrastructure and services efficiency. A higher LSCI score implies a higher maritime connectivity.

3.2b. Credit Information Index (CII)





Source: World Bank Doing Business Report, available at www.doingbusiness.org.

Note: CII is one of the World Bank indicators of ease of financing in the World Bank Doing Business Report. CII scores range from zero to 8. Higher scores indicate higher access and quality of credit information, contributing to a better environment for financing transactions.

3.2.3. Results

Panel regression estimates of the trade cost model are shown in table 3.3. The model was estimated using three different specifications of trade facilitation reform: The first model (1) is estimated using the average trade facilitation implementation rate across all 22 trade facilitation measures; model (2) features the average trade implementation rate for general trade facilitation measures (i.e., measures that need to be implemented as part of WTO TFA commitments) as well as the average implementation rates for paperless trade measures (i.e., measures that typically go beyond the WTO TFA commitments); Model (3) distinguishes between the effects of the four groups of TF measures defined in table 3.2 – institutional measures, transparency measures, formalities measures and paperless trade measures.

All the estimated variables have the expected signs when statistically significant. Distance and being landlocked increase trade costs significantly. Having a common border, a common official language, a former common colonizer, and/or a former colonial relationship are all associated with statistically significant and lower trade costs across countries. Having a common unofficial language and/or having formerly belonged to the same country are both statistically insignificant – in line with Arvis et al. (2013).

In terms of policy factors, tariffs, regional trade agreements, maritime connectivity, ease of financing and trade facilitation implementation indicators all have the expected and statistically significant impact on trade costs. Although tariffs have fallen considerably during the past decade, further reducing them globally remains an effective way to reduce trade costs. Indeed, the models suggest that a 10% change in tariff may be expected to reduce overall trade costs by more than 4% on average. The results also show the importance of TF, with a 10% increase in the overall implementation of trade facilitation measures associated with a 2.8% reduction in trade costs – see model (1). This is nearly twice the trade cost reduction that may be expected by a 10% improvement in maritime connectivity (1.4%).

Table 3.3. Trade cost model results

Models:	Beta coefficients			Standardized beta coefficients		
	(1)	(2)	(3)	(1)	(2)	(3)
$\ln(gtarif)_{ij}$	0.482*** [3.813]	0.486*** [3.837]	0.490*** [3.886]	0.0553*** [3.813]	0.0557*** [3.837]	0.0561*** [3.886]
$\ln(dist)_{ij}$	0.204*** [34.45]	0.203*** [34.02]	0.200*** [33.43]	0.399*** [34.45]	0.397*** [34.02]	0.392*** [33.43]
$\ln(contig)_{ij}$	-0.118*** [-4.042]	-0.120*** [-4.097]	-0.119*** [-4.089]	-0.0492*** [-4.042]	-0.0498*** [-4.097]	-0.0496*** [-4.089]
$\ln(comlang_off)_{ij}$	-0.0766*** [-3.647]	-0.0770*** [-3.656]	-0.0809*** [-3.830]	-0.0657*** [-3.647]	-0.0661*** [-3.656]	-0.0694*** [-3.830]
$\ln(comlang_ethno)_{ij}$	0.0139 [0.707]	0.0147 [0.740]	0.0157 [0.791]	0.0124 [0.707]	0.0130 [0.740]	0.0140 [0.791]
$\ln(colony)_{ij}$	-0.141*** [-5.124]	-0.140*** [-5.111]	-0.142*** [-5.136]	-0.0493*** [-5.124]	-0.0491*** [-5.111]	-0.0496*** [-5.136]
$\ln(comcol)_{ij}$	-0.0812*** [-4.951]	-0.0789*** [-4.820]	-0.0746*** [-4.589]	-0.0589*** [-4.951]	-0.0572*** [-4.820]	-0.0540*** [-4.589]
$\ln(smctry)_{ij}$	-0.0488 [-1.102]	-0.0498 [-1.125]	-0.0533 [-1.200]	-0.0142 [-1.102]	-0.0145 [-1.125]	-0.0155 [-1.200]
$\ln(landlocked)_{ij}$	0.232*** [18.29]	0.235*** [18.41]	0.240*** [18.83]	0.266*** [18.29]	0.269*** [18.41]	0.275*** [18.83]
$\ln(rta)_{ij}$	-0.0757*** [-6.725]	-0.0773*** [-6.862]	-0.0805*** [-7.139]	-0.0741*** [-6.725]	-0.0757*** [-6.862]	-0.0788*** [-7.139]
$\ln(creditindex)_i$	-0.00653*** [-6.400]	-0.00655*** [-6.390]	-0.00626*** [-5.710]	-0.0740*** [-6.400]	-0.0742*** [-6.390]	-0.0710*** [-5.710]
$\ln(LSCI)_i$	-0.142*** [-26.10]	-0.142*** [-25.90]	-0.145*** [-26.21]	-0.297*** [-26.10]	-0.297*** [-25.90]	-0.303*** [-26.21]
$\ln(TF_overall)_i$	-0.276*** [-14.11]			-0.178*** [-14.11]		
$\ln(TF_general)_i$		-0.195*** [-8.751]			-0.124*** [-8.751]	
$\ln(TF_transparency)_i$			-0.0741***			-0.0583***

			[-3.993]			[-3.993]
$\ln(TF_formalities)_i$			-0.0481***			-0.0630***
			[-6.828]			[-6.828]
$\ln(TF_institution)_i$			-0.00903***			-0.0310***
			[-3.304]			[-3.304]
$\ln(TF_paperlesstrade)_i$		-0.0678***	-0.0793***		-0.0644***	-0.0754***
			[-5.041]			[-5.041]
constant	1.988***	1.791***	1.493***			
	[19.42]	[17.89]	[17.89]			
Observations	4,723	4,723	4,723	4,723	4,723	4,723
R ²	0.651	0.650	0.650	0.651	0.650	0.650
Reporter FE	No	No	No	No	No	No
Partner FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Pair	Pair	Pair	Pair	Pair	Pair
Adjusted R ²	0.638	0.637	0.636	0.638	0.637	0.636

Source: Authors' calculations.

Note: Table 3.3 presents panel regression estimates of Equation [1] using data specified in table 3.1.

*** p<0.01, ** p<0.05 and * p<0.1; t-stats. in square parentheses.

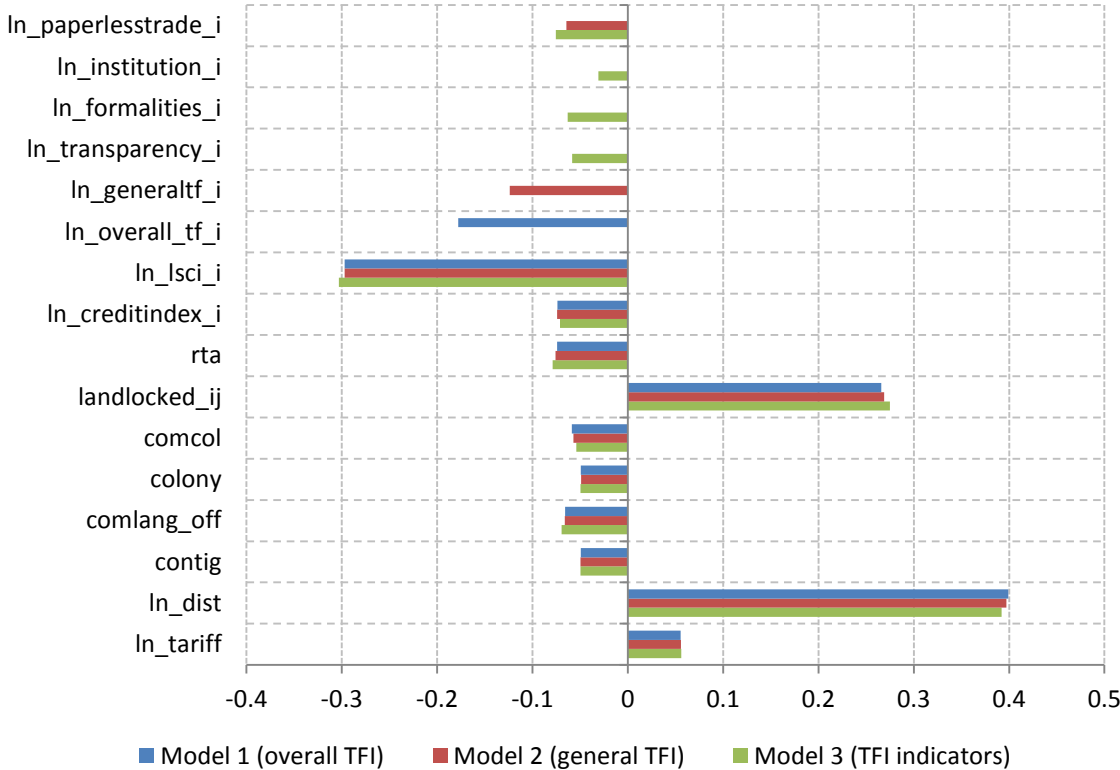
The scope for making a 10% improvement varies significantly across factors and it is therefore useful in calculating standardized coefficients, which take into account the underlying data distribution of explanatory factors across the sample of countries considered.⁴⁶ As shown in figure 3.3, doing this highlights the importance of maritime connectivity as dominant factor of trade cost variations across countries. It also confirms the importance of trade facilitation in reducing trade costs. However, it also reveals that trade costs are not very sensitive to tariff reductions – essentially because tariffs have already been reduced drastically over the past two decades. It also confirms that distance and landlockedness remain key natural barriers to international trade.

Looking at the impact of trade facilitation implementation in more detail, model (2) suggests that implementation of general TF measures included in the WTO TFA (i.e., a combination of transparency, formalities, and institutional arrangements and cooperation measures) and paperless trade measures are both highly significant determinants of trade costs. According to the model, a 10% increase in the general (paperless) TF index is associated with a 2% (0.7%) decrease in trade costs. In other words, General WTO TFA-related measures contribute about 70%-75% of trade cost reduction while application of modern information and communication technology to trade procedures contributes an additional 25%-30%.

⁴⁶ Standardized regression coefficients may be interpreted as follows: A one standard deviation change in the explanatory variable results in a [standardized beta coefficient] change in trade costs.

In turn, model (3) suggests that a 10% increase in paperless trade, transparency, formalities and institutional TF implementation indices are associated with statistically significant 0.8%, 0.7%, 0.5% and 0.1% reductions in trade costs, respectively. This strongly supports the recommendation that countries should not seek to simply meet the basic obligations associated with the WTO TFA but should be proactive in applying modern information and communications technologies to trade procedures as well as implementing electronic Single Window systems and other paperless trade measures. At the same time, it also shows that transparency measures, which are often less complex and less costly to implement than other measures, can go a long way towards reducing trade costs.⁴⁷ The statistically significant but more limited contribution of trade facilitation institutional arrangements to reducing trade costs may be explained in part by the fact that many of the more advanced economies – and best trade facilitation performer – do not have trade facilitation-specific institutional arrangements in place as broader coordination mechanisms are already embedded in the ongoing operation and systems of the agencies involved.

Figure 3.3. Sensitivity of trade costs to natural and policy factors



Source: Authors' own calculations.
 Note: The figure shows standardized regression coefficients of all models in this study.

⁴⁷ At the same time, however, the standardized regression coefficients shown in figure 3.3 suggest that, across the whole sample of countries included in the estimation, there may be slightly more scope for trade cost reductions through improvement in formalities rather than through transparency measures, as the latter have already been at least partially implemented in most of the countries considered.

3.2.4. Impact of trade facilitation implementation on trade costs in Asia-Pacific: A “what if” analysis

Based on the trade cost model estimated earlier, this study investigated in greater detail the potential of trade facilitation measures in reducing trade costs across countries by conducting counterfactual simulations (“what if” analyses). In doing so, three groups of TF measures were considered: (a) measures that are binding under the WTO TFA; (b) measures that are binding under the WTO TFA as well as those included in the WTO TFA but are non-binding; and (c) binding and non-binding WTO TFA measures as well as other paperless trade measures not specifically included in the WTO TFA. Details regarding allocation of the 22 TF measures included in this study to each of the three groups are provided in table A3.4 in annex 3.1. The following two scenarios are considered for each group:

- (a) Scenario 1: Partial TF implementation scenario. All countries that have either not implemented, or have implemented on a pilot basis the TF measures considered, take action and achieve at least partial implementation;
- (b) Scenario 2: Full TF implementation scenario: All countries that have not achieved full implementation of the TF measures considered take action and achieve full implementation.

Results of the simulations are shown in table 3.4 for Asia-Pacific economies. Implementation of binding and non-binding WTO TFA measures results in a 5% reduction in trade costs, on average, under a partial implementation scenario, and an 11% reduction under the more ambitious full implementation scenario. In contrast, implementing only binding WTO TFA measures results, at best, in a 6.77% decrease in trade costs on average in these countries. Under a WTO TFA + scenario where paperless trade measures not included in the WTO TFA are implemented, the average trade cost reduction across countries increases to more than 13%.

Table 3.4 also shows the average trade costs reduction of Asia-Pacific economies and the rest of the world associated with the different types of trade facilitation measures identified above. Both the partial and full implementation scenarios suggest that, among WTO TFA measures, those related to formalities will have the highest impact on trade costs on average, both in the case of binding and non-binding measures. The largest reduction of trade costs, however, is achieved through partial or full implementation of paperless trade measures beyond those required or specified in the WTO TFA.

Intraregional trade costs in Asia-Pacific are also expected to decline significantly as a result of WTO TFA implementation, although by less than trade costs between Asia-Pacific economies and the rest of the world (table 3.4). This may be mainly attributed to the fact that trade facilitation has been a core component of many regional and subregional integration initiatives in the Asia-Pacific region. As a result, average intraregional trade cost reductions from WTO TFA implementation are not expected to exceed 9%, even under the scenario of full implementation of both binding and non-binding measures. Again, the largest share of trade costs

reductions can be attributed to the implementation of paperless trade measures, followed by formalities measures.

Table 3.4. Changes in international trade costs of Asia-Pacific as a result of WTO TFA implementation

Asia-Pacific	WTO TFA (Binding only)		WTO TFA (Binding + non-binding)		WTO TFA+ (Binding + non-binding + other paperless trade)	
	Partially implemen ted	Fully implemen ted	Partially implemen ted	Fully implemen ted	Partially implemen ted	Fully implemen ted
Model 1 Overall TF	-3.15%	-6.77%	-5.38%	-11.11%	-6.71%	-13.16%
Model 3						
Transparency	-0.79%	-1.67%	-1.13%	-3.09%	-1.13%	-3.09%
Formalities	-2.25%	-3.17%	-2.66%	-3.95%	-2.66%	-3.95%
Institution	-0.10%	-0.35%	-0.10%	-0.35%	-0.10%	-0.35%
Paperless trade	-	-	-1.45%	-2.34%	-2.91%	-4.83%

Source: Authors' calculations.

At the individual country level, trade cost reductions associated with the various scenarios vary from zero to 30% or more, depending on each country's existing level of TF implementation. As figure 3.4 shows, most of the least developed and landlocked countries in Asia and the Pacific can expect trade cost reductions of 5% to 10% from their own full implementation of WTO TFA binding measures alone. Trade costs reductions in most of these countries increase to between 10% and 15% when they fully implement both binding and non-binding measures. Implementation of a WTO TFA+ package of measures, emphasizing the adoption of modern information and communications technologies, generates trade cost reductions of more than 15% in most LDCs and LLDCs. While these numbers are promising, it is worth emphasizing that the estimates are based on the full implementation of each measure, which may be difficult to achieve in the short to medium term. Several LDCs and LLDCs including, for example, Bhutan and Uzbekistan, are also not WTO members; as such, they may not have access to the technical assistance committed by development partners under the WTO TFA.

Importantly, the trade costs reduction estimates presented above are those associated with self-implementation by a country of WTO TFA measures and other selected trade facilitation measures. However, a country may also see its trade costs fall because of the WTO TFA implementation in partner countries. This is in fact how the most advanced economies are expected to benefit from the agreement, as they have in principle already implemented most measures. Average trade costs reductions in Asia-Pacific associated with WTO TFA implementation in partner countries – but not in own country - range from 4% to 7.5%. Such cost reductions are significant and important in terms of improving the overall efficiency of the

multilateral trading system, contributing to making it more inclusive and sustainable and facilitating development of global production networks. However, they should be clearly differentiated from trade cost reductions achieved through self-implementation of trade facilitation reform since they do not inherently affect a country's relative trade competitiveness.

Table 3.5. Changes in intraregional trade costs in Asia-Pacific as a result of WTO TFA implementation

Intra-Asia-Pacific	WTO TFA (Binding only)		WTO TFA (Binding + Non-binding)		WTO TFA+ (Binding + Non-binding + other paperless trade)	
	Partially implemen ted	Fully implemen ted	Partially implemen ted	Fully implemen ted	Partially implemen ted	Fully implemen ted
Model 1 Overall TF	-1.95%	-5.06%	-3.61%	-8.62%	-4.63%	-10.28%
Model 3						
Transparency	-0.48%	-1.19%	-0.73%	-2.38%	-0.73%	-2.38%
Formalities	-1.33%	-2.13%	-1.65%	-2.80%	-1.65%	-2.80%
Institution	-0.05%	-0.30%	-0.05%	-0.30%	-0.05%	-0.30%
Paperless trade	-	-	-1.01%	-1.72%	-2.11%	-3.66%

Source: Authors' calculations.

Indeed, an interesting finding from the counterfactual simulation of TF implementation on trade costs is that many developing economies in Asia and the Pacific can expect only limited trade cost reductions from their own WTO TFA implementation, essentially because they have already implemented most of the measures featured in the agreement. This is particularly true for ASEAN and East Asian economies, where implementation of some of the most advanced measures featured in the WTO TFA – such as Single Windows – had been initiated well before the

WTO TFA was concluded. For those countries, making significant progress in reducing trade costs through trade facilitation necessarily implies implementation of WTO TFA+ measures, such as those aimed at enabling electronic exchange of data and documents across countries and along international supply chains (i.e., cross-border paperless trade).

Figure 3.4. Trade cost reductions from trade facilitation in Asia-Pacific countries

Figure 3.4a. Partial implementation scenario

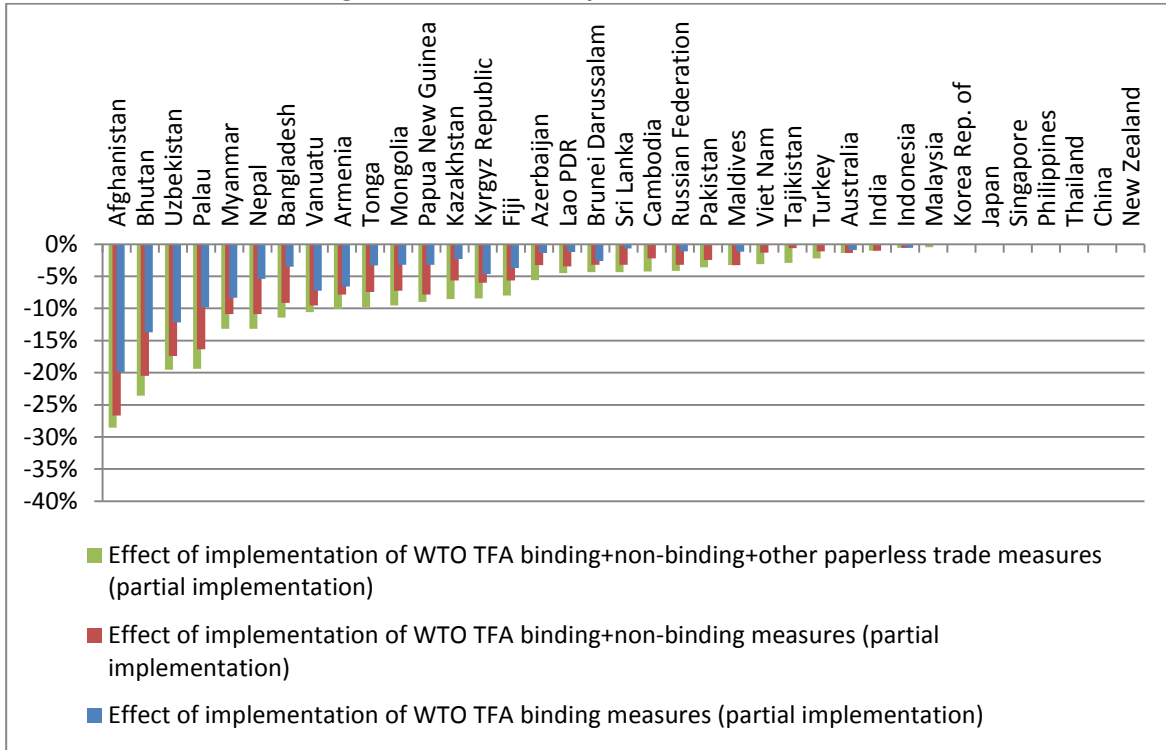
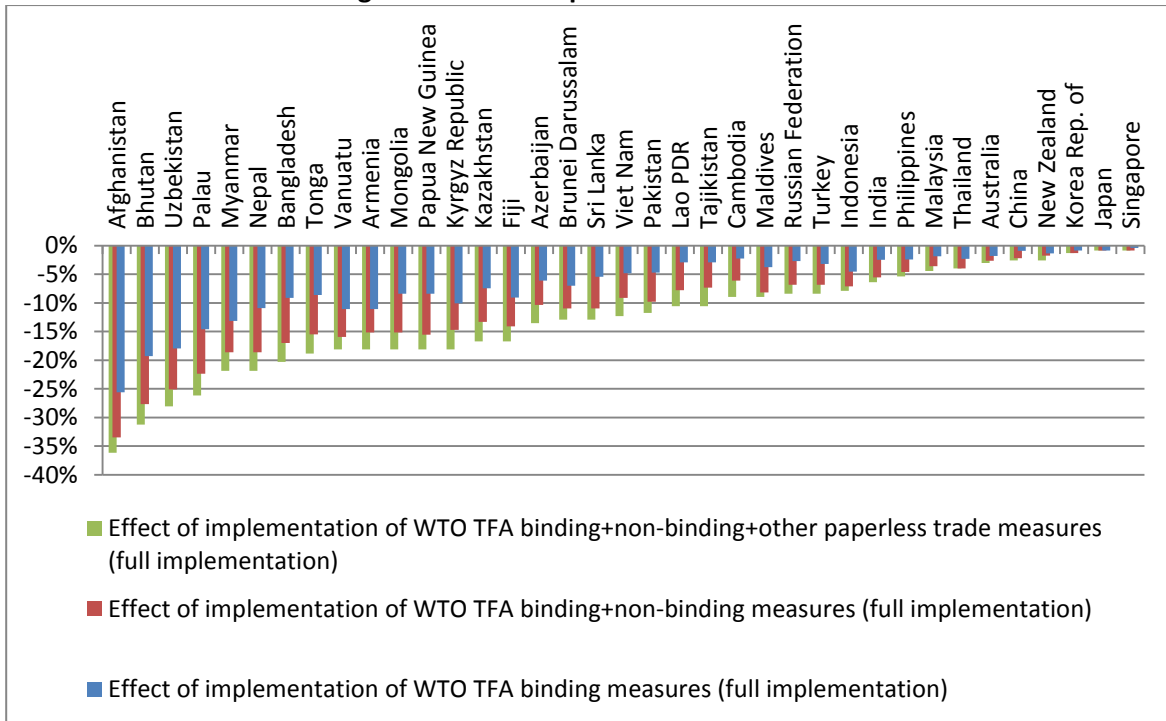


Figure 3.4b. Full implementation scenario



Source: Authors' calculations.

To put these results into perspective, it is useful to contrast them with the trade costs reductions that may be associated with broader trade facilitation reforms, which often encompass measures aimed at improving trade-related infrastructure and services, and the overall business environment.⁴⁸ In that context, the following additional counterfactual simulation was conducted as part of this study using the results of model 1:

- (a) Scenario 3: Improvement in maritime connectivity. All countries with LSCI scores below the developing country average / OECD average take action and bring their LSCI score to that level;
- (b) Scenario 4: Improvement in access to financing. All countries with CII scores below the developing country average / OECD average take action and bring their CII score to that level.

Table 3.6. Changes in trade costs of Asia-Pacific as a result of port connectivity and trade finance improvement

	Asia-Pacific with ROW	Intra-Asia-Pacific
Maritime connectivity	-5.27% / -10.77%	-3.46% / -8.50%
Credit information	-1.27% / -1.42%	-0.97% / -1.00%

Source: Authors' calculations.

Note: counterfactual estimates based on Model 1 and assuming port connectivity and credit information levels are brought up to the developing economies average / the OECD average.

As shown in table 3.7, the simulation results suggest that improvement in maritime connectivity, as described in scenario 3, would reduce intraregional trade costs in Asia and the Pacific by 8.5% and overall international trade costs of the region by nearly 11%, while improved access to finance through improvement in credit information availability and quality (scenario 4) could reduce trade costs by 1.0% to 1.5%.⁴⁹ Taken together, the size of the trade costs reductions associated with these broader trade facilitation measures appears to be very significant, although they cannot be easily compared to those associated with the narrower WTO TFA and paperless trade measures. This is not unexpected and is, in fact, consistent with earlier findings from the literature that improvements in port efficiency and the overall business environment are essential

⁴⁸ See WTO 2015b for a recent and rather comprehensive discussion of trade facilitation definitions.

⁴⁹ It is worth noting here that these regional estimates are calculated on the basis of the same group of countries than in earlier simulations, i.e., they include a significant number of Asia-Pacific developing countries who see no individual cost reductions under the scenarios considered since their maritime connectivity and credit information systems are already at or above the developing economies average (or the even the OECD average in the case of credit information). A more detailed analysis at the individual country level reveals that the trade cost reductions from improvements in maritime connectivity for below average countries are significantly larger than those from WTO TFA or paperless trade implementation.

to reducing international trade costs and enabling firms to efficiently conduct international transactions.

3.3. Conclusion

Using the new data from the survey, as detailed in chapter 2, together with the latest available data from the ESCAP-World Bank Trade Cost Database, this chapter investigates the impact of implementing trade facilitation measures on trade costs. This not only includes many of those featured in the WTO TFA but also more advanced paperless trade measures outside the scope of the WTO TFA. The econometric analysis shows that a 10% increase in the implementation of the comprehensive set of trade facilitation measures considered is associated with a 2.8% decrease in trade costs. A more disaggregated analysis, whereby trade facilitation measures are categorized into four categories (transparency, formalities, institutional arrangement and cooperation, and paperless trade) suggests that implementation of paperless trade and formalities measures have the greatest impact on reducing trade costs.

A counterfactual analysis conducted to simulate the impact of various trade facilitation implementation scenarios on Asia-Pacific countries revealed the following: (a) partial (full) implementation of binding and non-binding measures included in the WTO TFA is associated with an average 5% (10.5%) trade cost reduction in Asia-Pacific; (b) intraregional trade costs reductions are also significant but lower than those likely to be experienced by Asia and Pacific region countries extraregionally; (c) paperless trade measures have the highest impact on trade costs among all types of trade facilitation measures considered followed by formalities measures; and (d) country-specific reductions vary from zero per cent to more than 30%, depending on the current state of implementation of trade facilitation in each country.

The estimated impact of a full implementation of the WTO TFA is associated with an 8.62% decrease in intraregional trade costs in the Asia-Pacific region and an 11.11% decrease in international trade costs between the Asia-Pacific region and the world. In comparison, full implementation of the WTO TFA is associated with a reduction in world trade costs of 14.3%, according to the latest World Trade Report (WTO 2015b).⁵⁰ The reduction estimate for Asia in the World Trade Report is just below 14%. Our lower estimates may be explained by the fact that our analysis considered a wider range of other trade facilitation measures and factors besides the WTO TFA. Indeed, the results confirmed the prime importance of maritime connectivity in reducing trade costs and highlighted the need for WTO TFA implementation to take place as part of a comprehensive approach to reducing trade costs.

Overall, our estimates still suggest that trade costs savings for Asia and the Pacific from even partial implementation of both binding and non-binding WTO TFA measures could reach at least USD 263 billion a year.⁵¹ That said, developing countries that have long been involved in simplifying, harmonizing, and automating trade procedures at the national and (sub)regional level may experience relatively small trade cost reductions from WTO TFA given their already advanced

⁵⁰ Estimates are based on Moisé and Sorescu, 2013.

⁵¹ - and up to USD 640 billion a year if full implementation of a WTO TFA+ package of measures can be achieved.

level of trade facilitation. Further facilitation of trade in these economies will involve developing legal and technical frameworks to support cross-border paperless trade, i.e., enabling the electronic exchange and legal recognition of trade data and documents between public and private actors located in different countries along the international supply chain. However, such efforts should take place within the context of broader trade facilitation programmes and strategies encompassing trade-related infrastructure and services, particularly those related to port connectivity.

Annex 3.1. List of reporting countries and trading partners

Table A3.1. Reporting countries

1. Armenia	24. Ecuador	47. Malawi	70. Senegal
2. Australia	25. Egypt, Arab Rep.	48. Malaysia	71. Singapore
3. Austria	26. El Salvador	49. Maldives	72. Spain
4. Azerbaijan	27. Fiji	50. Mali	73. Sri Lanka
5. Bangladesh	28. Finland	51. Mexico	74. Suriname
6. Barbados	29. France	52. Mongolia	75. Sweden
7. Benin	30. Gambia	53. Myanmar	76. Switzerland
8. Bhutan	31. Germany	54. Namibia	77. Tajikistan
9. Bolivia	32. Ghana	55. Nepal	78. Tanzania
10. Botswana	33. Greece	56. Netherlands	79. Thailand
11. Brazil	34. Guatemala	57. New Zealand	80. Togo
12. Brunei Darussalam	35. Honduras	58. Nicaragua	81. Tonga
13. Burkina Faso	36. India	59. Niger	82. Turkey
14. Cambodia	37. Indonesia	60. Nigeria	83. Uganda
15. Cameroon	38. Japan	61. Pakistan	84. United Arab Emirates
16. Chile	39. Jordan	62. Palau	85. Uruguay
17. China	40. Kazakhstan	63. Papua New Guinea	86. Uzbekistan
18. Colombia	41. Kenya	64. Paraguay	87. Vanuatu
19. Comoros	42. Kyrgyzstan	65. Peru	88. Viet Nam
20. Congo (Republic of.)	43. Lao PDR	66. Philippines	89. Yemen
21. Costa Rica	44. Lebanon	67. Qatar	90. Zimbabwe
22. Cote d'Ivoire	45. Lesotho	68. Republic of Korea	
23. Dominican Republic	46. Madagascar	69. Russian Federation	

Note: Table A3.1 presents the 90 reporting countries used in the empirical models.

Table A3.2. Partner countries

1. Afghanistan	42. Cote d'Ivoire	83. Kyrgyzstan	124. Qatar
2. Albania	43. Croatia	84. Lao PDR	125. Republic of Korea
3. Algeria	44. Cyprus	85. Latvia	126. Romania
4. Angola	45. Czech Republic	86. Lebanon	127. Russian Federation
5. Antigua and Barbuda	46. Denmark	87. Lesotho	128. Rwanda
6. Argentina	47. Dominica	88. Lithuania	129. Saudi Arabia
7. Armenia	48. Dominican Republic	89. Luxembourg	130. Senegal
8. Australia	49. Ecuador	90. Macao, China	131. Seychelles
9. Austria	50. Egypt (Arab Rep.)	91. Macedonia, FYR	132. Singapore
10. Azerbaijan	51. El Salvador	92. Madagascar	133. Slovak Republic
11. Bahamas, The	52. Equatorial Guinea	93. Malawi	134. Slovenia
12. Bahrain	53. Estonia	94. Malaysia	135. South Africa
13. Bangladesh	54. Fiji	95. Maldives	136. Spain
14. Barbados	55. Finland	96. Mali	137. Sri Lanka
15. Belarus	56. France	97. Malta	138. St. Kitts and Nevis
16. Belgium	57. Gabon	98. Mauritania	139. St. Lucia
17. Belize	58. Gambia	99. Mauritius	140. Suriname
18. Benin	59. Georgia	100. Mexico	141. Sweden
19. Bhutan	60. Germany	101. Moldova	142. Switzerland
20. Bolivia	61. Ghana	102. Mongolia	143. Syrian Arab Republic
21. Bosnia and Herzegovina	62. Greece	103. Morocco	144. Tajikistan
22. Botswana	63. Grenada	104. Mozambique	145. Tanzania
23. Brazil	64. Guatemala	105. Myanmar	146. Thailand
24. Brunei Darussalam	65. Guinea	106. Namibia	147. Togo
25. Bulgaria	66. Guyana	107. Nepal	148. Tonga
26. Burkina Faso	67. Honduras	108. Netherlands	149. Trinidad and Tobago
27. Burundi	68. Hong Kong, China	109. New Zealand	150. Tunisia
28. Cambodia	69. Hungary	110. Nicaragua	151. Turkey
29. Cameroon	70. Iceland	111. Niger	152. Uganda
30. Canada	71. India	112. Nigeria	153. Ukraine
31. Cape Verde	72. Indonesia	113. Norway	154. United Arab Emirates
32. Central African Republic	73. Iran (Islamic Rep. of)	114. Oman	155. United Kingdom
33. Chad	74. Ireland	115. Pakistan	156. United States
34. Chile	75. Israel	116. Palau	157. Uruguay
35. China	76. Italy	117. Panama	158. Uzbekistan
36. Colombia	77. Jamaica	118. Papua New Guinea	159. Venezuela
37. Comoros	78. Japan	119. Paraguay	160. Viet Nam
38. Congo (Dem. Rep)	79. Jordan	120. Peru	161. Yemen
39. Congo (Rep. of)	80. Kazakhstan	121. Philippines	162. Zambia
40. Cook Islands	81. Kenya	122. Poland	
41. Costa Rica	82. Kuwait	123. Portugal	

Note: Table A3.2 presents the 162 partner countries used in the empirical models.

Table A3.3. Coding and scoring of different stage of implementation

Definition of stage of implementation	Coding/ Scoring
<p>Full implementation: The trade facilitation measure implemented is in full compliance with commonly accepted international standards, recommendations and conventions (such as the Revised Kyoto Convention, UN/CEFACT Recommendations, or the WTO Trade Facilitation Agreement). It is implemented in law and in practice. It is available to essentially all relevant stakeholders nationwide, supported by an adequate legal and institutional framework as well as adequate infrastructure, and financial and human resources.</p>	3
<p>Partial implementation: A measure is considered to be partially implemented if at least one of the following is true: (a) the trade facilitation measure is not in full compliance with commonly accepted international standards, recommendations and conventions; (b) the country is still in the process of rolling out the implementation of measure; (c) the measure is practiced on an unsustainable, short-term or ad-hoc basis; (d) the measure is not implemented in all targeted locations (such as key border crossing stations); or (e) not all targeted stakeholders are fully involved.</p>	2
<p>Pilot stage of implementation: A measure is considered to be at the pilot stage of implementation if, in addition to meeting the general attributes of partial implementation, it is available only to (or at) a very small portion of the intended stakeholder group (location) and/or is being implemented on a trial basis. When a new trade facilitation measure is under pilot stage of implementation, the old measure is often continuously used in parallel to ensure the service is provided in case of disruption of new measure. This stage of implementation also includes relevant rehearsals and preparation for the fully-fledged implementation.</p>	1
<p>Not implemented: This simply means a trade facilitation measure has not been implemented. However, this stage does not rule out initiatives or efforts towards implementation of the measure. For example, under this stage, (pre)feasibility or planning of implementation can be carried out, and consultation with stakeholders on the implementation may be arranged.</p>	0

Note: Table A3.3 presents coding and scoring of trade facilitation measures in four categories.

Table A3.4 Nature and relationships between selected trade facilitation measures considered and the WTO TFA provisions*

Trade facilitation measure	Corresponding WTO TFA Article	Binding or non-binding nature of the WTO TFA Article
Institutional arrangement		
1. Establishment of a national trade facilitation committee or similar body	Section 3, Article 23: Institutional Arrangements	Binding
31. Cooperation between agencies on the ground at the national level	Section 1, Article 8: Border Agency Cooperation	Binding
Transparency		
2. Publication of existing import-export regulations on the Internet	Section 1, Article 1.2: Information Available through Internet	Non-binding (Phrasing: shall, to the extent practicable and in a manner consistent with its domestic law and legal system)
3. Stakeholder consultation on new draft regulations (prior to their finalization)	Section 1, Article 2: Opportunity to Comment, Information Before Entry into Force, and Consultations	Non-binding (Phrasing: shall, to the extent practicable and in a manner consistent with its domestic law and legal system)
4. Advance publication/notification of new regulation before their implementation (e.g., 30 days prior)	Section 1, Article 2.1: Opportunity to Comment and Information Before Entry into Force	Non-binding (Phrasing: shall, to the extent practicable and in a manner consistent with its domestic law and legal system)
5. Advance ruling (on tariff classification)	Section 1, Article 3 : Advance Rulings	Binding
9. Independent appeal mechanism (for traders to appeal Customs and other relevant trade control agencies' rulings)	Section 1, Article 4: Procedures for Appeal and Review	Binding
Formalities		
6. Risk management (as a basis for deciding whether a shipment will be or not physically inspected)	Section 1, Article 7.4 : Risk Management	Non-binding (Phrasing: shall, to the extent possible)
7. Pre-arrival processing	Section 1, Article 7.1: Pre-arrival Processing	Binding
8. Post-clearance audit	Section 1, Article 7.5: Post-Clearance Audit	Binding
10. Separation of Release from final determination of customs duties, taxes, fees and charges	Section 1, Article 7.3: Separation of Release from Final Determination of Customs Duties, Taxes, Fees and Charges	Binding
11. Establishment and publication of average release	Section 1, Article 7.6: Establishment and Publication of	Non-binding (Phrasing: members are

times	Average Release Times	encouraged)
12. Trade facilitation measures for authorized operators	Section 1, Article 7.7: Trade Facilitation Measures for Authorized Operators	Binding
13. Expedited shipments	Section 1, Article 7.7: Expedited Shipments	Binding
14. Acceptance of paper or electronic copies of supporting documents required for import, export or transit formalities.	Section 1, Article 10.2: Acceptance of Copies	Non-binding (Phrasing: shall endeavor to accept)
<u>Paperless trade facilitation</u>		
15. Electronic/automated Customs System (e.g., ASYCUDA)	N/A	
16. Internet connection available to Customs and other trade control agencies at border-crossings	N/A	
17. Electronic Single Window System	Section 1, Article 10.4: Single Window	Non-binding (Phrasing: shall endeavor to establish)
18. Electronic submission of Customs declarations	N/A	
21. Electronic Submission of Air Cargo Manifests	N/A	
22. Electronic Application and Issuance of Preferential Certificate of Origin	N/A	
23. E-Payment of Customs Duties and Fees	Section 1, Article 7.2: Electronic Payment	Non-binding (Phrasing: shall, to the extent practicable)

Note: Table A3.4 presents justifications for classing WTO TFA measures as binding or non-binding.

*Measures which are binding under the WTO TFA correspond to group one (1) of TF measures in the counterfactual analysis presented in the chapter. Group 2 consists of the measures in group one (1) as well as non-binding WTO TFA measures. All measures, including paperless trade measures, identified as N/A constitute group 3.

Annex 3.2. Trade cost reductions from paperless trade facilitation in Asia-Pacific countries

Figure A3.1. Partial implementation scenario

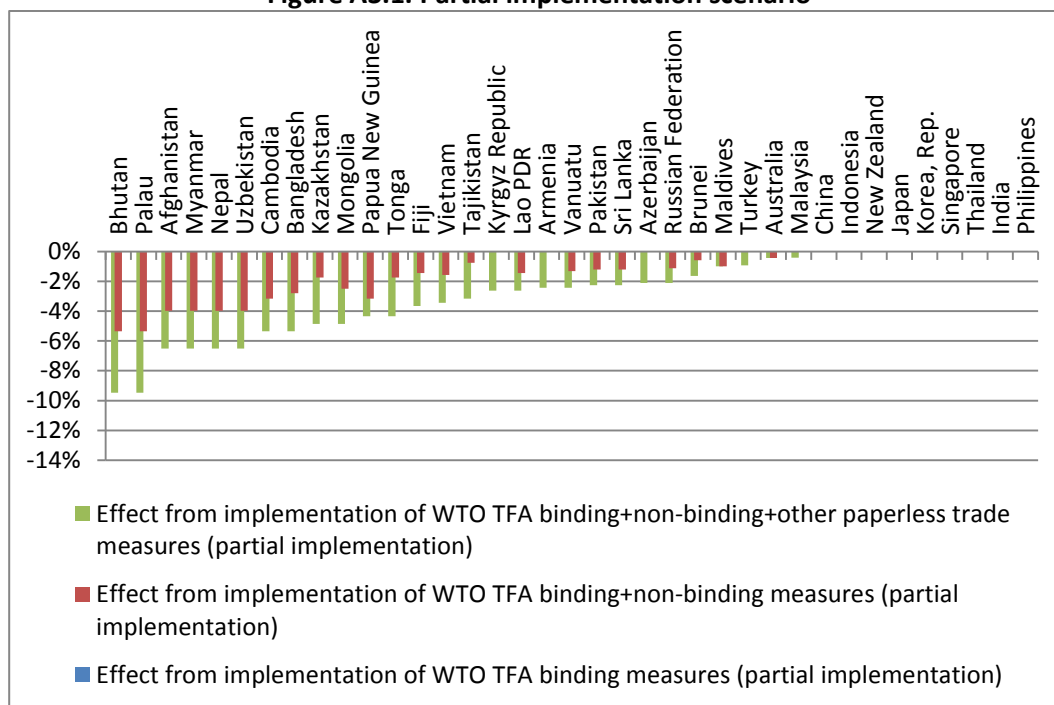
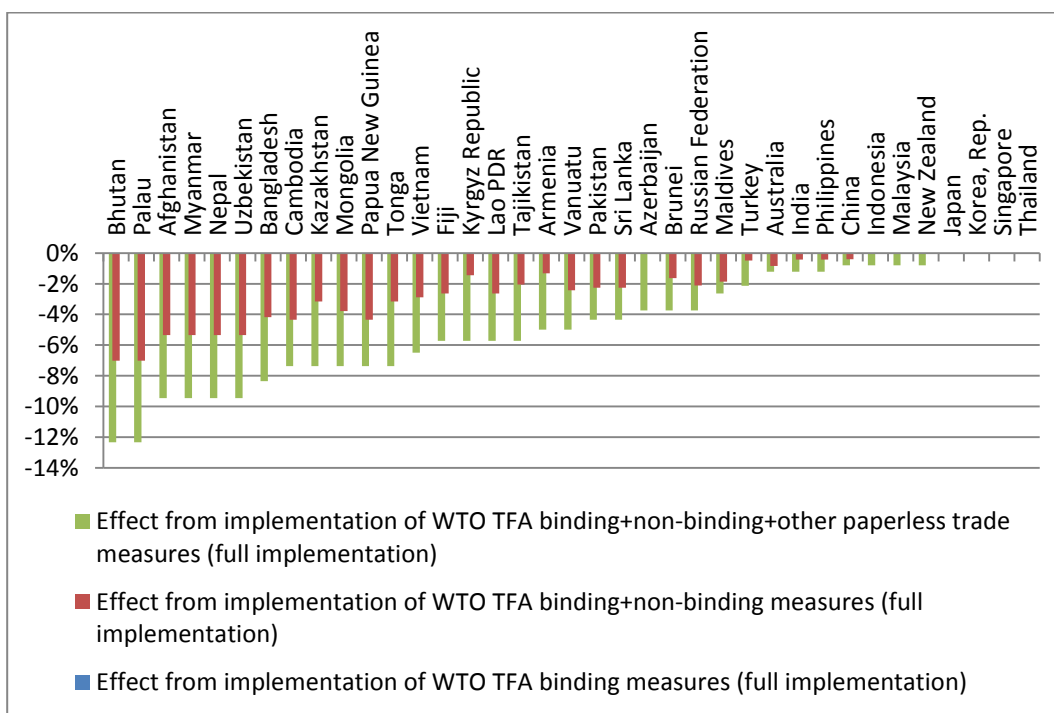


Figure A3.2. Full implementation scenario



Source: Authors' calculations.

Annex 3.3. Literature Review⁵²

The importance of reducing trade costs to support sustained and sustainable development of the Global economy has been widely acknowledged at the policy level, as evidenced by the focus of – and extensive discussions at – the Fifth Global Review on Aid for Trade held in July 2015.⁵³ This is particularly important for developing economies, where trade costs typically remain high and have not fallen as fast as in more developed economies (Arvis et al., 2015).

A wide consensus exists in the literature that further reductions in trade costs will come from addressing non-tariff barriers (NTBs) to trade, including implementation of trade facilitation measures (Duval et al., 2015, among other sources). The importance of reducing not only tariff but also non-tariff barriers to trade is highlighted in a seminal study by Anderson and Van Wincoop (2004), who found that ad-valorem trade costs between countries amounted to a staggering 170%, but that tariff costs only amounted to about 8%. However, measuring the importance and impact of individual non-tariff cost components has remained difficult.⁵⁴

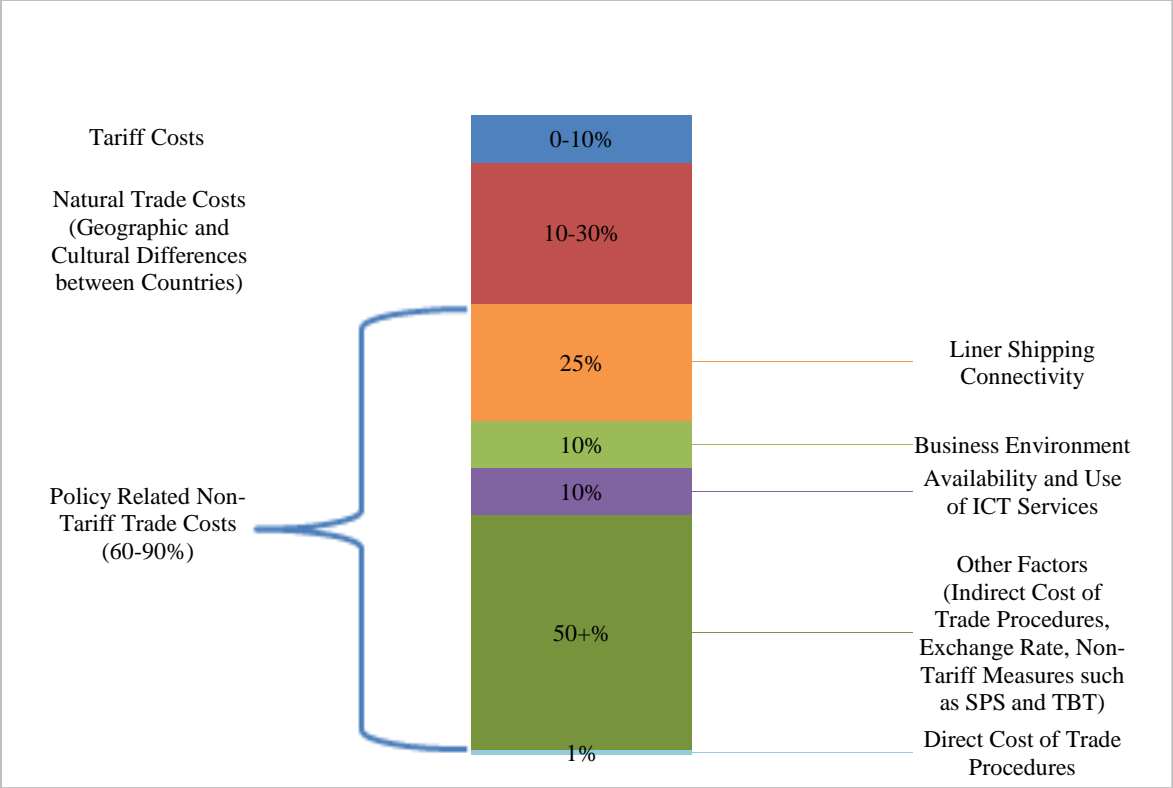
Building on the inverse gravity approach pioneered by Novy (2013), several studies inferred aggregate trade costs from gross trade and output data, and set out to directly measure the contribution of tariffs and NTBs on such comprehensive trade costs. A first regional analysis in Asia and the Pacific by Duval and Utoktham (2011) found that while tariff costs accounted for 0-10% of trade costs across countries, natural trade costs such as geography (i.e., distance, landlockedness etc.), cultural distance and historical relationships (i.e., language, colonization etc.) between countries accounted for an additional 10%-30% of trade costs (see figure A3.3). More importantly, policy-related NTBs accounted for the remaining 60%-90% of trade costs. The study found that international trade costs in that broad category were affected by liner shipping (maritime) connectivity, the domestic business environment of the trading partners, the availability and use of ICT services, the direct cost of trade procedures as well as by other policy related factors – the effect of which was difficult to disentangle, given the lack of data.

Figure A3.3. What explains trade costs across countries in Asia and the Pacific?

⁵² There are two main sources of empirical evidence, which are typically used to demonstrate the benefits of TF: econometric models and general equilibrium models. The general equilibrium models are more widely used to show the welfare effects of TF, while econometric models generally used to demonstrate the impact of trade policy on trade flows and the cost of trade. Econometric analyses overwhelmingly find that trade facilitation is associated with lower trade costs. However, as Hoekman and Shepherd (2013) pointed out, equivalent conclusions can be drawn from computable general equilibrium models. These models are typically used to analyse the impact on welfare costs across the economy. Baldwin and others (2012) for example found that GVCs enable companies to specialize in activities in which they are competitive; trade facilitation helps companies to exploit these niches by lowering the cost of trade.

⁵³ The theme of the Fifth AfT Global Review was “Reducing Trade Costs for Inclusive, Sustainable Growth”. See https://www.wto.org/english/tratop_e/devel_e/a4t_e/a4tmonit_e.htm.

⁵⁴ There is considerable difficulty in precisely disaggregating the plethora of individual components that constitute NTBs to trade. As Kee and others (2009) pointed out, previous studies have used a wide range of approaches to measure NTBs. These include frequency and coverage type measures, price comparison measures, quantity impact measures or residuals from gravity regressions.



Note: Figure A3.3 is a simplified representation of the results from Duval and Utoktham, 2011.

Arvis and others (2013) extended this type of analysis by developing the ESCAP-World Bank Trade Cost Database and conducting a comprehensive analysis of trade costs across 178 countries. Upon controlling for natural sources of trade costs (i.e., tariffs, transportation, language etc.) and other NTBs earlier identified in the literature, they confirmed the importance of liner shipping connectivity – and logistics performance in general – and the business environment in determining trade costs. Furthermore, the existence of a regional trade agreement (RTA) was shown to significantly reduce trade costs. That later result was corroborated by Novy (2013), who found that the existence of a free trade agreement between trading partners was associated with a 7%-12% decrease in trade costs.

While previous studies have demonstrated that TF can lead to higher trade flows and lower trade costs, very few studies have investigated the impact of the WTO TFA and/or paperless trade upon trade costs. With regards to the WTO TFA, Moisé and Sorescu (2013) collected data to construct 16 OECD TF Indicators (TFIs) corresponding to the main policy areas covered by the agreement, and estimated the impact on trade costs across WTO member and observer States using the ESCAP-World Bank Trade Cost Database. Their analysis, updated in OECD (2015) based on more recent TFI and trade cost data, suggested that implementation of the TF measures featured in the agreement would bring a 16.5%, 17.4% and 14.6% reduction in trade costs across low-income (LICs), lower-middle income (LMICs) and upper-middle income (UMICs) countries,

respectively.⁵⁵ Measures with the greatest potential for reducing trade costs include harmonizing and simplifying documents (up to 4.2% for LICs), streamlining border procedures (up to 3.9% for LMICs), and automating trade and customs procedures (up to 3.6% for LICs).⁵⁶ These estimates unfortunately do not take into account the policy-related factors previously identified in the literature as highly significant, such as maritime connectivity and the business environment, possibly leading to overestimation of impact.

With regard to the implementation of paperless trade reforms, the literature is still emerging and evidence of benefits is typically based on case studies and ad hoc evidence.⁵⁷ On the basis of an APEC survey on paper documents for trade in 1999, DTAC and FTEC (2001) found that removing the mandatory requirements for paper documents would result in savings amounting to 1.5% to 15% of the price of landed goods – depending on the specific product. A more recent study – surveying firms in the Republic of Korea – also found that businesses benefited to the tune of US\$ 2.6 billion annually from the introduction of paperless trade; these savings accrued from reductions in labor costs, printing and delivery of documents (Hyundai Research Institute, 2006). In Singapore, the introduction of an electronic Single Window for trade documents reduced processing times from four days to 15 minutes and lowered the cost of submission per document by 71% (UNNExT, 2010). In the case of Japan, the introduction of an electronic Single Window and associated simplified procedures resulted in annual savings exceeding US\$ 500 million for an initial investment of about US\$ 90 million (UNNExT, 2011).⁵⁸

Shepherd and Duval (2014) recently reviewed studies related to paperless trade and found that cost reductions associated with implementation of this type of trade facilitation measure ranged from 20% to 87% per transaction across studies and countries. However, the differences in the scope of paperless trade considered as well as in the methodologies applied and data availability limited the comparability of the results across studies. Using data from the ESCAP Survey on Trade Facilitation and Paperless Trade Implementation 2013,⁵⁹ they found that full implementation of the paperless trade measures included in the survey would result in a 24% decline in exporting time and 17% reduction in direct export costs across the Asia-Pacific region, increasing the annual export potential of the region by US\$ 257 billion.

⁵⁵ These figures are shown to be 1%-4% lower should countries limit themselves to mandatory provisions only. Trade costs were estimated to decline 11.8% across OECD economies, and 12.6%, 13.7% and 12.8% across low-income, lower-middle income and upper-middle income countries, should those countries limit themselves to mandatory provisions of the WTO TFA (OECD, 2015).

⁵⁶ The study concluded that the sum of implementing all TF measures outlined in the WTO TFA was greater than the individual components, and advised that TF be implemented comprehensively rather than with a focus on isolated measures.

⁵⁷ The UNNExT Brief (2009) indicated savings from automation of trade procedures and introduction of electronic Single Windows ranging from US\$ 168 million in Hong Kong, China, to US\$ 1.5 billion in Thailand and US\$ 1.8 billion in the Republic of Korea.

⁵⁸ It also yielded benefits of US\$ 533 million per year, with an implementation cost of US\$ 94million.

⁵⁹ See Wang and Duval, 2014.

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