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EXPORT SUPPLY CHAIN ANALYSIS FOR RICE AND SURGICAL INSTRUMENTS



CONNECTING PAKISTAN TO REGIONAL MARKETS



Surgical Instruments Manufacturers
Association of Pakistan



Rice Exporters Association of
Pakistan



Ministry of Commerce,
PITAD

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This study was carried out through the support of the EU funded TRTA II Programme implemented by UNIDO in association with ITC and WIPO



Export Supply Chain Analysis in Rice and Surgical Instruments

April 2016

Acknowledgments

This study was carried out on the request from Ministry of Commerce and in close collaboration with the Pakistan Institute for Trade and Development (PITAD), in association with SIMAP and REAP. This study was part of the Regional Trade initiative within the framework of the European Union funded Trade Related Technical Assistance Programme (TRTA II), implemented by the United Nations Industrial Development Organization (UNIDO) in cooperation with the International Trade Centre (ITC) and World Intellectual Property Organisation (WIPO).

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The study was supervised by Dr. Ali Abbas Qazilbash, Programme Officer in SPS and Accreditation at the TRTA II Programme, and facilitated by Badar ul Islam, Programme Officer in SMEs and Exports at the TRTA II Programme, Aurangzaib Khan, National Expert for Horticulture at the TRTA II Programme, Islamabad and Qaiser Wasique, Industrial National Expert in TRTA II Programme. Pakistan Institute of Trade and Development (PITAD) at the Ministry of Commerce participated in the consultative process during the selection phase when the industry sectors were decided.

The Trade Related Technical Assistance Programme acknowledges the support of the Rice Exporters Association of Pakistan (REAP) and the Surgical Instruments Manufacturers Association of Pakistan (SIMAP) to the study and their collaboration in collating data and information vital for the study.

TRTA II also acknowledges the contributions of Amir Rice Traders, Rhein Enterprises, Durable Hospital Supplies, and Skyways Freight Forwarders to this study and providing the necessary information about business processes of exporting rice and surgical instruments from Pakistan to the regional markets.

Last, the programme wishes to convey its gratitude to the rice exporters at REAP and the surgical instruments exporters at SIMAP for volunteering and taking part in the consultative process carried out during the selection of the ESCA candidate company.

Message from Rice Exporters Association of Pakistan



Falling just below textiles, rice is one of the biggest exports of Pakistan. At present, the country's rice exports account for 9 percent of the world trade in rice. Basmati, an aromatic variety of rice, is popular worldwide for its flavor. It is cultivated widely in Pakistan and its exports have traditionally accounted for 40 percent of the total rice exports of the country. Basmati exports are concentrated in the Middle East, Iran, North America and the UK, which are high price markets ready to pay a premium for high quality rice. During recent years, the exports of Basmati rice declined significantly due to shrinking international market demand¹ and competition from cheaper Indian Basmati rice². Exports to Iran and the Middle East in particular have dropped considerably, causing the total exports of the rice sector to plummet because these export markets are the major destinations of Basmati. According to Pakistani Basmati exporters, there is a large potential for exports growth to Iran and China, where rice is a staple food.

The Trade Related Technical Assistance (TRTA) program carried out an Export Supply Chain Analysis (ESCA) of Basmati Rice exports to Iran and China to map the as-is business processes involved in exporting Basmati to both countries and to identify any policy, regulatory, operational, time delays, or logistical bottlenecks which might be causing delays to getting the product to world markets. This report describes the findings of the ESCA and proposes recommendations to the Ministry of Commerce and the FBR to eliminate the identified bottlenecks, which will result in faster, and therefore increased exports of Basmati rice within the region.

We hope that the Ministry of Commerce and the Automation and Reforms Unit at the FBR will consider the recommendations of this Rice Export Supply Chain Analysis for making the rice export supply chain smoother and faster.

Chaudhry Muhammad Shafique
Chairman
Rice Exporters Association of Pakistan (REAP)

¹ The decline in demand by two major Basmati importers, Iran and the US, lead to the decrease in world Basmati exports

² In 2015, Basmati rice from Pakistan was priced at \$950 per ton whereas the Indian Basmati was priced at \$720 per ton.

Message from Surgical Instruments Manufacturers Association of Pakistan



Surgical instruments sector is a thriving SME export sector of Pakistan, which contributes 0.42 percent to the GDP of the country and employs 100,000-150,000 people. It also generates employment in the industries it is linked to, such as steel and chemicals industry. Over the past 5 years, the exports of the sector have experienced considerable growth, increasing from USD 221 million in 2010 to USD 337 million in 2015. However, the output of the sector is far below its maximum capacity and there is potential for further growth in exports, worldwide as well as within the region.

Pakistan's major global partners in this trade are USA and Germany whereas in the region India and China are two big markets for medical and surgical instruments. Unfortunately, a vast majority of the surgical instruments exporters from Pakistan find it less cumbersome to export to the EU and USA than in the region, owing mainly to the various NTBs in exporting surgical instruments to China and India. To facilitate the sector's export growth in these neighboring countries, TRTA has carried out an Export Supply Chain Analysis (ESCA) report which maps the business processes of exporting surgical instruments to China and India. The report aims to identify the bottlenecks, arising out of regulatory or logistical processes, which impede the export of surgical instruments in the region, with the aim of making recommendations for corrective action to the Ministry of Commerce and the Federal Bureau of Revenue.

The results of this study will be of relevance to and shared with the Pakistan Institute of Trade And Development (PITAD) at the Ministry of Commerce, Trade Development Authority of Pakistan, SMEDA, and Federal Bureau of Revenue Pakistan (FBR), through seminars and meetings scheduled to be held in April 2016.

Muhammad Ashraf Raza
Chairman
Surgical Instruments Manufacturers Association of Pakistan (SIMAP)

Preface

This study was conceived and carried out under the Regional Trade component of the Trade Related Technical Assistance II (TRTA II) programme, which aims to identify options to improve cross border mutual recognition and flow of goods from Pakistan. This also includes the means to recognize compliance assessment and other options to facilitate export, import, and transit trade.

This study analyzes the export supply chain of two dynamic sectors of Pakistan, namely rice and surgical instruments, which have the potential to grow their regional exports exponentially if an enabling business environment is provided. Basmati rice exports, which constitute 6 percent of the country's total exports, are declining. Iran and China are two of the world's biggest markets for rice which exporters from Pakistan can expand into to boost Basmati exports. Surgical instruments exports are far below the current capacity of the industry; exporters can explore the regional markets of India and China, which together constitute the world's most rapidly growing surgical instruments market, to increase their stagnant world market share and contribute to economic growth in the country.

To help benchmark the as-is export situation and identify the policy, operational, time and cost challenges in exporting rice and surgical instruments from Pakistan to the regional markets, an International Expert in Regional Trade Facilitation, Jan Tomczyk, proposed an Export Supply Chain Analysis method to plot the end-to-end export supply chain. This exercise should help identify the time delays, costs, number of paper documents, and perhaps logistical impediments, which are delaying getting Pakistani rice and surgical instruments to international markets. After plotting the as-is situation, this study suggests some of the solutions which the REAP, SIMAP and PITAD and perhaps Amir Rice Traders, Rhein Enterprises and Skyways Freight Forwarders can recommend to the Ministry of Commerce and the Federal Bureau of Revenue. It is believed their implementation would result in faster and therefore, increased Pakistani rice and surgical instruments exports to world markets.

Export Supply Chain Analysis:

RICE



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List of Acronyms

ANF: Anti-Narcotics Force
B/L: Bill of Lading
CAD: Cash Against Documents
CIF: Cost, Insurance and Freight
CRO: Container Release Order
FCILT: Fellow of the Chartered Institute of Logistics & Transport, UK
DPP: Department of Plant Protection
ESCA: Export Supply Chain Analysis
FBR: Federal Bureau of Revenue
FOB: Free on Board
FY: Fiscal Year
L/C: Letter of Credit
LPI: Logistics Performance Index
MNFSR: Ministry of National Food Security and Research
MT: Metric Tons
PCSIR: Pakistan Council of Scientific and Industrial Research
PITAD: Pakistan Institute of Trade And Development
PKR: Pakistani Rupee
REAP: Rice Exporters Association of Pakistan
SAFTA: South Asian Free Trade Area
SAPTA: South Asian Preferential Trade Area
SBP: State Bank of Pakistan
SPS: Sanitary and Phytosanitary
TBT: Technical Barriers to Trade
TDAP: Trade Development Authority of Pakistan
TRTA: Trade Related Technical Assistance
UNIDO: United Nations Industrial Development Organization
USD: United States Dollar
WeBOC: Web Based One Customs
WTO: World Trade Organization

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Executive Summary

The last five years have witnessed a considerable shrinkage in Pakistan's Basmati rice share in its traditional export markets, causing the export volume and earnings of Basmati to fall. Exporters from Pakistan are interested in exploring the regional markets to boost Basmati exports; Iran and China, two of the biggest global importers and consumers of rice, are potential regional markets for Basmati rice.

This Export Supply Chain Analysis (ESCA) maps the business processes, actors and documents involved in exporting Basmati rice from Pakistan to Iran and China; it identifies any policy, regulatory, or operational bottlenecks that create time delays along the export supply chain and proposes recommendations to the Ministry of Commerce and the Federal Bureau of Revenue (FBR) to alleviate these bottlenecks and reduce the time it takes to get Basmati rice to the market.

The Basmati rice export supply chain comprises of 13 core business processes and 14 different actors. It takes, on average, 16 business days for stakeholders to fulfill commercial and regulatory requirements of export business processes and get the Basmati rice from the exporter's warehouse to the shipping vessel en route to the port of discharge in the country of destination. The documentary requirements of exporting Basmati rice include a total of 16 documents, of which 8 documents require an official seal or stamp. Table 1 summarizes the findings of the Basmati rice ESCA:

Table 1: Results of the Basmati Rice Export Supply Chain Analysis

	AS-IS SITUATION FINDINGS	TO BE SCENARIO SOLUTIONS
Time to market	16 days	12 days
Arranging transport	1 hour	1 hour
Cargo insurance	1 day	1 day
Arranging goods declaration	30 minutes	30 minutes
Arranging empty container	10 hours	10 hours
Inspection	6 hours	6 hours
Transporting cargo to port	3 days	2 days
Phyto Certification	1 day	1 hour
Customs procedures	8 hours	4 hours
Cargo handling onto vessel	2 days	1 day
Prepare export support documents	1 day	30 minutes
Document numbers	16	7

This study proposes the following solutions and recommendations to get Basmati to the regional export markets faster:

Main solution

- Reducing time to market as a result of a combined effort to reduce the time it takes to get Basmati

Rice to market by 3 days: (i) reduce the time to get from the factory gate to port by 1 day; (ii) reduce seaport loading by 1 day; and (iii) reduce the time to get the phyto certificate from 1 day to 1 hour.

Other solutions

- Reducing the time to carry out Customs procedures – needs investment in facilities and detection and weighing equipment.
- Reducing the time it takes to prepare paper export support documents and the phyto certificate - needs investment in an electronic single window system (SWS)
- Reduce the time it takes to arrange insurance
- Eliminate the time delay it takes to find and deliver empty containers
- Increase seaport efficiency with the objective to reduce container handling times
- Better coordination between freight forwarders and shipping lines to reduce seaport container storage times and costs

Recommendations

- Get predictable export supply chains by combining Customs, Phyto and Insurance procedure changes with road, border crossing and seaport infrastructure investment
- Develop and implement trade facilitation, customs and logistics strategies in a “whole of Government” approach
- Train public sector staffs and managers in international good practice trade facilitation, customs and logistics
- Implement the articles of the World Trade Organization Trade Facilitation Agreement
- Develop and implement international logistics education and training
- Ensure free access to the Pakistan logistics and transport industries
- Harmonize the Pakistan Customs Law with the revised Kyoto Convention
- Develop and implement a Pakistan Basmati rice export marketing strategy
- Rice growers to develop and implement business plans
- Develop and plant new rice seed varieties and improved growing techniques

Benefits to rice growers and Pakistan

- Increased export volumes and improved yields and incomes

1. Introduction

Grown in the doabs³ between Rivers Ravi and Chenab in Punjab, Basmati rice is one of the most lucrative cash crops cultivated in Pakistan. Popular in North America, Europe and the Middle East for its aroma and flavor⁴, Basmati rice has traditionally accounted for almost six percent of the annual total export earnings of Pakistan. The last five years have witnessed a considerable shrinkage in Pakistan's Basmati rice share in its traditional export markets, the biggest of which are the UAE, Yemen, KSA, Oman, UK, Qatar, and Germany. Consequently, the export volume and earnings of Basmati have spiraled downwards, causing a major setback to an already negative Balance of Payments.

Exporters from Pakistan are interested in exploring the regional markets to boost Basmati exports. Iran and China, two of the biggest global importers and consumers of rice, are potential markets for Basmati rice. Iran has been a traditional buyer of Basmati rice from Pakistan but in the wake of the economic sanctions placed on Iran, the recent years have seen rice exports to Iran decline sharply. In 2009, Pakistan exported 3.1 million tons of rice to Iran, which fell to 0.6 million tons in 2014. Absence of a formal banking mechanism between Pakistan and Iran remains one of the biggest deterrents to trade with Iran. With the lifting of sanctions on Iran, exporters are optimistic that the embargo on banking will also be lifted soon, resulting in the exports picking up again. Rice exports to China rose considerably in 2012 but have suffered a blow in the recent years even though China's rice imports have grown exponentially in the past few years. According to the exporters, potential exists for the expansion of Basmati exports to China, which at the present is importing mainly from Thailand and Vietnam.

The Trade Related Technical Assistance (TRTA) program carried out an Export Supply Chain Analysis (ESCA) of Basmati Rice exports to Iran and China to map the business processes involved in exporting Basmati to both countries and to identify any policy, regulatory, operational, or logistical bottlenecks which might be causing delays in getting the product to regional markets. This report describes the findings of the ESCA and proposes recommendations to eliminate the identified bottlenecks. Section 2 presents an overview of the export position of Pakistani Basmati rice, section 3 describes the methodology employed to conduct the Export Supply Chain Analysis of Basmati rice, section 4 presents the findings of the study and section 5 concludes the report with recommendations.

³ Doab is a term used in India and Pakistan for the "tongue," or tract of land lying between two converging, or confluent, rivers.

⁴ Some of the most prominent brands of Basmati rice from Pakistan include Guard Rice, Falak Basmati Rice, HAS Basmati, Super Kernel, Ocean Pearl and Ideal Basmati.

2. Pakistan Basmati Rice Trade

2.1 Pakistan Basmati Rice export position in World Markets

Pakistan is the thirteenth largest annual global producer of rice paddy and the third largest global exporter of rice. The country's exports accounted for approximately 9 percent of world rice exports in 2014. Among all the types of rice traded, Basmati is the most popular variety of rice exported from Pakistan. It constitutes more than 40 percent of the total rice exports of the country and makes up 6 percent of the annual total exports. Subsequently, Pakistan is the second largest exporter of Basmati rice in the world and the bulk of its exports are sent to the Middle East, Europe, and North America.

Figure 1: Major rice exporters of the world

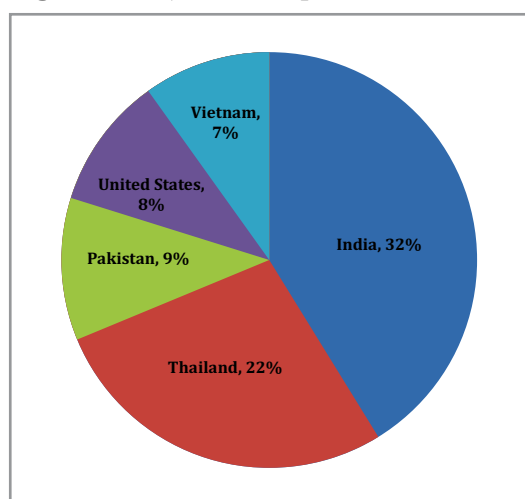
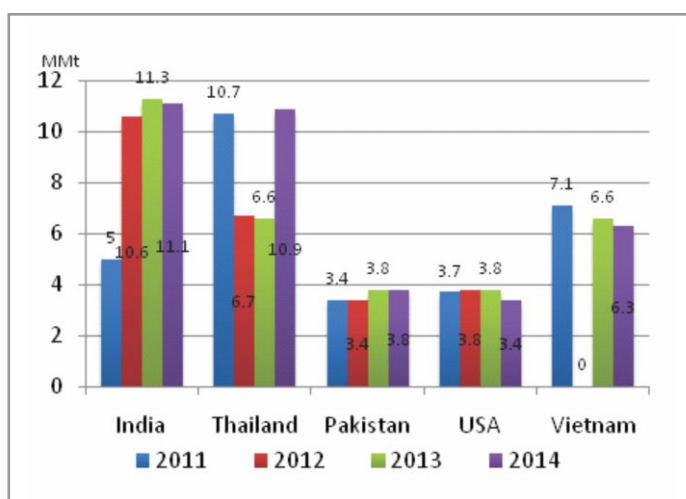


Figure 2: Export volumes of top 5 rice exporters of the world



Source: UN Comtrade Data

With an average annual production volume of more than 2 million tons, Pakistan is the largest producer of Basmati rice in the world. Grown in the fertile doabs of Punjab, Basmati rice has historically been known as the food of the emperors for its quality and flavor. Its long and aromatic grain, which is succulent in flavor, elongates upon cooking. It is indigenous to the South Asian Sub-continent and can only be grown in the plains of India and Pakistan. Therefore, Pakistan has a comparative advantage in the production of Basmati rice, making it an advantageous crop for the country's exports.

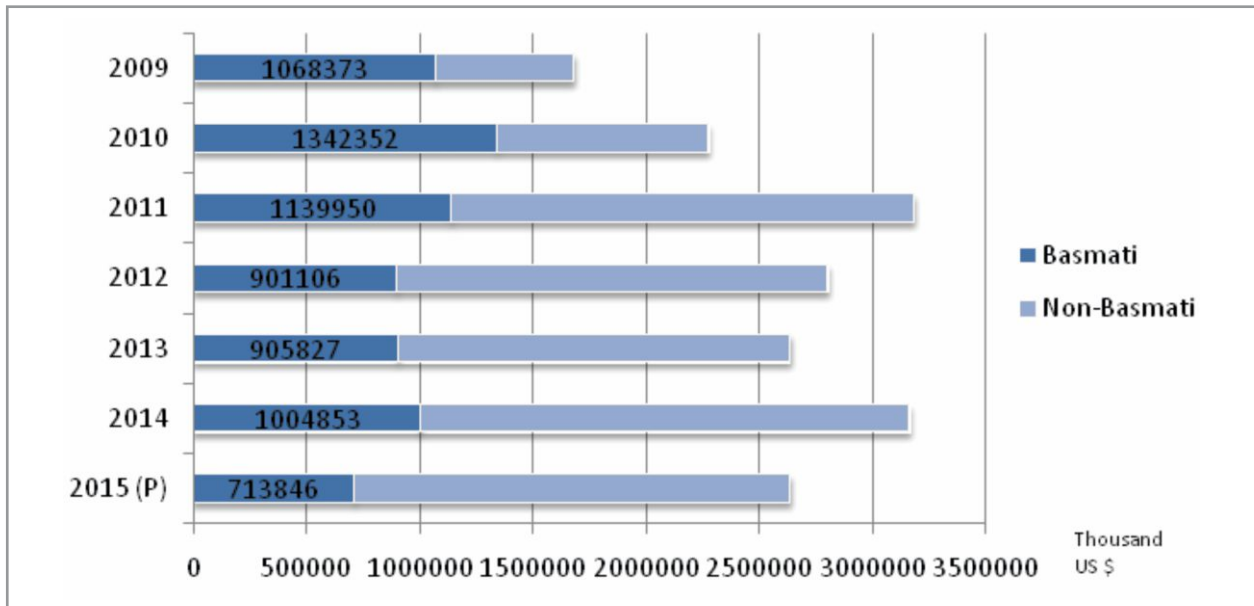
The last five years have registered a substantial decrease in the basmati exports growth and export earnings of Pakistan. In 2011, Pakistan exported 1.1 million tons of Basmati to the world, which dropped to 0.7⁵ million tons in 2015. Between 2014 and 2015 alone, the quantity of Basmati rice exported from Pakistan registered a decline of 22.5 percent. However, due to the favorable prices of Basmati rice, its exported value decreased by 18.5 percent. On the other hand, the export quantity of non-Basmati brand of rice witnessed a growth of 7.1 percent, but due to low prices its earnings grew by 1.0 percent.

This downward trend in Basmati rice exports from Pakistan can be best explained by the shrinking demand for Basmati rice in the international market and competition from cheaper Indian Basmati rice. In 2011, the Indian government removed the ban on the exports of rice, which was previously in place to ensure domestic food security. Since then, Indian exports have rivaled exports from Pakistan in

⁵ 676,630 tons

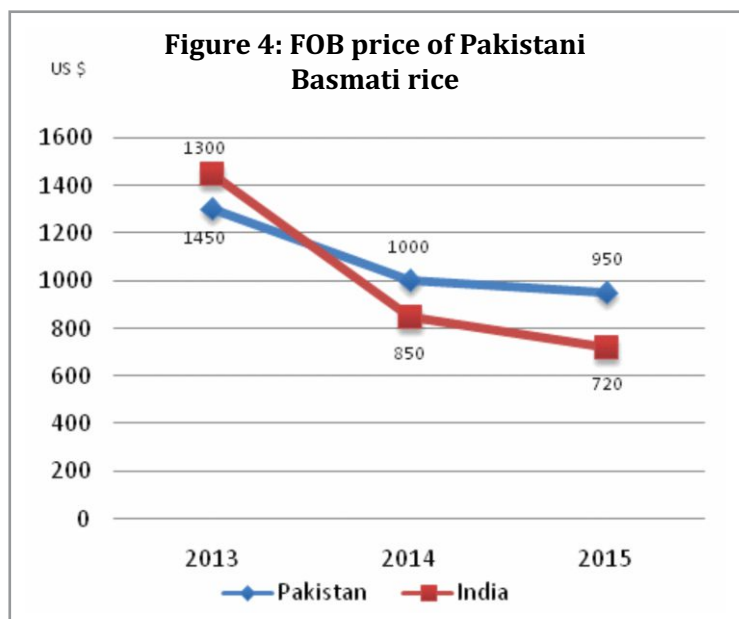
major rice importing markets, especially in Saudi Arabia, Kuwait, Iran, and USA- the top rice importers of the world- and claimed significant market shares in these countries.

Figure 3: Pakistan’s rice export earnings 2009 - 2015 (State Bank of Pakistan)



During this time, as a result of the decrease in Basmati imports by Iran and the US, the world trade in Basmati rice was also declining. The Basmati export industry in Pakistan and India incurred a loss of around 30 percent during the financial year 2014-15 after similar loss witnessed in the previous year. In the face of declining demand, Indian exporters responded by slashing their prices, which eventually lead to a 50 percent increase in their export volumes and a higher share of the world market.

Exporters in Pakistan could not keep up with the prices offered by the Indian exporters, mainly due to the high input costs at the farmers' end. In 2013-14, the price of Pakistani basmati rice stood at \$1,300 per ton in the international market, but it dropped to \$1,000 next year. However, prices of Indian rice fell more sharply than Pakistan's. In 2013-14, the Indian rice was \$150 more expensive than the Pakistani rice, but next year, it became \$100-150 cheaper than Pakistani rice, priced at \$900-\$850. Even though the volume of Basmati exported by Pakistan increased, it did not increase exponentially, and the total earnings from Basmati exports fell by 14 percent between 2013-14 and 2014-15 . In 2015-2016, Pakistan's various varieties of basmati rice were quoted at \$950 to 1,100/ton in the international market, while Indian varieties of basmati rice were priced at around \$720 to \$850/ton.



The price of Basmati is dependent on three key variables:

- i) Cost of production: Competitiveness at the farm level, cost of inputs, cost of processing and milling
- ii) Competitiveness of the exports supply chain: cost of logistics, in land transportation, fumigation and inspection, sample testing, customs clearance and freight
- iii) Incentives offered by the government (or lack thereof).

Basmati exporters in Pakistan experience high costs at each step of the supply chain, from farm to processing and transportation. Farming of old variety of seeds, with low yields⁶ and susceptibility to disease, and increased cost of fertilizers and pesticides add to the cost of Basmati. Farmers are currently using four varieties of Basmati seed, namely PK 1121, PK 386, PK 515, and super basmati. 1121 is an Indian variety of basmati being cultivated on a massive scale in Pakistan. However, reusing the same variety of seeds leads to lower resistance over time. Due to the lack of innovation by the Rice Research Institute of Pakistan, no new seed varieties have been developed by Pakistan to maintain resistance against bacterial attacks that lead to low yields. Moreover, due to a lack of government regulation in the fertilizer market, farmers are faced with high urea prices due to widespread hoarding.

In the absence of incentive schemes, regulation and subsidies by the government, the exporters cannot match the prices being offered by Indian exporters who are benefitting from rice export support prices and government subsidies in rice farming, which apply mainly to the electricity used for tube wells and the price of urea. As shown in Figure B in the Appendix, according to the World Bank Logistics Performance Index (LPI), Pakistan falls below India, Vietnam, and Thailand on the logistics competence⁷ and international shipments⁸ indicators. This means that Pakistan lags far behind its competitors in the ease of arranging competitively priced shipments for export and the quality of logistics services available.

In Pakistan, road transport is the only mode of transportation of rice from a miller to a port of exit. The Pakistan Railways, once much cheaper and effective, has lost its competitiveness to road transport, and now handles only six per cent of the freight traffic. The cost of imported fuel for road transportation determines the cost of inland transportation. Based on data collected from the exporters and freight forwarders, the cost of inland transportation of a 20-foot container, from Gujranwala to the Karachi Port, is on average PKR 1100 per ton. If the freight forwarder arranges inland haulage, the cost of transporting cargo to Karachi Port amounts to PKR 38,000. The ocean freight cost for a 20-foot container to Qingdao Port in China is USD 150, which amounts to approximately PKR 15,700 at the current exchange rate. The cost of sea freight for a 20-foot container to Bandar Abbas Port in Iran is USD 325, which translates to roughly PKR 34,000⁹. Terminal handling charge at the Karachi Port is estimated at PKR 300 per ton. For a 20-foot container that is not examined by the Customs or ANF, it adds up to PKR 4000. For a container that is examined, the terminal handling charges by the Port Authority can amount up to PKR 12,000 for one 20-foot container.

The cost of inspection varies. The phytosanitary inspection is done by the Department of Plant Protection, which charges PKR 220 per ton. Accredited international labs like Euro Fins carry out the

⁶ India's rice paddy yield hovers at 3008 kg per hectare. In the US, the average yield per hectare is around 7000 kg (India Together, 2015). In Pakistan this stands at 2117 kg per hectare.

⁷ 'Logistics competence' is defined as the competence and quality of logistics.

⁸ 'International shipments' is defined as the ease of arranging competitively priced shipments.

⁹ Current exchange rate USD 1= PKR 104.72

¹⁰ Testing from Euro Finns is required by the USA

pesticide testing usually, which charges between PKR 40,000-50,000¹⁰ depending on the coverage of the analysis. Rice to be exported is also subject to fumigation. The fumigation for a 20-foot container is charged at PKR 1500 with Aluminium Phosphide tablets for the first container and PKR 600 for the second container. Fumigation using Methyl Bromide gas can range between PKR 2500-10000. The cost of administering transport and regulatory requirements inclusive of completing customs formalities and processing other paper work is estimated at 3500 per transaction.

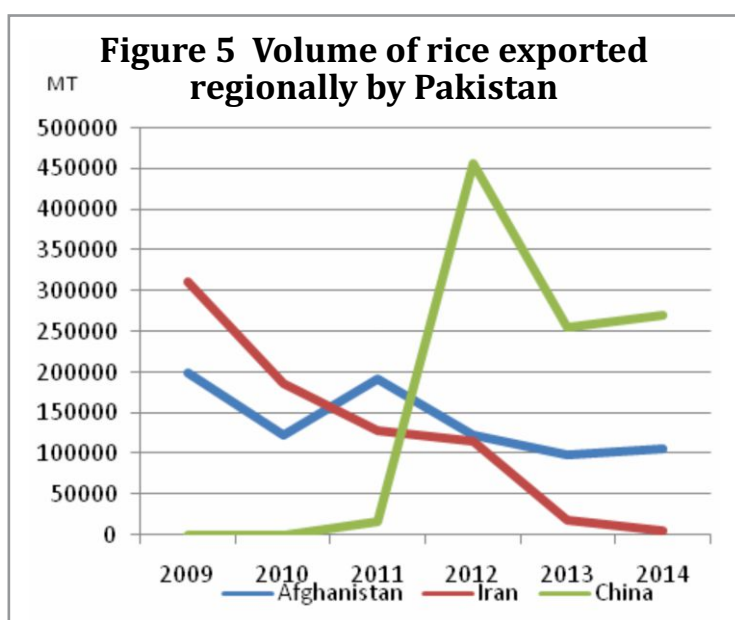
2.2 Exploring potential for Basmati Rice exports growth in the region

Iran and China, two of the countries with which Pakistan shares a border, are among the top five rice importing countries of the world. Simultaneously, Pakistan is the third biggest global rice exporter. This presents Pakistan with an ideal scenario of demand and supply and a comparative advantage in the production and export of high quality Basmati rice, which the country can exploit to capture the wide market in both countries.

Table 2: Major rice importers of the world in 2015

	Country	Value in Thousand USD
1	China	4,700
2	Nigeria	3,000
3	Philippines	1,800
4	Iran	1,600
5	Indonesia	1,600
6	Saudi Arabia	1,550
7	European Union	1,500
8	Iraq	1,200
9	Senegal	1,100
10	Malaysia	1,000

The volume of rice exported within the region has registered a downward trend in recent years. Exports to Iran and China have dropped significantly in the past two years, causing the total exports of the rice sector to plummet, since exports to these countries had formed a major part of the aggregate. Iran has traditionally been a major market for rice from Pakistan. In 2009, Pakistan exported 3.1 million tons of rice to Iran. The volume of rice exported decreased in the years to come, falling to 0.6 million tons in 2014¹¹. The overtime decrease in rice exports to Iran can partially be attributed to the sanctions on trading with Iran.



¹¹ Table of Volume of rice exported in the region by Pakistan is attached in the Appendix

For the last two decades, Iran has suffered from strict economic sanctions, imposed on it by the United States and the United Nations Security Council, in an attempt to dissuade Iran from pursuing an aggressive atomic energy program. In April 2015, the P5+1 and Iran meeting in Switzerland reached a provisional agreement on a framework that, once finalized and implemented would lift most of the sanctions in exchange for limits on Iran's nuclear programs, extending for at least ten years. As a result, UN sanctions were lifted on 16 January 2016. At present, there is still a bottleneck to contend with as the international ban on money transfers to Iran is still in place. With Indian exporters having access to a paper banking mechanism, more and more Basmati imports of Iran are shifting to India. Once this ban is lifted, and the possibility of a freer and more open trade regime with Iran becomes a reality, the Basmati exporters in Pakistan are optimistic that their exports will soar. However, to stay competitive and achieve this end, rice exporters from Pakistan will have to ensure the competitiveness of Basmati.

Rice exports from Pakistan to China have risen considerably over the past few years. China remains the world's largest rice producer and consumer. It has been largely self-sufficient in rice for more than 30 years and until recently was typically a net rice exporter. In 2012, China surpassed Nigeria to become the world's largest rice importer. Vietnam and Burma are the largest suppliers of rice to China, along with Pakistan and Thailand. According to the exporters, there is potential to export 600,000 to 700,000 tons of rice to China each year. There is no technical barrier to trading rice with China and through aggressive marketing and branding and business-to-business interaction between traders from both countries, Basmati exports from Pakistan can wedge their way into the huge Chinese market.

Table 3: Value of rice exported in the region by Pakistan¹²

Importing Country	Value in Thousand US Dollars					
	2009	2010	2011	2012	2013	2014
Afghanistan	106,386	70,819	135,438	96,463	72,550	43,541
Iran	198,795	123,250	74,994	68,755	14,724	5,810
China	427	896	8,336	207,117	101,917	109,445

¹² For HS Code 100630 Semi-milled or wholly milled rice

3. Methodology and Scope

The Export Supply Chain Analysis (ESCA) of Basmati rice exports was carried out in 2015 as part of the Regional Trade facilitation component of the Trade Related Technical Assistance II programme. The purpose of this ESCA is to map the as-is business processes of exporting Basmati from Pakistan to its neighboring countries, in order to examine the time and cost effectiveness of these processes and propose solutions and recommendations where export supply chain can be made more competitive and efficient resulting in time and cost reduction for the importer. The output of the ESCA will inform the trade policy measures aimed at creating an enabling environment for the export growth of high quality Basmati rice in the region. This report will map the export design for:

- i) Basmati export to Iran via Dubai by maritime freight
- ii) Basmati export to China by maritime freight

The following four varieties of Basmati are exported from Pakistan:

1. Super Basmati organic brown rice
2. Brown Basmati rice
3. Super Basmati parboiled rice
4. Super Basmati white rice

Of these four categories, this study reports the as-is business processes for the Super Basmati parboiled rice and Super Basmati white rice.

The Export Supply Chain Analysis was carried out over a period of three months. During this time, four visits were made to the rice mills of the ESCA candidate located in tehsil Kamunki in the district of Gujranwala. Gujranwala is the hub of businesses that are exporting several types of rice to North America, Europe, Middle East and South Asia. During these visits, three rice mills and a packaging unit was visited. Over the course of these visits, the National Expert in Regional Trade and the National Expert in Horticulture observed and noted the business processes as they were being carried out and conducted focus groups with the exports team, accounts team, and the freight forwarding team to understand the core business processes of Basmati export. Semi-structured interviews were conducted with the International Marketing Manager, Exports Manager, and the Freight Forwarder of the ESCA candidate to understand the documentary and regulatory requirements of exporting and importing Basmati rice. These processes are depicted as flow charts in the report and explained in tables following the flow charts. The information about costs and time was obtained by conducting structured interviews with the freight forwarders.

By using a BUY-SHIP-PAY model, this study divides the core business processes of exporting Basmati to Iran and China into three operational areas and maps the supply chain through diagrams denoting functions and actors. It captures the documentary, regulatory, logistical, and financial requirements of each stage in the export supply chain, alongside a time-procedure study of each process. The result is a standardized document that maps the Basmati exports supply chain along with time-cost, facilitating the following interventions:

1. Allow the Ministry of Commerce, Ministry of National Food Security & Research (Department of Plant Protection) and the Customs House to revise redundant procedures that lead to time delays and cost escalation.
2. Provide a standardized, step-by-step map of the Basmati export business process to the PRAL

to facilitate the design of an electronic single window system (E-SWS) entry at BCPs for rice which will allow exporters to complete the documentary requirements of exporting rice on an online portal and save time.

3. Deliver a comprehensive study of core business processes to the exporters with a time-procedure analysis and a blueprint of the export supply chain design to facilitate modification in processes to enhance efficiency at the firm level.

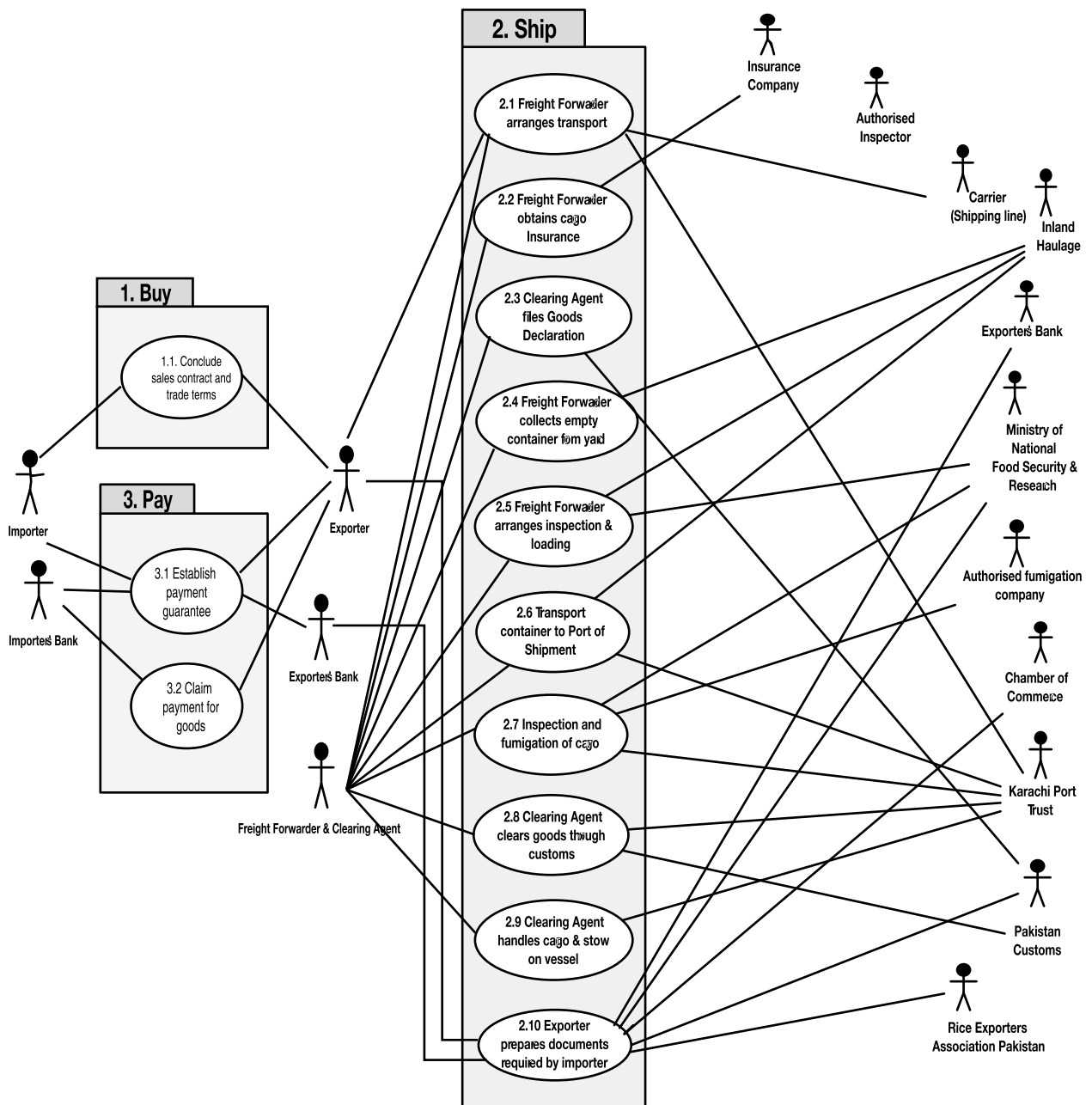
The analysis of Basmati rice export is based on the following assumptions:

1. Basmati rice is exported from Pakistan to Iran and China under uniform regulatory requirements for both countries.
2. The buyer does not add a separate clause for insurance in the Letter of Credit.
3. The rice is tested for Aflatoxin before it is packaged for export. Hence, Aflatoxin certification is not added as a core business process for the trade supply chain of Basmati as it does not fall under the BUY-SHIP-PAY categorization. The exporter shows the Aflatoxin certificate to the Department of Plant Protection to obtain a Phyto Certificate.
4. Basmati rice is shipped via maritime freight. The inland transportation is outsourced to the freight forwarding company and inland haulage.
5. The carrier delivers an empty container to exporter's premise for loading and brings the loaded container back to the container yard before loading it onto the vessel.
6. Basmati rice is delivered under the C.I.F. term where an exporter arranges and absorbs the costs of shipping basmati rice to the port of destination.
7. The payment for the purchased basmati rice is made by a Letter of Credit.
8. The clearing agent is a part of the freight forwarder's team but is listed as a separate actor in the ESCA due to the specialized nature of the tasks carried out by the clearing agent.

It is important to note that no export permit is required to export rice from Pakistan. The exporters are required to register with the Rice Exporters Association of Pakistan (REAP), without which they cannot export. However, it is not listed as a core business process because registration is a one-time process and once registered, the exporter becomes a member of the association and the membership is renewed annually by the payment of a membership fee. The exporters are given a REAP membership certificate, along with a membership number, which they use at the time of the export. Registration with REAP takes 1 day but the certificate of registration is issued after approval by the REAP Managing Committee.

Figure 6 presents a use case diagram indicating all the actors involved in the Basmati export supply chain. There are 14 different actors and stakeholders carrying out the 13 core business processes in the Basmati export supply chain, aside from the importer and the exporter.

Figure 6 Use Case diagram of Export Supply Chain Analysis in Basmati Rice Export from Pakistan



4. Core business processes of exporting Basmati Rice

Table 4 categorizes the Basmati export supply chain processes under three operational areas: buy, ship, and pay. The Basmati export supply chain comprises of 13 core business processes; Buy process area has 1 core business process, Ship process area has 10 core business processes and Pay process area has 2 core business processes.

Table4: Core Business Processes and Agencies in Basmati Rice Export from Pakistan

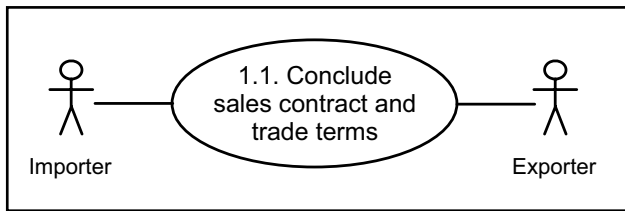
Core business process	Party											
	FREIGHT FORWARDER	INLAND HAULAGE	INSURANCE COMPANY	FUMIGATION COMPANY	CARRIER (SHIPPING LINE)	IMPORTER'S BANK	EXPORTER'S BANK	MNFSR DPP	CHAMBER OF COMMERCE	PORT OF SHIPMENT	PAKISTAN CUSTOMS	REAP
1. Buy												
1.1. Conclude sales contract and trade terms						X	X					
2. Ship												
2.1. Freight Forwarder arranges transport	X	X			X					X		
2.2. Freight Forwarder obtains cargo insurance	X		X									
2.3. Clearing Agent files Goods Declaration											X	
2.4. Collect empty container from yard		X			X							
2.5. Freight Forwarder arranges inspection & fumigation and stuffs container		X		X				X				
2.6. Transport container to Port of Shipment		X			X			X		X		
2.7. Inspection and fumigation of cargo				X				X		X		
2.8. Clearing Agent clears goods through customs										X	X	
2.9. Clearing Agent handles cargo and stow on vessel										X		
2.10. Exporter prepares documents required by importer								X	X	X	X	X
3. Pay												
3.1. Establish payment guarantee								X				
3.2. Claim payment for goods								X				

The processes listed above are denoted using activity diagrams and use case diagrams in the following sections of the report. A use case diagram highlights the participants linked to a process area, responsible for carrying out that activity. An activity diagram is a flow chart that highlights the criteria to begin and end a business process, activities and associated documentary requirements, and the participants performing each activity. The diagrams have been drafted using the Universal Modeling Language (UML). A legend of the UML is attached in the Appendix to the report.

4.1 Process Area 1: Buy

Core Business process area 1.1 'Conclude sales contract and trade terms'

Figure 7 Use Case Diagram '1.1 Conclude sales contract and trade terms'



'Conclude sales contract and trade terms' is the only core business process under "Buy" process area. It requires participation from:

- Importer
- Exporter

Figure 8 Activity Diagram '1.1 Conclude sales contract and trade terms'

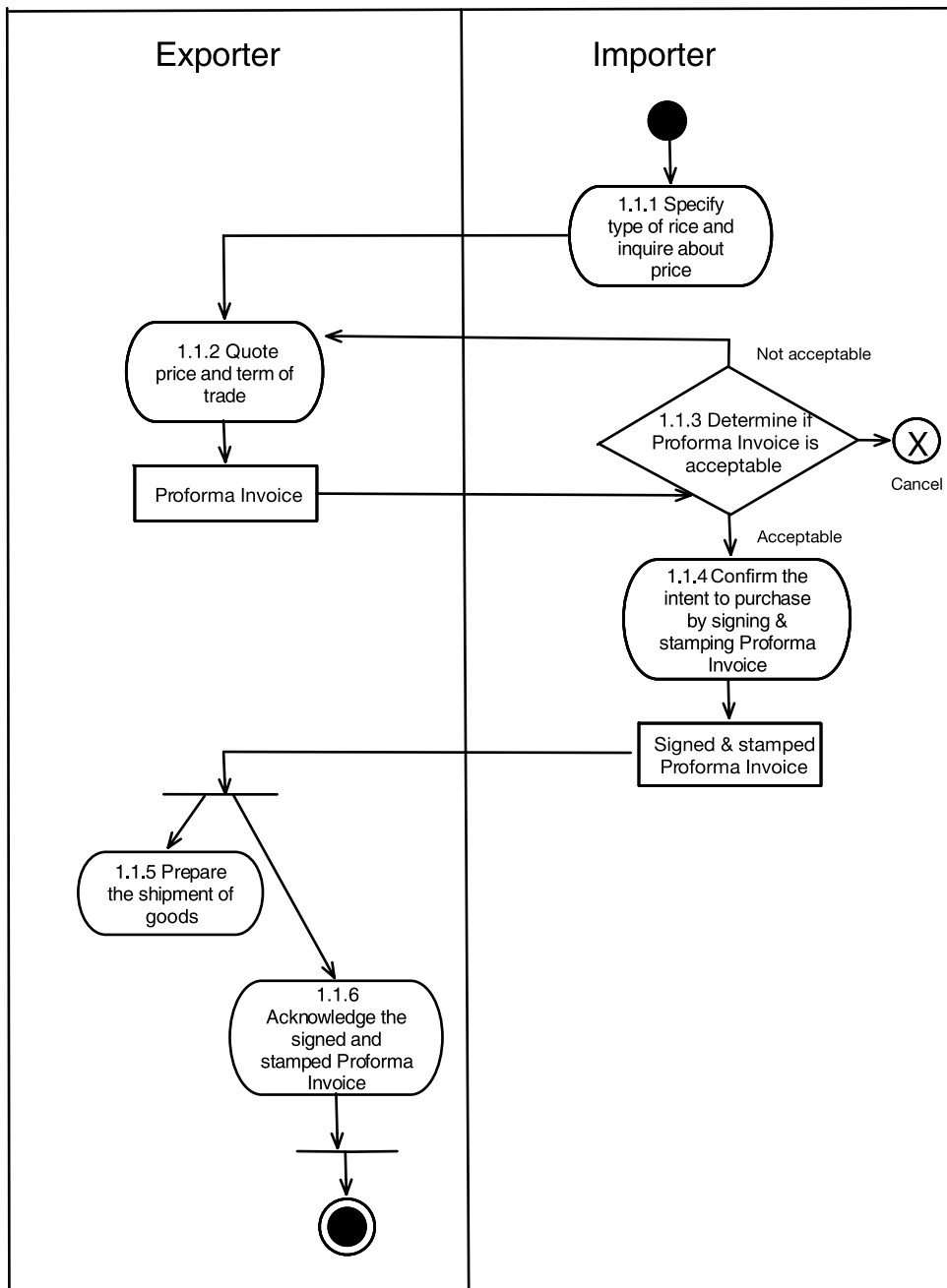
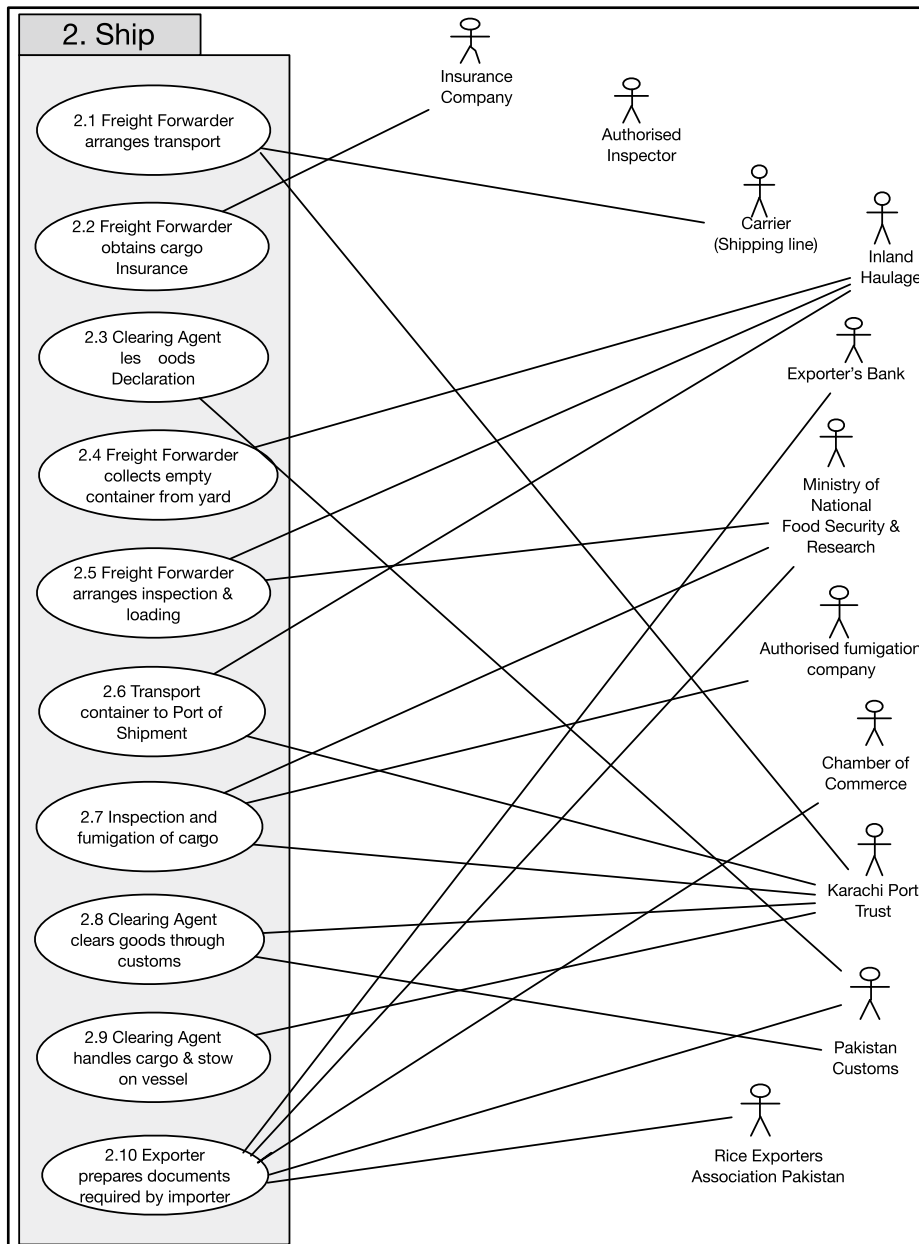


Table 5: Description of Process Area'1.1 Conclude sales contract and trade terms'

Name of a process area	1. Buy
Name of the business process	1.1 Conclude sales contract and trade terms
Related laws, rules and regulations	<ul style="list-style-type: none"> • In order to export Basmati to Iran, the exporter has to ensure that his mill meets certain standards set by the Government of Iran. As a pre-requisite to establishing a contract of import, the importer has to send a team of authorized private inspectors to the exporter's mill for the inspection of hygiene conditions and rice milling and polishing process. The standards set by the Government of Iran are very stringent and the inspection team demands complete compliance. Once the inspection team qualifies the mill as meeting the quality criteria, only then can the sales contract be established. • The Basmati rice is tested for Aflatoxin.
Process participant	<ul style="list-style-type: none"> • Importer • Exporter
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Exporter has registered itself with the Rice Exporters Association of Pakistan (REAP)
Activities and associated documentary requirements	<p>1.1.1 Importer makes an inquiry for the cost of a particular type of Basmati rice.</p> <p>1.1.2 Exporter prepares Proforma Invoice to inform importer about quoted price and sales terms. It takes 30 minutes.</p> <p>1.1.3 Importer reviews the Proforma Invoice and determines if the quoted price and sales terms are acceptable. If the quoted price and sales terms are not acceptable, importer requests exporter to revise them.</p> <p>1.1.4 If the quoted price and sales terms are acceptable, importer confirms exporter the purchase of goods by signing and stamping the Proforma Invoice and sending it back the next day.</p> <p>1.1.5 Exporter prepares the delivery of goods accordingly.</p> <p>1.1.6 Exporter acknowledges the receipt of signed and stamped Proforma Invoice.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Importer and exporter have concluded trade contract and terms.
Average time required to complete this business process	<ul style="list-style-type: none"> • 1 day

4.2 Process Area 2: Ship

Figure 9 Use Case Diagram '2. Ship'

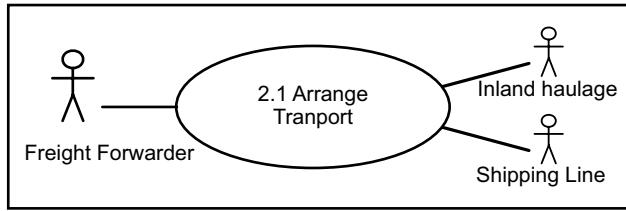


The shipping of Basmati Rice from Pakistan consists of 10 core business processes, as shown in Figure 9. These processes involve the procurement of the container and transportation for cargo movement, completion of customs formalities for export, and the fulfillment of documentary requirements for the export of Basmati rice from Pakistan and the import of Basmati rice in Iran and China.

The exporter outsources the shipping processes to a freight forwarder and a clearing agent. Freight forwarders usually have a clearing agent in their team. The freight forwarder is entrusted with the insurance and movement of cargo from Kamunki Gujranwala to the port of departure, the Karachi Port Trust. The Clearing Agent files the Goods Declaration, carries out customs clearance of cargo, and oversees stow on vessel.

Core Business Process Area 2.1 'Freight Forwarder arranges transport'

Figure 10 Use Case Diagram '2.1 Freight Forwarder arranges transport'



The use case diagram in Figure 10 indicates that the following participants are involved in the process area 'Arrange transport':

- Freight forwarder
- Inland haulage
- Shipping Line

Figure 11 Activity Diagram '2.1 Freight Forwarder arranges transport'

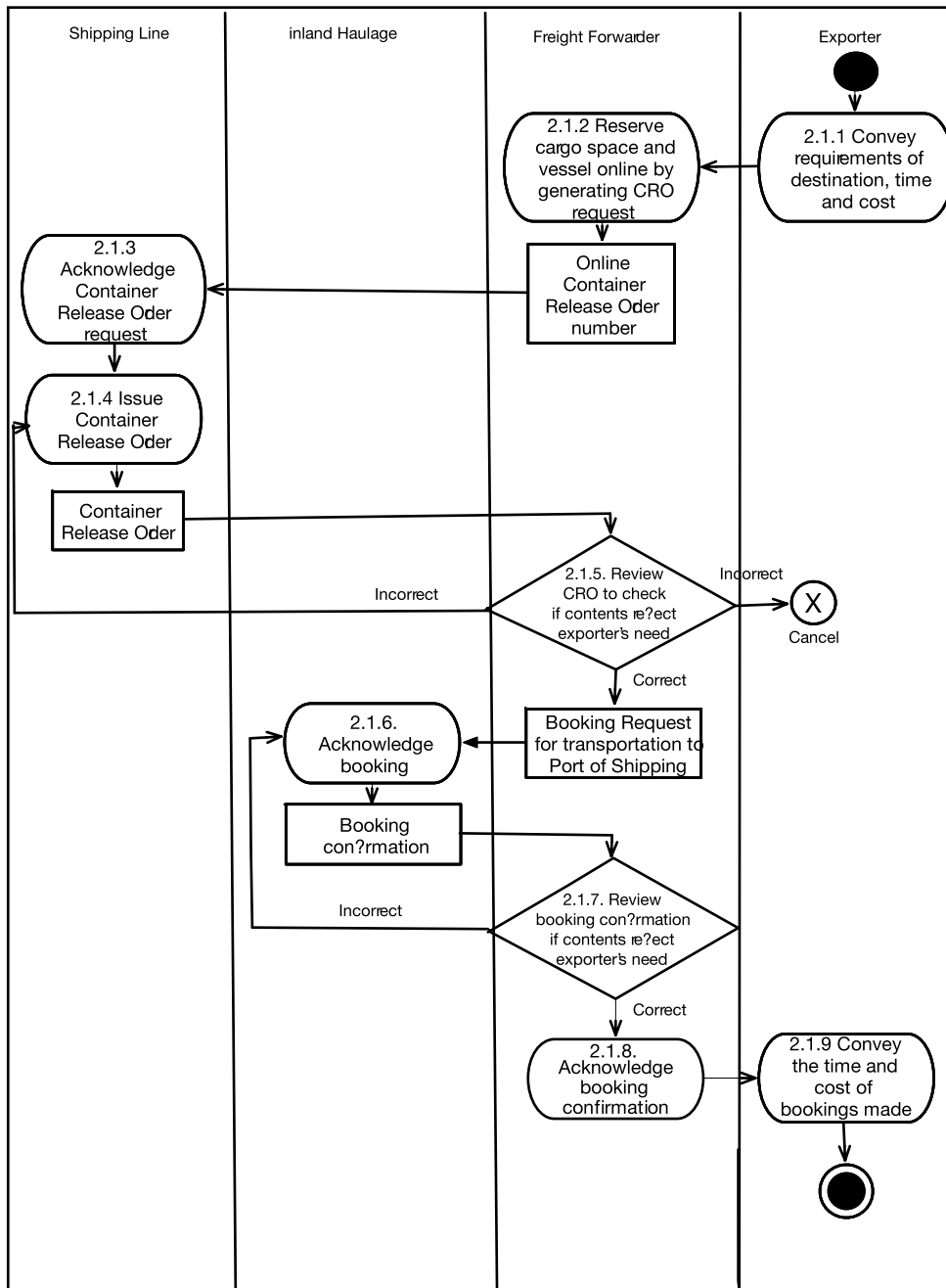


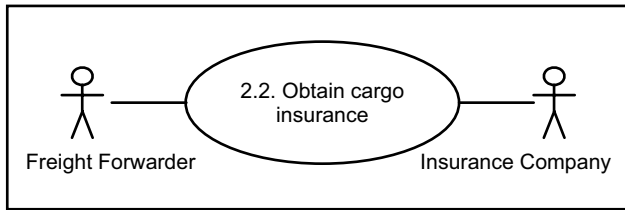
Table 6: Description of Process Area '2.1 Freight forwarder arranges transport'

Name of a process area	2. Ship
Name of the business process	2.1 Freight forwarder arranges transport
Related laws, rules and regulations	INCOTERMS 2000
Process participant	<ul style="list-style-type: none"> • Freight forwarder • Shipping line • Inland haulage
Input and criteria to enter/begin the business process	The exporter and importer have agreed upon CIF terms of trade, which entails that the delivery of purchased Basmati rice to the Port of Discharge is the exporter's responsibility.
Activities and associated documentary requirements	<p>2.1.1 Exporter contacts freight forwarder to reserve cargo space and vessel for a specified destination, date, cost and transit time. The freight forwarder, after checking the rates for different shipping lines that meet the criteria, informs the exporter of the rates of each line. The exporter decides which line suits him best and asks the freight forwarder to book it. The number of containers required is conveyed to the freight forwarder.</p> <p>2.1.2 Freight forwarder generates an online Container Release Order (CRO) request on the website of the shipping line. Once the request is submitted, the system generates a CRO number. The Freight Forwarder emails the CRO number to the designated agent of the shipping line.</p> <p>2.1.3 The shipping line agent acknowledges the Container Release Order request.</p> <p>2.1.4 The shipping line issues the Container Release Order. The Container Release Order contains information about the exporter, the freight forwarder, and the transporter of cargo to be used by the Port Authority at the time of container gate-in. It also mentions the country of destination, number of containers booked, the rate for each container, terminal of loading, Port of Shipment, Port of Discharge, and vessel berth day and time. The CRO is alternately used as the loading program at the Port of Shipment.</p> <p>2.1.5 Freight Forwarder reviews the CRO and determines if its contents reflect what exporter needs. If the contents do not reflect the exporter's needs accurately, the freight forwarder asks the shipping line to revise it. If the CRO matches the exporter's requirements, the freight forwarder schedules the pick-up of empty container from container yard, delivery of that container to the warehouse of the exporter, and the transportation of that container to the Port of Shipment.</p> <p>2.1.6 Inland haulage acknowledges the booking request by returning a booking confirmation to the freight forwarder. The cost of transportation of one 20 foot container, which contains around 25-26 tons of rice, is estimated at PKR 39000.</p>

	<p>2.1.7 Freight forwarder reviews the booking confirmation for accuracy. If it does not meet the exporter's needs, the freight forwarder asks inland haulage to revise the terms of the booking.</p> <p>2.1.8 Freight forwarder acknowledges the receipt of the correct booking confirmation.</p> <p>2.1.9 Freight forwarder conveys the receipt of booking confirmation to the exporter.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Transportation required to move Basmati rice to the Port of Shipment and to the specified Port of Discharge in Iran/China has been arranged.
Average time required to complete this business process	1 hour

Core Business Process Area 2.2 'Freight Forwarder obtains cargo insurance'

Figure 12 Use Case Diagram '2.2 Freight forwarder obtains Cargo Insurance'



The use case diagram in Figure 12 indicates that the following participants are involved in the process area 'Freight Forwarder obtains cargo insurance':

- Freight forwarder
- Insurance company

Figure 13 Activity Diagram '2.2 Freight Forwarder obtains Cargo Insurance'

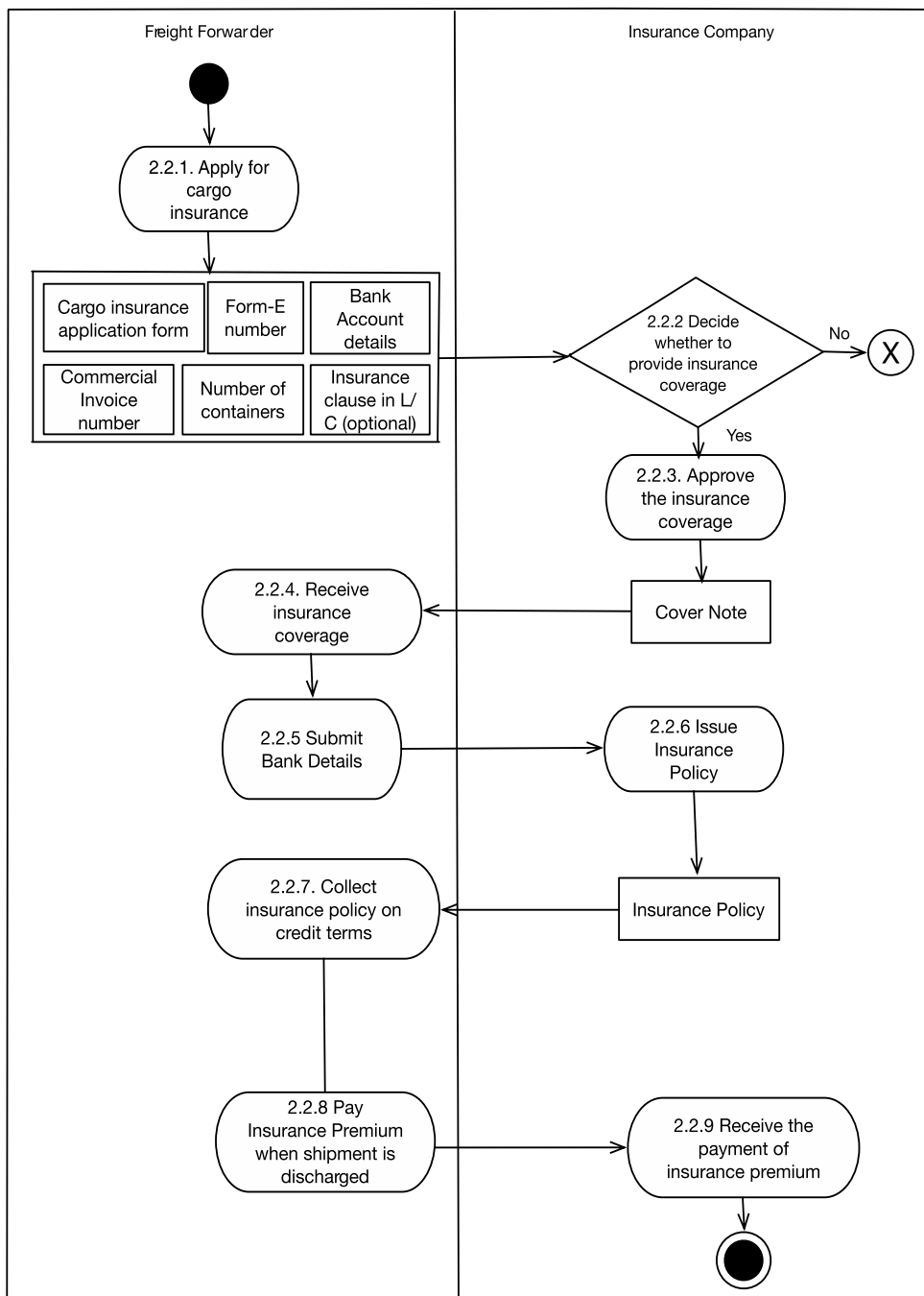
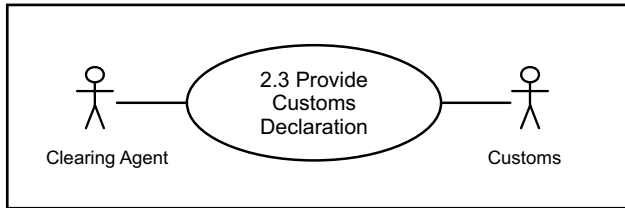


Table 7: Description of Process Area '2.2 Freight forwarder obtains Cargo Insurance'

Name of a process area	2. Ship
Name of the business process	2.2 Freight forwarder obtains Cargo Insurance
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Freight forwarder • Insurance company
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Importer and exporter have agreed upon CIF terms of trade making cargo insurance the responsibility of the exporter. • Transportation required to move Basmati rice to the Port of Shipping and to the specified Port of Discharge in Iran/China has been arranged. • The insurance company accepts credit terms of payment.
Activities and associated documentary requirements	<p>2.2.1 Under the CIF terms, the exporter is responsible for obtaining the cargo insurance. The freight forwarder, on behalf of the exporter, submits the following documents to the insurance company:</p> <ul style="list-style-type: none"> - Cargo Insurance Application Form - Form-E number - Commercial Invoice number - Bank account details - Number of containers <p>If an insurance clause is added to the L/C by the importer, the clause is copied off of it and attached with the insurance application form.</p> <p>2.2.2 Based on the submitted documents, insurance company decides whether or not to provide the insurance coverage.</p> <p>2.2.3 If insurance company decides to provide the insurance coverage, it issues Cover Note for the to-be-insured consignment as evidence to confirm that the insurance coverage is in effect.</p> <p>2.2.4 Freight forwarder collects Cover Note from the insurance company.</p> <p>2.2.5 Freight Forwarder provides Exporter's Bank Account information to the Insurance Company.</p> <p>2.2.6 Insurance company issues the Insurance Policy.</p> <p>2.2.7 Freight forwarder collects insurance policy from insurance company on credit terms.</p> <p>2.2.8 Insurance company receives the payment for insurance premium when the shipment departs from the Port of Shipment and the Freight Forwarder receives payment from the exporter.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The consignment is insured from the exporter's warehouse till the port of destination.
Average time required to complete this business process	1 day

Core Business Process Area 2.3 'Clearing Agent provides Goods Declaration'

Figure 14 Use Case Diagram '2.3 Clearing Agent provides Goods Declaration'



The use case diagram in Figure 14 indicates that the following participants are involved in the process area 'Clearing Agent makes Goods Declaration':

- Clearing Agent
- Pakistan Customs

Figure 15 Activity Diagram '2.3 Clearing Agent provides Goods Declaration'

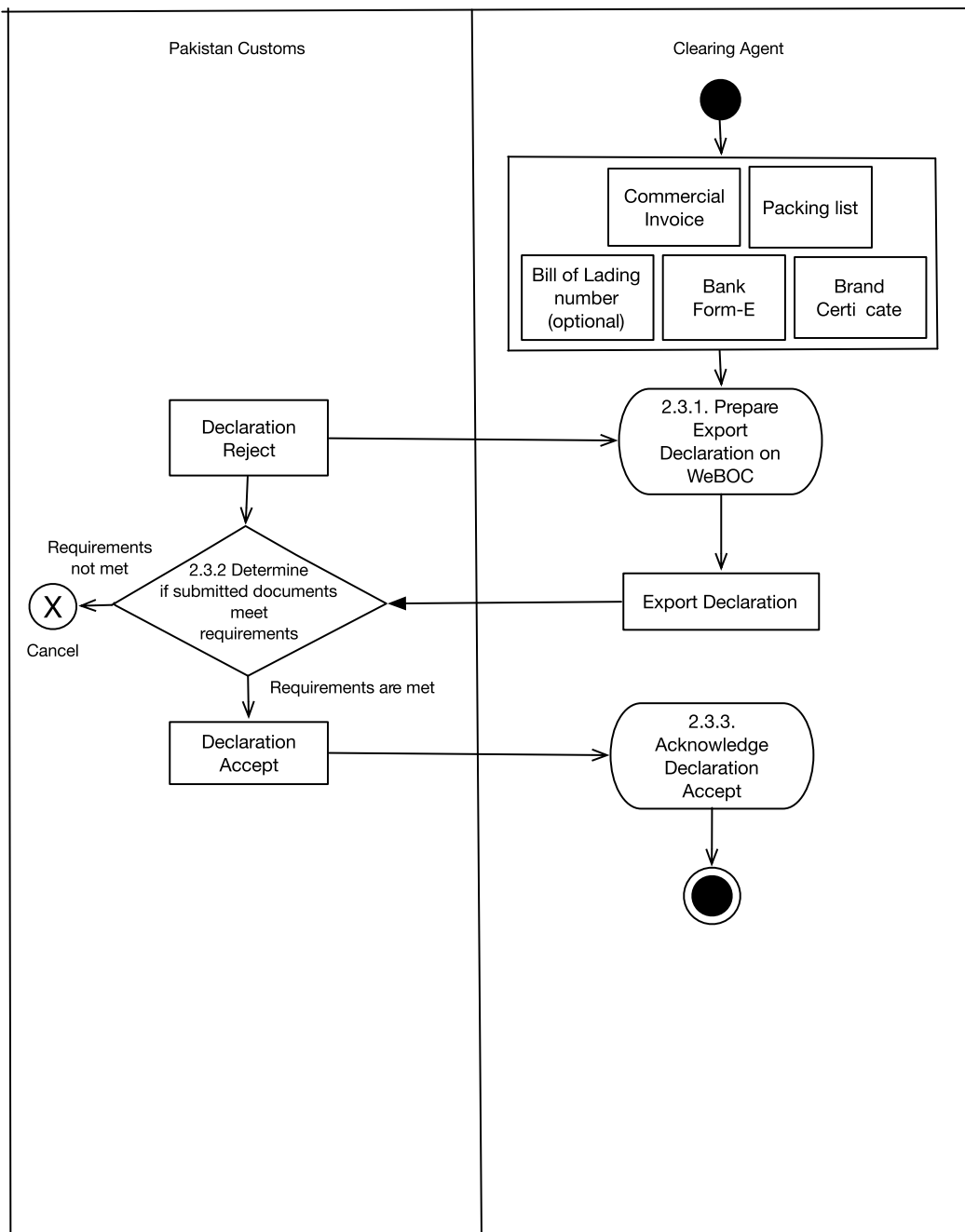
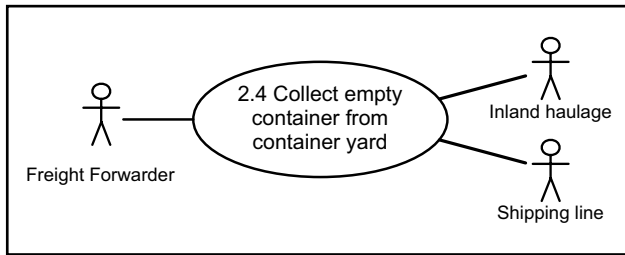


Table 8: Description of Process Area '2.3 Clearing agent provides Goods Declaration'

Name of a process area	2. Ship
Name of a business process	2.3 Clearing agent provides Goods Declaration
Related laws, rules and regulations	<ul style="list-style-type: none"> • No Export Duty is levied on exports from Pakistan. • The Goods declaration made on WeBOC expires within 15 days of filing. • Customs Rules 2001 • Customs Act 1969 (As amended up to 30th June 2015) Chapter XVI-A section 155A, 155B, 155C, 155D, 155E, 155F, 155G, 155H, 155-I, 155J, 155k, 155L, 155M, 155N, 155O, 155P, 155Q, 155R, Chapter XX section 204, 205, 206)
Process participant	<ul style="list-style-type: none"> • Clearing Agent • Pakistan Customs
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Exporter or Clearing Agent is a registered user of the WeBOC system • Transportation required to move Basmati rice to the Port of Shipment (Karachi Port Trust) and to the specified Port of Discharge in Iran/China has been arranged. • The consignment of Basmati rice has already been insured.
Activities and associated documentary requirements	<p>2.6.1 Exporter prepares Exports Goods Declaration (GD) in the Pakistan Customs E-filing system WeBOC by providing information from the following documents:</p> <ul style="list-style-type: none"> - Commercial Invoice - Packing List - Form-E - Bill of Lading number (optional) <p>2.6.2 Pakistan Customs, by WeBOC system, determines if submitted Goods Declaration meets Customs requirements. If it does not, WeBOC system generates a message to notify the user that the Goods Declaration has been rejected. In this case, the Clearing Agent needs to revise the GD. If submitted GD meets the requirements, WeBOC accepts it. The system accepts the Export GD and gives 'Declaration Accept' notification.</p> <p>2.6.3 Clearing Agent acknowledges successful submission of Export GD upon the receipt of Declaration Accept.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter receives a message from WeBOC system inclusive of the Goods declaration reference number notifying that the Export Declaration has been accepted.
Average time required to complete process	30 minutes

Core Business Process Area 2.4 'Collect empty container from yard'

Figure 16 Use Case Diagram '2.4 Collect empty container from yard'



The use case diagram in Figure 16 indicates that the following participants are involved in the process 'Collect empty container from yard':

- Freight Forwarder
- Inland Haulage
- Shipping Line
- Exporter

Figure 17 Activity Diagram '2.4 Collect empty container from yard'

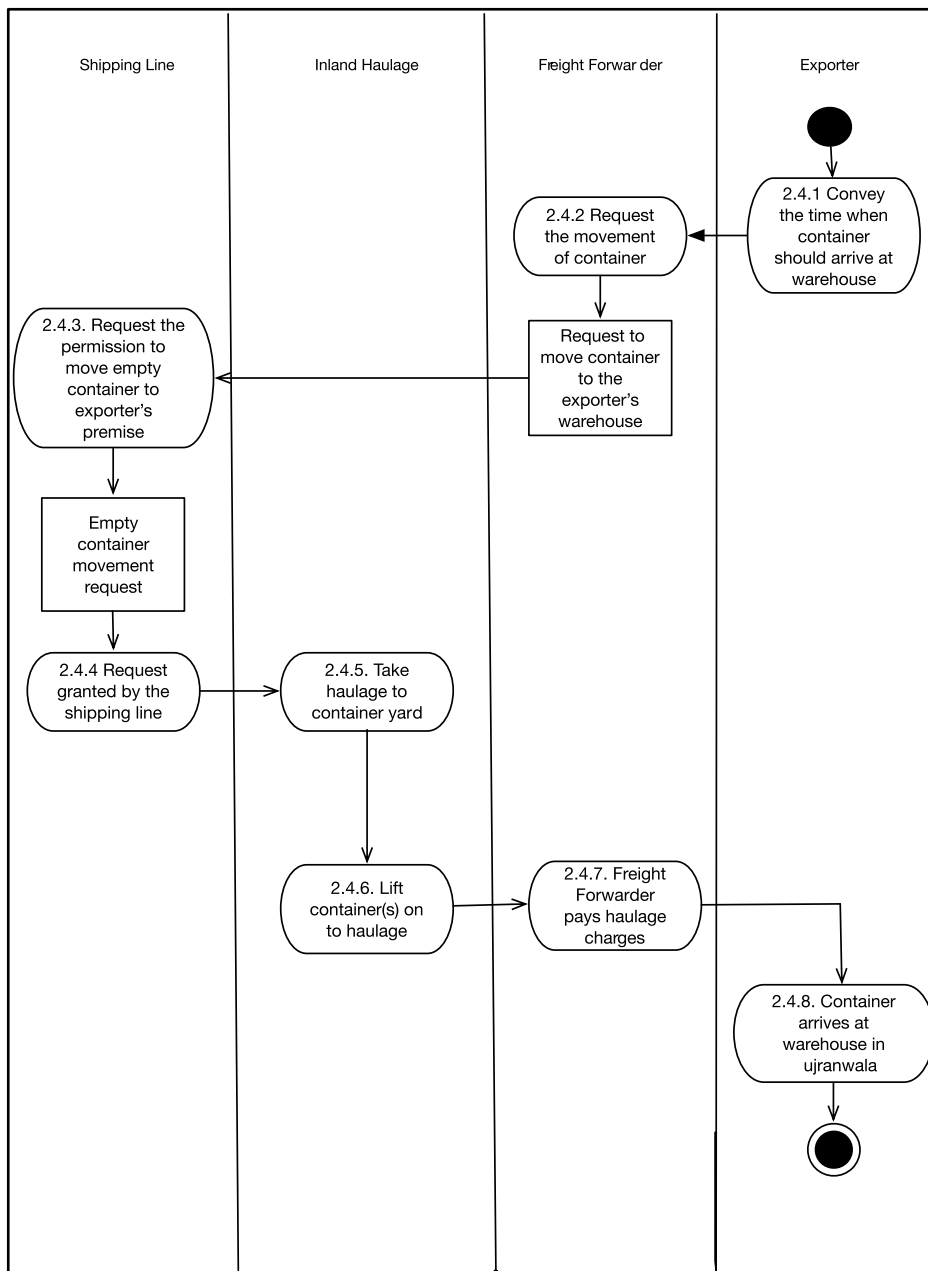
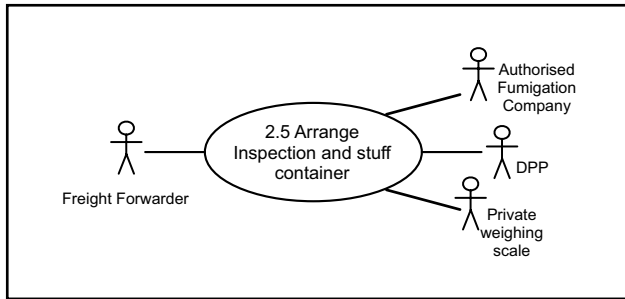


Table 9: Description of Process Area '2.4 Collect empty container from yard'

Name of a process area	2. Ship
Name of a business process	2.4 Collect empty container from yard
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Freight Forwarder • Inland Haulage • Shipping Line • Exporter
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Transportation required to move Basmati rice to the Port of Shipment and to the Port of Discharge in Iran/China has been arranged. • The consignment of Basmati rice has already been insured.
Activities and associated documentary requirements	<p>2.4.1 Exporter conveys to the freight forwarder the time when the container should arrive at the warehouse.</p> <p>2.4.2 Freight forwarder files a request with the shipping line for the movement of container from the container yard in Lahore to the exporter's warehouse in Kamunki Gujranwala.</p> <p>2.4.3 The agent of the shipping line submits an Empty Container Movement Request to request for the permission of movement of an empty container to the exporter's premise.</p> <p>2.4.4 The shipping line acknowledges and grants the empty container movement request.</p> <p>2.4.5 Freight forwarder generates a request to Inland Haulage to pick the container from container yard in Lahore. Driver takes the haulage to the container yard to pick up an empty container.</p> <p>2.4.6 Container is lifted on to haulage and ready for transfer to the exporter's warehouse.</p> <p>2.4.7 Freight forwarder pays haulage charges.</p> <p>2.4.8 Empty container arrives at the exporter's warehouse in Kamunki Gujranwala.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • An empty container has arrived at the exporter's warehouse.
Average time required to complete this business process	8-10 hours

Core Business Process Area 2.5 'Freight Forwarder arranges inspection and fumigation and stuffs container'

Figure 18 Use Case Diagram '2.5 Freight Forwarder arranges inspection and stuffs container'



The use case diagram in Figure 18 indicates that the following participants are involved in the process area 'Arrange inspection and fumigation and stuff container':

- Freight forwarder
- Private weighing scale
- Department of Plant Protection
- Authorized fumigation company

Figure 19 Activity Diagram '2.5 Freight Forwarder arranges inspection and fumigation and stuffs container'

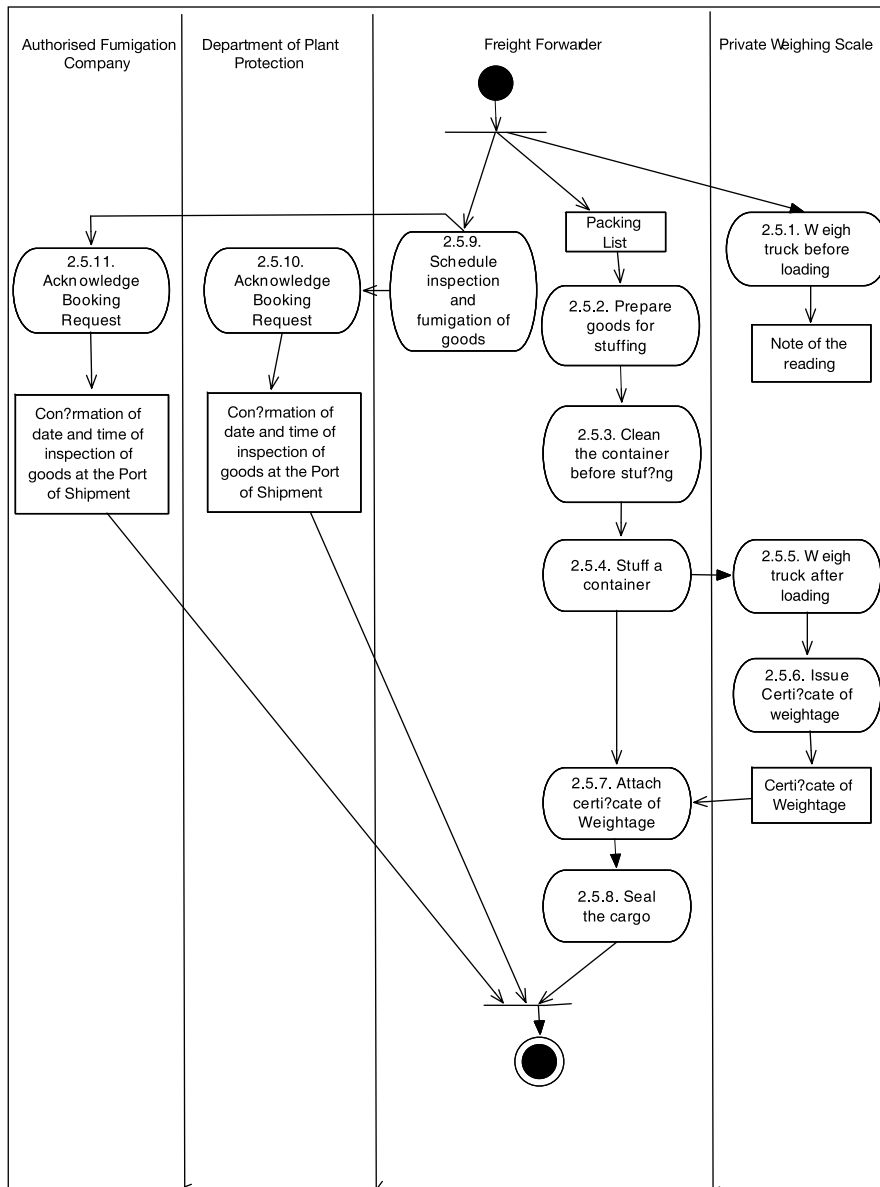


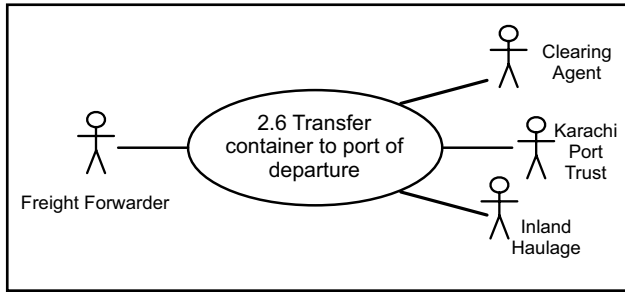
Table 10: Description of Process Area '2.5 Freight forwarder arranges inspection and fumigation and stuffs container'

Name of a process area	2. Ship
Name of a business process	2.5 Freight forwarder arranges inspection and fumigation and stuffs container
Related laws, rules and regulations	<ul style="list-style-type: none"> • A certificate of weightage, stating the weight of the cargo after stuffing, is attached with the cargo. • An inspector from the Department of Plant Protection inspects the cargo before it is boarded on to the vessel to ensure that the packed goods meet the Phyto Sanitary standards. Afterwards, a Phyto Certificate is issued by the DPP in a day, which is required for Customs clearance. • The container is fumigated after the Basmati rice has been stuffed inside it.
Process participant	<ul style="list-style-type: none"> • Freight forwarder • Private weighing scale • Department of Plant Protection
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Driver of an inland haulage has transferred an empty container to the exporter's premise and is ready to transport the stuffed container to the Port of Shipment.
Activities and associated documentary requirements	<p>2.5.1 The truck along with the empty container is taken to the private weighing scale and weighed. The reading is noted down and the truck is brought back to the exporter's warehouse for stuffing.</p> <p>2.5.2 Exporter prepares Basmati rice to be stuffed according to the Packing List.</p> <p>2.5.3 The container is cleaned from the inside using conventional cleaning methods. No fumigation takes place at this point.</p> <p>2.5.4 Container stuffing is completed. This process usually takes 5 hours.</p> <p>2.5.5 The truck with stuffed container is taken to the private weighing scale and weighed again. The reading is noted down.</p> <p>2.5.6 The private weighing scale company issues a certificate of weightage.</p> <p>2.5.7 The certificate of weightage is attached with the container.</p> <p>2.5.8 The cargo is sealed.</p> <p>Fumigation has been mentioned as a separate step because it's timing in the export supply chain can vary. Fumigation of the cargo can take place at two points in the export supply chain, depending on the decision made by the freight forwarder and the clearing agent:</p> <ul style="list-style-type: none"> - At the exporter's warehouse, when the container has been stuffed, it can be fumigated before it is sealed. - At the Port of Shipment in Karachi, after the container is gated-in, an inspector from the Department of Plant Protection examines the container and the goods inside. The fumigation company can fumigate the cargo at this

	<p>point as well.</p> <p>2.5.9 The freight forwarder schedules the inspection and fumigation of cargo with the Department of Plant Protection and the authorized fumigation company in Karachi respectively. It is scheduled at the Port of Shipment, after the cargo has been gated-in. The Phyto Sanitary certificate (referred to as Phyto by the local exporters and freight forwarders) is issued after the fumigation and inspection.</p> <p>2.5.10 The Department of Plant Protection acknowledges the inspection request and confirms the date and time of inspection.</p> <p>2.5.11 The authorized fumigation company acknowledges the booking request and confirms the date and time of fumigation, usually done at the same time as the inspection of cargo.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The container is stuffed with goods specified in the Packing List and ready for departure. • The certificate of weightage has been issued and attached with the cargo to certify that at the time of departure from the warehouse the weight of the cargo was in accordance with the terms of trade agreed in the Proforma Invoice.
Average time required to complete this business process	6 hours

Core Business Process Area 2.6 'Transport container to Port of Shipment'

Figure 20 Use case Diagram '2.6 Transport container to Port of Shipment'



The usecase diagram in Figure 20 indicates that the following participants are involved in the process area 'Transport container to Karachi Port Trust':

- Exporter & Freight Forwarder
- Clearing Agent
- Port of Shipment
- Inland Haulage

Figure 21 Activity Diagram '2.6 Transport container to Port of Shipment'

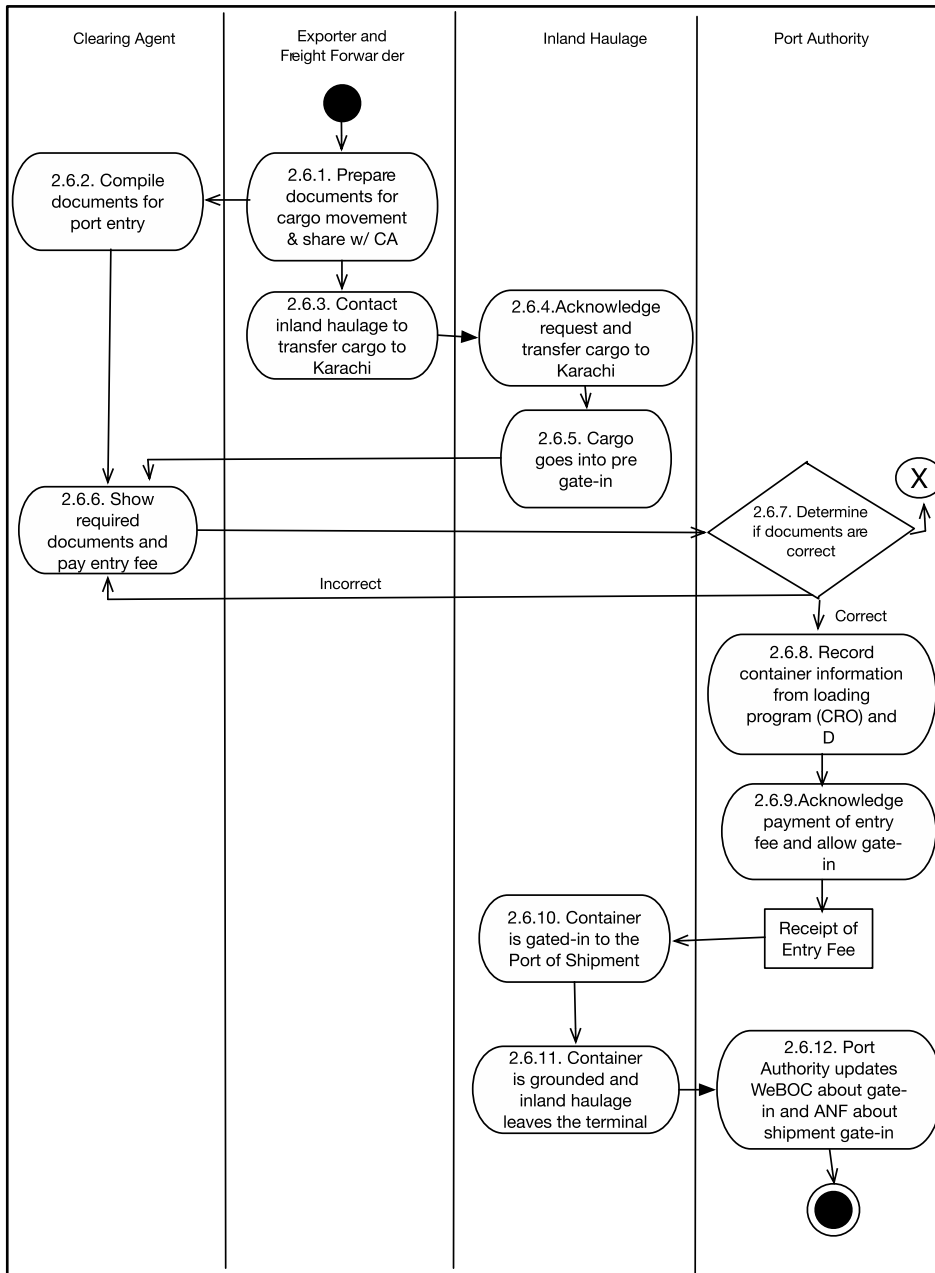


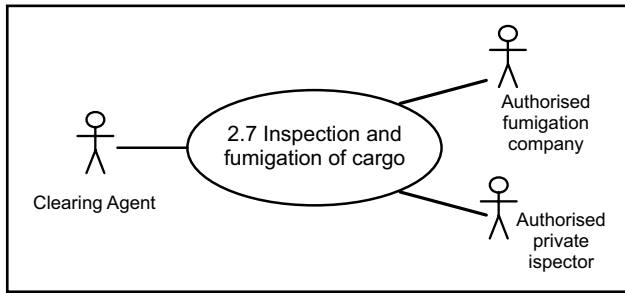
Table 11: Description of Process Area '2.6 Transport container to Port of Shipment'

Name of a process area	2. Ship
Name of a business process	2.6 Transport container to Port of Shipment
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Exporter/ Freight Forwarder • Clearing Agent • Karachi Port Trust • Inland Haulage
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Transportation required to move Basmati rice to the Port of Shipment and to the specified Port of Discharge in Iran/China has been arranged. • Basmati rice in amount and conditions specified in the Proforma Invoice has been packed and loaded in the container and departed from Gujranwala.
Activities and associated documentary requirements	<p>2.6.1 Exporter and Freight forwarder compile the following documents and send scanned or saved copies to the Clearing Agent via email:</p> <ul style="list-style-type: none"> - Commercial invoice - Packing List - Form-E - Goods Declaration on WeBOC - Container Release Order (referred to as the container loading program after gate-in at the Port) <p>2.6.2 Clearing Agent compiles all needed documents for container gate-in at the Port of Shipment.</p> <p>2.6.3 Freight forwarder contacts inland haulage to transport cargo from the exporter's warehouse in Kamunki Gujranwala to the Port of Shipment in Karachi.</p> <p>2.6.4 Inland haulage acknowledges the request. Driver takes the haulage to the warehouse where a specified number of containers are loaded onto the haulage. The cargo is then transported to Karachi. Transportation takes 3 days.</p> <p>The transportation charges of a 20-foot container from Gujranwala to Karachi range between PKR 35,000-40,000. Credit terms of payment are used and the haulage is paid after the cargo departs from the Port of Shipment and the exporter pays the freight forwarder.</p> <p>2.6.5 Upon arrival in Karachi, haulage takes the cargo to the designated terminal and queues at the pre gate-in. Clearing Agent joins the cargo at the pre gate-in. Pre gate-in queue times can vary depending on the length of the queue. During those times of the year when export volume is high, trucks have to wait in the queue for 7-8 hours for their turn to gate-in. In the absence of long queues, the waiting time decreases to 2 hours.</p>

	<p>2.6.6 Clearing Agent shows the required documents (mentioned in 2.7.1) to the Port Authority and pays a port entry token of PKR 250.</p> <p>2.6.7 Port Authority reviews the documents and determines if they meet the criteria of port gate-in. If the documents are incomplete and do not satisfy the container gate-in criteria accurately, the Port Authority refuses gate-in and asks the Clearing Agent to revise the documents. If the documents match the gate-in requirements, the Port Authority processes the documents.</p> <p>2.6.8 Port Authority records the information from the loading program (CRO) and the Goods Declaration filed on WeBOC and confirms that the Clearing Agent, the transporter, and the container at pre gate-in match the description given in the CRO and the GD. The Port Authority also examines the condition of the container.</p> <p>2.6.9 If the documents shown by the Clearing Agent are complete, and the condition of the container is fine, Port Authority acknowledges the receipt of port entry token and permits the cargo to gate-in.</p> <p>2.6.10 The container gates-in to the Port of Shipment.</p> <p>2.6.11 The container is off loaded from the haulage. Port Authority specifies the spot where it should be grounded. Haulage leaves the terminal.</p> <p>2.6.12 Port Authority updates WeBOC with the container gate-in time and date. It also updates the website of the Port. It also informs ANF about the container gate-in with information about the CRO and GD number of the cargo.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> The container has been gated-in at the Port of Shipment and the inland haulage has left. The status of the goods on WeBOC has been updated as gated-in.
Average time required to complete this business process	3 days

Core Business Process Area 2.7 'Inspection and fumigation of cargo'

Figure 22 Use Case Diagram '2.7 Inspection and fumigation of cargo'



The use case diagram in Figure 22 indicates that the following participants are involved in the process area 'Inspection and fumigation of cargo':

- Authorized private inspector
- Authorized fumigation company
- Clearing Agent

Figure 23 Activity Diagram '2.7 Inspection and fumigation of cargo'

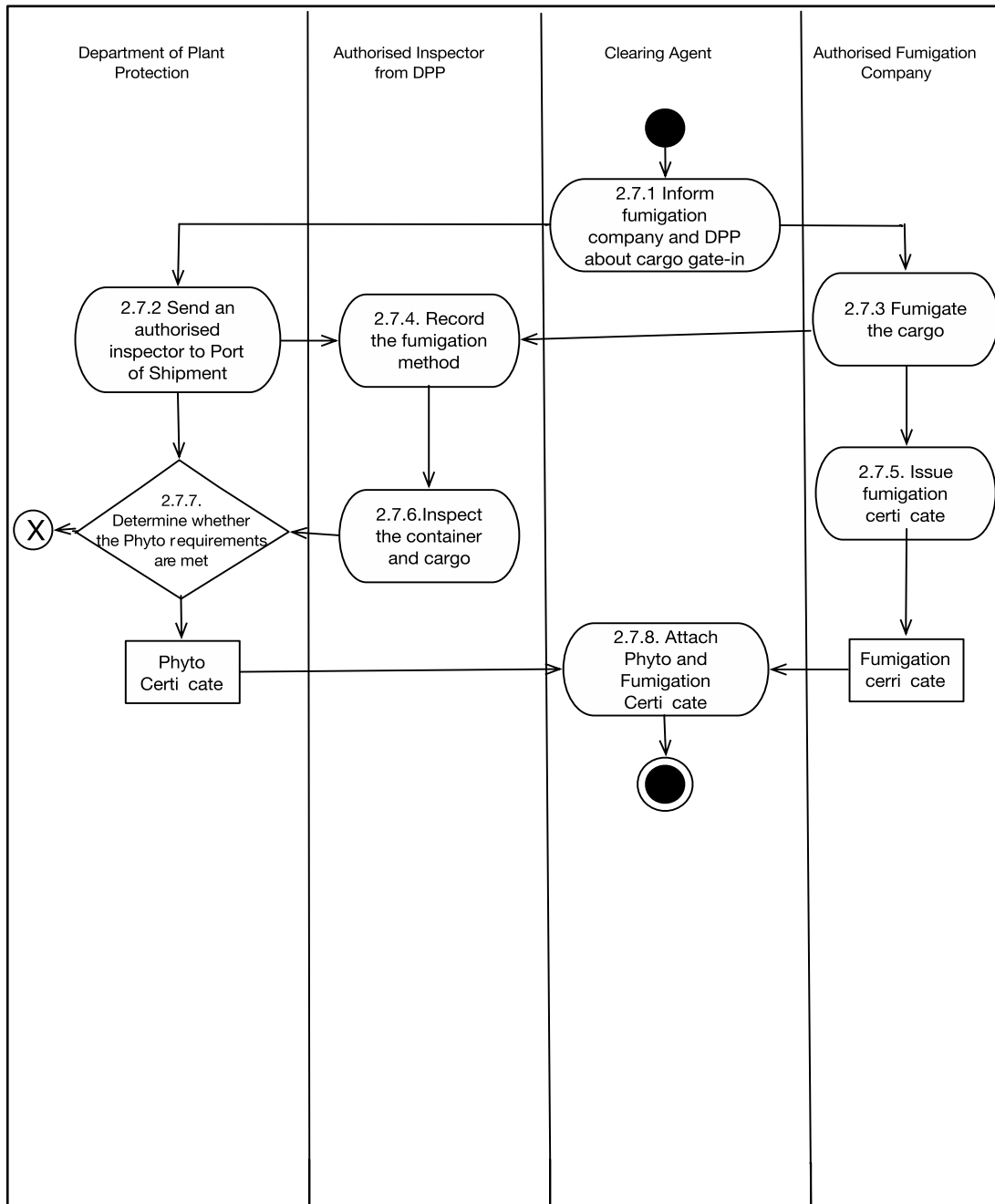


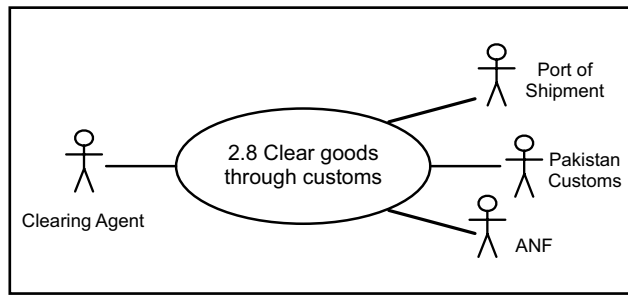
Table 12: Description of Process Area '2.7 Inspection and fumigation of cargo'

Name of a process area	2. Ship
Name of a business process	2.7 Inspection and fumigation of cargo
Related laws, rules and regulations	<ul style="list-style-type: none"> • The importer specifies the method of fumigation used. The two options available for fumigation include Aluminium Phosphide and Methyl Bromide. • Presence of an authorized inspector from the Department of Plant Protection while the fumigation is carried out is optional. • Container is fumigated after stuffing.
Process participant	<ul style="list-style-type: none"> • Freight forwarder • Authorized fumigation company • Authorized private inspector
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Transportation required to move Basmati rice to the Port of Shipment and to the specified Port of Discharge in Iran/China has been arranged. • Basmati rice in amount and conditions specified in the Proforma Invoice have been packed, inspected, and loaded in the container and is ready for fumigation.
Activities and associated documentary requirements	<p>2.7.1 The clearing agent informs the representative of the Department of Plant Protection and the Fumigation Company that the cargo has been gated-in.</p> <p>2.7.2 The Department of Plant Protection sends an inspector the Port of Shipment to record the method of fumigation and to inspect the Phyto Sanitary condition of the cargo.</p> <p>2.7.3 Fumigation Company fumigates the containers at the Port of Shipment.</p> <p>The fumigation of Basmati rice in 20-foot container using Aluminium Phosphide tablets costs PKR 1500 for the first container and PKR 600 for the second container. Fumigation using Methyl Bromide gas can range between PKR 2500-10000. For Iran, the maximum fumigation cost with Methyl Bromide is PKR 4500 for the first container and PKR 2500 for the second container onward.</p> <p>2.7.4 Authorized inspector from the DPP records the fumigation method. If the method does not meet the standard procedure, the inspector requests that the procedure be revised.</p> <p>2.7.5 If the inspector from DPP approves of the fumigation procedure, the fumigation company issues the Fumigation Certificate.</p> <p>2.7.6 Representative from the Department of Plant Protection inspects the cargo. He records the condition of the container and inspects whether the cargo meets the Phyto Sanitary standards for export.</p> <p>2.7.7 Based on the inspection and the documents provided, the</p>

	<p>Department of Plant Protection determines whether to issue the Phyto Certificate or not.</p> <p>It is mandatory for the exporter to get samples of rice tested for Aflatoxin before it is packaged. The report of Aflatoxin test is attached with the application for Phyto Certificate.</p> <p>If the cargo and the Aflatoxin test report do not meet the Phyto Sanitary requirements, the application is rejected and the Department does not issue Phyto. If the cargo and the Aflatoxin test report fulfill the Phyto Sanitary criteria, the Phyto Certificate is issued.</p> <p>2.7.8 If the Phyto is issued, the clearing agent attaches the Phyto and Fumigation Certificate with the cargo.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The container has been gated-in at the Port of Shipment and the inland haulage has left. • The cargo has been inspected and fumigated and the process of getting the Phyto Certificate has been initiated.
Average time required to complete this business process	<ul style="list-style-type: none"> • Fumigation: 15 minutes • Phyto Certificate: 1 day

Core Business Process Area 2.8 'Clearing Agent clears goods through customs'

Figure 24 Use Case Diagram '2.8 Clearing Agent clears goods through customs'



The use case diagram in Figure 24 indicates that the following participants are involved in the process area 'Clear goods through customs':

- Clearing Agent
- Port Authority
- Pakistan Customs
- ANF Pakistan

Figure 25 Activity Diagram '2.8 Clearing Agent clears goods through customs'

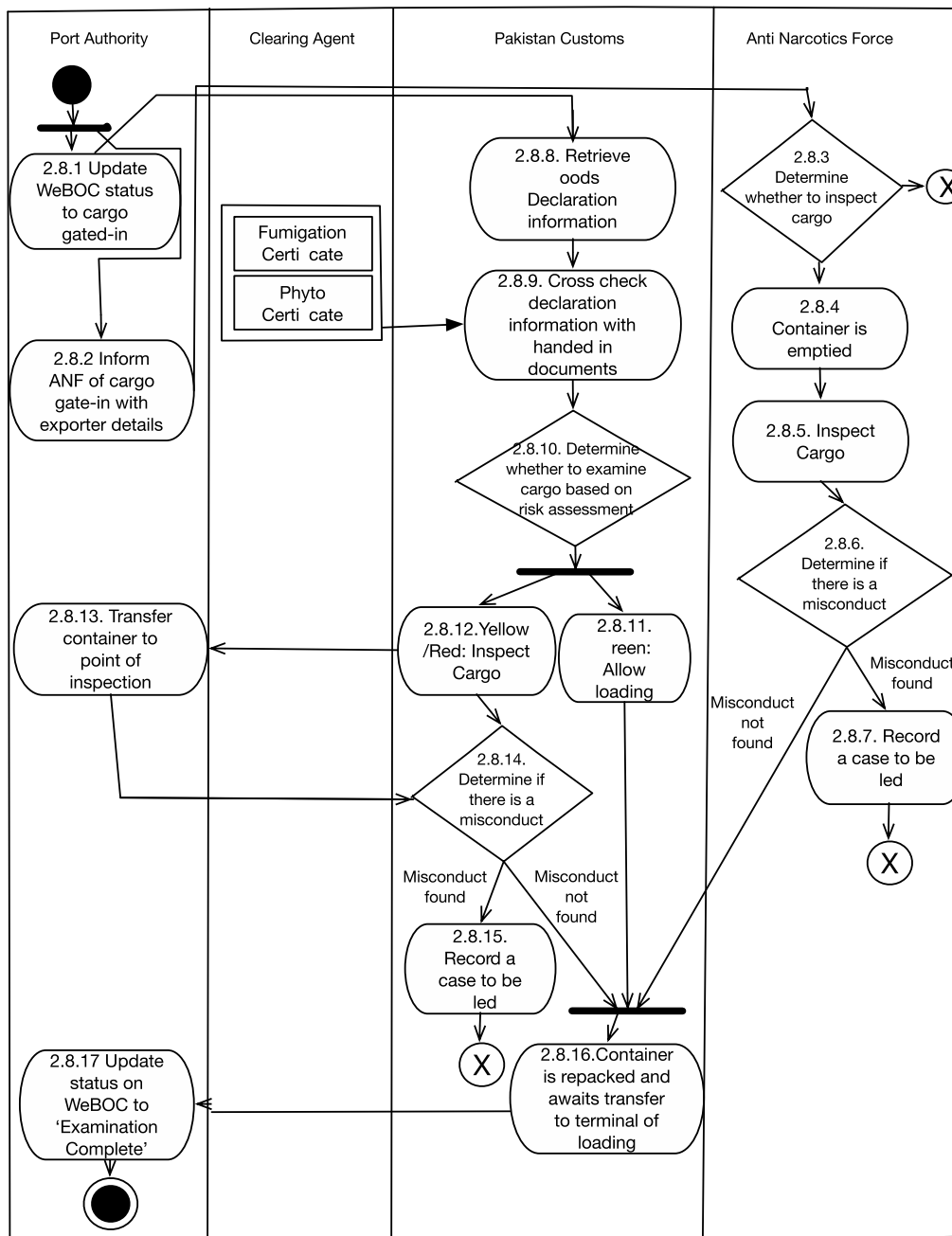


Table 13: Description of Process Area '2.8 Clearing agent clears goods through customs'

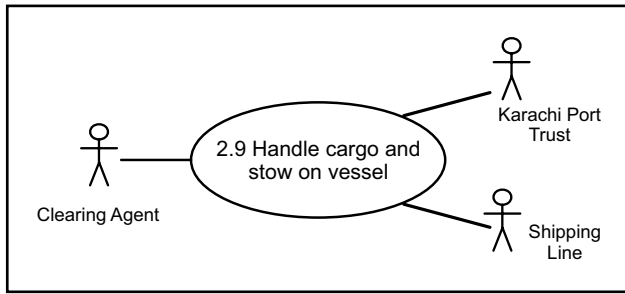
Name of a process area	2. Ship
Name of a business process	2.8 Clearing agent clears goods through customs
Related laws, rules and regulations	<ul style="list-style-type: none"> • Customs Rules 2001 • Customs Act 1969 (As amended up to 30th June 2015) Chapter IV, section 15, 16 Chapter VII section 42, 50(A)(B), 51, 53, 55, 56, 57, 58 Chapter XX section 197, 198, 199, 211A Punishment for offence: Chapter XVII, Chapter XVIII
Process participant	<ul style="list-style-type: none"> • Clearing Agent • Inland Haulage • Pakistan Customs • Anti Narcotics Force (ANF) Pakistan
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • The container has been gated-in at the Port of Shipment. The status of goods on WeBOC has been updated to gated-in. • The cargo has been inspected by the DPP and fumigated and the process of getting the Phyto Certificate has been initiated.
Activities and associated documentary requirements	<p>2.8.1 The Port Authority updates the status of cargo on WeBOC to gated-in. Pakistan Customs initiates the cargo's customs clearance process.</p> <p>2.8.2 The Port Authority informs the Anti Narcotics Force (ANF) that a shipment has gated-in and provides the exporter's details. This information is passed on using the Port's intranet or web system.</p> <p>2.8.3 ANF determines whether to inspect the cargo or not. If the ANF waives inspection, the shipment enters the customs clearance process at 2.8.8. If it decides to inspect the cargo, it asks the Port Authority to hold the container for ANF inspection before Customs examination. The status of the cargo is updated to 'ANF Hold' on the Port web system.</p> <p>ANF has its own risk management system in place to determine the need for cargo inspection. Exporters who have a green ANF status are waived inspection, and they are usually big exporters who have been exporting for many years. Exporters falling in the yellow stream, those who are small and relatively new exporters, go through inspection.</p> <p>2.8.4 The Port Authority transfers the cargo to the point of inspection. The seal is broken and the container is emptied of its contents, which are temporarily placed in an empty 40-foot container. The delegated officials of the ANF perform this task.</p> <p>2.8.5 An ANF inspector examines the empty container. Some packages are randomly selected and unpacked to check for the presence of illegal substances.</p> <p>The container is grounded for ANF examination early in the day. It</p>

	<p>is emptied of its contents at around mid-day. A team of ANF inspectors begins the inspection after 4 pm. The entire process takes approximately 7 hours to complete. ANF examination also results in more handling fee, by the Port Authority, for the exporter.</p> <p>2.8.6 ANF inspectors determine if there is misconduct. If there is none, the port authority repacks the goods inside the container. The ANF sends the container number to the Port Authority for applying ANF examination charges. The cost of ANF examination for one container is PKR 1700. The cargo is forwarded for customs clearance.</p> <p>2.8.7 If an illegal substance is found on board the container or inside a package, the ANF records a case to be filed against the exporter and cancels all further proceedings of the shipment.</p> <p>2.8.8 An officer from Pakistan Customs retrieves the information from the exporter's Goods Declaration on WeBOC.</p> <p>2.8.9 Officer from Pakistan Customs cross checks information that has been declared with information on the CRO and the documents handed by the Clearing Agent which include the Phyto Certificate and the Fumigation Certificate. He/she needs to make sure that the container to be exported is identical to the container that exporter has declared in the GD on WeBOC.</p> <p>2.8.10 Based on the results of the risk assessment, officer from Pakistan Customs determines whether to inspect the cargo.</p> <p>2.8.11 If the exporter has a 'green' status in the risk assessment profile, the inspection is waived and the cargo moves to the terminal of loading at 2.8.16.1</p> <p>2.8.12 If the exporter has a 'yellow' or 'red' status in the risk assessment profile, the Customs decides to examine the cargo. If the status is 'yellow' one container may be randomly selected for examination. If the status is 'red' all containers in the shipment might be examined.</p> <p>2.8.13 The Port Authority transfers the cargo to the point of inspection.</p> <p>2.8.14 Examiner from Pakistan Customs inspects the cargo, by making a walkway inside the container, to determine if there is misconduct.</p> <p>2.8.15 If there is a misconduct found, officer from Pakistan Customs records a misconduct case that requires further investigation.</p> <p>2.8.16 If misconduct is not found, the port authority repacks and restacks the goods inside the container and attaches the seal of the shipping line and Pakistan Customs. The officer from Pakistan Customs can release the containerized cargo for loading.</p> <p>2.8.17 The Port Authority updates status on WeBOC to 'Examination Completed'. This means that loading can be started.</p>
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Output criteria to exit the business process	<ul style="list-style-type: none"> • The consignment is released from Customs-controlled area. • The Port Authority has updated cargo status on WeBOC to 'Examination Completed'.
Average time required to complete this business process	<p>ANF examination: 30 minutes Customs examination: 30 minutes Total time for both with delays: 8 hours</p>

Core Business Process Area 2.9 'Clearing Agent handles cargo and stow on vessel'

Figure 26 Use Case Diagram '2.9 Clearing Agent handles cargo and stow on vessel'



The use case diagram in Figure 26 indicates that the following participants are involved in the process area 'Handle cargo and stow on vessel':

- Clearing Agent
- Port of Shipment
- Shipping Line

Figure 27 Activity Diagram '2.9 Clearing Agent handles cargo and stow on vessel'

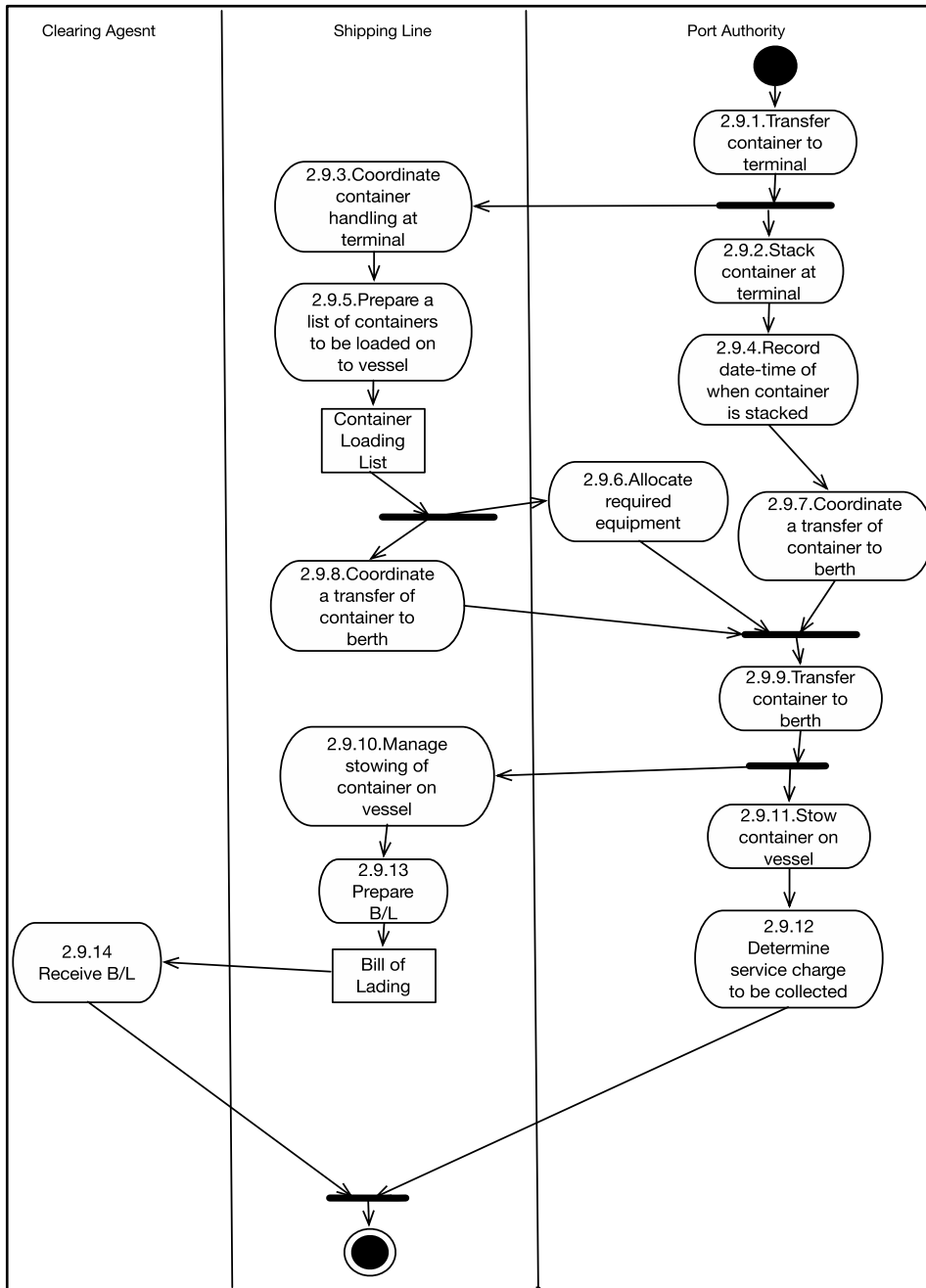


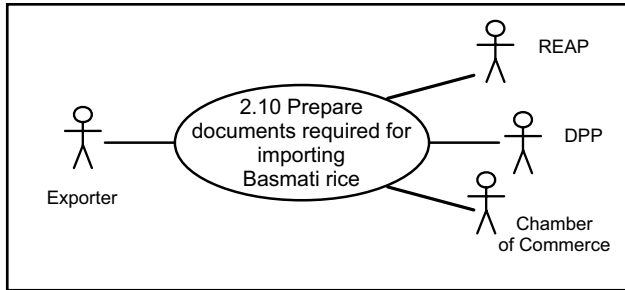
Table 14: Description of Process Area '2.9 Clearing agent handles cargo and stow on vessel'

Name of a process area	2. Ship
Name of a business process	2.9 Clearing agent handles cargo and stow on vessel
Related laws, rules and regulations	<ul style="list-style-type: none"> • Customs Act 1969 (As amended up to 30th June 2015) Chapter VIII section 60, 61, 62, 63, 64, 65, 66, 67, 72, 72 A Chapter IX section 73 Chapter XIV Section 130, 131, 133, 134, 135, 136, 137, 138 Port Fee: Chapter XX section 202, 202A 202B
Process participant	<ul style="list-style-type: none"> • Clearing Agent • Port of Shipment • Shipping Line
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Containerized cargo is released from Customs-controlled area.
Activities and associated documentary requirements	<p>2.9.1 Port authority transfers the container to the terminal of loading.</p> <p>When the vessel arrives, it is docked at the terminal for 24 hours for the loading of cargo. An average waiting time of 1 day has been added to the process for when the vessel is missed, delayed, or there is no space on the vessel.</p> <p>2.9.2 Port staff stacks the container at the terminal.</p> <p>2.9.3 Carrier agent coordinates the handling of container at the terminal with Port staff.</p> <p>2.9.4 Port staff then records date and time when the container is stacked.</p> <p>2.9.5 Carrier agent prepares a Container Loading List for Port Authority. It should be submitted to the Port Authority prior to loading.</p> <p>2.9.6 Based on Container Loading List, Port staff allocates equipment necessary for transferring containers to berth.</p> <p>2.9.7 Port staff coordinates with carrier agent on a transfer of container to berth.</p> <p>2.9.8 Carrier agent coordinates with Port staff on transfer of container to berth.</p> <p>2.9.9 Port staff transfers container from terminal to berth.</p> <p>2.9.10 Based on Container Loading List, carrier agent instructs port staff about the location of each container on a vessel.</p> <p>2.9.11 Port staff stows container on vessel according to carrier agent's instructions.</p> <p>2.9.12 The Port Authority, based on the number of containers, the examination by Customs and the ANF, determines the fee to be charged to the exporter. The Clearing Agent pays this fee.</p> <p>The Port Authority charges PKR 4,000 for handling of a container that is not examined by the Customs or the ANF. The handling cost for one container that is examined by the Customs amounts to between PKR 8,000-10,000. The handling</p>

	<p>cost for a container examined by the ANF adds up to PKR 12,000.</p> <p>2.9.13 The clearing agent generates a B/L request on the website of the shipping line. The B/L is issued after the vessel departs.</p> <p>2.9.14 The clearing agent receives the Bill of Lading in 1-2 days.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The container(s) has been stowed on to the vessel and the Clearing Agent has received a Bill of Lading. • The Clearing Agent has paid the cargo handling charges.
Average time required to complete this business process	2 days on average

Core Business Process Area 2.10 'Exporter prepares documents required for importing Basmati Rice from Pakistan'

Figure 28 Use Case Diagram '2.10 Exporter prepares documents required for importing Basmati Rice from Pakistan'



The use case diagram in Figure 28 indicates that the following participants are involved in the process area 'Prepare documents for importing Basmati Rice from Pakistan':

- REAP
- Department of Plant Protection
- Chamber of Commerce

Figure 29 Activity Diagram '2.10 Exporter prepares documents required for importing Basmati Rice from Pakistan'

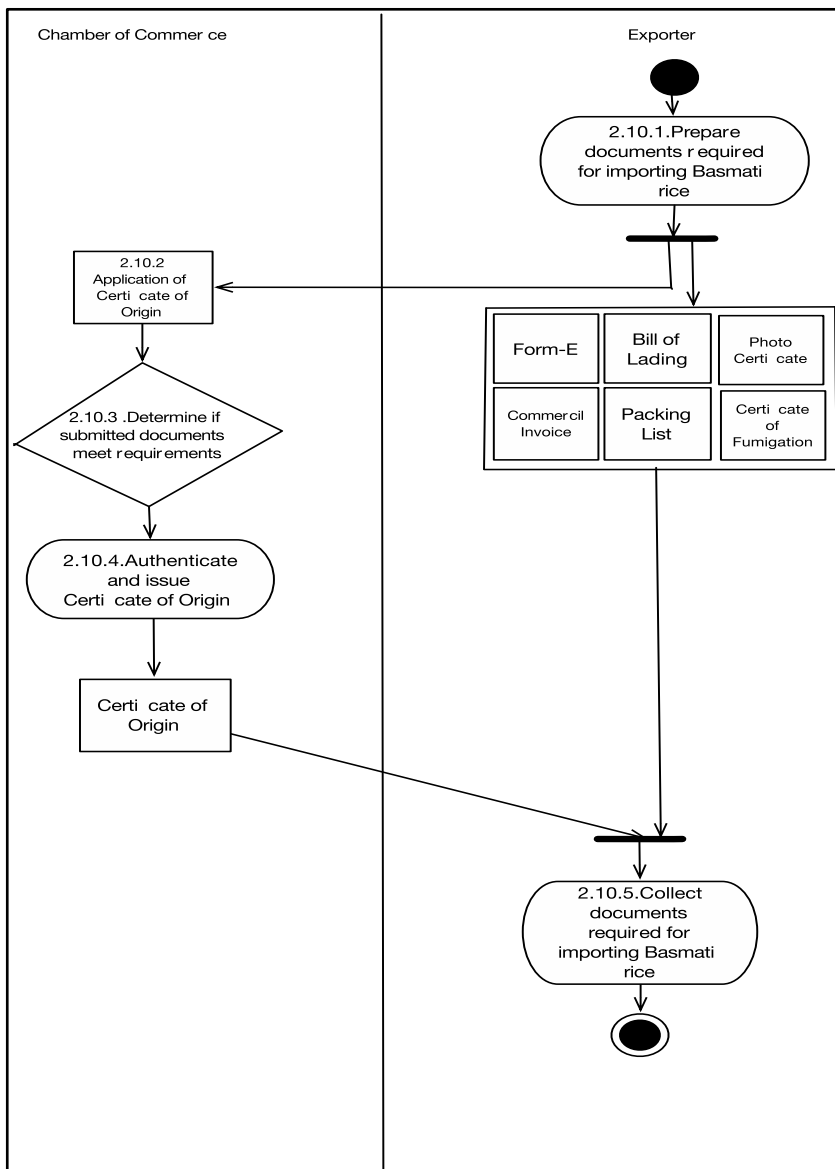


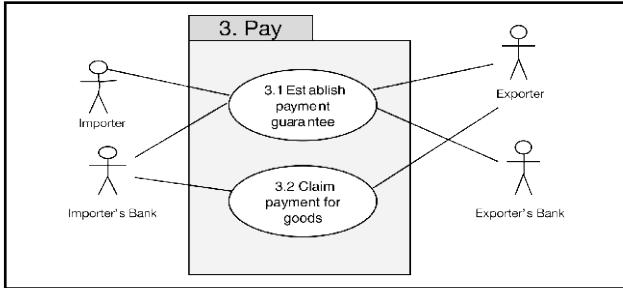
Table 15: Description of Process Area '2.10 Exporter prepares documents required for importing Basmati Rice from Pakistan'

Name of a process area	2. Ship
Name of a business process	2.10 Exporter prepares documents required for importing Basmati Rice from Pakistan
Related laws, rules and regulations	<ul style="list-style-type: none"> • Customs Act 1969 (As amended up to 30th June 2015) Chapter XVI-A section 155M, 155N, 155O, 155P, 155 Q, 155R, Chapter XX section 204, 205, 206
Process participant	<ul style="list-style-type: none"> • Rice Exporters Association of Pakistan • Department of Plant Protection • Chamber of Commerce
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • The vessel has left the Port of Shipment. • The clearing agent has received a Bill of Lading from the shipping line upon cargo departure.
Activities and associated documentary requirements	<p>2.10.1 The exporter prepares documents required for by the buyer for importing Basmati rice from Pakistan. These documents include:</p> <ol style="list-style-type: none"> 1. Commercial Invoice 2. Packing List 3. Phyto Certificate 4. Fumigation Certificate 5. Bill of Lading 6. Form-E 7. Certificate of Origin 8. Certificate of Registration with REAP (copy) <p>2.10.2 The exporter or the freight forwarder files an application for the Certificate of Origin with the Chamber of Commerce.</p> <p>2.10.3 The CoC determines if submitted application and documents meet requirement for obtaining the certificate. If the documents are incomplete, the Chamber requests that the documents be completed.</p> <p>2.10.4 If the Chamber approves the application, it authenticates the issuance of the Certificate of Origin. The process usually takes 2hours to complete.</p> <p>2.10.5 The exporter or the freight forwarder collects the Certificate of Origin from the Chamber of Commerce.</p>
Output criteria to exit the business process	The set of documents required by the buyer to import Basmati Rice form Pakistan is complete.
Average time required to complete this business process	2 hours to compile all the required documents B/L is obtained in 1-2 days; hence the whole process takes 1 business day to complete after the departure of the vessel.

4.3 Process Area 3: Pay

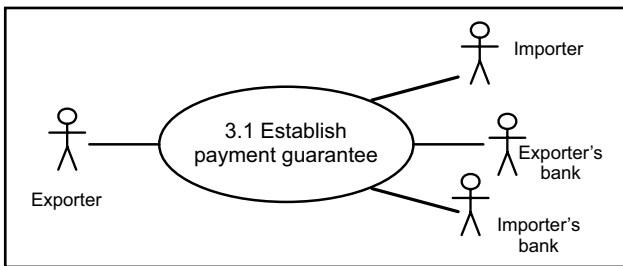
Core Business Process Area 3.1 'Exporter establishes payment guarantee'

Figure 30 Use Case Diagram '3. Pay'



Process area 3 'Pay' has two core business processes and involves four actors: exporter, importer, exporter's bank, and importer's bank. These processes take 6 days to complete and involve one document, the Letter of Credit.

Figure 31 Use Case Diagram '3.1 Exporter establishes payment guarantee'



The use case diagram in Figure 30 indicates that the following participants are involved in the process area 'Establish payment guarantee':

- Exporter & Exporters' Bank
- Importer & Importer's Bank

Figure 32 Activity Diagram '3.1 Exporter establishes payment guarantee'

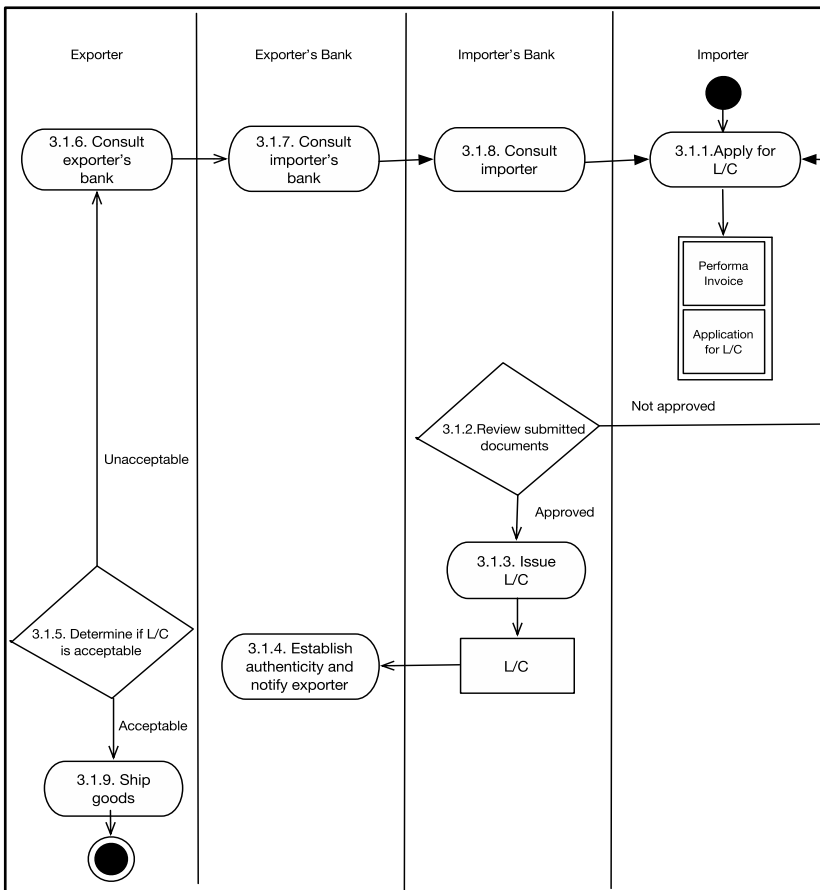


Table 16: Description of Process Area '3.1 Exporter establishes payment guarantee'

Name of a process area	3. Pay
Name of a business process	3.1 Exporter establishes payment guarantee
Related laws, rules and regulations	<ul style="list-style-type: none"> • The L/C is valid for 14 days after the date of issuance.
Process participant	<ul style="list-style-type: none"> • Exporter • Importer • Exporter's Bank • Importer's Bank
Input and criteria to enter/begin the business process	Exporter and importer have already concluded trade contract and terms.
Activities and associated documentary requirements	<p>3.1.1. Importer applies for Letter of Credit by submitting Application for Irrevocable Documentary Letter of Credit and Proforma Invoice to importer's bank.</p> <p>3.1.2. Importer's bank reviews submitted documents and evaluates importer's credit standing.</p> <p>3.1.3. If importer's credit is in good standing, importer's bank approves the application, issues Letter of Credit, and forwards it to exporter's bank by electronic means.</p> <p>3.1.4. Exporter's bank establishes authenticity of the letter of credit and informs exporter that Letter of Credit is ready for collection.</p> <p>3.1.5. Exporter collects Letter of Credit and determines if it meets contractual agreement and its terms and conditions can be satisfied. 3.1.6. If exporter finds Letter of Credit unacceptable, he or she needs to consult exporter's bank.</p> <p>3.1.7. Exporter's bank consults importer's bank.</p> <p>3.1.8. Importer's bank then consults importer on the amendment of Letter of Credit.</p> <p>3.1.9. If exporter finds the already issued Letter of Credit acceptable, he or she makes necessary arrangements for the delivery of goods.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter accepted Letter of Credit • Exporter started to make necessary arrangements to deliver Basmati rice to importer.
Average time required to complete this business process	4 days

Core Business Process Area 3.2 'Exporter claims payment for goods'

Figure 33 Use Case Diagram '3.2 Exporter claims payment for goods'



The use case diagram in Figure 32 indicates that the following participants are involved in the process area 'Claim payment fro goods':

- Exporter
- Importer
- Exporter's Bank
- Importer's Bank

Figure 34 Activity Diagram '3.2 Exporter claims payment for goods'

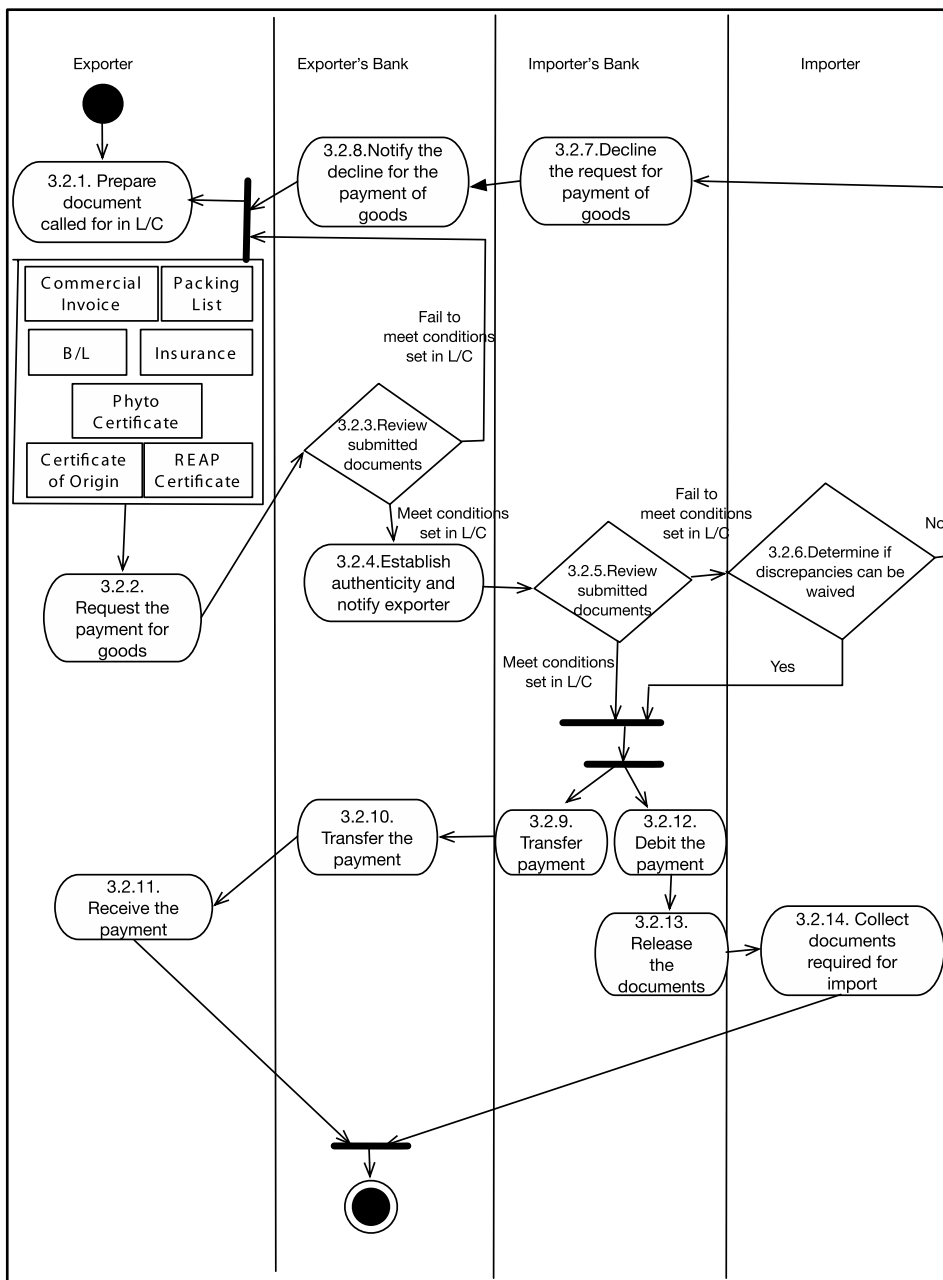


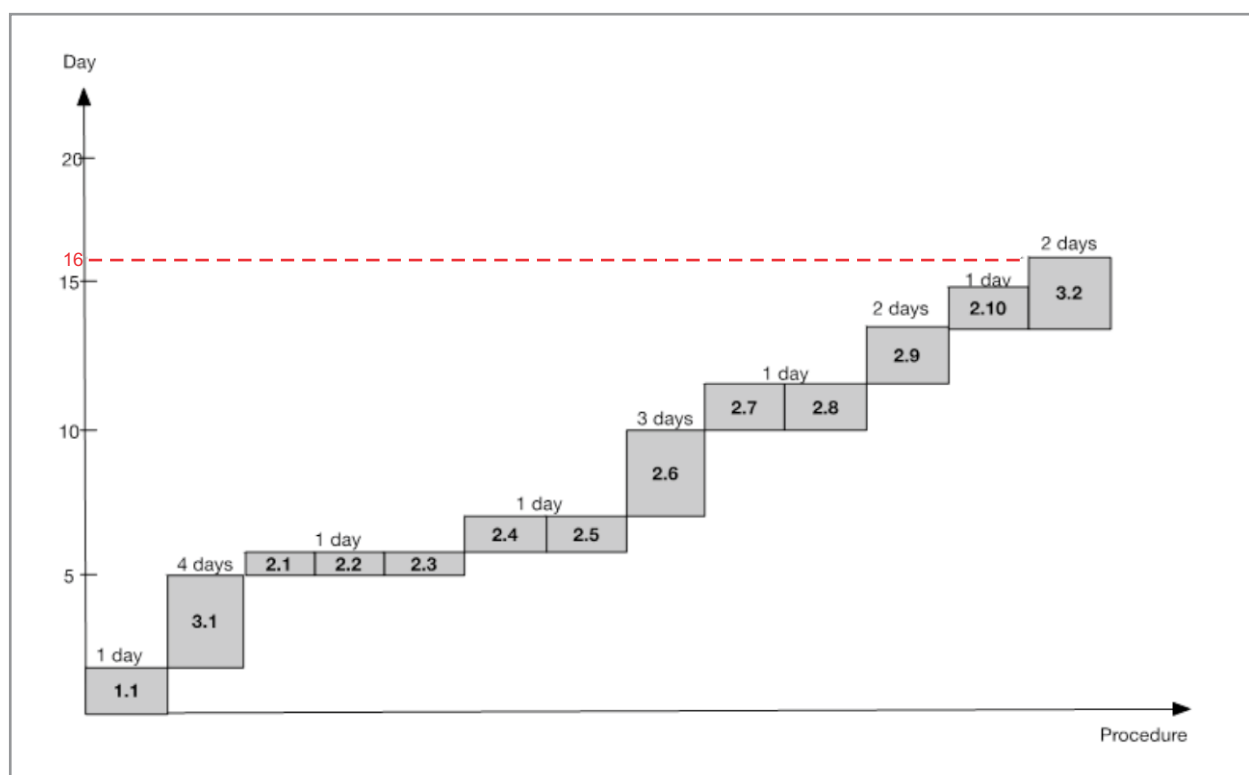
Table 17: Description of Process Area '3.2 Exporter claims payment for goods'

Name of a process area	3. Pay
Name of a business process	3.2 Exporter claims payment for goods
Related laws, rules and regulations	INCOTERMS 2000
Process participant	<ul style="list-style-type: none"> • Exporter • Importer • Exporter's Bank • Importer's Bank
Input and criteria to enter/begin the business process	Exporter has already fulfilled contractual agreement.
Activities and associated documentary requirements	<p>3.2.1. Exporter also prepares documents called for in Letter of Credit. Those documents typically include:</p> <ul style="list-style-type: none"> - Commercial Invoice, - Packing List, - Insurance Policy, - Bill of Lading, - Phytosanitary Certificate, - Fumigation Certificate - Certificate of Origin - REAP Certificate <p>3.2.2. With the documents called for in Letter of Credit, exporter requests exporter's bank to advice importer's bank to proceed the payment for goods.</p> <p>3.2.3. Exporter's bank reviews submitted documents and determines if they are compliant with the terms and conditions as listed in Letter of Credit. If they do not meet the terms and conditions in Letter of Credit, exporter's bank informs exporter about the discrepancies. In this case, exporter needs to make necessary corrections.</p> <p>3.2.4. If the submitted documents meet the terms and conditions as listed in Letter of Credit, exporter's bank forwards them to importer's bank.</p> <p>3.2.5. Importer's bank reviews submitted documents and determines if they are compliant with the terms and conditions of Letter of Credit. If they do not meet the terms and conditions in Letter of Credit, importer's bank informs importer about the discrepancies.</p> <p>3.2.6. Importer determines if discrepancies can be waived.</p> <p>3.2.7. If importer does not waive the discrepancies, importer's bank declines the request to make payment for goods.</p> <p>3.2.8. Exporter's bank notifies exporter about the decline for the payment for goods so that exporter makes necessary corrections.</p> <p>3.2.9. If importer's bank finds the submitted documents compliant with the terms and conditions listed in Letter of Credit from the very beginning, importer's bank transfer the payment for goods to exporter's bank.</p>

	<p>3.2.10. Exporter's bank transfers the payment for goods to exporter.</p> <p>3.2.11. Exporter receives the payment for goods.</p> <p>3.2.12. Importer's bank debits the payment for goods from importer's account.</p> <p>3.2.13. Importer's bank releases documents collected from exporter.</p> <p>3.2.14. Importer collected documents required for import.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter received the payment for goods. • Importer received documents required to complete import formalities.
Average time required to complete this business process	2 days

4.4 Summary of the Business Processes of exporting Basmati Rice

Figure 35 Time-procedure Chart for Basmati Rice Export from Pakistan to Iran and China



- | | |
|--|--|
| 1.1. Conclude sales contract and trade terms | 2.7. Inspection and fumigation of cargo |
| 2.1. Freight Forwarder arranges transport | 2.8. Clearing Agent clears goods through customs |
| 2.2. Freight Forwarder obtains cargo insurance | 2.9. Clearing Agent handles cargo and stow on vessel |
| 2.3. Clearing Agent files Goods Declaration | 2.10. Exporter prepares documents required by importer |
| 2.4. Collect empty container from yard | 3.1. Establish payment guarantee |
| 2.5. Freight Forwarder arranges inspection & fumigation and stuffs container | 3.2. Claim payment for goods |
| 2.6. Transport container to Port of Shipment | |

Figure 34 presents a time-procedure chart listing core business processes that are required to be carried out to export Basmati rice from Pakistan to Iran and China. The time-procedure chart suggests that it takes, on average, 16 days for stakeholders to fulfill commercial and regulatory requirements of 13 Basmati rice export business processes. It also provides an illustration of when each core business process occurs in relation to others. Table 18, on the other hand, provides the precise time it normally takes to complete each business process and a spotlight into dependencies among them.

Table 18: Duration and dependencies among Basmati rice export processes

Core Business Process	Duration	Predecessor or	Simultaneous Task
1. Buy			
1.1 Conclude sales contract and trade terms	1 day	N/A	N/A
2. Ship			
2.1. Freight Forwarder arranges transport	1 hour	1.1, 3.1	2.2, 2.3
2.2 Freight Forwarder obtains cargo insurance	1 day	2.1	2.1, 2.3
2.3 Clearing Agent files Goods Declaration	30 minutes	1.1, 2.1, 2.2	2.1, 2.2
2.4 Collect empty container from yard	10 hours	2.2	N/A
2.5 Freight Forwarder arranges inspection & loading	6 hours	2.1, 2.4	N/A
2.6 Transport container to Port of Shipment	3 days	2.5	N/A
2.7 Inspection and fumigation of cargo and Phyto Certificate	1 hour 1 day (Phyto)	2.5, 2.6	2.8
2.8 Clearing Agent clears goods through customs	8 hours	2.7	2.7
2.9 Clearing Agent handles cargo and stow on vessel	2 days	2.8	N/A
2.10 Exporter prepares documents required by importer	1 day	2.10	3.1
3. Pay			
3.1 Establish payment guarantee	4 days	1.1	2.10
3.2 Claim payment for goods	2 days	2.10	N/A

A total of 16 documents are required for completing the business processes of exporting Basmati rice to Iran and China. The following table lists the documents in the order in which they are obtained or required during the export processes, and mentions the relevant process area(s) and requirements of an official stamp or signature for obtaining the document:

	Document	Relevant Process Area	Requirement of Official stamp or Signature
1	Proforma Invoice	1.1, 3.1	Stamp and seal of the buyer
2	Cargo Insurance application	2.2	None
3	Insurance Policy	2.3, 2.8, 2.10, 3.2	None
4	Goods Declaration (GD)	2.3, 2.6, 2.8	None
5	Container Release Order	2.6, 2.8	Stamp of the shipping line
6	Form-E from exporter's Bank	2.2, 2.3, 2.8, 2.10, 3.1	Stamp of the exporter's Bank
7	Commercial Invoice	2.10, 3.1, 2.8, 3.2	Stamp of the exporter
8	Packing List	2.3, 2.5, 2.8, 3.2	None
9	Certificate of Weightage	2.5, 3.2	Stamp of the private weighing scale
10	Fumigation Certificate	2.7, 2.8, 2.10, 3.2	Stamp of the Authorized fumigation company
11	Phyto Certificate	2.7, 2.8, 2.10, 3.2	Stamp of the Department of Plant Protection
12	Container Loading List	2.9	None
13	Certificate of Origin	2.10, 3.2	Stamp of the Chamber of Commerce
14	REAP Certificate	2.10, 3.2	Stamp of REAP
15	Bill of Lading	2.9, 2.10, 3.2	Stamp of the shipping line
16	Letter of Credit	1.1, 2.2, 3.1, 3.2	Stamp of the exporter's and importer's bank
	Number of documents, stamps and signatures		

5. Conclusion and Recommendations

Pakistan is facing the risk of losing further international market share of Basmati rice to competitors. To start regaining market share and therefore ensuring export growth, Pakistan needs to develop and implement a new rice export strategy. Ideally a new rice strategy needs to get prepared using a “whole of government” approach – an integrated approach instead of a silo based method of each Ministry and agency making policies. The ESCA Basmati rice report describes several conclusions and recommendations that could be part of the new rice export strategy.

Conclusions

1. Reducing the time to get Basmati rice to market could be achieved if a combined effort is made to cut the current number of days from 15 to 12 days. This could be achieved if the time to get from the factory gate to port is cut by one day, reduce the seaport handling by 1 day and eliminate and instead of getting the phyto sanitary certificate in 1 day arrange to produce it in 1 hour;
2. Extra time might get eliminated from the export supply if attention was paid to reducing the time to arrange insurance, arrange an empty container, increase seaport efficiency and develop better coordination between freight forwarders and shipping lines; and
3. The investment in a national electronic single window system might help exporters prepare all documents between 10 and 30 minutes instead of 1 day.

Recommendations

The ESCA study identified other issues which if managed could lead to a more efficient and predictable export supply chain. Many of the issues described below are often associated with an integrated trade and industry strategy:

1. Carrying out an ESCA in each exporting industry will not serve as a solution. The ESCA suggests that a “whole of government” approach to integrating customs, logistics and trade facilitation might give faster processes;
2. Invest in a national electronic single window. The WeBOC is an important start but all export support documents and agencies must be connected to provide documents in under 30 minutes;
3. Get predictable export supply chains by making investments in new road, rail, border crossing and seaport and airport cargo handling infrastructure;
4. Implement the Articles of the World Trade Organization Trade Facilitation Agreement;
5. Harmonize the Pakistan Customs Law with the revised Kyoto Convention. This will help Customs use international good practice export, import and transit procedures;
6. Ensure free access by international logistics companies into the Pakistan transport and logistics industries;
7. Develop and implement a Pakistan Basmati rice export marketing strategy in collaboration with REAP and the Pakistan commercial trade attaches located in target export markets;
8. Combine the results of ESCA with any Time Release Studies (TRS) carried out by Pakistan Customs at airport cargo centers and other border crossings. The World Bank carried out a TRS at the Wagah border crossing and provides a useful template for the process at other border crossing points;
9. The ESCA study identified issues for further research. The issues include explaining the

difference in prices between Pakistan Basmati rice and competitor's rice, will vocational education and training help Pakistan farmers maintain and extend their skills in the industry, how can central and regional government agencies better deliver services to the farmers and to those in the export supply chain, and carry out a value chain analysis. This future research might get carried out in collaboration between REAP, a chamber of commerce and a university; and

10. Help is needed to develop new rice seed varieties with the objective of increasing production and with improving growing techniques.

The TRTA proposes to present the recommendations to the Ministry of Commerce and the Federal Bureau of Revenue (FBR) with the objective to help increase the Basmati rice sector.

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Appendix

Figure A: Pakistan Logistics Performance Index Score Card (2007-2014)

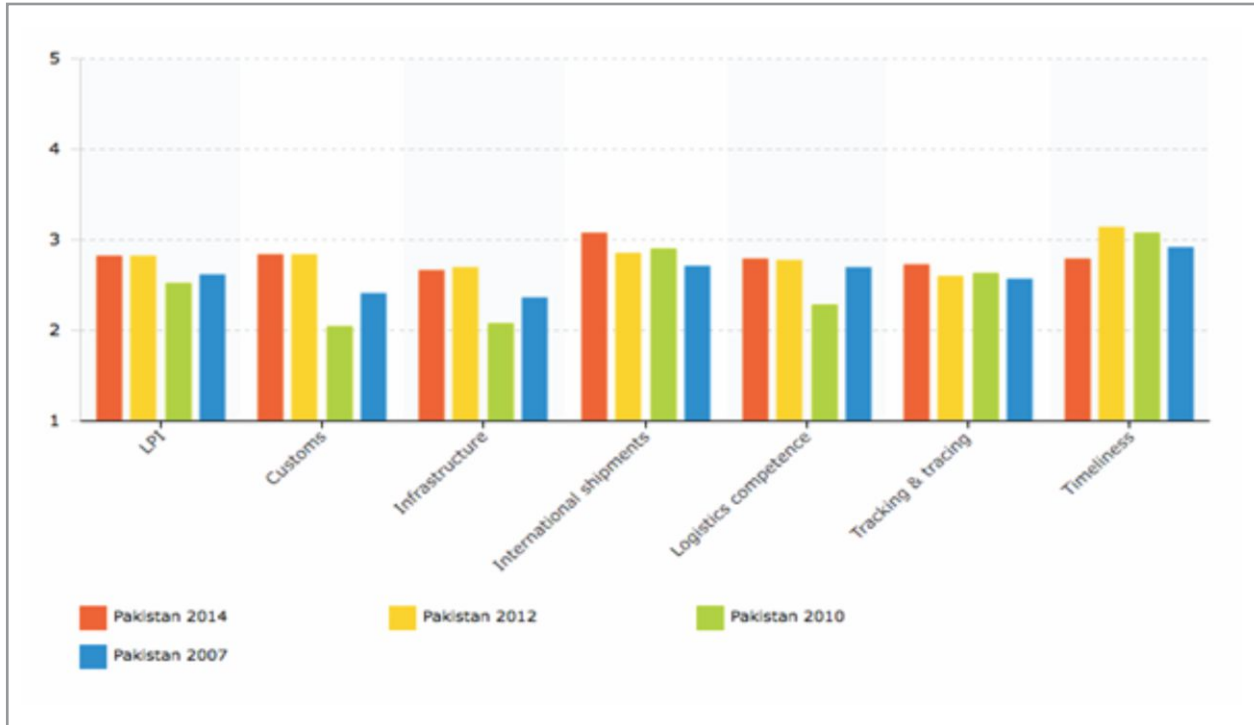


Figure B: LPI Comparison of Pakistan with India, Vietnam & Thailand (2007-2014)

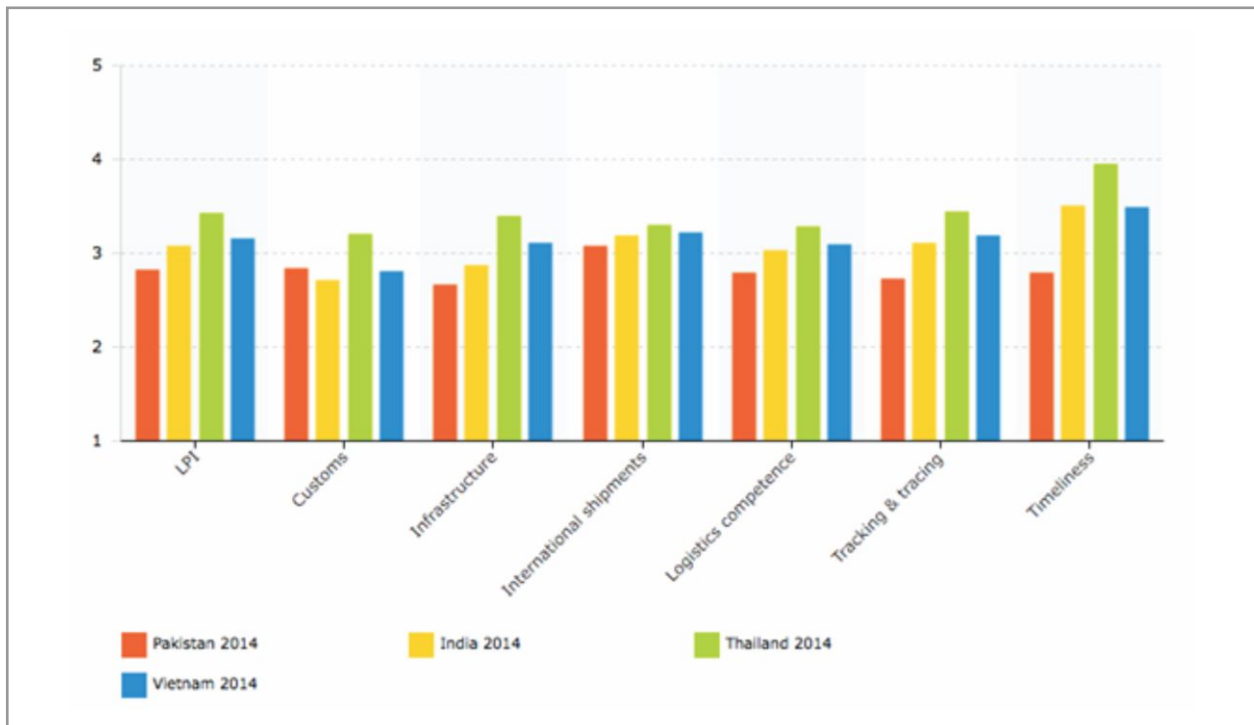


Table 20: Pakistan rice export earnings 2011-2015

Description	Value in Thousand US Dollar						Ratio of total rice exported
	2011	2012	2013	2014	2015	Average	%
Rice	2,041,237	1,902,340	1,730,456	2,158,325	1,922,249	1,950,921	-
<i>i. Basmati</i>	1,139,950	901,106	905,827	1,004,853	713,846	933,116	47
<i>ii. Others (mainly IRR)</i>	901,287	1,001,234	824,629	1,153,472	1,208,403	1,017,805	53





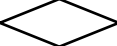



Source: State Bank of Pakistan (SBP) Economic Statistics

Table 21: Volume of rice exported by Pakistan in the Region

Importing Country	Value in Million Tons			
	2011	2012	2013	2014
Afghanistan	192153	122651	98768	105417
Iran	129219	115319	19367	5856
China	17021	456117	254436	269732

Source: Trade Development Authority of Pakistan (TDAP) Statistics

Table 22: Universal Modeling Language Legend

Symbol	Denotes
	Beginning of a process area
	Cancellation or rejection of an activity or document
	Exit from the process area
	Business activity
	Decision making process
	Document, application, or request
	Actor or stakeholder
	Process area

Export Supply Chain Analysis:

SURGICAL INSTRUMENTS



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List of Acronyms

ANF: Anti-Narcotics Force
B/L: Bill of Lading
CAD: Cash Against Documents
CIF: Cost, Insurance and Freight
CRO: Container Release Order
ESCA: Export Supply Chain Analysis
EU: European Union
FBR: Federal Bureau of Revenue
FOB: Free on Board
FY: Fiscal Year
L/C: Letter of Credit
LPI: Logistics Performance Index
MT: Metric Tons
NTB: Non-Tariff Barrier
PITAD: Pakistan Institute of Trade And Development
PKR: Pakistani Rupee
SAFTA: South Asian Free Trade Area
SAPTA: South Asian Preferential Trade Area
SBP: State Bank of Pakistan
SIMAP: Surgical Instruments Manufacturers Association of Pakistan
SME: Small and Medium Enterprise
TBT: Technical Barriers to Trade
TDAP: Trade Development Authority of Pakistan
TRTA: Trade Related Technical Assistance
UNIDO: United Nations Industrial Development Organization
USD: United States Dollar
WeBOC: Web Based One Customs
WTO: World Trade Organization

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Executive Summary

The surgical instruments sector is a key SME export sector of Pakistan, which accounts for around 1.2 percent of the exports of the country. Over the past 5 years the exports of the sector have witnessed remarkable growth, registering an increase of \$73 million in annual exports between 2008-09 and 2014-15 . There is potential for further growth in exports, worldwide as well as within the region.

China and India are two of the fastest growing medical and dental instruments markets in the world . Both countries constitute a surgical and medical instruments export market of more than US\$ 7 billion, which is growing at double-digit growth rates each year. In 2014, Pakistan's exports of surgical instruments to India and China totaled a net value of US\$ 17.8 million, which is a fraction of both countries' imports for the year . Industry analysis indicates that there is potential for Pakistan to establish itself as a major surgical instruments exporter to both regional markets.

To facilitate the sector's export growth in these countries, this Export Supply Chain Analysis (ESCA) maps the “as-is” business processes, actors, and documents involved in exporting surgical instruments from Pakistan to India and China; it identifies any policy, regulatory, or operational bottlenecks that create time delays along the export supply chain, and proposes recommendations to the Ministry of Commerce and the Federal Bureau of Revenue (FBR) to alleviate these bottlenecks and reduce the time it takes to get surgical instruments to the market.

The surgical instruments export supply chain comprises of 10 core business processes and 9 different actors¹⁵ It takes, on average, 13 business days for stakeholders to fulfill commercial and regulatory requirements of export business processes and get the surgical instruments from the exporter's warehouse to the aircraft en route to the Airport in the country of destination. The documentary requirements of exporting surgical instruments include a total of 11 documents¹⁶, of which 7 documents require an official seal or stamp. Table 1 summarizes the “as-is” findings and to-be scenario of the surgical instruments ESCA:

Table 1 Results of the Surgical Instruments Export Supply Chain Analysis

	AS-IS SITUATION FINDINGS	TO BE SCENARIO SOLUTIONS
Total time to market	13 days	11 days
2.1. Arranging transport	1 hour	1 hour
2.2. Arrange cargo insurance	1 day	1 hour
2.3 Arranging goods declaration	30 minutes	30 minutes
2.4 Arranging cargo for shipment	2 hours	2 hours
2.5 Transporting cargo to airport	2 hours	2 hours
2.6 Customs procedures and vessel loading	1 hour	1 hour
2.7 Prepare export support documents	1 day	30 minutes
Document numbers	11	4
Business processes	10	
Business actors	9	

Main solutions

- Using an electronic single window system (SWS) to prepare all export support documents will

¹⁵ Aside from the exporter and the importer

¹⁶ A list of documents can be found in Table 13

reduce the time to market from the current average of 13 days to 12 days; and

- Reduce the total time to market to 11 days by arranging cargo insurance electronically for exporters from 1 day to 1 hour.

Other solutions

- Reducing the time to carry out Customs procedures – needs investment in facilities and detection and weighing equipment;
- Increase airport efficiency with the objective to reduce the time it takes to receive cargo and load freight onto aircraft; and
- Better coordination and efficiency between freight forwarders and airline freight departments with the objective of filling the belly holds of passenger aircraft.

Recommendations

- Get predictable export supply chains by combining Customs and Insurance procedure changes with road, border crossing and airport infrastructure investment;
- Develop and implement trade facilitation, customs and logistics strategies in a “whole of Government” approach;
- Train public sector staffs and managers in international good practice trade facilitation;
- Implement the Articles of the World Trade Organization Trade Facilitation Agreement;
- Develop and implement international logistics education and training;
- Ensure free access to the Pakistan logistics and transport industries;
- Harmonize the Pakistan Customs Law with the Revised Kyoto Convention;
- Develop and implement a Pakistan Surgical Instrument export marketing strategy in collaboration with SIMAP and the commercial trade attaches located in target export markets;
- Surgical instrument makers to develop and implement business plans; and
- Develop value chains and export supply chains for existing products and new products.

Benefits to surgical instrument exporters in Pakistan

1. Increased export volumes, improved incomes and more jobs; and
2. Increased export competitiveness.

1. Introduction

Surgical Instruments industry is a key SME export sector of Pakistan and contributes 0.42 percent of the GDP of the country . The exports of the sector account for 1.2 percent of the total exports of Pakistan , a relatively modest figure that reflects the small size of the industry that is clustered in and around Sialkot. The surgical instruments industry is vertically integrated with a range of industries such as steel, chemicals, machine parts, and has a large vendor base, thus being a stimulant for generating economic activity in several industries. The sector employs around 100,000-150,000 workers and creates indirect employment, estimated to be 300,000-400,000, in the industries it is linked to . Only 5 percent of the surgical instruments industry production is sold in the domestic market with production capacity estimated at 2 million pieces a year and industry capacity utilization estimated at 70 percent .

Over the past 5 years the exports of the sector have witnessed remarkable growth, registering an increase of \$73 million in annual exports between 2008-09 and 2014-15 . There is potential for further growth in exports, worldwide as well as regionally. China and India, with their expanding health sectors and improving health services, are major importers of surgical instruments at present . Indian import of surgical instruments in HS 9018, which has been growing consistently each year, amounted to US\$ 1.3 billion in 2014 . China imported surgical instruments worth US\$ 6 billion in the same year .

The Trade Related Technical Assistance (TRTA II) program carried out an Export Supply Chain Analysis (ESCA) of Surgical Instruments exports to India and China to map the core business processes¹⁷ involved in exporting surgical instruments to both countries in order to identify any regulatory or logistical bottlenecks along the trade supply chain causing inefficient delays. This report presents the findings of the ESCA and proposes the to-be scenario and recommendations to eliminate the identified bottlenecks to facilitate trade in surgical instruments with India and China. Section 2 of the report presents an overview of the export position of Pakistani surgical instruments, section 3 describes the methodology employed to conduct the Export Supply Chain Analysis of surgical instruments, section 4 presents the findings of the study and section 5 concludes the report with recommendations.

¹⁷ A core business process is a recurring process that has to be performed each time a new shipment is exported.

2. Pakistan Surgical Instruments Trade

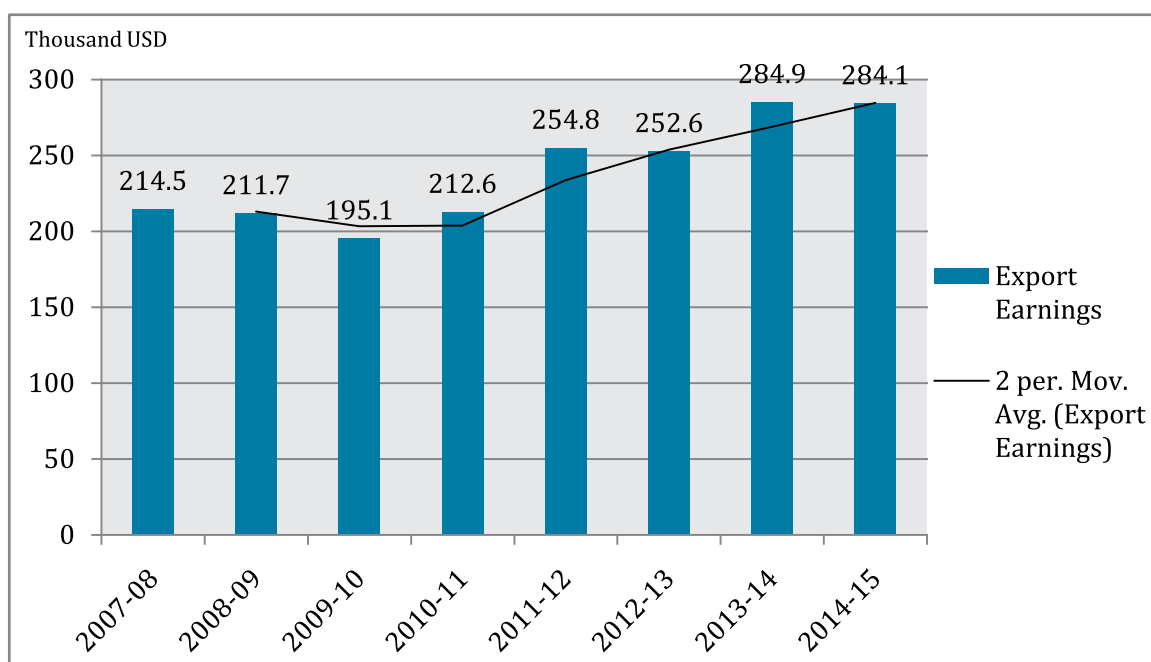
2.1 Export position of Surgical Instruments from Pakistan in World Markets

The major world markets for surgical instruments include the US, UK, and Germany, followed by France and other EU countries. Surgical instruments from Pakistan are exported to all world markets and have gained acclaim for their quality and competitive prices; this is one sector where manufacturers and exporters from Pakistan have been able to penetrate in to high-income markets such as Germany, USA, Belgium and France. Out of the total production of the surgical instruments industry, approximately over 95 percent is exported. Three broad surgical instruments and medical apparatus categories can be defined where Pakistan is supplying in the export markets. The categories include:

- (i) HS Code 9018- Instruments for medical, surgical and dental use;
- (ii) HS Code 9021- Orthopedic appliances;
- (iii) HS Code 9022- Equipment using X-rays, alpha, beta, gamma rays

The exports of Pakistan predominantly fall in the first category, HS Code 9018, and are saturated in North America and the European Union countries. The surgical instruments sector has witnessed inconsistent exports growth over the last two decades. After experiencing a slump in 2005 and 2006, the exports of surgical instruments picked up and witnessed reasonable export performance growth in the following decade. The past few years in particular have witnessed the export earnings of surgical instruments from Pakistan soar, rising from \$211 million in 2008-2009 to \$284 million in 2014-2015¹⁸, registering an increase of US\$ 73 million in annual exports.

Figure 1 Pakistan Surgical Instruments Export Earnings 2007-2015 (USD)

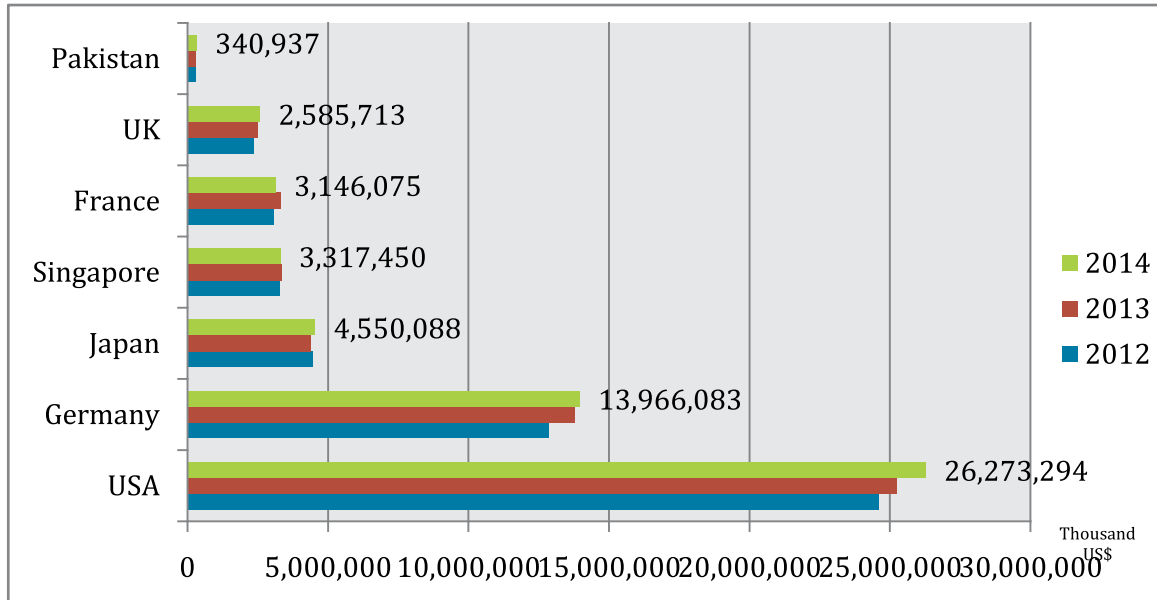


The surgical instruments industry in Pakistan is underutilized and generates far below its potential. Even though Pakistan is one of the two countries- Germany being the other one- that specialize in manufacturing hand-held surgical instruments, exports from Pakistan make up only a small fraction of world trade in surgical and medical devices, which amounts to over \$113 billion for the three

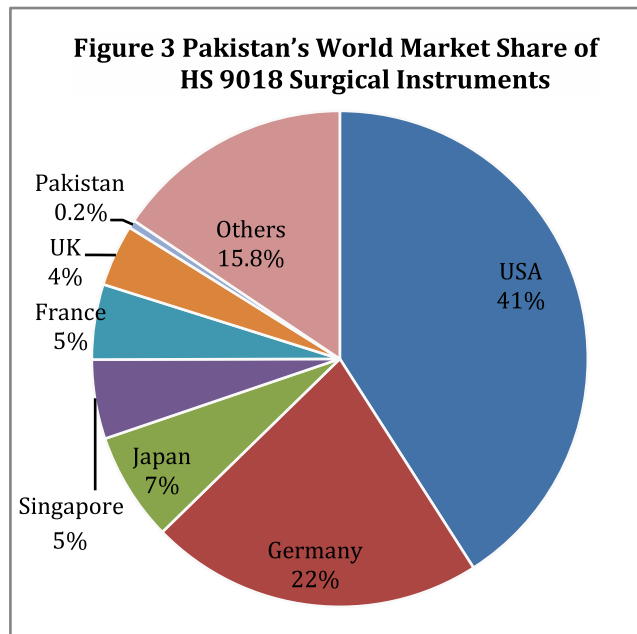
¹⁸ Table attached in the appendix

aforementioned HS categories: HS 9018, HS 9021, and HS 9022 .

Figure 2 Comparison of Surgical Instruments HS 9018 Export Earnings of Pakistan with World Top Exporters'



The global trade in surgical instruments has grown exponentially in the last three decades . A growing aging population in the developed countries and an increase in the disposable incomes of health care consumers, which led to greater expectations of public and private medical care provision, spurred this growth. The world exports of medical and surgical instruments grew from \$ 2.07 billion in 1978 to \$13.76 billion in 1992, with a growth rate of 8.44 percent in 1978-1984 and 14.50 percent in 1985-1993 . In 2009, the total world trade in medical and surgical instruments amounted to US\$ 30 billion. Despite the incessant growth in the global market for surgical instruments, Pakistan has not been able to exploit the rising demand to increase its world market share, which has stayed constant at a mere 0.2 percent .



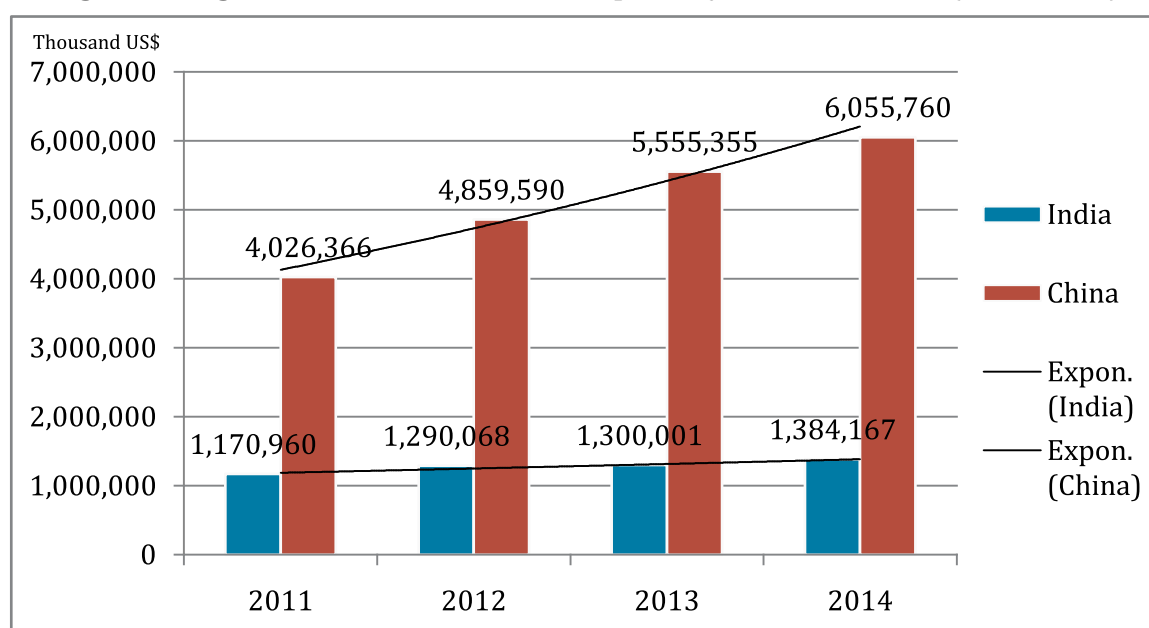
The recent stagnation of surgical instruments exports from Pakistan can be ascribed to a lack of product diversification, reliance on small and low income markets, and an inability to shift from low value disposable instruments to value-added, refined instruments. Pakistan exports semi-finished surgical instruments, which are repackaged by the USA, Germany, and other European countries, and sold at much higher prices, usually amounting to five times the price charged by the exporters from Pakistan . The average export price of goods made in Sialkot is around \$1.5-2.5 , which is higher than what Chinese products fetch (US\$0.35 – in disposable products) but much lower than some of the more sophisticated producers such as Germany and France .

Even though some Pakistani manufacturers and exporters have been able to diversify into value-added products and develop the capabilities to supply in a majority of commodities, their market has remained small or insignificant. With the regional and global markets experiencing increasing demand for medical and surgical instruments, there is potential for growth in exports from Pakistan, worldwide as well as within the region.

2.2 Exploring the potential for Surgical Instruments exports growth in the region

China and India are two of the fastest growing medical and dental instruments markets in the world . As shown in Figure 4, both countries constitute a surgical and medical instruments export market of more than US\$ 7 billion, which is growing at double-digit growth rates each year. Figure 5 indicates that in 2014, Pakistan's exports of surgical instruments to India and China totaled a net value of US\$ 17.8 million, which is a fraction of both countries' imports for the year.

Figure 4 Surgical Instruments HS 9018 Imports by China and India (2011-2014)

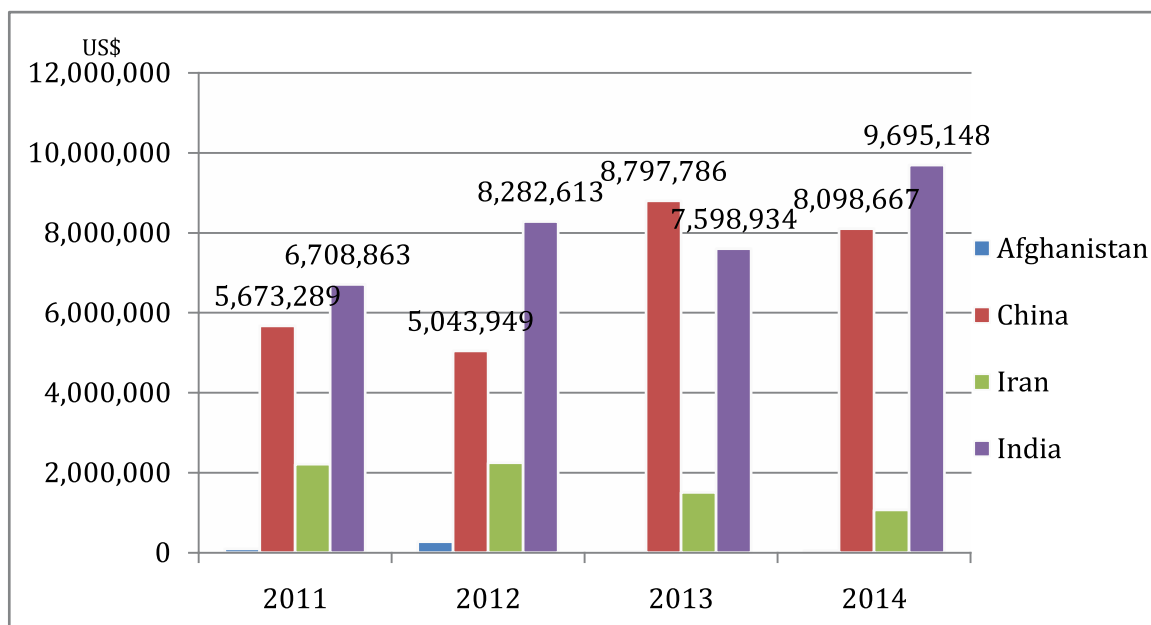


Pakistan's exports of surgical instruments to India have been growing steadily each year, as indicated in Figure 5; between 2011 and 2014, the annual exports grew at an average rate of 14.3 percent each year. Industry analysis indicates that despite consistent growth in exports over the past few years, the surgical instruments exports to India are still far below the potential . According to the members of the Surgical Instruments Manufacturers Association of Pakistan , the volatility of the political situation between India and Pakistan creates an uncertain business environment and poses an obstacle to generation of new business. During periods of diplomatic hostility, the exporters and the buyers are subjected to invasive intelligence activities such as phone call tracing, covert phone call tapping, and investigation of business delegations. Often times, payment for goods is delayed due to close monitoring of remittances to Pakistan. Such experiences give rise to a feeling of insecurity and uncertainty among the traders, limiting the surgical instruments exports to India.

Surgical instruments exports from Pakistan to China have witnessed consistent growth in the past few years. Between 2011 and 2014, exports of HS 9018 Medical and Surgical Instruments to China increased from USD 5.7 million to USD 8.1 million respectively. Despite having grown by USD 3 million, the current exports are far below the potential of the surgical instruments industry and fail to grab a

significant share in the huge Chinese market. According to the exporters at SIMAP, a major NTB is limiting the exports to China; The Ministry of Health in China has categorized surgical instruments as Pharmaceuticals, and all products falling into this category require the exporter to obtain a registration license, for each design that has to be exported, from the Chinese Ministry of Health. The registration itself is free, but the Chinese agency that translates the registration documents charges a substantial fee of USD 2000 for registration of each surgical instrument design and the waiting periods are long. Many exporters are willing to make the monetary investment and endure the waiting period to achieve the registration, but they lack the knowledge about the registration process and its requisites. It is imperative that the issue be resolved to achieve exponential exports growth to this regional market.

Figure 5 Pakistan HS 9018 Medical and Surgical Instruments Exports in the Region



3. Methodology and Scope

The Export Supply Chain Analysis (ESCA) of surgical instruments exports was carried out in 2015 as part of the Regional Trade facilitation component of Trade Related Technical Assistance II programme. The purpose of this ESCA is to map the as-is business processes of exporting surgical instruments from Pakistan to its neighboring countries, in order to examine the time and cost effectiveness of these processes and propose recommendations where export supply chain can be made more competitive and efficient resulting in time and cost reduction for the importer. The ESCA proposes a to be scenario, which attempts to describe the benefits of reduced challenges in the export supply chain and estimate the reduction in time getting product to international world markets. The output of the ESCA will inform the trade policy measures aimed at creating an enabling environment for the export growth of surgical instruments in the region. This report will map the export design for:

- i) Surgical instruments export to India by air freight
- ii) Surgical Instruments export to China by air freight

The Export Supply Chain Analysis was carried out during a period of three months. During this time, multiple visits were made to the surgical instruments manufacturing units of the ESCA candidates located in Sialkot. During these visits, three surgical instruments manufacturing units were visited. Over the course of these visits, the National Expert in Regional Trade observed and noted the business processes as they were being carried out and arranged focus groups with the exports team, accounts team, and the freight forwarding team to understand the core business processes of surgical instruments export. Semi-structured interviews were conducted with the exporters to understand the documentary and regulatory requirements of exporting and importing surgical instruments. These processes are depicted as flow charts in the report and explained in tables following the flow charts.

By using a BUY-SHIP-PAY¹⁹ model, this study divides the core business processes of exporting surgical instruments to India into three operational areas and maps the supply chain through diagrams denoting functions and actors. It captures the documentary, regulatory, logistical, and financial requirements of each stage in the export supply chain, alongside a time-procedure study of each process. The result is a standardized document that maps the surgical instruments exports supply chain along with time-cost, facilitating the following interventions:

1. Allow the Ministry of Commerce and the Customs House to revise redundant procedures that lead to time delays and cost escalation.
2. Provide a standardized, step-by-step map of the surgical instruments export business process to the PRAL to facilitate the design of an electronic single window at BCPs for surgical instruments which will allow exporters to complete the documentary requirements of exporting these instruments on an online portal and save time.
3. Deliver a comprehensive study of core business processes to the exporters with a time-procedure analysis and a blueprint of the export supply chain design to facilitate modification in processes to enhance efficiency at the firm level.

The analysis of surgical instruments export is based on the following assumptions:

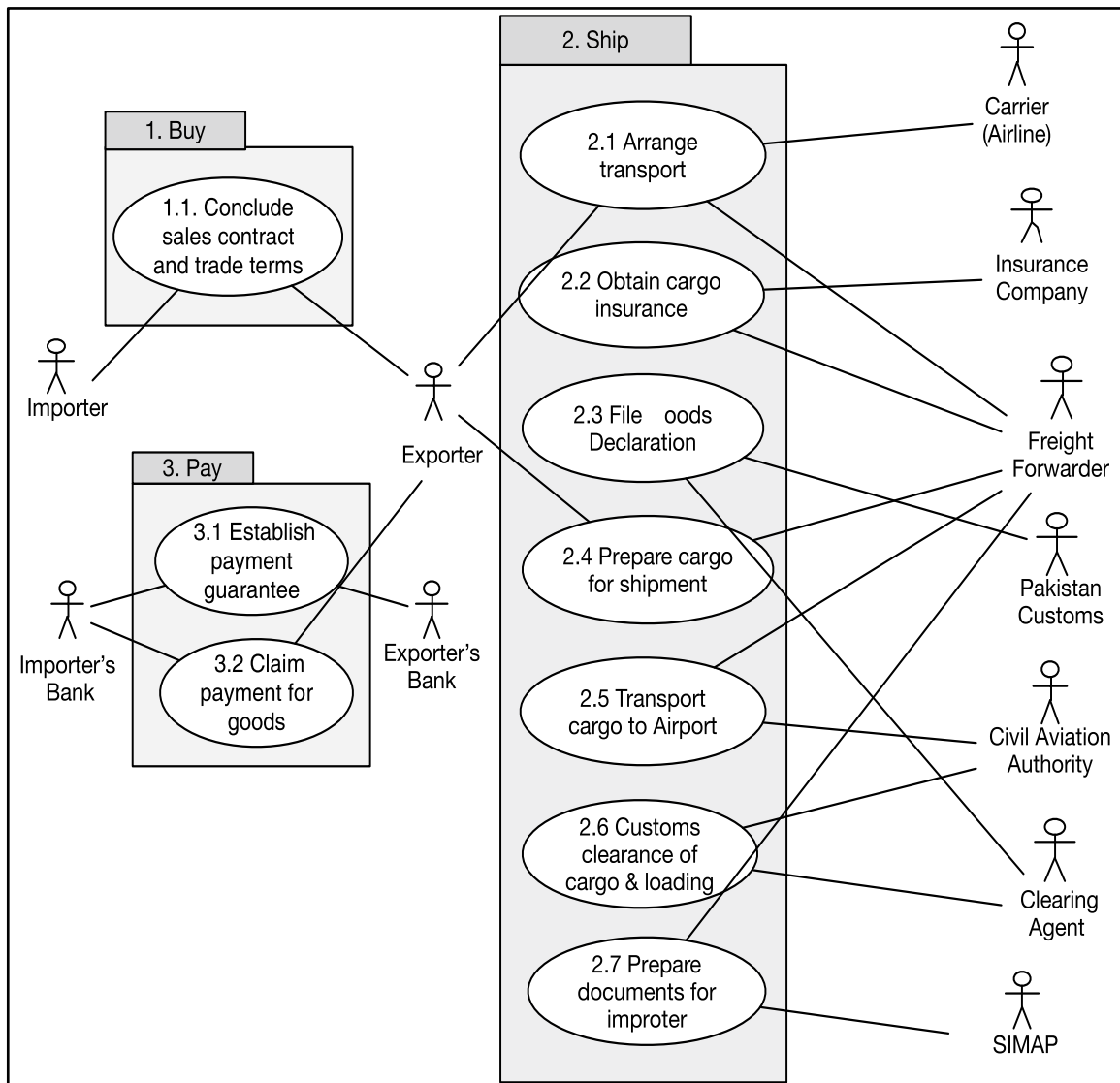
1. The buyer does not add a separate clause for insurance in the Letter of Credit.
2. Surgical instruments are shipped via airfreight.
3. Surgical instruments are delivered under the C.I.F. term where an exporter arranges and

¹⁹ The BUY-SHIP-PAY model divides trade business processes into three categories: buy, ship, and pay.

- absorbs the costs of shipping surgical instruments to the port of destination.
- 4. The payment for the purchased surgical instruments is made by a Letter of Credit.
- 5. For export to China, the exporter is registered with the Ministry of Health in China.

It is important to note that no export permit is required to export surgical instruments from Pakistan, but registration is required with the Chinese Ministry of Health for export to China; it is a one-time process and is therefore not listed as a core business process. Figure 6 presents a use case diagram indicating the core business processes of surgical instruments export from Pakistan to India and China, and all the actors involved in the surgical instruments export supply chain. There are 10 core business processes in the trade supply chain and 9 different actors, aside from the exporter and the importer.

Figure 6 Use Case Diagram Core Business Processes Surgical Instruments



4. Core Business Processes of Surgical Instruments exports

This table lists the business processes involved in getting surgical instruments from Pakistan to India and China by categorizing them under three operational areas: buy, ship, pay. The buy process area has 1 core business process²⁰, ship process area has 7 core business processes, and the pay process area has 2 core business processes.

Table 2 Core Business Processes and Agencies in Surgical Instruments Exports from Pakistan

Core business process	Party								
	FREIGHT FORWARDER	INSURANCE COMPANY	SIMAP	CARGO CARRIER (AIRLINE)	IMPORTER'S BANK	EXPORTER'S BANK	Civil Aviation Authority	CLEARING AGENT	PAKISTAN CUSTOMS
1. Buy									
1.1. Conclude sales contract and trade terms						X			
2. Ship									
2.1. Arrange transport	X			X					
2.2. Obtain cargo insurance	X		X						
2.3. File Goods Declaration								X	X
2.4. Prepare cargo for shipment	X								
2.5. Transport cargo to Airport	X						X		
2.6. Customs clearance of cargo and loading	X							X	X
2.7. Prepare documents required by importer	X								
3. Pay									
3.1 Establish payment guarantee						X			
3.2 Claim payment for goods						X			

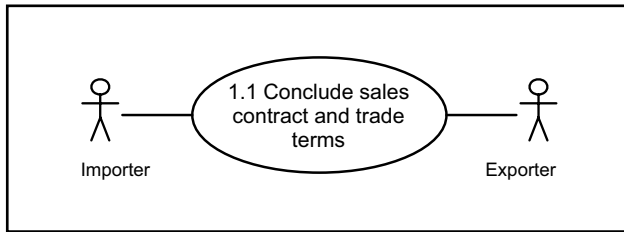
The processes listed above are denoted using activity diagrams and use case diagrams in the following sections of the report. A use case diagram highlights the participants linked to a process area, responsible for carrying out that activity. An activity diagram is a flow chart that highlights the criteria to begin and end a business process, activities and associated documentary requirements, and the participants performing each activity. The diagrams have been drafted using the Universal Modeling Language (UML). A legend of the UML is attached in the Appendix to the report.

²⁰ A core business process is a recurring process that is performed each time a new shipment is exported.

4.1 Process Area 1: Buy

Core Business Process Area 1.1 'Conclude sales contract and trade terms'

Figure 7 Use Case Diagram '1.1 Conclude sales contract and trade terms'



'Conclude sales contract and trade terms' is the only core business process under "Buy" process area. It requires participation from the:

- Importer
- Exporter

Figure 8 Activity Diagram '1.1 Conclude sales contract and trade terms'

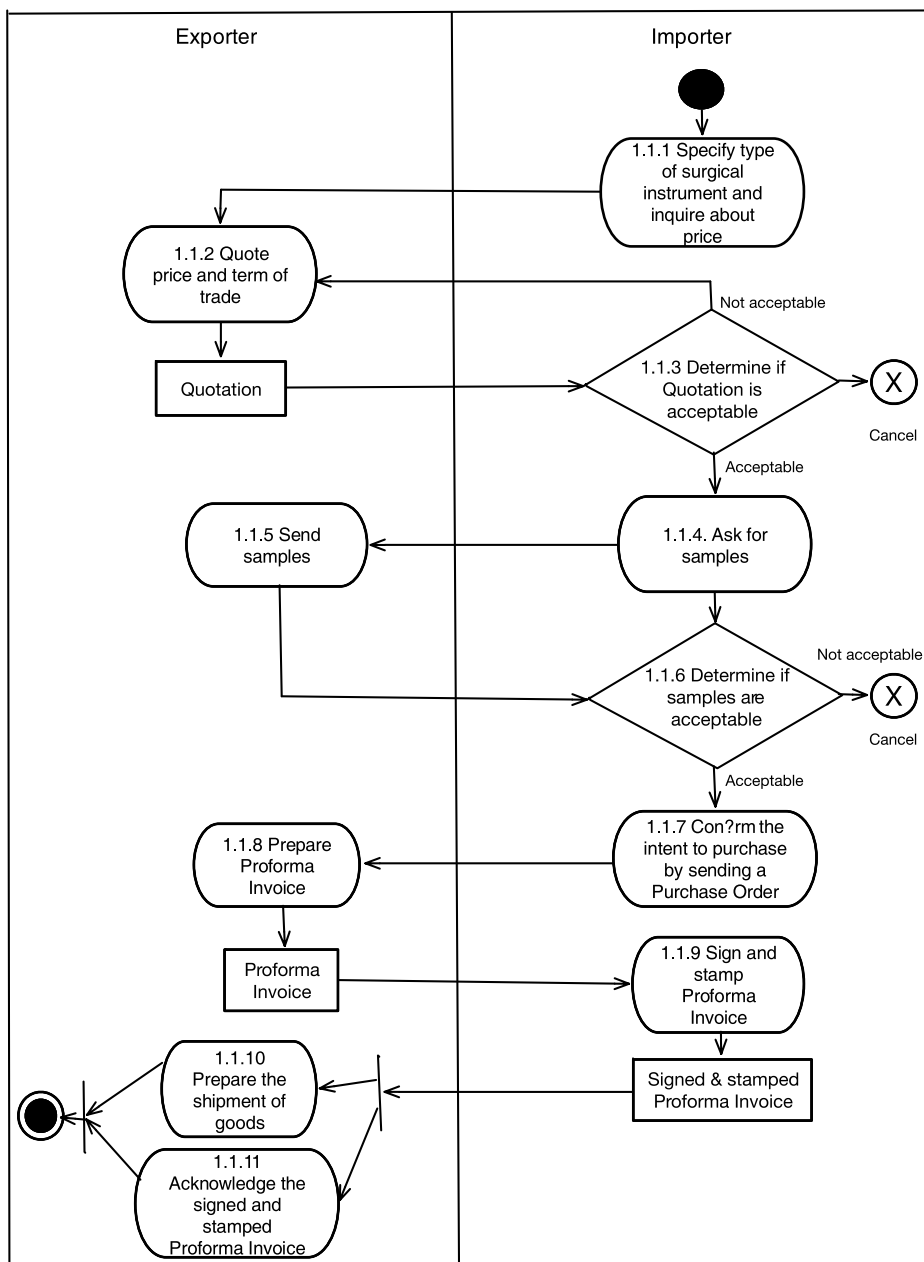
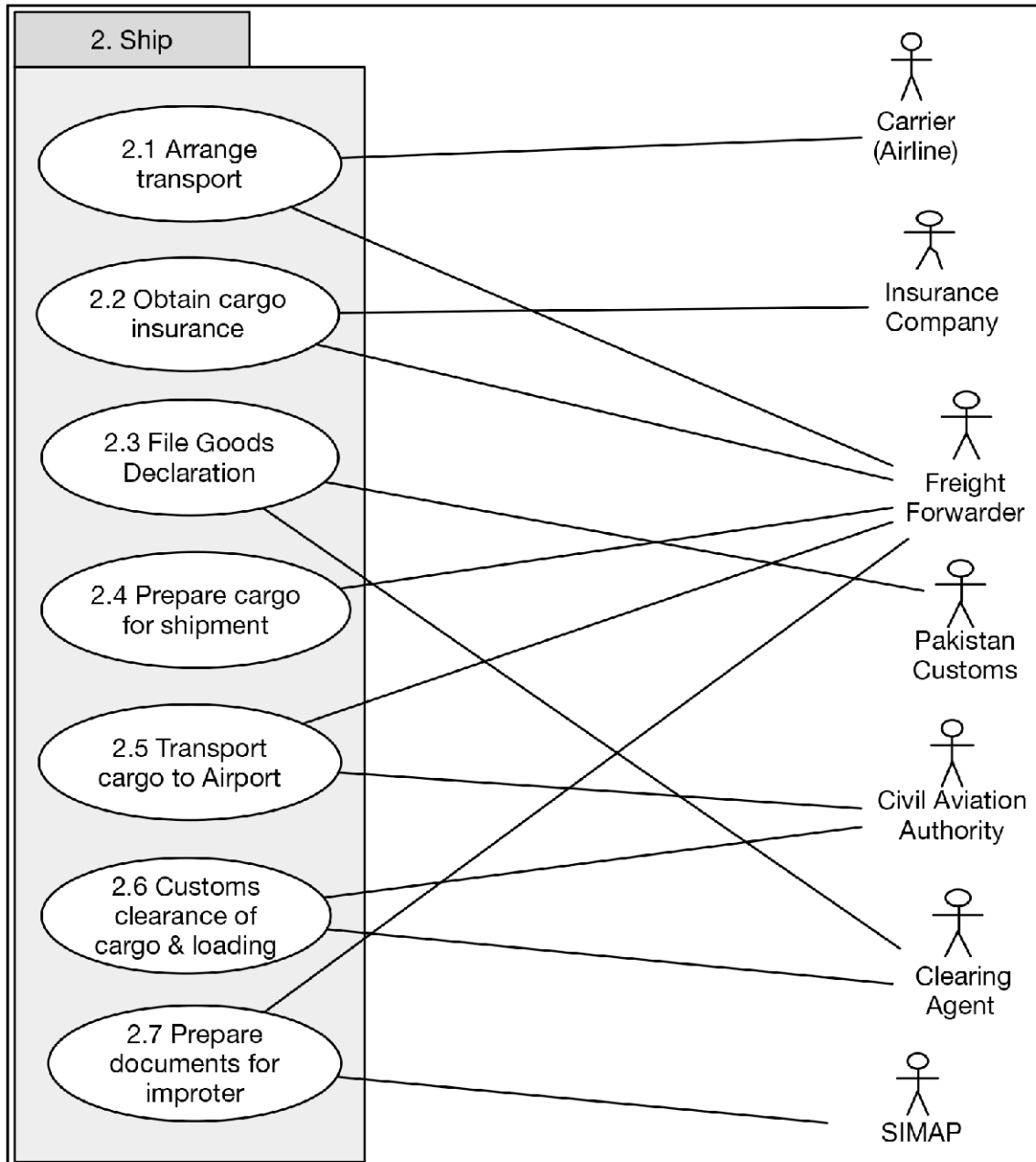


Table 3 Description of Process Area '1.1 Conclude sales contract and trade terms'

Name of a process area	1. Buy
Name of the business process	1.1 Conclude sales contract and trade terms
Related laws, rules and regulations	<ul style="list-style-type: none"> • In order to export surgical instruments to China, the exporter is required to be registered with the Chinese Ministry of Health
Process participant	<ul style="list-style-type: none"> • Importer • Exporter
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • A potential buyer contacts the surgical instruments exporter.
Activities and associated documentary requirements	<p>1.1.1 Importer makes an inquiry for the cost of a particular type of surgical instrument.</p> <p>1.1.2 Exporter quotes the price for the surgical instruments and the terms of trade. This step takes 15 minutes.</p> <p>1.1.3 Importer reviews the quotation and determines if the quoted price and sales terms are acceptable. If the quoted price and sales terms are not acceptable, importer requests exporter to revise them.</p> <p>1.1.4 If the quoted price and sales terms are acceptable, importer asks for samples.</p> <p>1.1.5 The exporter sends samples by DHL. Delivery through DHL takes 3 business days.</p> <p>This is a one-time process, carried out when the buyer and the exporter are trading for the first time. This step is skipped when a business relationship has been established.</p> <p>1.1.6 Importer examines the samples and determines if they meet the quality and standards expected by the buyer. This process takes 2 days. If the samples do not meet the buyer's requirements, he cancels the deal.</p> <p>1.1.7 If the samples meet the buyer's requirements, he confirms the intent to purchase by sending a Purchase Order to the exporter, specifying the type and quantity of surgical instruments required.</p> <p>1.1.8 Exporter prepares Proforma Invoice to inform importer about quoted price and sales terms for the type and quantity required. It takes 30 minutes.</p> <p>1.1.9 Importer signs and stamps the Proforma Invoice and sends it back via email/fax.</p> <p>1.1.10 Exporter prepares the delivery of goods accordingly.</p> <p>1.1.11 Exporter acknowledges the receipt of signed and stamped Proforma Invoice.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Importer and exporter have concluded trade contract and terms.
Average time required to complete this business process	<ul style="list-style-type: none"> • Sending samples to the buyer: 3 days • Approval of samples by the buyer and issuance of Purchase Order: 2 days • Issuance of Proforma Invoice and stamping/signing by the buyer: 1 hour

4.2 Process Area 2: Ship

Figure 9 Use Case Diagram '2. Ship'

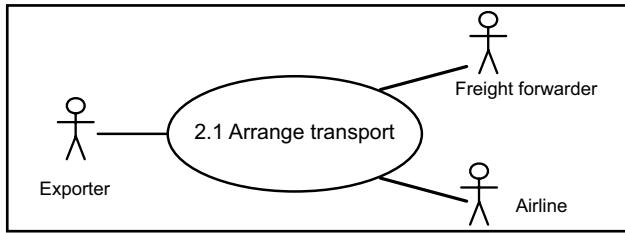


The shipping of surgical instruments from Pakistan consists of 7 core business processes, as shown in Figure 9. These processes involve the booking of cargo space in the airline, transportation of cargo to the airport, completion of customs formalities for export, and the fulfillment of documentary requirements for the export of surgical instruments from Pakistan and the import of surgical instruments in India and China. All the processes in the ship process area take 2 days to complete.

The exporter out-sources the shipping processes to a freight forwarder and a clearing agent. The freight forwarder is entrusted with the insurance and movement of cargo from exporter's premise to the Airport in Sialkot, and preparation of documents required by the importer. The Clearing Agent files the Goods Declaration, carries out customs clearance of cargo, and oversees loading on the aircraft.

Core Business Process Area 2.1 'Arrange transport'

Figure 10 Use Case Diagram '2.1 Arrange transport'



The use case diagram in Figure 10 indicates that the following participants are involved in the process area 'Arrange transport':

- Exporter
- Freight forwarder
- Airline

Figure 11 Activity Diagram '2.1 Arrange transport'

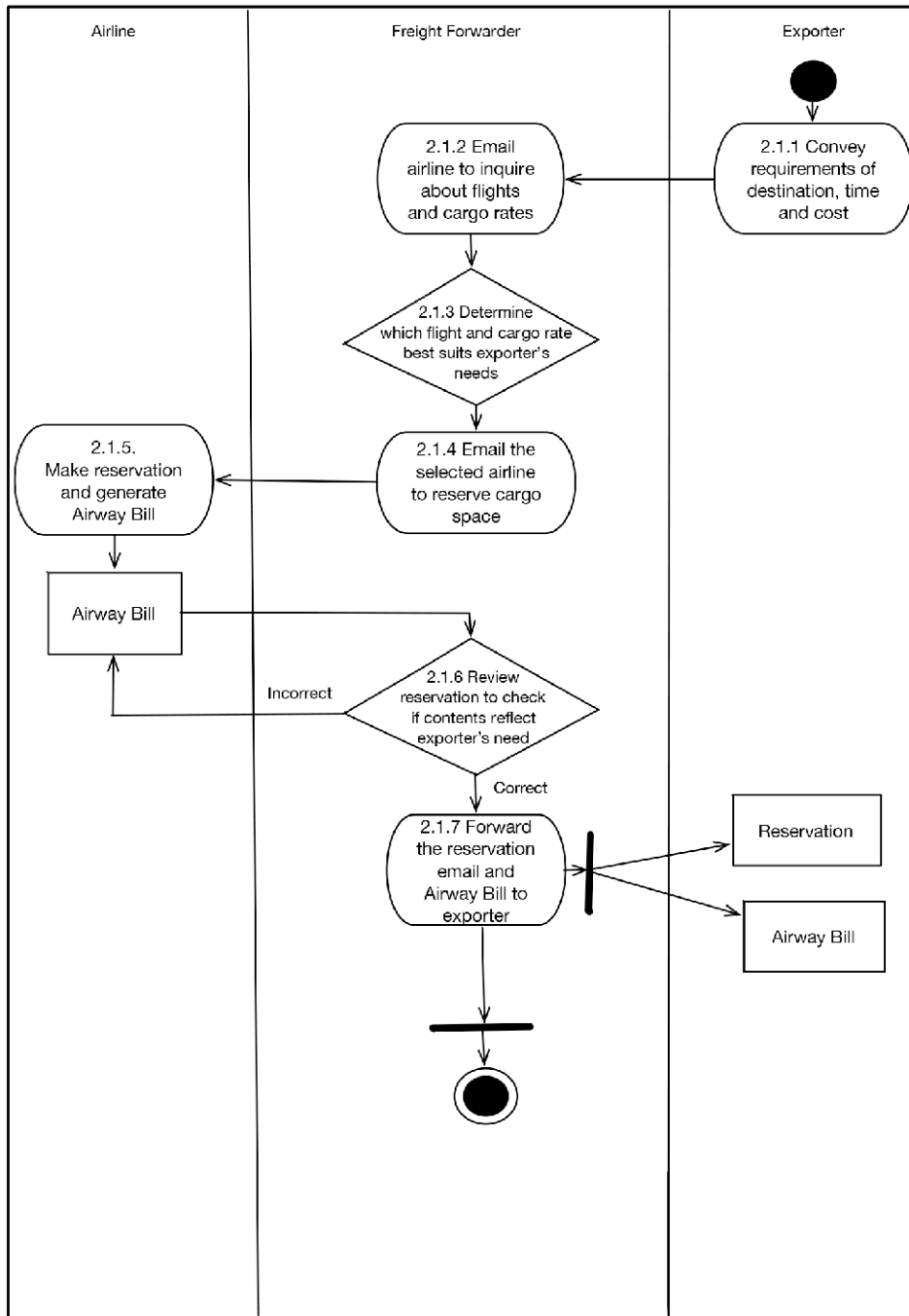
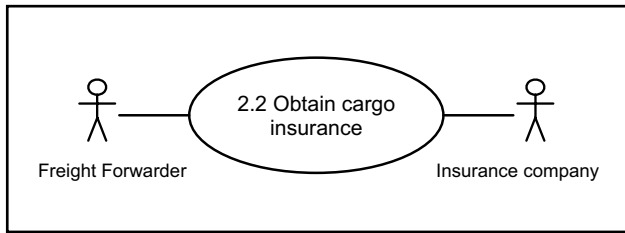


Table 4 Description of Process Area '2.1 Arrange transport'

Name of a process area	2. Ship
Name of the business process	2.1 Arrange transport
Related laws, rules and regulations	INCOTERMS 2000
Process participant	<ul style="list-style-type: none"> • Exporter • Airline • Freight forwarder
Input and criteria to enter/begin the business process	The exporter and importer have agreed upon CIF terms of trade, which entails that the delivery of purchased surgical instruments to the customer's Airport is the exporter's responsibility.
Activities and associated documentary requirements	<p>2.1.1 Exporter contacts freight forwarder to reserve cargo space in an airline for a specified destination, date, cost and transit time.</p> <p>2.1.2 The freight forwarder emails the airlines to inquire about flights and cargo rates for a specified destination and date.</p> <p>2.1.3 Upon getting the requested information, the freight forwarder decides which airline, flight and cargo rate best suits the exporter's requirements.</p> <p>2.1.4 The freight forwarder emails the selected airline to reserve cargo space for the specified date, time, and destination.</p> <p>2.1.5 The airline books cargo space according to the requirements specified by the freight forwarder and generates Airway Bill. Details of reservation and Airway Bill number are sent to the freight forwarder via email.</p> <p>2.1.6 Freight forwarder reviews the information contained in the reservation to ensure the contents reflect the exporter's needs. If it does not, he asks the airline to revise the reservation.</p> <p>2.1.7 If the reservation is apt, the freight forwarder forwards the reservation email by the airline and the Airway Bill to the exporter.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Transportation required to move surgical instruments to the specified Airport in India/China has been arranged.
Average time required to complete this business process	1 hour

Core Business Process Area 2.2 'Obtain cargo insurance'

Figure 12 Use Case Diagram '2.2 Obtain cargo insurance'



The use case diagram in Figure 12 indicates that the following participants are involved in the process area 'Obtain cargo insurance':

- Freight forwarder
- Insurance company

Figure 13 Activity Diagram '2.2 Obtain cargo insurance'

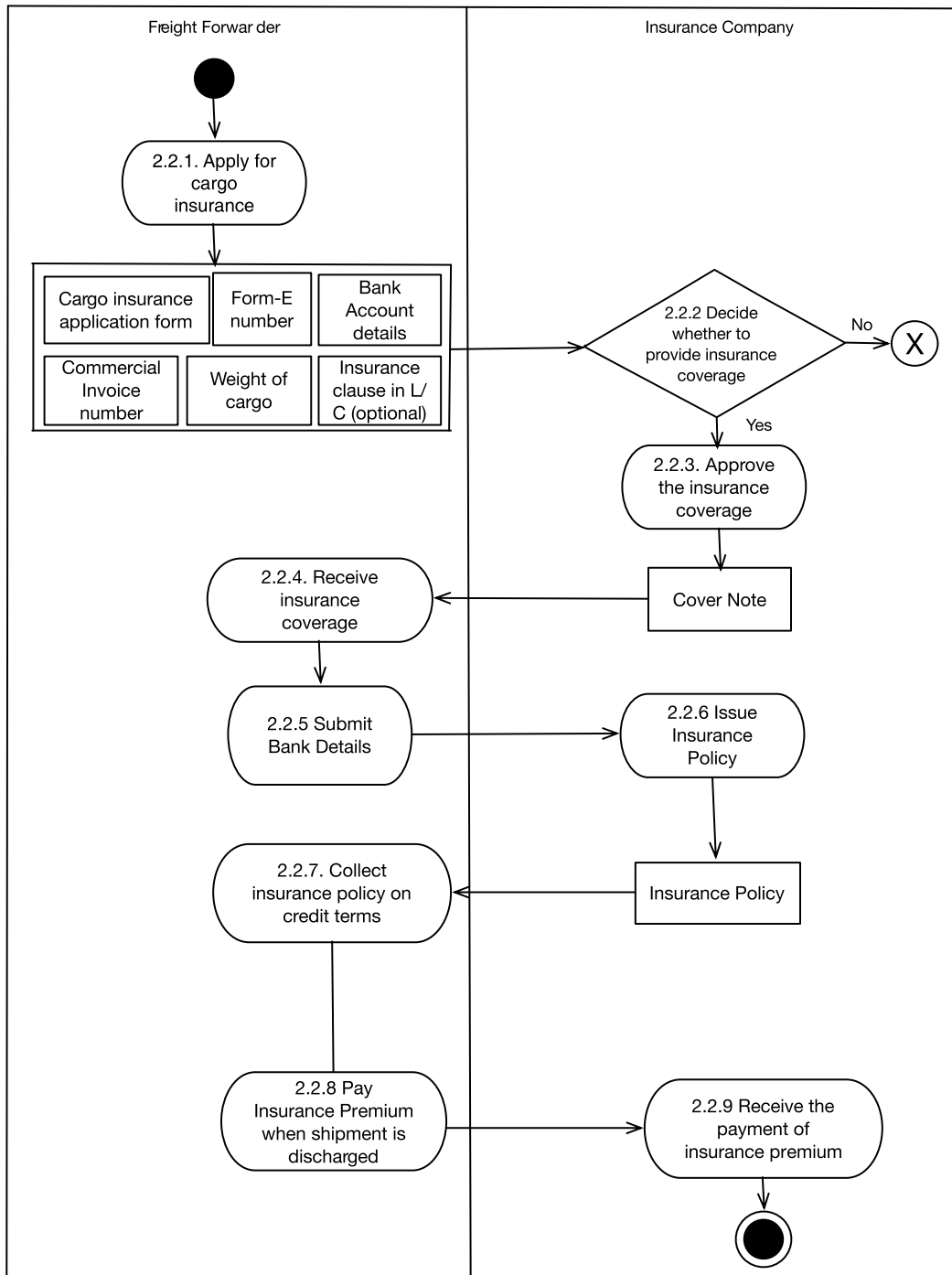
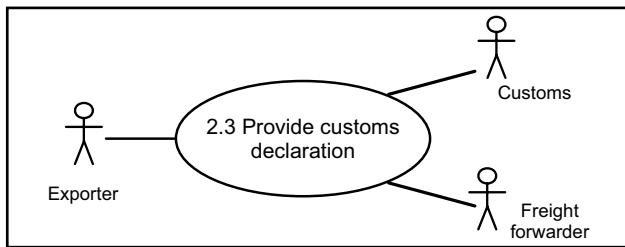


Table 5 Description of Process Area '2.2 Obtain cargo insurance'

Name of a process area	2. Ship
Name of a business process	2.2 Obtain cargo insurance
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Freight forwarder • Insurance company
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Importer and exporter have agreed upon CIF terms of trade, making insurance the responsibility of the exporter. • Transportation required to ship surgical instruments to the customer's Airport has been arranged. • The insurance company accepts credit terms of payment.
Activities and associated documentary requirements	<p>2.2.1 Under the CIF terms, exporter is responsible for obtaining the cargo insurance. The freight forwarder submits the following documents to the insurance company:</p> <ul style="list-style-type: none"> - Cargo Insurance Application Form - Form-E number - Commercial Invoice number - Bank account details - Weight of cargo <p>2.2.2 Based on the submitted documents, insurance company decides whether or not to provide insurance coverage.</p> <p>2.2.3 If the insurance company decides to provide the insurance coverage, it issues a Cover Note for the to-be-insured consignment as evidence to confirm that the insurance coverage is in effect.</p> <p>2.2.4 FF collects Cover Note from the insurance company.</p> <p>2.2.5 Freight Forwarder provides Exporter's Bank Account information to the insurance company.</p> <p>2.2.6 Insurance company issues the Insurance Policy.</p> <p>2.2.7 Freight forwarder collects insurance policy from insurance company the next day on credit terms.</p> <p>2.2.8 Insurance company receives the payment for insurance premium when the shipment departs from the Airport.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The consignment is insured from the exporter's warehouse till the airport of destination.
Average time required to complete this business process	30 minutes

Core Business Process Area 2.3 'File Goods Declaration'

Figure 14 Use Case Diagram '2.3 File Goods Declaration'



The use case diagram in Figure 14 indicates that the following participants are involved in the process area 'File Goods Declaration':

- Clearing Agent
- Pakistan Customs

Figure 15 Activity Diagram '2.3 File Goods Declaration'

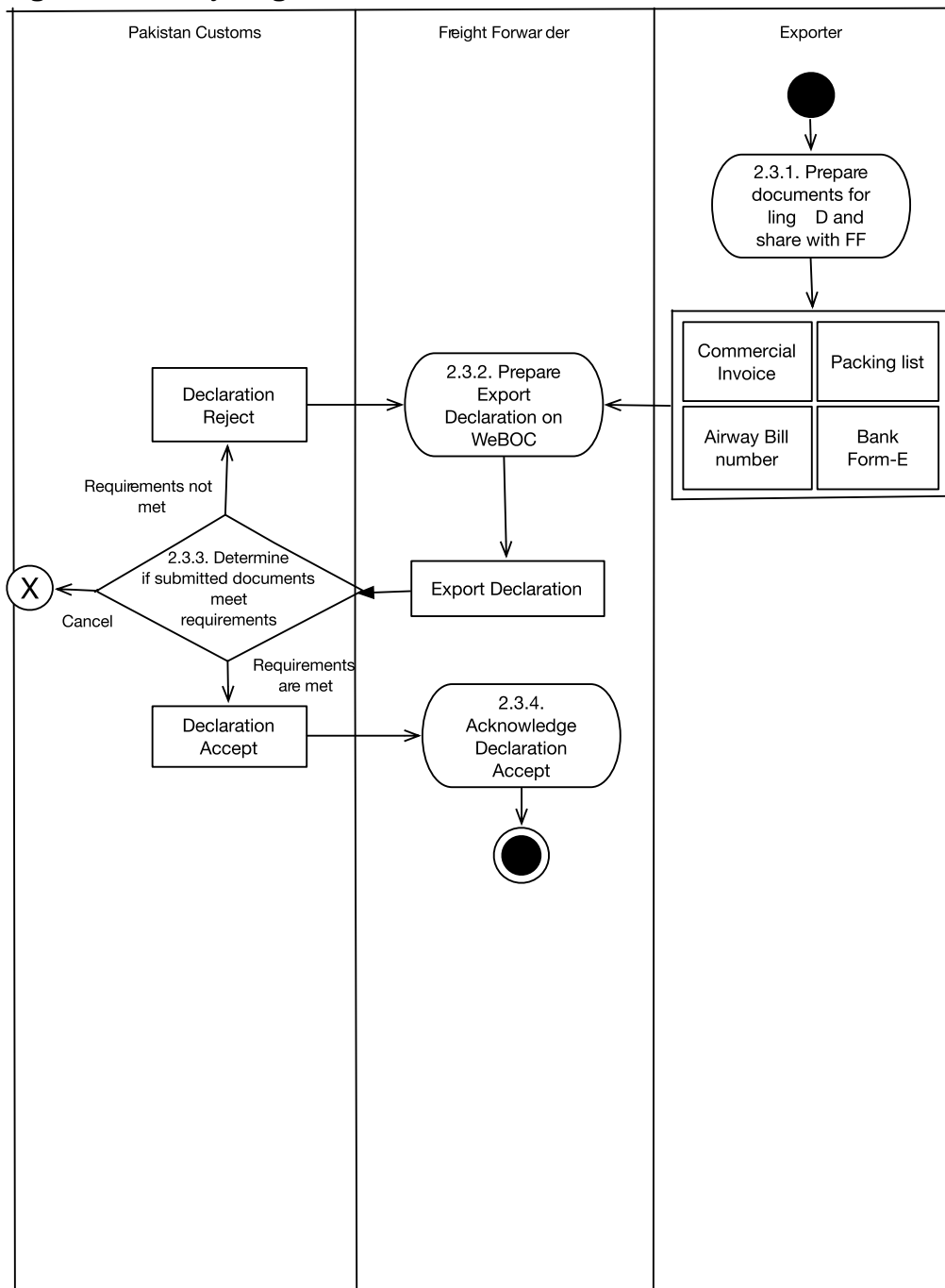
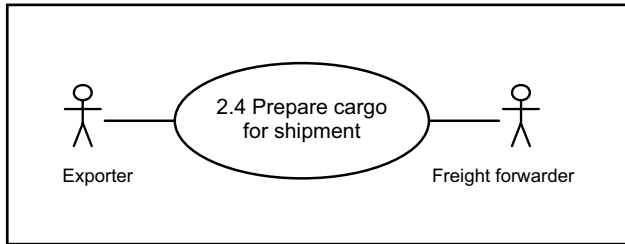


Table 6 Description of Process Area '2.3 File Goods Declaration'

Name of a process area	2. Ship
Name of a business process	2.3 Clearing agent provides Goods Declaration
Related laws, rules and regulations	<ul style="list-style-type: none"> • No Export Duty is levied on exports from Pakistan. • Customs Rules 2001 • Customs Act 1969 (As amended up to 30th June 2015) Chapter XVI-A section 155A, 155B, 155C, 155D, 155E, 155F, 155G, 155H, 155-I, 155J, 155k, 155L, 155M, 155N, 155O, 155P, 155Q, 155R, Chapter XX section 204, 205, 206)
Process participant	<ul style="list-style-type: none"> • Clearing Agent • Pakistan Customs
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Exporter or Clearing Agent is a registered user of WeBOC. • Transportation required to ship cargo to the specified Airport in India/China has been arranged. • The consignment of surgical instruments has been insured.
Activities and associated documentary requirements	<p>2.3.1 Exporter compiles the following documents required for filing Exports Goods Declaration on Pakistan Customs E-filing system WeBOC and shares them with the freight forwarder:</p> <ul style="list-style-type: none"> • Commercial Invoice • Packing List • Form-E • Airway Bill number <p>2.3.2 A clearing agent in the freight forwarder's team prepares Exports Goods Declaration (GD) in WeBOC.</p> <p>2.3.3 Pakistan Customs, by WeBOC system, determines if submitted Goods Declaration meets Customs requirements. If it does not, WeBOC system generates a message to notify the user that the Goods Declaration has been rejected. In this case, the Clearing Agent needs to revise the GD. If submitted GD meets the requirements, WeBOC accepts it. The system accepts the Export GD and gives 'Declaration Accept' notification.</p> <p>2.3.4 Clearing Agent acknowledges successful submission of Export GD upon the receipt of Declaration Accept.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter receives a message from WeBOC system inclusive of the Goods declaration reference number notifying that the Export Declaration has been accepted.
Average time required to complete process	30 minutes

Core Business Process Area 2.4 'Prepare cargo for shipment'

Figure 16 Use Case Diagram '2.4 Prepare cargo for shipment'



The use case diagram in Figure 16 indicates that the following participants are involved in the process area 'Prepare cargo for shipment':

- Freight Forwarder
- Exporter

Figure 17 Activity Diagram '2.4 Prepare cargo for shipment'

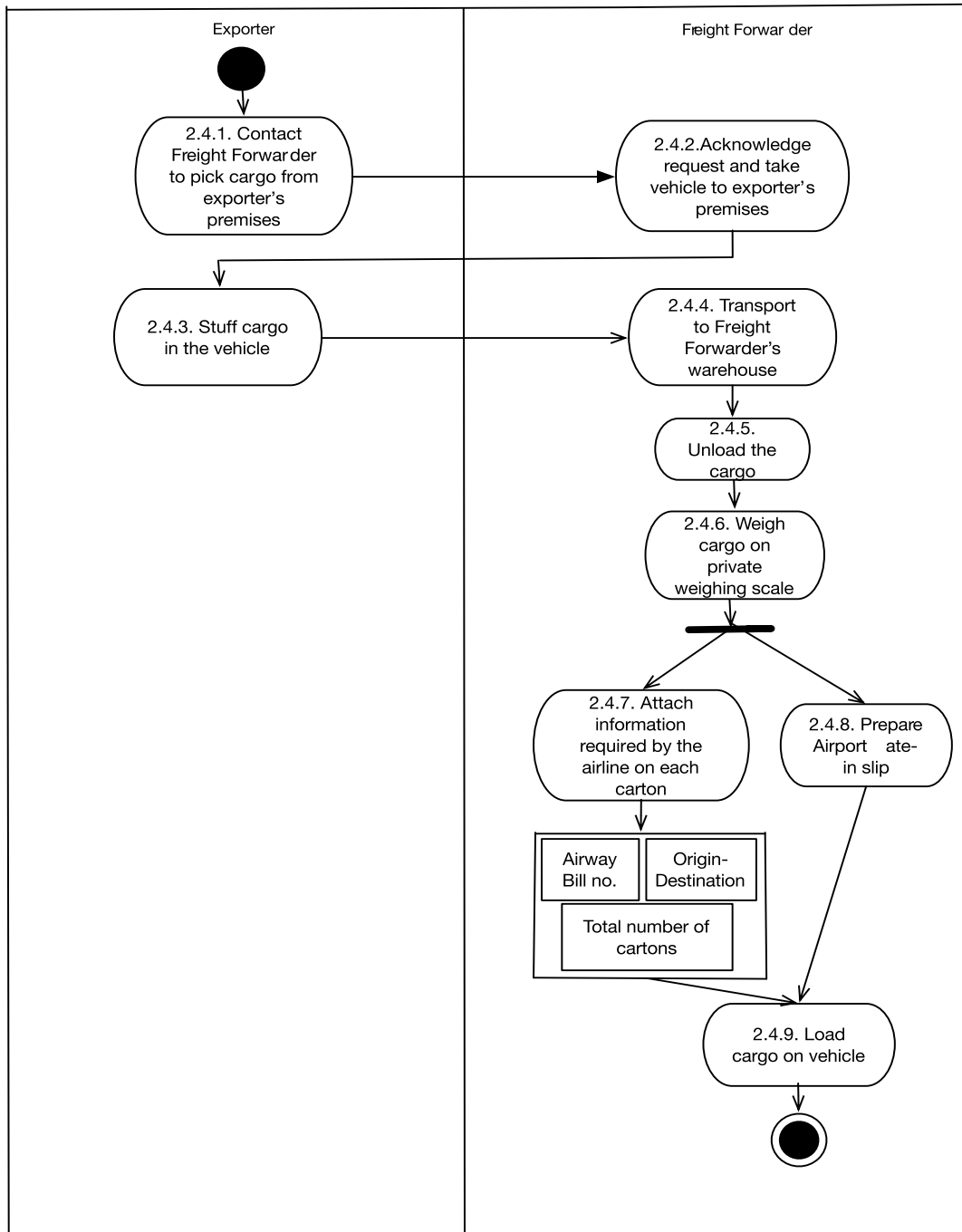
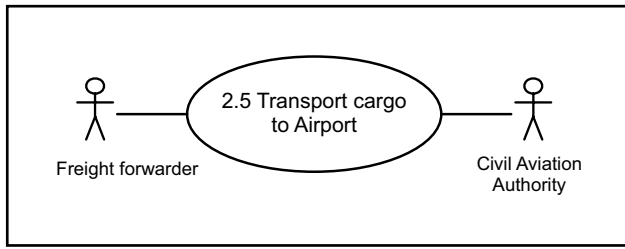


Table 7 Description of Process Area '2.4 Prepare cargo for shipment'

Name of a process area	2. Ship
Name of a business process	2.4 Prepare cargo for shipment
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Freight Forwarder • Exporter
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Transportation required to ship surgical instruments to the Airport in India/China has been arranged. • The consignment of surgical instruments has already been insured.
Activities and associated documentary requirements	<p>2.4.1 Exporter conveys to the freight forwarder the time when freight forwarder's vehicle should pick the cargo from the exporter's premises.</p> <p>2.4.2 Freight forwarder acknowledges request and takes vehicle to the exporter's warehouse for loading.</p> <p>2.4.3 Packed cargo boxes are loaded on to the vehicle. It takes between 15 to 30 minutes to complete loading.</p> <p>2.4.4 The vehicle transports the cargo to the freight forwarders warehouse.</p> <p>2.4.5 Cargo is unloaded in the freight forwarders warehouse.</p> <p>2.4.6 Cargo cartons are weighed on a private weighing scale and the weight reading is noted down by the freight forwarder. No box should exceed a weight limit of 30 kg set by the airline.</p> <p>2.4.7 The following information is attached with each box:</p> <ul style="list-style-type: none"> - Airway Bill no. - Origin-Destination - Total number of cartons <p>2.4.8 Freight forwarder prepares a cargo gate-in slip for the gate-in at the airport. It contains the following information:</p> <ul style="list-style-type: none"> - Vehicle driver's name - Clearing agent's name - Export company name
Output criteria to exit the business process	<ul style="list-style-type: none"> • The cargo is ready for transfer to the airport.
Average time required to complete this business process	2 hours

Core Business Process Area 2.5 'Transport cargo to airport'

Figure 18 Use Case Diagram '2.5 Transport cargo to Airport'



The use case diagram in Figure 18 indicates that the following participants are involved in the process area 'Transport cargo to Airport':

- Freight Forwarder
- Civil Aviation Authority

Figure 19 Activity Diagram '2.5 Transport cargo to Airport'

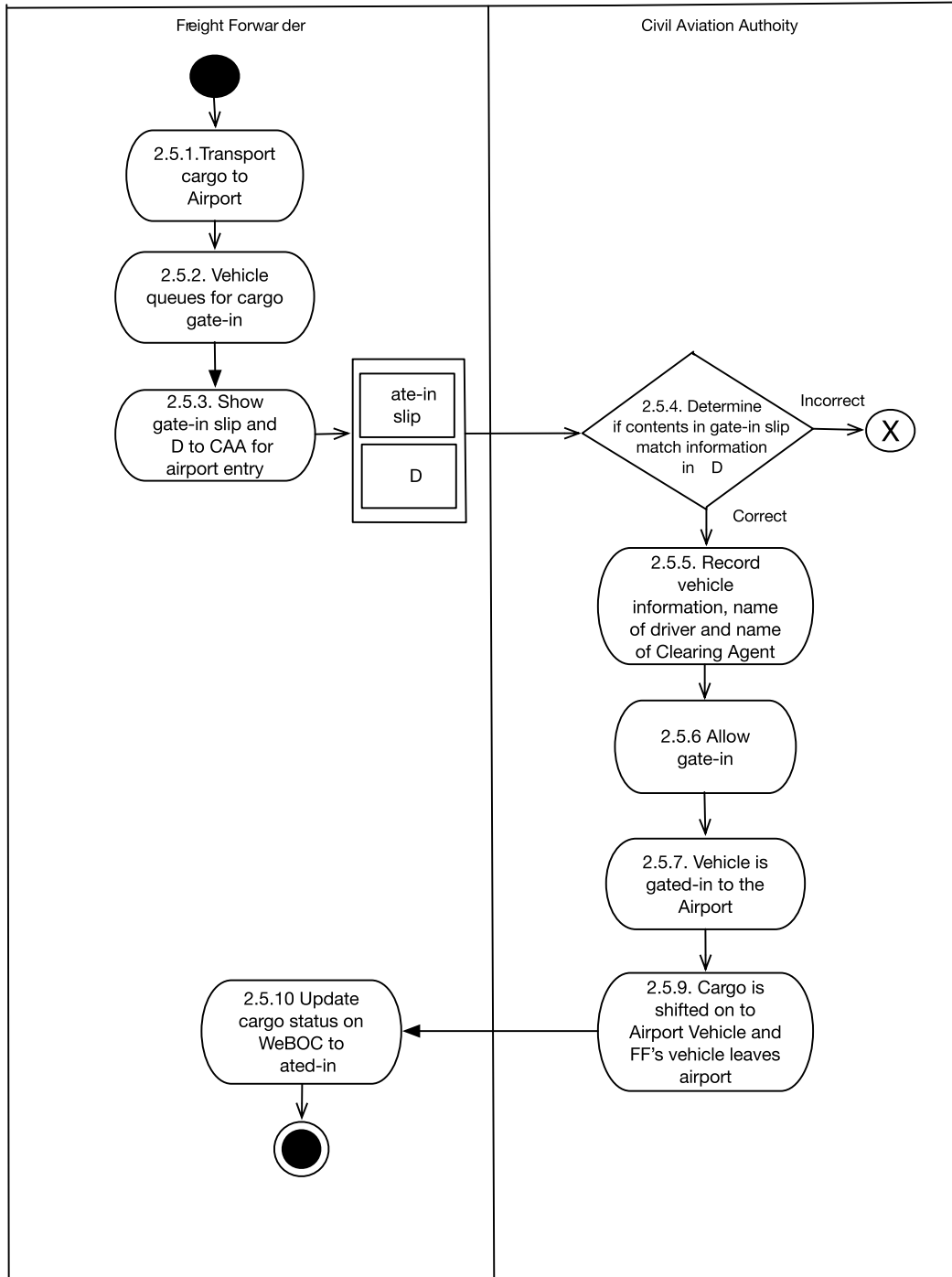
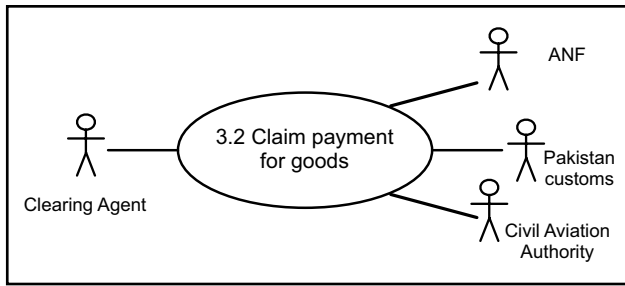


Table 8 Description of Process Area '2.5 Transport cargo to Airport'

Name of a process area	2. Ship
Name of a business process	2.5 Transport cargo to Airport
Related laws, rules and regulations	N/A
Process participant	<ul style="list-style-type: none"> • Freight Forwarder • Civil Aviation Authority
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • Transportation required to move surgical instruments to the Airport in India/China has been arranged. • The consignment of surgical instruments has already been insured.
Activities and associated documentary requirements	<p>2.5.1 Freight forwarder transports the cargo to the Sialkot Airport.</p> <p>2.5.2 Vehicle queues for gate-in at the airport. The average waiting time in the queue is 15-20 minutes.</p> <p>2.5.3 The vehicle driver shows the gate-in slip and a copy of the Goods Declaration to the Civil Aviation Authority (CAA) for airport entry.</p> <p>2.5.4 The CAA inspector determines if the contents of the gate-in slip accurately reflect the information in the Goods Declaration. If the contents do not reflect the information in the GD, the CAA inspector does not allow the vehicle to gate-in.</p> <p>2.5.5 If the contents of the gate-in slip are satisfactory, the CAA inspector records vehicle information, driver's name, and the clearing agent's name.</p> <p>2.5.6 The vehicle is gated-in to the airport.</p> <p>2.5.7 The Airport authority unloads cargo from the freight forwarder's vehicle and shifts it on to the airport vehicle. Freight forwarder's vehicle leaves the airport.</p> <p>2.5.8 Freight forwarder updates cargo status on WeBOC to 'Cargo gated-in'.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The surgical instruments consignment has been gated-in to the Sialkot Airport.
Average time required to complete this business process	2 hours

Core Business Process Area 2.6 'Customs clearance of cargo and loading'

Figure 20 Use Case Diagram '2.6 Customs clearance of cargo and loading'



The use case diagram in Figure 20 indicates that the following participants are involved in the process area 'Customs clearance of cargo and loading':

- Clearing Agent
- Civil Aviation Authority
- Pakistan Customs
- Anti-Narcotics Force (ANF)

Figure 21 Activity Diagram '2.6 Customs clearance of cargo and loading'

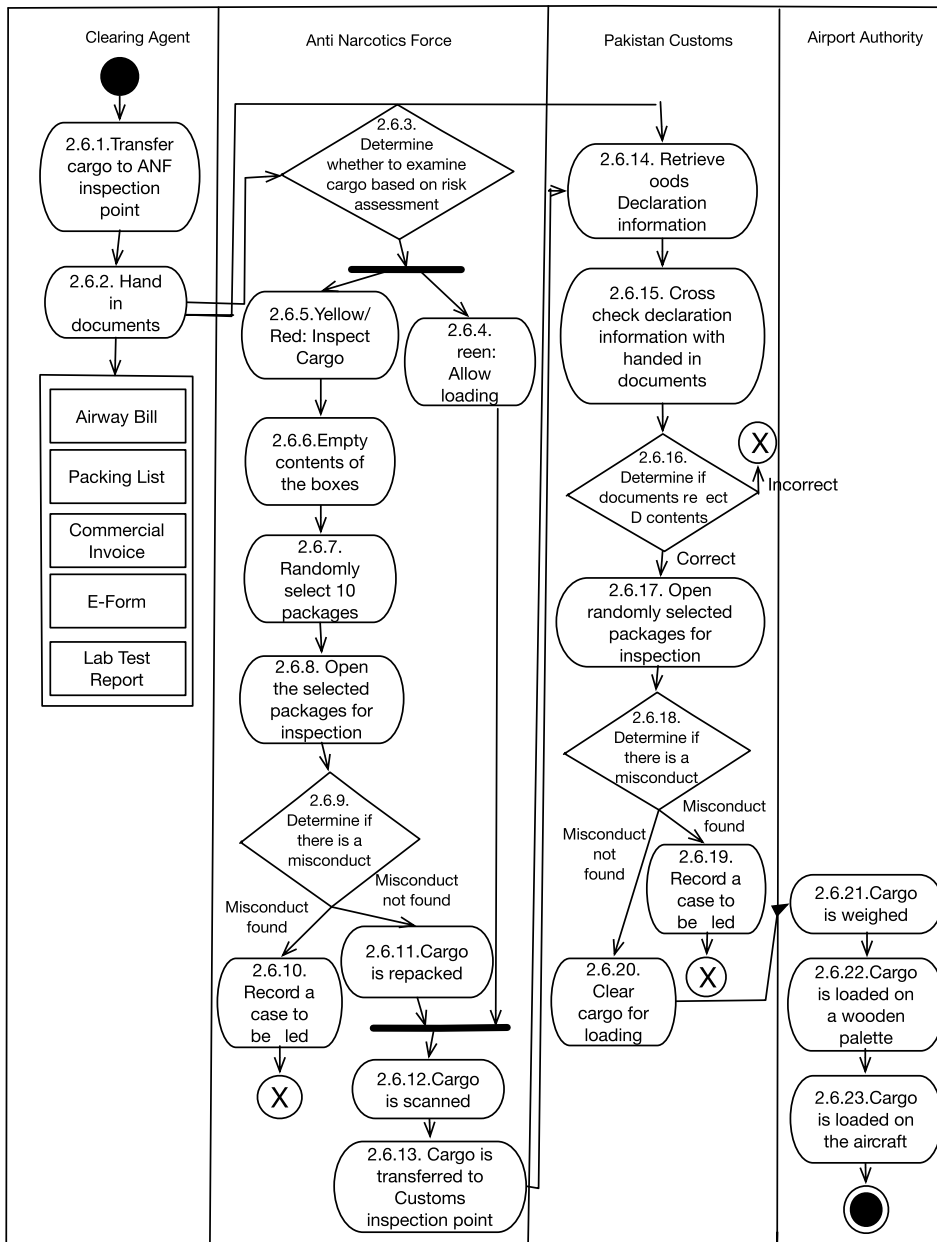


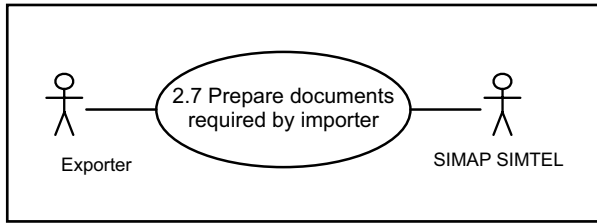
Table 9 Description of Process Area '2.6 Customs clearance of cargo and loading'

Name of a process area	2. Ship
Name of a business process	2.6 Customs clearance of cargo and loading
Related laws, rules and regulations	<ul style="list-style-type: none"> • Customs Rules 2001 • Customs Act 1969 (As amended up to 30th June 2015) Chapter IV, section 15, 16 Chapter VII section 42, 50(A)(B), 51, 53, 55, 56, 57, 58 Chapter XX section 197, 198, 199, 211A Punishment for offence: Chapter XVII, Chapter XVIII
Process participant	<ul style="list-style-type: none"> • Clearing Agent • Pakistan Customs • Anti Narcotic Force (ANF) Pakistan • Civil Aviation Authority
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • The cargo has been gated-in at the Airport. The status of goods on WeBOC has been updated to gated-in.
Activities and associated documentary requirements	<p>2.6.1 The clearing agent transfers cargo to the ANF inspection point in the hall.</p> <p>2.6.2 Clearing agent hands in the hard copies of following documents to the ANF for its record:</p> <ul style="list-style-type: none"> - Airway Bill - Packing List - Commercial invoice - Form-E - Lab test report from SIMTEL <p>2.6.3 ANF determines whether to inspect the cargo or not based on the risk assessment profile of the exporter.</p> <p>2.6.4 If the exporter's risk assessment status is green, ANF waives inspection, and the shipment enters the scanning process at 2.6.11.</p> <p>2.6.5 If the exporter has a yellow or red risk assessment status, it decides to inspect the cargo.</p> <p>2.6.6 ANF inspectors open all the cargo boxes and empty them of their contents.</p> <p>2.6.7 Inspectors randomly select 10 packages to check for the presence of illegal substances.</p> <p>2.6.8 The selected packages are opened and inspected.</p> <p>2.6.9 The ANF inspector determines whether there is misconduct.</p> <p>2.6.10 If an illegal substance is found inside any package, the ANF inspector records a case to be filed against the exporter and cancels all further proceedings of the shipment.</p> <p>2.6.11 If no misconduct is found, goods are repacked inside the boxes.</p> <p>2.6.12 The clearing agent transfers the cargo to the point of cargo scanning.</p> <p>2.6.13 After getting scanned, the cargo is taken to the point of Customs examination. The clearing agent provides the customs examination officer with the hard copies of the</p>

	<p>following documents:</p> <ul style="list-style-type: none"> - Airway Bill - Packing List - Commercial invoice - Form-E - Lab test report from SIMTEL <p>2.6.14 An officer from Pakistan Customs retrieves the information from the exporter's Goods Declaration on WeBOC.</p> <p>2.6.15 Officer from Pakistan Customs cross checks information that has been declared with information in the documents handed by the Clearing Agent. He/she needs to make sure that the shipment to be exported is identical to the shipment that exporter has declared in the GD on WeBOC.</p> <p>2.6.16 The customs officer determines if the information in the documents is in congruence with the information declared in the GD. If the information does not match, the customs holds the shipment and officer cancels all further proceedings.</p> <p>2.6.17 If the contents in the documents are in sync, the customs examiner randomly selects boxes and packages for inspection.</p> <p>2.6.18 The packages are opened and inspected to make sure that the description of goods in the Export Goods Declaration matched the goods in the consignment.</p> <p>2.6.19 If the goods inside the cargo boxes do not match the description of goods declared in the GD, the customs officer cancels all further proceedings of the shipment and records a case to be filed.</p> <p>2.6.20 If the goods match the description given in the GD, the cargo is cleared for loading.</p> <p>2.6.21 The officers from the airline weigh the cargo to make sure that no box exceeds the 30 kg per box weight limit.</p> <p>2.6.22 The officers from the Civil Aviation Authority load cargo on to a wooden palette for loading in the aircraft.</p> <p>2.6.23 The CAA officers load cargo on to the aircraft.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • The consignment is released from Customs-controlled area. • The Port Authority has updated cargo status on WeBOC to 'Examination Completed'.
Average time required to complete this business process	<p>ANF examination: 30 minutes</p> <p>Customs examination: 30 minutes</p> <p>Total time taken on average: 1 hour</p>

Core Business Process Area 2.7 'Prepare documents required by importer'

Figure 22 Use Case Diagram '2.7 Prepare documents required by importer'



The use case diagram in Figure 22 indicates that the following participants are involved in the process area 'Prepare documents required by importer':

- Exporter
- SIMAP SIMTEL

Figure 23 Activity Diagram '2.7 Prepare documents required by importer'

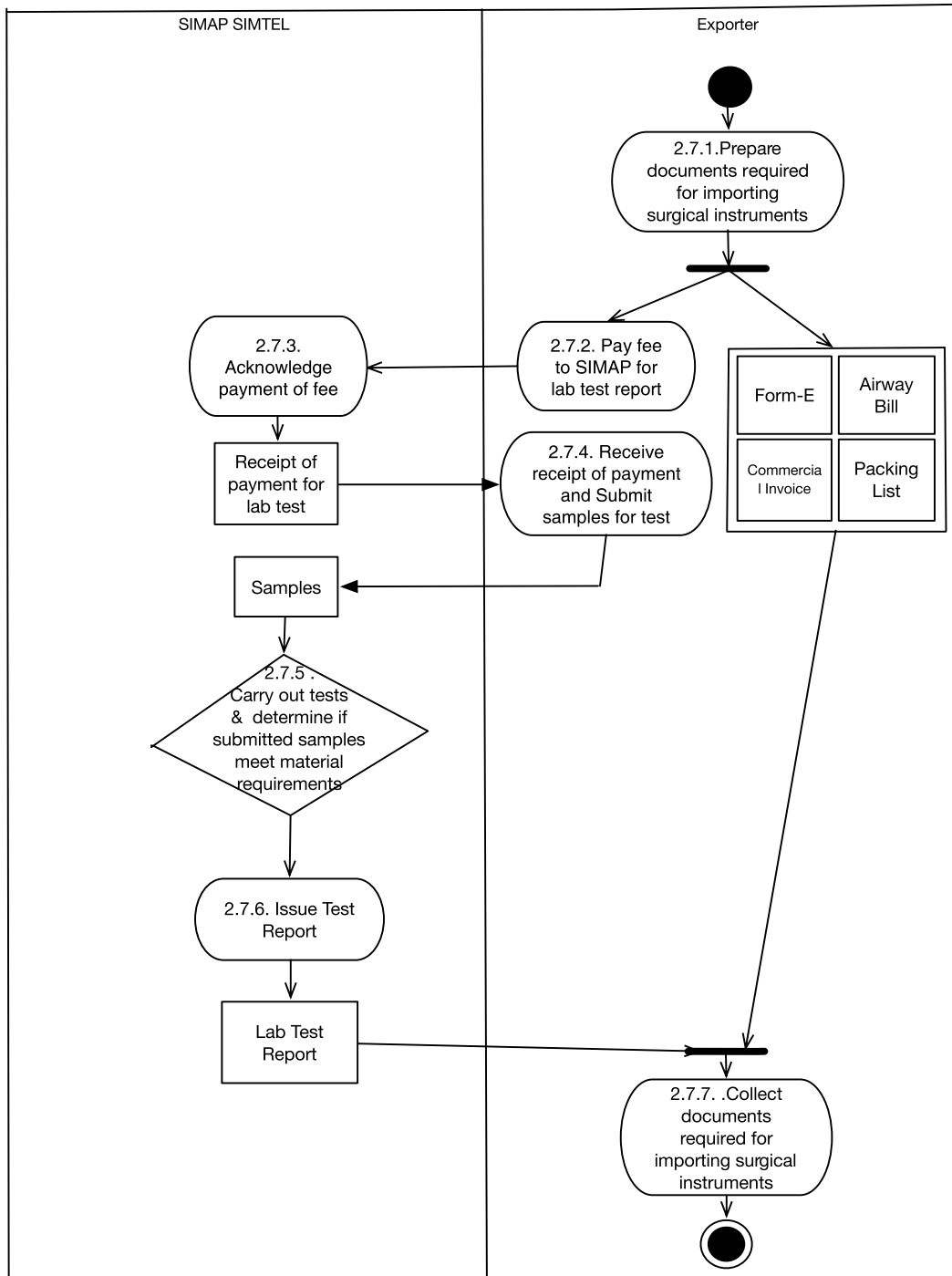


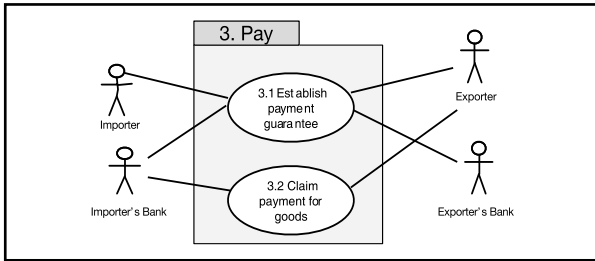
Table 10 Description of Process Area '2.7 Prepare documents required by importer'

Name of a process area	2. Ship
Name of a business process	2.10 Prepare documents required by importer
Related laws, rules and regulations	<ul style="list-style-type: none"> • Customs Act 1969 (As amended up to 30th June 2015) Chapter XVI-A section 155M, 155N, 155O, 155P, 155 Q, 155R, Chapter XX section 204, 205, 206
Process participant	<ul style="list-style-type: none"> • SIMAP SIMTEL • Exporter's representative
Input and criteria to enter/begin the business process	<ul style="list-style-type: none"> • A sales contract is in place and the exporter requires a lab test report to verify that the metal used in manufacturing surgical instruments meets the buyer's requirements.
Activities and associated documentary requirements	<p>2.7.1 The exporter prepares documents required for by the buyer for importing surgical instruments from Pakistan. These documents include:</p> <ol style="list-style-type: none"> 1. Commercial Invoice 2. Packing List 3. Airway Bill 4. Form-E from exporter's Bank 5. Lab test report from SIMAP SIMTEL <p>2.7.2 The exporter's representative submits lab test fee to SIMAP for all the tests required by the importer.</p> <p>The cost of one test for a SIMAP member is PKR 400 and for a non-member is PKR 3100.</p> <p>2.7.3 SIMAP acknowledges the payment and issues a receipt.</p> <p>2.7.4 The exporter's representative receives the receipt and submits samples for testing.</p> <p>2.7.5 SIMTEL carries out tests specified by the exporter and determines if the submitted samples meet the buyer's requirements in terms of the metal and quality specified. If they do not fulfill material requirements, the lab test report reflects these findings.</p> <p>2.7.6 SIMTEL issues the lab test report.</p> <p>2.7.7 The exporter's representative compiles the documents to send them to the importer.</p>
Output criteria to exit the business process	The set of documents required by the buyer to import surgical instruments from Pakistan is complete.
Average time required to complete this business process	<p>15 minutes to generate the required documents through the company software</p> <p>1 day for submitting the samples and receiving lab test report</p>

4.3 Process Area 3: Pay

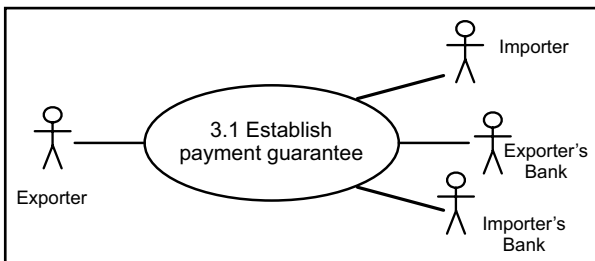
Core Business Process Area 3.1 'Establish payment guarantee'

Figure 24 Use Case Diagram '3. Pay'



Process area 3 'Pay' has two core business processes and involves four actors: exporter, importer, exporter's bank, and importer's bank. These processes take 6 days to complete and involve one document, the Letter of Credit.

Figure 25 Use Case Diagram '3.1 Establish payment guarantee'



The use case diagram in Figure 25 indicates that the following participants are involved in the process area 'Establish payment guarantee':

- Exporter & Exporters' Bank
- Importer & Importer's Bank

Figure 26 Activity Diagram '3.1 Establish payment guarantee'

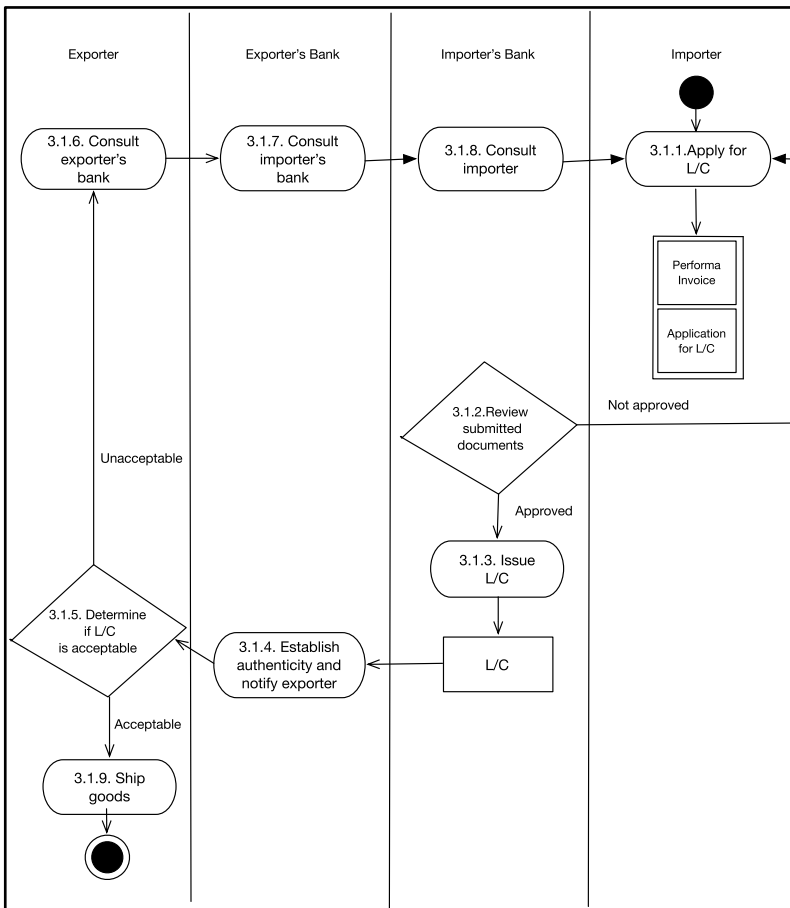
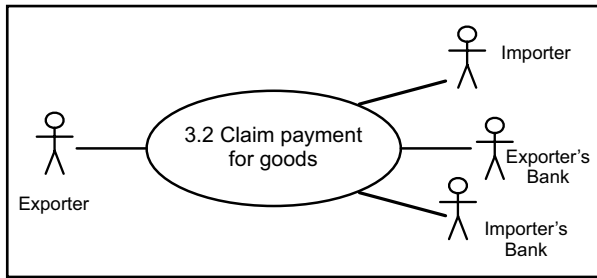


Table 11 Description of Process Area '3.1 Establish payment guarantee'

Name of a process area	3. Pay
Name of a business process	3.1 Establish payment guarantee
Related laws, rules and regulations	<ul style="list-style-type: none"> • The L/C is valid for 14 days after the date of issuance.
Process participant	<ul style="list-style-type: none"> • Exporter • Importer • Exporter's Bank • Importer's Bank
Input and criteria to enter/begin the business process	Exporter and importer have already concluded trade contract and terms.
Activities and associated documentary requirements	<p>3.1.1. Importer applies for Letter of Credit by submitting Application for Irrevocable Documentary Letter of Credit and Proforma Invoice to importer's bank.</p> <p>3.1.2. Importer's bank reviews submitted documents and evaluates importer's credit standing.</p> <p>3.1.3. If importer's credit is in good standing, importer's bank approves the application, issues Letter of Credit, and forwards it to exporter's bank by electronic means.</p> <p>3.1.4. Exporter's bank establishes authenticity of the letter of credit and informs exporter that Letter of Credit is ready for collection.</p> <p>3.1.5. Exporter collects Letter of Credit and determines if it meets contractual agreement and its terms and conditions can be satisfied.</p> <p>3.1.6. If exporter finds Letter of Credit unacceptable, he or she needs to consult exporter's bank.</p> <p>3.1.7. Exporter's bank consults importer's bank.</p> <p>3.1.8. Importer's bank then consults importer on the amendment of Letter of Credit.</p> <p>3.1.9. If exporter finds the already issued Letter of Credit acceptable, he or she makes necessary arrangements for the delivery of goods.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter accepted the L/C and started to make necessary arrangements to deliver surgical instruments to importer.
Average time required to complete this business process	4 days

Core Business Process Area 3.2 'Claim payment for goods'

Figure 27 Use Case Diagram '3.2 Claim payment for goods'



The use case diagram in Figure 27 indicates that the following participants are involved in the process area 'Claim payment for goods':

- Exporter
- Importer
- Exporter's Bank
- Importer's Bank

Figure 28 Activity Diagram '3.2 Exporter claims payment for goods'

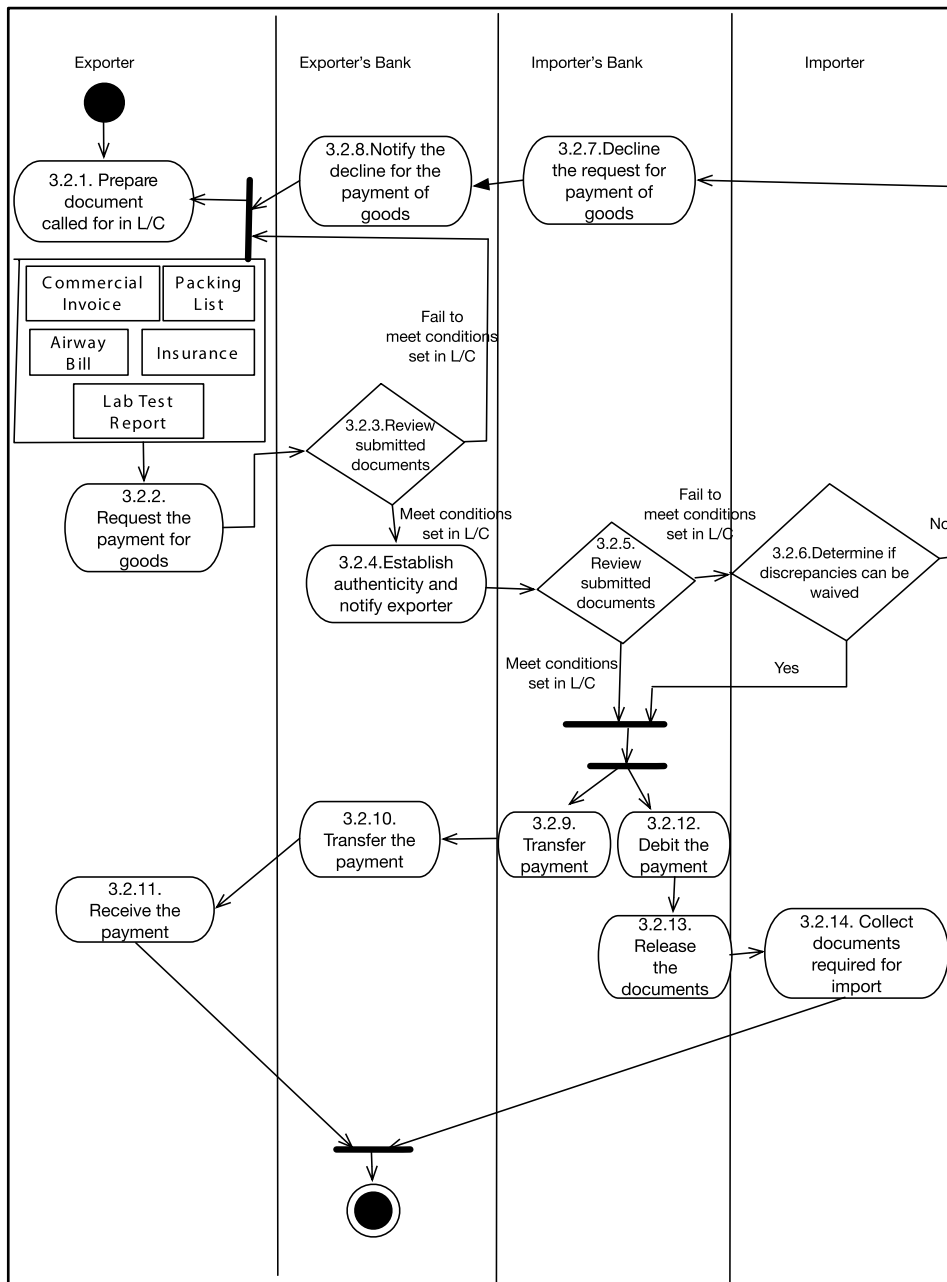


Table 12 Description of Process Area '3.2 Claim payment for goods'

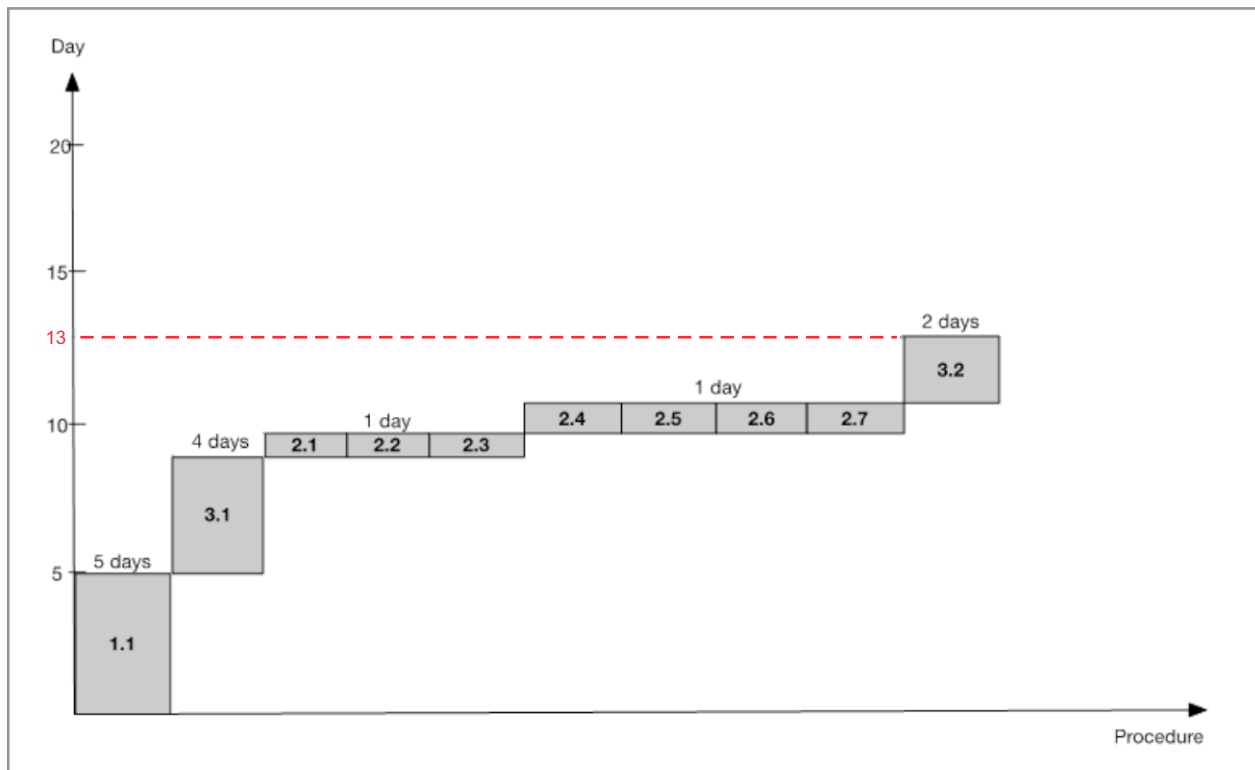
Name of a process area	3. Pay
Name of a business process	3.2 Claim payment for goods
Related laws, rules and regulations	INCOTERMS 2000
Process participant	<ul style="list-style-type: none"> • Exporter • Importer • Exporter's Bank • Importer's Bank
Input and criteria to enter/begin the business process	Exporter has already fulfilled contractual agreement.
Activities and associated documentary requirements	<p>3.2.1. Exporter also prepares documents called for in Letter of Credit. Those documents typically include:</p> <ul style="list-style-type: none"> - Commercial Invoice, - Packing List, - Insurance Policy, - Airway Bill, - SIMAP SIMTEL Test Report <p>3.2.2. With the documents called for in Letter of Credit, exporter requests exporter's bank to advice importer's bank to proceed the payment for goods.</p> <p>3.2.3. Exporter's bank reviews submitted documents and determines if they are compliant with the terms and conditions as listed in Letter of Credit. If they do not meet the terms and conditions in Letter of Credit, exporter's bank informs exporter about the discrepancies. In this case, exporter needs to make necessary corrections.</p> <p>3.2.4. If the submitted documents meet the terms and conditions as listed in Letter of Credit, exporter's bank forwards them to importer's bank.</p> <p>3.2.5. Importer's bank reviews submitted documents and determines if they are compliant with the terms and conditions of Letter of Credit. If they do not meet the terms and conditions in Letter of Credit, importer's bank informs importer about the discrepancies.</p> <p>3.2.6. Importer determines if discrepancies can be waived.</p> <p>3.2.7. If importer does not waive the discrepancies, importer's bank declines the request to make payment for goods.</p> <p>3.2.8. Exporter's bank notifies exporter about the decline for the payment for goods so that exporter makes necessary corrections.</p> <p>3.2.9. If importer's bank finds the submitted documents compliant with the terms and conditions listed in Letter of Credit from the very beginning, importer's bank transfer the payment for goods to exporter's bank.</p> <p>3.2.10. Exporter's bank transfers the payment for goods to exporter.</p> <p>3.2.11. Exporter receives the payment for goods.</p>

	<p>3.2.12. Importer's bank debits the payment for goods from importer's account.</p> <p>3.2.13. Importer's bank releases documents collected from exporter.</p> <p>3.2.14. Importer collected documents required for import.</p>
Output criteria to exit the business process	<ul style="list-style-type: none"> • Exporter received the payment for goods. • Importer received documents required to complete import formalities.
Average time required to complete this business process	2 days

4.4 Summary of Surgical Instruments Export Core Business Processes

Figure 29 Time procedure chart for core business processes of surgical instruments export Figure 29 presents a time-procedure chart listing core business processes that have to be carried out to export surgical instruments from Pakistan to India and China. The time-procedure chart suggests that it takes, on average, 13 days for stakeholders to fulfill commercial and regulatory requirements of 10 surgical instruments export business processes. It also provides an illustration of when each core business process occurs in relation to others.

Figure 29 Time procedure chart for core business processes of surgical instruments export



1.1	Conclude sales terms and contract	2.6	Customs clearance and loading of cargo
2.1	Arrange transport	2.7	Prepare documents required by the importer
2.2	Obtain cargo insurance	3.1	Establish payment guarantee
2.3	File Goods Declaration	3.2	Claim payment for goods
2.4	Prepare cargo for shipment		
2.5	Transport cargo to Airport		

Table 12, on the other hand, provides the precise time it usually takes to complete all business processes and an insight into dependencies among them. Predecessor of a business process is an entry criterion that has to be fulfilled before the stated business process can begin. A simultaneous task is a process that can be carried out at the same time as the stated business process.

Table 13 Duration and dependencies among surgical instruments export processes

Core Business Process	Duration	Predecessor	Simultaneous Task
1. Buy			
1.1 Conclude sales contract and trade terms	5 days	N/A	N/A
2. Ship			
2.1. Arrange transport	1 hour	1.1, 3.1	N/A
2.2 Obtain cargo insurance	1 day	2.1	N/A
2.3 File Goods Declaration	30 minutes	2.1, 2.2	2.7
2.4 Prepare cargo for shipment	2 hours	2.2	N/A
2.5 Transport cargo to Airport	2 hours	2.1, 2.3, 2.4	N/A
2.6 Customs clearance and loading of cargo	1 hour	2.1, 2.3, 2.5	N/A
2.7 Prepare documents required by the importer	15 minutes	1.1, 2.1	2.1, 2.2, 2.3
3. Pay			
3.1 Establish payment guarantee	4 days	1.1	2.7
3.2 Claim payment for goods	2 days	2.7	N/A

A total of 11 documents are required for completing the business processes of exporting surgical instruments to India and China. The following table lists the documents in the order in which they are obtained or required during the export processes, and mentions the relevant process area(s) and requirements of an official stamp or signature for obtaining the document:

Table 14 List of documents in the surgical instruments export process

	Document	Relevant Process Area	Requirement of Official stamp or Signature
1	Purchase Order	1.1	Stamp of the buyer
2	Proforma Invoice	1.1	Stamp and seal of the buyer
3	Cargo Insurance application	2.2	None
4	Insurance Policy	2.2	None
5	Goods Declaration (GD)	2.3	None
6	Form-E from exporter's Bank	2.2, 2.3, 2.7, 3.1, 2.7	Stamp of the exporter's Bank
7	Commercial Invoice	2.2, 2.3, 2.6, 2.7	Stamp of the exporter
8	Packing List	2.2, 2.3, 2.6, 2.7	None
9	SIMAP SIMTEL report	2.6, 2.7	Stamp of SIMAP and signature
10	Airway Bill	2.1, 2.2, 2.3, 2.6, 2.7	Stamp of the Airline
11	Letter of Credit	1.1, 2.7, 3.1, 3.2	Stamp of the exporter's and importer's bank

5. Conclusion and Recommendations

Conclusions

The “as-is” findings (benchmark) identified several challenges in the export supply chain. The suggested “to-be” scenario identifies opportunities to reduce the time to export market from 13 days to 11 days. The challenges include:

1. It takes one day to prepare all the export consignment support documents. When discussing this with traders and with policy makers one day was considered by them to be sufficient and a good practice. However, this is a matter of perception because there are countries which use electronic single window systems to prepare all the export support documents between 10 and 30 minutes. One day is therefore one day too long.
2. The reduction in days can be accomplished if the time to get cargo insurance is also decreased. Although it takes about 30 minutes to arrange the cargo insurance collection of the certificate is next day. Changing from a paper system to an electronic system could save 1 day. Other countries consider using a national electronic single window system as part of a trade facilitation and competitiveness strategy; and
3. The ESCA did not examine in detail airport customs processes or airport freight operations. The processes and operations limited to the handling of surgical instruments suggest that increased efficiency might result after investing in detection and weighing equipment.

Recommendations

The recommendations described below are those often associated when developing an integrated trade and industry strategy:

1. Carrying out an ESCA in each exporting industry will not serve as a solution. The ESCA suggests that a “whole of government” approach to integrating customs, logistics and trade facilitation might give faster processes;
2. Invest in a national electronic single window. The WeBOC is an important start but all export support documents and agencies must be connected to provide documents in under 30 minutes;
3. Get predictable export supplychains by making investments in new road, rail, border crossing and seaport and airport cargo handling infrastructure;
4. Implement the Articles of the World Trade Organization Trade Facilitation Agreement;
5. Harmonize the Pakistan Customs Law with the revised Kyoto Convention. This will help Customs use international good practice export, import and transit procedures;
6. Ensure free access by international logistics companies into the Pakistan transport and logistics industries;
7. Develop and implement a Pakistan Surgical Instrument export marketing strategy in collaboration with SIMAP and with the Pakistan commercial trade attaches located in target export markets;
8. Combine the results of ESCA with any Time Release Studies (TRS) carried out by Pakistan Customs at airport cargo centers and other border crossings. The World Bank carried out a TRS at the Wagah border crossing and provides a useful template for the process at other border crossing points; and
9. The ESCA study identified issues for further research. The issues include explaining the

difference in prices between Pakistan surgical instruments and those from competitors, will vocational education and training help Pakistan maintain and extend its skills in the industry, how can central and regional government agencies better deliver services to the industry, and carry out a value chain analysis. This future research might get carried out in collaboration between SIMAP, a chamber of commerce and a university.

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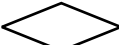


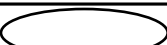
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Appendix

Table 15 Surgical instruments export earnings of Pakistan (HS 9018) 2007-2015

Year	Export Earnings in Thousand USD
2007-02	214.5
2008-09	211.7
2009-10	195.1
2010-11	212.6
2011-12	254.8
2012-13	252.6
2013-14	284.9
2014-15	284.1

Table 16 Universal Modeling Language Legend

Symbol	Denotes
	Beginning of a process area
	Cancellation or rejection of an activity or document
	Exit from the process area
	Business activity
	Decision making process
	Document, application, or request
	Actor or stakeholder
	Process area

Trade Related Technical Assistance (TRTA II) Programme

(TRTA II Programme is funded by the European Union)

