Part I

Synthesis Report

Introduction

Trade facilitation, defined broadly in this study as "measures aimed at streamlining trade procedures and reducing the cost and uncertainties of international trade transactions", has become an important area of focus for countries seeking continuous growth and development through trade. During the past two decades, import tariffs have decreased significantly and non-tariff measures aimed at further reducing international trade costs have gained more importance in promoting trade across countries. Indeed, costs associated with regulatory procedures, waiting time (delays) and unpredictability of delivery dates can have a significant impact on trade.[1] Even if international shipping and other non-tariff costs are excluded, costs associated with completing documentary and related regulatory import and export procedures for international trade can account for up to 15 per cent of the value of traded goods.[2] This is particularly true for intermediate goods, where delays in shipment of goods in one country increase the cost of production of the final good in another country.

Moving goods across borders requires meeting a vast number of commercial, transport and regulatory requirements, which typically entail complex procedures and often a large number of documents.[3] While most actors and regulators along the international supply chain are aware of the need to streamline import and export procedures, few, if any, have a complete understanding of the entire trade transaction process, making it difficult to identify the bottlenecks and to prioritize reforms.

Trade procedures and their effect on the overall movement of goods across borders and competitiveness vary across products traded, as well as trade routes, modes of transport, and origin and destination of the products. Therefore, while the broad trade facilitation performance indicators developed in recent years are useful to secure political will for reform and identify important trade facilitation measures,[4] a more detailed

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1 On average, each additional day that a cargo is delayed prior to being shipped reduces trade volume by at least 1 per cent, and by approximately 7 per cent if the products are time-sensitive to time-insensitive agricultural goods (Djankov et al., 2010). In the context of South Asia, De (2011b) found that a 10 per cent fall in transaction costs at borders increases a country's exports by about 2 per cent. He also found evidence that e-flling of customs documents has a significant positive effect on trade flows, supporting the need for implementation of paperless trade systems in that region of Asia.

2 Asian Development Bank and United Nations Economic and Social Commission for Asia and the Pacific (2009).

3 See, for example, World Bank's Doing Business Report 2011 (World Bank, 2010a).

4 For example, using such indicators, Duval and Utoktham (2011a) found that increasing port and maritime services efficiency, enhancing access to ICT facilities and improving the domestic business environment are essential in reducing trade costs in Asia. This is consistent with the findings of Shepherd and Wilson (2009), who found that trade flows in member countries of the Association of Southeast Asian Nations (ASEAN) are particularly sensitive to transport infrastructure and information and communication technology (ICT) networks. Both studies suggest that gains from trade facilitation reform in Asia would be larger than those that may be achieved through further tariff reductions.

understanding of international trade transactions is needed for developing economies to design effective policy interventions for trade facilitation. Such understanding is particularly needed intraregionally, as growth potential continues to shift away from developed countries to economies within the Asian and the Pacific region.

In this context, the ARTNeT study on "Regional Import-Export Procedures and Processes", presented here, aimed at deepening understanding of the processes firms face when engaging in international trade, particularly intraregional trade. This Synthesis Report brings together findings and results from more than a dozen product-specific import and export process analyses conducted in a coordinated manner in Bangladesh, China, India, Japan, Nepal, Sri Lanka and Thailand during the course of 2010. A unique feature of the study is that it provides an integrated view and performance information for selected products on the entire trade process between developing countries of the region, covering both procedures in the exporting (origin) countries and the procedures in the importing (destination) countries.

The rest of the Report is arranged as follows. Following a brief overview of trade facilitation in Asia and the Pacific in Section A, Section B describes the scope and methodological aspects of the regional study. The major research findings from the seven country studies are then presented in Section C. Section D features conclusions and policy implications. Limitations and future research are discussed in Section E.

A. Trade Facilitation in the Asia-Pacific Region: An Overview

Measuring trade facilitation performance precisely, including the costs of international trade transactions, remains a challenging exercise, not least because of the lack of a precise definition and agreement on the various cost components that should be included in such measurements. Comprehensive trade cost estimates by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) account for all additional costs involved in conducting a transaction across borders rather than within borders.[5] According to ESCAP's Trade Cost Database, aside from Singapore and Hong Kong, China, top-ranked economies in terms of low trade cost include Malaysia, the United States of America (USA), China, the Republic of Korea and Thailand, with Japan and Germany following closely.[6] However, trade cost performance of a given country varies significantly depending on its trading partners, as well as the type of goods traded.

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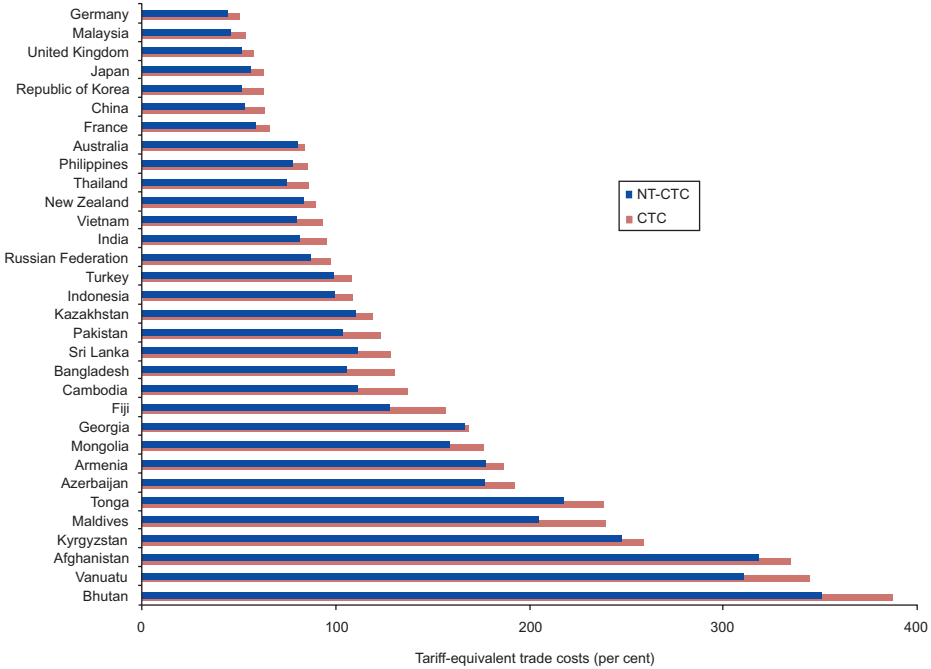
[5] The comprehensive trade cost estimate is an objective measure based on macroeconomic data rather than perception survey data. It is a very broad aggregate measure of international trade costs including, inter alia, direct and indirect costs related to fulfilling regulatory import and export requirements as well as costs resulting from differences in currencies, languages, culture and geographical distances. Domestic and international shipping and logistics costs associated with imports and exports are also included.

[6] For details, see Duval and Utoktham (2011b).

Although ESCAP estimates reveal that many economies of the region have made significant progress in reducing costs over the past decade, they also show that in many cases nearly half the cost reduction may be attributed to tariff cuts.[7] Typically, tariff trade costs account for no more than 10 per cent of overall trade costs. This is illustrated in Figure 1, which shows that while tariff costs do affect the relative trade cost ranking of selected countries (with the USA), they often account for a very small portion of overall trade costs. As tariffs continue to fall – in part due to implementation of free trade commitments under recent bilateral and regional trade agreements – countries aiming to maintain their competitiveness will have to pay greater attention to non-tariff trade costs, including those arising from unnecessarily cumbersome procedures and regulations or inadequate logistics services.

Figure 1. Comprehensive trade costs (CTC) and CTC excluding tariff costs (NT-CTC) between selected economies and the USA



Source: ESCAP Trade Cost Database (version 2), 2011.

7 See ESCAP (2011a).

Many countries in the region have reduced export and import times and corresponding documentary requirements over the past decade. However, the time required for the completion of import and export procedures in developing economies of the region is, on average, about three times higher than it is in developed economies (see Annex 1).[8] Between 2005 and 2011, the time it took to complete all trade procedures involved in moving goods from factory to ship at the nearest seaport – or vice versa – decreased, on average, by 18 per cent in developing economies in the Asia-Pacific region. South-East Asia made the most progress, cutting its average time for completing trade procedures to 20 days. Cambodia and Thailand cut their time by more than 40 per cent during the same period. India and Pakistan achieved improvements of a similar magnitude, although trade procedures in South and South-West Asia still take 50 per cent more time to complete than in South-East Asia (30 days on average). The landlocked economies in North and Central Asia made some small improvements, but the time taken by most of the economies of that subregion to clear procedures for moving goods to a seaport remains lengthy (50 days on average). No significant progress was made in the Pacific.

Considering their regulatory trade procedures and the quality and availability of services available to move goods within and across countries,[9] a few countries in the Asia-Pacific region, such as China and Thailand, now have relatively well-developed logistics systems for international trade. However, many other countries, such as Bangladesh and Nepal, still lag well behind regional averages in most of the logistics performance indicators (see Annex 2). Further improvement in trade facilitation is therefore needed.

Trade facilitation improvements are particularly needed intraregionally. With the shifting of growth potential away from developed countries to economies within the Asian and the Pacific region, intraregional trade has become more important. As shown in Table 1, the intraregional comprehensive costs of trade in goods have fallen in almost all regions, but these costs remain high compared to those among European Union (EU) countries. According to the latest estimates available,[10] non-tariff comprehensive trade costs between China, the Republic of Korea and Japan (East Asia-3) are among the lowest in the world, averaging less than 50 per cent tariff-equivalent in 2007-2009. This is remarkable given the absence of free trade agreements between those countries during that period. The largest middle-income members of the Association of Southeast Asian Nations (ASEAN), i.e. Indonesia, Malaysia, the Philippines and Thailand, or ASEAN-4, have also achieved high levels of international trade efficiency; but average trade costs among other ASEAN members, in particular its two least developed countries, are still

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8 The Annex is based on data from the latest World Bank Doing Business Report 2012, released during the fourth quarter of 2011.

9 As discussed in Brooks and Stone (2010), supply chains that span the region rely on efficient cross-border movement of goods. The combination of efficient logistics services and regulatory procedures can lead to cost savings equivalent to moving production to locations closer to trading partners, helping to attract foreign direct investment.

10 ESCAP Trade Cost Database (Version 2) released in December 2011. For details, see Duval and Utoktham (2011a), “Trade Costs in Asia and the Pacific: New bilateral and Sectoral Estimates”.

Table 1. Intra- and extra-regional trade costs in the Asia-Pacific region, excluding tariff costs (2007/2009)

	ASEAN-4	East Asia-3	North & Central Asia	SAARC-4	AUS-NZL	EU-3	USA
ASEAN-4	**79%**	73%	291%	134%	90%	97%	77%
	(-9.5%)	(-5.9%)	(-14.2%)	(2.1%)	(-12.3%)	(-4.9%)	(3.0%)
East Asia-3	73%	**47%**	187%	119%	78%	70%	53%
	(-5.9%)	**(-21.1%)**	(-32.7%)	(-2.8%)	(-15.7%)	(-19.0%)	(-13.5%)
North & Central Asia	291%	187%	**149%**	270%	270%	149%	165%
	(-14.2%)	(-32.7%)	**(-20.5%)**	(-22.4%)	(-22.2%)	(-26.0%)	(5.0%)
SAARC-4	134%	119%	270%	**113%**	130%	101%	99%
	(2.1%)	(-2.8%)	(-22.4%)	**(5.0%)**	(-2.7%)	(-3.2%)	(5.9%)
AUS-NZL	90%	78%	270%	130%	**45%**	89%	82%
	(-12.3%)	(-15.7%)	(-22.2%)	(-2.7%)	**(-23.5%)**	(-17.0%)	(-11.1%)
EU-3	97%	70%	149%	101%	89%	**32%**	51%
	(-4.9%)	(-19.0%)	(-26.0%)	(-3.2%)	(-17.0%)	**(-32.6%)**	(-18.2%)
USA	77%	53%	165%	99%	82%	51%	
	(3.0%)	(-13.5%)	(-17.3%)	(5.9%)	(-11.1%)	(-18.2%)	

Source: ESCAP Trade Cost Database (version 2), 2011.

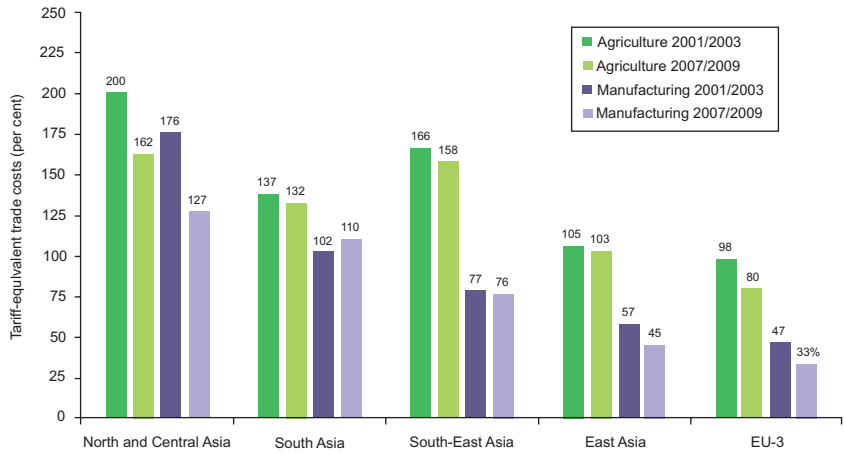
Note: Trade costs may be interpreted in percentage of value of goods (tariff equivalents). Percentage changes in trade costs between 2001/2003 and 2007/2009 are in parentheses. ASEAN-4: Indonesia, Malaysia, the Philippines and Thailand; East: China, Japan and Korea; NC (North and Central Asia): Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, and Russian Federation; SAARC-4: Bangladesh, India, Pakistan and Sri Lanka; AUS/NZL: Australia and New Zealand; EU-3: France, Germany, and the United Kingdom.

more than double those among the East Asia-3 economies. Intraregional trade costs among North and Central Asian countries, at 149 per cent, are highest in the region, followed by those among South Asian countries, at 113 per cent.

While improvements have been made within many subregions in Asia, trade costs between Asian subregions are often higher than those between Asian subregions and regions outside Asia. For example, the non-tariff costs of trade between ASEAN members and members of the South Asian Association for Regional Cooperation (SAARC) are, on average, nearly double the costs of trade between ASEAN members and the USA. Similarly, the costs of trade between the countries making up North and Central Asia and those of South Asia are nearly double the costs of trade between the countries of North and Central Asia and those of the European Union.

Intraregional agricultural trade costs also remain much higher than manufacturing trade costs, as illustrated in Figure 2. This is partly explained by the nature of the products (e.g. perishability), which can make these products harder to trade across borders, as well as the higher level of regulations these products attract for food safety or food security reasons.[11] However, the fact that the cost premiums for trading agricultural goods vary widely from country to country suggests that there is significant scope for reduction in costs in many countries of the region.

Figure 2. Intraregional agricultural and manufacturing comprehensive trade costs



Source: ESCAP Trade Cost Database (version 2), 2011.

In order to bring down transaction costs, two important policy measures are common in most of the countries in the region: rationalization of trade procedures and improvement of trade-related infrastructure.[12] While the latter often requires massive amounts of capital, implementation of the former can begin quickly if the political will is there. Furthermore, rethinking procedures involved at each step of the import and export process lead to more efficient use of existing trade-related infrastructure, e.g. through enabling the same port infrastructure and customs clearance checkpoints to handle more ship arrivals or traffic as goods move more quickly through the facilities.

Simplification of trade processes and procedures is therefore increasingly recognized as key to improving competitiveness of exports across the countries in the region. For example, the Indian Government's task force report for reduction of transaction costs in exports recently identified (i) cutting red tape at the point where goods enter India and

[11] For more details on this issue, see ESCAP (2011), "Facilitating Agricultural Trade in Asia and the Pacific", Trade and Investment Series No. 72.

[12] See ESCAP (2011b) and ESCAP (2006).

(ii) providing easier access to trade-related information, as two important measures for facilitating trade.[13] Similarly, the ASEAN Economic Community (AEC) Blueprint includes specific actions related to trade facilitation, namely, (i) developing simple, harmonized and standardized trade and customs processes, procedures and related information flows, (ii) integration of customs structures and the e-customs system and (iii) establishing national Single Windows as well as an integrated ASEAN Single Window, among others (Layton, 2007).

B. Scope of the Study and Methodology

This regional study consists of seven coordinated country studies offering a more detailed picture of the business processes associated with importing and/or exporting selected goods from or to other countries within Asia. Refer to Table 2 for a summary of the countries and products covered by the study.

Table 2. Country and product coverage of the study

Import Processes	Export Processes							
		Bangladesh	**China**	**India**	**Japan**	**Nepal**	**Sri Lanka**	**Thailand**
	Bangladesh			Cotton Yarn				Sugar
	China				Fabrics*, Auto parts	Vegetable ghee (fuel)*		
	India	Garments*				Vegetable ghee*, Fabrics*	Rubber tyres	Auto parts*
	Japan	Shrimp*	Garments				Tea	
	Nepal			Textile & clothing*				
	Sri Lanka			Fabrics**	Used cars			
	Thailand		Electronics					

Notes: * indicates import processes excluded from analysis; ** indicates export processes excluded from analysis.

[13] The report of the task force to reduce transaction costs in exports, released in February 2011 by the Government of India, recommended certain measures that are expected to save 210 billion Indian rupees (about $450 million) for exporters every year. This amount represents about 0.02 per cent of India's exports, where exporters suffer transaction costs to the extent of between 7 and 10 per cent of exports. The task force report identified 44 issues, where closure has been achieved on 23. For further details, refer to Government of India (2011).

Relevant procedures were identified and mapped using a common method outlined in the UNNExT *Business Process Analysis Guide to Simplify Trade Procedures*, a guide developed by trade facilitation and paperless trade practitioners – as opposed to academic or policy researchers.[14] The cost and time of the procedures were calculated as part of the analysis and provided an opportunity to benchmark results against relevant indicators from the World Bank Doing Business Report.[15]

The mix of intermediate and final products selected for analysis was initially chosen by the national researchers based on the importance of the product in their countries overall import or export market, as well the existence of government priorities in developing certain industries or products, when available. However, difficulties in obtaining relevant data, sometimes either in exporting or in importing countries, also affected the final mix of products analyzed.

The scope of the export process analyzed by ARTNeT researchers included all procedures directly involving the exporter (seller) or its representatives, from signature of the contract between buyer and seller to transportation of the goods onto a sea vessel (or, if by land, to the border checkpoint of the importing country), and receiving payment. The scope of the import process likewise generally included all procedures involving the importer (buyer), from the signature of the contract to transportation of the goods to the border (or seaport of the importing country) and delivery to the warehouse in the importing country. Thus, the studies generally covered the entire BUY-SHIP-PAY process (see Box 1). This is in contrast to the World Bank's Doing Business Report, which mostly excludes the BUY and PAY process, except for preparation of documents for a Letter of Credit (L/C), when calculating export and import time.

Box 1. An international supply chain model

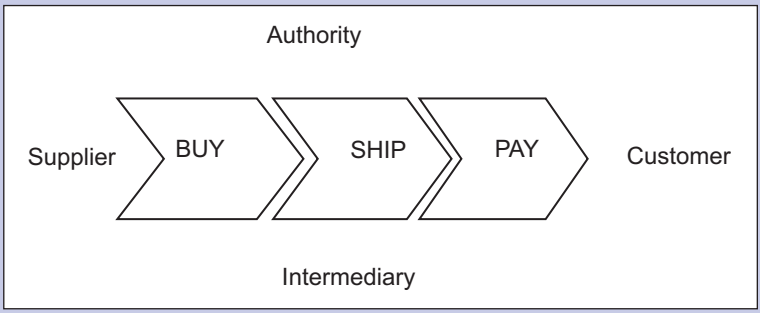
The United Nations Centre for Trade Facilitation and E-business (UN/CEFACT) illustrates a simplified view of the international supply chain in the Buy-Ship-Pay model in Recommendation No. 18 (as shown in the image below).[16] The model not only provides "a series of fragmented activities" carried out in an international trade transaction, but also defines the actors that are associated with them. Key actors in the international supply chain are authorities, intermediaries, suppliers and customers.

The Business Process Analysis Guide to Simplify Trade Procedures, prepared by UNNExT, UNESCAP and UNECE, notes that an international trade transaction encompasses

[14] UNESCAP, UNECE and UNNExT (2009) Business Process Analysis Guide to Simplify Trade Procedures. Available from http://www.unescap.org/unnext/tools/business_process.asp

[15] Definition as given in the World Bank Doing Business Database.

[16] United Nations Economic Commission for Europe. (2001). Facilitation Measures Related to International Trade Procedures. Recommendation 18, third revised edition, adopted by the United Nations Centre for Trade Facilitation. New York and Geneva: United Nations. Available from http://www.unece.org/fileadmin/DAM/cefact/recommendations/rec18/Rec18_pub_2002_ecetr271.pdf



all activities related to the establishment of commercial contracts (commercial procedures), the arrangement of inland and cross-border transportation of goods (transport procedures), the export and import formalities to meet regulatory requirements (regulatory procedures) and the payment for purchased goods (financial procedures). Such transactions require cooperation between many actors, including traders, government agencies and service providers from different countries. Business Process Analysis (BPA) of international trade transactions is recommended as the first step to understanding the changes that will need to be made as part of the simplification, harmonization and automation of trade procedures and documents.

Researchers conducted their analysis on the basis of transactions involving a 20-foot container and payment by letter of credit, whenever these assumptions were consistent with actual practice, in order to facilitate comparison of the results across studies and with those of World Bank's Doing Business Report. In some cases, these assumptions were inconsistent with reality (e.g. used car imports in Sri Lanka; or export of garments from India) and were therefore relaxed.

Following the BPA methodology outlined in the UNNExT *Business Process Analysis Guide to Simplify Trade Procedures*, information on import and export processes was collected essentially through interviews with a small number of key informants, i.e. buyers, sellers and intermediaries directly involved in the process being analysed. Interviews and consultations with relevant government agencies were also conducted whenever possible. Information was collected, for the most part, during the second and third quarters of the year 2010. Details on the number of interviews and mechanisms used by the national researchers in gathering and verifying information is available in the individual country studies summarized in Part II of this monograph, and available in full as ARTNeT working papers.

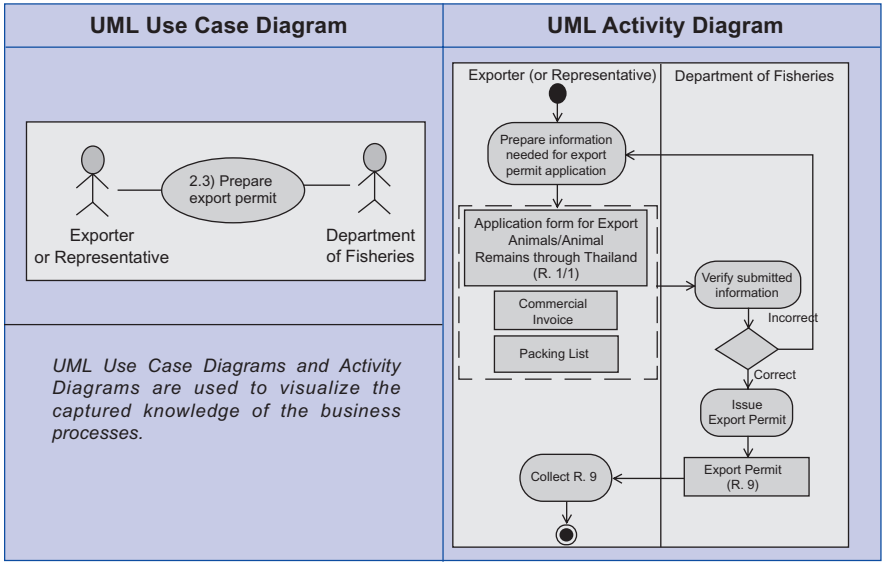
All researchers used the Unified Modelling Language (UML) to describe the various procedures and process analysed, greatly facilitating comparison of procedures across countries and improving understanding among the researchers (see Box 2).

Box 2. Introduction to the Unified Modelling Language for BPA

The UNNExT *Business Process Analysis Guide to Simplify Trade Procedures* introduces Unified Modelling Language as a standard way to graphically represent the various procedures involved in the trade process. Use of this common standard is essential to arrive at a description of a procedure that can be understood by all stakeholders involved in international trade transactions.

Unified Modelling Language provides a set of standard graphical notations for business process modelling.[17] These notations were used by ARTNeT researchers to draw a use case diagram and related activity diagrams for each product-specific import or export process they analysed. The Use Case Diagram serves as a project's frame of reference. Its purpose is to present a graphical overview of core business processes that are subject to further examination in greater depth. It indicates all stakeholders that are involved in these business processes and demonstrates all actual associations between these business processes and stakeholders.

Examples of Use Case and Activity Diagrams



Source: UNNExT, UNESCAP, UNECE (2009).

The Activity Diagram is an elaboration of each business process displayed in the use case diagram. It portrays a sequence of activities and documentary flows from one responsible party to another. It informs its audience of who is doing what, in which order, and also of documentary inputs that serve as prerequisites to activities and documentary outputs that can be obtained after completing certain activities.

[17] See the UML Resource Page, http://www.uml.org

C. Analysis of Regional Trade Processes and Procedures: Major Findings

The export process includes all trade-related procedures from the factory to loading of the cargo at the seaport (or crossing of land border), as well as relevant buy (e.g. signature of contract) and pay procedures. The import process includes all procedures from arrival at the seaport (or land border customs point) to delivery at the buyer's warehouse, as well as the buy and pay procedures. The number of steps involved in each process gives an indication of the complexity of the overall process. Tables 3 and 4 summarize the number of steps and parties involved in the export and import processes, as well as the documents required and the time and costs of the processes for the products and partner countries studied.

Table 3. Business processes, documents, time and costs of export processes

Export Process in	Product exported	Country of destination	Business Process		Documents Needed	Time	Cost
			No. of Steps	No. of Parties	(No.)	(Days)	(USD/TEU)
Bangladesh	Shrimp	Japan	10	14	24	36.75	500.00
Bangladesh	Garments	India	10 (8)	13 (12)	26 (17)	15.50	935.00
China	Garments	Japan	9	11	14	26.00	366.50
China	Electronics	Thailand	11	11	17	18.50	366.50
India	Cotton Yarn	Bangladesh	13	16	18	30.00	531.52
India	Vegetables	UAE	12	14	22	25.00	550.56
India	Fruits	EU	13	14	27	25.00	631.11
Japan	Automobile parts	China	–	–	–	19.00	369.00
Japan	Used cars	Sri Lanka	–	–	–	20.00	499.94
Nepal	Vegetable ghee	India	10	14	26	41.00	1 066.86
Nepal	Vegetable ghee	China	5	10	43	11.00	833.00
Sri Lanka	Rubber tyres	India	7	13	19	16.90	237.00
Sri Lanka	Tea	Japan	7	12	24	17.06	435.00
Thailand	Automobile parts	India	7	11	35	51.00	509.00

Table 3. *(continued)*

Export Process in	Product exported	Country of destination	Business Process		Documents Needed	Time	Cost
			No. of Steps	No. of Parties	(No.)	(Days)	(USD/TEU)
Thailand	Sugar	Bangladesh	11	10	39	13.00	430.00
Average			10	13	25	25.00	550.73
Coefficient of variation (CV)			0.25	0.14	0.28	0.43	0.40

Source: ARTNeT country studies.

Notes: The data shown is unadjusted for possible variations across studies in process scope and analysis method. In the case of Bangladesh exports of garments to India, numbers shown are for export through land borders, with numbers in parentheses representing business processes and documentation for export through seaports.

–: Data not available.

Table 4. Business processes, documents, time and costs of import processes

Import Process in	Product Imported	Country of origin	Business Process		Documents Needed	Time	Cost
			Steps involved	Parties involved	(No.)	(Days)	(USD/TEU)
Bangladesh	Cotton Yarn	India	5	8	10	10.00	415.00
Bangladesh	Sugar	Thailand	4	7	11	11.00	525.00
China	Automobile parts	Japan	6	11	13	14.50	513.00
China	Fabrics	Japan	6	11	13	10.50	586.00
India	Rubber tyres	Sri Lanka	10	13	9	22.00	359.50
Japan	Garments	China	–	–	–	21.50	–
Japan	Tea	Sri Lanka	–	–	–	15.50	410.00
Nepal	T&C*	India	5	10	20	8.00	320.00
Sri Lanka	Fabrics	India	7	13	19	6.55	677.00
Sri Lanka	Used cars	Japan	3	9	18	7.85	79.00
Thailand	Electronics	China	6	12	44	4.00	300.00
Average			6	10	17	11.95	418.45
Coefficient of variation (CV)			0.32	0.19	0.58	0.47	0.38

Source: ARTNeT country studies.

Note: The data shown is unadjusted for possible variations across studies in process scope and analysis method.

– Data not available; *T&C: Textiles and Clothing.

1. Parties involved in export and import and importance of the private sector

The findings of the seven ARTNeT country studies indicate that the number of parties and steps involved in export processes are comparatively higher than those in import processes.[18] The number of parties involved in export processes ranges from 10 (sugar exports from Bangladesh to Thailand and exports of vegetable ghee from Nepal to China) to 16 (exports of fabric from India to Bangladesh). In contrast, the number of parties involved in import processes ranges from 7 (sugar imports from Thailand to Bangladesh) to 13 (rubber tyre imports from Sri Lanka to India). Similarly, the number of steps involved in export processes ranges from 5 to 13, while that of import processes never exceeds 10. The study found that, based on the number of steps involved, the most complex process is the export from India of fabrics and fruits to Bangladesh and the EU, respectively.

Interestingly, the import and export process analyses show that, while many steps involve both public and private parties, a significant number of procedures involve only or mostly private parties. This is illustrated in Table 5, which shows that the majority of the steps (7 out of 12) for exporting sugar from Thailand to Bangladesh involve only private sector entities. This suggests that the efficiency of international trade processes crucially

Table 5. Public and private sector involvement in the export of sugar from Thailand

Export Process – Major Steps	Actors of Process (Private/Public)
Conclude sale contract and trade term	Private
Obtain export permit	Public and Private
Obtain cargo insurance	Private
Arrange transport	Private
Provide customs declaration	Private and Public
Collect containers from yard	Private
Stuff a container	Private and public
Clear goods through customs	Private and public
Handle container and stow on vessel	Private and public
Prepare documents required by importer	Private
Verify accuracy/authenticity of exported cargo	Private
Payment process	Private

Source: ARTNeT Working Paper 103.

[18] Nevertheless, the number of business process steps and corresponding parties involved in export are relatively less dispersed than that of imports, as per the coefficients of variation (CVs) presented in Table 2(a) and 2(b). Distributions with CV < 1 are considered low-variance, while those with CV > 1 are considered high-variance. Between any two variables, the variable with the smaller CV is less dispersed than the variable with the larger CV.

depends on the capacity of private actors to exchange information with each other and provide effective transport, logistics, payment and other services.

2. Number of documents in the export and import processes

The number of documents (types of documents) prepared as part of export processes ranges from 14 in the case of garment exports from China to Japan, to 43 for exports of vegetable ghee from Nepal to China (see Table 3 and Table 6). The number of documents prepared as part of import processes ranges from 9 in the case of rubber tyres imported from Sri Lanka into India, to an impressive 44 documents for imports of electronic parts from China into Thailand (see Table 4 and Table 6).[19]

Table 6. Number of documents required for exports and imports

(a) Export Process

Export In	Product	Destination	No. of Documents	
			Types	Copies
China	Garments	Japan	14	28
	Electronics	Thailand	14	22
India	Fabrics	Bangladesh	18	26
	Vegetables	United Arab Emirates	22	26
	Fruits	EU	27	29
Thailand	Auto parts	India	35	46
	Sugar	Bangladesh	39	50

[19] The number of documents reported here may not be fully comparable across country studies and may not be used for comparing their trade facilitation performance. Indeed, part of the variation in the number of documents may be associated with how each researcher counted the documents and which documents were considered. For example, in the case of the Thailand country study, all documents seem to have been accounted for, including application forms for certain regulatory documents and a wide array of transport documents, but this does not seem to have been the case in all studies. In this context, it is interesting to note that the number of documents for importing or exporting reported in ARTNeT studies are consistently higher than those reported in the World Bank Doing Business Database (DBD) – which may be partly explained by the fact that the DBD focuses on documents necessary as part of the regulatory process, while the ARTNeT studies accounted for all documents prepared as part of the trade process, regardless of their nature.

Table 6. *(continued)*

Export In	Product	Destination	No. of Documents Types	Copies
(b) Import Process				
Import In	**Product**	**Origin**	**No. of Documents Types**	**Copies**
India	Rubber tyres	Sri Lanka	9	17
China	Fabrics	Japan	16	37
	Auto parts	Japan	16	37
Thailand	Electronics	China	44	54

Source: ARTNeT country studies.

Unlike the number of documents for exports, the number of documents for imports appears to vary significantly across the different countries studied. The number of copies of documents required for imports also varies between countries, as reported in Table 6.

In general, the number of documents required at the various stages of export processes exceeds that required for imports – by about 25 per cent, on average. But in some cases, the number of documents required for imports is also very high. As noted above, the study found that 44 different types of documents are required to be prepared for the import of electronic devices into Thailand from China (see Annex 3). This high number of documents suggests that there is scope for simplification of documentary requirements and alignment with international standards in both exports and imports. At the same time, although a large number of documents are required for the import of electronic goods into Thailand, import processing time is lowest for this country (see Table 4). This suggests that what matters is not the number of documents per se, but rather their nature (electronic vs. paper) and the procedures involved in their preparation and submission.

Electronic submission of documents

Application of modern information and communications technology (ICT) to trade processes has been recognized as an important component of national and regional trade facilitation strategies (ESCAP, 2010). The findings of the country studies indicated that in many countries export and import documents are still not being submitted and/or processed electronically, except for the customs declaration form. Exporters and importers (or their agents) can generally submit the customs declaration form online, although often a paper version also needs to be submitted at some point during the process. This was the case in Sri Lanka at the time the analysis was conducted, although this requirement was subsequently changed.

Among the developing countries studied, Thailand was found to be the country that had the most electronic trade procedures. Similarly, in India the documents required for exports and imports used to be handled manually only a few years back, but today most processes are handled electronically. Application of ICT in managing trade processes in India has gained popularity since the exporters and importers have found it increasingly beneficial (see Table 7). Likewise, scope was found for the application of ICT in trade process management in the least developed countries, including in Bangladesh.

Table 7. Indian export of fabric to Bangladesh – Processes and submission of documents

No.	Process	Submission of Documents
1	Buy	Electronic and manual
2	Obtain export permit	Electronic
3	Contract registration and inspection	Electronic and manual
4	Excise inspection	Manual
5	Obtain cargo insurance	Electronic
6	Arrange pre-shipment inspection	Manual
7	Obtain certificate of origin	Electronic and manual
8	Obtain SAFTA certificate	Electronic and manual
9	Submit customs declaration	Electronic
10	Arrange transport for loading	Manual
11	Transfer to LCS	Manual
12	Parking of goods	Manual
13	Customs clearance	Electronic and manual
14	Send the goods to importer's warehouse	Manual
15	Pay	Electronic

Source: ARTNeT Working Paper 95.

Similar trends have been noticed in other countries. In China, for example, to arrange an inspection by the local Entry-Exit Inspection and Quarantine Bureau (Commercial Inspection Bureau), companies need to submit eight documents electronically; following which an inspection schedule is confirmed. Among the documents are the customs declaration form and the application for an export or import permit. The forms can be downloaded online and completed by the company (or the customs broker, based on information provided by the company). The approval of the customs declaration form is also done online. Similar procedures have been implemented in India and Sri Lanka. Cargo insurance and payment are managed electronically in many of the countries included in this study, namely China, India and Thailand. Going one step further, Thai traders are using specialized ICT applications not only for submission of customs and other regulatory documents but

also to manage other vital components of trade processes, such as arrangement of transport or vessel berthing times and loading and unloading of cargoes from vessel.

3. Direct costs of the export and import processes

The study found that ports and terminal handling charges and inland haulage costs are the highest costs incurred in the export and import processes, whereas regulatory costs and documentation charges are found to be low. Import and export costs vary widely across products and import costs are often (but not always) higher than export costs. For example, the costs of importing rubber tyres (into India) and sugar (into Bangladesh) exceed those of exports, but the costs of exporting fabric (from India) are found to be higher than the costs of importing. Interestingly, costs reported in the ARTNeT product-specific case studies were found to be significantly lower than those reported in the World Bank's Doing Business Database (DBD).[20]

It is worth noting that traders in several countries expressed that they were particularly concerned about international shipping costs as they significantly exceeded the costs involved in completing all procedures necessary to move goods to or from the seaport. For example, the cost of transporting a container of electronic devices from Thailand to China (by sea) was found to be 1.75 times the total of other export process costs. In addition, the prices charged for shipping costs seem to be somewhat unpredictable, with local shipping agents and freight forwarders in some countries reportedly charging according to product value rather than according to the actual cost of shipping.

Direct costs of trade in cotton yarn, rubber tyres and sugar are presented in Tables 8, 9 and 10, respectively. These tables provide a detailed breakdown of the costs incurred in the export and import processes for each product. The costs shown do not include international shipping costs and tariff (customs) duties, however, nor do they include unofficial payments or costs associated with loss of opportunities (e.g. costs incurred due to delays and subsequent waiting time). The export and import costs of the World Bank's Doing Business Database are also shown in the table, for reference, as they also exclude the above-mentioned cost components.

[20] Export and import times and costs in the World Bank's Doing Business Report are based on trade in general, whereas the country studies were product specific. Thus, there are differences in trade cost calculations even though both calculations follow same definition.

Table 8. Costs of trade in cotton yarn from India to Bangladesh

Steps	Procedures	Average Cost in United States dollars*
1	Obtain export permit	46.74
2	Contract registration and inspection	2.72
3	Excise inspection	5.43
4	Obtain cargo insurance	222.83
5	Arrange pre-shipment inspection	24.46
6	Obtain certificate of origin	10.87
7	Obtain SAFTA certificate	21.74
8	Submit customs declaration online	18.48
9	Arrange transport for loading	14.13
10	Transfer to LCS (inland transportation charge)	154.35
11	Parking of goods	9.78
12	Customs clearance	–
13	Send the goods to importer's warehouse	10.87
	Export process cost in India	**542.39 (945.00)**
14	Assembling and preparing documents	150.00
15	L/C Cost	10.00
16	Customs clearance	15.00
17	Ports and Terminal handling costs	120.00
18	Inland transportation and handling costs	120.00
	Import process cost in Bangladesh	**415.00 (1 375.00)**
	Total trade process cost	**957.39**

Source: Calculated based on ARTNeT Working Papers 93 and 95.

Notes: Import tariffs and international shipping costs are excluded.

*Per TEU. Data in parentheses represents Doing Business Data of World Bank for export (import) of a standard container.

Table 9. Costs of trade in rubber tyres from Sri Lanka to India

Steps	Procedures	Average Cost in United States dollars*
1	Assembling and preparing documents	33.00
2	L/C Cost	25.00
3	Customs clearance	21.00
4	Ports and Terminal handling costs	70.00
5	Inland transportation and handling costs	88.00
	Export process cost in Sri Lanka	**237.00 (715.00)**
6	Obtain IEC code	21.50
7	Vessel information and filling IGM	9.00
8	Allocation of berth	12.50
9	Filing Bill of entry & other import papers	72.50
10	Filing Delivery Order	9.00
11	Immigration	–
12	Plant quarantine	–
13	Unloading of goods from vessel	80.00
14	Verification of cargo	45.00
15	Send the goods to importer's warehouse	110.00
	Import process cost in India	**359.50 (960.00)**
	Total trade process cost	**596.50 (1 675.00)**

Source: Calculated based on ARTNeT Working Papers 91 and 95.

Notes: Import tariffs and international shipping costs are excluded.

*Per TEU. Data in parentheses represents Doing Business Data of World Bank for export (import) of a standard container.

Table 10. Costs of trade in sugar from Thailand to Bangladesh

Steps	Procedures	Average Cost in United States dollars**
1	Buy	
2	Request for export permit	6.90
3	Request for cargo movement permit	6.90
4	Prepare documents for insurance	6.90
5	Prepare documents for cargo movement	120.69
6	Prepare documents for customs declaration	–
7	Receive empty container	–
8	Load cargo into the container	172.41
9	Declare to Customs	–
10	Customs clearance	–
11	Waiting time before next ship departs	–
12	Loading containers onto the vessel	89.66
13	Prepare documents for importer	51.72
14	Report of sugar export	17.24
15	Payment Process	–
	Export process cost in Thailand	**472.41 (625.00)**
16	Assembling and preparing documents	50.00
17	L/C Cost	10.00
18	Customs clearance	15.00
19	Ports and Terminal handling costs	200.00
20	Inland transportation and handling costs	250.00
	Import process cost in Bangladesh	**525.00 (1 375.00)**
	Total trade process cost	**997.41**

Source: Calculated based on ARTNeT Working Papers 93 and 95.

Notes: Import tariffs and international shipping costs are excluded.

*Per TEU. Data in parentheses represents World Bank Doing Business data for the export or import of a standard container.

4. Export and import process time: import-export time procedure charts

The time it takes to complete export and import procedures, and any delays associated with these procedures, have been identified as highly significant factors affecting a trading firm's competitiveness and profitability (Djankov et al., 2010). Lengthy procedures create significant indirect costs that often far exceed the direct costs of trade transactions, including, in extreme cases, the complete loss of a shipment value when that shipment contains perishable or time-sensitive goods. Lengthy procedures are also usually associated with increased uncertainties regarding time of delivery, reducing opportunities for firms to take part in international production networks where just-in-time deliveries are essential.

One of the key outputs of business process analyses are time-procedure charts, which provide a graphic summary of the steps involved in a process, the time relationships between the steps (i.e. whether they take place in parallel or sequentially), and the time it takes to complete them as well as the overall process. Based on the completed ARTNeT country case studies, six time-procedure charts have been prepared, each showing both the export process (in the country of origin) and the import process (in the country of destination) for a given product (see Figures 3 to 8).[21] International shipping time has also been added in order to get a comprehensive picture of the time it takes to complete an entire international trade transaction.[22]

The figures show that the complete trade processes range in length from less than 24 days for the export-import of electronic devices from China to Thailand, to 41 days for export-import of tea from Sri Lanka to Japan (including payment to the exporter, which takes place 7 days after arrival of goods in the importer warehouse) or 48 days for the export of garments from China to Japan (including payment to the exporter 15 days after the arrival of the goods). International shipping time is found to be a significant, but often not the largest, component of total trade transaction time, with payment delays and the time needed for various inspections (e.g. export-import of rubber tyres from Sri Lanka to India) and obtaining of export permits (e.g. export of electronic devices from China) taking up a large share of total time. Time for arranging inland transport from factory to port is also sometimes very high: 4.5 days in the case of China, in part due to the scarcity of empty containers for shipment in that country.

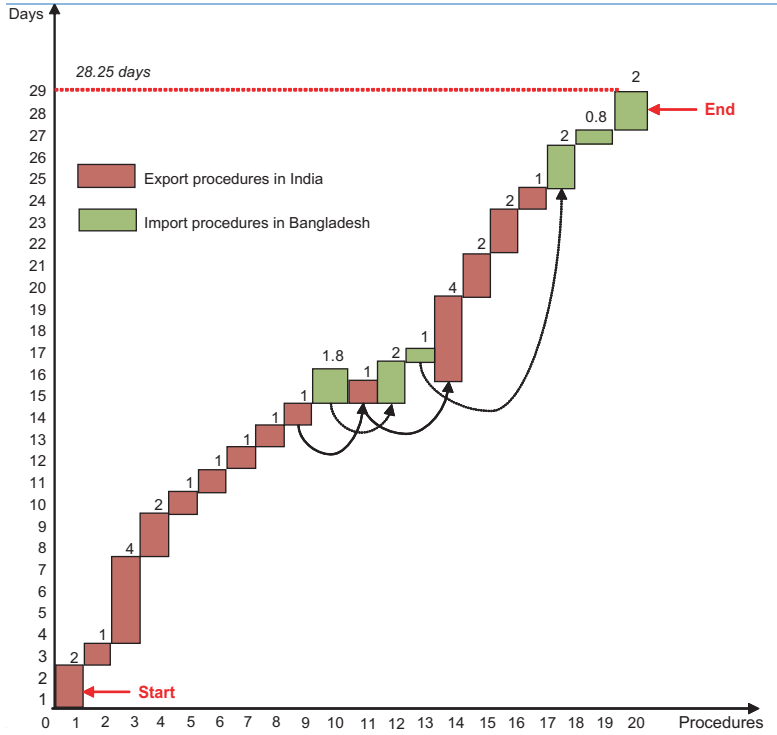
Other observations that can be made based on the charts are as follows.

- Procedural bottlenecks often seem to be more on the export side rather than on the import side. For example, it takes nearly 28 days to complete a trade transaction for fabric, from signing the contract to getting the payment, where an Indian firm is an exporter and a Bangladeshi firm is the importer. More than 80 per cent of that time (24 days) is spent on procedures in the exporting country. Contract registration and inspection involving the exporting firm and the government (textile ministry) takes 4 days, on average, as does inland haulage of goods to the land customs station (LCS). However, the study also found that the time spent at the land border (from parking of vehicle to transfer of goods to importer's warehouse) also amounts to between 7 to 8 days, suggesting that improvements may be needed in the procedures on both sides of the land border.

[21] Post-shipment payment time data when not available from importer's side was covered by the corresponding exporter's data.

[22] This data was obtained from the shipping time databases of some noted liner companies dealing with trade in the region.

Figure 3. Time Procedure Chart: Trade in cotton yarn from India to Bangladesh



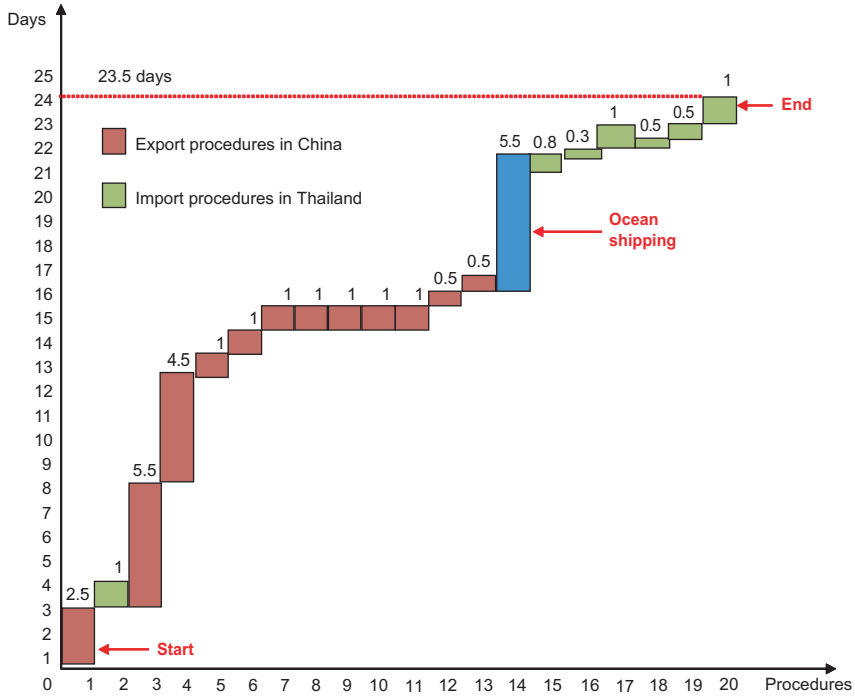
No.	Procedures	Days	No.	Procedures	Days
1	Buy	2.00	12	Prepare other import documents	2.00
2	Obtain export permit	1.00	13	Provide customs declaration	0.50
3	Contract registration and inspection	4.00	14	Transfer to LCS	4.00
4	Excise inspection	2.00	15	Parking of goods	2.00
5	Obtain cargo insurance	1.00	16	Customs clearance	2.00
6	Arrange pre-shipment inspection	1.00	17	Send the goods to importer's warehouse	1.00
7	Obtain certificate of origin	1.00	18	Clear goods through customs	2.00
8	Obtain SAFTA certificate	1.00	19	Transport to importer's premise	0.75
9	Submit customs declaration online	1.00	20	Pay	1.50*
10	Collect and endorse documents for import	1.75		**Total**	**28.50****
11	Arrange transport for loading	1.00			

Source: ARTNeT Working Papers 93 and 95.

*According to Indian exporters, it takes about 8 days to get payment from Bangladesh.

** Total time becomes 34.75 days if we take 8 days to receive payment from Bangladeshi importer.

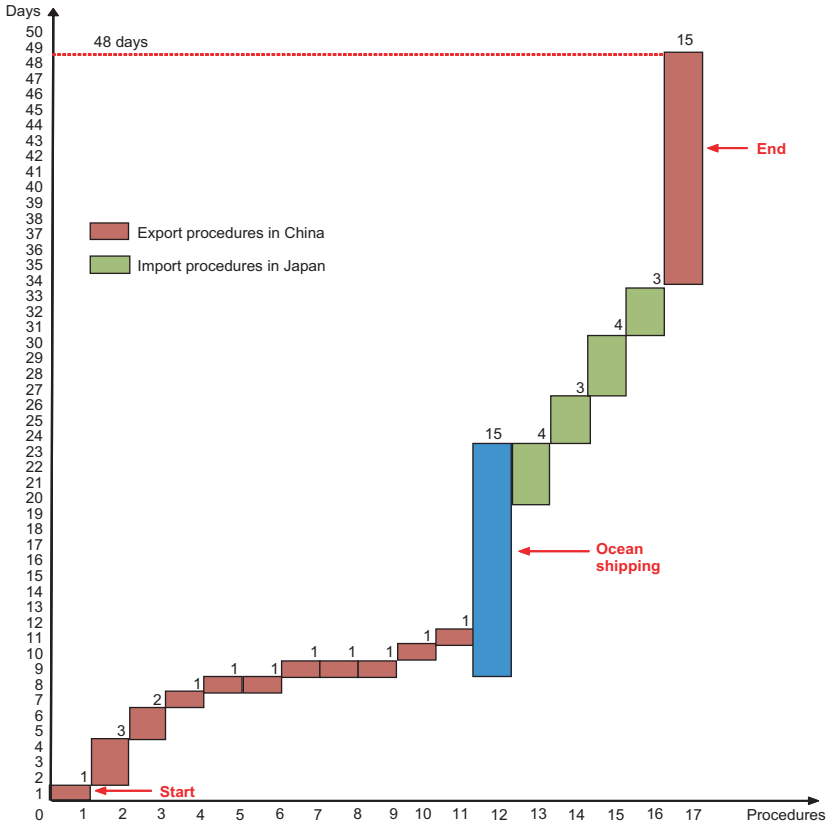
Figure 4. Time Procedure Chart: Trade in electronic devices from China to Thailand



No.	Procedures	Days	No.	Procedures	Days
1	Buy	2.50	12	Obtain cargo insurance	0.50
2	Obtain permission for raw materials release	1.00	13	Prepare documents for payment	0.50
3	Obtain export permit	5.50	14	Ocean shipping	5.50
4	Arrange transport	4.50	15	Request for vessel berthing	0.75
5	Arrange inspection	1.00	16	Unload goods from vessel	0.25
6	Prepare customs declaration	1.00	17	Declare goods to Customs	1.00
7	Collect empty containers from yard	1.00	18	Arrange goods for inspection	0.50
8	Stuff a container	1.00	19	Inspect and release goods	0.50
9	Transfer to port of departure	1.00	20	Pay	1.00
10	Clear goods through customs	1.00		**Total**	**23.50**
11	Handle containers and stow on vessel	1.00			

Source: ARTNeT Working Papers 88 and 103.

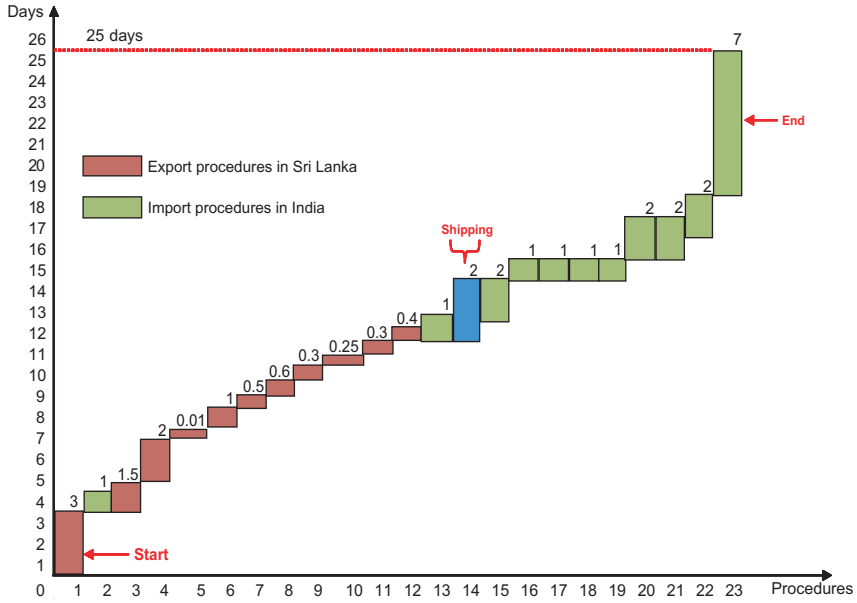
Figure 5. Time Procedure Chart: Trade in garments from China to Japan



No.	Procedures	Days	No.	Procedures	Days
1	Buy	1	10	Prepare documents for importer	1
2	Arrange transport	3	11	Prepare documents for payment	1
3	Arrange Inspection	2	12	Ocean shipping	15
4	Obtain cargo insurance	1	13	Pre-arrival documentation	4
5	Collect empty containers from yard	1	14	Port terminal handling	5
6	Stuff containers	1	15	Customs and inspection	4
7	Transfer to port of departure	1	16	Inland transport to/from warehouse	2
8	Clear goods through customs	1	17	Pay	15
9	Handle containers and stow on vessel	1		**Total**	**48**

Source: ARTNeT Working Papers 91 and 101.

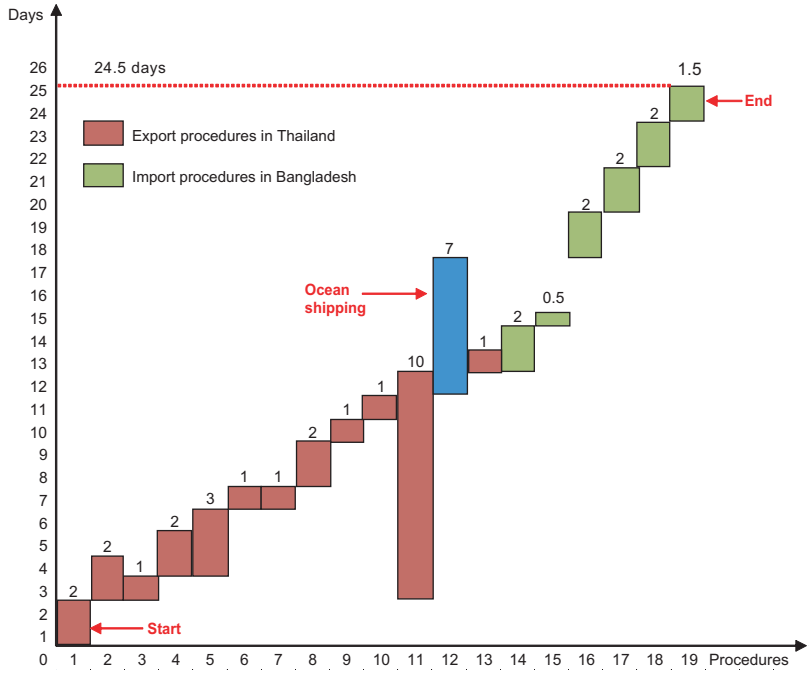
Figure 6. Time Procedure Chart: Trade in rubber tires from Sri Lanka to India



No.	Procedures	Days	No.	Procedures	Days
1	Buy – conclude sales and contract terms	3.00	13	Vessel information and filling IGM	1.00
2	Obtain IEC code	1.00	14	Shipping	2.00
3	Obtain bank related documents	1.50	15	Allocation of berth	2.00
4	Prepare all export documents	2.00	16	Filing bill of entry & other import papers	1.00
5	Lodge CUSDEC online	0.01	17	Filing Delivery Order	1.00
6	Pass CUSDEC manually	1.00	18	Immigration	1.00
7	Obtain cargo insurance	0.50	19	Plant quarantine	1.00
8	Arrange transport and load on truck	0.60	20	Unloading of goods from vessel	2.00
9	Transport to port of departure	0.25	21	Verification of cargo	2.00
10	Clear goods through customs at seaport	0.30	22	Send the goods to importer's warehouse	2.00
11	Port and terminal handling activities	0.30	23	Pay to exporter	7.00
12	Loading container onto vessel	0.40		**Total days**	**25.00**

Source: ARTNeT Working Papers 91 and 95.

Figure 7. Time Procedure Chart: Trade in sugar from Thailand to Bangladesh



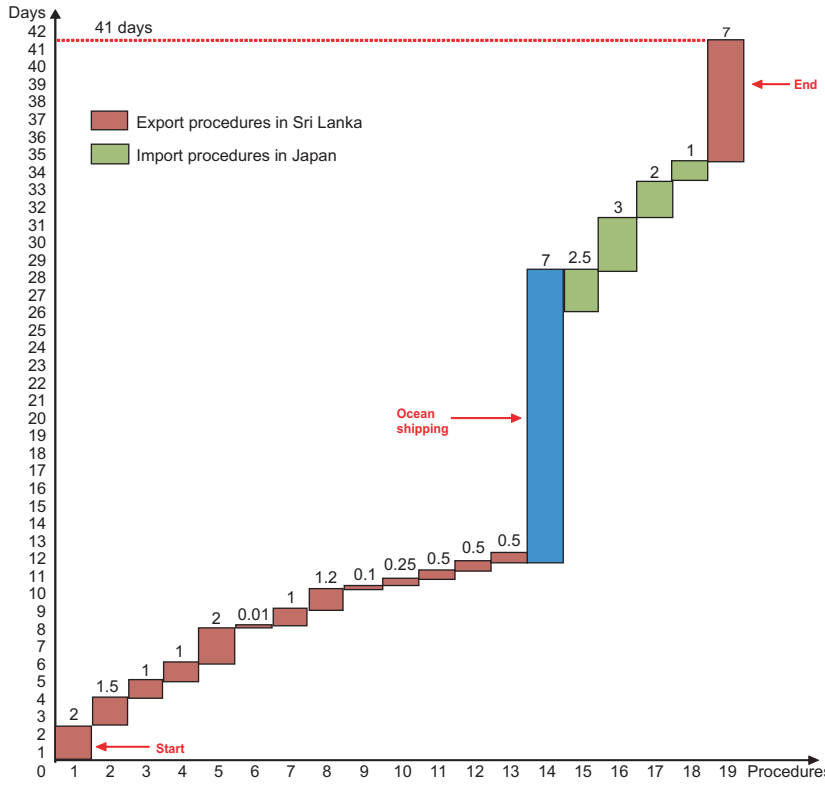
No.	Procedures	Days	No.	Procedures	Days
1	Buy	2.00	11	Prepare documents required by importer	10.00
2	Obtain export permit	2.00	12	Ocean shipping	6.00
3	Obtain goods movement permit	1.00	13	Verify accuracy/authenticity of exported cargo	1.00
4	Obtain cargo insurance	2.00	14	Collect and endorse documents for import	2.00
5	Arrange transport	3.00	15	Provide customs declaration online	0.50
6	Provide customs declaration	1.00	16	Handling cargo at port	2.00
7	Collect empty container from yard	1.00	17	Clear goods through customs	2.00
8	Stuff a container	2.00	18	Transfer goods to importer's premise	2.00
9	Clear goods through customs	1.00	19	Pay	1.50*
10	Handle container at terminal and stow on vessel	1.00		**Total**	**24.50***

Source: ARTNeT Working Papers 93 and 103.

*According to Thailand exporters, it takes one day to get payment from Bangladesh.

** Total time becomes 23.50 days if we take one day to receive payment from the importer in Bangladesh.

Figure 8. Time Procedure Chart: Trade in tea from Sri Lanka to Japan



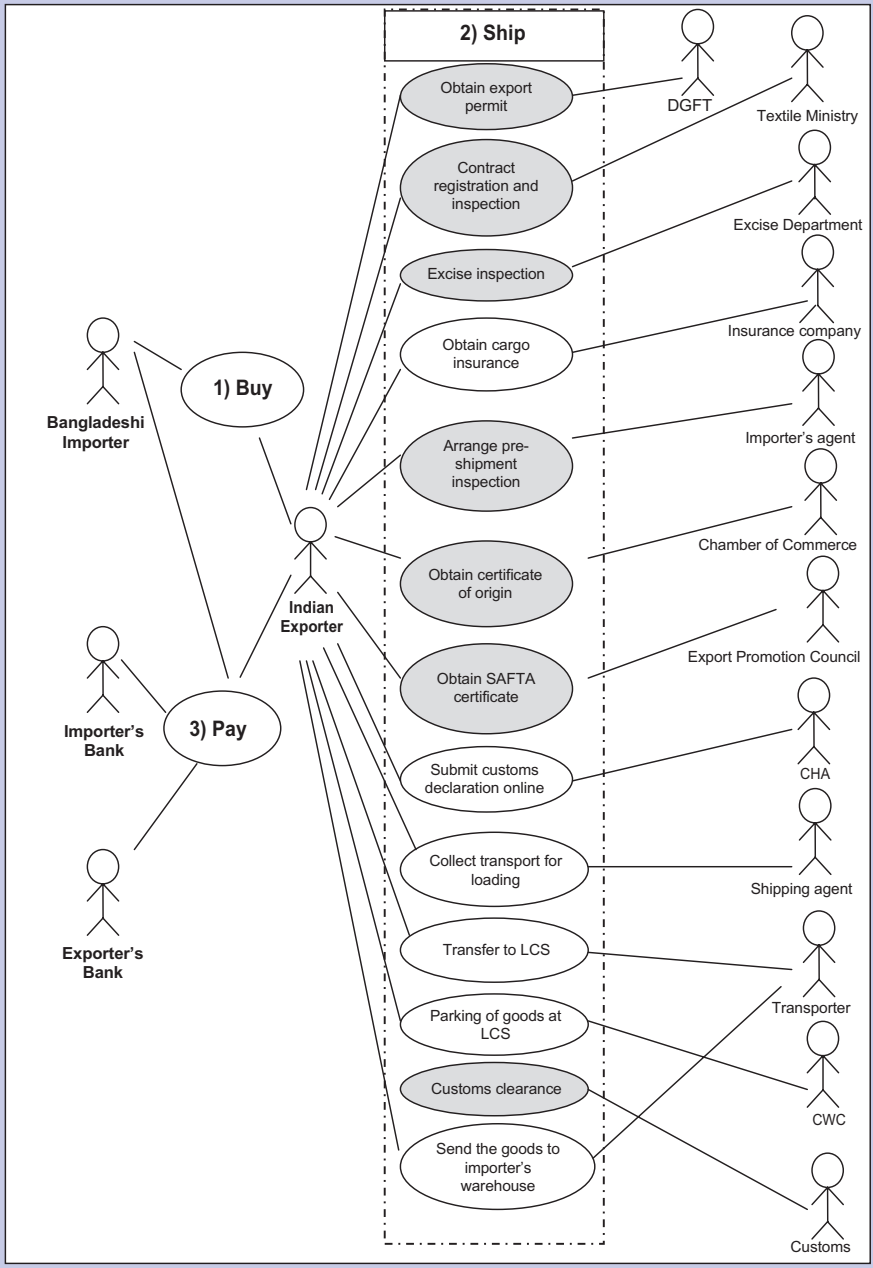
No.	Procedures	Days	No.	Procedures	Days
1	Buy	2.00	11	Port and terminal activities	0.50
2	Obtain bank-related documents	1.50	12	Loading container into vessel	0.50
3	Obtain export permit	1.00	13	Prepare documents required by importer	0.50
4	Obtain cargo insurance	1.00	14	Ocean shipping	17.00
5	Prepare all other export documents	2.00	15	Pre-arrival documentation	2.50
6	Lodge the CUSDEC online	0.01	16	Port terminal handling	3.00
7	Pass the CUSDEC manually	1.00	17	Customs and inspection	2.00
8	Arrange transport and load on truck	1.20	18	Inland transport to/from warehouse	1.00
9	Transport to the port of departure	0.10	19	Pay	7.00
10	Clear goods through customs at seaport	0.25		**Total**	**41.00**

Source: ARTNeT Working Papers 91 and 101.

- Physical inspection by government authorities before and at the time of export or import also appears to create bottlenecks. In all the countries studied, government inspector(s) often carry out physical inspection before an export or import permit is issued. Sometimes multiple inspections are required, by various ministries. According to the UML case diagram for Indian exports to Bangladesh (Box 3), half of the process (7 out of 13 steps) for exporting Indian fabric to Bangladesh involves physical (or verbal) inspections.[23] In the case of China, pre-shipment cargo inspection is often compulsory. For the export of garments, Chinese exporters must request an inspection of the goods by the local Entry-Exit Inspection and Quarantine Bureau (Commercial Inspection Bureau). The inspection focuses on various issues, including the quality, safety and toxicity of the goods. No less than eight documents are needed to be provided to get an approval of the authority. While inspections often make trade safer and more secure, excessive inspections by government authorities impede trade. Physical inspections, by multiplying face to face contact between control officers and traders (or their representatives), also potentially provide opportunities for informal payments and rent seeking, increasing the overall cost of trade and the uncertainties associated with each transaction. Implementation of risk management systems and authorized economic operator programmes may help minimize the need for inspections.
- Regulatory procedures are not the only procedures that take considerable time. For example, the arrangement of containers takes a long time in some countries, such as in Thailand (3 days). While reducing the time it takes to get an export permit is the responsibility of the exporting country government, increasing the supply of containers depends on the private sector, viz. transporter or shipping agency. Therefore, while streamlining regulatory procedures and related documentation is important, broader policy reforms targeting the service sectors supporting trade transactions (transport, logistics, financial) may also be needed.

[23] Refer to Box 2 and UNNExT, UNESCAP and UNECE (2009) for an introduction to UML Case Diagrams. See also the UML Case Diagram of Chinese export to Thailand in Annex 4.

Box 3. UML Case Diagram: Export of fabric from India to Bangladesh



Source: ARTNeT Working Paper 95.

5. Export and import time: cross-country analysis

As discussed earlier, the length of time required to complete export and import procedures reported in the various ARTNeT studies varies between countries (see Tables 3 and 4). While this is in large part due to differences in products and partner countries, there are also slight differences in scope of procedures and in methods of payment across studies and countries. These differences make cross-country comparisons difficult without adjustments. Thus, export and import times were re-calculated using the World Bank's DBD approach. For exports, this means measuring from the time of the signature of contract to the time the products are loaded on the ship at the nearest port.[24] Under this approach, therefore, the time required to complete export and import procedures excludes the time for contract negotiation and signature (Buy process) and payment delays (Pay process), as shown in Figure 9 and Figure 10. Also, in line with the DBD approach, the various steps involved in the export and import processes identified by the ARTNeT researchers in their studies are grouped into four standard components: (1) document preparation, (2) inland carriage and handling, (3) customs and (4) terminal handling. It should be noted that the "customs" component actually includes health, quarantine and technical control (and any physical inspections) as well, some of which may be under the responsibilities of agencies other than the customs office.

As illustrated in Figure 9, the time required for preparation of documentation is generally the main component of export and import time. However, the time required for inland haulage (e.g. export of vegetable ghee from Nepal), terminal handling (e.g. export of automobile parts from Thailand) and inland customs and inspection (e.g. export of automobile parts from Japan) are also very significant in determining the overall time required for the completion of export procedures. Document preparation is also typically the largest time component in the import process, except in the case of Nepal's import of fabric from India (Figure 10), for which inland transportation and the customs component are larger.

Some brief observations on each of the trade time components follow.

Document preparation time

The time required for the completion of documentation for the export of shrimp from Bangladesh (to Japan) and vegetable ghee from Nepal (to India) is 22 and 33 days, respectively. In contrast, the document preparation for export of automobile parts from Thailand to India takes just 2 days, which is found to be the lowest time among the countries considered in this study.

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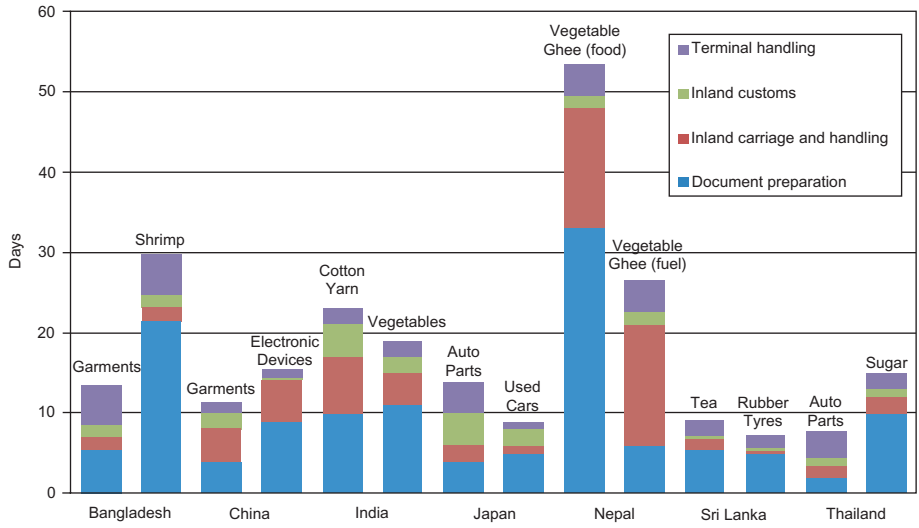
[24] In the case of landlocked countries or of export or import processes involving land border-crossings, export and import times were adjusted to include travel time to the nearest seaport. Details are available in Annex 5.

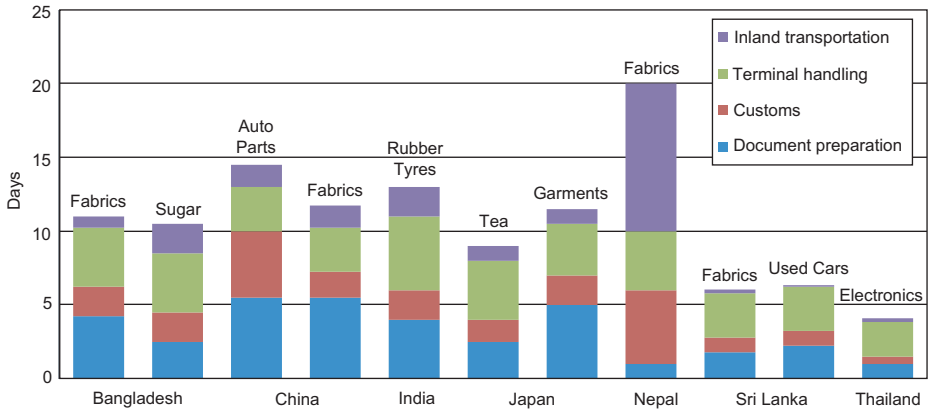
Figure 9. Export time for selected products and countries in Asia (adjusted)*



Source: Authors' calculations based on ARTNeT Working Papers.

Notes: *Adjusted to the DBD approach, i.e., time for moving goods from factory to deck of sea vessel. See Annex 5 for details on the method of adjustment.

Figure 10. Import time for selected products and countries in Asia (adjusted)*



Source: Authors' calculations based on ARTNeT Working Papers.

Notes: *Adjusted to the DBD approach i.e., time for moving goods from deck of sea vessel to importer warehouse. See Annex 5 for details on the method of adjustment.

Document preparation for importing generally does not take as much time as for exporting. For example, document preparation for the import of electronic devices into Thailand from China or the import of fabric by Nepal from India takes only one day. The only exceptions are the cases of India's import of rubber tyres from Sri Lanka and China's import of fabric from Japan, where document preparation takes almost a week. In contrast, document preparation for import of electronic devices into Thailand from China or import of fabrics by Nepal from India just takes one day. Importantly, document preparation for imports is often done before the arrival of the goods, so usually takes place in parallel with ocean shipping, and therefore does not affect the overall trade transaction time (e.g. in the case of imports into Japan, as shown in Figure 8).

Inland carriage and handling time

Inland carriage and handling time does not account for a large share of the export time, except in the cases of landlocked countries (Nepal and Afghanistan). In the case of imports, inland transportation takes between 2 days to 1/4th of a day across countries, generally accounting for less than 20 per cent of total import time.

While the location of the importing and exporting firms in relation to the nearest seaport (or from each other) is a crucial factor in inland transportation time, Governments may reduce overall inland carriage and handling by enhancing the transport infrastructure within their own country (as well as transit countries in the case of a landlocked country like Nepal), promoting the development of logistics services and reducing the number of police and other checkpoints en route to the port or the border. Establishing special economic zones near seaports (or near the border) could also help in this regard.

Customs clearance time (including quarantine, health and technical controls)

For exports from India to Bangladesh, customs and other control agencies take 4 days to clear an export consignment. In contrast, it takes one quarter of a day to 2 days to clear an export consignment in the other developing countries examined in this study. For imports, consignments are generally cleared by customs within the time frame of between half a day to 2 days.

As noted earlier, however, clearance and release of goods at the port (or the border) is not solely dependent on the customs authority, as various other agencies may also be involved in the control of the goods. Therefore, it is necessary to analyse what other agencies are involved and what causes inefficiencies and delays at border points.

Export and import time – terminal handling

The time required to handle shipments at port terminals is often lengthy, thus increasing overall export time. Therefore, enhancing port efficiency is essential to trade facilitation (Wilson et al., 2003). Handling of export cargo at the port terminal in Bangladesh requires about 5 days, which is the lengthiest time among all the export processes examined

in this study. The time required for terminal handling of India's imports of rubber tyres from Sri Lanka and Japan's imports of tea from Sri Lanka are also found to take about 3 days. In contrast, little time (less than a day) is required for the handling of imports of electronic devices and auto parts at the ports in China and Thailand. These disparities across countries and products deserve deeper analysis, as they may be due in part to the difficulties experienced by the ARTNeT researchers in obtaining accurate time estimates.[25]

Given that the time estimates in the Doing Business Database are for the import or export of non-sensitive products that do not require any special controls or inspections, one would expect the DBD to have lower estimates of import and export times. On the contrary, however, it was found that DBD import and export times are generally higher than those obtained by the ARTNeT researchers (after adjustments to match the DBD approach, as explained earlier). The export and import costs in the DBD were also found to be higher, in general, than those reported in the ARTNeT studies.[26] Table 11 shows the export and import times obtained through the detailed product and partner country-specific case studies and those available in the DBD database.

The large differences between the ARTNeT studies and the DBD in terms of the time required for the completion of importing procedures are explained in large part by differences in "document preparation" time. This time ranges from 8 days (for Thailand) to 15 days (for Bangladesh) in the DBD dataset – while it rarely exceeds 5 days in the ARTNeT studies. Looking further at the disaggregated data, the DBD estimates show that the time needed to "obtain bank-related documents" – one of the two components of "document preparation" in the DBD – ranges from 4 days (in India) to 8 days (in China). While that specific component was not singled out for time measurement in the ARTNeT studies, these DBD estimates are not supported by the results of the import process analyses conducted by ARTNeT, even when the entire PAY process is considered – see Annex 5 (b).

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[25] Terminal handling includes the following two sub-categories: (1) unloading of containers from vessels and (2) parking the containers in designated container storage areas. It is not clear from the country cases whether these two components were systematically included in the time estimates. It is worth noting that DBD port terminal handling estimates include "vessel waiting time to enter the berth" in the case of imports, and "waiting time before the next vessel departs" in the case of exports, two components that the ARTNeT researchers were not able to include in their analysis.

[26] The cost of exports from Bangladesh was found to be slightly higher than that reported in the DBD. However, wide variations in the costs of L/C from shipment to shipment make it difficult to estimate direct costs accurately, according to the ARTNeT study.

Table 11. Trading across borders: Comparisons with the World Bank Doing Business Database (DBD)*, 2011

	Time to export (days)		Cost to export (USD per container)		Time to import (days)		Cost to import (USD per container)	
	DBD	ARTNeT	DBD	ARTNeT	DBD	ARTNeT	DBD	ARTNeT
Bangladesh[1]	25	14	920	935	31	11	1 305	[415]
China[2]	21	12	500	367	24	15	545	403
India[3]	17	23	1 055	532	20	13	1 025	359
Japan[4]	10	14	880	369	11	10	970	410
Nepal[5]	41	40	1 960	[1 067]	35	20	2 095	[320]
Sri Lanka[6]	21	9	715	435	19	6	745	677
Thailand[7]	14	8	625	509	13	4	795	300
Average	21.29	17.14	950.71	602.00	21.86	11.29	1 068.57	412.00
CV	0.47	0.67	0.51	0.49	0.4	0.6	0.48	0.3

Sources: Authors' calculations based on ARTNeT Working Papers and World Bank DBD (2010).

Notes: See Annex 5 for details on adjusted ARTNeT Data; Bracketed numbers [ ] are not comparable to those of DBD since they do not reflect the cost of moving goods to the nearest port (only to a land border); 1. Export of garments and import of fabrics; 2. Export of garments and import of auto parts; 3. Export of fabrics and import of rubber tyres; 4. Export of automobile parts and import of tea; 5. Export of vegetable ghee (average time) and import of fabrics; 6. Export of tea and import of fabrics; 7. Export of auto parts and import of electronic products.

* DBD data shown is from the Doing Business Report 2011, which presents data collected in 2010 (the same year ARTNeT data was collected).

6. Beyond trade time and cost averages: Other findings

The trade process analyses conducted in each country provide many insights into import and export procedures beyond the import and export time averages summarized above. The studies provide information on how procedures vary across products, routes and firms, as well as in terms of timeliness. The most relevant findings are highlighted below.

Trade processes and their efficiency vary significantly depending on the route or mode of transport selected. For example, in the Bangladesh study, the time required for the export of ready-made garments to India by sea is compared to the time required for the export by land. Export time (excluding international transport) was found to be longer by sea (17 days) than by land (15 days), mainly due the extra time involved in arranging shipment by sea and handling of the container at the port. At the same time, the customs clearance process at the Bangladesh border was found to take twice as much time as the clearance process at the port. Similar findings are reported in other studies, many pointing out that the time and cost required for importing and exporting a particular product will vary depending on the port through which it is shipped and the distance of the firm to the port.

While these findings are not surprising, they make it clear that cross-country comparisons in terms of trade efficiency must be made with caution as results will be very much influenced by the underlying assumptions.[27] They also suggest that evaluating the trade facilitation performance of a country requires that much more detailed assessments be conducted, as reform priorities and procedural bottlenecks may be different across routes and modes of transport for a given country. In that context, process analysis and improvements at the corridor level may indeed be preferable.

The study also provides evidence of large variations in trade procedures across products, with agricultural and food products unsurprisingly subject to the most complex procedures and delays. The need to sample and examine products, a step generally involving laboratory testing and the issuing of a quality certificate (typically required for food products), is found to increase export time by at least one third, as compared to most manufactured goods (for which this procedure is optional or non-existent). For example, the procedure for testing vegetable ghee to India was found to take up to 15 days, while that for shrimp exports from Bangladesh to Japan takes 18 days – or nearly half of the overall export time. Again, this result highlights the need to assess trade facilitation needs and priorities – and possibly develop solutions – at the industry or product level whenever possible.[28]

Interestingly, although product testing is identified as a key issue, it is a procedure linked to bilateral preferential trade arrangements. For example, the procedure related to the allocation of the quota for the export of vegetable ghee from Nepal to India is identified as a key bottleneck in the export process for that product. Likewise, procedures related to the issuing of certificates of origin have been identified as sources of inefficiencies in several countries (see Box 4). Given that private sector associations play a key role in the above-mentioned procedures, this finding emphasizes the necessity for governments to ensure that these associations provide efficient and non-discriminatory service to all traders. It also highlights the link between trade policy and negotiations and trade facilitation, as more agreements and rules involving differential treatments of trade partners result in additional procedures and documentation that may ultimately negate the benefits associated with the preferences given.

None of the trade process analyses conducted as part of this regional study leadsto the conclusion that import and export processes do not differ significantly between large companies and small and medium-sized enterprises (SMEs). The Sri Lanka study, for example, found that the cost and time of trade processes is often higher for SMEs in relative terms, as they have to commit relatively more of their limited resources to handling them (hence the need to continuously streamline procedures to make international trade

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[27] For example, even assuming that a firm is located near the capital city when calculating trade time automatically puts countries with capital cities located at some distance from a seaport at a disadvantage, although in reality the relevant firms may be operating near that seaport, being very much aware of the need to cut time and cost.

[28] See ESCAP (2011c), for a more detailed introduction to agricultural trade facilitation.

more inclusive) but there were no significant differences in the time and cost of exporting/ importing across firm size.[29]

The study found, however, that processes vary between Board of Investment (BOI) member companies and non-members in Sri Lanka, as outlined in Table 12. The ability of BOI companies to submit a customs declaration form (CUSDEC), make the payments and examine the cargo within the free trade zone (FTZ), provides the BOI companies with advantages in terms of time savings and fewer problems, e.g. avoiding long queues and the need to transport the cargo (if selected for examination) to yards outside the ports.[30]

Box 4. Procedure for receiving preferential quota in Nepal

At the time of the study, Nepal producers were eligible for an allocation of preferential quota for the export of vegetable ghee.[31] The export process analysis conducted as part of the study revealed that the procedure for receiving an allocation of the quota took between seven 7 to 10 days, making it the second-most time-consuming procedure of the entire 40-day Buy-Ship-Pay process of exporting vegetable ghee from Nepal to India- after the product sampling and testing procedure, which took 10 to 15 days.

As per the bilateral trade agreement between India and Nepal, the Government of India sets an annual quota for the import of vegetable ghee from Nepal. The Ministry of Commerce and Supplies (MOCS) of Nepal allocates the quota among exporting firms on the recommendations of the Nepal Vegetable Ghee Producers' Association (NVGPA), the Federation of Nepalese Chambers of Commerce and Industry (FNCCI) and the Nepal-India Chamber of Commerce and Industry (NICCI). Though the Government of India provides an overall quota to the Government of Nepal (GON), there is a system of state-wise quota distribution. Exporters have to consider this factor while planning for exports to different states of India. NICCI maintains records of state-wise export quotas and actual exports by the exporting firm. On that basis, it issues a passbook to the exporting firm. A passbook is a record of the state-wise export quota and the use of this quota by individual export firms. Exporting firms need to obtain a passbook from the NICCI in the process of getting a recommendation for an allocation of the export quota.

In the process of obtaining part of the quota, exporting firms first approach the NVGPA, and after getting recommendation letter from them, they apply to the FNCCI and NICCI for recommendation letters, with their letter from the NVGPA, Industry Registration Certificate, Permanent Account Number (PAN), Registration Certificate and documents showing the

[29] While this is true in absolute terms, the cost and time of trade processes often remains higher for SMEs in relative terms, since they have to commit relatively more of their limited resources to handing them – hence the continuous need to streamline procedures to make international trade more inclusive.

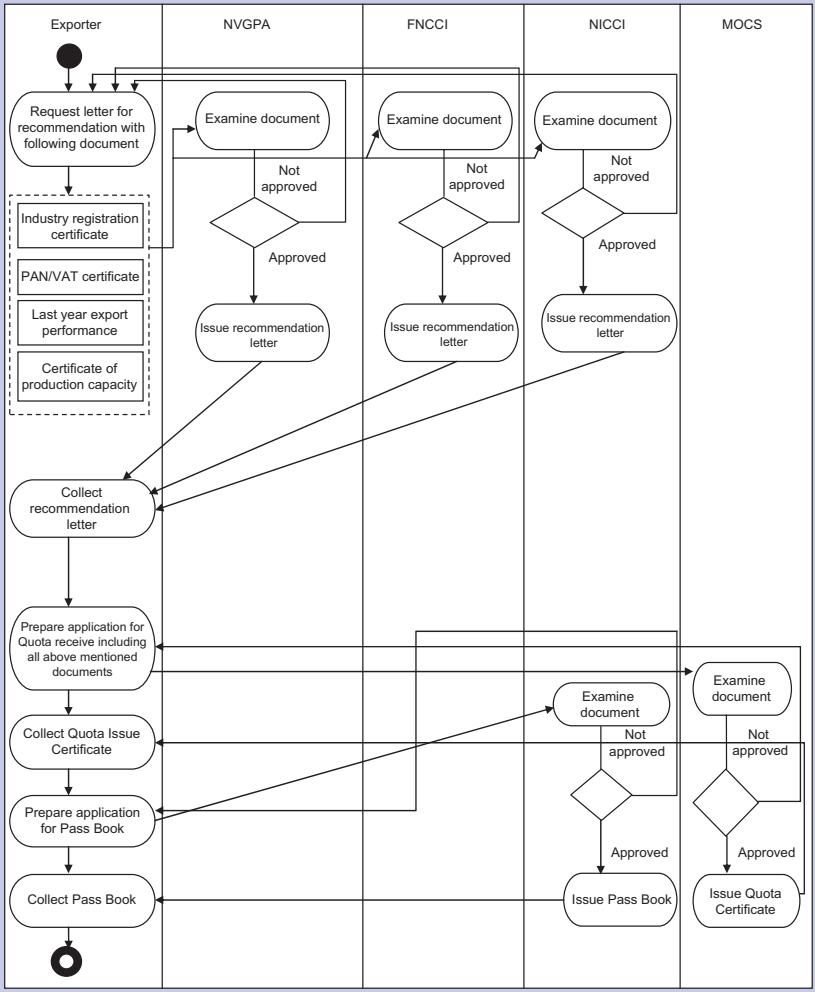
[30] It is worth noting that BOI companies are generally large companies, although size is not necessarily an essential characteristic for BOI membership.

[31] As per the bilateral trade agreement between India and Nepal, the Government of India sets an annual quota for export of vegetable ghee to the government of Nepal (Rajkarnikar, 2010).

production capacity of their business and their export performance in the previous year. After examining the documents, the FNCCI and NICCI issue recommendation letters to the exporting firms. With these recommendation letters and the documents showing their production capacity and their export performance in the previous year, the exporting firms then apply to the MOCS for an allocation of the export quota. After examining the documents, the MOCS issues a quota certificate to the exporting firm.

The UML activity diagram of the quota allocation procedure is provided below.

Annex 5.1.2C: Receive Quota



Source: ARTNeT Working Paper No. 89.

Given that most traders (small or large) in the countries studied rely on intermediaries, such as customs brokers or freight forwarders, the differences between small and large traders in terms of time – and possibly cost – of preparing documents and clearing customs may be small. However, the situation may be different in terms of transport and terminal handling procedures, as some studies indicate that the time required for importing differs significantly depending on the volume of goods shipped. For example, importing tea from Sri Lanka to Japan can take between 4 to 14 days longer (not including extra unloading time on arrival in Japan) if the export involves container-sharing.

Table 12. Main differences of BOI and Non-BOI processes in Sri Lanka

Process	Activity	Non-BOI Company	BOI Company
Import Process	Import declaration	CUSDEC submitted to Long Room of Customs in Colombo	CUSDEC submitted to BOI Centre in the Free Trade Zone (FTZ)
	Payment of duties and taxes	To bank located near Long Room	Bank counter at the BOI in the FTZ
	Determination of examination level	By Customs	By Customs/BOI Coordination Unit (CBCU)
	Cargo examination	Examination by Customs at Grayline yard	Examination by BOI at the FTZ
Export Process	Export declaration	Submit documents to Customs	Submit documents to BOI
	Cargo examination (when required)	Cargo verification by Customs	Cargo verification by BOI at FTZ

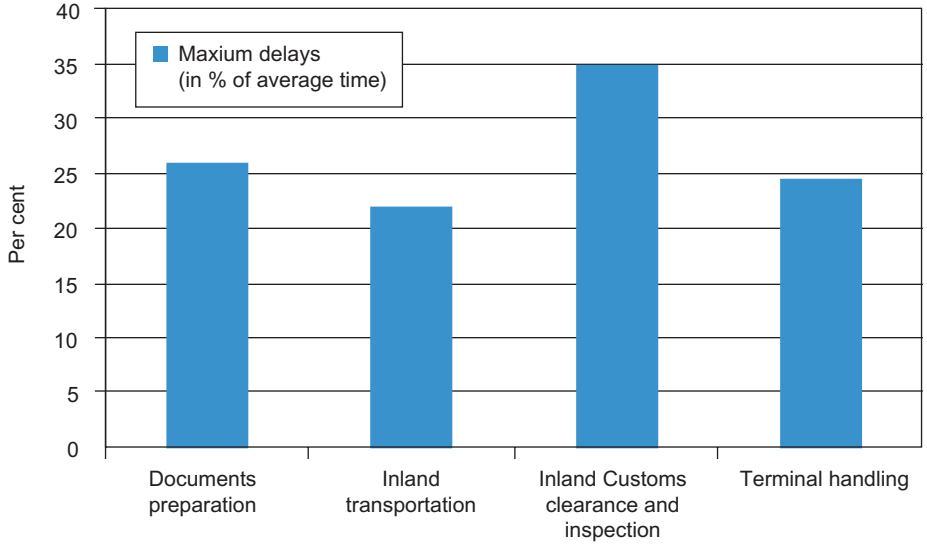
Source: ARTNeT Working Paper 91.

An important dimension of trade facilitation and efficiency is the predictability of the time the export or import process will take. Both the Bangladesh and India case studies provide some insights on this matter, as they report minimum and maximum times along with average times required for various procedures, as part of their process analyses. According to those analyses, maximum delays range from 13 per cent of average time (for export of rubber tyres from Sri Lanka to India) to 43 per cent (for export of garments from Bangladesh to India). See Annex 6.

Looking at procedures within processes, the study found that inland customs clearance is the procedure that seems to be the least predictable, with the potential for a maximum delay of 35 per cent of average customs clearance time (see Figure 11). This is explained by the fact that a shipment may be selected for physical inspection, in which case the clearance process will be delayed. It is worth noting that this is not necessarily due to customs. For example, in the case of exports of auto parts from China, random inspections conducted by the Commodity Inspection Bureau as part of the clearance process may

take between 1 to 5 days to complete, as compared to only 0.5 days when no inspection is conducted.

Figure 11. Average maximum delays, by type of trade procedures



Source: Authors' calculations based on ARTNeT Working Papers 93 and 95.

D. Conclusions and Policy Recommendations

The Asia-Pacific region as a whole has experienced exceptional economic growth over the past two decades, fuelled in large part by exports to high income countries outside the region. Import tariffs fell sharply in these and other countries during that period, making it possible for many developing countries of the region to reap the benefits of globalization. However, as firms in an increasing number of countries compete for a share of the global market, it is essential for governments to find new ways to enhance trade competitiveness. At a time when developed economies face limited growth prospects and possible recessions, facilitating intraregional trade and, more generally, South-South trade, will be particularly important for sustaining growth in the region.

Facilitating trade is about reducing the time and cost of trade transactions, including the risks associated with them. While the trade facilitation performances of individual economies vary greatly, it takes, on average, three times more days to import or export to or from a developing country in the region than it does for trade with a developed country. Also, it often costs more for Asia-Pacific economies to trade with each other than to trade with the USA or Europe. These facts, along with the now well-established finding that benefits from trade facilitation generally exceed those that may be achieved through

further tariff cuts, call for urgent attention to be placed on streamlining trade procedures in the Asia-Pacific region.

In this context, this first regional study of trade procedures is very timely. This study examined the export and import processes in seven countries of the region (Bangladesh, China, India, Japan, Nepal, Thailand and Sri Lanka) by conducting business process analyses of trade procedures for specific products to and from these countries. The procedure analyses covered the entire trade transactions, including the buying, shipping and payment processes. A total of 14 product- and country-specific export processes and 11 import processes were mapped and analysed by a team of ARTNeT researchers, following the guidelines provided in the BPA guide.

Based on the information contained in the seven country studies, a total of five complete import-export processes – from the factory of the manufacturer in the exporting country all the way to the warehouse of the importer – have been assembled. Although far from comprehensive and subject to limitations (outlined in the next section), the study clearly documented the complexity of the overall trade process, and in particular that of the export process faced by firms in many countries of the region. While country-specific recommendations can be found in each of the country studies summarized in Part II of this publication, a number of policy implications may be drawn from the regional study, as outlined below.

- ***Full and inclusive representation of the private sector in trade facilitation initiatives is essential.***

Reducing the time and cost of trade transactions cannot be done without the support of the private sector. All procedures and steps in the import and export processes involve the private sector, while only some of them involve national regulatory authorities directly. While Governments could and should streamline the procedures over which they have direct control (e.g. customs and other regulatory procedures), they may also need to encourage private sector collaboration and coordination initiatives to achieve significant results. Chambers of Commerce and/or Industry Associations sometimes play a significant role in issuing trade-related documents, such as certificates of origin or quality certificates, and the procedures put in place by these entities may not always facilitate trade and can sometimes be discriminatory. Similarly, some private sector intermediaries, e.g. transport and logistics service providers and customs brokers, do not always have an incentive to support trade facilitation, as some of the services they render may become unnecessary if import and export processes are simplified or automated. Governments could address these issues by ensuring more inclusive representation of the private sector in national trade facilitation bodies (or similar institutions in charge of enabling trade).

- ***Implementation of basic trade facilitation measures should be consistently enforced and re-enforced nation-wide.***

The process analyses revealed that simple trade facilitation measures, such as the provision of customs clearance services during holidays and weekends, and the harmonization

of work hours at border checkpoints on both sides of a land border, are sometimes not implemented. The studies also indicated that the trade situation varies significantly depending on the route and border crossings used within each country. These findings highlight the need for central authorities to promote a change of mind-set among the staff of trade control agencies in terms of the importance of trade facilitation and their role in it. Development of change management programmes encouraging officials to develop and test simple and pragmatic trade facilitation solutions at the local level in consultation with the private sector – and/or officials on the other side of the border if possible – may be considered.

- ***Paperless trade, including development of national and regional single windows, needs to be prioritized for trade facilitation.***

Preparation of documents and exchange of information among various parties involved (even before the goods start moving from the factory, or before they arrive at the port in case of imports) account for the largest share of the time required to complete an import or export process. As such, the development of single window facilities for submission and processing of information and documents is important. Again taking into account the importance of private sector actors in the transaction chain, the development of single window facilities should enable not only submission of information to regulatory and control agencies but to both public and private actors along the transaction chain, thus facilitating trade. Such "extended" national single windows are now operating in the Republic of Korea and Singapore (Koh Tat Tsen, 2011). At the same time, the study found that there is limited use of modern information and communication technologies and a heavy reliance on paper documents throughout the import and export processes in the countries studied. Increased use of ICT and the development of paperless trade should therefore be pursued more vigorously for trade transactions to be facilitated.

- ***Physical inspections should be minimized whenever possible, in particular through adoption of risk management techniques by all organizations involved in the trade process.***

Inspection and testing procedures often increase the average transaction time required to complete export and import processes. More importantly, the study found that inspections affect the timeliness and predictability of the trade transaction process; key factors in enabling firms to participate in international production networks. Inspections are often required at various stages of the import and export processes, typically at the border or port for imports, but also often as part of the preparation of documents in the case of exports. The frequency of inspections should be minimized through the use of appropriate risk management techniques. While customs often have some form of risk management system in place, other regulatory agencies often do not. Building the capacity of these non-customs agencies and developing inter-agency risk management systems should be considered, along with joint (multi-agency) inspections, when needed. Setting up certification programmes where the quality and other characteristics of goods can be ensured, through control of the production process at the factory, rather than for every shipment, could also be promoted as a way to reduce the need for inspections.

- ***Healthy competition among transport, logistics and other trade-related service providers should be encouraged.***

The study clearly showed the key role that is played by service providers in the trade process. Aside from preparation of documents, which is often outsourced in part to service providers, inland carriage and handling and terminal handling are the most time-consuming procedures in the import and export processes. Providing traders with access to a variety of high quality and affordable services is therefore essential in reducing the costs and time of import and export processes. This implies the need for countries that are aiming to improve trade performance to carefully review policies related to transport and other trade-related service sectors, to ensure that existing service providers are not unduly protected and have clear incentives to provide the efficient services needed by the trading community.

- ***Reviewing payment systems and their efficiency may reveal new opportunities for improving trade facilitation performance.***

The analysis of the entire buy-ship-pay process provided some evidence of the extent of time involved in the buying and payment process relative to the shipping process. One interesting finding is that the payment process accounted in some cases for a large proportion of the time required for the overall trade process, sometimes even approaching the time needed for the shipping process (excluding international shipment). While in some cases this can be due to the payment method (e.g. open account method) or negotiated payment terms, some of the process analyses revealed delays in receiving payment of up to 15 days after all necessary documents specified in the letter of credit (L/C) had been submitted to the bank. These findings indicate the need for a more detailed review of payment systems, as well as of the efficiency and practices of financial intermediaries as a way to facilitate trade, particularly since the cost of L/Cs was also found to represent, in some cases, nearly half of the direct cost of exporting a 20-foot container (excluding international shipping costs).

- ***National trade facilitation performance monitoring mechanisms are needed to identify the real and most important barriers to trade efficiency.***

Regulatory authorities have a limited view of the entire trade process, often only aware of their own internal efficiency – or inefficiency. Traders also have limited awareness and information about procedural bottlenecks, as it is the intermediaries who hold a lot of the information on the time and cost of specific procedures. Whether the inefficiencies are actually due to the intermediaries or to other parties (e.g. regulatory authorities), and the impact of the inefficiencies, would need to be assessed independently and regularly in order to identify priorities for reform. Governments should therefore consider the establishment of national trade performance monitoring mechanisms or measurement systems. Regular, systematic business process analyses of import and export processes, similar to the ones conducted in this study, should be considered as the basis for such systems, possibly in combination with the World Customs Organization (WCO) Time Release Study methodology

(which focuses on a narrower set of procedures). Embedding performance measurement and monitoring into ICT systems being developed as part of paperless trade initiatives, such as customs automation systems and Radio-Frequency Identification (RFID) tracking of container systems, should also be considered, as such systems could provide real-time information and detailed records about the time taken to move goods and exchange electronic documents for all transactions.

- ***Industry-specific trade facilitation programmes should be considered, in particular for agricultural products.***

The product-specific studies clearly highlighted differences in the complexity and length of the trade process depending on the type of goods traded. For example, the often mandatory sampling and testing procedures for agricultural goods and food products were found to account for nearly half of the export time in some cases, often due to limited availability of recognized testing facilities in the exporting country. Such industry- or sector-specific bottlenecks may best be addressed through the implementation of industry- or sector-specific trade facilitation programmes.

- ***Harmonization of documentary requirements across countries should be actively pursued.***

A recurrent issue noted by the traders interviewed for the case studies is that, for a given product, different documentation is needed for exports to different destinations. These differences, more than the volume or number of documents, are found to create confusion and delays. Besides simplification of documentary requirements, a concerted effort should be made to align national procedures and documents to international standards and conventions (i.e. harmonization). In that context, participation of developing countries from Asia and the Pacific in the development of these international standards would be important, as would be the need to increase awareness and build the capacity of trade facilitation practitioners to implement existing standards. It is worth noting that differences in documentation stem not only from differing regulations across importing countries, but also from different requirements by individual buyers (e.g. requiring different types of quality certificates or requiring the information to be sent in different formats), such that involvement of international private sector associations in the harmonization efforts would be needed.

- ***Bilateral and regional free trade agreements should systematically address trade facilitation issues.***

Preferential treatment given to, or negotiated with, selected trade partners typically involves additional documentary requirements. The study found some evidence of significant delays associated with such requirements. Including trade facilitation provisions and standard guidelines should be considered, so as to ensure that the procedures involved in obtaining the additional documents and exchanging them across borders are as efficient as possible – and to maximize the utilization and benefits of bilateral and regional trade agreements.

E. Limitations and Future Research

The study – including the individual country studies – is subject to several limitations. First, the findings are based on a limited number of product-specific case studies. It therefore may not be possible to generalize them to reflect all import and export procedures. As highlighted throughout this synthesis report, the trade process and its time and costs vary significantly depending on the product, origin, destination and route. The set of export and import time and cost estimates generated as part of the study may therefore not be used to draw definite conclusions on the relative performance of countries with each other.

Second, the various business process analyses that form the basis of the study are dependent on the quality of the input provided by the interviewees (i.e. staff and executives of selected companies involved in the relevant trade procedures). It is possible that the researchers and the executives could have overlooked some documents or costs involved in the process due to the repetitive and sometimes complex nature of these procedures. In fact, the research team members and their respective institutions often had difficulty gathering the information necessary to conduct BPAs and estimating the costs and time of exporting and importing. As mentioned earlier, traders do not always have detailed information about specific procedures, while intermediaries (service providers) and government agencies are often reluctant to share information. Traders are also sometimes concerned about providing information for a BPA for fear of that information being used against them by a competitor or a regulatory agency.

While various efforts were made by individual research team members to cross-check or validate their results, in most cases research team members could not validate the results through public national consultations (co-organized with the relevant government agencies or industry associations and opened to all interested public and private stakeholders). These consultations could not be organized (except in Bangladesh) because of limited resources and time. Some of the difficulties associated with collecting information and holding national consultations would probably have been alleviated if the BPA studies had been conducted under the work programme of a national trade facilitation body – or the relevant agency in charge of trade – as opposed to being part of a regional research initiative. It is hoped that such consultations will take place more systematically as part of future business process analyses for trade facilitation. Such consultation would indeed not only help in validating results, but would also help in building awareness and political will for reform – as evidenced by a business process analysis of rice exports from Cambodia conducted by ESCAP and UNNExT in 2011.

A third limitation of the study was that, while it provided a relatively detailed analysis of the existing “as is” trade processes for the products and countries covered, it did not generally include the design of new “re-engineered” procedures and processes. While this was clearly beyond the scope of the research, the design of the “to be” process is an integral part of the UNNExT business process analysis methodology. Relevant government officials and other trade facilitation stakeholders may therefore consider taking up the

challenge of designing “to be” trade processes, building and improving the UML diagrams developed by the ARTNeT researchers.

Overall, the study described in this publication was useful in gaining an understanding of the trade facilitation situation and the need to improve regional trade processes and procedures in Asia and the Pacific. It is clear, however, that more detailed national level studies should be undertaken, perhaps as part of national business process analysis programmes for trade facilitation, where the analysis would be updated regularly for a number of key strategic products as a way to measure progress over time. In that context, clearly distinguishing between import and export procedures that take place for every shipment and those that take place only from time to time (e.g. obtaining an export license compared to applying for an allocation of a preferential quota), systematically identifying the documentation and procedures that are electronic as opposed to paper-based, and emphasizing the collection of detailed information on the sequencing of the various procedures (e.g. which ones do or could take place in parallel) should be considered in future trade process analysis exercises.

In terms of future research, it is recommended to combine the business process analysis method used in this study with the time-cost-distance method often used in transport facilitation and corridor analysis studies. Such an approach would allow for a more precise understanding and evaluation of the various bottlenecks associated with competing modes of transport operating on the same route or alternate transit routes.[32] In addition, it is recommended to conduct business process analyses spanning regional production networks (e.g. from the import of raw materials or parts and components, to the export of the final product), as this would give a comprehensive view of the importance of trade facilitation in the operation of such networks.

[32] See Annex 7, which presents a time-cost-distance chart of Thailand’s imports of electronic devices from China.

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Annex 1. Factory-to/from-sea-ship trading time and costs in Asia and the Pacific

	Time for completing trade procedures (days)					Cost of completing trade procedures (2000 constant USD)				
	2005	2011 (Export time)	2011 (Import time)	2011	% Change	2005	2011 (Export cost)	2011 (Import Cost)	2011	% Change
Developing economies	**35**	**28**	**30**	**29**	**-18.0**	**1 085**	**1 380**	**1 538**	**1 169**	**7.8**
East and North-East Asia	**23**	**18**	**19**	**18**	**-21.8**	**907**	**980**	**1 035**	**807**	**-11.0**
China	21	21	24	23	**7.1**	309	500	545	419	**35.5**
Democratic People's Republic of Korea										
Hong Kong, China	15	5	5	5	**-66.7**	370	575	565	457	**23.4**
Japan	11	10	11	11	**0.0**	886	880	970	741	**-16.4**
Mongolia	59	46	47	47	**-20.5**	2 178	2 265	2 400	1 869	**-14.2**
Macao, China										
Republic of Korea	12	7	7	7	**-41.7**	792	680	695	551	**-30.5**
South-East Asia	**29**	**20**	**21**	**20**	**-29.2**	**701**	**769**	**835**	**642**	**-8.4**
Brunei Darussalam		19	15	17			680	745	571	
Cambodia	49	22	26	24	**-51.0**	675	732	872	642	**-4.9**
Indonesia	28	17	27	22	**-20.0**	531	644	660	522	**-1.7**
Lao PDR	72	44	46	45	**-37.5**	1 353	1 880	2 035	1 568	**15.9**
Malaysia	16	17	14	16	**-3.1**	356	450	435	354	**-0.3**
Myanmar										
Philippines	18	15	14	15	**-17.1**	696	630	730	545	**-21.8**
Singapore	4	5	4	5	**12.5**	341	456	439	358	**5.2**
Thailand	23	14	13	14	**-41.3**	822	625	750	551	**-33.0**
Timor-Leste	26	25	26	26	**0.0**	864	1 010	1 015	811	**-6.1**
Vietnam	24	22	21	22	**-8.5**	674	580	670	501	**-25.8**
South and South-West Asia	**38**	**30**	**31**	**30**	**-20.7**	**1 047**	**1 499**	**1 709**	**1 285**	**22.7**
Afghanistan	82	74	77	76	**-7.4**	2 002	3 545	3 830	2 954	**47.6**
Bangladesh	46	25	31	28	**-39.1**	953	965	1 370	935	**-1.8**
Bhutan	38	38	38	38	**0.0**	1 406	2 230	2 805	2 017	**43.5**
India	40	16	20	18	**-54.4**	917	1 095	1 070	867	**-5.5**
Iran (Islamic Republic of)	33	25	32	29	**-12.3**	953	1 275	1 885	1 266	**32.8**
Maldives	21	21	22	22	**4.9**	1 044	1 550	1 526	1 232	**18.0**
Nepal	39	41	35	38	**-2.6**	1 447	1 960	2 095	1 624	**12.3**
Pakistan	35	21	18	20	**-44.3**	571	660	705	547	**-4.3**
Sri Lanka	26	21	19	20	**-21.6**	639	715	745	585	**-8.5**
Turkey	23	14	15	15	**-35.6**	543	990	1 063	822	**51.4**
North and Central Asia	**61**	**49**	**52**	**50**	**-16.8**	**2 017**	**2 688**	**3 132**	**2 331**	**15.6**
Armenia	36	13	18	16	**-56.3**	1 514	1 815	2 195	1 606	**6.1**
Azerbaijan	56	38	42	40	**-28.6**	2 463	2 905	3 405	2 527	**2.6**
Georgia	53	10	13	12	**-78.3**	1 192	1 595	1 715	1 326	**11.2**
Kazakhstan	83	76	62	69	**-16.4**	2 398	3 130	3 290	2 571	**7.2**
Kyrgyzstan	70	63	72	68	**-2.9**	2 154	3 210	3 450	2 668	**23.8**

Annex 1. *(continued)*

	Time for completing trade procedures (days)					Cost of completing trade procedures (2000 constant USD)				
	2005	2011 (Export time)	2011 (Import time)	2011	% Change	2005	2011 (Export cost)	2011 (Import Cost)	2011	% Change
Russian Federation	36	36	36	36	**0.0**	1 523	1 850	1 800	1 462	**-4.0**
Tajikistan		82	83	83			3 850	4 550	3 365	
Turkmenistan										
Uzbekistan	92	71	92	82	**-11.4**	2 872	3 150	4 650	3 124	**8.8**
Pacific	**23**	**22**	**23**	**22**	**-3.8**	**863**	**998**	**1 022**	**809**	**-6.2**
American Samoa										
Australia	12	9	8	9	**-29.2**	757	1 060	1 119	873	**15.3**
Cook Islands										
Fiji	24	22	23	23	**-6.3**	497	655	635	517	**3.9**
French Polynesia										
Guam										
Kiribati	21	21	21	21	**0.0**	1 349	1 120	1 120	897	**-33.5**
Marshall Islands	27	21	25	23	**-14.8**	666	945	970	767	**15.2**
Micronesia (Federated States of)		30	30	30			1 295	1 295	1 037	
Nauru										
New Caledonia										
New Zealand	10	10	9	10	**0.0**	664	855	825	673	**1.4**
Niue										
Northern Mariana Is.										
Palau	32	29	33	31	**-3.1**	988	1 070	1 030	841	**-14.8**
Papua New Guinea	28	26	29	28	**0.0**	534	664	722	555	**4.1**
Samoa	29	27	31	29	**0.0**	774	820	848	668	**-13.6**
Solomon Islands	23	24	21	23	**0.0**	998	1 030	1 237	908	**-9.0**
Tonga	22	20	24	22	**0.0**	507	775	775	621	**22.5**
Tuvalu										
Vanuatu	28	21	20	21	**-26.8**	1 758	1 690	1 690	1 354	**-23.0**
ESCAP Developed Economies	**11**	**10**	**9**	**10**	**-10.9**	**769**	**932**	**971**	**762**	**-0.9**
All economies	**35**	**28**	**29**	**28**	**-18.6**	**1 107**	**1 387**	**1 547**	**1 175**	**6.1**

Source: Based on World Bank Doing Business Report data (World Bank 2011a).

Note: Trade time and trade costs are calculated as the simple averages of import and export times and costs, respectively, reported in the Doing Business Report. Costs are expressed in constant USD to allow for comparison over time.

Annex 2. Logistics performance index of selected countries in the Asia-Pacific region

Logistics Performance Index (LPI)*, 2010

Global Rank	Country or Region	LPI	Customs[1]	Infra-structure[2]	Inter-national ship-ments[3]	Logistics com-petence[4]	Tracking & tracing[5]	Time-liness[6]
79	Bangladesh	2.7	2.33	2.49	2.99	2.44	2.64	3.46
27	China	3.5	3.16	3.54	3.31	3.49	3.55	3.91
47	India	3.1	2.70	2.91	3.13	3.16	3.14	3.61
7	Japan	4.0	3.79	4.19	3.55	4.00	4.13	4.26
147	Nepal	2.2	2.07	1.80	2.21	2.07	2.26	2.74
137	Sri Lanka	2.3	1.96	1.88	2.48	2.09	2.23	2.98
35	Thailand	3.3	3.02	3.16	3.27	3.16	3.41	3.73
	East Asia and the Pacific	2.7	2.41	2.46	2.79	2.58	2.74	3.33
	South Asia	2.5	2.22	2.13	2.61	2.33	2.53	3.04

Source: World Bank LPI Database (World Bank 2011b).

Note: *The scores are from one to five, one being the worst performance for the given dimension. 1. Efficiency of the clearance process by border control agencies, including Customs. 2. Quality of trade and transport related infrastructure. 3. Ease of arranging competitively priced shipments. 4. Competence and quality of logistics services. 5. Ability to track and trace consignment. 6. Timeliness of shipments in reaching destination within the scheduled or expected delivery time.

Annex 3. Summary of processes, documents and stakeholders involved in the import of raw materials for producing electronic devices in Thailand

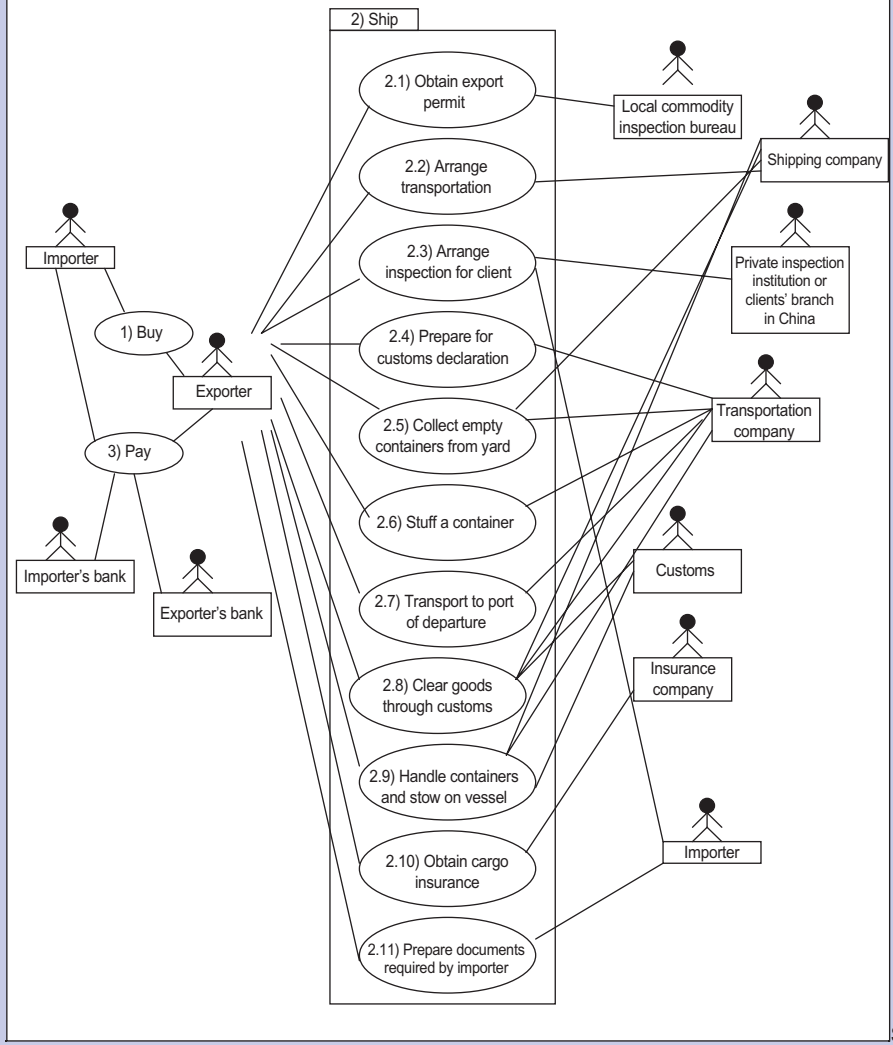
Import Processes	Related Documents	Stakeholders
1. Buy (Conclude sale contract and trade terms)	Proforma Invoice, Purchase Order	Importer, Exporter/Representative
2. Obtain permission for raw materials release	Request for Import Duty Exemption on Raw Materials, copy of import invoice, copy of Promotion Certificate (In case of request for raw materials release for the first time), copies of A/L & B/L (In case of request for raw materials release for the first time), Import Declaration (In case of using bank guarantee for release of raw materials or using the right reservation)	Importer, Investor Club Association, Board of Investment.
3. Request for vessel berthing	Ship Schedule, Ship Particular, Ship Profile, Notification of vessel berthing, Notification of vessel entering port city, Crew List, Last Port Clearance (Original), CLC Certificate (In case of loading oil tanks with weight exceeding 200 tons), Certificate of Fitness (In case of loading dangerous goods, LNP/ LPG, or chemical substances), Pilot Requirement Form, document of "Entering or Sailing or Shifting", Application for Vessel Entering the Port Area, Inward Container List Cargo Manifest, Application for tug and other related services	Ship Agent, Royal Thai Customs Department, Port Authority of Thailand, Pilot Station, Marine Promotion Bureau
4. Unload goods from vessel	Inward Container List, Cargo Manifest, Notification of Goods Transfer and Loading Containers, Discharged Report (Tally Sheet), Report of port use and services	Ship Agent, Customs Department (Computer System), Port Authority of Thailand
5. Declare goods to Customs	Invoice, Packing List, Import Declaration, Duty Payment Receipt	Importer, Customs Department (Computer System)
6. Arrange goods for inspection	Original and copy of bill of lading, Delivery Order, Request for Opening Goods Containers, Request for Release of Goods Containers from Customs' Custody, Wharf receipt, Payment receipt, Delivery Container Slip	Importer, Haulage, Ship Agent, Port Authority of Thailand

Annex 3. ***(continued)***

Import Processes	Related Documents	Stakeholders
7. Inspect and release goods	Wharf Receipt, Delivery Order, Request for Opening Goods Containers, Request for Release of Goods Containers from Customs' Custody, Request for Inspection, Customs' instruction of goods inspection, Delivery order (Kor Sor Kor 100), Container Slip/EIR for FCL containers or the Cargo Slip for LCL containers	Importer, Haulage, Customs Department
8. Payment process	Proforma Invoice, Commercial Invoice, Insurance Policy, Packing List, Health Certificate, Bill of Lading, Certificate of Origin, Original Letter of Credit (L/C)	Importer, Exporter, Importer's Bank, Exporter's Bank

Source: ARTNeT Working Paper 103.

Annex 4. UML Case Diagram of the export of electronics from China to Thailand



Source: ARTNeT Working Paper 88.

Annex 5

(a) Export time and its components (days)

(Time in days, and costs in USD/TEU)

Export from	Bangladesh (BL)		China (CH)		India (IN)		Japan (JP)		Nepal (NP)		Sri Lanka (SL)		Thailand (TH)	
Product	**Gar.[1]**	**Shrimp**	**Gar.[1]**	**Elec.[2]**	**C. Yarn[3]**	**Veg.[4]**	**A. Parts[5]**	**U. Cars[6]**	**V. Ghee[7] (for food)**	**V. Ghee[7] (for fuel)**	**Tea**	**R. Tyre[8]**	**A. Part[5]**	**Sug.[9]**
1. BUY process/other pre-shipment procedures[+]	**24.50[#] [2.00]**	**5.50**	**1.00**	**2.50**	**9.00**	**9.00**	**2.00**	**10.00**	**4.50**	**2.50**	**2.00**	**3.00**	**7.25**	**2.00**
2. Export time[++]														
(i) Document preparation	5.50	21.75	4.00	9.00	10.00	11.00	4.00	5.00	33.00	6.00	5.51	5.01	2.00	10.00
(ii) Inland carriage and handling	1.50	1.50	3.90	5.10	7.00	4.00	2.00	1.00	15.0* (0.5)	15.0* (1)	1.30	0.30	1.50	2.00
(iii) Inland customs	1.50	1.50	2.30	0.20	4.00	2.00	4.00	2.00	1.50	1.50	0.25	0.25	1.00	1.00
(iv) Terminal handling	5.00*	5.00	1.30	1.20	2.00*	2.00	4.00	1.00	4.00*	4.00*	2.00	1.70	3.25	2.00
Export time[+++]	**13.50**	**29.80**	**11.50**	**15.50**	**23.00**	**19.00**	**14.00**	**9.00**	**54(36)**	**27(9)**	**9.06**	**7.26**	**7.75**	**11.00**
3. PAY process/post-shipment procedures[+]	**4.00**	**3.50**	**15.00**	**1.00**	**8.00**	**5.00**	**3.00**	**1.00**			**7.00**	**7.00**	**38.00**	**2.00**
4. Total export process time[++++]	**42.00[#] [19.50]**	**36.75**	**27.50**	**19.00**	**40.00**	**32.00**	**19.00**	**20.00**	**(40.50)**	**(11.50)**	**18.06**	**17.26**	**53.00**	**15.00**
Export costs ($ per container)	**935.00**	**500.00**	**366.50**	**366.50**	**531.52**	**550.56**	**369.00**	**499.94**	**1 066.86**	**833.00**	**435.00**	**237.00**	**509.00**	**430.00**

Notes: 1. Garments. 2. Electronics. 3. Cotton Yarn. 4. Vegetables. 5. Auto parts. 6. Used cars. 7. Vegetable ghee. 8. Rubber tyres. 9. Sugar. * Terminal handling time at seaport estimated based either on that of other export products analysed in the study or on DBD data for that country, for the purpose of comparison across country and with DBD numbers; In the case of Nepal, number in parenthesis indicate time (days) for moving goods from factory to the border for overland export to India/China; # Includes 22.50 days for import of raw materials for production of garments (if we exclude it, the total pre-shipment time becomes just 2 days, and total time for export reduces to 19.50 days). ++ based on WB's DBD definition. +++ Sum of processes 2(i) to 2(iv). ++++ Sum of processes 1 to 3.

(b) Import time and its components (days)

(Time in days)

Import to / Product	Nepal (NP)	Bangladesh (BL)		Sri Lanka (SL)		China (CH)		India (IN)	Japan (JP)		Thailand (TH)
	Fabrics	C. Yarn and Fabrics	Sugar	U. Cars	Fabrics	A. Parts	Fabrics	R. Tyres	Tea	Fabrics	Electronics
1. BUY process/other pre-shipment procedures	**2.00**	**1.50**	**1.50**	**2.00**	**2.00**	**1.00**	**1.00**	**2.00**	**7.00**	**9.00**	**1.00**
2. Import Time											
(i) Document preparation	1.00	4.25	2.50	2.25	1.80	5.50	5.50	4.00	2.50	5.00	1.00
(ii) Customs	5*(2.25)	2.00	2.00	1.00	1.00	4.50	1.75	2.00	1.5(4.5**)	2.00	0.50
(iii) Terminal handling	4.00*(0)	4.00*(0)	4.00+	3.00+	3.00+	3.00+	3.00+	5.00	4.00	3.50	2.35
(iv) Inland transportation	10*(0.75)	0.75	2.00	0.10	0.25	1.50	1.50	2.00	1.00	1.00	0.25
Import time+++	**20.00**	**11.00**	**10.50**	**6.35**	**6.05**	**14.5**	**11.75**	**13.00**	**9.50**	**11.50**	**4.15**
3. PAY process/post-shipment procedures	**2.00**	**1.50**	**1.50**	**1.00**	**1.00**	**0.50**	**0.50**	**7.00**	**7.00**	**1.00**	**1.00**
4. Total import process time++++	**24.00**	**14.00**	**13.50**	**9.35**	**9.05**	**16.00**	**13.25**	**22.00**	**23.50**	**21.50**	**6.00**
Import Costs (United States dollars per container)	**(320)**	**(415)**			**677**	**403**		**359**	**410**		**300**

Notes: Abbreviations follow Annex 5(a) *Estimated number based on DBD data for that country, for the purpose of comparison across country and with DBD numbers. Numbers in ( ) indicate days or United States dollars for goods to go from importing country's land border to importer's warehouse. + based on DBD data. ** in case of inspection for special kinds of tea. +++ Sum of processes 2(i) to 2(iv). ++++ Sum of processes 1 to 3. In the case of Thailand, *vessel waiting time to enter berth* and *time for other terminal handling activities* as reported in the DBD were added to the terminal handling activity time reported in the ARTNeT study in an effort to make the data more comparable.

Annex 6. Timeliness data for selected import and export processes

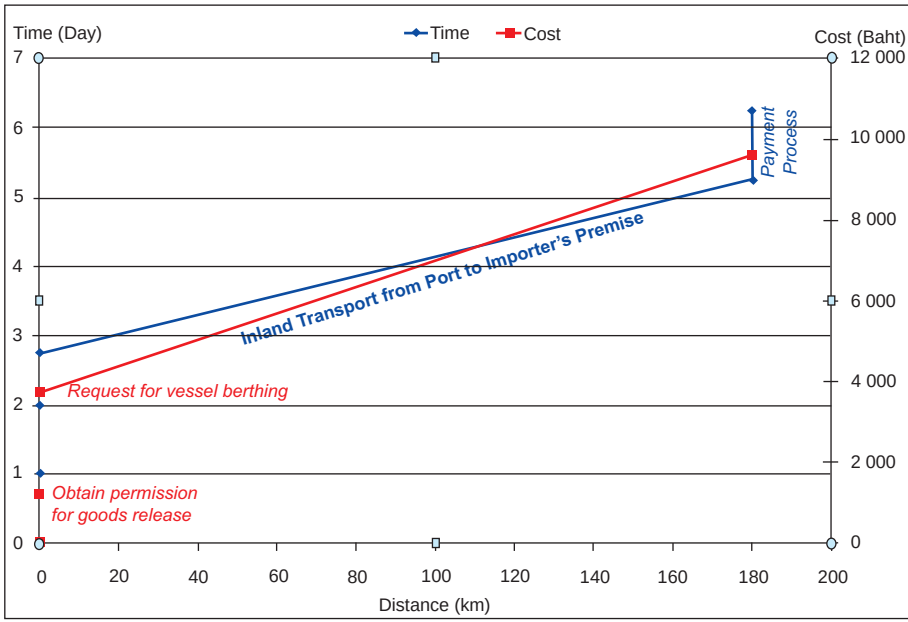
Process	Product	Exporter	Importer	Procedure	Time (min)	Time (max)	Time (avg.)	Max delay*
Export	**Garments**	**Bangladesh**	**India**	Documents preparation	6.5	15.5	11	41%
				Inland transportation	1	2	1.5	33%
				Inland Customs time	1.5	2.5	2	25%
				Terminal handling time	1	5	3	67%
				Total time	**10**	**25**	**17.5**	**43%**
Export	**Shrimp**	**Bangladesh**	**Japan**	Documents preparation	22	38.5	30.25	27%
				Inland transportation	1	2	1.5	33%
				Inland Customs time	1.5	2.5	2	25%
				Terminal handling time	1	5	3	67%
				Total time	**25.5**	**48**	**36.75**	**31%**
Import	**Fabrics**	**Bangladesh**	**India**	Documents preparation	4	9.5	6.75	41%
				Inland transportation	0.5	1	0.75	33%
				Inland Customs time	1.5	3.5	2.5	40%
				Terminal handling time*	0.5	3	3	0%
				Total time	**6**	**14**	**10**	**40%**
Import	**Sugar**	**Bangladesh**	**Thailand**	Documents preparation	3	7	5	40%
				Inland transportation	1	3	2	50%
				Inland Customs time	1.5	3.5	2.5	40%
				Terminal handling time*	2	4	3	33%
				Total time	**7.5**	**17.5**	**12.5**	**40%**
Export	**Yarn**	**India**	**Bangladesh**	Documents preparation	20	26	23	13%
				Inland transportation	5	7	6	17%
				Inland Customs time	1	3	2	50%
				Terminal handling time	1	1	1	0%
				Total time	**27**	**37**	**32**	**16%**
Export	**Vegetables**	**India**	**United**	Documents preparation	17	23	20	15%
			Arab	Inland transportation	2	2	2	0%
			Emirated	Inland Customs time	1	3	2	50%
				Terminal handling time	1	1	1	0%
				Total time	**21**	**29**	**25**	**16%**
Export	**Fruits**	**India**	**EU**	Documents preparation	17	25	21	19%
				Inland transportation	2	2	2	0%
				Inland Customs time	1	3	2	50%
				Terminal handling time	1	1	1	0%
				Total time	**21**	**31**	**26**	**19%**
Import	**Tyres**	**India**	**Sri Lanka**	Documents preparation	15	19	17	12%
				Inland transportation	1.8	2.2	2	10%
				Inland Customs time	1	1	1	0%
				Terminal handling time	1.4	2.6	2	30%
				Total time	**19.2**	**24.8**	**22**	**13%**

Source: ARTNeT Working Papers.

* Maximum delay is calculated as a percentage of average time, i.e. (maximum time – average time)/(average time).

Annex 7

Time/cost-distance chart of imports to Thailand of raw materials for producing electronic devices for China



Source: ARTNeT Working Paper 103.