

Report

South Asian Association for Regional Cooperation (SAARC) area cross-border timber trade including regional institutional mechanisms and trade links with Myanmar/Burma

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Executive Summary

This study on cross-border timber trade focuses on Bangladesh, Bhutan, India, Nepal, Sri Lanka and Myanmar/Burma (Myanmar). All countries except Myanmar are members of the South Asian Association for Regional Cooperation (SAARC). Very little systematic information exists so far on timber and timber products trade flow between these countries and outside markets. The main objective of this study is to provide a clear understanding of the timber and timber products trade as well as related regulatory and policy framework and institutional mechanisms in the SAARC region. The study also provides an overview of the SAARC region's timber trade links with Myanmar and other important markets. It highlights challenges and opportunities, and provides recommendations on possible key target areas for Forest Law Enforcement, Governance and Trade (FLEGT) related support, and for strengthening the existing regional institutional mechanisms in the region. The key findings, challenges and opportunities, and recommendations are presented below.

Key findings, challenges and opportunities

Timber production and consumption

Plantations and trees outside forests (TOF) will remain the major source of timber. Demand for certified timber will grow. Social and community forestry (CF), private plantations in small scale, e.g. agro and farm forestry as well as in large-scale home gardens and TOFs, have been and will continue to be the main domestic source of timber in the SAARC countries. The supply of recorded timber from natural forests has been declining. The demand for certified timber is growing especially in India, Bangladesh and Sri Lanka as the countries try to export more to markets that require certification. Timber industry companies and medium- and large-scale private plantation investors will play a key role in increasing the production of certified timber.

Timber consumption has increased more than the recorded supply. Imports and the use of unrecorded timber are filling the gap. This is the case for all the countries in this study except Bhutan and Myanmar. The demand for timber is likely to grow further due to the increasing population and rapid economic growth in the region. As a consequence, the gap between the recorded supply and consumption will widen further in the future, and this will increase reliance on imports. Trade policies, particularly in Bangladesh and India, that favour importing industrial roundwood through lower duties compared with other products, will provide incentives for increasing imports. Most likely, such policies will also encourage more unrecorded timber in the supply chain.

Trade pattern and trade links with Myanmar and other trading partners

The SAARC region is likely to lose its trade link with Myanmar. Before Myanmar's log export ban, trade between the SAARC region and Myanmar was one-way. The SAARC countries, particularly India and Bangladesh, imported industrial roundwood, mainly teak (*Tectona grandis*), gurjan (*Dipterocarpus* spp.) and pyinkado (*Xylia dolabriformis*) worth hundreds of millions of US dollars, while exports to Myanmar were negligible (Figure E1). Myanmar's log export ban has put a stop to imports of industrial roundwood from Myanmar by the SAARC countries. India's imports of plywood and veneer from Myanmar, which have been negligible compared with industrial roundwood imports, might increase slightly in the future due to the scheduled reduction in import duties for these two products under the Association of Southeast Asian Nations (ASEAN) – India Free Trade Area (AIFTA) Agreement. This increase will not come close to compensating Myanmar for the loss of its industrial roundwood exports. Myanmar's log export ban has ended the trade between it and the SAARC countries. Any trade between them will likely be minimal over the next 15 years.

Tropical countries will continue to be the leading trading partners for the SAARC countries for timber imports. Malaysia, together with Myanmar, Ghana, Nigeria and Ivory Coast, contributed to 80% of industrial roundwood imports in terms of value and volume of the study countries in the SAARC region over the period from 2000–2013. To fill the vacuum created by Myanmar's log export ban, these countries have started importing more timber from Malaysia and a number of other new countries, such as the Solomon Islands, Benin and Surinam. The zero import duty set in 2010 under the AIFTA Agreement for the trade of industrial roundwood between India and Malaysia will act as a key policy driver for increasing imports of this product by India from Malaysia.

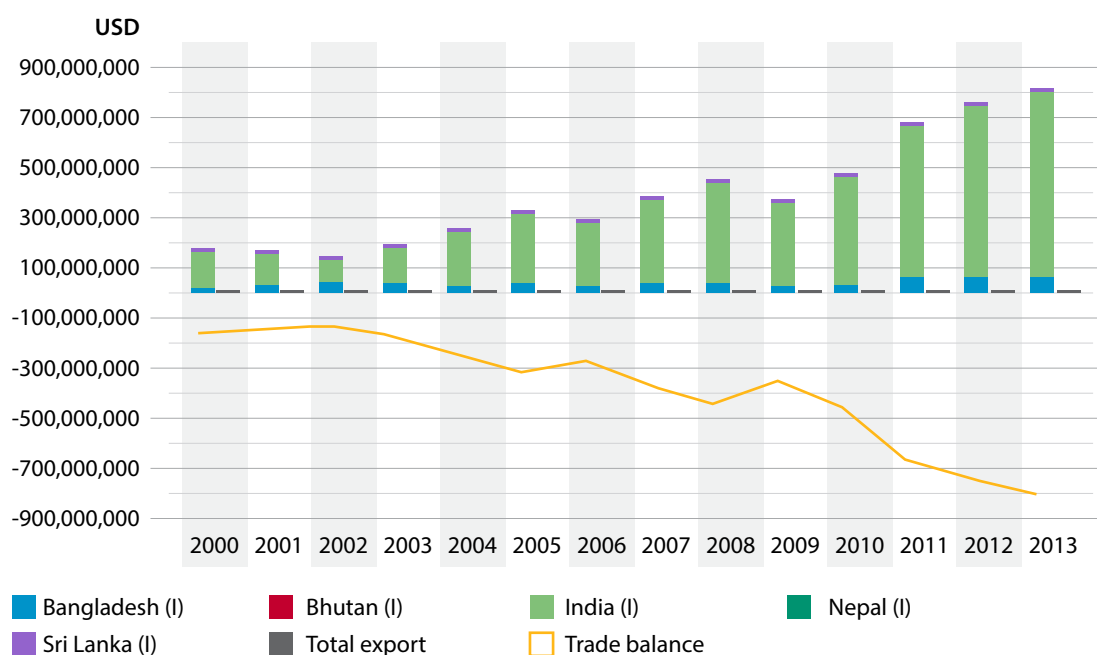


Figure E1: Imports from and exports to Myanmar by the study countries in the SAARC region, and trade balance. Note: (I) stands for import. Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

The SAARC countries will continue to be net importers of timber and timber products. The European Union (EU) and the United States (US) remain the leading trade partners for timber products. During the period from 2000–2013 paper, paperboard and wood pulp (besides industrial roundwood) were the leading imported timber products by SAARC countries from the EU and US. Paper and paperboard, wooden furniture and handicrafts were the major timber products exported. The EU and the US were the leading trade partners for timber products. Imports of these products from China were substantial and grew rapidly. The scenarios regarding the most traded timber products and leading trade partners are likely to remain unchanged for the next 15 years, as market factors, such as the trend in demand and supply, are likely to remain the same. Overall, the SAARC region will remain a net importer for at least the next 15 years as domestic demand is estimated to grow faster than domestic production. India will remain by far the biggest exporter and importer of timber and timber products in the SAARC region.

Policy and regulatory framework, export-import procedures and controls

Forest law enforcement is challenging. The regulatory framework is weak in timber transport control and in verifying the supply chain. Timber production, processing and trade in particular and forest resources in general in the study countries are regulated by multiple acts and laws that have good provisions. However, a lack of resources and corruption in forest departments, as suggested by the analysis in this study, make effective forest law enforcement very challenging. The main means of recognising timber as legal is a transit pass (TP). The forest departments check consignments of timber against TPs at the checking stations. However, a TP is only a piece of paper and forgery is not uncommon. Checking is done manually and systems used at the forest checkpoints are not computerised. Technological improvements to the systems are needed to make the TP an effective way to control timber transport or to verify the supply chain.

Policy measures and import procedures are inadequate for controlling illegal logging and stopping imports of illegally sourced timber. Forest policies in all study countries lack explicit measures to control illegal logging. In addition, a mandate for effectively checking whether imported timber comes from a legal source is missing from the countries' current forest and international trade policies. No documents proving timber legality are required for customs clearance. This leaves the door wide open for illegal timber imports.

Weak procedures and controls allow for exports of illegally sourced timber and products made of such timber. In the case of exports, a TP is used to determine the legality of timber in all the study countries. A TP does not provide effective control of timber transport and verification of the supply chain due to the shortcomings in checking the consignment.

Export and import procedures and controls are inconsistent across the study countries regarding the number and type of documents and checks required. This inconsistency, together with the geographic locations of these countries, results in a variation in time required for, and costs associated with, exports and imports.

Source, trade flows and markets for illegal timber

Inadequately enforced forest regulations allow large quantities of unrecorded timber, sometimes mixed with legal timber, to enter the domestic supply chain each year. Unrecorded timber meets a substantial part of the domestic timber demand especially in Bangladesh, India and Sri Lanka. It is mixed with legal timber to some extent in all the study countries. Weak regulatory provisions for timber transport control and verifying supply chains encourage illegal logging. Private tree growers' poor knowledge on timber legality requirements and the absence of national systems for recording legal timber production data also contribute to the problem. Corruption in the forest sector is a major underlying problem in this situation.



Figure E2: Hot zones and routes for illegal cross-border timber trade among the study countries*

*In cases of smuggling from Nepal to India and from India to Bangladesh, the timber originates from within the respective hot zones.

The study countries import large quantities of illegally sourced timber, which go undetected due to a lack of effective policy measures. A significant portion of the imported timber, particularly in India, is estimated to be sourced illegally. Since a policy mandate is lacking, imported timber can be cleared through the import procedures without proper checks for legality.

The illegal cross-border timber trade takes place within local communities and by organised groups. Individuals trying to earn a living and organised groups move illegal timber across the border (especially from Nepal and Myanmar to India, and from India and Myanmar to Bangladesh) (Figure E2). Communities living on both sides of the border do not respect national borders when in need of timber.

Regional institutional mechanisms

Despite recorded weaknesses, regional institution mechanisms provide a good base for future FLEGT-related activities in the SAARC region. The SAARC Forestry Centre (SFC) appears to be the best choice of partner (Figure E3) to collaborate with EFI in any future FLEGT-related activities. However, the SFC is under-resourced in terms of budget and staff, which limits its ability to become a regional platform for timber legality. The South Asian Free Trade Area (SAFTA) Agreement has not had a positive effect on the trade in legal timber products. Nevertheless, it could provide a good base for future FLEGT activities through provisions for harmonisation, simplification and cooperation on procedures and standards.

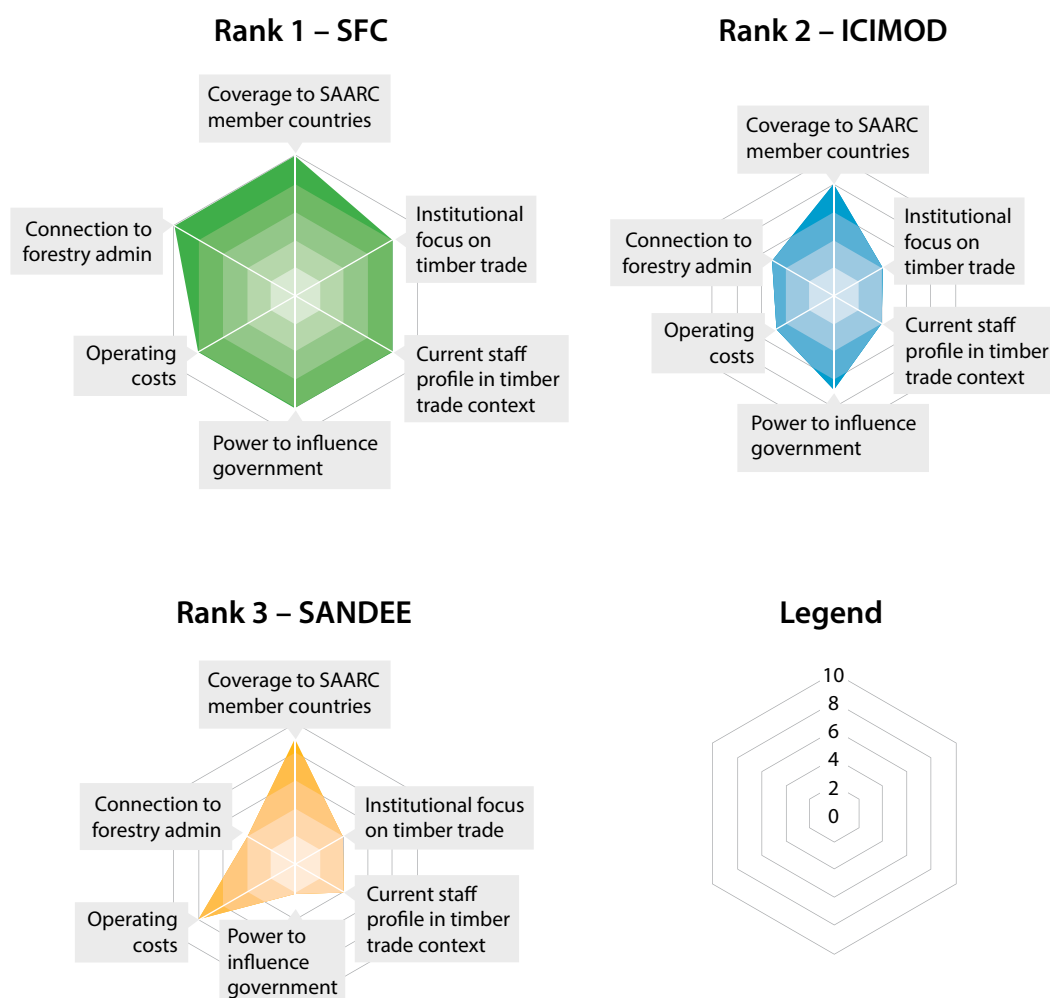


Figure E3: Potential regional partners for collaborating in FLEGT-related activities

Recommendations

The following are the consultants' recommendations to the client.

Key target areas for FLEGT support

Strengthen legislative framework and adopt responsible import policies. Highlight the importance of strengthening the legislative framework and adopting more responsible foreign trade policies that make checking the legality of imported timber mandatory by the SAARC region countries and Myanmar. To stop illegal logging, illegal cross-border timber trade and importing illegally sourced timber, it will be necessary to strengthen the existing legal framework and adopt import policies with provisions and mandates for strict timber transport control and verifying the supply chain. Effective law enforcement and policy implementation will also be necessary. Together these will enhance the region's ability to meet the European Union Timber Regulations (EUTR).

Raising awareness on timber legality and the EUTR. Programs to train small-scale private tree growers in timber legality requirements will reduce the volume of unrecorded timber in the supply chain. Such programmes can be run on public media platforms as well as by organising sessions at the village/community levels. Awareness-raising programmes that target the forest industry, particularly in India, on the EUTR, its requirements and risks related to continuing to consume illegal timber will also help in this regard.

Promoting sustainable forest management and forest certification. It is also important to promote sustainable forest management and forest certification by developing certification criteria and indicators. As the problem of illegal timber is regional, and as small-scale producers supply a significant quantity of timber, it is worth exploring the potential for regional cooperation for promoting group forest certification. A joint action plan (combining several countries) has a better chance of preventing illegal timber from entering the supply chain than a single country-led approach.

Strengthening existing regional institutional mechanisms

Strengthening potential regional partners. The SFC should be strengthened through funding, training and building the capacity of selected staff on regional timber trade and legality issues. The SFC could become a regional platform for dialogue, which could support national forest agencies on timber legality and in promoting legal trade of timber and timber products. National forest departments also need similar strengthening to further enhance the effectiveness of forest law enforcement and forest governance. Options for cooperation between SAARC and ASEAN regions on FLEGT-related activities should be explored, as the ASEAN region is likely to remain the leading partner for timber imports for the SAARC region.

Engaging national institutions. EFI and the European Commission (EC) should help the SFC to reach out to the forest departments in the SAARC countries and Myanmar. This will strengthen the SFC as a regional platform on timber legality. The forest departments themselves, with the support of their ministries, could help to bring the forest corporations, timber industry and export promotion bodies on board. Civil society and non-governmental organisations (NGO) should also be engaged in order to offer a broader social perspective on FLEGT activities. Timber industry companies and medium- and large-scale private plantation investors should also be engaged.

Strengthening regional trade mechanisms. EFI and the EC should work with the SAARC Secretariat and the SFC to strengthen SAFTA by including provisions such as mandatory checks on the legality of timber. Such provisions would eliminate the risk of trading illegal timber products and thus promote the trade of legal timber and timber products.

Next steps for EFI and the EC, additional research activities and potential links with other sectors for future engagement in FLEGT-related activities

Steps for EFI and the EC. Initiating discussions with the SFC to identify the priority areas for cooperation would be the first step toward a formal collaboration on FLEGT-related engagements in the SAARC region. To start a formal collaboration with the SFC, they must sign a Memorandum of Understanding (MoU) with the SAARC Secretariat. While the relationship with the SFC is being built, EFI and the EC should start facilitating a linkup between the national forest departments and the SFC.

Potential links and additional research activities. The following actions could help to better design the FLEGT-related activities in the region: (i) examine the extent of unrecorded domestic timber and the extent of illegal timber mixed with legal timber; (ii) examine the options to develop national systems for recording legal timber production; (iii) examine regional systems for easy access to information on policy, regulatory framework, procedures and controls-related timber production, processing and trade; (iv) examine how periodic monitoring of timber trade data could work; (v) examine the feasibility of using independent forest monitoring to improve the effectiveness of forest law enforcement; and (vi) examine ways to minimise certification costs. To find possible entry points for FLEGT-related activities, explore links between timber legality issues and climate change, and between livelihood aspects in border areas and cross-border illegal timber trade.

1. Introduction

1.1 Background

The South Asian Association for Regional Cooperation (SAARC) is comprised of eight South Asian countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, which are primarily located in South Asia (Figure 1.1). Myanmar/Burma (Myanmar) was given observer status in the organisation in 2008. Even though the SAARC region is not a major timber producer and timber trade is not one of the key areas of cooperation in the region, forestry extends to a number of important areas of cooperation such as environmental conservation and protection, and climate change. Indeed, the SAARC Environment Action Plan adopted in 1998 stressed the importance of enhanced cooperation in sharing information to promote effective management of the environment and forests for the benefit of all the member states. This paved the way to establish the SAARC Forestry Centre (SFC) in Thimphu, Bhutan in 2008, which can deal with common issues related to forestry and the forest sector in the member countries. In addition, Myanmar is currently preparing for negotiations for a voluntary partnership agreement (VPA) with the European Union (EU) under the Forest Law Enforcement, Governance and Trade (FLEGT) (see Annex 1 for an overview on FLEGT and international trade). However, very little systematic information is available on timber and timber product trade flows within the SAARC region, and between the region and outside markets. Thus there is a need for a study on cross-border timber trade in the SAARC region, the region's timber trade link (i.e. trade relationship) with Myanmar and relevant existing institutional mechanisms.



Figure 1.1: The study countries

1.2 Objectives

The main objective of the study is to provide a clear picture of the timber product flows and trade, and the forestry issues in the SAARC region, and also to illustrate the SAARC region's timber trade links with Myanmar and important outside markets. This objective includes identifying challenges and opportunities related to potential FLEGT activities in the region. In addition, the study provides recommendations to the European Forest Institute (EFI) and its potential partners in the SAARC region and to Myanmar on possible key target areas of FLEGT-related support, and for strengthening existing regional institutional mechanisms. The study focuses on such SAARC region countries as Bangladesh, Bhutan, India, Nepal and Sri Lanka as well as Myanmar (Figure 1.1). Annex 2 provides a general overview of SAARC and the study countries.

The study is a detailed analysis of data and information on timber and timber products trade, product flows, illegal logging, certified timber as well as the institutional mechanisms, political, economic and societal aspects, and policy processes affecting the timber products trade in the specified countries (see Annex 4 for methodology of the study). The key outcomes of the study are:

- analysis of the regulatory and policy frameworks, trade procedures, and regional institutional mechanisms related to forestry and timber trade in the study countries;
- baseline timber trade information for the study countries and the SAARC region (focusing on Bangladesh, Bhutan, India, Nepal and Sri Lanka);
- a recommended methodology for periodic monitoring of the baseline;
- analysis of cross-border trade of timber and timber products, timber production and consumption in the study countries from 2000–2013, which covers trade links among the study countries in the SAARC region, between the SAARC region (i.e. in five study countries combined) and Myanmar, and between the SAARC region and important outside markets such as the EU, the United States (US), China and Malaysia;
- analysis and estimation of illegal logging and illegal cross-border timber trade;
- future projections of timber production and consumption until 2030, and an analysis of the likely future directions of timber and timber products trade between the SAARC region (i.e. the five study countries combined) and Myanmar and between the SAARC region and important outside markets; and
- a list of the key opportunities and challenges, as well as recommendations to EFI and its partners in the SAARC region and Myanmar (see Annex 3) on possible key target areas of FLEGT-related support, and on strengthening existing regional institutional mechanisms in the region.

1.3 Forest resources and changes in forest cover in the study countries

In general, the study countries in the SAARC region and Myanmar are rich in forest resources. Together those countries hold 110.39 mha of forests which constitute 19% of Asia's forests and 3% of the world's forests. Bangladesh, Bhutan, India, Nepal and Sri Lanka together hold 79 mha of forests, which amounts to 96% of forests in the entire SAARC region (FAO, 2010). Forests occupy 27.49% of the land in the whole study area. All countries, except Bangladesh, have at least 23% of their total land area under forest cover (Figure 1.2).

India is the most forested of the study countries followed by Myanmar. Bhutan and India are the two countries with a positive change in national forest cover during the period from 2000–2010. This change occurred because of current conservation-oriented policies and an orientation towards protective forest management. Mass plantations through joint forest management and agro/farm forestry have also contributed to the gain in Indian forest cover. By contrast, the rate of forest cover loss in Myanmar, Nepal and Sri Lanka during the same 10-year period has been alarming (Table 1.1).

In the study countries, population growth is the main reason behind the conversion of forest land to agriculture. The conversion of forest land for infrastructure development is not a major factor in the loss of forests in these countries (Asia-Pacific Forestry Commission, 2012). In Bangladesh, the only cases of infrastructure development requiring forest conversion between 2008 and 2012 was a 62 km road built through and a 405 ha shooting range for the Air Force in the state-owned Sal forests in the central part of the country (Islam and Sato, 2012). In Bhutan, 4 689 ha and 2 983 ha of state-owned forests were allocated by the Government for road construction and electricity transmission lines respectively from 2008–2013 (DFPS, 2013). In India, on average about 37 100 ha of state-owned forests were allocated per year by the Government for infrastructure development and human settlement from 1981–2011 (ICFRE, 2010). In 2014 the Government of India allocated 35 867 ha of forest land for constructing roads, railway lines and other infrastructure development (Matters India, 2015). The area converted or allocated for infrastructure development in these three countries is negligible compared with the total forest area of the countries. The data on forest conversion for infrastructure development in Nepal and Sri Lanka is not available.¹ The same is the case for the data on converting forests to agriculture for all the study countries. In Myanmar, infrastructure development, such as constructing roads and hydropower dams, as well as logging, is one of the leading drivers of deforestation (Woods, 2015). Although the data on the total forest area converted for infrastructure development is not available, clearing forest land for constructing hydropower dams resulted in 110 777 m³ of timber during the 2011/2012 financial year in Myanmar (Woods, 2015). Commercial agriculture is also emerging as one of the leading factors causing deforestation in Myanmar. Forest land of 4.38 mha with less substantial tree cover was marked available for perennial crop cultivation, such as rubber and oil palm, in the 2010/2011 financial year (Woods, 2015).

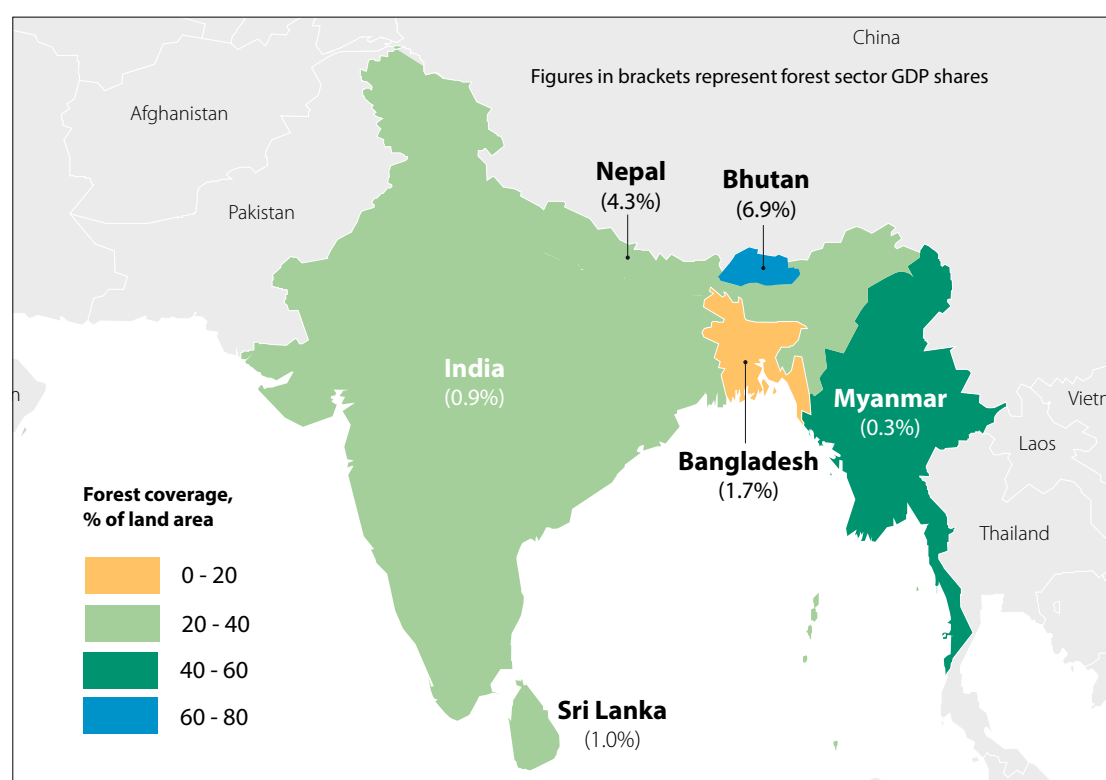


Figure 1.2: Forest cover and the forest sector's share of gross domestic product in the study countries

Sources: FAO Forest Resource Assessment, 2010 (forest resource and cover data) and FAO Forestry Country Profiles (GDP share and employment data)²

1 Nevertheless, it is highly likely that only state-owned forests are converted for infrastructure development as most forests are state owned in these two countries. In fact, in Sri Lanka, infrastructure development is not one of the main factors in deforestation (University of Colombo, 2014).

2 Bangladesh – www.fao.org/forestry/country/57033/en/bgd/; Bhutan – www.fao.org/forestry/country/57033/en/btn/; India – www.fao.org/forestry/country/57033/2en/ind/; Myanmar – www.fao.org/forestry/country/57033/en/mmr/; Nepal – www.fao.org/forestry/country/57033/en/npl/; Sri Lanka – www.fao.org/forestry/country/57033/en/lka/.

(Sources last accessed on 24 May 2014).

Table 1.1: Forest resources and forest cover change in the study countries

Country	Forest resource		Net annual change in forest cover (%)	
	Area (mha)	% of total land area	1990–2000	2000–2010
Bangladesh	1.442	11.06	-0.2	-0.2
Bhutan	3.249	69.36	+0.2	+0.5
India	68.434	23.07	+0.3	+0.3
Myanmar	31.773	48.14	-1.2	-0.9
Nepal	3.636	25.43	-2.1	-0.7
Sri Lanka	1.860	29.43	-1.2	-1.1

Sources: FAO Forest Resource Assessment, 2010

Annex 7 presents an overview of socio-economic conditions in the study countries. Annex 8 presents an overview of the forest sector and forest management in these countries.

2. Regulations, policies and procedure related to timber production, processing and trade in the study countries

2.1 Regulatory framework related to timber production, processing and trade

The following is an overview of the regulatory framework for timber production, processing and trade in each study country.

2.1.1 Bangladesh

The Forest Act, 1927 (amended in 2000) is the main forest-related act in Bangladesh. This Act regulates timber production,³ processing and trade as well as forest protection in the country. According to this Act, only two government agencies, the Bangladesh Forest Department and the Bangladesh Forest Industries Development Corporation (BFIDC), have the right to harvest timber in government forests, which amounts to 62% of the country's forests. The Act allows private persons to harvest timber in social forestry plantations, home gardens and private plantations with prior permissions from the nearby office of the Bangladesh Forest Department.⁴ As per the Act, domestically produced timber transported within the country for further processing, sale in the domestic market and export must have a transit pass (TP). Exporting industrial roundwood from Bangladesh is currently illegal. Imported timber transported within the country must have a TP. Thus, a TP is a pre-requisite for processing and trading timber in Bangladesh. The TP itself is regulated by the Transit Rules, 2011, under the Forest Act, 1927. Timber processing, be it domestically produced or imported, is regulated by the Saw Mill (License) Rules 2012, under the Forest Act, 1927. According to these rules, a sawmill must have a valid licence for operating and can only process timber accompanied by a TP. The sawmill issues a sales receipt, which is required for transporting and trading sawn timber in Bangladesh. In addition, the Forest Industries Development Corporation Ordinance, 1959 established the groundwork for the BFIDC. It is the Government's timber harvesting and industry (i.e. processing) wing under the Ministry of Environment and Forests of Bangladesh. The Customs Act, 1959 (amended in 2014) regulates exports and imports of all products (including timber and timber products). This Act focuses on the levy and collection of customs duties. The Exports and Imports (Control) Act, 1959 aims to make sure that only permitted products are exported from and imported to Bangladesh.

3 Includes all issues related to timber production such as forestland tenure, use and management rights, and harvesting and extraction permissions. The regulatory framework on timber production in this regard is the same in the other study countries.

4 The government forests, which are managed by the Bangladesh Forest Department, consist of natural forests, and afforestation and reforestation in degraded forestland. The social forestry plantations are located on waste and fallow land, and roadsides. They are established by local people with the assistance and supervision of the Bangladesh Forest Department. The Social Forestry Rule, 2004 (amended in 2011) defines the benefit-sharing mechanisms between local people and the Bangladesh Forest Department in social forestry. Privately owned home gardens consist of trees in and around the home estates in the villages of Bangladesh.

2.1.2 Bhutan

The Forest and Nature Conservation Act, 1995 regulates timber production, processing and trading in Bhutan. The Land Act, 2007 defines that all trees, either naturally grown or planted, in land registered to the Government shall belong to the landowner and thus regulates the timber production. As per the Forest and Nature Conservation Rules, 2006 (amended in 2008), under the Forest and Nature Conservation Act, timber from government-registered land (i.e. government forests) should be harvested by the Natural Resources Development Corporation Limited (NRDCL) of Bhutan. The landowner can harvest the timber from private registered land (i.e. private forests), and the communities can harvest from the community forests (CFs) even though they are government-registered land. The Rules allow the sale of timber in the domestic market by NRDCL, communities and private landowners. Bhutan has banned exports of industrial roundwood and sawn timber since 1999 (Ministry of Agriculture, 2009). The Rules also make it mandatory to obtain a TP from the nearby office of the Bhutan Forest Department for transporting both domestically produced and imported timber within the country (stakeholder consultation). This means that processing (such as sawing) and trading timber cannot be done without a TP. The Sales Tax, Customs and Excise Act, 2000, which focuses on the levy and collection of customs duties, regulates the foreign trade of all products including those made of timber.

2.1.3 India

The Indian Forest Act, 1927 is the main act providing the principal legal framework for timber production, processing and trade in India. The Act is complemented by numerous state-level regulations many of which are made under the Act itself. Timber production in India is regulated by the Forest Act, the Land Revenue Code/Act, the Forest Manual/Code, the Tenancy Act, and the Consolidation and Fragmentation Act in different states (WWF–TRAFFIC, 2012). As per the Indian Supreme Court Order (No 202/1995), timber harvesting in all states should follow the working plan approved by the Central Government of India. The states should make a working plan based on the National Working Plan Code issued by the Government. Domestically produced and imported timber being transported within the country for further processing and sale in the domestic market requires a TP. Such a TP is issued by the state forest departments as per the State Transit Rules and State Forest Acts. Legislations related to timber production and transport greatly vary across different states (MoEF, 2012). This means different states have different restrictions on timber harvesting and transportation based on area, intended use and species. The key legislation for timber processing in India are the state-level Forest Acts and Saw Mill Establishment Rules. The Indian Industries (Development and Regulation) Act, 1951, the Indian Factories Act, 1948, the Indian Air (Prevention and Control of Pollution) Act, 1981 and the Indian Water (Prevention and Control of Pollution) Act, 1974 are the other pieces of legislation applicable to timber processing in India. According to the regulatory framework related to timber processing, the processing units (i.e. sawmills) must be registered with the relevant state forest department, located in a place approved by the State Government and must process only legally produced timber (WWF–TRAFFIC, 2012). The key legal references for trading foreign timber in India include the Indian Foreign Trade (Development Regulation) Act, 1992 and the Indian Customs Act, 1962. The aim of these pieces of legislation is to ensure that the Indian entity doing the trade has a valid trade licence and the trade is taking place as per the norms and conditions specified in this licence. The Indian Destructive Insects and Pest Act, 1914 and the Indian Plant Quarantine Order, 2003 are also applicable to timber imported into India. The purpose of these pieces of legislation is to ensure that the imported timber is free of destructive insects and pests (WWF–TRAFFIC, 2012).

2.1.4 Myanmar

The Forest Law, 1992 is the main legislative framework for timber production,⁵ processing and trade in Myanmar. This Law provides for decentralising the forest management and, therefore, for creating more opportunities for the private sector to become involved in timber trade. This Law makes it mandatory for all timber harvesting and trading to have the prior approval of the Myanmar Forest Department. This Law also provides that timber extraction must be done through the Myanmar Forest Department's competitive bidding system. The Forest Rules, 1995 was introduced to complement the implementation of the Forest Law, 1992. The Rules include definitions of and

⁵ The Community Forestry Instructions, 1995 aims to produce timber and other forest products from CFs by ensuring the participation of rural communities in planting trees in barren lands and degraded areas (NEPCon, 2013).

provisions on forest reserves, forest management, forest plantations, extraction and transportation of forest products, rights related to driftwood on rivers, seals and stamps for timber markings, timber storage terminals and ports, establishing factories, policing responsibilities of forest officers, and forest offences and punishments. The National Code of Forest Harvesting, 2000 provides guidelines and prescriptions for maximising the economic return from forests without harming the forest health and sustainable production capacity. The Code defines the forest management system in Myanmar, which is called the Myanmar Selection System,⁶ In addition, the Myanmar Timber Enterprise (MTE) Extraction Manual provides guidelines for the MTE in its timber extraction work (NEPCon, 2013). The hammer marks on the logs given by the MTE and the TPs issued by the Myanmar Forest Department, are the proof of timber legality in Myanmar and, therefore, are required for processing and trading timber. Despite the requirement to use competitive bidding for permitting timber extraction, the MTE is responsible for all timber extraction in Myanmar. The MTE often harvests through private contractors. Myanmar gives a share of the harvested timber to the contractors as reimbursement for their harvesting costs (consulting with the MTE and Myanmar Timber Merchant Association officials). The MTE is also responsible for transporting, processing and trading timber in Myanmar (NEPCon, 2013). The Sea and Land Customs Act, 1878 (amended in 1962), regulating exports and imports of all products, applies to timber. This Act focuses on the levy and collection of customs duties.

2.1.5 Nepal

The Forest Act, 1993 is the main legislative framework for timber production, processing and trade in Nepal. The Forest Regulation, 1995 was enacted to support the implementation of the Forest Act. The Forest Act broadly separates the forests in Nepal into two categories: private forests and national forests. Private forests are trees outside forests (TOF) that include home gardens and private plantations. National forests include government-managed forests, CFs, collaborative forest management (CoFM), leasehold forests, protected forests and religious forests. The Scientific Management Guidelines, 2014 aims to ensure sustainable management and timber production from all forests in Nepal. The Forest Act allows private forest owners to harvest timber from their forests and sell it in the local market (MoFSC, 2009). In order to harvest, the forest owners need the prior permission of the Nepal Forest Department. According to the Forest Act, the Nepal Forest Department or the Nepal Timber Corporations harvests the government managed forests and sells the timber. CFs and CoFM are harvested and the communities sell timber. The leaseholder can harvest timber and sell it. Timber harvesting is usually not allowed in protected and religious forests. As per the Forest Act, a TP is required to transport both domestically produced and imported timber within the country. The Nepal Forest Department has the authority to issue TPs. There is no separate legislation regulating timber processing. The Forest Act states that a sawmill can process only legal timber, i.e. timber with a TP (consultation with officials from the Nepal Forest Department). The Customs Act, 2007 applies to the trade of all products including timber, and mainly focuses on the levy and collection of customs duties.

2.1.6 Sri Lanka

The Forest Ordinance No. 16, 1907 (amended in 2009) is the main legislation regulating timber production, processing and trade. The Ordinance bans timber harvesting from natural forests in Sri Lanka. Timber can be harvested only from government plantations, private plantations, home gardens, and other TOFs, which are privately owned (Chokkalingam and Vanniarachchy, 2011). According to the Ordinance, the State Timber Corporation (STC) harvests timber from government plantations. The STC has the authority to process and sell the timber. Owners can harvest timber from private plantations, home gardens and other TOFs, with the prior permissions of the Sri Lanka Forest Department, and sell it. As per the Ordinance, a TP is required to transport both domestically produced and imported timber within the country. The Sri Lanka Forest Department has the authority to issue TPs. The Ordinance also regulates sawmills allowing them to process only timber with a TP (consultation with officials from the Sri Lanka Forest Department and the STC). The Customs Act, 1991 and the Import Export Act, 1987, regulating exports and imports of all products in Sri Lanka, also apply to timber. The Customs Act focuses on the levy and collection of customs duties, while the Import Act aims to ensure that only permitted products are being exported from and imported to Sri Lanka (Seneviratne and Wijesinghe, 2013).

⁶ As per the Myanmar Selection System, forest lands are divided into felling series each containing 30 blocks of approximately equal yield capacity. One block is harvested each year creating a 30-year felling cycle for the whole series.

2.1.7 Challenges for law enforcement

The discussion above suggests that the regulatory framework in all the study countries in general have good provisions for regulating timber production, processing and trade. There are also multiple regulations in each country for protecting forests (see Annex 9). However, corruption in forest departments and law enforcing agencies makes enforcing these regulations a challenge. A study done by Khoda (2008) and Mohammad (2013) for Transparency International Bangladesh suggested that corruption in forest departments is the key challenge for effective forest law enforcement in Bangladesh. In spite of strict provisions to fight it, corruption is considered a normal business practice especially for timber extraction in Myanmar (NEPCON, 2013). There is also widespread corruption in the forest sector in Nepal (Magrath et al, 2013). Although literature on corruption in the forest sectors of the other three study countries was unavailable, Transparency International's corruption perception index (CPI) from 2014 suggests there is a high level of corruption in these countries (except Bhutan, which actually ranks much higher in the CPI, 2014).⁷ Under resourcing, especially in the forest department, also contributes to the low level of forest law enforcement. Khoda (2008) and Mohammad (2013) suggested a lack of sufficient budgets and skilled manpower as some of the key constraints for effective forest law enforcement. Stakeholder consultations reveal that there is only one staff person per 5 000 ha of forests in Bangladesh. Bhutan has about 2 436 staff people per ha of forest (DFPS, 2013). Although relevant data is not available for the other study countries, available resources in these countries is likely similar to Bangladesh as socio-economic conditions and related challenges faced by all the study countries are similar or the same (see Annex 7). Multiple laws and acts for regulating the same forest resources pose a challenge for effective forest governance, as harmonising their implementation with other enforcement agencies in each country is a daunting task given the corruption and under resourcing in the forest departments.

2.2 Transit pass – a means to recognise timber as legal

The regulatory frameworks in all the study countries have made TPs mandatory. All timber sourced from natural forests as well as homestead, private plantations, community forestry, agro and farm forestry and other TOFs require a TP. In all the study countries, TPs are issued by the district-level forest officer commonly known as the divisional/district forest officer (DFO). TPs usually carry information on the source of origin, volume, name of species and the physical measurement of the logs. A TP also carries information on the owner of the logs, i.e. to whom a TP was issued, and the reference to the hammer marks on the logs. The consultants observed during the country missions that in all study countries, except Sri Lanka, a hammer mark is given to each log. In Sri Lanka, the logs are marked with paint. This means that a TP provides information about the log itself, and also the information to identify it. The procedure for obtaining a TP in the study countries is as follows:

- The DFO office issues prior approval for harvesting. The approval application letter usually includes information on the place of harvesting, i.e. source of origin, number of trees, estimated quantity and name of species. Officials from the DFO office often inspect the trees to be harvested before issuing the approval letter.
- Officials from the DFO office inspect and measure the harvested logs against the information provided for the approval. If the inspection is satisfactory, each log is marked and a TP issued for the logs harvested as one consignment. The TP is required to transport the timber inside the country.
- If the timber is sold, the TP has to be handed over to the buyer. The TP, along with the sales receipt, will then be the means for proving legality of timber.
- The forest department officials must also inspect imported timber. The timber goes to the port after customs clears it and the TP is issued upon satisfactory inspection.

⁷ In Transparency International's corruption perception index of 2014, all the study countries except Bhutan rank 85 or below out of 175. Bhutan ranks 30. Source: <http://www.transparency.org/cpi2014/results>.

In all the study countries, there are check posts of forest departments usually located by the road and waterways to monitor the TPs and the consignment of timber when being transported. However, as a TP is just a piece of paper prepared manually and forest checkpoints are not computerised, the check post guards are unable to detect if any illegal timber is mixed with the consignments in between the check posts. Stakeholder consultations reveal that this happens often, especially in Bangladesh (see also Khoda, 2008), India, Nepal and Sri Lanka where the volume is exaggerated in a TP by bribing the forest department officials to allow the illegal timber to be mixed in with the legal timber. This suggests that the control of timber transport and verification of supply chain control, two essential components of the legality assurance system (LAS) under the FLEGT VPA, or any methods to promote legal timber trade are weak in all the study countries of the SAARC region.

2.3 Forest-related policies and their implications on timber production, processing and trade

The forest policies in the study countries in the SAARC region and Myanmar have changed over the past few decades. These changes were made to cope with climate change, biotic pressure on forest resources and increasing demands for timber and other forest products. The major forest policy shift that the study countries have encountered has been in favour of community forestry and participatory forest management. All the study countries have adopted community forestry to enhance the production base, increase forest cover, save natural forests, and generate livelihoods for the community. The key features and directions of policies affecting forests and their implications are presented in Table 2.1.

Although the forest policies in all the study countries are conservation oriented (see Table 2.1), a major limitation related to forest governance is that they do not describe any explicit measures for controlling illegal logging and processing of illegally sourced timber.⁸ The policies do not address this issue. This encourages illegal logging, processing, consumption and trading, and in turn makes it a challenge to achieve the conservation goals. The other limitation of forest policies in these countries is the lack of any mandate for checking whether the imported timber comes from legal sources. Bangladesh, India, and Nepal rely heavily on imports of industrial roundwood and Sri Lanka relies on imports of sawn timber. Much of this timber comes from Malaysia, Myanmar (until the log export ban was enforced on 1 April 2014), Ghana, Nigeria and a number of other African countries (see Chapter 4). Much of the timber imported, particularly from non-FLEGT VPA countries, is likely harvested illegally (EFI, 2014). Since the imported timber is used by export-oriented industries, such as the furniture industry in India, failing to control imports of illegally sourced timber poses great challenges for these countries to meet the European Union Timber Regulations (EUTR).

⁸ The regulatory framework in the study countries allows for processing legal timber only (recall Section 2.1) indicating that the policy on timber processing in these countries promotes using only legal timber. There is no policy document in any study country with a specific mandate for timber processing.

Table 2.1 Key features and directions of forest policies and their implications in the study countries

Country	Policy	Key features and directions	Implications
Bangladesh	Forest Policy, 1994	It restricted harvesting in protected forests, encouraged afforestation on private and fallow land, agro/farm forestry and enacted stringent rules for transit of timber.	The policy is in conflict with the national agriculture policy for fixing priorities between forestry and agriculture, particularly in the case of fallow lands.
Bhutan	National Forest Policy, 2009	Aims to keep a minimum of 60% of the total land under forest cover. The Policy also emphasised the sustainable use of forests for poverty reduction.	Forest-based industries started being promoted, but the growth in the sector is not noticeable.
India	Forest Policy, 1988	It focused on conservation of forests, meeting the local needs of the people and participatory management.	Opened the door for joint forest management and changes in the management system. It encouraged the industry to ensure their own wood raw supply and hence the industry started plantations and imports of raw material to survive.
Myanmar	Myanmar Forest Policy, 1995	It introduced sustainable development of forest resources while conserving wildlife, plants and ecosystems and it became a watchword for progress.	Encouraged participatory management but does not specify timber trade issues and the age-old system of royalty collection and TPs continue.
Nepal	Forest Sector Policy, 2000	The Policy encouraged industry-laid provisions for regulating, harvesting and strengthening community forestry.	Focused on non-timber forest products. Timber is not in the mainframe. CF was further strengthened.
Sri Lanka	National Forestry Policy, 1995	Emphasised conserving biodiversity, soil and water resources.	Conservation measures were made stricter, and law enforcement strengthened to monitor timber harvesting and trade.
	National Environment Policy, 2003	Multi-dimensional environmental integrity and social inclusions.	Harvesting from natural forests practically stopped.

Sources: Olsen and Helles, 1997; NBS, 2002; GoSL, 2015; Bangladesh Forest Department (<http://www.bforest.gov.bd/>); National Portal of Bhutan (<http://www.bhutan.gov.bt>); Joshi et al., 2011; Näsström and Mattsson, 2011; Amatya, 2012; Overndorf, 2012; and consultations with forest department officials in all countries

2.4 Trade policies

In general, trade policies of the SAARC countries have undergone major changes over the past two to three decades. The countries made good progress in liberalising trade regimes and slashing tariffs since the early 1990s when most of the countries started the reforms. The countries have also undertaken considerable industrial deregulation and other structural reforms. The governments and the private sector recognise that strong exports are critical for overall economic growth and poverty reduction, and export-led growth has become important to each country. Each country has been integrating with the global economy, as evidenced by the significant increases in merchandise trade. Myanmar has not experienced these changes due to political and social exclusions for nearly fifty years.

In the case of exports, all these countries have uniform policies for banning log exports. Myanmar has recently banned log exports (1 April 2014) and in other countries the bans and moratoriums are more than a decade old. Bhutan does not allow sawn timber exports. The export of hand-sawn timber is banned in Myanmar, while square- shaped sawn timber is allowed (see Annex 10 for a full list of products allowed and not allowed for export). All the study countries allow exports of processed timber products. The policies regarding imports are more liberal in all the study countries. It is allowed to import logs, sawn timber and all processed timber products. However, importing raw materials such as logs is usually favoured especially by the SAARC region countries as they face a timber shortage. For example, in India the average import duties for industrial roundwood is just one-seventh of that for particleboard (EFI, 2014). Also in Bangladesh, the import duty for industrial roundwood is lower than that for finished timber products (NRB, 2015).

There are problems with favouring raw material imports. The policies of the study countries regarding international trade do not address imports of illegally sourced timber. The policies of these countries allow for customs clearance to be issued for imported timber with the certificate of origin, but no documents are required to prove legality. This makes it easy to import illegally sourced timber to these countries. This suggests that the international trade policies of the study countries, especially those in SAARC, do not have adequate measures to control the supply chain of timber, which is an essential component of LAS in the FLEGT VPA.

2.5 Export and import procedures and controls, and related gaps and inconsistencies

2.5.1 Export and import procedures and controls

Export and import procedures and controls for timber and timber products in all study countries are guided by the regulatory framework and policy on trade. These procedures and controls, including the documentation required and the agencies involved in each study country, are detailed below.

Bangladesh: Exporters and importers in Bangladesh must have an Export Registration Certificate and Import Registration Certificate for foreign trade. The Office of the Chief Controller of Imports and Exports under the Ministry of Commerce issues these certificates (Future Startup, 2015). The documents required exports and imports of timber and timber products are listed in Table 2.2.

Table 2.2: Documents required for exporting and importing timber and timber products in Bangladesh

Export documents	Import documents
1. Bill of lading	1. Bill of lading
2. Certificate of origin	2. Cargo release order
3. Commercial invoice	3. Letter of credit
4. Customs export declaration	4. Certificate of origin
5. Packing list	5. Commercial invoice
6. Pre-shipment inspection (clean report of findings)	6. Customs import declaration
7. Transit pass (TP)	7. Packing list
8. Customs clearance	8. Technical standard/health certificate
	9. Terminal handling receipts

Sources: World Bank, 2014a; Hossain and Rahman, 2011; and consultation with Bangladesh Forest Department officials

For importing timber and timber products, the documents listed in Table 2.2 must be submitted to the Customs Department and necessary import duties must be paid for receiving the customs clearance. After the customs clearance, officials from the Utilization Division of the Bangladesh Forest Department inspect the consignment of import against the bill of lading, commercial invoice, certificate of origin, and packing list for volume, source of origin, species and purpose for which it has been imported. The consignment is also checked against the health certificate to make sure that it does not contain any harmful pests and insects. The environment and/or public health department is called in to check if required. Upon satisfactory checking, a TP is issued for transporting the consignment within the country. Imported industrial roundwood is hammer marked. Similarly, for exporting timber and timber products, a TP from the Utilization Division of the Forest Department is required to transport the products to the port of export. The first seven documents mentioned in Table 2.2 also must be submitted to the Customs Department for customs clearance and the necessary duties must be paid. The Customs Department checks the consignment of export against the documents submitted and, if it is satisfactory, issues a customs clearance. The procedures and controls involved in exporting to and importing from all countries including the other study countries are the same in Bangladesh (consultation with Bangladesh Forest Department officials).

Bhutan: Any individual or firm with a valid business licence, issued by the Ministry of Economic Affairs, can export and import. Export permits are required for restricted and prohibited items, which currently include industrial roundwood and sawn timber. The documents required for exporting and importing timber and timber products are listed in Table 2.3.

Table 2.3: Documents required for exporting and importing timber and timber products in Bhutan

Export documents	Import documents
1. Bill of lading	1. Bill of lading
2. Certificate of origin	2. Cargo release order
3. Commercial invoice	3. Certificate of origin
4. Customs export declaration	4. Commercial invoice
5. Insurance certificate	5. Customs import declaration
6. Packing list	6. Business licence
7. Road/dispatch challan/transit pass	7. Insurance certificate
8. Clearance from the Forest Department	8. Letter of guarantee
9. Customs clearance	9. Packing list
10. Terminal handling receipts	10. Road/dispatch challan (transport document)
11. Transit declaration	11. Terminal handling receipts

Sources: World Bank, 2014a; consultations with the Department of Revenue and Customs; and consultations with Bhutan Forest Department officials

The Bhutan-India Agreement on Trade, Commerce and Transit allows Bhutan to use the Kolkata seaport and to transit through India for trade with third-party countries without being subjected to Indian customs duties. Exporting timber products requires a clearance from the Bhutan Forest Department. This clearance, along with the other documents listed in Table 2.3, must be submitted to receive the customs clearance issued by the Revenue and Customs Department. For industrial roundwood and sawn timber exports, which are currently banned, the Customs Department consults a committee represented by the Bhutan Forest Department, Natural Resources Development Corporation Limited (NRDCL) and at least one member from the local community where the timber was harvested before issuing the customs clearance. Once approved by the committee, the duties are paid and other documents are provided, and the consignment is given clearance for export by the Revenue and Customs Department.

The Bhutan Customs Department office in Kolkata inspects the timber and timber products arriving from third-party countries through the Kolkata seaport and collects duties. Once the consignment is cleared by the office, the Indian Customs office does not intervene and the consignment crosses the Indian border without any more checks. Once in Bhutan, the consignment is checked by the Bhutan Forest Department against the bill of lading, commercial invoice, certificate of origin, and packing list for volume, source of origin, species and purpose for which it has been imported. If the check is satisfactory, the Forest Department issues a TP and clearance. In the case of pulp and paper imports, the clearance and the TP from the Forest Department is not required. In Bhutan, the procedures and controls involved in exporting to and importing from all the countries including the other study countries is the same (consultation with officials from the Department of Revenue and Customs and the Bhutan Forest Department). However, due to the Bhutan-India Agreement on Trade, Commerce and Transit, Bhutan's exports to and imports from India are free of any duties.

India: A firm or an individual requires an export or import licence from the Directorate General of Exports and Imports at the Ministry of Commerce in order to export from or import to India. A trader has to register with the Reserve Bank of India. The documents required for exporting and importing timber and timber products are listed in Table 2.4.

Table 2.4: Documents required for exporting and importing timber and timber products in India

Export documents	Import documents
1. Road/dispatch challan/transit pass	1. Bill of lading
2. Bill of lading	2. Cargo release order
3. Certificate of origin	3. No objection certificate
4. Commercial invoice	4. Certificate of origin
5. Foreign currency exchange form	5. Commercial invoice
6. Customs export declaration	6. Foreign currency exchange form
7. Packing list	7. Customs import declaration
8. Technical standard certificate	8. Inspection report
9. Terminal handling receipts	9. Packing list
10. Clearance from Handicraft Export Council (for wooden handicrafts)	10. Product manual
11. Customs clearance	11. Terminal handling receipts

Sources: World Bank, 2014a and consultations with State Forest Department officials in Kolkata

Exporting industrial roundwood from India is banned. Only processed products can be exported. An exporter first requires the TP issued by the concerned State Forest Department to be able to transport the products within the country to the port of export. The exporter must submit the first 10 documents mentioned in Table 2.4 and pay the necessary duties to the Customs Department for obtaining clearance. In the case of wooden handicrafts, the exporter must also submit a clearance from the Handicraft Export Development Council of India. For exporting products made of imported timber, the exporter must be the same party that imported the timber. The shipment of export has to leave from the same port through which the timber was imported. Exported sawn-timber products derived from imported industrial roundwood should not exceed 60% of the import volume. The added value of such products should not be less than 30%. The exporter's sawmill, where the imported timber is sawn, should be registered with the concerned State Forest Department and located away from the forest area in a location approved by the Conservator of Forests of the State Government. The exporter must ship the goods within a period of six months from the date of importing the industrial roundwood (DoC, 2015).

For importing timber and timber products, an importer must first provide the Customs Department with the documents mentioned in Table 2.4 and pay the duties. In the case of timber imports (industrial roundwood and sawn timber), once the consignment is cleared by the Customs Department, it is checked by the concerned State Forest Department officials against the bill of lading, commercial invoice, certificate of origin, and packing list for volume, source of origin, species and purpose for which it has been imported. The consignment is also checked to make sure that it does not have any harmful pests and insects. If the check is satisfactory check, the State Forest Department issues the TP. Imported industrial roundwood is also hammer marked. The TP enables the importer to transport the timber within the country. In the case of paper and paperboard, plywood, veneer, fiberboard, furniture and wooden handicrafts the import check and the TP from the Forest Department is not required. In India, the procedures and controls involved in exporting and importing from all countries including the other study countries is the same. However, due to India's trade agreements with Nepal and Bhutan, India's exports and imports to and from these two countries are free of any duties. (Consultations with officials of the State Forest Department in Kolkata, Bhutan Department of Revenue and Customs and Bhutan Forest Department, and Nepal Forest Department).

Myanmar: In Myanmar, an export/import licence is required for international trade. The Export Import Registration Office, Directorate of Trade, issues the licence. The documents required for exporting and importing timber and timber products are listed in Table 2.5.

Table 2.5: Documents required for exporting and importing timber and timber products in Myanmar

Export documents	Import documents
1. Export declaration form	1. Import declaration form
2. Export licence/permit	2. Import licence/permit
3. Commercial invoice	3. Commercial invoice
4. Packing list	4. Bill of lading or air consignment note
5. Sales contract	5. Packing list
6. Shipping instruction	6. Other certificates and permits issued by the relevant government departments as a condition for import
7. Letter of credit	
8. Remittance exemption certificate	
9. Details for receiving payments	
10. Clearance from the Myanmar Forest Department (also serves as a transit pass)	
11. Customs clearance	

Sources: Myanmar Customs (www.myanmarcustoms.gov.mm); Woods, 2013; De and Majumdar, 2014; and consultations with Myanmar Forest Department officials

Before the log export ban came into effect, timber (industrial roundwood and sawn timber) could only be exported through the Myanmar Timber Enterprise (MTE). Now all exports should go through the Yangon seaport. Private firms or individuals can export processed timber products only. However, they can import both timber and timber products. An exporter first requires an export clearance from the Myanmar Forest Department. This clearance also works as a TP, which is necessary to transport the products within the country to the Yangon seaport. The exporter must submit the first ten documents mentioned in Table 2.5 and pay the duties to the Customs Department to obtain the clearance for shipment (Myanmar Customs, 2015). Before the clearance is issued, an inspection team consisting of officials from the Myanmar Forest Department, the Customs Department, and the Department of Immigration and Manpower inspects the consignment (consultations with Myanmar Forest Department officials). The importer has to submit to the Customs Department all the documents mentioned in Table 2.5 and pay the duties for the customs clearance so the products can be released from the port (Myanmar Customs, 2015). Before the release, an inspection team consisting of officials from the same government departments as in the case of exports will check the consignments. The procedures and controls involved in exporting and importing from all the other study countries are the same as in Myanmar (consultations with Myanmar Forest Department officials).

Nepal: An exporter or importer requires a valid export/import licence issued by the Trade and Export Promotion Centre. If a company is making the transaction, it must be registered in Nepal. No special permit is required for exporting and importing any products other than banned items, which include industrial roundwood. The documents required for timber exports and imports and timber products are listed in Table 2.6.

Table 2.6: Documents required for exporting and importing timber and timber products in Nepal

Export documents	Import documents
1. Bill of lading	1. Bill of lading
2. Cargo release order	2. Certificate of origin
3. Certificate of origin	3. Commercial invoice
4. Commercial invoice	4. Customs transit document
5. Customs transit declaration	5. Delivery order
6. Foreign exchange control form	6. Foreign exchange control form
7. Insurance certificate	7. Insurance certificate
8. Letter of credit	8. Letter of credit
9. Packing list	9. Packing list
10. Single administrative document	10. Single administrative Document
11. Truck challan/transit pass	11. Road/dispatch challan (transport document)
12. Customs clearance	

Sources: World Bank, 2014a; Nepal Trade and Export Promotion Centre, 2015; and consultations with the Nepal Forest Department and Customs Department officials

The Nepal-India Transit Treaty allows Nepal to use the Kolkata Seaport and transit through India for trade with third-party countries without being subjected to Indian customs duties. In the case of timber and timber product exports, each consignment should be checked by the DFO and issued with a TP. The TP is required to transport the consignment to the port of export. The exporter must submit the first ten documents listed in Table 2.6 and must pay duties to the Customs Department for clearance. Once the consignment is cleared, the products are free to be exported. To import timber and timber products, the importer must submit the documents listed in Table 2.6 to the Customs Department for clearance, and must pay the import duties to the Customs Department. Timber and timber products imported from third-party countries are always routed through India. The Customs Department checks the consignment of timber and timber products, at the border checkpoint with India, against the document provided. The consignment is then checked by the Nepal Forest Department against the bill of lading, commercial invoice, certificate of origin, and packing list for volume, source of origin, species and the purpose for which it has been imported. The TP is issued after the consignment has been checked and approved. Imported industrial roundwood is hammer marked. With a TP the consignment can travel and be traded anywhere in the country. In Nepal, the procedures and controls involved in exports to and imports from all countries including the other study countries is the same. However, due to the Nepal-India Agreement on Trade, the country's exports to and imports from India are free of any duties (consultations with officials from the forests and customs departments).

Sri Lanka: The import and export procedure in Sri Lanka varies depending on whether a trader is approved by the Board of Investment or not. Board of Investment-approved traders must submit the necessary documents to the Board of Investment. The non-Board of Investment traders must submit their documentation to the Sri Lanka Customs Department. The documents required for exporting and importing timber and timber products are listed in Table 2.7.

Table 2.7: Documents required for exporting and importing timber and timber products in Sri Lanka

Export documents	Import documents
1. Export licence	1. Customs declaration form for customs clearance
2. Central bank form	2. Central bank form
3. Shipping note	3. Commercial invoice
4. Commercial invoice	4. Delivery order
5. Packing list	5. Bill of lading
6. Boat note	6. Foreign currency exchange form
7. Cargo dispatch note	7. Packing list
8. Transit pass	8. Certificate of origin
9. Customs clearance	9. Import licence

Sources: World Bank, 2014a; Sri Lanka Customs, 2015; de Mal et al., 2011; and consultations with Sri Lanka Forest Department and State Timber Corporation officials

To export and import all timber and timber products in Sri Lanka, the documents listed in Table 2.7 must be submitted to the Board of Investment and the Customs Department for clearance and must be paid. An exporter of timber and timber products must have a TP from the Sri Lanka Forest Department before starting the clearance process. In the case of imports, after receiving clearance, the officials from the Sri Lanka Forest Department inspect the consignment against the bill of lading, commercial invoice, certificate of origin, and packing list for volume, source of origin, species and purpose for which it has been imported. If the checks are satisfactory, a TP is issued for transporting the consignment within the country (consultations with Sri Lanka Forest Department officials).

Customs clearance in Sri Lanka has three channels:

- The Green Channel for low risk declarations, releases goods without requiring documents and an examination of the cargo. Ideally, such goods would be released without any examination, but in practice all cargo is checked randomly.
- The Yellow Channel for medium risk consignments, clears goods after examining the required documents, but without examining the cargo examination, except during random checks.
- The Red Channel for high-risk consignments, clears goods after examining both documents and cargo (de Mal et al., 2011).

The procedures involved in exporting and importing from all countries including the other study countries is the same in Sri Lanka (consultations with the Sri Lanka Forest Department and STC officials).

Examples of export and import documents in the study countries are presented in Annexes 11.1 to 11.4. Annex 11.5 includes examples of the hammer marks on imported logs. Annex 12 contains a glossary of the export and import documents.

2.5.2 Documentation required for export to the European Union

Under the EUTR, an operator⁹ in the EU is required to provide adequate documentation for proving the legality of the imported timber and timber products (Overdevest and Zeitlin, 2014). To export timber and timber products included in the EUTR to the EU, an exporter in the study countries must provide documents, in addition to the ones listed in Table 2.2 to 2.7, if requested by the operator in the EU.

⁹ An operator is the one who first places the timber on the EU market. An importer can also be an operator.

2.5.3 Gaps and inconsistencies in export and import procedures and controls

Gaps: In the case of exports of timber and timber products in all the study countries, a TP is used as a guarantee of legality. As discussed in Section 2.2, a TP, despite containing information sufficient for recognising timber legality, does not provide effective control of timber transport and verification of the supply chain due to shortcomings in the checking process. In addition, in all the study countries in the SAARC region, exports of timber and timber products must have a certificate of origin. This certificate only contains information about the source of the timber being exported or the timber used for producing the products being exported. It does not provide any information on whether or not the timber was sourced legally. This implies that illegally sourced timber or products made of such timber can pass through the export procedures and controls in these countries. Similarly, in the case of imports, no documents proving the legality of the timber being imported or used for producing products that are being imported is required by any study country (see Section 2.5.1). All countries require the certificate of origin, which merely gives the original place and/or country of the timber/timber products. This certificate is not a proof of legality. This suggests that the import procedures and controls in the study countries are inadequate for checking whether or not the timber and timber products being imported are sourced legally.

Inconsistencies: The number of documents required for exporting and importing timber and timber products varies across the study countries. The procedures and controls for exporting and importing are not consistent regarding the type of documents and checks required in these countries. As discussed in Section 2.5.1, not all the forest departments of the study countries subject the imported timber and timber products to checks after customs clearance. In India, timber products are not subjected to such checks, while in Bhutan only paper and paperboard are exempt from the checks. In addition, only Bhutan and Nepal require insurance certificates for exports and imports. Other countries do not require such certificates. Only Bangladesh and India check consignments of imports for harmful pathogens.

Due to these inconsistencies, as well as geography, the average costs associated with exports and imports vary across the study countries. According to the World Bank (2014a), among the study countries, Nepal requires the most time and has higher costs followed by Bhutan (Table 2.8). This is understandable as both countries are land locked and have to use the Kolkata seaport, which requires transit through India in order to trade with third-party countries. The duration and costs presented in Table 2.8 are the average for all products. The costs and duration for timber and timber products are likely to be higher than the average presented as the forest departments in all the study countries require additional documents (e.g. a TP) and checks.

Table 2.8: Average time required (from signing agreement between exporter and importer to the delivery of goods) and costs associated with exports and imports in the study countries

Country	Export		Import	
	Time (days)	Total costs (USD)	Duration (days)	Total costs (USD)
Bangladesh	26	1125	32	1320
Bhutan	38	2230	37	2330
India	16	1120	20	1250
Myanmar	20	620	22	610
Nepal	40	2545	39	2650
Sri Lanka	16	560	13	690

Sources: World Bank, 2014a

3. Regional institutional mechanisms related to timber trade

3.1 Institutions

3.1.1 Regional institutions

There are only three regional institutions working with forestry issues in the South Asia region. The key features of the institutes in the context of this study are described below.

SAARC Forestry Centre: The SAARC Forestry Centre (SFC) is one of 11 regional centres of SAARC, and naturally, all eight SAARC member countries are part of the centre. The SFC is located in Thimphu, Bhutan. It was established in 2008 in response to concerns about environmental degradation and adverse impacts of climate change in the region. The establishment of the SFC highlights the importance of forestry in the framework of SAARC cooperation on environmental conservation and climate change. It has four objectives, which correspond to its four divisions:

- I. Information and knowledge management division. Its objective is to develop a regional information and knowledge-based centre on forest resources, and to facilitate dissemination of information and networking among member states
- II. Sustainable forest management division. Its objective is to promote research, education and extension in sustainable forest management and conservation within the SAARC region.
- III. Mountain ecology division. Its objective is to enhance the management capacity for sustaining mountain forestry ecosystems and related environmental services.
- IV. Participatory forest management division. Its objective is to promote participatory forestry for improving rural livelihoods and local forest management.

The broader mandate of the SFC is to promote cooperation among member states through research, education and coordination in the field of forestry and the environment. SFC's mandate is to assist the member countries in improving forest governance by conducting studies on forest policy and regulatory framework, and improving forest management by developing different tools and databases. The mandate also extends to strengthening national and international institutional links (SFC, 2015). The director as well as head of four divisions of SFC are seconded from the government departments that look after forestry affairs in the member countries. This directly connects forestry administration in the SAARC member countries and the SFC. The centre is in a good position to bring the forestry administration in the SAARC countries together to promote dialogue on good forest management and governance.

Consultation with SFC officials by the consultants revealed that fulfilling the centre's mandate is challenging due to a lack of adequate human and financial resources. Member countries often put a cap on their contribution to the centre's programme costs. Although the SFC is encouraged by its parent organisation, the SAARC Secretariat, to collaborate with international organisations, the secretariat and the international organisation must sign a MoU before they can begin. Signing a MoU is often a time-consuming process making such collaboration challenging. From 1 January 2016, the SAARC Forestry Centre will merge with the SAARC Meteorological Research Centre in Dhaka, Bangladesh, the SAARC Disaster Management Centre in New Delhi, India, and the SAARC Coastal Zone Management in Male, Maldives to form a new centre called the SAARC Environment and Disaster Management Centre. Dhaka, New Delhi, Thimphu and Islamabad are the candidate cities to host the new centre. Although it is agreed that the mandate of the SFC will be incorporated in the mandate of the new centre, there is always the risk that the focus may be shifted from forestry towards the environment. The strengths and weaknesses of the SFC, according to the authors' assessment, as a potential partner for any future FLEGT activities in the SAARC region are presented in Table 3.1.

Table 3.1: Strengths and weaknesses of the SAARC Forestry Centre as a potential partner for any future FLEGT activities in the SAARC region

Strengths	Weaknesses
<ul style="list-style-type: none"> • Coverage of all SAARC member countries • SAARC Secretariat encourages the centre to develop linkages with international organisations • The centre is relatively light with bureaucracy compared to the SAARC Secretariat • Officials come from the forestry administration in the member countries making a direct connection between the SAARC Forestry Centre and forestry administration • Current personnel is familiar with forestry and timber trade-related issues in their respective countries 	<ul style="list-style-type: none"> • Budgetary limitations because member countries often put a cap on the budget • Lack of adequate manpower • Getting approval from the SAARC Secretariat on international collaboration/initiatives is a time-consuming process

International Centre for Integrated Mountain Development: The International Centre for Integrated Mountain Development (ICIMOD) is a regional intergovernmental centre for learning and knowledge sharing in the Hindu Kush Himalayan (HKH) region. Six SAARC member countries (Afghanistan, Bangladesh, Bhutan, India, Nepal and Pakistan) as well as China and Myanmar are the regional member countries (RMCs) of ICIMOD. It is based in Kathmandu, Nepal. ICIMOD aims to serve the HKH region by generating and sharing information and knowledge in order to find effective solutions to the problems, such as climate change, faced by people living in the region. Its nodal partners are mainly government agencies, usually ministries, from the RMCs, which represent their countries in the Board of Governors that assists the centre in setting its strategic direction. The nodal partners from RMCs are usually those agencies responsible for the affairs of mountains and people living in mountainous areas, not necessarily the forestry and timber trade. Forestry, timber legality and trade, and forest governance do not usually fit into the core strategy of ICIMOD. ICIMOD collaborates with universities and research organisations in the RMCs for capacity development and research. The centre receives funding for its activities from the RMCs as well as partner organisations and countries from outside the HKH regions (ICIMOD, 2015).

The activities of ICIMOD are grouped into four thematic areas: (i) livelihoods; (ii) ecosystem services; (iii) water and air; and (iv) geospatial solutions. Timber trade, timber legality and forest governance are neither currently included under any thematic area nor has the centre worked on these issues in the past. The strengths and weaknesses of ICIMOD, according to the authors' assessment, as a potential partner for any future FLEGT activities in the SAARC region is presented in Table 3.2.

Table 3.2: The strengths and weaknesses of ICIMOD as a potential partner for any future FLEGT activities in the SAARC region

Strengths	Weaknesses
<ul style="list-style-type: none"> • Huge network in Hindu Kush Himalayan (HKH) region which includes all SAARC countries except Sri Lanka and Maldives • As an intergovernmental organisation, it can influence government decisions 	<ul style="list-style-type: none"> • Lack of experience working with timber trade and legality, and forest governance issues • Larger budget is needed due to high overhead costs • Focuses on issues related to mountains and mountain people in the HKH region as represented by the thematic areas • Does not cover Sri Lanka and Maldives

South Asian Network for Development and Environmental Economics: The South Asian Network for Development and Environmental Economics (SANDEE) is a regional network of researchers and institutes interested in the inter-connections among development, poverty and the environment. It was launched in November 1999 and is hosted by ICIMOD in Kathmandu, Nepal. Currently, it has just eight staff members. It works in seven SAARC member countries: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. The main goal of SANDEE is to build the professional skills required to enable South Asians to address local and global environmental concerns (SANDEE, 2015). It provides grants (USD 20 000 to 40 000 per grant) to researchers in the region. It does capacity building in development and environmental economics research, and provides some training to the researchers. It also conducts research in three thematic areas: (i) ecosystem management; (ii) climate change; and (iii) policy. SANDEE has not conducted any studies on timber trade or illegal logging. The strengths and weaknesses of SANDEE, according to the authors' assessment, as a potential partner for any future FLEGT activities in the SAARC region are presented in Table 3.3.

Table 3.3: Strengths and weaknesses of SANDEE as a potential partner for any future FLEGT activities in the SAARC region

Strengths	Weaknesses
<ul style="list-style-type: none"> • Network of researchers in all SAARC countries except Afghanistan • Capable of influencing policy environment through advocacy 	<ul style="list-style-type: none"> • Network is rather loose • Does not do any project work • Small staff size

Based on the above, the study analysed the comparative strengths and weaknesses of the SFC, ICIMOD and SANDEE through a ranking system. For the ranking, we set six criteria: (i) coverage to SAARC member countries, i.e. how many SAARC member countries are part of the institution; (ii) institutional focus on timber trade, i.e. past experience and current focus with working on timber trade and legality, and forest governance issues; (iii) current staff profile in timber trade context, i.e. the working experience of the staff in forestry and timber trade; (iv) power to influence government decisions on timber trade, legality and forest governance issues; (v) operating costs – the more the bureaucracy, the higher the overhead and operating costs and the less desirable an institution as a partner; and (vi) connection to forestry administration in SAARC member countries. According to the exercise, SFC appears to be the most suitable regional institution for collaboration with EFI and the EC in any future FLEGT activities in the SAARC region (Figure 3.1).

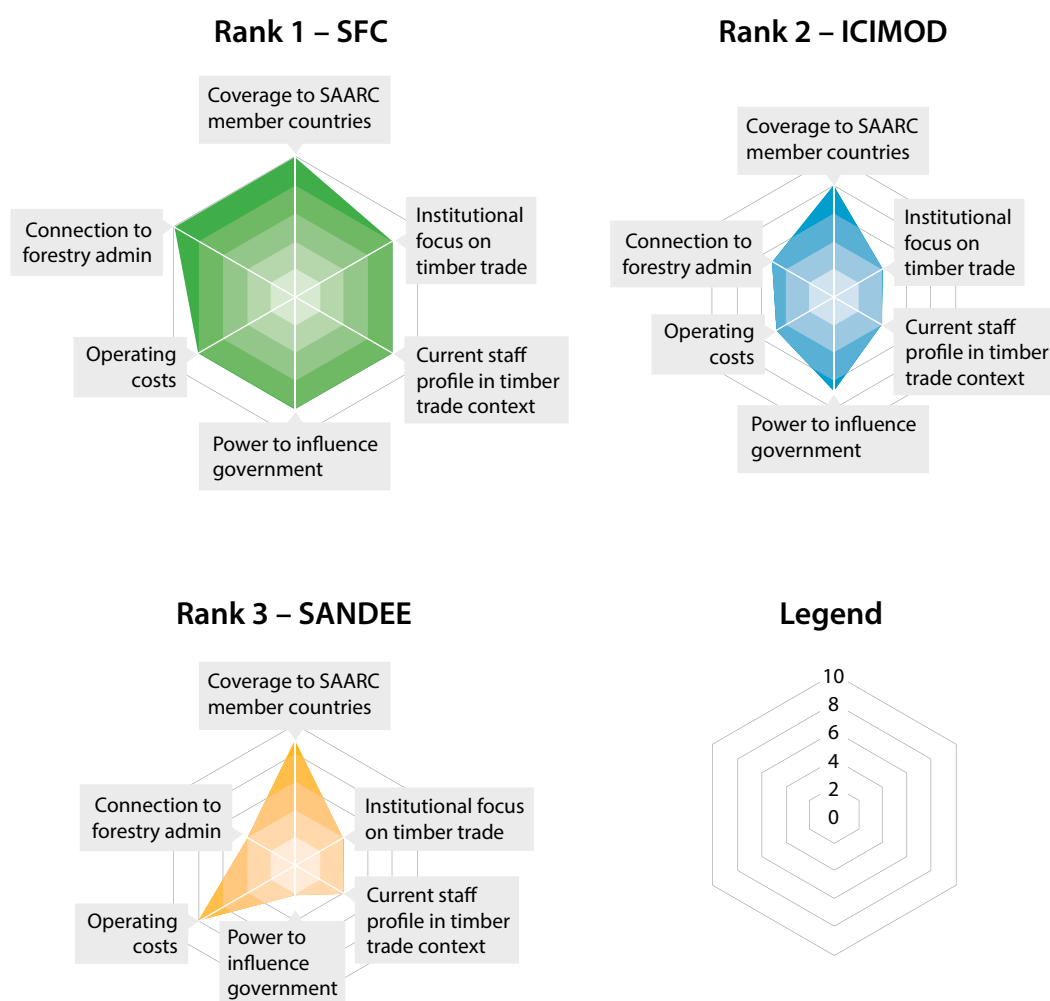


Figure 3.1: Comparison among SFC, ICIMOD and SANDEE as the potential regional partner of EFI for engaging in any future FLEGT activities in the SAARC region

3.1.2 National institutions

The national institutional framework in the study countries consists of the government agencies responsible for forests and related affairs, and non-governmental organisations (NGO) and civil societies. The government agencies include ministries, forest departments, research and education institutions, and the forest product agencies or corporations.¹⁰ In each country, one ministry looks after the forests and related affairs. The other agencies are under the ministry. In India, it is the Ministry of Environment, Forest and Climate Change, in Bangladesh the Ministry of Environment and Forests, in Bhutan the Ministry of Agriculture and Forests, in Myanmar the Ministry of Environmental Conservation and Forestry, in Nepal the Ministry of Forest and Soil Conservation and in Sri Lanka the Ministry of Mahaweli Development and Environment.¹¹ The forest corporations are involved in plantations in all the study countries in addition to their prime mandate of harvesting and trading. These autonomous organisations are also involved in processing and marketing. In addition, there are associations of private traders in the study countries that look after the interests of their members. See Annex 3 for national agencies looking after forests and timber in all the study countries.

¹⁰ In India, each state has its own forest department. Many states have forest (development) corporations as well.

¹¹ Until the end of 2014, the concerned ministries in India and Sri Lanka were called the Ministry of Environment and Forests, and the Ministry of Environment and Renewable Energy, respectively.

The NGOs and civil society either partner with government institutions for development or are involved in advocacy. World Wide Fund for Nature (WWF) in India is currently working with a number of export-oriented pulp and paper companies in the country to procure raw materials from sustainable sources. It is helping companies to get agro and farm forestry plantations in India certified by FSC International and to import certified wood through the Global Forest Trade Network (consultation with Rebecca Aranha of WWF India). In Bangladesh, Transparency International has worked on corruption in the forest sector. Apart from these, the civil society in the study countries in the SAARC region in general and India in particular are mostly partnering with their governments to assist in community mobilisation, afforestation, and practically remain silent on timber legality and importing illegally sourced timber. There are only a few NGOs capable of influencing the Government's decisions through advocacy in India. Even these organisations mostly address issues of tribal rights, land tenure and climate change. In Myanmar, there are a number of NGOs and civil society groups working on forestry issues. Among them, Economically Progressive Ecosystem Development Group (EcoDev) is currently working on FLEGT issues. Ecosystem Development and Community Development Initiative, another NGO, mainly focuses on community forestry in the country. In Nepal, a growing number of NGOs are partnering with the Government on forestry issues. These NGOs are linked with projects funded by international donor agencies, and have no significant role to play on policy matters. The consultants could not identify any civil society organisations working on forest governance and timber legality issues in Sri Lanka and Bhutan.

The international trade aspects are governed by the customs departments, which are mostly under the commerce ministries. The customs departments cooperate with the forest departments for exports and imports of timber and timber products. In the case of exports, the timber and timber products are checked by the forest departments before entering the customs procedure in all study countries. Similarly, in the case of imports, these products are checked by the forest departments after the customs clearance (see Section 2.5.1). The educational and research organisations are negligibly involved in formulating policy (stakeholder consultations).

3.2 Mandates and functional mechanisms

3.2.1 Regional treaties and conventions

South Asia Free Trade Area Agreement: The need for regional economic integration within South Asia was realised long ago. Consequently, the SAARC Preferential Trading Arrangement (SAPTA) came into existence in 1995. SAPTA provided the basis for the South Asia Free Trade Area (SAFTA) Agreement, which was signed on 6 January 2004 at the SAARC Summit, held in Islamabad, Pakistan. The key objective of the agreement is to promote and enhance mutual trade and economic cooperation among the SAARC member states through exchanging concessions for trading goods. The SAFTA Agreement entered into force on 1 January 2006. Following the agreement, the SAFTA Ministerial Council was established consisting of ministers of commerce or trade of the member states. A committee of experts, consisting of one senior economic official from each member country, supports the SAFTA Ministerial Council. This implies that the SAFTA Agreement provides a basis for cooperation among the government agencies looking after trade-related affairs in the member countries such as cooperation of the customs departments to resolve trade disputes. The SAFTA Ministerial Council is the highest decision-making body of SAFTA and is responsible for administering and implementing the agreement (SAARC, 2015b).

A trade liberalisation programme, under the SAFTA agreement, became effective on 1 July 2006. The programme covers all timber and other products except certain products on the Sensitive List¹² (see Annex 13 for the timber and timber products included in the list). Under the programme, the Non-Least Developed SAARC member states agree to reduce tariffs for products from 0% to 5% within seven years (by 20% within the first two years) and Least Developed¹³ member states within ten years (by 30% within the first two years) from the effective date of the Agreement. Member countries can also take unilateral action on reducing tariffs. For example, since 2011 (complying with the announcement made at the SAARC Summit in New Delhi, 2007) India allows duty free access to its market for products, including all timber and timber products, from all Least Developed SAARC member states (SAARC, 2015c). This suggests that the Agreement has the potential to increase the volume of timber and timber products trade in the SAARC region. Moreover, under the SAFTA Agreement, member countries may agree either bilaterally or multilaterally to:

- harmonise standards, reciprocate recognition of tests and accredit testing laboratories and certify products;
- simplify and harmonise customs clearance procedures;
- harmonise national customs classification based on harmonisation system (HS) coding system;
- enhance customs cooperation to resolve disputes at customs entry points;
- simplify and harmonise import licensing and registration procedures;
- simplify banking procedures for import financing;
- provide transit facilities for efficient intra-SAARC trade, especially for the land-locked member countries; and
- simplify the procedures for business visas (SAARC, 2015b).

The above suggests that the Agreement could provide a good basis for any future engagement in FLEGT-related activities such as keeping track of timber and timber products trade across the region. However, the agreement has not been implemented as planned. Except for some actions (Bangladesh and India offering transit to Nepal and Bhutan, India allowing duty free access to products from Least Developed Countries in SAARC and the use of the HS coding system for national customs classification), no harmonisation and simplification has been agreed so far. Even though exports under SAFTA increased considerably since the launch of the Trade Liberalization Program (to about USD 3 billion) the intra-SAARC trade flows are far below the potential (SAARC, 2015b). Consequently, the SAARC member countries have shown increasing interest towards bilateral trade agreements that have been signed or amended (see Section 3.2.2).

Even though SAFTA has created a platform for free trade of many products among the SAARC nations, it neither imposes stringent prohibitions on the trade of timber nor requires showing the legality of origin of timber at the border crossing or port of entry. For exported products (including timber products) no certificate of legal origin is required, but a certificate of origin from the exporter country is sufficient (SAARC, 2015b; Operational Certificate Procedure). As a result, the trade of legal and illegal timber and timber products can take place across the borders as long as a certificate of origin shows that the product was produced in the exporting member state. This particular trend is not in line with the FLEGT activity of controlling illegal timber trade in the region.

¹² No concession is offered for these products, and they are effectively excluded from the agreements. The concessions include tariff, para-tariff (border fee and charges) and non-tariffs (measure, regulation and practices other than tariff and non-tariff).

¹³ SAARC follows the UN definition of Least Developed Countries, which, among the member countries, currently include Afghanistan, Bangladesh, Bhutan, Maldives and Nepal (UN DESA, 2015). India, Pakistan and Sri Lanka are the Non-Least Developed Countries.

The SAARC Agreement on Multilateral Arrangement on Recognition of Conformity

Assessment and the Agreement on Implementation of Regional Standards: These two agreements were signed during the 17th SAARC Summit held in Maldives in 2011. The first agreement aims to promote mutual recognition of activities of conformity, e.g. inspection, testing and certifying tradable goods. The second agreement aims to provide a framework for implementing common standards across the SAARC region (DoC, 2015). The two agreements, if they are implemented, may complement SAFTA and make trade flows smoother through better information sharing and cooperation.

The Asia Pacific Trade Agreement (APTA): The APTA, formerly known as the Bangkok Agreement, is an initiative under the Economic and Social Commission for Asia and the Pacific for trade expansion through the exchange of tariff concessions. It was signed on 31 July 1975. The APTA member states are Bangladesh, India, Sri Lanka, China, Lao PDR and the Republic of Korea. Mongolia was accepted as the seventh participating member in 2014. APTA is a preferential tariff arrangement that aims at promoting intra-regional trade through the exchange of mutually agreed concessions by the member states. The Agreement allows the use of a common set of operational procedures for certifying and verifying the origin of goods (DoC, 2015). Under this agreement, India provides concessional entry to pulp produced from wood and bamboo deriving from Bangladesh. No other timber products are currently included for tariff concessions. In fact, no concessions are exchanged between Sri Lanka and India under the APTA as these two countries have entered into a bilateral Free Trade Agreement (SIAM, 2014).

The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC):

BIMSTEC is an international organisation working in Bangladesh, India, Myanmar, Sri Lanka, Thailand, Bhutan and Nepal. The countries established the BIMSTEC Free Trade Area Framework Agreement in order to stimulate trade and investments among them (BIMSTEC, 2014). With five member states from SAARC and two from ASEAN, BIMSTEC is seen as a bridge between these two major regional groups. The areas of cooperation under BIMSTEC include tariff concession on trade goods, customs cooperation, as well as services and investments (DoC, 2015). Timber and timber products are not included in this agreement (BIMSTEC, 2014).

ASEAN-India Comprehensive Economic Cooperation Agreement (CECA): The ASEAN-India CECA is a framework agreement signed on 13 August 2009. It became operational with all ASEAN Member States¹⁴ on 1 August 2011. The Agreement on Trade in Goods, ASEAN-India Free Trade Area (AIFTA) Agreement, as well as a separate trade agreement with each ASEAN member state were signed under CECA (EEPC India, 2013). Tariff concessions were agreed with ASEAN member countries for about 5 000 products, which include timber, and timber products. For example, from 1 January 2010 onwards the import duty on industrial roundwood and sawn timber from Indonesia and Malaysia was reduced to 0%. The Agreement increases India's imports of timber (especially industrial roundwood and sawn timber) from Indonesia and Malaysia, which are already the two key timber suppliers for India. CECA requires the certificate of origin, not the certification of legality, which could create room for trading timber of illegal origin. However, import duties on most paper and paperboards have been reduced progressively to 0% from 1 January 2014. Stakeholder consultations in India suggest that due to the 0% import duty and the comparatively lower production cost in ASEAN countries compared to India (due to the lower price of pulpwood), significant quantities of paper and paperboard are being imported to India from ASEAN countries. While the Indian paper industry is operating under extremely challenging conditions, such as a shortage of raw materials (IPMA, 2015), the imports from ASEAN countries hamper domestic production.

While the Agreement does not make any specific provision for sharing information related to the trade of timber or other products, it does encourage: (i) simplified customs procedures; and (ii) harmonised customs procedures, to the extent possible, with relevant international standards and recommended practices (Department of Commerce, Government of India, 2015). This is to ensure the prompt clearance through customs of trade products.

Based on the above discussion, the timber trade related provisions in the regional trade mechanisms are summarised in Table 3.4.

¹⁴ ASEAN member states are Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, Philippines, Thailand and Viet Nam.

Table 3.4: Provisions related to timber trade included in regional trade mechanisms

Trade mechanism	Countries/ region covered	Provision related to timber trade		
		Information sharing (kind, organisation)	Cooperation and coordination	Harmonisation and simplification
SAFTA Agreement	SAARC countries	Present, but mechanisms for and areas of information sharing are ambiguous	Tariff concession, cooperation of customs departments to resolve trade dispute	Standards, customs clearance and classification, import procedure, business visa
SAARC Agreement on Multilateral Arrangement on Recognition of Conformity Assessment	SAARC countries	Present (trade information, trade agencies)	Mutual recognition of inspection, testing and certification of tradable goods	None
Agreement on Implementation of Regional Standards	SAARC countries	Present (trade information, trade agencies)	Implementation of common standards	None
Asia Pacific Trade Agreement	Bangladesh, India, Sri Lanka, China, Lao PDR, South Korea and Mongolia	Present (trade information, trade agencies)	Tariff concession, certification and verification of origin of goods	None
BIMSTEC	Bangladesh, Bhutan, Nepal, India, Sri Lanka, Myanmar and Thailand	Timber and timber products are not included		
ASEAN-India Free Trade Area	India and ASEAN states	Present (trade information, trade agencies)	Tariff concession	None

3.2.2 Bilateral trade and transit agreements

There are a number of bilateral trade agreements between the study countries. The most important are briefly discussed below.

Bhutan-India Agreement on Trade, Commerce and Transit: The Agreement was signed on 28 July 2006 and came into force the following day. It is a revised version of the Indo-Bhutan Trade Treaty signed in 1972. The Agreement gives all products of Bhutanese and Indian origin, except the ones banned for export or import by the governments of both countries, duty-free access to each other's markets (Department of Commerce, Government of India, 2015). Since there is a log export ban in place in both countries, all timber and timber products except industrial roundwood are covered by this Agreement. Under the Agreement, India allows Bhutan to use Kolkata, Chennai and Mumbai seaports and airports as well as Delhi airport to export to and import from other countries, as well as to use Indian land routes for transporting goods to and from Bhutan for the purpose of trade with a third-party country. Not all exports and imports of Bhutan to and from countries other than India are subject to the customs duties and trade restrictions of the Indian Government. The agreement also allows Bhutan to use Indian land routes to transport goods from one part to another (Department of Commerce, Government of India, 2015). The Agreement combined with a historical, long-term good relationship between India and Bhutan (revealed in consultations especially with the forest department and customs officials of Bhutan and India), allows the countries to cooperate closely in controlling the illegal trade of timber and other products. In addition, there is a joint patrol by the

Indian Army and Bhutanese forces that tries to control timber smuggling and wildlife poaching in the area bordering the state of Assam in India.

India-Nepal Treaty of Trade: The India-Nepal Treaty of Trade was signed in 1992 and revised in 2009. Under the treaty, all goods (except three exceptions¹⁵) originating from India or Nepal are allowed to move to Nepal or India without being subject to any quantitative restrictions, licensing or permit systems. Currently all timber and timber products, except industrial roundwood (due to the export ban in both countries), are covered by the Treaty (Department of Commerce, Government of India, 2015). So far the treaty has been unable to increase Nepal's timber product exports to India, since the country's production capacity is minimal and it relies on imports. However, the Treaty has increased India's exports to Nepal. Under the Treaty, both countries agree to cooperate in preventing infringement and circumvention of the laws, rules and regulations of either country with issues relating to foreign exchange and foreign trade (Department of Commerce, Government of India, 2015). Effective implementation of the Treaty could reduce the illegal timber trade between the countries.

India-Nepal Agreement of Cooperation to Unauthorized Trade: Under this Agreement, first signed on 6 December 1991 and last amended on 27 October 2009, both countries agreed to cooperate to prevent infringement and circumvention of the laws, rules and regulations of either country with regard to matters relating to customs, narcotics and psychotropic substances, foreign exchange and foreign trade. It allows both countries to compile and exchange with each other statistical and other information relating to unauthorised trade across the common border (Department of Commerce, Government of India, 2015). Naturally, the cooperation under this agreement applies to controlling timber smuggling between India and Nepal. However, the effectiveness of the agreement on curbing the illegal timber trade is questionable, as the stakeholder consultations, which were carried out by consultants in both countries, reveal that there is timber smuggling and movement of illegally sourced timber regularly along the long porous border between the two countries.

India-Nepal Transit Treaty: The Treaty was signed on 6 January 1999. Under the Treaty, Nepal can use the Kolkata seaport of India for exporting and importing goods to and from third-party countries, and can use the Indian land route for transporting goods without paying customs duties (Department of Commerce, Government of India, 2015). Under the Treaty, Nepal imported industrial roundwood from Myanmar until 2013, and continues to import roundwood from Malaysia.

India-Sri Lanka Free Trade Agreement: The Agreement was signed on 28 December 1999 and made operational in March 2000. It provided Sri Lanka with important market access to India, which is its main trading partner in the region. Implementing the Agreement had a dramatic effect on Sri Lanka's exports to India. Currently, India is the main market for goods exported from Sri Lanka, including timber and timber products.

Bangladesh-Nepal Trade and Payments Agreement: The Agreement was signed in 1976 and amended in 2010. Under the Agreement, Bangladesh allows duty free access to 22 types of products from Nepal, while Nepal does the same for 20 products from Bangladesh. Timber and timber products are included among those from Nepal but not from Bangladesh (Nepal Trade and Export Promotion Centre, 2015). Nepal's exports of timber and timber products to Bangladesh have been minimal (see Chapter 4), which suggests the Agreement in the forest sector is ineffective.

Bangladesh-Nepal Transit Agreement: The Agreement was signed in 1976 and amended in 2010. It allows Nepal to use the Chittagong and Mongla seaports and a land route in Bangladesh to trade with third-party countries. Goods from Nepal in transit through Bangladesh are not subject to any custom duties, sales taxes, other local taxes or charges (Nepal Trade and Export Promotion Centre, 2015). Thus far Nepal has not exploited the Agreement in order to export or import timber or timber products. In fact, stakeholder consultations in Nepal revealed that Nepalese importers are not very keen on using Bangladeshi seaports. Currently, they use the Kolkata seaport in India because the costs are lower.

India-Myanmar Bilateral Border Trade Agreement: The Agreement was signed in 1995. It does not mention timber or timber products.

15 Goods that are: (i) restricted for export to third-party countries; (ii) subject to price control for distribution or movement within the domestic market; and (iii) prohibited for export to each other's territories to prevent deflection to third-party countries.

Bangladesh-Bhutan Bilateral Trade Agreement: The Agreement was signed in 2003, and it includes wood-based panels and wooden furniture. Bangladesh offered Bhutan the use of its Chittagong and Mongla seaports for importing goods from third-party countries. However, stakeholder consultations in Bhutan revealed that Bhutanese importers are not very keen on using Bangladeshi seaports. Currently, they use the Kolkata seaport in India because the costs are lower.

India provides land transit to Bangladesh, Nepal and Bhutan for bilateral trade: India provides land as well as maritime transit to land-locked Nepal and Bhutan for international trade. This initiative has a minimal effect on the trade in timber and timber products as both Nepal and Bhutan trade mostly, if not entirely, with India.

3.2.3 Other bilateral arrangements

India-Bangladesh Memorandum of Understanding (MoU) for establishing Border Haats: Both countries signed the MoU on 23 October 2010 for establishing border haats (i.e. markets in border areas) along the border between the two countries. The aim of the MoU is to promote the wellbeing of the people living in the border area by establishing a market for local products. Timber and timber products are, however, excluded from the MoU (Department of Commerce, Government of India, 2015).

Based on the discussion in Sections 3.2.2 and 3.2.3, the provisions related to timber trade mentioned in bilateral trade mechanisms are summarised in Table 3.5.

Table 3.5: Provisions related to timber trade included in bilateral trade mechanisms*

Trade mechanism	Provision related to timber trade	
	Information sharing (kind, organisation)	Cooperation and coordination
Bhutan-India Agreement on Trade, Commerce and Transit	Present (trade information between customs and forest departments)	Tariff concession, Bhutan's use of India's seaport for import from third-party countries, control of illegal timber trade
India-Nepal Treaty of Trade	Present	Tariff concession, control of illegal timber trade
India-Nepal Agreement of Cooperation to Unauthorized Trade	Present (information on illegal timber trade, between customs and forest departments)	Control of illegal timber trade
India-Nepal Transit Treaty	Absent	Nepal's use of India's seaport for import from third-party countries and transiting them through India
India-Sri Lanka Free Trade Agreement	Present (trade information between customs departments)	Tariff concession
Bangladesh-Nepal Trade and Payments Agreement	Present (trade information between customs departments)	Tariff concession
Bangladesh-Nepal Transit Agreement	Absent	Nepal's use of Bangladesh's seaport for import from third-party countries and transiting them through Bangladesh
Bangladesh-Bhutan Bilateral Trade Agreement	Present (trade information between customs departments)	Tariff concession
India-Myanmar Bilateral Border Trade Agreement	Timber and timber products are not included	
India-Bangladesh Memorandum of Understanding for establishing Borderhats	Timber and timber products are not included	

*None of these bilateral trade agreements includes provisions for harmonising and simplifying standards and procedures.

4. Trend analysis, projections and future direction of timber trade

4.1 Trend in recorded production and consumption of timber

4.1.1 Bangladesh

The domestic sources of industrial roundwood in Bangladesh are home gardens, government forests and social forestry plantations. Between 2000 and 2013, home gardens were the biggest sources of timber in Bangladesh contributing to a little less than 80% of the country's industrial roundwood production. Home gardens in Bangladesh hold a total growing stock of trees of over 120 million m³ and are the major supplier of timber in the country (MoEF and FAO, 2011, Choudhury and Hossain, 2011). The government forests contributed to 20% of the timber in Bangladesh and social forestry plantations account for the rest. Between 2000 and 2004, the production of industrial roundwood in Bangladesh increased from about 1 million m³ to 1.25 million m³. This was due to an increased supply from government forests attributed to a partial easement of the harvesting moratorium in natural forests (stakeholder consultations). From 2005, production remained fairly constant at 1.2 million m³ with the production of home gardens and government forests remaining constant (Figure 4.1).

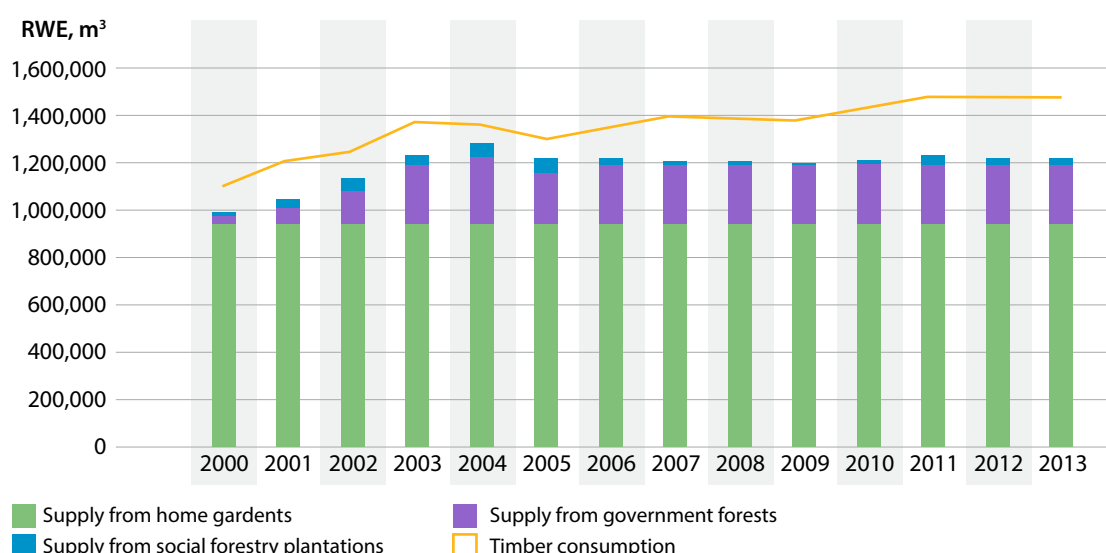


Figure 4.1: Industrial roundwood production and consumption in Bangladesh

Sources: Bangladesh Forest Department, 2015; FAOSTAT; UN Comtrade; and Choudhury and Hossain, 2011

The regression equation (see Annex 14) suggests that between 2000 and 2013, timber consumption was driven by economic growth. Population growth also increased consumption, as more people require more timber. An average gross domestic product (GDP) growth of 6% (World Bank, 2014b) and population growth of more than 1% (UN DESA, 2013) over the last two decades increased housing construction and increased the demand for wooden furniture, which boosted wood consumption. Traditional small-scale carpentries have been the main suppliers of wooden furniture. The sawn timber for carpentries and house construction usually comes from local sawmills. In Bangladesh, there are more than 11 000 sawmills almost all of which are small and produce less than 2 m³ of sawn timber per day (Choudhury and Hossain, 2011). Many of these sawmills are unlicensed, and their output is unrecorded. There are just a few medium and large sawmills, which are owned by and supply timber to the furniture industry.

The change in consumption patterns of the growing middle class in Bangladesh are behind the recent increase in wooden furniture produced on an industrial scale. Navana Furniture Limited, Otobi and Hatil are the three largest private industrial-scale wooden furniture producers. Based on consultation with officials at Navana Furniture, the three companies together consume an estimated 100 000 m³ of timber per year, entirely from local sources.

4.1.2 Bhutan

The industrial roundwood production in Bhutan was small at 60 000 m³ per year between 2000 and 2013. On average, 97% of the production came from natural forests, which are managed by the Bhutan Department of Forests and Park Services and harvested by NRDCL. Timber is harvested in only 14% of the country, which has 2.71 million ha of forests (DFPS, 2013). A small amount of the timber production came from community forests, which are owned by the Government but managed and harvested by the communities (Figure 4.2).

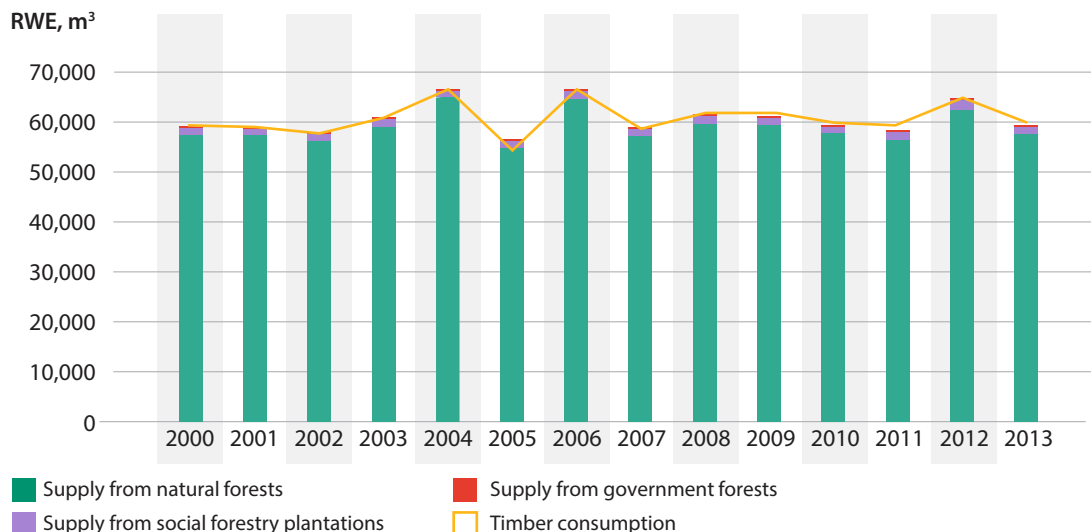


Figure 4.2: Industrial roundwood production and consumption in Bhutan

Sources: DFPS, 2013 ; NRDCL, 2008–2012 ; FAOSTAT ; UN Comtrade ; and Dhital, 2009

Between 2000 and 2013, consumption of industrial roundwood in Bhutan followed the same trend as Bhutan. The country was self-sufficient in timber and did not import or export any timber. In fact, industrial roundwood exports have been banned in Bhutan since 1999. The regression analysis (Annex 14) shows that the consumption of timber did not follow the economic growth trend. Even though the country is small, with a population of just over 0.7 million with a marginal growth rate, it did not show an increased demand for wood and wood products even though its GDP grew rapidly (World Bank, 2014b). The country does not have a clearly established timber consuming industry. The country's wood industry is made up of less than 100 small sawmills, and five plywood factories¹⁶ (DFPS, 2013). Sawmills provide timber for house construction. The plywood industries together consume approximately 5 000 m³ of wood per year (FAOSTAT). The Bhutan Board Products Limited is the biggest of the plywood factories in Bhutan. It is in Phuentsholing near the border with India, which gives it easy access to Indian markets, and sources timber from Bhutan.

¹⁶ The plywood industries are Bhutan Board Products Limited, Bhutan Ply, Green Wood Manufacturing Corporation, Gyeltshen Wood Industry and Bhutan Wood Panel Industry.

4.1.3 India

In India, the three major sources of industrial roundwood are natural forests, social forests and communal forestland, and private plantations. Natural forests are usually managed and harvested by the state forest departments in different states of India (EFI, 2014; FSI, 2013; ICFRE, 2012). Social forests include plantations established on waste, fallow and degraded land, and on roadsides by local people with the assistance and supervision of the state forest departments. Communal forest land consists of tree resources owned and/or managed by the communities and panchayats (i.e. villages) (EFI, 2014). Plantations include agro and farm forestry plantations as well as captive plantations, i.e. plantations managed by industries for sourcing their own raw wood material that are under private ownership (ICFRE, 2012; MoEF, 2009). The state forest departments across India also manage plantations.

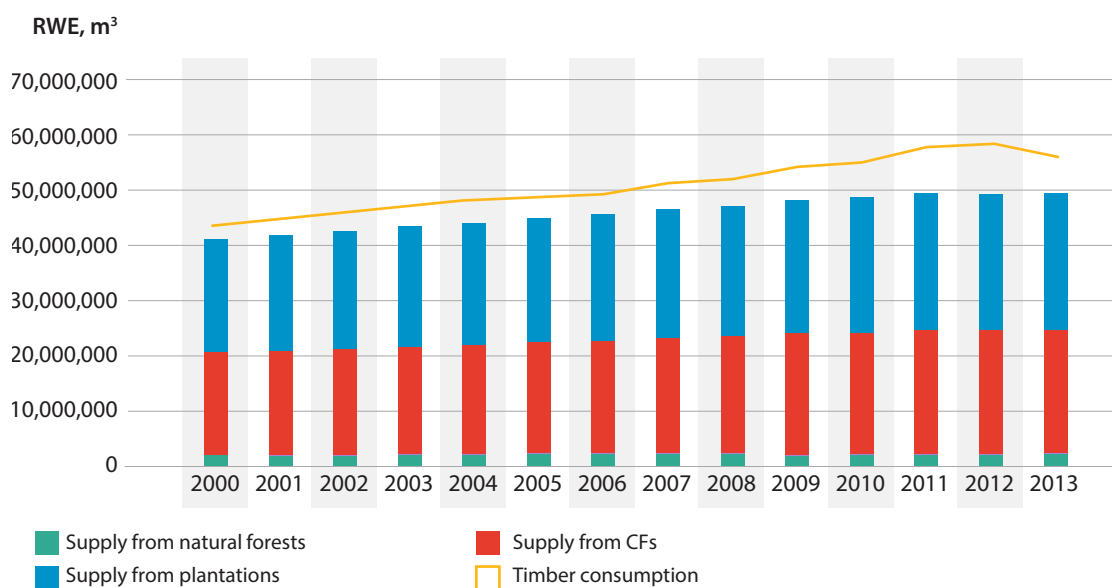


Figure 4.3: Industrial roundwood production and consumption in India

Sources: UN Comtrade; FAOSTAT; MoEF, 2009 ; ICFRE, 2012

From 2000 to 2013, the recorded industrial roundwood production in India grew at a moderate pace from just over 40 million m³ to 50 million m³. The growth was due to an increased supply from non-natural forest sources, i.e. social and communal forests and private plantations. Plantations, especially those that were privately owned, were the major source of industrial roundwood in India contributing to half the total production on average. An increase in the area of agro and farm forestry plantations, especially in the states of Haryana, Punjab and Uttar Pradesh, contributed to the increase in the timber supply from private plantations between 2000 and 2013 (Annex 15.1). Social and communal forests throughout India were the second biggest sources of industrial roundwood in the country (Figure 4.3). Growth in timber supply from this source can be attributed to the increase in social forestry plantations in recent decades. The contribution of natural forests to India's timber supply has been marginal because of the conservation oriented forest policy in the country.

The consumption of industrial roundwood¹⁷ in India followed a gradual increasing trend between 2000 and 2013. Consumption always remained above production, and growth in consumption was faster than growth in production, and the consumption-production gap gradually widened (Figure 4.3). Imports from abroad had to increase to fill the gap.

¹⁷ A large quantity of timber enters into the supply chain from unrecorded sources such as home gardens, illegal harvesting from natural forests and timber smuggled from neighboring countries, especially from Nepal and Myanmar. Stakeholder consultations in India and published reports (MoEF, 2009; EFI, 2014) estimate the quantity to be between 25 million m³ to 32 million m³ per year. This represents the unrecorded part of timber consumption in India.

The regression equation (Annex 14) suggests that between 2000 and 2013, the growth in timber consumption was driven by economic growth. India's GDP grew rapidly over the last 14 years reaching a high of 10.3% in 2010 (World Bank, 2014b). This creates a huge demand for paper, tissues, timber-based building materials, wooden furniture and other timber products. The rising number of middle-class households is a solid foundation for the increase in demand. Massive public spending in education meant that millions more people were literate and better educated, especially in the rural areas, their incomes increased and this contributed to the demand for pulp and paper (MoEF, 2009). The population growth, which was about 1.5% per year in the last decade (World Bank, 2014b) contributed to the growth in total timber consumption in the country. The three broad categories of wood-based industries are sawmilling, paper, and plywood and panel (ICFRE, 2010).

The sawmilling industry in India is composed of numerous small-scale sawmills. According to one estimate, India has about 23 000 sawmills, 98% of which are small with annual log consumption close to 3 000 m³ (Manoharan, 2011). The sawmilling industry is the biggest consumer of timber with an estimated consumption of about 29 million m³ per year. The logs come from all three major domestic sources mentioned above. The industry also consumes imported timber in significant quantities. About 62% of sawn timber is used for house construction, 8% for railway sleepers, 7% for the furniture and vehicle industries and the rest is used for packing, shipbuilding, mining and in other industries (Pandey and Rangaraju, 2008). The sawmilling industry is a semi-formal sector since a large number of sawmills that fulfil local needs run without a licence for operation and proper technological back-up (ICFRE, 2010). Therefore, a significant proportion of the sawmilling industry's timber consumption and production remains unrecorded in India.

There are 653 paper mills in India. About 31% of them use wood and bamboo, 22% use agro residue and the rest, which make up 47%, use recycled fibre (IPMA, 2015). The wood-based paper mills procure raw materials mainly from private plantations (agro and farm forestry, and captive plantations) and from social forestry areas (Manhoaran, 2013). This industry also imports some timber. In the financial year 2013–2014, the total installed production capacity of the industry was 12.75 million tonnes. However, due to raw material shortages, the industry could produce only 11.38 million tonnes, which accounts for 89% of the production capacity (IPMA, 2015). The use of plywood and panels, instead of wood, has become very popular in India because it is easy to use and relatively low cost. The industry consists of 62 large- or medium-scale mills and more than 2 500 small-scale mills. Most of them are located in Haryana, Punjab, Uttarakand and Uttar Pradesh states. These four states together have more than 1 000 mills (ICFRE, 2010). The Yamuna Nagar industrial area in Haryana has 300 plywood mills, which are very dependent on eucalyptus and poplar grown in agro and farm forestry plantations. This is also the case with other mills especially in the four states mentioned above (ICFRE, 2010).

4.1.4 Nepal

In Nepal, industrial roundwood comes from four sources, which are CF and CoFM, leasehold forests, government managed forests and TOFs.¹⁸ Industrial roundwood production in Nepal remained at 1.3 million m³ per year between 2000 and 2013 (Figure 4.4). On average, CFs and CoFM contributed 40% of the production, while government managed forests and trees outside forests contributed about 30% each. Stakeholder consultations revealed that a lack of modern harvesting technologies and infrastructure (such as roads) for harvesting in mountainous forest areas and poor forest governance are the main barriers for increasing domestic timber production. High timber transportation cost due to difficult terrain is another barrier. Due to these barriers, millions of cubic metres of harvestable standing timber stock remain in the forests. Between 2000 and 2011, the consumption of industrial roundwood in Nepal generally followed the trend of production. From 2012, consumption started to surpass production (Figure 4.4) and the resulting gap was usually filled with imports.

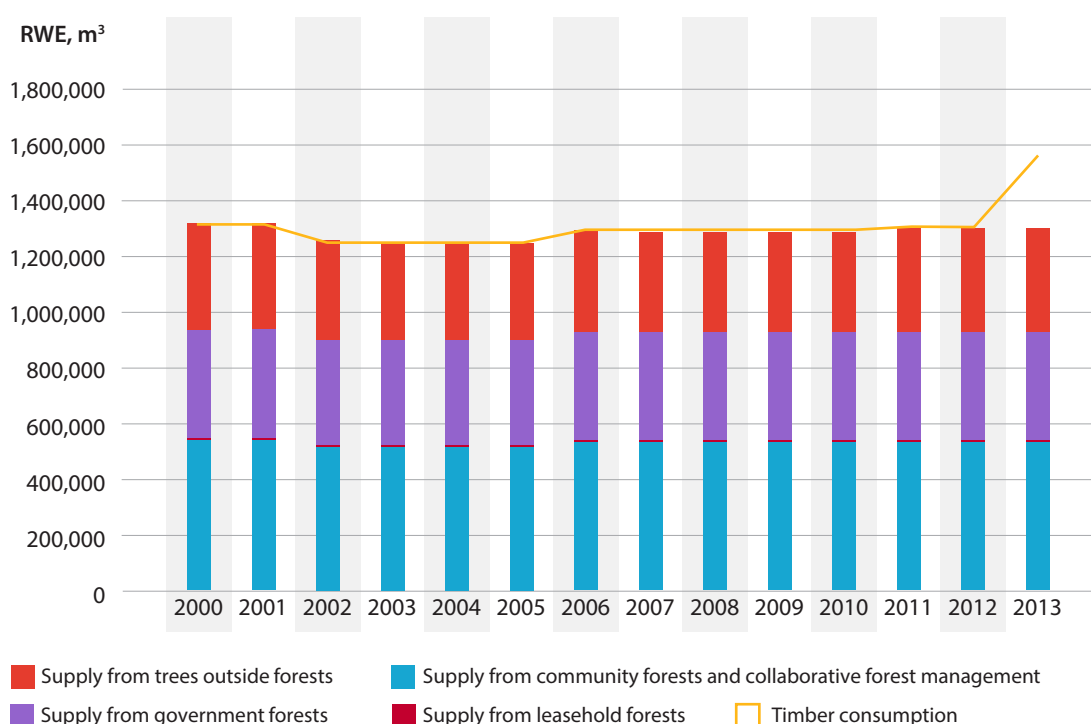


Figure 4.4: Industrial roundwood production and consumption in Nepal

Sources: FAOSTAT; UN Comtrade; and MoFSC, 2009

The regression equation (see Annex 14) suggests that the growth in timber consumption from 2000 to 2013 was driven by economic growth. During this period, Nepal's GDP growth rate was between 3% and 6% per year (World Bank, 2014b) activated mainly by the increase in remittances sent by Nepalese living abroad. Economic growth drove the consumption of timber especially in house construction and the wooden furniture sectors. Numerous small-scale sawmills across the country supply sawn timber for house construction and wooden furniture. Sawmills themselves usually procure timber from domestic sources. Some sawmills, located especially near the Indian border in the Terai region,¹⁹ have also started using imported timber bought from Nepalese importers. The consultants visited one such sawmill in Birgunj (Annex 15.2). The veneer and plywood industries are another important consumer of timber in the country. There are about 50 veneer mills in Nepal located mainly in the Terai region close to the border with India (MoFSC, 2009). The location gives these mills easy access to the Indian markets. The mills source timber from the Terai itself as well as from other regions in the country. They also use imported timber. The location near the border with India makes it convenient for them to import timber using the Kolkata Seaport and then to transit through India.

¹⁸ Government managed forests are natural forests managed and harvested by the forest department. TOFs include non-cultivated inclusions, i.e. private plantations and agroforestry as well as home gardens especially in rural areas (Kenal et al., 2012).

¹⁹ Terai refers to relatively flat land in the southern part of Nepal.

4.1.5 Sri Lanka

In Sri Lanka, timber harvesting from natural forests has been banned since 1989. The domestic sources of industrial roundwood in the country are home gardens, mature rubber and coconut plantations,²⁰ forest plantations and TOFs (SLFD, 2009). The total industrial roundwood production increased gradually from just over 1 million m³ in 2000 to 1.31 million m³ in 2013 (Figure 4.5). An increase in the timber supply from home gardens accounted for an increase in timber stock (Pusphakumara et al., 2012), and activated the growth in the supply of industrial roundwood. Home gardens were the biggest source contributing to about 40% of timber on average between 2000 and 2013. The supply from the rubber and forest plantations – the second and third biggest sources contributing to about 22% and 12% of production, respectively – also increased slightly following the increase in area under forest plantations (SLFD, 2009 and Ruwanpathirana, 2014). The production from TOFs and from coconut plantations did not increase significantly (Figure 4.5). The consumption of industrial roundwood in Sri Lanka generally followed the trend of production between 2000 and 2013. This reflects the fact that the country did not export industrial roundwood due to the log export ban and imported little (see Section 4.2).

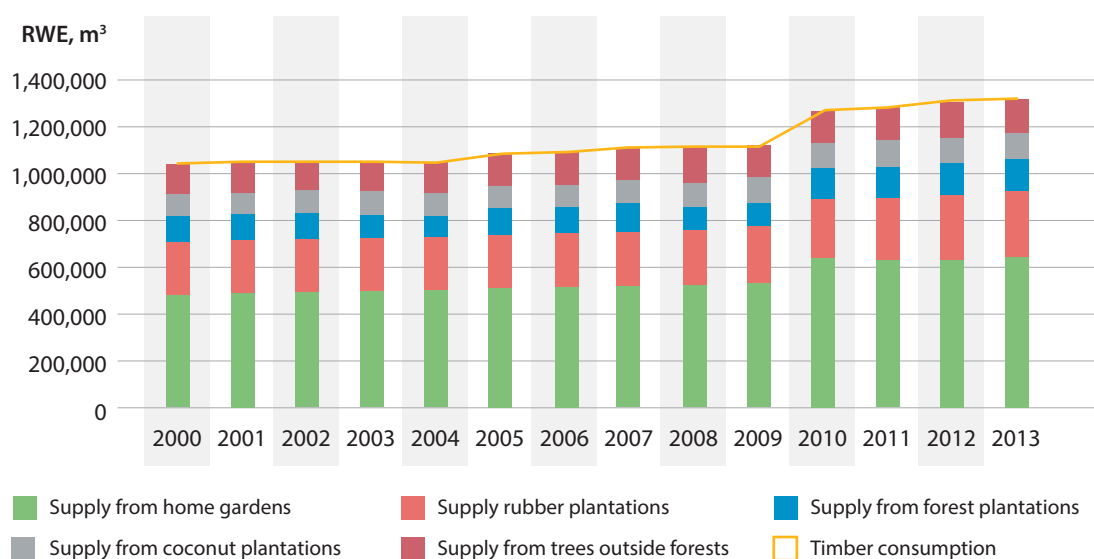


Figure 4.5: Industrial roundwood production and consumption in Sri Lanka

Sources: UN Comtrade; FAOSTAT; SLFD, 2009; and Ruwanpathirana, 2012 and 2014

The regression equation (Annex 14) suggests that between 2000 and 2013, the growth in timber consumption was driven by economic growth. During this period Sri Lanka's GDP growth rate was good but fluctuated between 3.5% and 8.2% per year (World Bank, 2014b) causing a boom in housing construction. This boom coupled with a population growth of about 1% per year on average during that period (World Bank, 2014b) drove the consumption of timber. With the GDP and population growth, the demand for wooden furniture also increased. The sawmilling industry consisting of numerous small-scale sawmills supplying most of the sawn timber²¹ required by the construction and furniture industries. The consultants visited a number of sawmills across Sri Lanka and their report, plus related literature (e.g. Ruwanpathirana, 2012 and 2014), suggest that sawmills usually buy industrial roundwood from all available sources. The STC has its own sawmills and furniture factories. Sawmills are supplied with logs the STC itself produces to provide sawn timber to the furniture factories (Annex 15.3). There are also a few plywood and fibreboard mills that consume less than 20 000 m³ of timber per year and a few medium-sized paper mills, which are based on recycled fibre (SLFD, 2009 and Ruwanpathirana, 2014).

20 Tapping for latex is usually done until the rubber trees are 25 years old. Coconut trees usually produce fruit until they are 80 to 90 years old. Trees are harvested for timber after the latex and coconut production periods are over.

21 Sri Lanka also imports sawn timber from abroad (see Section 4.2).

4.2 Trend in recorded trade of timber and timber products

4.2.1 Total exports and imports

Bangladesh: Bangladesh has traditionally been a net importer of timber and timber products. Between 2000 and 2013, imports far exceeded exports. During that period, both exports and imports followed an upward trend. However, the growth rate of imports was a lot faster than that of exports and the trade deficit gradually increased (Figure 4.6).

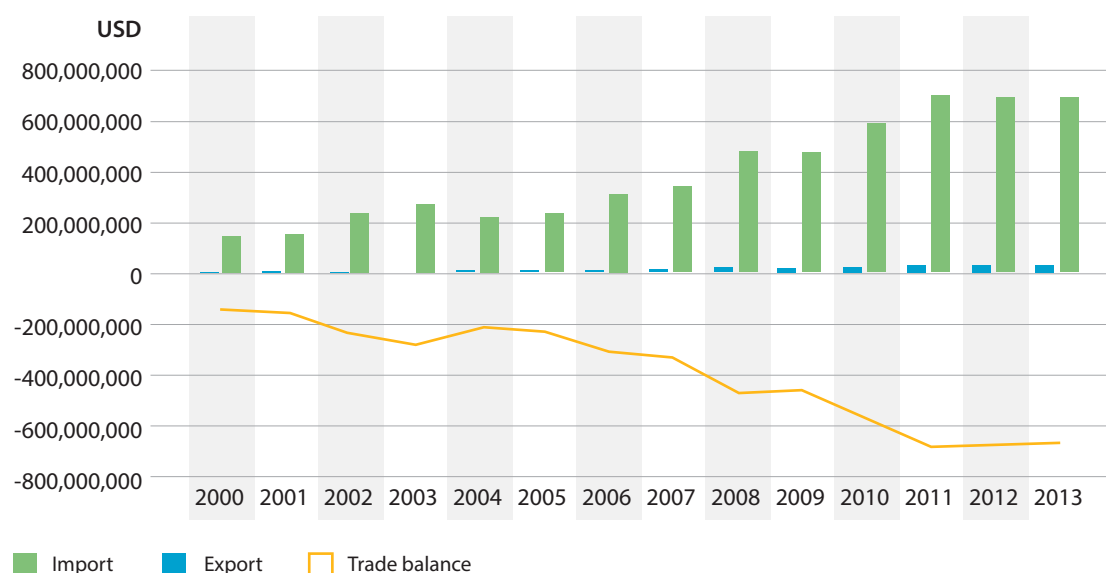


Figure 4.6: Total exports and imports of timber and timber products by Bangladesh

Sources: UN Comtrade and FAOSTAT

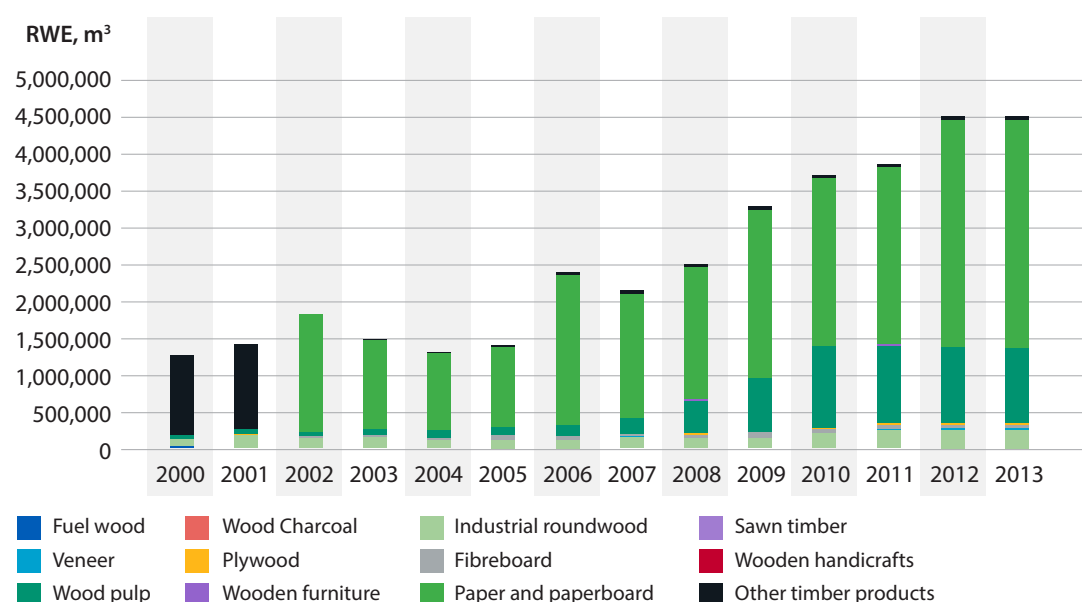


Figure 4.7: Imports of timber and timber products into Bangladesh (volume)

Sources: UN Comtrade and FAOSTAT

The increase in timber and timber products imports in Bangladesh were caused by population and economic growth. The three main timber products by volume (see Figure 4.7) as well as value (see Annex 16.1) imported into Bangladesh were paper and paperboard, wood pulp and industrial roundwood. Rapid economic growth allowed Bangladesh to allocate increasingly more financial resources to literacy programs. An increasing literacy rate, together with rising household incomes (due to economic growth) and population growth, has likely accounted for the huge demand for paper and pulp (see Sarkar, 2006 and Lintu, 1984). The domestic production of these products could not keep pace with the increasing demand, which caused imports to increase. The demand for industrial roundwood increased while the domestic supply of industrial roundwood fell behind because of the moratorium on harvesting and other supply constraints (see Section 4.1.1). The trade policy in Bangladesh favours importing industrial roundwood rather than timber products. Over the last 15 years, the import duty for industrial roundwood has been kept at 5%, while for timber products it is 12% or more (NRB, 2015 and consultation with customs officials in Bangladesh). Paper, paperboard, and wood furniture were the main timber-based export products of Bangladesh in terms of both value and volume (see Annexes 16.2 and 16.3). Myanmar, Indonesia, China, the US, the EU and South Korea were the main import partners, while the US, the EU, other study countries in the SAARC region and China were the main export partners of Bangladesh (Annexes 16.4 to 16.7).

Bhutan: Between 2000 and 2013, Bhutan's total exports and imports of timber and timber products were negligible compared with those of Bangladesh, India and Sri Lanka. Bhutan had a trade surplus for timber and timber products from 2000 to 2007. After this period, Bhutan showed an increasing deficit that corresponded to the growth in imports (Figure 4.8). Wood charcoal was by far the largest timber-based product imported into Bhutan in terms of both value and volume (Annexes 16.8 and 16.9). As Bhutan gradually abandoned its self-imposed isolation, especially since 2006, more foreign tourists started to visit the country. This led to an increasing demand for charcoal in hotels and restaurants, which was met by importing them from India. Half the energy consumed by non-domestic sectors in Bhutan is in the form of fuelwood and charcoal (FAO – RWEDP, 2015). Unlike imports, there was no leading timber-based export product. Bhutan's exports and imports of timber and timber products were almost entirely to and from India (Annexes 16.10 and 16.11). This could be attributed to the fact that India has been Bhutan's long-term ally, and the Bhutan-India Trade Treaty, which was signed in 1972, makes trade between these two countries duty free and virtually borderless. Bhutan's breakdown of exports and imports in terms of value and volume is presented in Annexes 16.12 to 16.15.

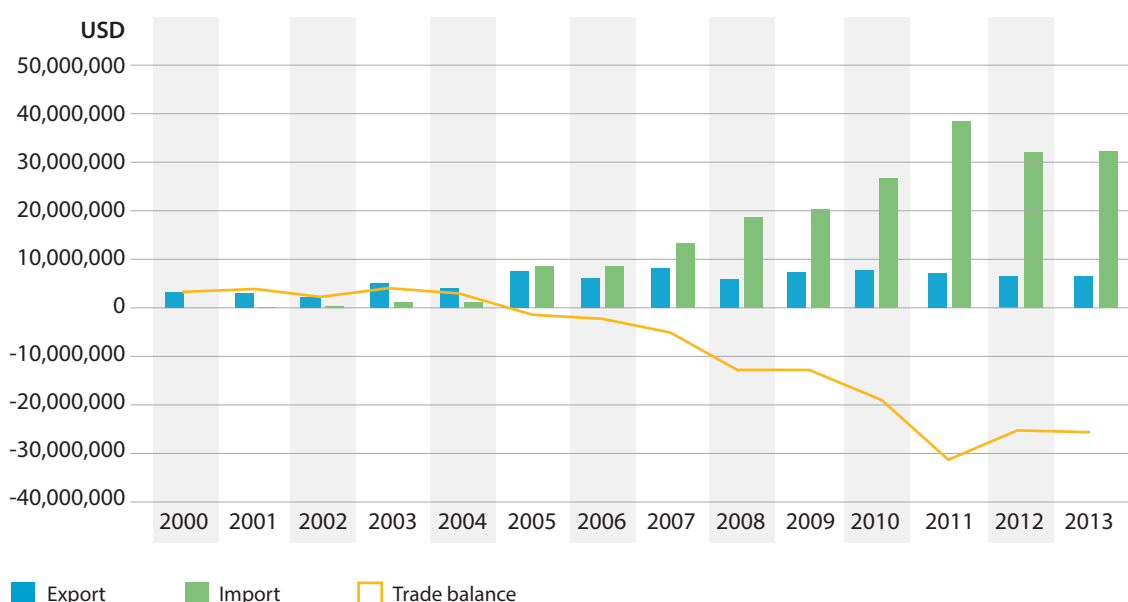


Figure 4.8: Total exports and imports of timber and timber products by Bhutan

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics

India: India has traditionally been a net importer of timber and timber products, and the period from 2000 to 2013 was no exception. The country's imports far exceeded exports and the country's trade balance was negative during that period. Since 2011, exports grew faster than imports, and the trade deficit started to decrease gradually (Figure 4.9). Both exports and imports followed an upward trend with a slump in 2009, which was attributed to the after effect of the global financial crisis in 2008. GDP growth dropped to 3.9% from 9.8% in 2007 (World Bank, 2014b).

Like in other study countries in the SAARC region, population and economic growth were the key underlying reasons for the increasing demand and, consequently, imports of timber and timber products by India. Paper and paperboard, wood pulp and industrial roundwood were the three main timber products imported into India in terms of volume (Figure 4.10) and value (Annex 16.16). The domestic production of these products could not keep pace with the increasing demand and, therefore, imports increased. Indian trade policy clearly supports importing unprocessed raw materials such as industrial roundwood. In 2005, the import duty for this product was reduced to 5.1% from 9.2% (EFI, 2014). Under the ASEAN-India Free Trade Area Agreement with Malaysia, the import duty for industrial roundwood was reduced to 0% from 1 January 2010 (see Section 3.2.1). These favourable policy incentives could be one reason for the overall increasing trend in industrial roundwood imports by India since 2006 by both volume (Figure 4.10) and value (Annex 16.16). The increased demand for timber is another factor. The main timber products exported by India were paper and paperboard, wooden furniture and handicrafts, and wood charcoal (Figure 4.11 and Annex 16.17). Myanmar, Malaysia Indonesia, China, the USA, the EU, South Korea, Nigeria and Ghana were the main import partners, while the USA, the EU, other study countries in the SAARC region and China were India's main export partners in terms of both value and volume for all products except wood charcoal (Annexes 16.18 to 16.21). UN Comtrade data suggests that India's wood charcoal exports were almost entirely sent to Bhutan from 2000 to 2013.

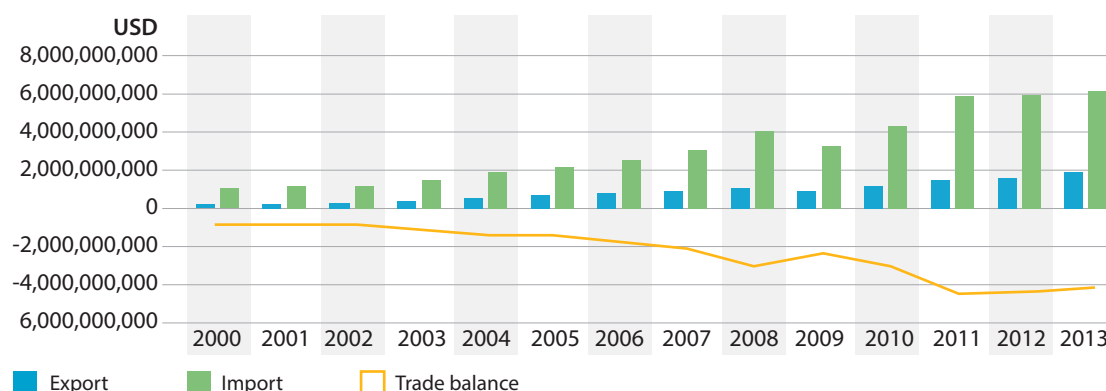


Figure 4.9: Total export and imports of timber and timber products by India

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India

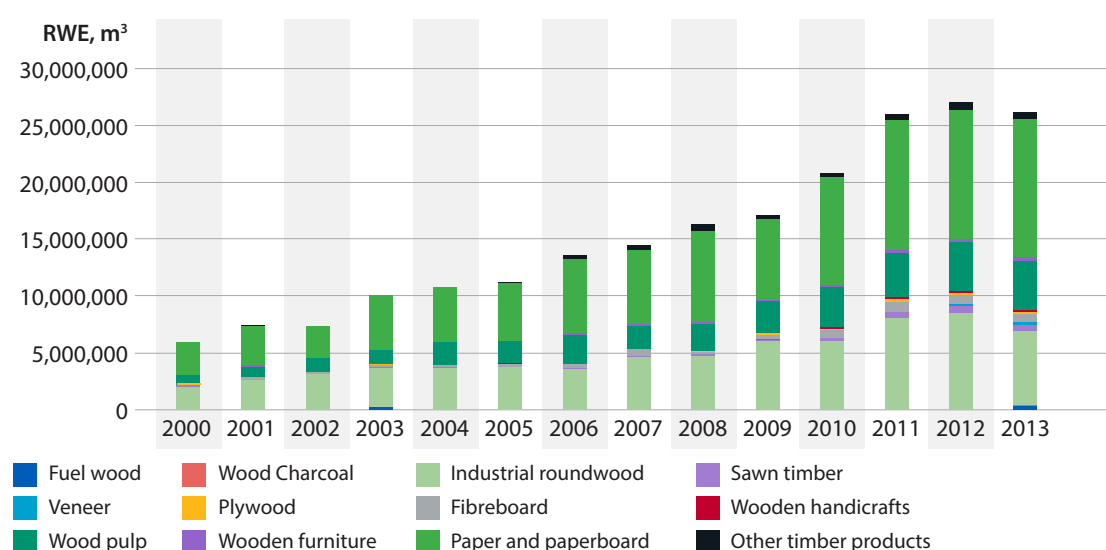


Figure 4.10: Imports of timber and timber products into India (volume)

Sources: Comtrade; FAOSTAT; and Export Import Data Bank of India

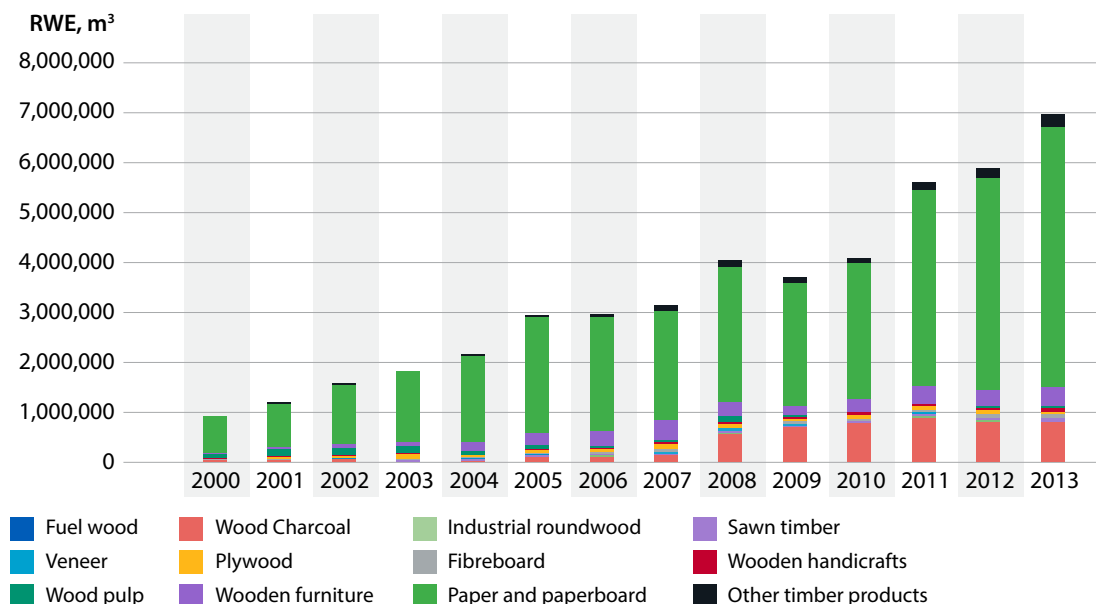


Figure 4.11: Exports of timber and timber products from India (volume)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India

Nepal: Nepal's total exports and imports of timber and timber products from 2000 to 2013 were insignificant compared to Bangladesh, India and Sri Lanka. During this period, exports of timber and timber products from Nepal did not increase and remained below imports, increasing the trade deficit (Figure 4.12). The main products imported, in terms of value and volume, were paper and paperboard. The increase in imports of these products led to an increase in total imports. The growth in GDP, literacy rate and population in Nepal led to an increased demand for paper products. Since the country's production level did not increase (MoFSC, 2009), it had to rely on imports to meet the growing demand (Figure 4.12). Since 2001 imports of industrial roundwood have grown rapidly due to the acute shortage in the country's domestic production (Annexes 16.22 and 16.23). Of the country's rather small and declining export value and quantity, paper and paperboard is the largest component (Annexes 16.24 and 16.25). Nepal's main export and import partners were the other study countries in the SAARC region, especially India (Annexes 16.26 to 16.29). This could be due to the fact that India has been Nepal's long-term ally, and the India-Nepal Treaty of Trade, which was signed in 1992, makes trade between these two countries duty free and virtually borderless.

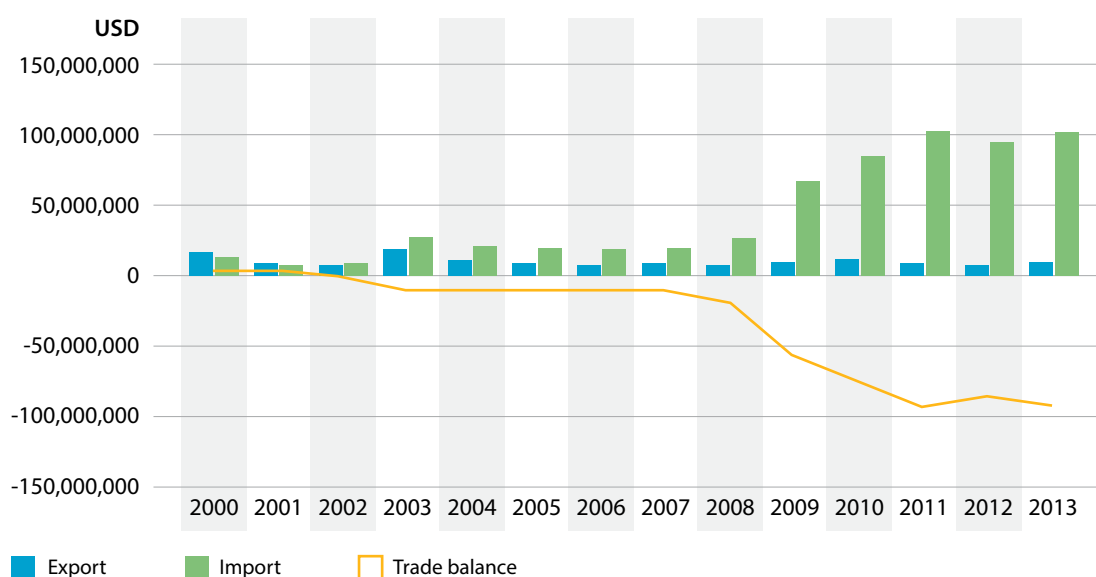


Figure 4.12: Total exports and imports of timber and timber products by Nepal

Sources: Comtrade; FAOSTAT; and Export Import Databank of Nepal

Sri Lanka: Sri Lanka's imports and exports of timber and timber products followed a fluctuating but increasing trend from 2000 to 2013. The fluctuation in imports since 2008 followed the trend in GDP growth in the country (see World Bank, 2014b). Overall, the country experienced a trade deficit as it imported more than it exported (Figure 4.13). Paper and paperboard were among the majority of the imported timber products both in terms of volume (Figure 4.14) and value (Annex 16.30). With economic and population growth increasing demand while domestic production declined, as revealed by stakeholder consultations and literature review (SLFD, 2009), the country had to rely on imported paper products. Imports of sawn timber increased mainly because of the growing demand in construction, which was attributed to economic growth (Figure 4.14 and Annex 16.30). Fibreboard and wooden furniture were Sri Lanka's main export products in terms of value and volume from 2000 to 2013 (Annexes 16.31 and 16.32). Over that period, Sri Lanka's timber and timber products imports mainly came from the other study countries in the SAARC regions, China, the EU, Malaysia and Indonesia (Annexes 16.33 and 16.34). Sri Lanka exported mainly to other study countries in the SAARC region, the EU and the US (Annexes 16.35 and 16.36).

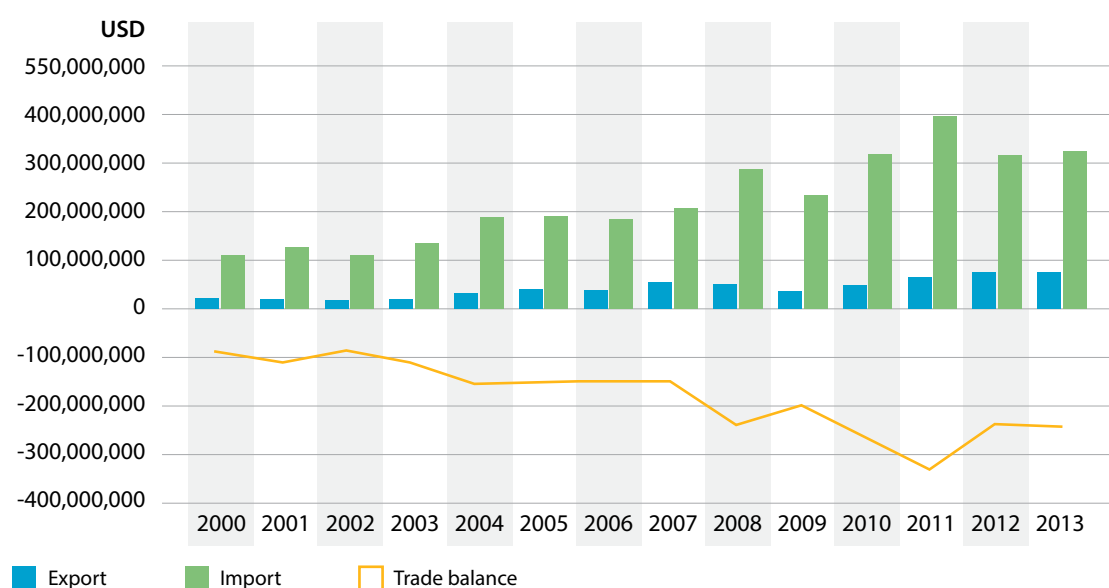


Figure 4.13: Total exports and imports of timber and timber products by Sri Lanka

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs

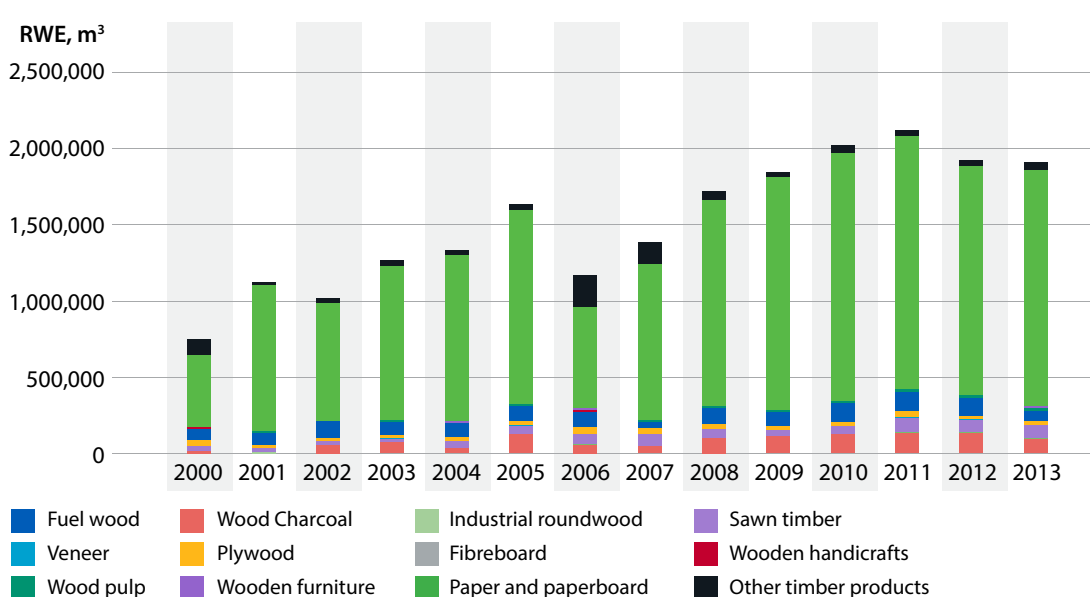


Figure 4.14: Imports of timber and timber products into Sri Lanka (volume)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs

4.2.2 Trade within the study countries in the SAARC region

Overall situation: During the period from 2000 to 2013, combined imports of timber and timber products by the study countries in the SAARC region from each other accounted for a small share of worldwide timber imports. During the same period, total exports from these countries to each other grew rapidly and their share of worldwide timber exports was much larger. The total exports from the study countries in the SAARC region to the rest of the world during this same period grew steadily. Imports also grew steadily until 2011 and then slowed down (Figure 4.15, Figure 4.17 and Annexes 16.1 and 16.2). This suggests that the SAARC region as a whole, and India in particular, are strong on exports and are less reliant upon imports. Exports and imports dropped in 2009 because economic growth slowed in the study countries and their partner countries after the global financial crisis.

Since 2006, the year the Trade Liberalization Program under the SAFTA Agreement became effective, total imports of timber and timber products from one study country in the SAARC region followed a fluctuating but increasing trend both in terms of value (Figure 4.15) and volume (Figure 4.16). The same trend is apparent in total exports (Figure 4.17 and Figure 4.18). This increasing trade flow may have very little or nothing to do with the Trade Liberalization Program itself, as the SAARC countries have so far shown very little interest in implementing SAFTA (see Section 3.2.1). Rather India's bilateral trade agreements with Bhutan, Nepal and Sri Lanka have improved access to markets of the countries mentioned for products from India, contributing to the increasing trade flow.

During the period from 2000 to 2013, paper and paperboard, fibreboard, plywood, wooden furniture and wood charcoal were the key timber products traded among the study countries in the SAARC region (see Figures 4.16 and 4.18). There was practically no export or import of industrial roundwood²² among these countries during the same period. This can easily be attributed to the fact that all the study countries in the SAARC region have had log export bans in place since 2000 or before. The next chapters will examine how each study country in the SAARC region traded timber and timber products with each other.

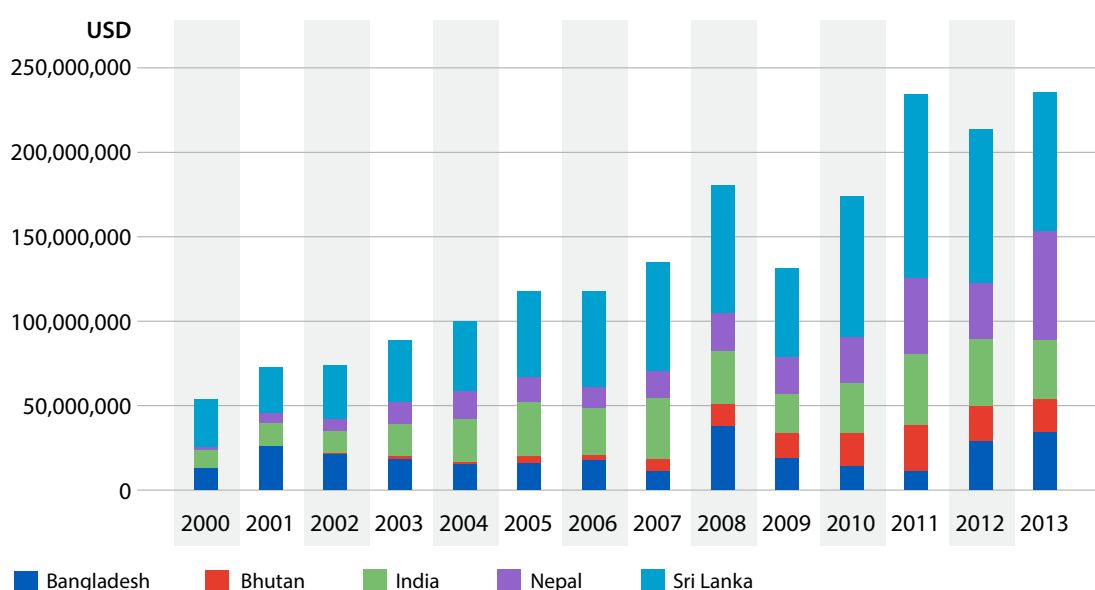


Figure 4.15: Total imports of timber and timber products among the study countries in the SAARC region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

²² Bhutan exported a negligible amount of Industrial roundwood to India between 2000 and 2009 with special permission from the Ministry of Agriculture and Forests. See Bhutan section below for further discussion.

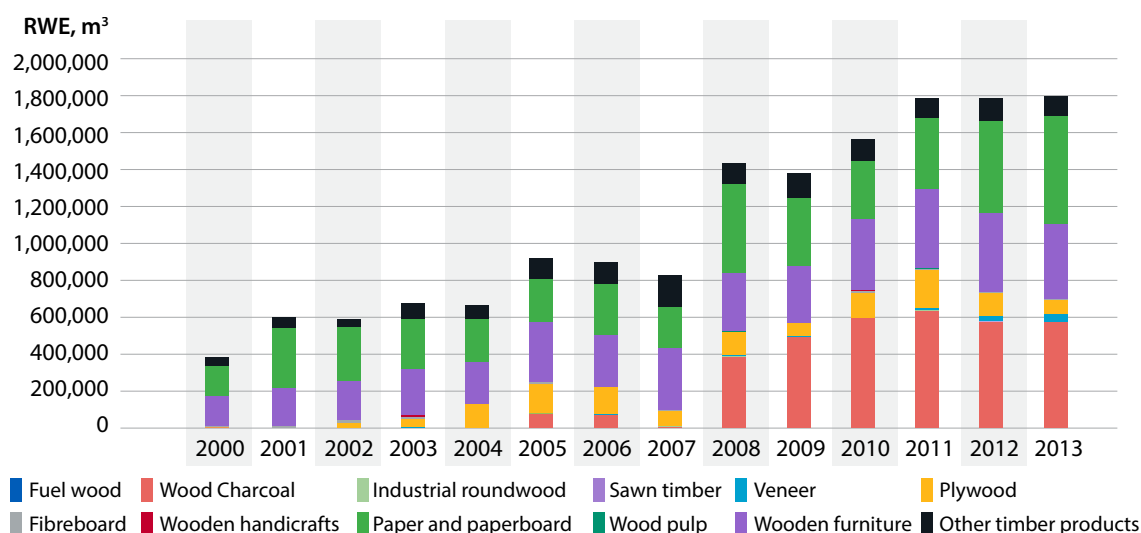


Figure 4.16: Breakdown of total imports of timber and timber products among the study countries in the SAARC region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

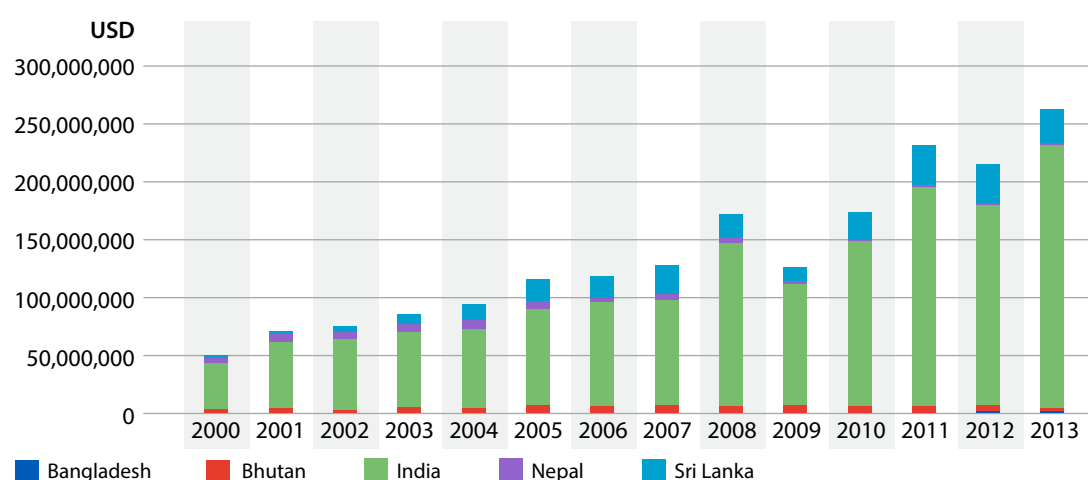


Figure 4.17: Total exports of timber and timber products among the study countries in the SAARC region and the world (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

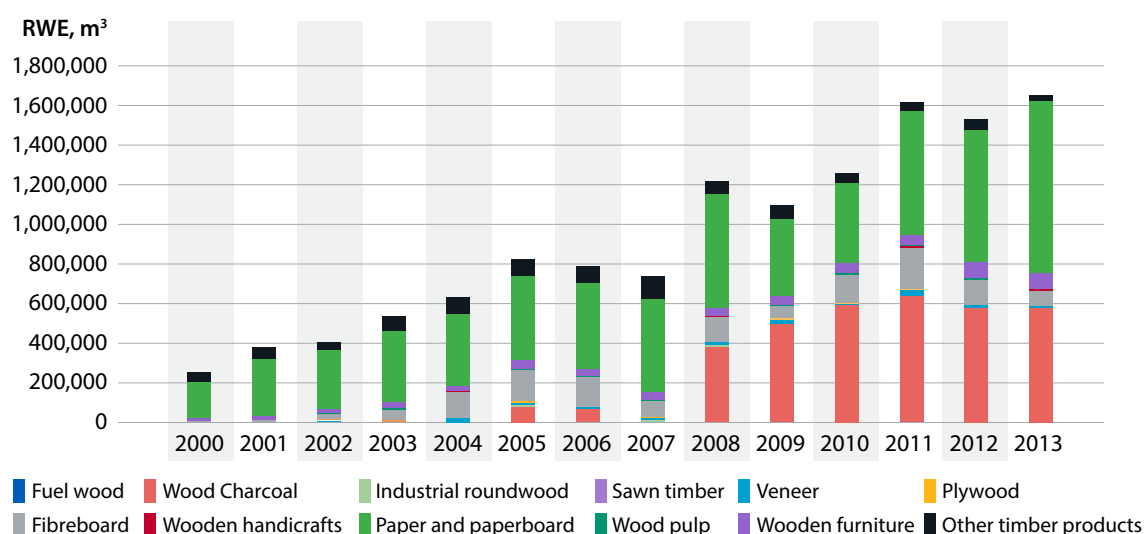


Figure 4.18: Total exports of timber and timber products among the study countries in the SAARC region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Bangladesh: Among the study countries in the SAARC region, Bangladesh exported to and imported from India alone during the analysis period from 2000 to 2013 (Annexes 17.3 to 17.6). Paper and paperboard were the main imported and exported products in terms of both value and volume. Bangladesh neither imported from nor exported to any other study country in the SAARC region industrial roundwood, due to the log export bans (Annexes 17.7 to 17.10). Exports were negligible compared to imports. Imports were small in absolute terms and fluctuated, which suggests that price and availability, as revealed in stakeholder consultations, dictated Bangladesh's timber and timber products imports from its neighbors in the SAARC region. It also suggests that the regional trade mechanisms such as SAFTA and APTA, which the country is a part of, or bilateral treaties with Nepal and Bhutan did not have any notable impact on timber and timber products imports or exports.

Bhutan: Bhutan and India have a long and open border. The Bhutan-India Agreement on Trade, Commerce and Transit (see Section 3.2.2) has established duty free and virtually borderless trade between Bhutan and India. As a result, from 2000 to 2013, India was practically Bhutan's only trade partner for timber and timber products (Annexes 17.11 to 17.14). In terms of volume and value, wood charcoal was the main timber product imported into Bhutan (Annexes 17.15 to 17.18). Bhutan's imports increased steadily until 2011 due to higher demand for charcoal in the country. Fluctuations in Bhutan's exports are the result of the country's practice of selling any excess of any product to India, as was revealed by stakeholder consultations in the country. Bhutan did not import any industrial roundwood from other study countries in the SAARC region or any country in the world because the country is self-sufficient in this product (Annex 17.15 and 17.16). Since Bhutan has had a log export ban since 1999, it exported negligible amounts of industrial roundwood between 2000 and 2009. Such exports were made by NRDCL from its depots near the border with India with special permission from the Ministry of Agriculture and Forests. The exported timber could not be sold in the local market and if it was not exported to India it would remain unused in the depots (consultation with NRDCL officials).

India: According to Figure 4.19 and Figure 4.20 (and Annexes 17.19 and 17.20), India traded timber and timber products with all other study countries in the SAARC region during the period from 2000 to 2013. India's exports to those countries were far larger than its imports from them. This is expected, as India is the regional economic superpower and the leading producer of all types of timber products. Imports fluctuated, which suggests that India imported from its neighbours only when price and other factors were favourable. Exports grew rapidly indicating that India was successful in capturing an increasingly larger share of the timber products markets in neighbouring countries. Sri Lanka was India's leading trade partner in the SAARC region (Figure 4.19 and Figure 4.20). This was due to the India-Sri Lanka Free Trade Agreement that became effective in 2000. India's exports to Nepal and Bhutan grew steadily (Figure 4.20), while imports from them declined (Figure 4.19). This suggests that India took advantage of the bilateral trade agreements with these two countries, while the other countries could not as their production bases are small. Paper and paperboard accounted for most of India's exports, while fibreboard, wooden furniture, and paper and paperboard were its main import products from neighbouring countries in SAARC. India did not export any industrial roundwood to any other study country in the SAARC region due to the log export ban. It imported a negligible amount of industrial roundwood from Bhutan (Annexes 17.21 to 17.24).

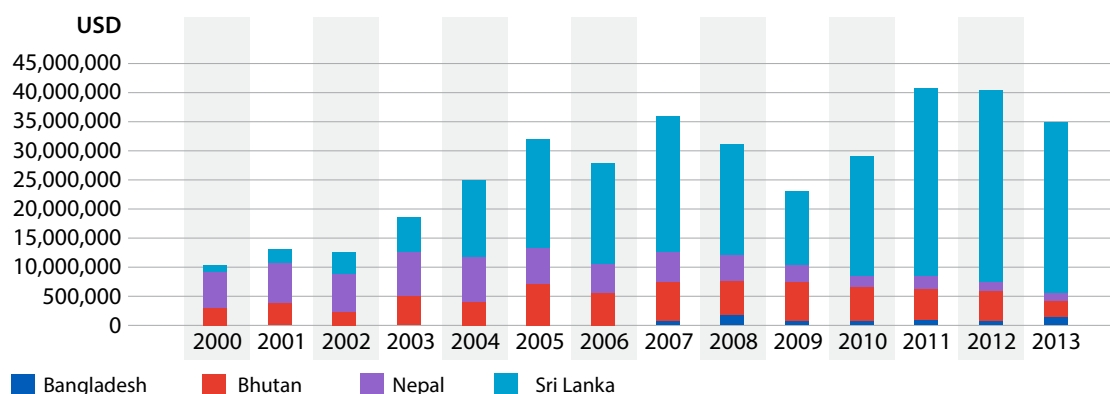


Figure 4.19: Imports of timber and timber products to India from the study countries (value)
Sources: UN Comtrade; FAOSTAT; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

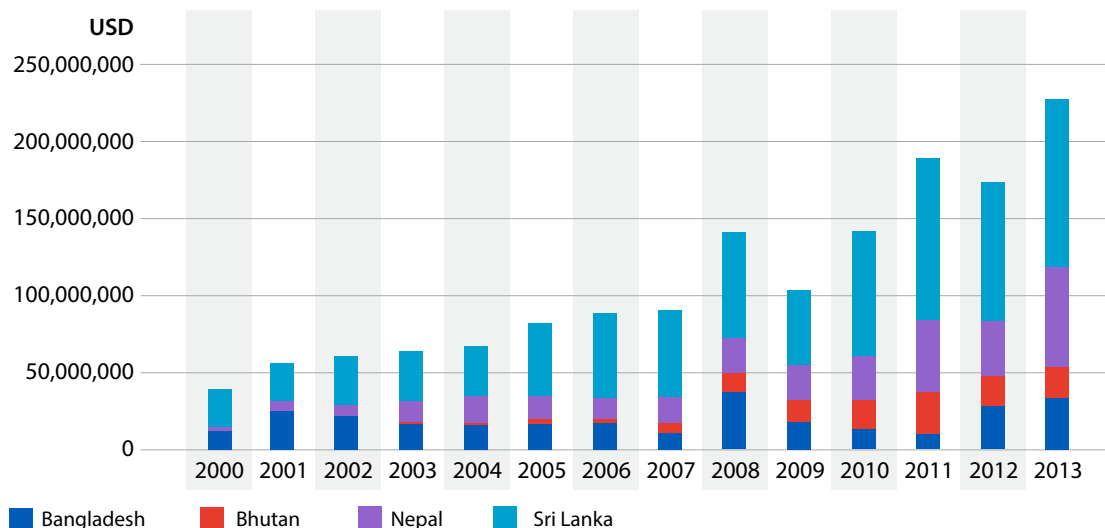


Figure 4.20: Exports of timber and timber products from India to the study countries (value)
Sources: UN Comtrade; FAOSTAT; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Nepal: India was practically Nepal's only export and import partner for timber and timber products in the SAARC region between 2000 and 2013 (Annexes 17.25 to 17.32). This was due to the India-Nepal Treaty of Trade signed in 1992, which made trade between these two countries free of any duty and virtually borderless. Imports were far larger than exports during the period mentioned above. Imports increased steadily, while exports decreased. This is attributed to Nepal's shrinking domestic production together with increasing demand. Paper, paperboard and veneer were the main products traded between Nepal and India both in terms of value and volume. There were no exports of industrial roundwood from Nepal due to the log export ban (Annexes 17.31 and 17.32).

Sri Lanka: The India-Sri Lanka Free Trade Agreement made India almost the only trade partner for Sri Lanka in the SAARC region for timber and timber products during the period from 2000 to 2013 (Annexes 17.33 to 17.40). Imports were far larger than exports, and imports grew steadily while exports fluctuated. This suggests that India was better able to take advantage of the agreement than Sri Lanka. Sri Lanka exported mainly fibreboard and veneer, while it imported paper and paperboard in vast quantities. No industrial roundwood was exported due to the log export ban (Annexes 17.39 and 40).

4.2.3 Trade link between the study countries in the SAARC region and Myanmar

As Figure 4.21 demonstrates, the trade link concerning timber and timber products among the study countries in the SAARC region and Myanmar for the period from 2000 to 2013 was practically one-way traffic. The SAARC countries imported from Myanmar and exports were negligible. The imports followed a rapid upward trend during that period and the trade deficit grew rapidly. Figure 4.21 shows that of the combined amount imported by the study countries in the SAARC region from Myanmar, India imported most of it in terms of both value and volume (see also Annex 18.1). Bangladesh also imported a significant share. Imports by Nepal and Sri Lanka constituted a small share especially in 2013. Bhutan did not import anything from Myanmar.²³ Due to various long-standing sanctions imposed on Myanmar by the US and the EU, which were lifted only in 2013, Myanmar's exports to these two leading timber consumer markets was insignificant (Woods 2013, Woods and Canby, 2011). The country generated revenue by exporting timber and timber products to the SAARC countries (mainly India and Bangladesh), China and other countries especially in Southeast Asia that did not impose sanctions. This was mentioned to the consultants by various stakeholders in Myanmar and confirmed by the data (see Annexes 18.2 and 18.3). Indeed, the study countries (mainly India and Bangladesh) combined were the biggest importers of timber and timber products from Myanmar in terms of both value and volume.

²³ In fact, another three SAARC countries – Afghanistan, Pakistan and Maldives – also did not import anything from Myanmar during the period from 2000 to 2013. This was also the case for exports. Therefore, imports and exports by study countries in the SAARC region with Myanmar represent the whole SAARC region.

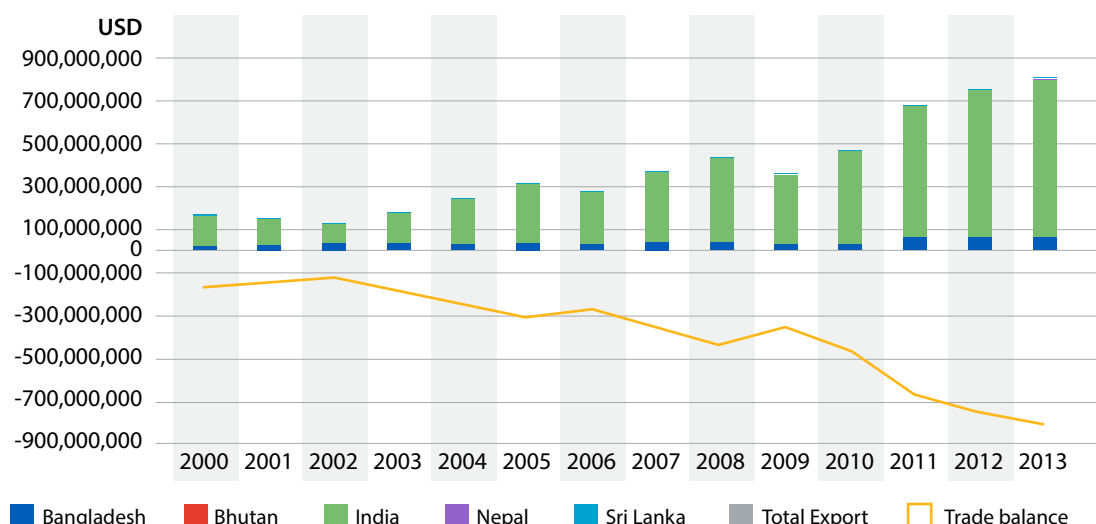


Figure 4.21: Study countries' exports and imports with Myanmar. Note: (I) stands for import
Sources: Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

Industrial roundwood²⁴ from Myanmar was by far the main import in terms of volume (Figure 4.22) and value (Annex 18.4) for the study countries in the SAARC region. The trend in volume imported and the corresponding value of industrial roundwood and other products fluctuated but increased. India's decrease in import duty to 5.1% in 2005 from 9.2% on industrial roundwood could have attributed to the increase. Increasing timber demand, particularly in India and Bangladesh, was also a key factor. India and Bangladesh mostly imported high-value logs from Myanmar. Teak (*Tectona grandis*) was the main species of industrial roundwood imported from the country by India in particular (see Box 1). The logs of gurjan (*Dipterocarpus* spp.) and pyinkado (*Xylia dolabriformis*) were the other main industrial roundwoods imported by the study countries in the region. In fact, for Bangladesh garjan logs were the main import from Myanmar, as mentioned by stakeholders in the country. A growing, yet small, amount of veneer and plywood were imported from Myanmar from 2000 to 2013. The imports went almost entirely to India. A number of Indian companies, most notably Century Ply (which the consultants visited) and Green Ply, set up factories in Myanmar to take advantage of Myanmar's relaxed foreign direct invest policy.²⁵ Indian companies source logs and use labour from Myanmar to produce veneer and plywood and then ship their entire production to India. Exports to Myanmar from the SAARC region countries mostly consisted of paper and paperboard and came almost entirely from India (Annexes 18.5 and 18.6).

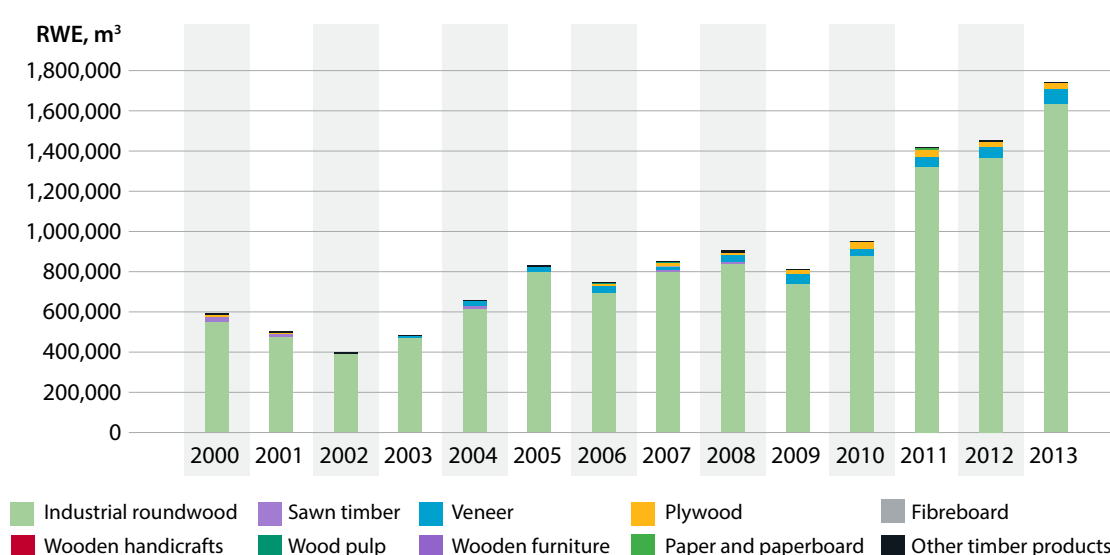


Figure 4.22: Imports of timber and timber products from Myanmar to the study countries in the SAARC region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

²⁴ Myanmar's log export ban started on 1 April 2014. Since this analysis covers the period from 2000 to 2013, it is not relevant.

²⁵ Myanmar offers tax relief for the first five years to foreign companies investing in the country. The point of relaxing the foreign direct investment policy is to attract more foreign investment.

Box 4.1: The demand and supply of teak timber in India

India is one of the biggest producers and consumers of teak timber and products. There is a huge and growing demand in the country for this timber for furniture, door and window frames, construction, flooring, decorative veneer, plywood and other decorative purposes (ICFRE, 2010 and Carrillo, 2013). Steady population and economic growth, and a change in consumption patterns are behind the demand. Over the past decades, rapid economic growth has shifted an increasingly larger number of India's growing population to the middle-class. They can afford the higher value teak products. EFI in 2014 reported that the demand for teak timber in India had increased by 700% in the last 50 years. To meet this growing demand, the country imports a large volume of teak timber every year. According to Indufor Databank, it imported about 1 million m³ of teak timber (mainly industrial roundwood) in 2013. It is likely that the biggest share of the imports came from Myanmar. India received 80% of its teak imports, along with other hardwood ocean shipments, from Myanmar (ITTO, 2011). Woods and Canby in 2011 reported that India was the destination for much of Myanmar's teak logs larger than 10 cm in diameter. India also imports teak timber from a number of west African countries.

The teak timber demand in India is largely met with domestic production. The plantations are the only source of legal or recorded teak timber, since harvesting in natural forests in the country was banned in 1982. The country has about 1.7 million hectares of teak plantations (Lukkanen and Appiah, 2013). These plantations could potentially supply 4.25 million m³ of timber every year (considering a mean annual increment of 5 m³/ha/year as reported by ITTO in 2009 and assuming 50% harvesting efficiency as the harvesting operation is mostly unmechanised). These are mostly large-scale plantations. The forest departments, especially in the states of Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka, Chhattisgarh, Gujarat, Kerala, Tripura and Mizoram have established a large area of teak plantations, and their respective state forest development corporations (ICFRE, 2010) harvest them. This suggests that timber legality requirements are most likely to be met while harvesting these plantations. Forest industry companies and plantation investors, who are usually serious about maintaining timber legality for the sake of their reputation and gaining more market access as revealed by the stakeholder consultations, also own a significant share of these plantations. Small-scale teak growers are serious about supplying legal timber. For example, a group of farmers holding 1 to 10 ha of mostly teak plantations in Madhya Pradesh have already started the process for obtaining their Forest Stewardship Council (FSC) forest management certification (EFI, 2014).

4.2.4 Trade links between the study countries in the SAARC region and important international markets

China: China has trade links for timber and timber products with all the study countries in the SAARC region. Figure 4.23 demonstrates that from 2000 to 2013, all the study countries in the SAARC region imported timber products from China, with India importing the most followed by Bangladesh and Sri Lanka. Nepal also imported a noticeable amount. Imports by all the countries mentioned increased both by value (Figure 4.23) and volume (Figure 4.24 and Annex 19.1). The growth in imports was more the result of China's rise as the world's leading production hub and exporter of almost all products. None of the study countries in the SAARC region has any special trade agreements involving timber products with China. Favourable price, good product quality and short distances between the SAARC region and China mainly encouraged the countries to import from China. From 2000 to 2013, exports of timber and timber products by the study countries in the SAARC region gradually increased both in terms of value and volume because of increasing exports from India (see Annexes 19.2 and 19.3) but lagged far behind imports. This implies that the trade balance favoured China. India, which was the leading importer of Chinese timber products among the study countries in the SAARC region, mainly imported paper and paperboard, and wooden furniture (Annexes 19.4 and 19.5). Naturally, these were also the main import products for the study countries in the SAARC region.

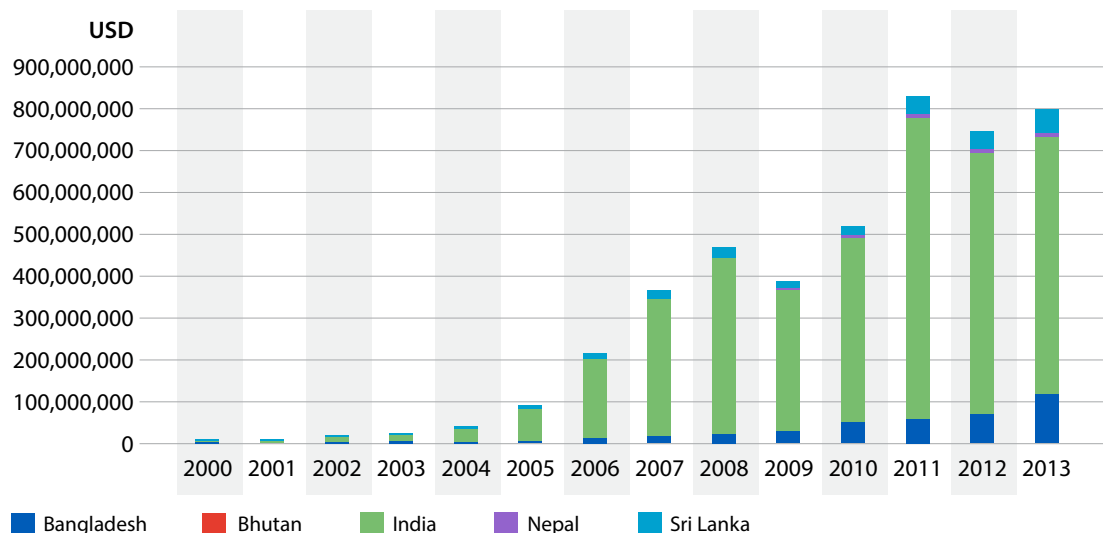


Figure 4.23: Breakdown of imports from China to the study countries in the SAARC region (value)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India

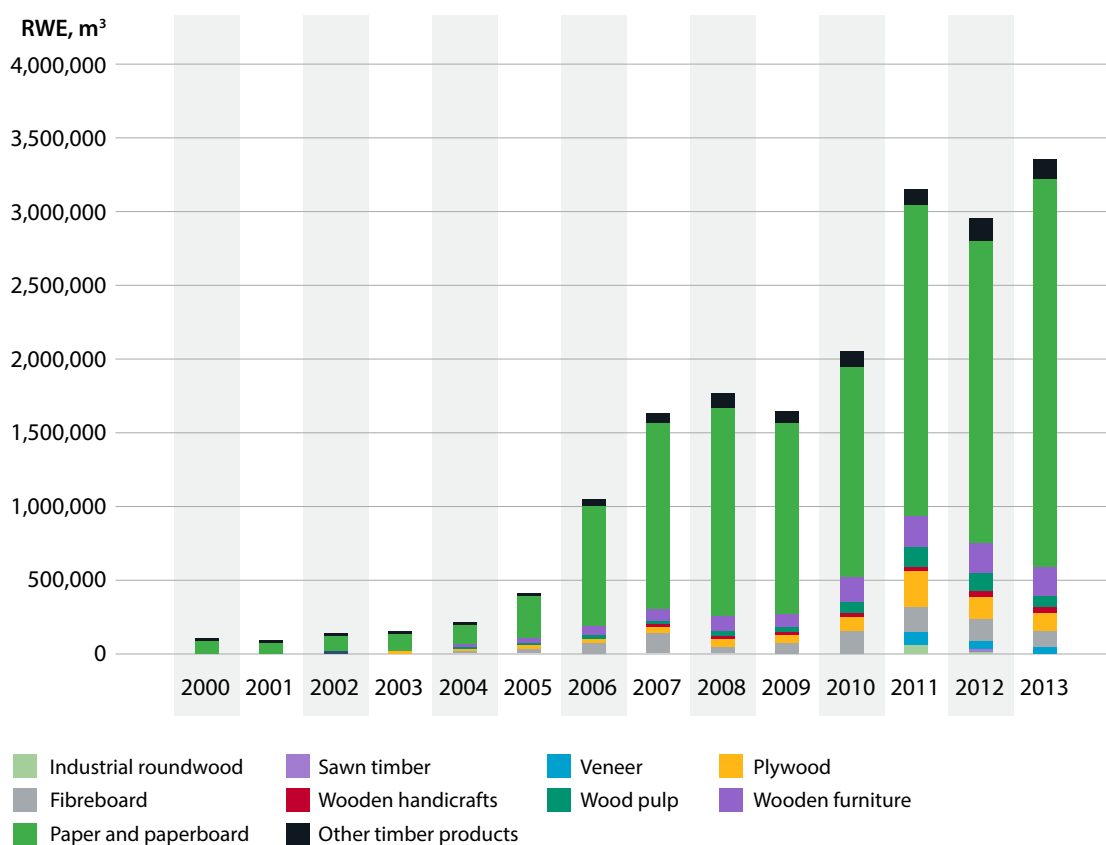


Figure 4.24: Imports of timber and timber products from China to the study countries in SAARC region (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India

EU: The EU has trade links for timber and timber products with all the study countries in the SAARC region. The trade relationship was more balanced in terms of export and import compared to the almost entirely import-oriented relationship with Myanmar and China (Figure 4.25 and Annexes 20.1 to 20.4). From 2000 to 2013, all the study countries imported timber products from the EU. India imported most of it followed by Bangladesh and Sri Lanka. The imports fluctuated in terms of value (Figure 4.25). The import volume gradually increased (Figure 4.26). The variation in value and volume was likely due to inconsistent prices of individual products (see Section 2.5). Overall, the growth in imports was mainly attributed to the rapid increase in demand for paper products and pulp in India. Paper and paperboard, and wood pulp were the main imports from the EU to India (Annexes 20.4 and 20.5) and to all the study countries. The EU countries such as Finland, Sweden and Germany have been among the world's leading exporters of pulp and paper, and their export markets include the SAARC region as well.

From 2000 to 2013, about 90% of exports in terms of value, and about 86% in terms of volume of timber and timber products by the study countries to the EU came from India. Exports from Sri Lanka and Nepal were also noticeable. The total exports from these countries to the EU increased during the period from 2000 to 2007 and then declined in terms of both value and volume (Annexes 20.2 and 20.3). The decrease in exports after 2007 could be explained by the Euro zone economies slowing down during that period. Paper and paperboard, wooden handicrafts and furniture originating from India were the main products exported to the EU from the SAARC region (Annexes 20.6 and 20.7).

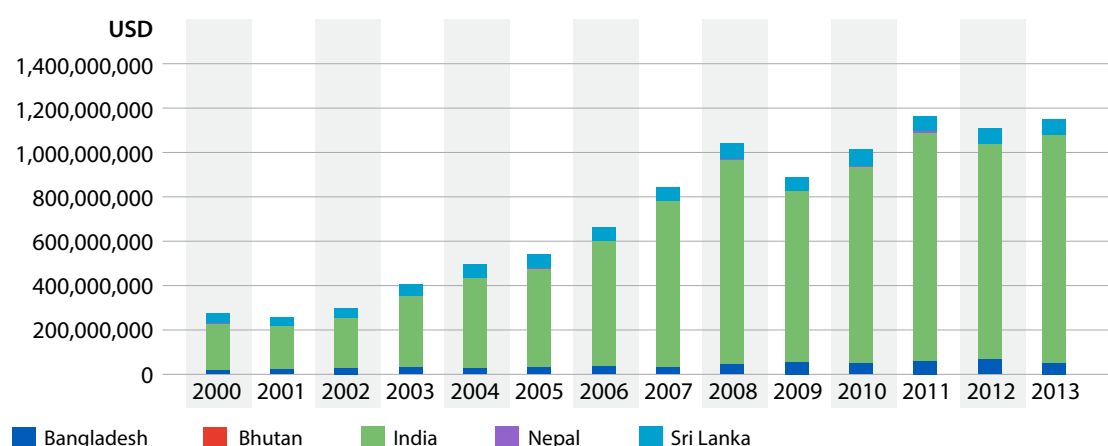


Figure 4.25: Breakdown of the study countries' imports from the EU (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

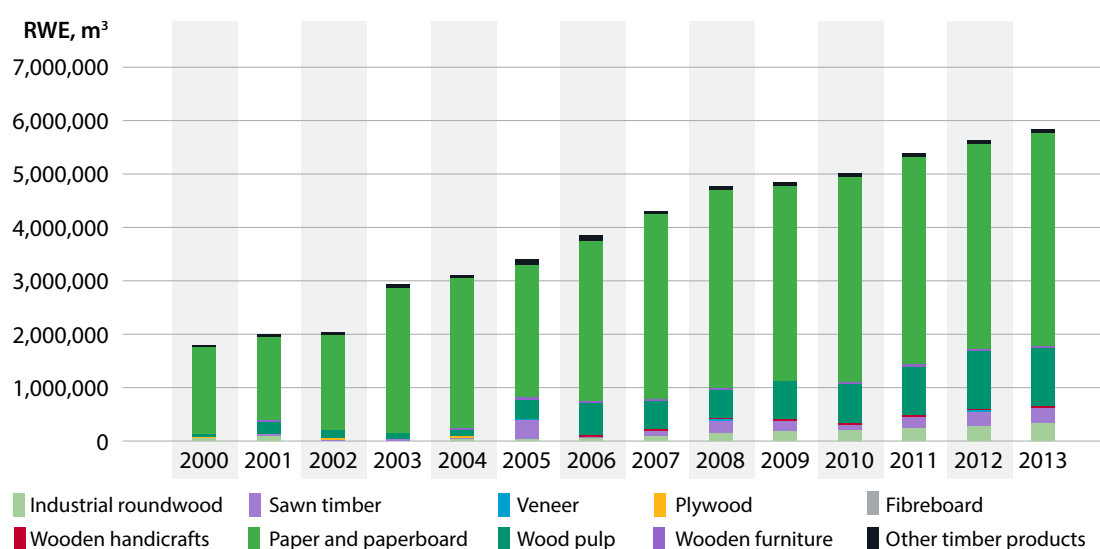


Figure 4.26: Imports of timber and timber products from the EU to the study countries in the SAARC region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

The US: During the period from 2000 to 2013, the trade link between the US and all the study countries in the SAARC region for timber and timber products was shaped by the US-India trade relationship regarding these products. Figure 4.27 and Annexes 21.1 to 21.3 show the combined exports to and imports from the US by the study countries were almost equal in terms of value and volume by virtue of India's balanced trade relationship with the US. Imports grew modestly from 2000 to 2008, and more rapidly afterwards when India began importing more paper and paperboard and wood pulp to meet a growing domestic demand (Figure 4.28 and Annexes 21.4 and 21.5). This reflects the fact that the US, alongside China, the EU and Brazil, has been one of the world's leading producers and exporters of pulp and paper, and India has been one of the fastest growing export markets. During the period from 2000 to 2013, combined exports of timber and timber products, in terms of both value and volume, from India and the SAARC region study countries to the US increased rapidly except for a decline in 2008 and 2009 due to the financial crisis in the US. Paper and paperboard, and wooden furniture originating from India were the main export products to the US from the SAARC region (Annexes 21.6 and 21.7).

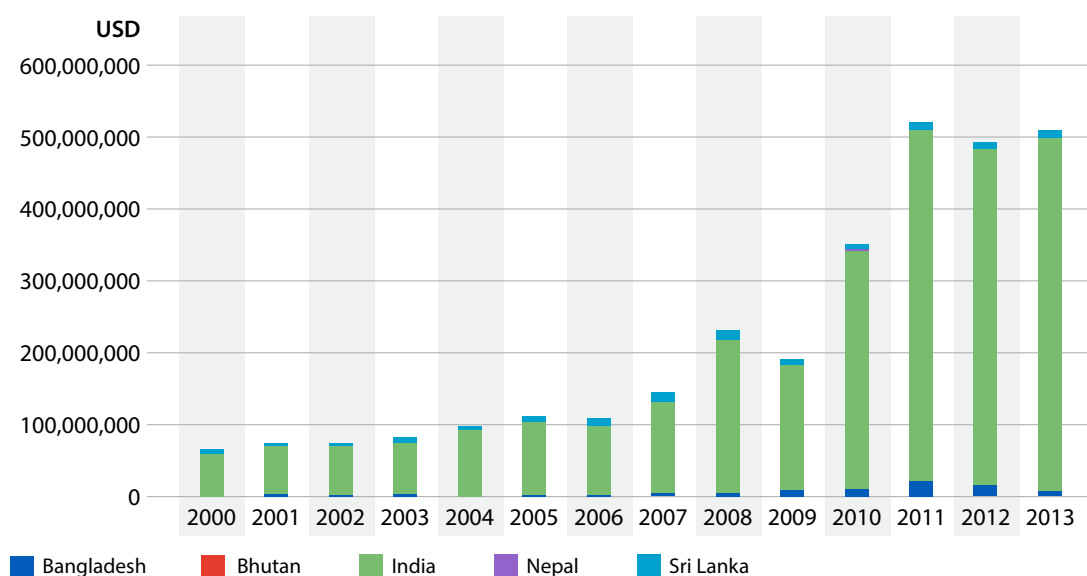


Figure 4.27: Breakdown of imports from the US to the study countries (value)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

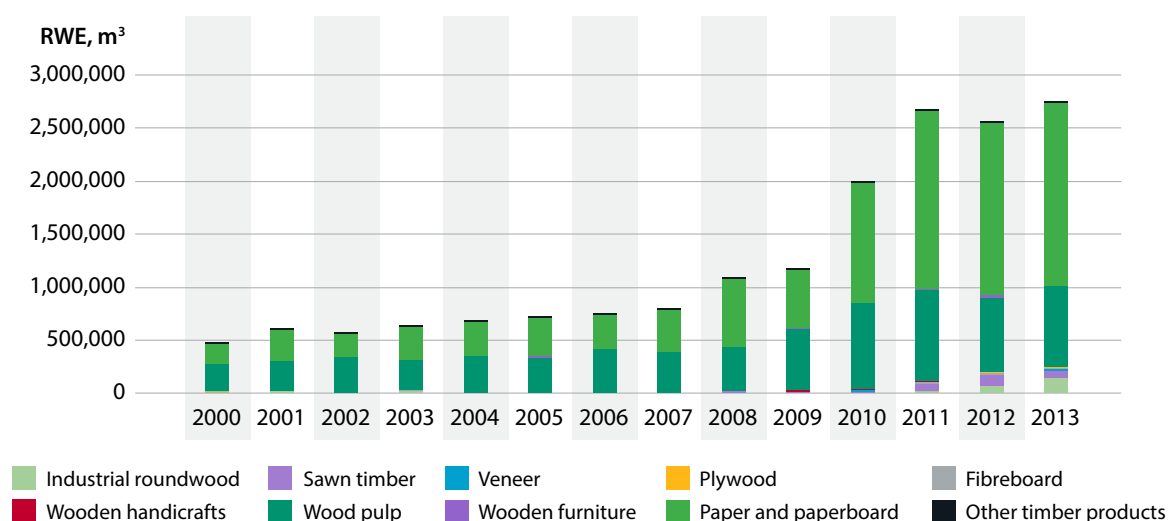


Figure 4.28: Imports of timber and timber products from the US to the study countries (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

Malaysia: During the period from 2000 to 2013, as shown by Figure 4.29 and Annexes 22.1 to 22.3, the timber trade relationship between Malaysia and all the study countries was one-sided: the SAARC countries imported far more from Malaysia than they exported to it. The value of the imports was in the hundreds of millions of US dollars, while the highest export value reached just over USD 20 million. India's share of imports accounted for more than 90% of the total value and volume, and Sri Lanka accounted for most of the rest. Total imports grew rapidly both in volume (Figure 4.30) and value propelled by increasing imports to India mainly, also to Sri Lanka (Annexes 22.4 to 22.7). The majority of imports to India from Malaysia consisted of industrial roundwood. Wooden furniture, paper, and paperboard were a distant second and third place. India's increased imports of industrial roundwood and other timber products from Malaysia can be attributed to the AIFTA Agreement which reduced import duties for timber and timber products from ASEAN countries to 0% (Department of Commerce, 2015). Sri Lanka's imports from Malaysia mainly consisted of increasing amounts of sawn timber and paper and paperboard to meet a growing domestic demand (Annexes 22.4 and 22.7)

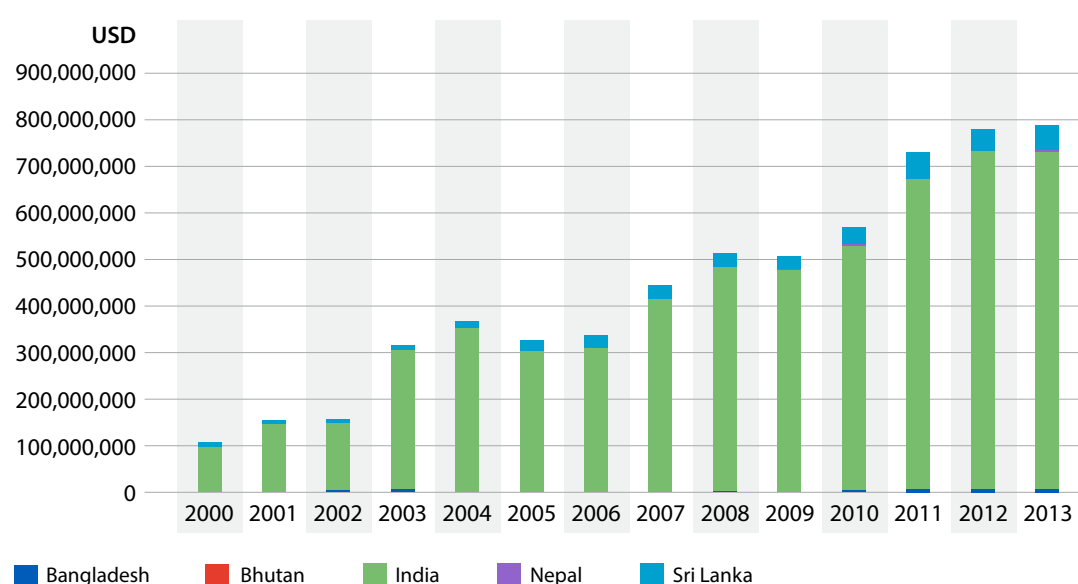


Figure 4.29: Breakdown of imports to the study countries from Malaysia (value)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

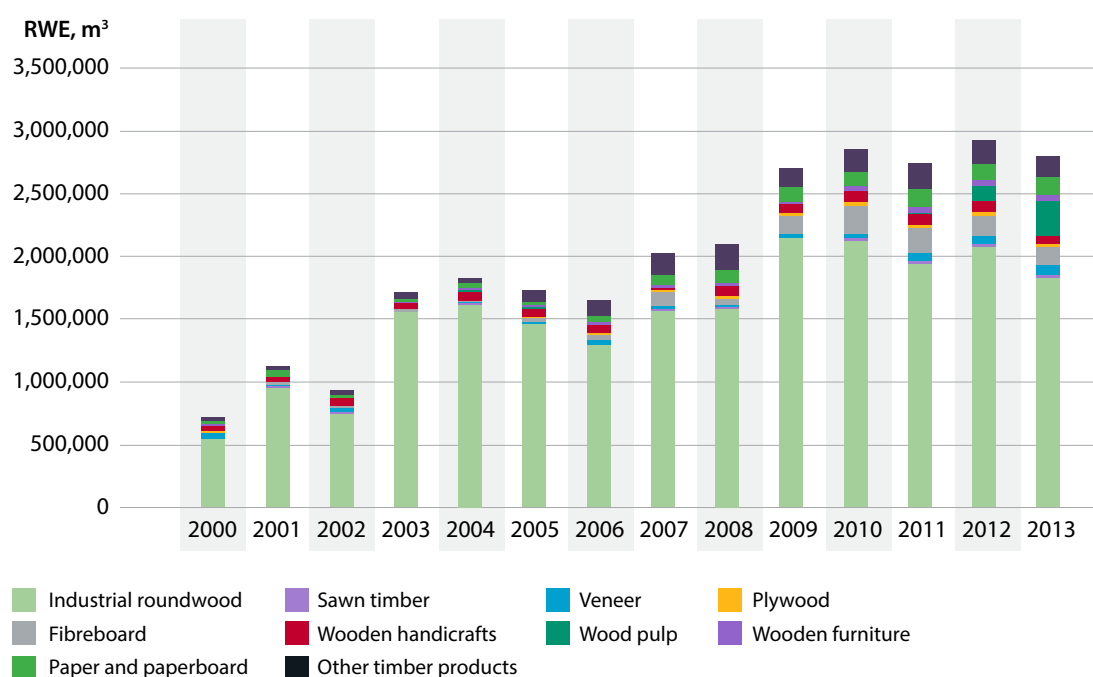


Figure 4.30: Imports of timber and timber products to the study countries from Malaysia (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Banks of India and Nepal

Based on the discussion in Section 4.2, Table 4.1 shows the effects of regional and bilateral trade mechanisms and schemes and domestic policies on timber and timber products trade in the study countries in the SAARC region. Also, Annex 23.1 shows the combined trade-flow map for the period from 2000 to 2013 between the SAARC region (five study countries combined) and its major partners. Annexes 23.2 to 23.7 show similar trade flow maps of Bangladesh, Bhutan, India, Nepal, Sri Lanka and Myanmar.

Table 4.1: Effects of regional and bilateral trade mechanisms and schemes and domestic policies on timber and timber products trade in the study countries in the SAARC region between 2000 and 2013

Name	Effects on export	Effects on import
Regional trade mechanisms and schemes±		
Trade Liberalization Program under SAFTA Agreement	Negligible increase in exports to each other	Negligible increase in imports from each other
ASEAN-India Free Trade Area	No effect	Increase in India's imports of industrial roundwood, and paper and paperboard from Malaysia
Bilateral trade agreements		
Bhutan-India Treaty on Trade, Commerce and Transit	Increase in India's total exports to Bhutan	Increase in Bhutan's total imports from India
Nepal-India Treaty on Trade	Increase in India's total exports to Nepal	Increase in Nepal's total imports from India
Nepal-India Transit Treaty	No effect	Increase in Nepal's total imports from third-party countries via India
India-Sri Lanka Free Trade Area Agreement	Increase in total exports of India and Sri Lanka to each other	Increase in total imports of India and Sri Lanka from each other
Domestic policies		
Trade policy of Bangladesh	No effect	Increase in total imports of industrial roundwood
Trade policy of India	No effect	Increase in total imports of industrial roundwood
Log export ban in all study countries in the SAARC region	No exports of industrial roundwood to each other	No imports of industrial roundwood from each other

± SAARC Agreements on Multilateral Arrangement on Recognition of Conformity of Assessment, and Implementation on Regional Standards, Asia Pacific Trade Agreement, BIMSTEC, Bangladesh-Nepal Agreements on Trade, Payments and Transit and Bangladesh-Bhutan Bilateral Trade Agreement had no effect.

4.3 Traded timber species and products

As discussed in Sections 2.4 and 4.2, during the period from 2000 to 2013, none of the study countries in the SAARC region exported industrial roundwood as they all had a log export ban in place. Only Bangladesh and India imported industrial roundwood in significant quantities. Nepal only started to import industrial roundwood in 2011. India and Sri Lanka also imported sawn timber. During the same period, Bangladesh and Nepal imported from Myanmar, Sri Lanka and mostly from Malaysia, while India imported mostly from Malaysia and Myanmar. The certificate of origin or other documents issued from the country of import often do not mention the name of the species of industrial roundwood (see Annex 11.1 for an example) making it difficult to make a list of imported species. Nevertheless, the consultant prepared a list of the most commonly imported species by the study countries in Table 4.2, based on consultations with forest department officials involved in inspecting and issuing documents for imported logs and on the literature.

Teak is by far the most common species of industrial roundwood imported into India. Consultations with the Indian Council of Forestry Research and Education (ICFRE) officials revealed that India imports about 2.5 million m³ of teak logs per year, which accounts for more than 40% of the country's log imports. Until the Myanmar log export ban came into effect, teak logs used to come solely from Myanmar. In the case of Bangladesh, garjan logs were imported the most. Between 2012 and 2014, about 60% of the total logs (by volume) imported by Bangladesh through the Chittagong seaport were garjan and all came from Myanmar (consultation with Utilization Division of Bangladesh Forest Department).

The products most imported into the study countries between 2000 and 2013 were paper and paperboard, industrial roundwood and wood pulp. For exports, the bulk of which were from India, mainly included paper and paperboard, and wooden furniture and handicrafts. Eucalyptus (*Eucalyptus* spp.) and poplar (*Populus* spp.) are the most common timber species used by the paper industry, while teak (*Tectona grandis*), mango (*Mangifera indica*) and Indian Rosewood (*Dalbergia sissoo*) were most commonly used by the wooden furniture and handicraft industries in India.

Table 4.2: Most common timber species imported into the study countries from 2000 to 2013

Timber species		Imported into	Mostly imported from	Product	Main purpose
Common name	Scientific name				
Teak	<i>Tectona grandis</i>	Bangladesh, India and Nepal	Myanmar	Industrial roundwood	Furniture and house construction
Garjan	<i>Dipterocarpus</i> spp.	Bangladesh, Nepal and India	Myanmar	Industrial roundwood	Veneer, plywood and heavy construction
Pyinkado	<i>Xylia dolabriformis</i>	Bangladesh and India	Myanmar	Industrial roundwood	Furniture and house construction
Selangan Batu	<i>Shorea</i> spp.	Bangladesh, India, Nepal and Sri Lanka	Malaysia	Industrial roundwood	Furniture and construction
		India and Sri Lanka	Malaysia	Sawn timber	
Thitya	<i>Shorea oblongifolia</i>	Bangladesh, India and Sri Lanka	Myanmar and Malaysia	Industrial roundwood	Furniture and construction
Pine and other softwood	<i>Pinus</i> spp. and others	India	The EU and the US	Industrial roundwood and sawn timber	Furniture and construction

Sources: Woods and Canby, 2011; Woods, 2013; and consultation with officials from the West Bengal Forest Department, Nepal Forest Department and Utilization Division of the Bangladesh Forest Department

4.4 Trade in certified timber and the Convention on International Trade in Endangered Species of Wild Fauna and Flora timber species

None of the study countries has a national certification system in place. Myanmar started to develop a system in 1999. In April 2014, India launched the Network for Forest Conservation and Certification, an institutional mechanism to ensure collaborative and streamlined efforts to develop a national standard for forest certification. Among the study countries, only India, Nepal and Sri Lanka have certified forest plantations, and India has the most (Figure 4.31). All Indian plantations are certified under the Forest Stewardship Council (FSC) forest certification scheme. The certified plantations in India and Sri Lanka are for timber production, while in Nepal they are for extracting non-timber products, e.g. resin (see Annex 24 for details). Due to the log export ban, none of the three countries export certified industrial roundwood. They do not export any sawn timber produced from logs coming from certified forests. This suggests that there is no export of certified timber neither from Myanmar nor any other study country. Timber from certified plantations is used for the export-oriented paper industry in India and for wooden furniture in Sri Lanka. The SAARC countries do not require certification for importing timber. As a result, most timber, if not all of it, imported by the countries comes from uncertified forests or plantations. For example, between 2000 and 2013, 72% of Bangladesh's, 100% of Nepal's, and 15% of India's industrial roundwood imports came from Myanmar (UN Comtrade). This timber came from uncertified sources as no forests or plantations have been certified in Myanmar. During the same period, about 32% of India's total industrial roundwood imports came from Malaysia where just 4.66 mha out of a total 20.5 mha (i.e. 22.73%) of forests are currently certified under the Malaysian Timber Certification Council (MTCC, 2015). Negligible amounts of timber are imported from the EU, the US, Australia, Chile, Uruguay, Brazil and New Zealand where timber mostly comes from either certified or sustainably managed sources.

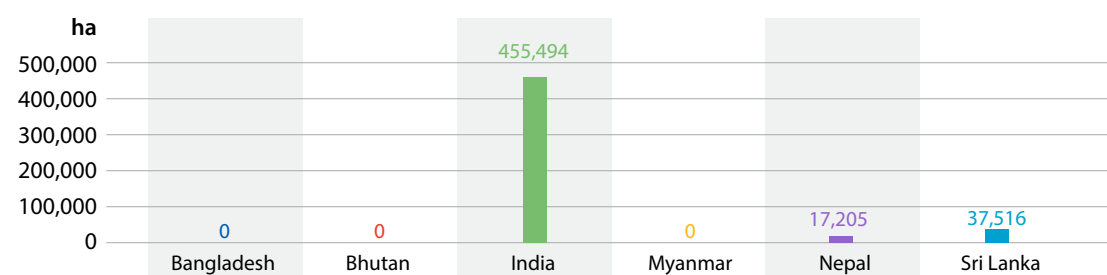


Figure 4.31: Forest Stewardship Council certified forest plantations in the study countries.

Source: FSC International Database

None of the commercial species in the study countries is listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) ANNEX I to III²⁶ (CITES, 2015b). According to the CITES Trade Database, Sri Lanka is the only study country that has exported products made from CITES listed species (Table 4.3).

Table 4.3: Exports from Sri Lanka of products made from CITES listed tree species

Year	Species	Listed in CITES Appendix	Export destination	Export quantity (kg)	Exported product
2003	<i>Swietenia macrophylla</i>	III	Great Britain	588	Furniture
2003	<i>Swietenia macrophylla</i>	III	Japan	18	Furniture
2003	<i>Swietenia macrophylla</i>	III	US	7	Furniture
2013	<i>Cedrela odorata</i>	III	Germany	285	Sawn wood

Source: CITES Trade Database

²⁶ CITES Appendix I consists of species that are the most endangered. Appendix II consist of species that are not necessarily threatened with extinction but that may become so unless trade is closely controlled. Appendix III is a list of species included at the request of a Party that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation. International trade in specimens of species listed in Appendix III is allowed only on presentation of the appropriate permits or certificates (CITES, 2015b).

4.5 Production and trade of illegal and unrecorded timber

4.5.1 Definition of illegal timber

We define illegal timber as the timber harvested and/or traded in violation of any applicable local, national or international laws and requirements. The definition of illegal timber differs among the study countries as the legal references vary. The definitions by country are presented in Table 4.4.

Table 4.4: Definition of illegal timber in the study countries

Country	Definition	Key legal reference
Bangladesh	Any timber harvested without the approval of the Divisional/District Forest Officer (DFO), not carrying an approval letter, source of origin and Transit Permits (TP).	Bangladesh Forest Act, 1927 (amended in 2000)
Bhutan	Any timber or fuel wood harvested from any source without obtaining the Government's permission, paying taxes and obtaining TPs from competent authorities.	Forest and Nature Conservation Act, 1995
India	Any timber (except the exempted species from agro and farm forestry) harvested without a working plan prescription, obtaining permission from competent authorities, in violation of international treaties and without legal and valid documents.	Indian Forest Act, 1927 and multiple acts enacted by the state governments
Myanmar	Any timber other than that harvested by an authorised agency from approved areas and timber and timber products extracted, transported, manufactured and exported in accordance with the laws, regulations and procedures pertaining to forestry, timber industry and trade of Myanmar. Any timber is considered illegal if it does not have the stamps of the state-owned Myanmar Timber Enterprise (MTE) and is not exported via the Yangon seaport.	Myanmar Forest Law, 1992

4.5.2 Estimates of illegal logging

In Sri Lanka, almost all stakeholders including the Sri Lanka Forest Department, the STC, other government officials and private timber traders consistently mentioned that the quantity of illegally produced timber is equivalent to about 5% to 6% of the country's recorded or legal production on average. This suggests that illegal logging adds about 65 000 to 80 000 m³ of timber to the supply chain in Sri Lanka each year. Only a small portion of it is caught and confiscated by the Sri Lanka Forest Department. For example, in 2004 just 110 m³ was confiscated, in 2006 just 450 m³ and in 2012 just 230 m³ (SLFD, 2011 and 2013). Such low rates of confiscation could be because of under resourcing in terms of staff and logistics as well as corruption in the forestry department. In Bangladesh, as consultation with the Bangladesh Forest Department officials revealed, 3 000 m³ of illegal timber is confiscated each year in southeastern Chittagong and Chittagong Hill Tract Region, which is the main timber producing region in the country. The general perception among the stakeholders consulted is that a far bigger quantity of illegal timber is never caught in the country. In India, stakeholder consultations and publicly available reports (MoEF, 2009 and EFI, 2014) estimate that somewhere between 25 million m³ and 32 million m³ of unrecorded timber enter the supply chain each year. This timber most notably comes from home gardens and other TOFs (EFI, 2014), illegal harvests of natural forests (MoEF, 2009) and illegal cross-border timber trade from neighboring countries, especially Nepal and Myanmar (see Section 4.5.3). The unrecorded timber from home gardens and other TOFs is the result of forest owners who are unaware of the permissions required for harvesting and transporting timber. Even if they were aware, the procedure for having a permission is so complicated and time consuming they prefer to bribe the forestry department officials instead. Illegal logging also occurs in Nepal and Myanmar, although no estimation could be made, as stakeholders in these two countries were very reluctant to give any information. Illegal logging in Bhutan is limited as law enforcement in the country is strict and people are generally willing to protect forests.

4.5.3 Estimates of illegal cross-border timber trade

Between Bangladesh and India: The Indian northeastern state of Meghalaya has 440 kilometers (km) of border with Bangladesh, about 60 km of which is not fenced. Based on the long working experience in the region of one of the consultants involved in this study (referred to as 'the consultant' in the rest of this section) the state of Meghalaya has an estimated 25 unmanned and unofficial border points with makeshift roads mainly in the unfenced portion. It can also be estimated, based on the consultant's working experience in the region, that on average 25 to 30 hand carts, each containing about 0.5 tonnes of timber (logs and hand sawn timber) cross the border to Bangladesh every day through these points. This suggests that 6 000 to 7 000 m³ of timber is smuggled through the border points every year. Timber is transported to Bangladesh, at the Dawki unofficial border point, beneath the legally supplied stones and pebbles.²⁷ Stakeholder consultations at the border point suggests that there about 20 truckloads (1 truckload = 15 m³ of timber) destined for Bangladesh that cross at this point every month. This would mean that 3 600 m³ of logs are smuggled through this border point every year, or about 9 600 to 13 600 m³ of timber is smuggled from Meghalaya to Bangladesh (Figure 4.32). Sal (*Shorea robusta*) and teak timber are mainly smuggled to Bangladesh from Meghalaya. The value of the smuggled timber could range from USD 17 million to just over USD 24 million per year.²⁸ The illegal timber trade between India and Bangladesh is mostly between individuals as the Khasi, Juntia and Garo communities live on both sides of border. Organised gangs are sometimes involved in the smuggling.

There is similar smuggling between the Indian state of West Bengal and Bangladesh. Organised gangs and individuals smuggle logs (*Shorea robusta* mainly) from the northern part of West Bengal to the northern part of Bangladesh. During the rainy season (May to August), trees are illegally felled in West Bengal and the smugglers load the logs on rafts to use on the rivers. Consultations with forest department officials of West Bengal suggest that every year millions of Indian rupees (i.e. US tens of thousands of dollars) worth of logs are smuggled across the border. As the northern part of Bangladesh (the destination of smuggled timber) does not have any forest, the Bangladesh Forest Department has very little presence there and the timber can easily be smuggled into Bangladesh. However, incidences of timber smuggling from Bangladesh to India are uncommon (consultations with forest department officials in West Bengal).

From Myanmar to India and Bangladesh: The long working experience of the consultant in the region suggests that most illegal timber enters India from Myanmar through the Moreh border point in Manipur and through the Champhai border in Mizoram. Both the border points have customs checkpoints, but loose checks at these points mean that the illegal trade in timber and other products is common. Based on the consultant's working experience, about 40 to 50 truckloads of illegal timber arrive in India every month through these border points. The unchecked borders of Nagaland, Arunachal Pradesh and Manipur also receive about 30 truckloads²⁹ every month. In other words, the total amount of illegal timber from Myanmar to India is an estimated 70 to 80 truckloads every month or the equivalent of about 12 600 m³ to 14 400 m³ of timber per year. The smuggled timber is mostly teak and garjan. Timber not only comes from within the hot zone in the Myanmar side but also from other parts of the country (Figure 4.32). The value of the timber smuggled from Myanmar to India could range from USD 22 million to USD 26 million per year (see Footnote 28 for assumptions). There are also observations that Myanmar receives Indian timber illegally harvested from private and community forests in the bordering areas of Myanmar.

As Figure 4.32 demonstrates, illegal timber trading from Myanmar to Bangladesh occurs through the Teknaf border point, and the timber originates from within the hot zone in Myanmar as well as from other parts of the country. No estimate could be made of how much timber enters illegally

27 Since stones are heavy and are not usually unloaded at the border point for a thorough check of the trucks, timber smuggling remains unnoticed.

28 Assuming that in total volume of smuggled timber, the proportion of log and sawn timber is equal, and teak constitutes half while other hardwood species (including sal) constitute the rest. Indian market prices for logs and sawn timber for January 2015 of teak (ITTO, 2015) and other hardwood (Index Mundi, 2015) are used for estimating the value as smuggled timber in this case originates from India. Such prices are also used for other cases later in this Section (4.5.3) to estimate the value, as the smuggled timber is destined for India in those cases. It can be noted here that the details of species and grades, by which timber price varies (see ITTO, 2015), of undocumented/illegal/smuggled timber are unknown. The timber price by species and grade or average timber price is unavailable for the hot zones or for any study country in the SAARC region except India, to the best of the consultants' knowledge.

29 These trucks are mostly registered in the country from where the timber is sourced.

from Myanmar to Bangladesh. Nevertheless, an article by Paul Vrieze and Htet Naing Zaw published in the magazine *Irrawaddy*³⁰ on 26 March 2014 estimated that logs worth USD 5.7 billion were smuggled out of Myanmar since 2000, and that almost half of all exported timber was logged illegally. The consultant estimates that 35% to 40% of these logs were smuggled to India and about 10% to Bangladesh. This suggests that the timber smuggled from Myanmar to Bangladesh per year could be worth hundreds of thousands of US dollars. Timber smuggling from Myanmar to India and Bangladesh is done by individuals as well as by organised groups. The individuals deliver timber in small quantities across the border, where there are agents who assemble these quantities to form a truckload and henceforth it becomes an organised trade.

The illegal timber trade from Myanmar to Bangladesh and India, however, had drastically declined during the past five years prior to Myanmar's log export ban on 1 April 2014 due to stringent customs checks in the recipient countries. However, civil society observers consider that smuggling from Myanmar to these two countries has started increasing anew since the ban became effective.

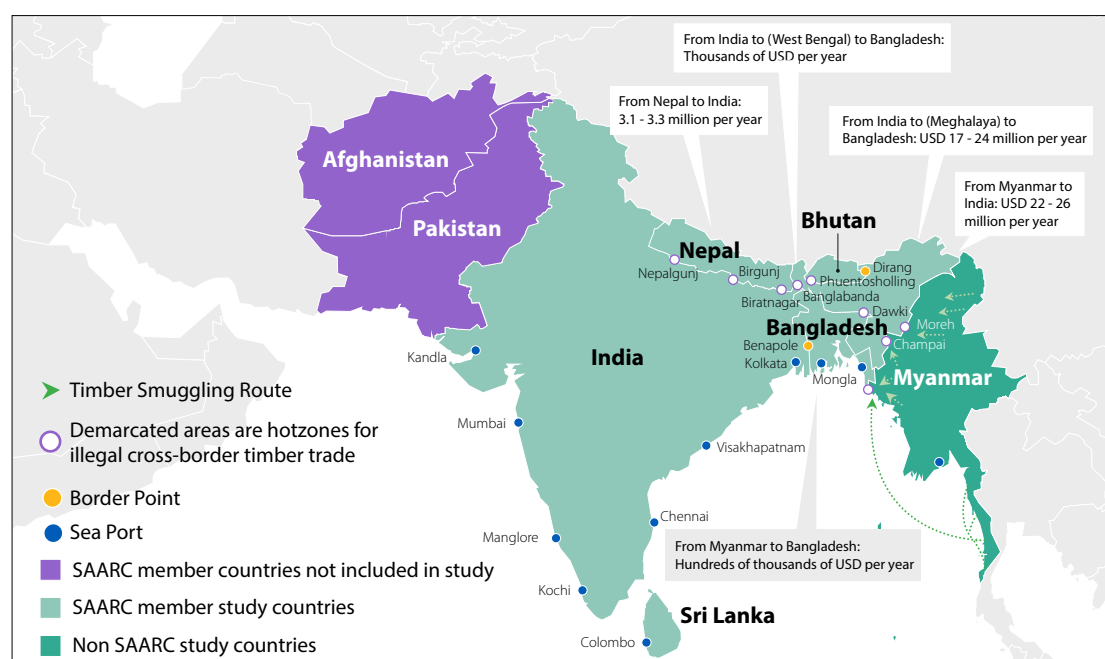


Figure 4.32: Hot zones and routes for the illegal cross-border timber trade among the study countries*
Source: Chit, 2015 (for smuggling route) *In the case of smuggling from Nepal to India, and India to Bangladesh, the timber originates from within the respective hot zones.

The major open borders are the Indian border with Nepal near Dudhwa National Park and Gorakhpur in Uttar Pradesh, and Faribishgunj in Bihar states. Based on stakeholder consultations, an estimated 25 truckloads of timber pass through these border areas and enter India every month (about 4 500 m³ per year). In addition, the Gram Panchayats³¹ in Sitamarhi, Saharsa, Jainagar, Darbhanga and Supaul, all in Bihar state, receive illegal timber transported on Bagmati, Koshi, Kamla Balan and several other seasonal rivers during monsoon season. The local people estimate that the smuggled timber amounts to about 100 to 120 truckloads or 1 500 to 1 800 m³ within two monsoon months of July and August when the rivers are at full flow. This suggests that about 6 000 to 6 300 m³ of timber is smuggled from Nepal to India each year. Sissoo and sal are the main species being smuggled, mostly by individuals. The value of the timber smuggled from Nepal to India could range from USD 3.1 million to 3.3 million per year (Figure 4.32). Nepal also receives Indian timber but only sporadically and in limited amounts.

In order to earn money to buy subsistence goods, local people also trade timber from northern Nepal illegally to Tibet in China. Moreover, Nepal is used as a transit route to smuggle sandalwood (*Santalum album*) to Tibet from southern India. Nepalese authorities catch very little of this timber (consultations with stakeholder in Nepal, see also Annex 15.5).

30 Available at <http://www.irrawaddy.org/burma/5-7bln-timber-smuggled-burma-illegal-logging-rampant-report.html> (Last sighted on 15 May 2015)

31 Gram Panchayat is the lowest level administrative body in India that operates in villages..

4.5.4 Imports of illegal timber

Bangladesh, India, and Nepal import industrial roundwood, whereas Sri Lanka imports sawn timber in vast quantities. Much of the timber came from Malaysia, Myanmar (until the log exports ban was enforced in 2014), Ghana, Nigeria, Ivory Coast, and a number of other tropical African, Latin American and Southeast Asian countries. Much of the timber imported in particular from non-FLEGT VPA countries is believed to be harvested illegally (EFI, 2014). In fact, Lawson in 2014 suggested that India is one of the leading destinations for timber exports from some of these countries. The same study estimates that about 17% of India's imports of timber is illegal. Using this figure from the UN Comtrade data suggests that as much as 1.1 million m³ of illegally sourced industrial roundwood (worth USD 341 million) might have been imported to India in 2013.

4.6 Projection of production and consumption of industrial roundwood

4.6.1 Assumptions for production projection

Table 4.5 offers the assumptions made in order to make the projection of industrial roundwood production until 2030 in the study countries in the SAARC region. The assumptions are based on the relevant trends discussed in the Food and Agriculture Organization of the United Nations (FAO) forestry sector outlook reports (Choudhury and Hossain, 2011; Dhital, 2009; MoEF, 2009; MoFSC, 2009 and SLFD, 2009), national reports estimating timber production (see Annex 4) and stakeholder consultations.

Table 4.5: Assumptions for projecting industrial roundwood production

Country	Assumptions	Impact on industrial roundwood production
Bangladesh	Home gardens: Area will decrease marginally due pressures such as house construction. However, the mean annual increment of timber stock will increase because of planting fast-growing species, such as eucalyptus and acacia, and better management. The increase in the mean annual increment will more than compensate for the decrease in area.	Positive
	Government forests: Availability of better forest resource information due to increasing use of information technology will improve forest management. Harvesting technologies will also be modernised. The key policy focus will remain on conserving forests. The total harvestable area will decrease marginally due to forest being converted for other uses. However, a decrease in total production due to the decrease in the harvesting area will exceed the increase in production due to improved forest management and using modern harvesting technologies.	Positive
	Social forests: Area under social forests will increase most notably due to an increase in roadside plantations, and because the benefits of social forestry will attract more people to join it.	Positive
Bhutan	Natural and community forests: Harvesting area will remain unchanged as forests converted to other uses will be marginal and will not affect the productive forests. Efficiency in harvesting will increase due to further modernisation of harvesting technologies and availability of better forest resource information.	Positive
	Private forests: Harvesting area and efficiency remain unchanged.	No impact

Country	Assumptions	Impact on industrial roundwood production
India	Natural forests: Area available for harvest will decrease due to adapting conservation-oriented policy and other measures for conservation, and forestland conversion to other uses.. Efficiency in harvesting will increase due to the modernisation of harvesting technologies and availability of better forest resource information. However, a decrease in total production due to the decrease in harvesting area will exceed the increase in production due to improved harvesting efficiency.	Negative
	Social and communal forests: Area under social forests will increase marginally because the benefits of social forestry will attract more people to join it. Communal forest area will remain unchanged.	Positive
	Private plantations: Area will increase to match the growing domestic demand for timber. Improved management will increase the mean annual increment. Efficiency in harvesting will increase due to the improvement in harvesting technologies	Positive
Nepal	Community and collaborative forest management, leasehold forests, government-managed forests: Adopting scientific forest management principles will increase the mean annual increment. Efficiency in harvesting will increase due to further modernisation of harvesting technologies and availability of better forest resource information. Forest conversion for agriculture and infrastructure development will be marginal and total harvestable area will remain unchanged.	Positive
	Trees outside forests: Area under forests and the stock of trees outside forests will increase. The latter will be due to improved management resulting in higher mean annual increment.	Positive
Sri Lanka	Natural forests: Government policy on banning harvesting in natural forests will continue.	No impact
	Home gardens: Area will increase marginally due to the migration of people from rural to urban areas. The mean annual increment of timber stock will increase due to planting more fast-growing species such as eucalyptus and acacia, and to better management.	Positive
	Rubber and forest plantations: Area will increase as demand for timber continues to grow. Improved management resulting in higher mean annual increment.	Positive
	Trees outside forests and coconut plantations: No substantial change in area and mean annual increment.	No substantial impact

4.6.2 Assumptions for consumption projection

The time-series econometric models (Eq. 1 to 5 in Annex 14) constructed for the study countries in the SAARC region based on their industrial roundwood consumption between 2000 and 2013 (see Section 4.1) are used for projecting consumption until 2030. Thus, the inherent assumption behind the projection is that the magnitude of the relationship (or, the elasticity) between industrial roundwood consumption and its explanatory variables observed over the period from 2000 to 2013 will also persist until 2030. This assumption has strong statistical support. All models are statistically valid at minimum 95% level of significance. Moreover, the root mean square errors of all models are a maximum +/-5% of the observed consumption values implying that the predictive accuracy of the models is 95% or more (see Annex 25). The root mean square errors measures the predictive power of a model, the smaller the root mean square errors, the higher the predictive power of the model.

4.6.3 Projected production and consumption of industrial roundwood

Bangladesh: The production of industrial roundwood in Bangladesh is expected to increase steadily from just over 1.2 million m³ in 2014 to 1.6 million m³ in 2030. This increase will mainly be the result of the growing production in home gardens, which will remain the biggest source of industrial roundwood until the end of the next decade (Figure 4.33).

Bangladesh's consumption of industrial roundwood is likely to increase from just under 1.5 million m³ in 2014 to 1.8 million m³ in 2030 and will always exceed production. This suggests that the country has to rely on imports of industrial roundwood. An increase in housing construction and a higher demand for wooden furniture, fueled by economic growth as well as population growth, are likely to drive growth in consumption (Choudhury and Hossain, 2011). From 2025, the growth in production is projected to be higher than consumption and this will reduce the gap (Figure 4.33) and cut dependence on imports.

India: In India, the domestic production of industrial roundwood is likely to increase by 12 million m³ from 50 million m³ in 2014 to just over 62 million m³ in 2030. The plantations, especially those that are privately owned, will contribute to most of the growth (Figure 4.35). The contribution from plantations will increase from 50% to 55%. This increase will result in a decrease in the share from social and communal forests from 45% to 41% over the next 15 years, although the actual production from this source will increase marginally. The contribution of natural forests will be marginal and will decrease regularly (Figure 4.35).

Consumption of industrial roundwood in India is projected to increase steadily by more than 20 million m³ between 2014 and 2030 (Figure 4.35). The increased domestic demand fueled by rapid economic growth and an increase in the total population will cause the wood-based industries to expand and will increase roundwood consumption in India (MoEF, 2009). As Figure 4.35 demonstrates, over the next 15 years the projected consumption will not only be larger than the domestic production, but the growth in consumption will be greater than domestic production creating an increasingly bigger gap between them. This suggests that India will rely even more heavily upon imported industrial roundwood in the future.

Bhutan: Production of industrial roundwood in Bhutan is projected to increase marginally from 58 000 m³ in 2014 to 63 000 million m³ in 2030 mainly because of growing production from natural forests, which is the biggest source of industrial roundwood in the country (Figure 4.34).

Over the next 15 years, the consumption of industrial roundwood in Bhutan is likely to decrease slightly (Figure 4.34). With the prospect of marginal population growth (UN, 2012) and no expansion of the wood industry (Dhital, 2009), the projected economic growth (USDA, 2013) is unlikely to be translated into an increase in timber consumption.

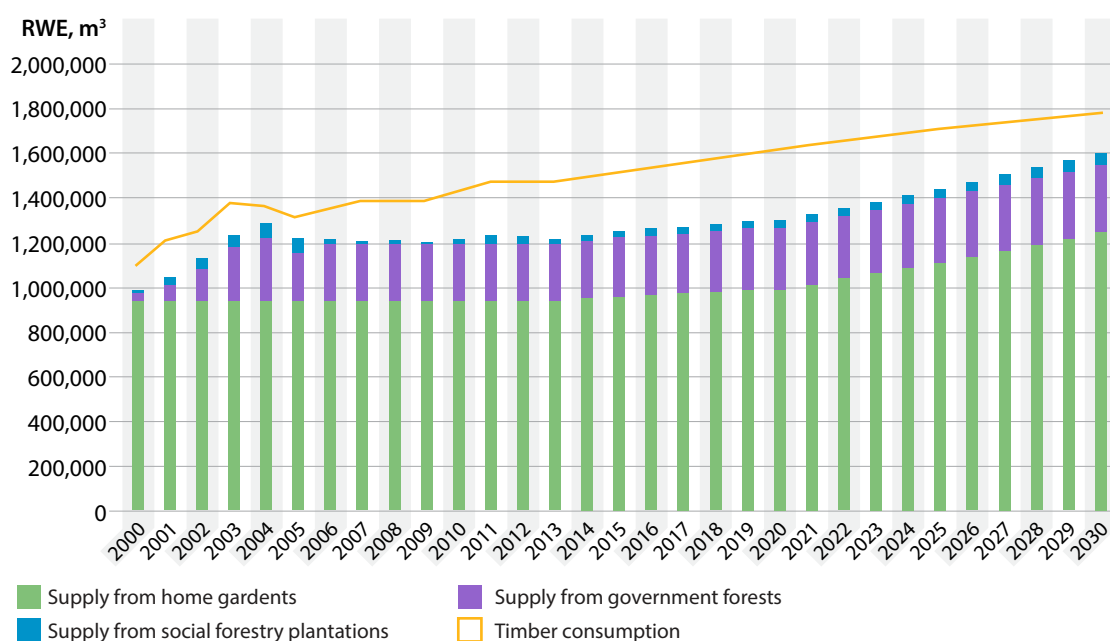


Figure 4.33: Projected production and consumption of industrial roundwood until 2030 in Bangladesh
Sources: 2000–2013 (BFD, 2015; FAOSTAT; UN Comtrade; Choudhury and Hossain, 2011, 2014–2030 (projection)

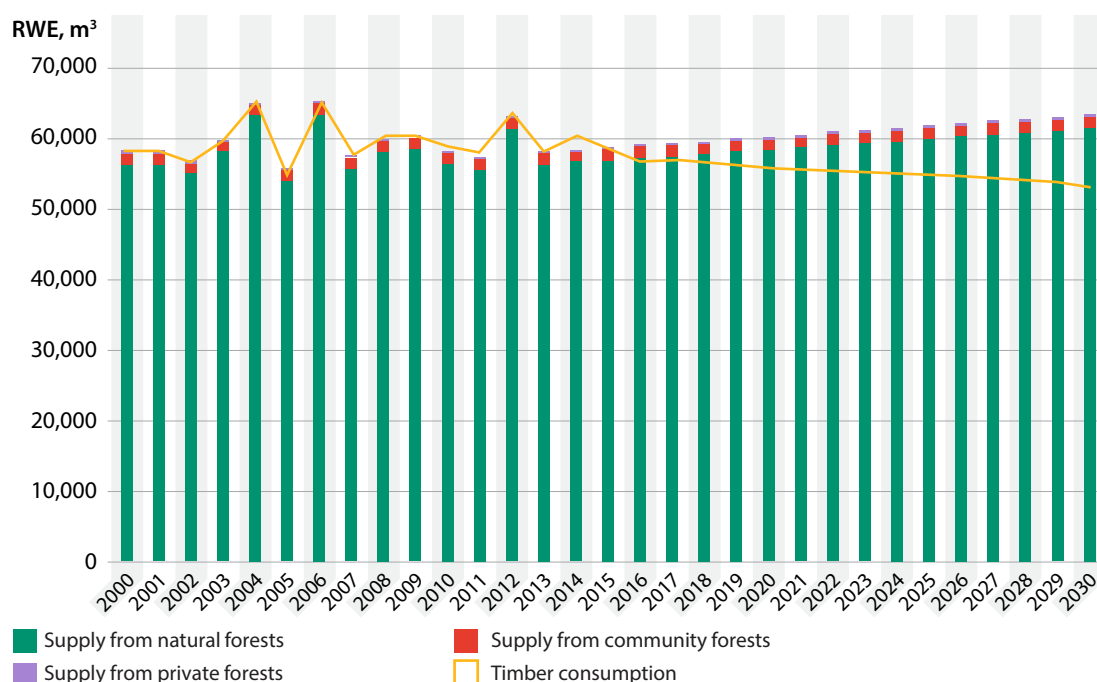


Figure 4.34: Projected production and consumption of industrial roundwood until 2030 in Bhutan
Sources: 2000–2013 (DFPS, 2013 ; NRDCL, 2008–2012 ; FAOSTAT ; UN Comtrade ; Dhital, 2009), 2014–2030 (projection)

Nepal: The production of industrial roundwood in Nepal is projected to increase steadily from 1.35 million m³ in 2014 to about 3.3 million m³ in 2030. A rapid increase in production from community and collaborative forest management and trees coming from outside forests are all expected to contribute to the increase in total production. Community and collaborative forest management is expected to remain a source of industrial roundwood and to increase its total production from 42% in 2014 to 60% in 2030 (Figure 4.36). During the same period, the government managed forests are expected to decrease their contributions from 29% to just 14%, which suggests that the growth rate in community and collaborative forests will be much faster than in government managed forests.

Figure 4.36 demonstrates that the consumption of industrial roundwood in Nepal is projected to increase steadily from just under 1.7 million m³ in 2014 to about 4.5 million m³ in 2030. There will be a gap between consumption and production and the country will have to rely on imports of industrial roundwood. Increased housing construction and a higher demand for wooden furniture fueled by economic growth as well population growth are likely to drive the growth in consumption (MoFSC, 2009).

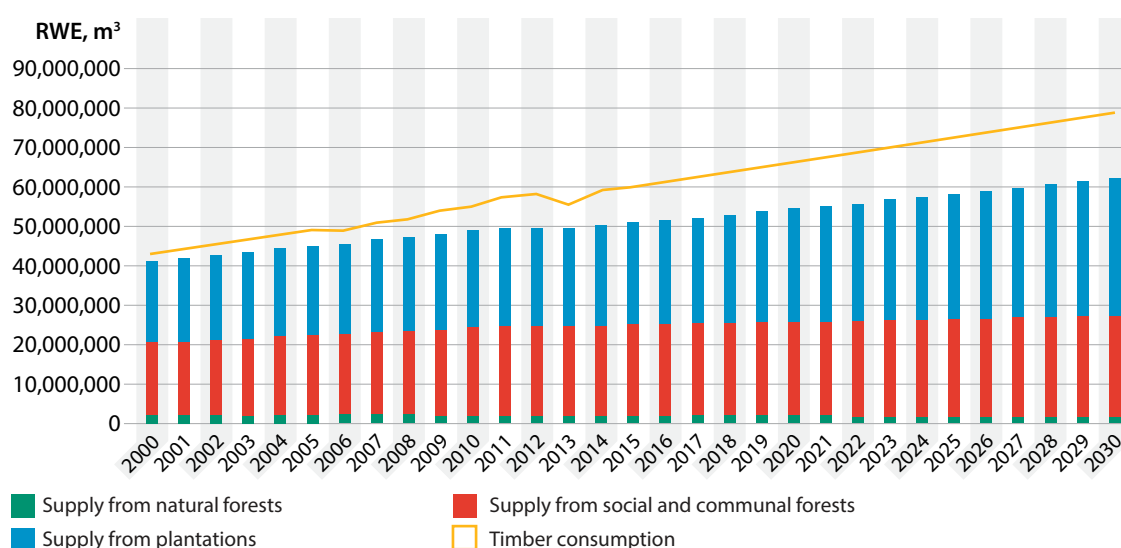


Figure 4.35: Projected production and consumption of industrial roundwood until 2030 in India
Sources: 2000–2013 (FAOSTAT; MoEF, 2009; ICFRE, 2012), 2014–2030 (projection)

Sri Lanka: The production of industrial roundwood in Sri Lanka is projected to increase steadily from just over 1.3 million m³ in 2014 to 1.6 million m³ in 2030. The growth in production from home gardens and rubber plantations will drive this increase (see Box 2). Home gardens will remain as the biggest source of industrial roundwood until the end of the next decade (Figure 4.37). Sri Lanka is likely to experience faster growth in consumption of industrial roundwood than in production and, therefore, there will be a rapidly decreasing supply of timber over the next 15 years. Industrial roundwood consumption in the country is projected to increase steadily from just under 1.4 million m³ in 2014 to 1.9 million m³ in 2030. This suggests that the country will have to import more timber in the future. Increased housing construction and a higher demand for wooden furniture, both fueled by economic growth as well as population growth are likely to drive growth in consumption (SLFD, 2009).

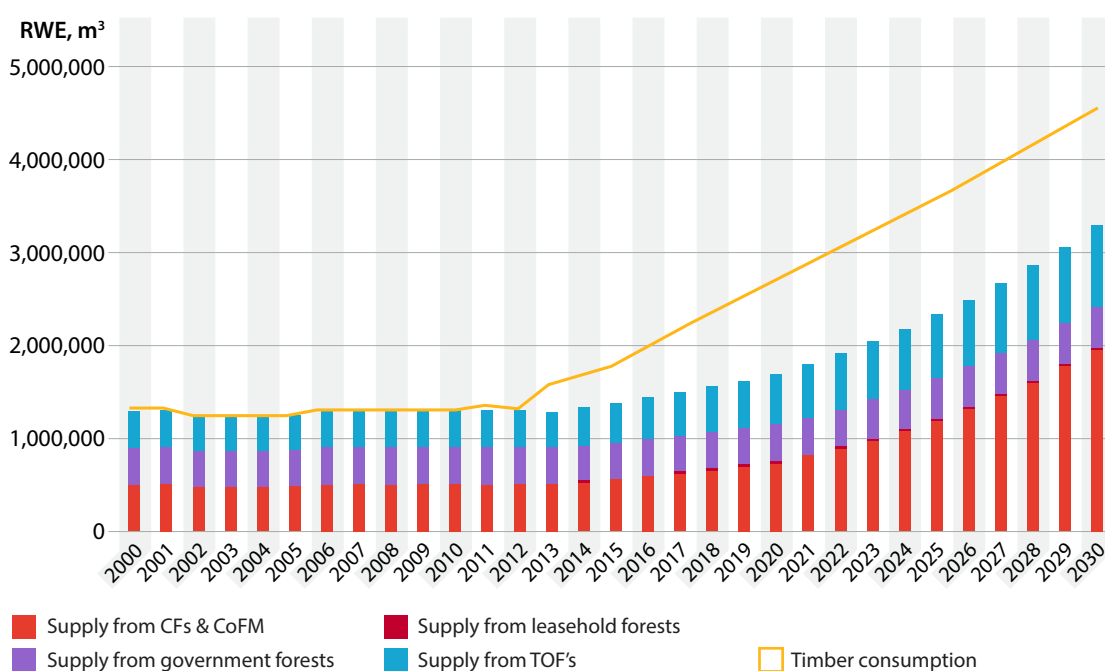


Figure 4.36: Projected production and consumption of industrial roundwood until 2030 in Nepal
Sources: 2000–2013 (FAOSTAT; Comtrade; MoFSC, 2009), 2014–2030 (projection)

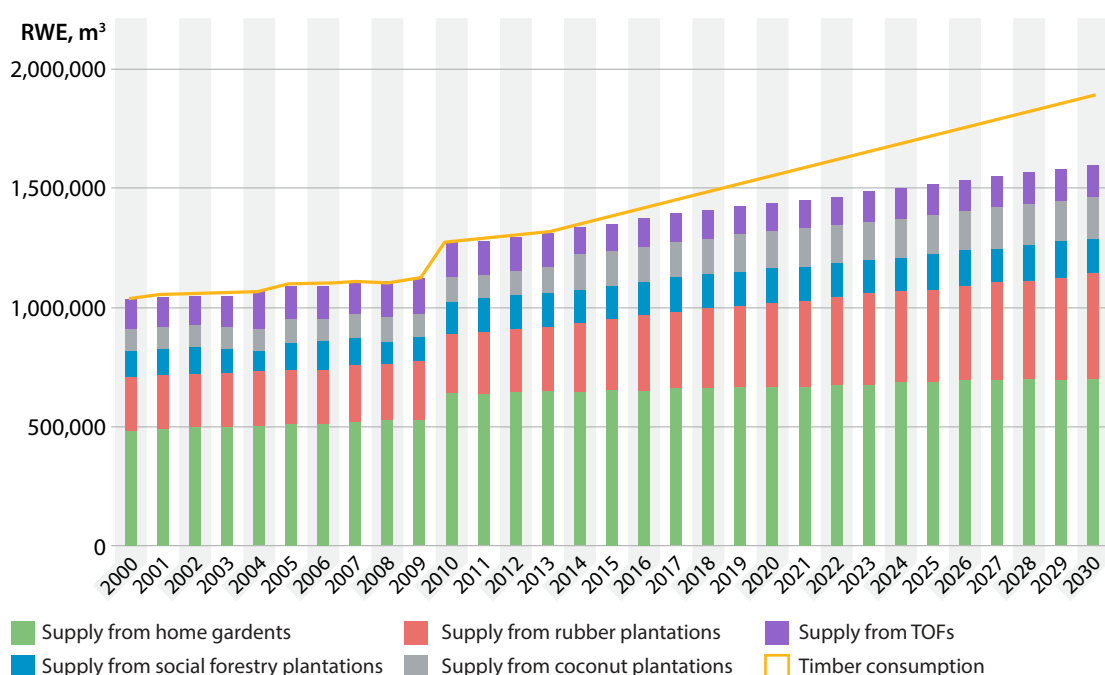


Figure 4.37: Projected production and consumption of industrial roundwood until 2030 in Sri Lanka
Sources: 2000–2013 (FAOSTAT; SLFD, 2009; Ruwanpathirana, 2012 and 2014), 2014–2030 (projection)

Box 4.2: Rubber plantations as a source of legal timber in Sri Lanka

Rubber cultivation started in a part of Sri Lanka during the British colonial period and then gradually spread all over the country. Rubber plantations are a major source of fuelwood as well as timber in the country. Rubber trees are cut down once they become unsuitable for latex production (around 25 years). Rubber wood is moderately heavy with an attractive grain that makes it suitable for furniture, veneer and plywood, and for many household uses. The products made of properly treated rubber wood are long lasting (Ruwanpathirana, 2014).

The Rubber Development Board (RDB) of the Ministry of Plantation Industries oversees the rubber plantations. As of 2013, there were 0.134 mha of rubber plantation in the country (RDB, 2015). About 58% of these plantations are owned by 21 state controlled regional plantation companies, which operate directly under the Ministry of Plantation Industries. The rest are owned by small holders who own less than 20 ha each and by private companies (Rwanpathirana, 2014). Together they produce 0.27 million m³ of timber. The RDB has started a rubber plantation expansion programme that aims to use degraded land (SLFD, 2009). This program is likely to increase the timber production to 0.35 million m³ in 2020 and 0.44 million m³ in 2030 (see

Figure 4.37). As all rubber tree harvesting is supervised by the Sri Lanka Forest Department (SLFD, 2009), it is logical to believe that the timber from these rubber plantations meets the relevant legality requirements of Sri Lanka. Private investors established 37 515 ha of plantation with rubber and other species, which are certified by FSC International (Figure 4.31 and Annex 24). More plantations may be certified in the future as the demand for rubber wood by the timber industry is increasing and the industry is gaining more access to such markets as the EU, the US and Australia where certification either offers a price premium or is a requirement (SLEDB, 2015). This suggests that timber coming from rubber plantations in Sri Lanka in the future will very likely fulfill the legality requirements and some of it will be certified.

4.7 Future direction of the timber trade

4.7.1 Overall trade direction for the study countries in the SAARC region

Industrial roundwood, paper and paperboard and wood pulp were the most imported products during the period from 2000 to 2013 into India and Bangladesh (recall Section 4.2.1), and, therefore, for all these countries combined. These products are likely to be the main imports for these countries in general over the next 15 years. In all the countries except Bhutan, domestic production of industrial roundwood is projected to lag far behind consumption (see Section 4.6.3) now and for the next few decades. This suggests that the supply of industrial roundwood is likely to decrease further, especially in India and Bangladesh, and countries will have to import increasingly larger quantities of industrial roundwood from abroad to meet the demand.³² This will continue the trend already apparent in these two countries between 2000 and 2013: imports of industrial roundwood grew rapidly as a result of growing domestic demand. Nepal and Sri Lanka, which were more or less self-sufficient in industrial roundwood from 2000 to 2013, will face growing shortages and will import increasingly larger amounts. Sri Lanka and India are also likely to continue importing sawn timber in the future, following the trend in the past ten years or so, as a way of mitigating their timber shortage. All the countries currently have a log export ban, which they plan to continue into the future, as revealed by consultations with forestry administration in all countries. The ban will hardly contribute to reducing the industrial roundwood shortage in the future in these countries except in Bhutan (see Section 4.6.3). The effects of the SAFTA Agreement on timber and timber products trade within the SAARC region are likely to remain negligible because the SAARC member countries have so far made little effort to implement the Agreement and have not demonstrated a willingness to do so in the future.

From 2000 to 2013, imports of paper and paperboard increased rapidly in all the study countries in the SAARC region. India and Bangladesh imported increasingly larger amounts of wood pulp during this period (see Section 4.2.1). The trend towards importing these products will continue in the future due to the rapid GDP and population growth, which has also increased demand and imports during the period from 2000 to 2013 (USDA, 2014 and UN, 2012). For example, the Indian Paper Manufacturers Association (IPMA) projects that per capita paper consumption in India will increase to at least 17 kg per year in the next 10 years from the current 11 kg per year, while domestic production will lag behind demand. Indeed, the Indian pulp and paper industry is currently using just 89% of the installed capacity mainly due to a shortage of raw materials such as timber (IPMA, 2015).

Following the trend towards growth during the period from 2000 to 2013, exports of high-value products, most notably paper and paperboard, wooden furniture and wooden handicrafts especially from India, will grow over the next 15 years. India will see impressive growth in the export-oriented paper, furniture and handicraft industries in response to the liberalised policies and incentives for export offered by the Indian Government. India will remain by far the biggest exporter among the countries. Sri Lanka and Bangladesh are likely to be the next biggest exporters. Since the current log export ban will soon be in place in all the countries, none of them will export industrial roundwood. Total exports of timber products from the SAARC region is ready to grow faster than imports of the same products, which will cut the trade deficit. This trend has been evident since 2011. This is likely due to India's rapid expansion of high-value products such as paper and paperboard, wooden furniture and handicrafts. This means that India and the other study countries in the SAARC region have to source more timber both from domestic bases and through imports. Total imports into these countries together is likely to exceed their total exports, as the current deficit is too big to be covered up in the face of huge and rapidly growing domestic demand in the region. The overall trade direction is summarised in Table 4.6.

³² The shortage will also lead to an increase in supply from unrecorded sources such as smuggling from Myanmar and other neighbouring countries.

Table 4.6: Overview of trading in timber and timber products over the next 15 years in the study countries of the SAARC region

Key product	Import into SAARC region		Export from SAARC region	
	Increase	Decrease	Increase	Decrease
Industrial roundwood	For all study countries in SAARC region	None	None	None
Sawn timber	For India and Sri Lanka	None	None	None
Veneer, plywood and fibreboard	For India	None	For India and Sri Lanka	
Paper and paper board	For all study countries in SAARC region	None	For Bangladesh, India and Sri Lanka	None
Wood pulp	For Bangladesh and India	None	None	
Wooden furniture	None	None	For Bangladesh, India and Sri Lanka	None
Wooden handicraft	None	None	For India and Sri Lanka	None

4.7.2 Trade between the study countries and Myanmar

From 2000 to 2013, the trade link between Myanmar and the study countries in the SAARC region was shaped mainly by India's and Bangladesh's huge imports of industrial roundwood from Myanmar. Nepal also imported from Myanmar from the beginning of 2011. From 2000 to 2013, industrial roundwood accounted for 98% of the value of exports (95% in volume) of all timber and timber products from Myanmar to these countries. As Myanmar imposed an indefinite log export ban on 1 April 2014, the quantity of legally-imported industrial roundwood from Myanmar is very likely to be drastically reduced in 2015. During the first quarter of 2015, the consultants visited and had conversations with the authorities of the seaports of Kolkata in India, Chittagong in Bangladesh and the land port of Birgunj in Nepal (the main ports for trade in timber and timber products in these three countries). It became clear that no more industrial roundwood from Myanmar came through these ports after the end of June 2014. Some industrial roundwood continued to arrive for three months after the Myanmar log export ban was imposed because of the gap between the receipt of the export release order and the actual shipment in Myanmar. In fact, total imports of industrial roundwood from Myanmar to Bangladesh through the seaport in Chittagong, which handles more than 80% of Bangladesh's foreign trade, was already reduced in 2014 compared with that of 2012 and 2013 (Figure 4.38).

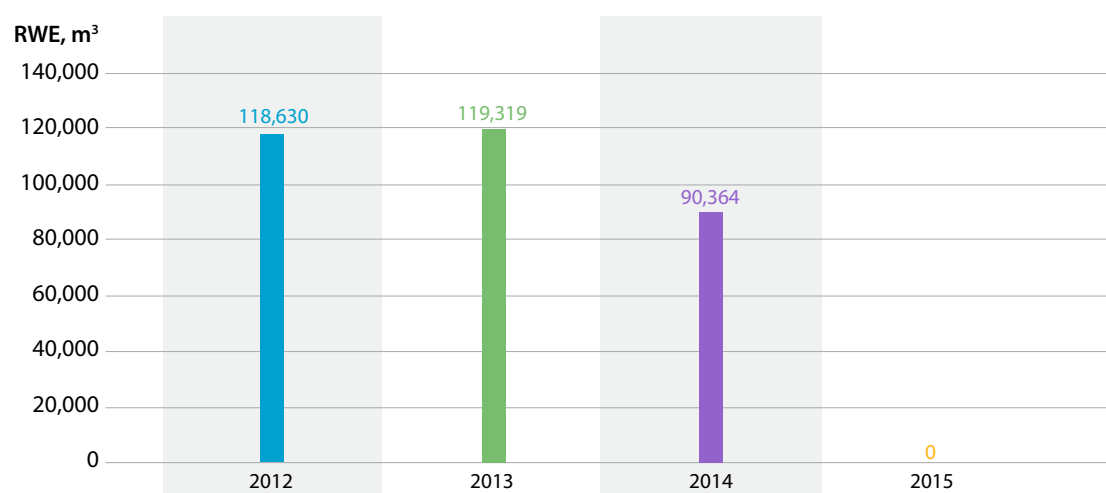


Figure 4.38: Total imports of industrial roundwood from Myanmar to Bangladesh through the seaport in Chittagong (volume) *Until March. Source: Bangladesh Forest Department

India's imports of veneer and plywood are likely to grow slowly as some Indian companies, such as Century Ply (where the consultants visited) and Green Ply, have already set up factories in Myanmar. They are expected to start using their installed capacity and ship more to India in the future. More Indian companies might follow suit. Under the ASEAN–India Free Trade Area Agreement, import duties between India and Myanmar on veneer and plywood are scheduled to reach to 0% (from the current 12.5% in India) in 2018 and 5% (from the current 12% in Myanmar) in 2021 (Department of Commerce, 2015). This might also boost India's imports of these two products from Myanmar. It is unlikely that more sawn timber will be imported from Myanmar to India and Bangladesh. Traders in these two countries mentioned to the consultants that sawn timber from Myanmar is more expensive. After the Myanmar log export ban is lifted, import volumes and values will be far smaller than the pre-ban period. Exports to Myanmar from the SAARC countries (which were mainly led by India and were negligible compared to imports during the period from 2000 to 2013) may increase slowly as more Indian paper and paperboard enter Myanmar markets, taking advantage of the reduction in duty under the ASEAN-India Free Trade Area Agreement. The overall trade direction is summarised in Table 4.7.

Table 4.7: Overview of trading in timber and timber products over the next 15 years between the study countries and Myanmar

Key product	Import from Myanmar		Export to Myanmar	
	Increase	Decrease	Increase	Decrease
Industrial roundwood	None	No import for any study country in SAARC region	None	None
Sawn timber	None	None	None	None
Veneer, plywood and fibreboard	India	None	None	None
Paper and paper board	None	None	India	None
Wood pulp	None	None		
Wooden furniture	None	None	None	None
Wooden handicraft	None	None	None	None

4.7.3 Trade direction between the study countries and key consumer markets

China: Total imports of timber products from China to the study countries will continue growing in the coming decades. India is likely to import the most, followed by Bangladesh and Sri Lanka. Import bundles will mostly consist of increasingly large amounts of paper and paperboard to meet the growing domestic demand in these three SAARC countries. Favourable prices, good quality products and the short distance between China and South Asia will remain the key drivers for imports from China. China's continuation as the leading global production hub and one of the leading exporters of all products, including paper and paperboard make it an important source of these products. Exports to China, especially from India, are likely to grow but will be negligible compared to imports. This reflects the fact that China is the traditional importer of timber, which is now and will likely continue to be in short supply in the SAARC region.

The EU and the US: As in the past, the EU and the US are likely to remain the main import partners for the SAARC region in general, India, and Bangladesh in particular, for paper and paperboard, and wood pulp. Sri Lanka is also likely to rely on the EU and the US for paper and paperboard. Both the EU and the US are likely to continue to be the world's leading exporters of wood pulp, and paper and paperboard in the future. Imports are likely to match the increasing domestic demand in the SAARC countries.

The bulk of exports to the EU and the US from the SAARC region is likely to come from India, as in the past. In fact, the EU and the US are India's biggest markets for paper and paperboard, wooden furniture and wooden handicrafts. India is making a serious effort to comply with the requirements of these two markets (such as increasing its certified timber production) as set out under the EUTR and the Lacey Act Amendment. India already uses wood from certified sources for producing the products that are exported to the EU and the US in order to comply with requirements. India currently has 0.5 mha of FSC certified plantation. The country has also launched a national certification body (i.e. the Network for Certification and Conservation of Forests), which aims to increase certified timber production for export-oriented industries. It is likely that India's market share in the EU and the US with the products mentioned above will grow in the coming decades.

Malaysia: From 2000 to 2013, Malaysia was the biggest import partner for industrial roundwood from India and, as a result, for all the study countries in the SAARC region. During the same period, Malaysia contributed to 32% of India's total imports of industrial roundwood by volume (UN Comtrade and the International Tropical Timber Organization (ITTO) Annual Review Statistics). With Myanmar's log export ban, Malaysia is likely to become even more important as an import market of industrial roundwood not only for India but also for Bangladesh and Nepal. The officials of the seaports in Kolkata in India, Chittagong in Bangladesh and the land port in Birgunj in Nepal told the consultants that more industrial roundwood from Malaysia has landed on their ports since the second half of 2014 (Annex 20.4). One Indian stakeholder estimated that Malaysia currently contributes to 38% of India's total industrial roundwood imports by volume. This rapid increase was fueled by the ASEAN-India Free Trade Area Agreement that allows industrial roundwood from ASEAN countries to enter India with zero import duties. Imports of paper and paperboard from Malaysia to India are also likely to increase because of the duty free access.

Other partners: To make up for the industrial roundwood supply no longer coming from Myanmar, Bangladesh has already started importing from a number of new countries including Papua New Guinea, Tonga, Solomon Islands, Ireland, Benin, Surinam, Costa Rica, Liberia, and Gabon (consultants in discussions with port officials, timber traders and Bangladesh Forest Department officials). Bangladesh is also increasing its imports significantly from traditional import countries, most notably from, Malaysia, Ivory Coast, Cameroon, Ghana, Nigeria, Canada, the US and the EU. India is importing industrial roundwood in larger quantities from its old partners such as Ghana, Nigeria, Cameroon, Brazil, Costa Rica and Chile.

Based on the discussion in Section 4.7, the likely effects of regional and bilateral trade mechanisms and schemes, and domestic policies on the trade in timber and timber products in the study countries in the SAARC region over the next 15 years are presented in Table 4.8. Based on the discussions in Sections 4.7.2 and 4.7.3, the key export and import products and partners of each study country are presented in Table 4.9.

Table 4.8: Likely effects of regional and bilateral trade mechanisms and schemes, and domestic policies on timber and timber products trade in the study countries in the SAARC region over the next 15 years

Name	Effects	
	On export	On import
Regional trade mechanisms and schemes[±]		
Trade Liberalization Program under SAFTA Agreement	Negligible increase in exports to each other	Negligible increase in imports from each other
ASEAN-India Free Trade Area	Negligible increase in India's exports of paper and paperboard to Myanmar	Increase in India's imports of industrial roundwood, and paper and paperboard from Malaysia and plywood and veneer from Myanmar
Bilateral trade agreements		
Bhutan-India Treaty on Trade, Commerce and Transit	Increase in India's total exports to Bhutan	Increase in Bhutan's total imports from India
Nepal-India Treaty on Trade	Increase in India's total exports to Nepal	Increase in Nepal's total imports from India
Nepal-India Transit Treaty	No effect	Increase in Nepal's total imports from third-party countries via India
India-Sri Lanka Free Trade Area Agreement	Increase in total exports from India and Sri Lanka to each other	Increase in total imports to India and Sri Lanka from each other
Domestic policies		
Trade policy of Bangladesh	No effect	Increase in total imports of industrial roundwood
Trade policy of India	No effect	Increase in total imports of industrial roundwood
Log export ban in all study countries in the SAARC region	No exports of industrial roundwood to each other	No imports of industrial roundwood from each other

[±] SAARC Agreements on Multilateral Arrangement on Recognition of Conformity of Assessment and Implementation on

Regional Standards, Asia Pacific Trade Agreement, BIMSTEC, Bangladesh-Nepal Agreements on Trade, Payments and Transit and Bangladesh-Bhutan Bilateral Trade Agreement are not likely to have any effect.

Table 4.9: Key export and import products and partners of the study countries over the next 15 years

Country	Key products	Key import partner	Key export partner
Bangladesh	Industrial roundwood	Malaysia, Nigeria, and various African countries	No export
	Paper and paperboard	China, the United States (US) and the European Union (EU)	No key partner
	Wooden furniture	None	India, US and EU
Bhutan	Fibreboard and plywood	India	India
	Paper and paperboard, wood charcoal	India	No export
India	Industrial roundwood	Malaysia, Ghana, Nigeria and Cameroon	No export
	Sawn timber	Malaysia	No export
	Paper and paperboard, and wood pulp	EU, US and China	EU, US and other study countries in SAARC
	Wooden furniture	China	EU and US
	Wooden handicraft	No key partner	EU and US
	Plywood, veneer and fibreboard	Myanmar and Sri Lanka (fibreboard)	Other study countries in SAARC
Nepal	Industrial roundwood	Malaysia	No export
	Paper and paperboard, fibreboard and plywood	India	No export
Sri Lanka	Industrial roundwood	Malaysia and various other countries	No export
	Sawn timber	Malaysia	No export
	Paper and paperboard, fibreboard and wooden furniture	No key partner	India and EU

5. Opportunities, challenges and recommendations

5.1 Challenges and opportunities

5.1.1 Regulatory and policy framework

Regulatory framework: In the study, the multiple acts and laws of the countries regulate the production, processing and trade of timber in particular, and also forests and tree resources. Even though the regulation has good provisions, effective law enforcement is challenging due to under-resourcing. Corruption in forest departments and other law enforcement agencies adds to the challenge in all the study countries except Bhutan. Multiple regulations for forest resources pose a challenge for effective forest governance, and harmonising enforcement with the enforcement agencies in each country is difficult because the forest departments lack resources.

A TP, as per regulations, is the main method for recognising timber as legal in all the study countries. A TP is a paper document that contains information about the timber itself such as the source of origin, name of species and provides the means to identify the timber based on such information. When a consignment of timber is transported, it is checked against TPs at the check posts of the forest department. Since a TP is only a piece of paper prepared manually, it is easy to forge. The forest checkpoints are not computerised, and check post guards are unable to detect if any illegal timber is mixed into consignments between the check posts. This suggests that the regulatory framework in all the study countries is weak on controlling timber transports and for verifying the supply chain, both essential components under any FLEGT VPA.

Policy framework: Forest policies do not specify measures for controlling illegal logging in the region. This is a major limitation concerning forest law enforcement and governance in the study countries. It is also a major impediment to effectively implementing any FLEGT-related activities in the SAARC region. In addition, forest or international trade policies in the countries do not have a mandate for carrying out effective checks on whether or not their imported timber is coming from legal sources.

5.1.2 Export and import procedures and controls

For exports, a TP is the means for recognising legal timber in all the study countries. In spite of containing enough information to recognise timber legality, a TP is not an effective control of timber transport and verification of supply chain because of the possibility of abuse of the paper-based system. This makes it too easy to export illegally sourced timber and products made from such timber. Similarly, customs clearance is given to imported timber with only a certificate of origin, i.e. without documents proving legality. Therefore, illegally sourced timber can easily be imported into the region. This suggests that import procedures and controls in the study countries are currently inadequate to effectively control the supply chain of timber.

Furthermore, there are inconsistencies in export and import procedures across the study countries regarding the number and type of documents, and related checks required. The time required for and the costs associated with exports and imports may vary because of this inconsistency and because of the geographical locations of the countries. The additional documents, plus the time required to process them means that exports and imports of timber and timber products is higher than the average for all the products in the study countries.

5.1.3 Sources, trade flows and markets for illegal or unrecorded timber

Unrecorded domestic timber: Timber coming from unrecorded sources meets a substantial part of the demand in the SAARC region. An estimated 25 million m³ to 32 million m³ of unrecorded timber is imported into India per year. There is likely a substantial quantity imported into Bangladesh, Sri Lanka and Nepal as well. Weak or inexistent regulations for controlling timber transports and for verifying supply chains encourage illegal logging. A lack of awareness of the legality requirements for harvesting private forests, e.g. home gardens and other TOFs especially in Bangladesh, India and Sri Lanka, also to a large quantity of unrecorded timber in the supply chain. Corruption in the forest sector is a serious obstacle. The absence of national systems to systematically keep track and record the amounts of legal timber coming from whatever sources adds to the problem of unrecorded timber entering the supply chain. This seriously hampers the ability of these countries to meet the EUTR and effectively implement future FLEGT activities. Illegal logging is also a concern for forest degradation and deforestation in the study countries.

Mixing legal and illegal timber: Due to weak timber transport control and verification of supply chains, unrecorded or illegal timber is mixed with legal or registered timber, at least to some extent, in all the study countries. The illegal timber is often mixed into a shipment in between the forest check posts, on the way to the mill yards and sometimes even at the mill yards, especially in the case of sawmills. This makes it extremely difficult, if not impossible, to separate timber products made from legal and illegal timber. The problem is compounded by the fact that there are so many unregistered sawmills, and also by the practice of using waste material from one wood-based industry as raw material in another. The problem of mixing illegal timber into legal shipments poses a serious challenge for meeting the EUTR as well as for ensuring that the study countries are trading in legal timber and timber products in general.

Illegal cross-border timber trade, livelihood and land tenure: Local people transport illegal timber across the border (especially from Nepal and Myanmar to India, and from India and Myanmar to Bangladesh) to make a living, but there are also organised groups involved. The communities living on both sides of a border contribute to the illegal cross-border timber movement. A complicated community oriented forest land tenure in northeastern India that allows communities to run their own forestry administration in parallel to the state forestry administration, also facilitates illegal timber movement especially to neighbouring Bangladesh and also to Myanmar. This suggests that the illegal cross-border timber trade is more of a socio-economic issue than merely a law-enforcement issue and, therefore, it is extremely challenging to control this form of timber trade.

Importing illegal timber: Bangladesh, India, and Nepal rely heavily on imports of industrial roundwood, whereas Sri Lanka imports vast quantities of sawn timber. A significant portion of this timber currently comes from Malaysia, Myanmar (until the log export ban was enforced on 1 April 2014), Ghana, Nigeria and a number of other African countries. These countries, except for Myanmar, are likely to be the main sources for imported timber entering the SAARC region in the future as well. Much of the timber imported, particularly from non-FLEGT VPA countries, is believed to be harvested illegally. There are no policy measures in place to prevent importing illegally sourced timber. This is a huge challenge for the SAARC region, especially India, to meet the EUTR because the furniture for export markets is made from imported timber.

5.1.4 Demand for certified timber

In India, Bangladesh and Sri Lanka, there is a growing interest in forest certification and a demand for certified timber. Private companies in India and Sri Lanka have started having their plantations certified by FSC International. Export-oriented paper companies in India have already started using timber from certified sources. Large-scale private timber industry players, e.g. wooden furniture producers in Bangladesh, are also showing an increasing interest in using certified timber in order to export to markets that require certification. This is a positive development towards meeting the EUTR in particular. However, it is important to remember that most of the domestic timber in the region comes from small-scale private forest plantations, e.g. agro and farm forestry, social and community forestry, home gardens and other TOFs. Costs will remain an issue for certification because private plantations and home gardens are too small to absorb the costs of certification alone. Community and social forestry is economically weak and unable to afford the certification payments unless they can come together for group certification. Government policy ambiguity on certification will also make it difficult to begin the certification process.

5.1.5 Regional institutional mechanisms

Regional institutions: Among the three regional institutions (SFC, ICIMOD and SANDEE) currently working on forestry issues in the SAARC region, SFC appears to be the one best positioned to collaborate with EFI and the European Commission (EC) in the future on FLEGT-related activities. However, the SFC is under-resourced in terms of budget and staff. Without additional support, the SFC's ability to participate in FLEGT activities will be limited.

Trade mechanisms: The provisions in SAFTA, the leading trade agreement in the SAARC region, do not require the certificate of legal origin for trading timber products, which allows products made of illegal or unrecorded timber to be traded. This is clearly a hindrance for promoting the trade in legal timber products in the region, and prevents the region from meeting the EUTR. However, the Agreement could provide a good basis for any future engagement in FLEGT-related activities such as keeping track of timber and timber products trade across the region. The Agreement has provisions for harmonising and simplifying as well as for cooperating on procedures and standards related to timber and timber products trade. Other regional and bilateral trade mechanisms have weak or no provisions for harmonising and simplifying.

National institutions: International trade in the study region is governed by the ministries of commerce through the customs departments. The customs departments are heavily dependent on the forest departments for technical matters concerning timber and timber products. The educational and research wings are barely involved in formulating policy. National NGOs and civil societies in the study countries in the SAARC region are not vocal in timber trade and legality issues, and lack the ability to influence relevant policies. In addition, the administrative structure in India, where each state effectively controls and administers its forests and where the Ministry of Environment, Forest and Climate Change acts as an umbrella organisation extending help to the state governments on technical and policy matters, may prove to be a hindrance for moving ahead with any FLEGT-related activities in the country. Not all the states may be able to come to a uniform decision. Other study countries do not have the same problems since forestry affairs are usually handled through one forest department.

5.2 Recommendations

5.2.1 Key target areas of FLEGT-related support

The key target areas for EFI and its potential partners for FLEGT-related support in the SAARC region are listed below.

Strengthening legislative framework: Highlighting the importance of strengthening the existing legislative framework by including provisions especially for effective timber transport control and verification of supply chain in the SAARC region countries constitutes an important target area. Provisions to issue and use digital TPs, together with computerising the forest check posts, can cut illegal logging and control the practice of mixing illegal timber with legal timber, and can also curb illegal cross-border timber trade. Assessing the effects of strengthened legislation could be a way to highlight its importance.

Responsible import policies: The importance of adopting more responsible import policies with provisions for effective timber supply chain control, such as making the checks for the legality of imported timber mandatory, should be highlighted. Such policies could help the countries to import only legally sourced timber and could enhance their ability to meet the EUTR. An impact assessment on how responsible import policies promote the trade in legal timber and timber products could be a way to promote such policies in the SAARC region countries.

Awareness raising on timber legality and the EUTR: Programmes to make small-scale tree growers, especially the owners of home gardens and TOFs, aware of the legality requirements for harvesting and transporting trees will reduce the volume of unrecorded timber in the supply chain. Such programmes could be run through public media such as radio, television and newspapers as well as by organising information sessions at the village/community level. Similar programmes are run on the same platforms in the SAARC countries, for example, to encourage people to plant more trees and to make them aware of the importance of planting trees for mitigating climate change. Awareness raising programs on the EUTR, its requirements targeting the forest industry in the SAARC countries in general and India in particular, and the risks involved in continuing to consume timber from illegal origins could help reduce illegal timber in the supply chain.

Promoting sustainable forest management and forest certification: It is important to promote sustainable forest management and forest certification through support for developing certification criteria and indicators. Initiatives should explore the potential for regional cooperation for promoting group certification (both forest management and chain of custody certification) as small-scale producers supply most of the timber in the region. This would involve all the SAARC countries and they would stand on a common platform. A cumulative action plan will reduce the trade in illegal timber. Sustainably managed and certified timber sources will reduce the demand for imported, illegally traded and unrecorded domestic timber.

5.2.2 Strengthening existing regional institutional mechanisms

Strengthening potential regional partners: SFC appears to be the most suitable regional partner for collaborating with on any future FLEGT activities in the SAARC region. It should be strengthened to become the regional platform. It is in a good position to bring the national forest agencies in the SAARC countries together to promote dialogue on good forest management and governance. The two major weaknesses of SFC are that its budget is limited and it lacks staff with an understanding of timber trade and legality issues in the SAARC region. These same limitations are throughout the national forest departments. Support for funding, training and capacity building for selected staff members on regional timber trade and legality issues would strengthen SFC and the forest departments as partners of EFI and EC for FLEGT-related activities.³³ Strengthening the national forest departments will contribute to enhancing the effectiveness of forest law enforcement and forest governance. Independent forest monitoring³⁴ could counteract the corruption in the forest departments and improve the effectiveness of forest law enforcement.

³³ Sponsoring forest department staff from SAARC countries at FAO Executive Forest Policy courses held in Thimphu, Bhutan in 2013 and Napyitaw, Myanmar in 2015 by the EU EFI FLEGT Facility is a good initiative for strengthening potential partners.

³⁴ Independent forest monitoring refers to the use of an independent third party. The third party, by agreement with state authorities, provides an assessment of legal compliance, and observation of and guidance on official forest law enforcement systems (Brack and Leger, 2013)

The options for cooperation between SAARC and ASEAN on FLEGT-related activities should also be explored. The ASEAN member countries, such as Malaysia, have been and are likely to remain the leading partners for timber imports for the SAARC region countries.

Engaging national institutions: The national forest departments³⁵ could be engaged in any future FLEGT-related activities in the SAARC region through SFC with help from the EU Delegation in each study country. The forest departments themselves, with the support of their ministries, could help bring the forest corporations, timber industry and export promotion bodies on board. EFI should facilitate SFC to reach out to the forest department in Myanmar, which will further strengthen SFC as a regional platform on timber legality, and in promoting the legal trade of timber and timber products. Civil society and NGOs should be allowed to engage in any regional FLEGT activities, as this would give a broader societal perspective to those activities. Timber industry companies and medium- and large-scale private plantation investors should also be allowed.

Strengthening regional trade mechanisms: The SAFTA Agreement could provide a base for any future engagement in FLEGT-related activities in the SAARC region such as keeping track of the trade in timber and timber products across the region. However, EFI and the EC should work with the SAARC Secretariat and SFC to include provisions such as making legality checks for imported timber mandatory in order to eliminate the risk of trading timber products made from illegal wood.

5.2.3 Potential links with other sectors and future engagement in FLEGT activities

Sustainable forest management and climate change: Sustainable forest management not only enhances the production of legal timber but also helps mitigate climate change. Climate change provides a natural entry point into timber legality and forest governance issues in the region. South Asia is one of the most vulnerable regions to climate change linked with forestry and timber production. The merger of SFC into a new SAARC Disaster Management Centre from the beginning of 2016 offers an opportunity to address timber legality and governance together with climate change.

Good governance: Unrecorded timber entering the supply chain, mixing legal and illegal timber, the illegal cross-border timber trade, and the weakness of existing legislative frameworks to control illegal timber flows give a clear indication of the failure of governance in general. Promoting good governance could be an entry point for future engagement in timber legality and FLEGT activities in the SAARC region.

5.2.4 Next steps for EFI and the EC, and additional research activities

Steps for EFI and the EC: To collaborate with SFC on FLEGT-related engagement in the SAARC region, it is necessary to understand the possible areas for cooperation. A MoU must be signed with the SAARC Secretariat in order to collaborate with SFC. While building a relationship with SFC, EFI and the EC should start facilitating the linkup between the national forest departments and SFC.

Future research activities: To improve future FLEGT-related activities, it is important to explore the problems of unrecorded domestic timber and of mixing legal and illegal timber in the SAARC countries. Exploring options for developing national systems for systematically recording the production of legal timber could be a good start. Also it is important to explore options for developing a regional system that would make information available online on regulatory and policy frameworks related to forestry, timber production, processing and trade, and trade procedures. It is worthwhile to understand how a system for periodically monitoring timber trade data works. The feasibility of using independent forest monitoring to improve the effectiveness of forest law enforcement should be analysed. More work is needed to study the different aspects and options for minimising certification costs. To control the trade in illegal timber, the links between livelihood and land tenure with illegal logging and their implications for timber legality should be researched thoroughly. Particularly, it is important to understand the links between livelihood aspects or the socio-economic conditions in the border areas and the cross-border trade in illegal timber.

35 In the case of India, both the Ministry of Environment, Forest and Climate Change as well as the state forest departments should be engaged. The states where illegal cross-border timber trade takes place (northeastern states, West Bengal, Bihar, Uttarpradesh and Uttarakand) and those that have high timber industry concentration (Haryana, Punjab, Maharashtra and Tamil Nadu) should have priority.

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Abbreviations

AAC	Annual Allowable Cut
ADC	autonomous district council
BBS	Bangladesh Bureau of Statistics
AIFTA	ASEAN-Indian Free Trade Area
APTA	Asia Pacific Trade Agreement
ASEAN	Association of Southeast Asian Nations
BFD	Bangladesh Forest Department
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
CECA	Comprehensive Economic Cooperation Agreement
CF	community forestry
CFUG	community forestry user groups
CIF	Insurance and Freight
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoFM	Collaborative Forest Management
DFO	Divisional/District Forest Officer
DFPS	Department of Forests and Park Services
DGCI&S	Directorate General of Commercial Intelligence and Statistics
EC	European Commission
EcoDev	Economically Progressive Ecosystem Development Group
EFI	European Forest Institute
EU	European Union
EUR	Euro
EUTR	European Union Timber Regulation
FAO	Food and Agriculture Organization
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
FSI	Forest Survey of India
GDP	Gross Domestic Product
HKH	Hindu Kush Himalayan
HS	Harmonisation System
ICFRE	Indian Council of Forestry Research and Education
ICIMOD	International Centre for Integrated Mountain Development

ITTO	International Tropical Timber Organization
JFM	joint forest management
LAS	Legality Assurance System
MoECF	Ministry of Environmental Conservation and Forestry
MoEF	Ministry of Environment and Forests
MoFSC	Ministry of Forestry and Soil Conservation
MoU	Memorandum of Understanding
MTE	Myanmar Timber Enterprise
NGO	non-governmental organisation
NOC	no objection certificate
NTFP	non-timber forest products
NRDCL	Natural Resources Development Corporation Limited
RDB	Rubber Development Board
RMC	regional member countries
RWE	roundwood equivalent
RWEDP	Region Wood Energy Development Program
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asia Free Trade Area
SANDEE	South Asian Network for Development and Environmental Economics
SAPTA	SAARC Preferential Trading Arrangement
SFC	SAARC Forestry Centre
STC	State Timber Corporation
TOF	trees outside forests
TP	transit pass
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNECE	United Nations Economic Commission for Europe
US	United States
USDA	United States Department of Agriculture
VPA	Voluntary Partnership Agreement
WWF	World Wide Fund for Nature (Conservation)

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Annex 1: Overview of Forest Law Enforcement, Governance and Trade and the international timber trade

The European Union (EU) introduced the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan in 2003. The objective of FLEGT is to prevent illegal timber from entering the EU market, and by doing this, to help to eliminate the demand for illegal timber from the international market. FLEGT made it possible for the exporting countries to sign bilateral Voluntary Partnership Agreements (VPA)¹ with the EU by establishing control and licensing procedures. The EU Timber Regulation (EUTR) was introduced in 2010 and became effective in March 2013. It further strengthens the control and licensing procedure by requiring importers in the EU to produce adequate documentation to prove the legality of the imported products. VPAs and the EUTR reinforce each other and strengthen FLEGT.

The VPA includes a legality assurance system (LAS) designed to identify, monitor and license legally sourced timber to ensure that only legal timber is exported. VPAs cover only four products: industrial roundwood, sawn wood, veneer and plywood. The partner countries are free to set up their own systems. Each country entering into a VPA designs and develops, with assistance from the EU, its own LAS based on its existing control mechanisms and legislative framework. The system includes verifying forest operations, controlling timber transport, verifying supply chain controls, and procedures for issuing a FLEGT licence to timber by a national authority and independent monitoring organisation. FLEGT-licensed timber is allowed into the EU market. VPAs are voluntary at first, but become legally binding once ratified (EU FLEGT Facility, 2015).

While VPAs are a supply side measure, the EUTR works on the demand side by requiring operators within the EU to produce adequate documentation for proving the legality of imported products. An operator has to fulfill prohibition, a due diligence system and traceability obligation requirements to prove the legality of imported timber. Each EU Member State is responsible for controlling the legality of its imports by designating a competent authority with the responsibility to enforce the EUTR. The EUTR covers the products already included under the VPA as well as a range of other processed timber products such as wood panels, wood pulp, paper and paperboard and wooden furniture. Naturally, timber and timber products covered by FLEGT licences are considered to have met the EUTR requirements. The same is true for the products covered by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) permits. Third party certification, such as by the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification, could be another way of fulfilling the EUTR requirements (Overdevest and Zeitlin, 2014).

A number of other countries have taken initiatives similar to the EUTR. The Lacey Act (amendment of May 2008) in the United States (US) makes it illegal for anyone to import, export, transport, sell, receive or purchase timber and timber products in violation of the US and international laws (Jonsson et al., 2015). Similarly in Australia, the Illegal Logging Prohibition Bill of 2012 restricts the import of illegally logged timber into Australia. It only places the requirements on the Australia-based importers. According to the Bill, to be considered legal, timber has to be harvested in accordance with the legislation either in the country of harvest or in Australia (Australian Government, 2015). In Japan, the Green Purchasing Law of 2006 was introduced to ensure the legality of timber products imported into the country. According to this Law, Japanese importers are responsible for ensuring the legality of the timber they are importing (Jansoon et al., 2015). In addition, New Zealand introduced a policy in 2006 to ensure that the Government purchases only legal timber products (EFI, 2010).

¹ As of 2015, six countries (Cameroon, Central African Republic, Ghana, Indonesia, Liberia and the Republic of the Congo) have signed VPAs. Nine countries (Ivory Coast, Democratic Republic of the Congo, Gabon, Guyana, Honduras, Lao People's Democratic Republic, Malaysia, Thailand and Vietnam) are negotiating and two countries (Cambodia and Myanmar/Burma) are preparing for the VPA negotiations. Nine countries (Bolivia, Colombia, Ecuador, Guatemala, Papua New Guinea, Peru, Philippines, Sierra Leone and Solomon Islands) are at the pre-negotiation stage (EU FLEGT Facility, 2015).

Annex 2: Overview of the South Asian Association for Regional Cooperation and the study countries

The South Asian Association for Regional Cooperation (SAARC) was established in 1985. Its headquarters is located in Kathmandu, Nepal. The key objective of the organisation is to accelerate the process of economic and social-cultural development in its member states. Consequently, it has been actively promoting trade as an area of economic co-operation by signing the South Asian Free Trade Area (SAFTA) Agreement. Forestry and timber trade are not the core areas of cooperation in SAARC, however, they are cross-cutting issues related to trade and the economy, rural development, the environment and energy (SAARC, 2015a). The challenges related to the forest sector, for example, are not adequately addressed in the regional cooperation agenda of SAARC.

The whole SAARC region, with a total nominal gross domestic product (GDP) of about USD 2.6 trillion, was the eighth largest economy in the world in 2014. India accounts for 80% of the SAARC region's economy. The region holds just 3% of the world's land mass but hosts 21% of the world's total population (1.7 billion people). India covers 70% of the SAARC region and population of the eight nations. The five SAARC countries covered in this study together constitute 80% of the region's population and land area as well as 90% of the region's economy. The countries together account for more than 90% of the foreign trade of the entire SAARC region (SAARC, 2015a). Overviews of the socio-economic and political situation, and of the forest resources in the study countries, are presented in Annexes 7 and 8.

Annex 3: Key beneficiaries of the study in the South Asian Association for Regional Cooperation region and Myanmar/Burma

Name	Location/country
Regional organisations	
South Asian Association for Regional Cooperation (SAARC) Forestry Centre	Thimphu, Bhutan
International Centre for Integrated Mountain Development	Kathmandu, Nepal
South Asian Network for Development and Environmental Economics	Kathmandu, Nepal
Ministries responsible for forests and related affairs	
Ministry of Environment and Forest	Bangladesh
Ministry of Agriculture and Forests	Bhutan
Ministry of Environment, Forests and Climate Change	India
Ministry of Environmental Conservation and Forestry	Myanmar
Ministry of Forest and Soil Conservation	Nepal
Ministry of Mahaweli Development and Environment	Sri Lanka
Forest departments	
Bangladesh Forest Department	Bangladesh
Department of Forest and Park Services	Bhutan
State Forest Departments	Various states in India
Myanmar Forest Department	Myanmar
Department of Forests	Nepal
Sri Lanka Forest Department	Sri Lanka
Education and research institutes	
Bangladesh Forest Research Institute	Bangladesh
Forest Survey of India	India
Indian Council of Forest Research and Education	India
Indian Forest Research Institute	India
Myanmar Forest Research Institute	Myanmar
Institute of Forestry of Nepal	Nepal

Name	Location/country
National/provincial forest product agencies	
Bangladesh Forest Industries Development Corporation	Bangladesh
Bhutan Natural Resources Development Corporation Limited	Bhutan
State Forest Development Corporations	Assam, West Bengal and other important timber producing and trading states in India
Myanmar Timber Enterprise	Myanmar
Timber Corporation of Nepal	Nepal
Sri Lanka Timber Corporation	Sri Lanka
Sri Lanka Forestry Institute	Sri Lanka
Timber trade associations	
Bangladesh Timber Merchants Association	Bangladesh
Bhutan Exporters Association	Bhutan
Federation of Plywood and Panel and Allied Manufacturers Products	India
Indian Timber Merchants Association	India
Indian Paper Manufacturers Association	India
Myanmar Timber Merchants Association	Myanmar
Pulp and Paper Association of Myanmar	Myanmar
Timber Merchants Association of Sri Lanka	Sri Lanka

Annex 4: Methodology of the study

Background - Definition of legal or recorded timber

The study defines legal timber as the timber harvested and traded in accordance with all applicable local, national and international laws and requirements. This is in line with the European Union Timber Regulation (EUTR) definition.² The production and trade of legal timber is recorded. However, all recorded timber is not necessarily legal timber.³ For example, confiscated illegal timber is recorded as part of the national production. This study focuses on recorded timber. The procedure for recognising timber legality in each study country is reviewed in detail in Section 2.2 of the main report.

Timber products studied

All major timber products traded in the South Asian Association for Regional Cooperation (SAARC) region countries and Myanmar/Burma are included in this study. The products are: (i) fuelwood (for both domestic and industrial use); (ii) wood charcoal; (iii) industrial roundwood; (iv) sawn timber; (v) veneer; (vi) fibreboard; (vii) plywood; (viii) wooden handicrafts; (ix) wood pulp; (x) paper and paperboard;⁴ and (xi) wooden furniture (see Table A4.1 for Harmonisation System (HS) code-wise definitions). All these products, excluding wood charcoal and wooden handicrafts, are basically the products included in the EUTR.

Table A4.1: Timber products included in the study

Product	Harmonisation system code	Definition
Fuelwood	4401	Fuelwood in logs, in billets, in twigs, in faggots or in similar forms; wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated into logs, briquettes, pellets or similar forms
Wood charcoal	4402	Wood charcoal (including shell or nut charcoal) whether or not agglomerated
Industrial roundwood	4403	Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared
Sawn timber	4407	Wood sawn or chipped lengthwise, sliced or peeled, whether or not planed, sanded or end-jointed, larger than 6 mm thick
Veneer	4408	Sheets for veneering (including those obtained by slicing laminated wood), for plywood or for other similar laminated wood and other wood, sawn lengthwise, sliced or peeled, whether or not planed, sanded, spliced or end-jointed, not larger than 6 mm thick
Fibreboard	4411	Fibreboard of wood or other ligneous materials, whether or not bonded with resins or other organic substances
Plywood	4412	Plywood, veneered panels and similar laminated wood

2 According to the EUTR (EU Regulation No 995/2010), the definition of timber legality, in the absence of an internationally agreed one, should be based on the legislation of the country of harvest of timber including regulations and implementations in that country of relevant international conventions of which that country is a party.

3 Unrecorded timber can also come from sustainable sources. For example, homestead tree resources are more or less sustainably managed in the SAARC countries. However, much of the timber coming from this source is not actually recorded.

4 For producing paper and paperboard, virgin wood fibre is often mixed with agro and recycled fibre. This suggests that it is hard, if not impossible, to quantify exactly how much paper and paperboard is produced solely from wood fibre. All types of paper and paperboard are included in this study.

Product	Harmonisation system code	Definition
Wooden handicrafts	4414	Wooden frames for paintings, photographs, mirrors or similar objects
	4415	Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood
	4416	Casks, barrels, vats, tubs and other coopers' products and parts thereof, of wood, including staves.
	4417	Tools, tool bodies, tool handles, broom or brush bodies and handles, of wood; boot or shoe lasts and trees, of wood
	4418	Builders' joinery and carpentry of wood, including cellular wood panels, assembled flooring panels, shingles and shakes.
	4419	Tableware and kitchenware of wood
	4420	Wood marquetry and inlaid wood; caskets and cases for jewellery or cutlery, and similar articles, of wood; statuettes and other ornaments, of wood; wooden articles of furniture not falling under Chapter 94
	442110	Clothes hangers of wood
Wood pulp	4701	Mechanical wood pulp
	4702	Chemical wood pulp, dissolving grades
	4703	Chemical wood pulp, soda or sulphate, other than dissolving grades
	4704	Chemical wood pulp, sulphite, other than dissolving grades
	4705	Wood pulp obtained by a combination of mechanical and chemical pulping processes
Paper and paperboard	48	Paper and paperboard; articles of paper pulp, of paper or of paperboard
Wooden furniture	940330	Wooden office furniture
	940340	Wooden kitchen furniture
	940350	Wooden bedroom furniture
	940360	Other wooden furniture

Source: UN Comtrade (definitions)

Data and information

Data sources

International data sources: The study reviewed the following major international forest product databases: United Nations (UN) Comtrade, FAOSTAT, the International Tropical Timber Organization (ITTO) Annual Review Statistics Database, Eurostat, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Trade Database, Forest Stewardship Council (FSC) Database and the Association of Southeast Asian Nations ASEANstats. All these sources, except the FSC Database, include relevant data on timber products trade. However, none of these sources offer complete datasets on both production and trade of timber products for all the study countries. Thus the production and trade data is collected from different sources. UN Comtrade appears to be the most useful source for trade data (both total and country to country). In fact, it is the only source that covers all timber products and all countries relevant to this study. FAOSTAT provides data on production, total exports and imports of all products, except wooden handicrafts and furniture, included in this study for all the study countries. Although only UN Comtrade provides data as per the HS Codes, in FAOSTAT and UN Comtrade the definitions of individual timber products relevant to this study can be assumed to be consistent.⁵ This enables a seamless combination of trade data from them. The ITTO Annual Review Statistics Database collects production data, total exports and imports of four products (industrial roundwood, sawn timber, plywood and veneer) for just three study countries (India, Myanmar and Nepal). The CITES Trade Database provides data on exports and imports, quantities of timber and timber products coming from CITES listed species, and is the only source of its kind. Likewise, the FSC Database is the only comprehensive database for country-level data on FSC certified forests and forest plantations. A detailed review of all the databases mentioned above is presented in Table A4.2.

⁵ FAOSTAT relies on UN COMTRADE for trade data. Since 1999, the Food and Agriculture Organization of the United Nations (FAO) has been collecting forestry data and information through the Joint Forest Sector Questionnaire in partnership with the ITTO, the UN Economic Commission for Europe (UNECE) and the Statistical Office of the European Communities (DG-EUROSTAT) (FAO, 2011).

Table A4.2: International databases for data on timber production and trade

Database	Data availability	Year of availability	Study countries covered	Update status	Online availability
FAOSTAT	Data on quantity of production, and quantity and value of both total exports and totals import of : FuelwoodWood charcoal, Industrial roundwood, Sawn timber, Veneer, Fibreboard, Plywood, Wood pulp, Paper and paperboard	1961 – 2013	All six study countries, but for some countries data is available only until 2011	Regularly updated	Yes
	Data on quantity and value of flow (country to country) of both exports and imports of: Industrial roundwood, Sawn timber, Veneer, Plywood, Particleboard	1997 – 2012			
UN COMTRADE	Data on quantity and value of flow (total as well as bilateral) of both exports and imports of: Fuelwood, Wood charcoal, Industrial roundwood, Sawn timber, Veneer, Fibreboard, Plywood, Wood pulp, Paper and paperboard, Wooden furniture	1962 – 2013	All six study countries, but for some countries data is available only until 2011	Regularly updated	Yes
ITTO Annual Review Statistics Database	Data on quantity of production, and quantity and value of both total exports and total imports of: Industrial roundwood, Sawn timber, Veneer, Plywood	1994 – 2013	India, Myanmar and Nepal	Regularly updated	Yes
EUROSTAT	Data on quantity and value of both total exports to and total imports from the EU of: Industrial roundwood, Sawn timber	2005 – 2012	India	Regularly updated	Yes
ASEANstats	Data on quantity and value of total exports and total imports of all timber products combined	2000 – 2011	Myanmar	Regularly updated	Yes
CITES Trade Database	Data on quantity of both total exports and total imports on timber and timber products coming from CITES listed species	1975 – 2012	All six study countries	Regularly updated	Yes
FSC Database	Only area of FSC certified plantations, no data on timber production	--	All six study countries	Regularly updated	Yes

The following sources include useful information on forest resources and timber production:

(i) the Food and Agriculture Organization of the United Nations (FAO) Forestry Country Profiles;⁶ (ii) FAO Forest Resource Assessment (FRA) 2010; (iii) FAO FRA 2010 Country Reports; and (iv) FAO Forestry Outlook Studies for relevant countries. National Export Strategy of Myanmar (2015–2019) (Myanmar Ministry of Commerce, 2015) also gives some information mainly on the growth in timber and timber products trade in Myanmar.

Furthermore, the United States Department of Agriculture (USDA) (2013) provides real historical and projected gross domestic product (GPD) and GDP growth rates for 2000–2030 for all the study countries. The United Nations Department of Economic and Social Affairs (UN DESA) (2013) provides historical and projected population data for the period from 1950 to 2100 for all the study countries. This data is used for time-series econometric modeling, analysis and future projection of timber consumption.

National data sources: No study country has national databases that systematically record data on timber production from all sources. During the country missions, the consultants collected reports published or submitted to the national forest agencies (see Table A4.3) that have data on timber (industrial roundwood) production for sporadic years except for Bhutan. The reports on Bhutan give total timber production data for 2000–2013. For data on the trade of timber and timber products, Bhutan, India, Nepal and Sri Lanka have national online databases or sources (see Table A4.4). These data sources provide data by HS codes and the products definition in them is consistent with that of UN Comtrade, FAOSTAT and ITTO Annual Review Statistics. Bangladesh and Myanmar do not have any publically available databases or sources for timber trade, but the consultants received some unpublished data on the timber trade while visiting these countries. The national sources for trade data have data for only a few years during the period from 2000–2013. The national sources in Myanmar and India provide trade data for the financial year 1 April to 31 March and other countries provide by calendar year.

6 Available at <http://www.fao.org/forestry/country/en/> (accessed on 28 May 2015).

Table A4.3: National sources of timber production data

Country	Report name	Publishing authority/ source	Comment/online availability	Periodicity status
Bangladesh	Data on timber production in social forests	Bangladesh Forest Department	Bangladesh Forest Department's internal publication; not available online	Not a periodic publication
Bhutan	Forestry: facts and figures 2013	Department of Forests and Park Services	Not available online	Not a periodic publication
	Natural Resources Development Limited (NRDCL) Annual Reports 2008-2012	NRDCL	Available online	Published annually during 2008–2012. No further publications
India	Forest Sector Reports 2010 and 2012	Indian Council of Forestry Research and Education	2012 report not available online	Not a periodic publication
	India State of Forests Reports 2007, 2009, 2011, 2013	Forest Survey of India	Available online	Biannual
Myanmar	Forestry in Myanmar 2011	Myanmar Forest Department	Not available online	Not a periodic publication
	Hardwood Production from 2006–2007 to 2014–2015	Myanmar Forest Department	Not available online	Not a periodic publication
	Teak Production from 2006–2007 to 2014 – 2015	Myanmar Forest Department	Not available online	Not a periodic publication
Nepal	A study on the demand and supply of forest products in different regions of Nepal	A report submitted to Nepal REDD – Forestry Climate Change Cell	Available online	Not a periodic publication
Sri Lanka	Integration of Forestry Sector Contributions to national accounts of Sri Lanka	Sri Lanka Forest Department	Not available online	Not a periodic publication
	Timber utilisation in Sri Lanka 2014 and Sustainable utilisation of timber resources in Sri Lanka 2012	Both reports authored by Dr Nimal Ruwanpathirana, Deputy General Manager (Research, Development and Training) of the State Timber Corporation of Sri Lanka	Available online	Not a periodic publication

Table A4.4: National sources for trade data in the study countries

Country	Database/ data source	Responsible authority	Data availability	Year of availability	Online availability
Bangladesh	Import data	Bangladesh Forest Department	Data of import through Chittagong seaport by country and species of: Industrial roundwood Sawn timber	2012–2014	No (Unpublished data)
Bhutan	Bhutan Trade Statistics	Department of Revenue and Customs, Royal Government of Bhutan	Data on quantity and value of flow (country to country) of both exports and imports of all timber products included in this study	2005, 2006, 2009–2013	Yes
India	Export Import Data Bank	Department of Commerce, Government of India	Data on quantity and value of flow (country to country) of both export and import of all timber products included in this study	Financial years [±] 1999–2000 to 2013–2014	Yes
Nepal	Export Import Data Bank	Trade and Export Promotion Centre, Government of Nepal	Data on quantity and value of flow (country to country) of both export and import of all timber products included in this study	2009–2013	Yes
Sri Lanka	Export Import Statistical Portal	Sri Lanka Customs, Government of Sri Lanka	Data on quantity and value of flow (country to country) of both export and import of all timber products included in this study	2011–2012	Yes
Myanmar	Export data	Myanmar Forest Department	Data on quantity of value of both total export of: Industrial roundwood (logs) Sawn timber	Financial years [±] 1987–1988 to 2014–2015	No (Unpublished data)

[±] Financial year spans from 1 April to 31 March

Stakeholder consultations

The study consultants have conducted field missions in all the study countries and consulted with stakeholders in each country. Stakeholders have different interests and varying levels of involvement in forests and the forest sector. The most relevant stakeholders are: the national forest agencies, donor agencies, development partners, non-governmental organisations (NGO), departments of statistics, forest industry representatives, civil society groups, forest product trade bodies, timber industries, trade and industry associations/federations and customs departments (see Annex 5).

Stakeholder consultations helped the consultants to validate the data and information collected from online sources. Stakeholder consultations also helped them to understand the different aspects of forest law enforcement and governance, and on forest products trade in the study countries. Such consultations were the only way to collect data and information on sources, trade flows and markets of illegally harvested timber in the study countries.

6 Available at <http://www.fao.org/forestry/country/en/> (accessed on 28 May 2015).⁶

Seaport and border point visits

The consultants visited a number of key trading seaports for timber and timber products and border points in the study countries. They also visited important trade points for timber and timber products in these countries (see Table A4.5). The geographic location (latitude and longitude) of all key border points and seaports in the study countries are presented in Table A4.6.

The visits helped them to gather information and data, and to understand better the exports and imports of timber and timber products, as well as illegal logging and timber smuggling.

Table A4.5: Seaports, border and trade points visited

Country	Name/location	Type	Comment
Bangladesh	Chittagong	Seaport	Main seaport, handles more than 80% of timber and timber products trade in the country.
	Chittagong	Trade point	Main hub for international timber and timber products trade in the country.
Bhutan	Phuentsholing	Border point	Bordering India (West Bengal state). Handles a significant portion of the timber and timber products trade in Bhutan.
	Thimpu	Trade point	Main timber trading point.
India	Kolkata, West Bengal	Seaport	Handles a significant portion of India's timber and timber products trade. Also handles all timber and timber products exports and imports of landlocked Nepal and Bhutan.
	Dawki, Meghalaya	Border point	Bordering Bangladesh.
	Guwahati, Assam	Trade point	A transit point on the timber supply route between the northeastern region and the rest of India.
	Saharanpur, Uttar Pradesh	Trade point	An important market in India for selling timber produced on farms and agroforestry plantations to industry.
	Yamuna Nagar, Haryana	Trade point	An important market in India for selling timber produced on farms and agroforestry plantations to industry.
Myanmar	Yangon	Seaport	Main timber trading seaport.
	Yangon	Trade point	Main hub for international timber and timber products trade in the country.
Nepal	Birgunj	Border point	Bordering India (Bihar state). Handles the majority of Nepal's timber and timber products trade.
	Birgunj	Trade point	Key timber trade point in the country.
Sri Lanka	Colombo	Seaport	Main timber trading seaport.
	Colombo	Trade point	Main hub for international timber and timber products trade in the country.
	Jaffna	Trade point	Key timber trade point in the country.

In the case of the Colombo and Yangon seaports, the consultants visited the port area and saw the activities only from the outside. They were not given permission to go inside. The consultants were not allowed to take photos inside the Chittagong seaport. The consultants were allowed to take copies or photos of just a few of the import-export documents during the country missions. In most cases, they were not even shown the documents.

Table A4.6: Key ports and border points for timber trade identified during the study

Country/bordering countries	Name	Geographic location	
		Latitude (north)	Longitude (east)
Border points			
Bangladesh - India	Benapole	23.041944	88.895556
	Banglabanda	26.629500	88.412600
	Dawki	25.184025	92.024870
Bhutan - India	Dirang	27.358442	92.240888
	Phuentsholing	26.860293	89.393793
India – Myanmar	Moreh	24.251281	94.301304
	Champai	23.456571	93.328193
India - Nepal	Birgunj	27.000000	84.866667
	Nepalgunj	28.050000	81.616667
	Biratnagar	26.454200	87.279700
Seaports			
Bangladesh	Chittagong	22.254803	91.790840
	Mongla	22.494220	89.601617
India	Kolkata	22.538421	88.305470
	Visakhapatnam (Vaizag)	17.715079	83.315015
	Chennai	13.062826	80.284494
	Kochi	9.931233	76.267304
	Mangalore	12.842860	74.842225
	Mumbai	18.961260	72.818350
	Kandla	23.030000	70.220000
Myanmar	Yangon	16.780833	96.149722
Sri Lanka	Colombo	6.927079	79.861243

Source: <http://www.latlong.net/> (accessed 22 June 2015)

Expert observation

During the country field missions, the consultants gathered information and gained an additional understanding through expert observations on the following topics:

- timber movement nomenclature on border points
- narking/hammer marks on logs during transportation
- methods used for transit and logistics at port areas
- status of social and community forestry
- planted tree species
- legality and documentation procedures followed by sawmills
- procurement modalities adopted by wood-based industries

Compiling data and bridging the data gap

The data on timber production and exports and imports of timber and timber products for all the study countries is collected for the period from 2000–2013. In almost all the databases and data sources, the latest year of available data for the study countries is 2013 (see Tables A4.2 – A4.4). The national sources for timber production, as mentioned in the section ‘Data Source’ in this annex, in all countries except Bhutan do not provide data for the entire period from 2000–2013. Timber production data for Bhutan is collected from the national sources, and from FAOSTAT for other countries, which makes the compiled dataset consistent. The ITTO Annual Review Statistics Database, and national sources are used to supplement the production data from FAOSTAT whenever necessary.

The national sources for trade data, as mentioned in the section ‘Data Source’ in this annex, provide data for just a few years during the period from 2000–2013. Thus export and import data are primarily compiled from UN Comtrade. For Myanmar and Nepal the availability of data on their own reporting to UN Comtrade for the period from 2000–2013 is sporadic. Bhutan’s own reported data until 2005 is mostly unavailable. These data gaps are bridged by using reported data from partner countries.⁷ None of the study countries report to UN Comtrade the total exports to or imports from the 28 member countries of the European Union (EU) combined, while the EU does report such data, which means the trade between the study countries and the EU comes from the EU’s reporting. The trade data from FAOSTAT, ITTO Annual Review Statistics, EUROSTAT and national sources, which individually do not provide the complete dataset for 2000–2013, are used to complement the UN Comtrade data whenever required.

Timber production data are presented in terms of volume in roundwood equivalent (RWE) m³. All export and import data is presented in terms of both value in United States Dollars (USD) and volume in RWE m³. UN Comtrade and other international databases used in this study measure value in USD. In national data sources, values are presented both in USD and in local currencies. In all databases, however, the volume data is presented in kilograms, tonnes or cubic feet (ft³) and then converted into RWE m³ using standard conversion factors (Table A4.7).⁸ The volume data is usually consistent with the value data. There are a few cases of inconsistencies, which are usually due to fluctuations in product prices.

During the desk review phase, the consultants came to learn that the data and information on illegal logging and illegal cross-border timber trade in the study countries are not recorded anywhere. There are sporadic media reports, which do not provide any estimate of value or volume of illegal logging and associated trade in or with the study countries in the SAARC region. The consultants gathered anecdotal evidence on illegal logging and cross-border timber smuggling in the study countries through stakeholder consultations. Visits to ports and to border and trade points and consultation with stakeholders there have been particularly useful. Information on regulatory and policy framework related to forestry and to timber production and trade and trade procedures in almost all study the countries is not available online. Such information can only be obtained by visiting national forest, customs and commerce agencies as well as through stakeholder consultations.

7 In UN Comtrade, the export data reported by a country often does not match with the corresponding import data reported by its partners. Such mismatching usually occurs because of differences in valuation, that is import cost, insurance and freight (CIF), exports freight on board, inclusions/exclusions of particular commodities and timing (UN Comtrade). Under-reporting may also be a reason for this as, according to UN Comtrade, a country may not always report detailed trade data to UN Comtrade due to confidentiality. For this study, the one reporting the larger of the value and volume is used. This helps to compensate for any possible under-reporting of trade values and volumes to UN Comtrade by a country.

8 To the best of the consultants’ knowledge, no conversion factor is available for any study country or the SAARC region as a whole. This clearly is a constraint of this study. ITTO (2012) specifies conversion factors for industrial roundwood, sawn timber, veneer and plywood that are applicable to ITTO member countries, which include three study countries, India, Nepal and Myanmar. It can be assumed that these conversion factors also apply to Bangladesh, Bhutan and Sri Lanka, because forest types, species composition, commercial timber species and timber industries in these countries are largely similar to those in the former three countries. Thus the ITTO (2012) conversion factors for industrial roundwood, sawn timber, veneer and plywood are used in this study. The conversion factors for wooden handicrafts and furniture are estimated based on stakeholder consultations. For other products, UK Forestry Commission (2014) conversion factors are used as they are the latest available for the whole range of products. UNECE (2010) has conversion factors for the UNECE region for the same products as the United Kingdom Forestry Commission (2014). However, since the conversion factors from the former source is from 2009, the latter source is preferred.

As mentioned in the section 'Data Source' in this annex, national sources in Myanmar and India provide trade data for the financial year 1 April to 31 March. The calendar year data is estimated from the financial year using the following method:

Trade figure for calendar year 2004 = $\frac{1}{4}$ (trade figure of financial year 2003-2004) + $\frac{3}{4}$ (trade figure of financial year 2004-2005)

Table A4.7: Conversion factors used in this study

Product	Conversion factor	
	Tonnes to m ³	m ³ to RWE m ³ (underbark)
Fuelwood	1.38	1.00
Wood charcoal	1.38	6.00
Industrial roundwood (hardwood)	1.37	1.00
Industrial roundwood (softwood)	1.43	1.00
Sawn timber (hardwood)	1.43	2.50
Sawn timber (softwood)	1.82	2.00
Veneer	1.33	3.45
Fibreboard	1.67	2.50
Plywood	1.54	2.50
Wooden handicrafts	1.54	1.70
Mechanical wood pulp	2.50	1.00
Chemical wood pulp, dissolving grades	2.50	1.00
Chemical wood pulp, soda or sulphate, other than dissolving grades	4.50	1.00
Chemical wood pulp, sulphite, other than dissolving grades	5.00	1.00
Wood pulp obtained by a combination of mechanical and chemical pulping processes	2.75	1.00
Paper and paperboard	2.50	1.00
Wooden furniture	1.54	3.00

Sources: ITTO, 2012; UK Forestry Commission, 2014; and stakeholder consultation

1 tonne = 1000 kilograms; 1 m³ = 35.42 cubic feet (ft³)

Reliability of compiled data

As mentioned in the preceding sections in this annex, timber production data in all the study countries except Bhutan is collected from FAOSTAT since national sources in these countries do not provide such data for the time period from 2000–2013. The database applies its own intelligence and methodology to the data sourced from the countries. The compiled timber production data can be assumed to be consistent. The data compiled may not be reliable in absolute terms, but it can be considered reliable in the context of the study countries as FAOSTAT is the most comprehensive database for timber production available for the study countries.

UN Comtrade was the primary source for the trade data. It is one of the biggest and the most comprehensive trade databases in the world. It is open to anyone. It provides data for all the study countries on all products and gives consistency to the compiled dataset. The UN Comtrade data is supplied by the national reporting authorities⁹ in each country. In all the study countries, reporting authorities are either the national agencies looking after trade or the reporting authorities source data directly from trade agencies. Even though this does not prove that the compiled trade data is absolutely reliable it is the best and most reliable data available in the context of the study countries. The reliability of the compiled trade data for each country is analysed in the light of data available in national trade data sources in Table A4.8. Due to confidentiality, some of the detailed trade data is not always reported to UN Comtrade or published in the national trade databases. This limitation may well apply to the trade of timber and timber products.

Table A4.9: Reliability analysis for compiled trade data

Country	National data source	Reliability analysis
Bangladesh	Import data: Data (volume in ft ³) on imports coming through the Chittagong Seaport between 2012 and 2014	As available national data is incomplete, UN Comtrade is the only source for Bangladesh. The country's reporting authority to UN Comtrade, Bangladesh Bureau of Statistics (BBS), receives data from Bangladesh Customs. The compiled data is reliable to the extent possible in the context of Bangladesh.
Bhutan	Bhutan Trade Statistics	The Bhutan Trade Statistics are compiled by the Department of Revenue and Customs, which is Bhutan's reporting authority to UN Comtrade. Naturally, Bhutan Trade Statistics and UN Comtrade data on the trade of timber and timber products is the same. The compiled data are reliable to the extent possible in the context of Bhutan.
India	Export Import Data Bank	The data in the Export Import Data Bank comes from the Directorate General of Commercial Intelligence and Statistics (DGCI&S), which is India's reporting authority to UN COMTRADE. Naturally, the Export Import Data Bank and UN COMTRADE data match very well: the difference between data from these two sources is minimal (+/- 5% on average). Such a difference is expected as Export Import Data Bank data had to be converted to be based on the calendar year instead of on the original financial year. This suggests that the compiled trade data using UN Comtrade as the primary source may not be absolutely reliable, but is reliable to the extent possible under the circumstances in India.
Myanmar	Export data	As available national data is incomplete and due to the sporadic availability of the trade data of Myanmar's own reporting to UN Comtrade, partner country reported data are mostly used. The data of Myanmar's partner countries, most notably India and Bangladesh, are reliable only to the extent possible in the context of those countries.
Nepal	Export Import Data Bank	The Export Import Data Bank provided trade data for the period from 2009–2013, which seem to match well with UN Comtrade data. The compiled data is reliable to the extent possible in the context of Nepal, but not in absolute terms.
Sri Lanka	Export Import Statistical Portal	The available trade data (2011 and 2012 only) in Sri Lanka's Export Import Statistical Portal seem to match well with UN Comtrade data. The compiled data for Sri Lanka, like the other study countries, is reliable only to the extent possible in the context of the country.

9 Bangladesh – Bureau of Statistics (BBS), Bhutan – Department of Revenue and Customs, India – Directorate General of Commercial Intelligence and Statistics (DGCI&S), Myanmar – Myanmar Customs Organization, Nepal – Department of Customs, and Sri Lanka – Department of Census and Statistics (Source: UN Comtrade).

Analysis of production, consumption and trade patterns

Timber production (industrial roundwood) between 2000 and 2013 in the study countries in the SAARC region is analysed based on different production sources such as natural forests, forest plantations and social or community forests. The timber consumption in a country is calculated using the following formula:

Consumption=Production+Import-Export

The recorded production, imports and exports of industrial roundwood are used as the basis for the calculation, and the consumption calculated applying this approach can be considered to be the apparent or recorded consumption. Timber from unrecorded sources, such as illegal logging and timber smuggling from neighbouring countries, enters into the supply chain year after year. There is no available year-by-year estimate for the period from 2000–2013 or for any period before or after. In fact, there is no reasonably accurate estimate available for illegal timber for even a single year. Unrecorded timber is left out of consumption calculations. The end-use method, i.e. calculating consumption based on consumption in each wood-based industry, would be a way to capture both recorded and unrecorded timber in the calculation. However, the problem with this approach is that there is no available data in the study countries on roundwood consumption by individual industry. What exacerbates the problem is that waste from one roundwood consuming industry is used in another as raw material. For example, wood-based panel and paper industries use sawmill wastes alongside roundwood. Likewise, the portion of a log that is not suitable for peeling in the veneer and plywood industry is used as pulpwood by the pulp and paper industry. As there is no estimate available on the quantity of waste used alongside logs, the end-use method over estimates consumption. The apparent consumption approach is best in the context of this study. Since it accounts for the recorded trade, it makes the analysis on the future direction of timber trade easier. Multiplying the population estimate with industrial roundwood consumption per capita would be another approach to calculate the total industrial roundwood consumption in a country. Time-series data on consumption per capita would be needed for this approach as the parameter varies year by year in a country. However, there is no such time-series data available, to the best of the consultants' knowledge, for any of the study countries.

A time-series econometric analysis is conducted to examine timber consumption using statistical software called Statistician. The analysis yields regression equations depicting the relationship between timber consumption and its drivers, i.e. population and GDP growth, and consumption in the previous year (i.e. lagged consumption) and thus helps explain consumption patterns.¹⁰ Internal timber flow and the timber industry are also analysed whenever relevant while examining consumption. The timber and timber trade flow for the period from 2000–2013 is analysed in view of timber consumption and production and other explanatory factors. The analysis covers trade among the five project countries in the SAARC region, between the SAARC region (i.e. the five study countries combined) and Myanmar as well as with important markets outside the region such as China, the EU and the US. The trend in total exports and imports in terms of value varies minutely from those in terms of volume in many cases. This is because the products included in this study range from low value (such as fuelwood and wood charcoal) to high value (such as wooden furniture and handicrafts) in terms of unit volume of timber contained or used. Naturally, the price in terms of unit volume of timber used varies among the products. This price also fluctuates with time due to different market drivers and the fluctuation is not often uniform for all products. Nevertheless, the trend regarding the key traded products and major trade partners remains, as it should be, the same both in terms of value and volume. This means the variation in trends in total exports and imports by value and volume does not change the related conclusions.

¹⁰ GDP reflects the overall economic activity in a country. Global industrial roundwood consumption has been following the trend of population and GDP growth in the past decades and are considered as the key drivers of consumption of this product (Indufor, 2012; FAOSTAT). Alongside these two main drivers, consumption in the previous year also helps explain the variation in current consumption (Hurmekoski et al., 2014).

Projections and likely future direction

Production

The study provides a projection of timber production until 2030 in the five study countries. The issues considered for the projection are: area available for harvesting, mean annual increment, timber stock and harvesting co-efficient.¹¹ The study used the estimate of the factors mentioned in FAO Forestry Outlook Studies and from different official national sources.

Consumption

The timber consumption in the five SAARC region study countries is projected until 2030 based on the regression equations developed for each country in the time-series econometric analysis of timber consumption between 2000 and 2013. GDP and population projection done by USDA (2013) and UN DESA (2013) are plugged into the equations for consumption while making projections.

Future direction of trade

The study analysed the likely future direction of timber trade between the study countries and Myanmar as well as key consumer markets outside. The analysis is based on a gap in projected timber production and consumption, economic and population growth, trade policies and regulations in the study countries and regional institutional mechanisms.

Baseline timber trade information

The baseline

Timber and timber products trade baselines are developed for all project countries in the SAARC region, i.e. Bangladesh, Bhutan, India, Nepal and Sri Lanka individually as well as for the SAARC region and Myanmar. Year 2013 is used as the base year in all baselines as it is the most recent year available. This makes it convenient to monitor changes in exports and imports of timber and timber products in the future. The baselines provide both value (USD) and volume (m³) data on:

- total exports and imports of timber and timber products with
 - product-wise breakdown
 - partner-wise breakdown
- trade of timber and timber products with other project countries in the SAARC region with
 - country-wise breakdown
 - product-wise breakdown
- trade of timber and timber products with Myanmar for project countries in the SAARC region with
 - product-wise breakdown
- trade of timber and timber products with key consumer markets and other important partners outside the SAARC region with
 - product-wise breakdown for each consumer market and partner
- The detailed baseline trade data is presented in MS Excel format in Appendix 6 and the trade trends from the period from 2000–2013 are discussed in Chapter 4.

¹¹ Harvesting co-efficient refers to the actual timber yield during harvesting.

Methodology for constructing and periodic updating of the baseline

The trade baseline for the study countries (see Annex 6) is constructed using the UN Comtrade data, which provides trade data for all major timber and timber products for the study countries making trade baseline consistent. Among the six study countries, as mentioned in the section 'Data Source' in this annex, only India, Nepal and Sri Lanka have online trade databases. Data from Nepal and Sri Lanka are given for the calendar year, while the Indian data is for the financial year (1 April – 31 March). Conversion of the Indian data for the calendar year would make it less accurate. The Sri Lankan trade database does not provide data for 2013, the base year. Using the data from these national sources would not provide consistency. Trade data in UN Comtrade on Myanmar's own reporting is unavailable for 2013, as is the case for a number of other years, and so corresponding partner country reported data is used. This is also the case for the baseline trade data between all study countries and the EU as none of the study countries report to UN Comtrade the total exports to or imports from the 28 member countries of the EU combined, while the EU does report such data. The trade volume data, if available in other units is converted into m³, i.e. standardisation, using the conversion factors presented in Table A4.7. The baseline trade data of Bangladesh, Bhutan, India, Nepal and Sri Lanka, which are included in the study, is combined to get the baseline trade data for the SAARC region.

UN Comtrade should be used as the primary data source for periodically updating the trade baseline for the study countries as it provides trade data for all major timber and timber products for the study countries. In case data is not available through a country's own reporting system, corresponding partner country reported data shall be used. For the data on study countries' trade with the the EU, the EU reported data in UN Comtrade will be the only source as it reports the total exports from or imports to the 28 member countries of the EU together. The trade data from FAOSTAT, ITTO Annual Review Statistics, EUROSTAT and national sources (see Tables A4.2 – A4.4)¹² should be used to complement the UN Comtrade data only if needed. The trade volume data should be presented in m³. In case the volume data is available in other units, it should be converted into m³ using the conversion factors specific to the study countries or the SAARC region, if they become available. If such conversion factors are not available, the conversion factors presented in Table A4.7 should be used. Data from all countries should be combined to get the regional baseline.

¹² The trade data of a country for a particular year is not made publically available in national and international trade databases in the end of that year, but is instead usually available towards the end of the following year. The data for 2015 will actually be available towards the end of 2016, for 2016 in 2017 and so on.

Annex 5: Stakeholders consulted for the study

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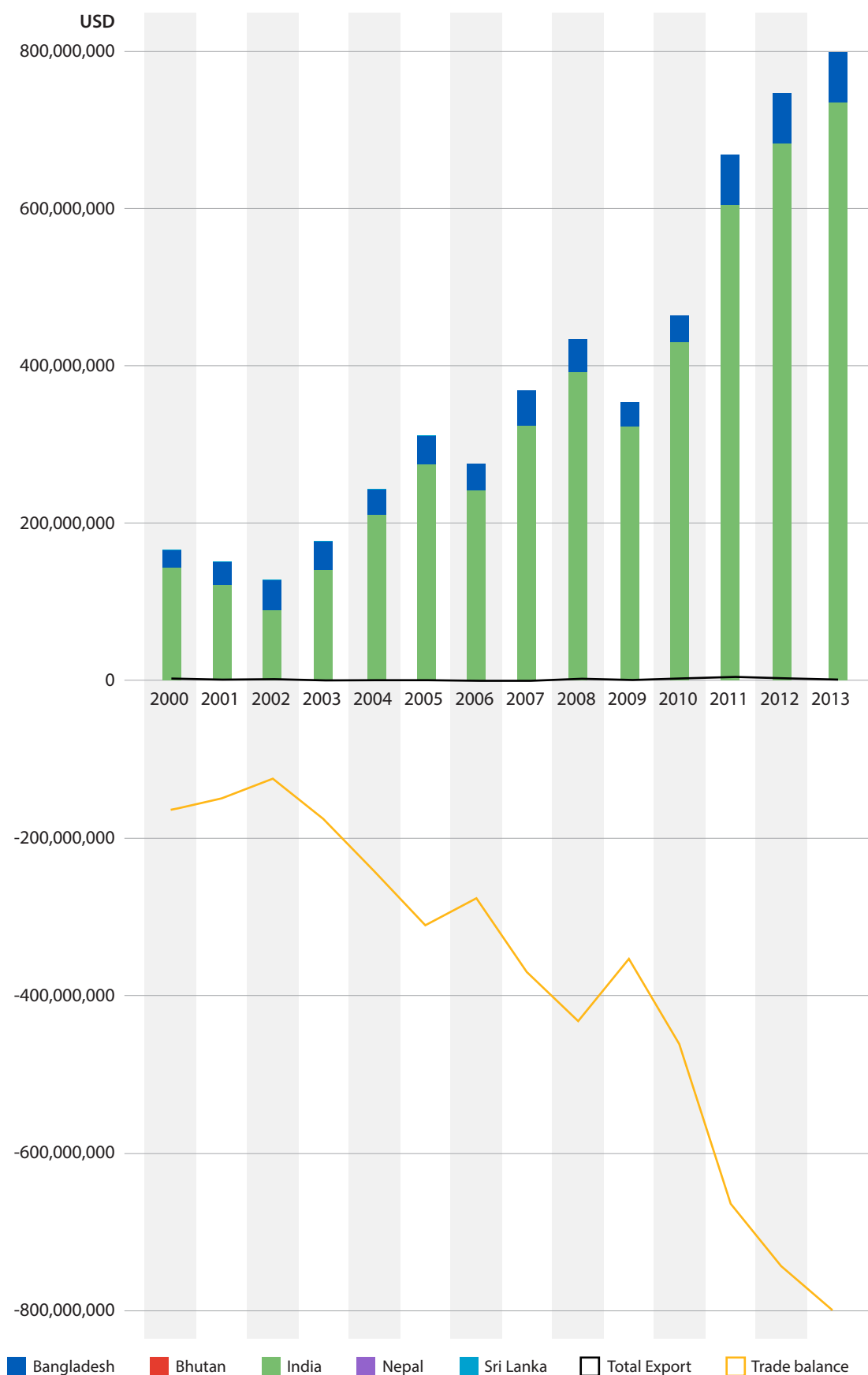
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Annex 6: Baseline timber trade information for the study countries



Annex 7: Overview of the socio-economic conditions in the study countries

Geographic location

The study countries are in the South and Southeast Asia region. All countries, except Sri Lanka, share surface borders with India. India shares an open border with Nepal in its northern and eastern parts, and with Myanmar/Burma, Bangladesh and Bhutan on its north-eastern part. The borders are, if not fully open, certainly porous. Bangladesh borders India on all sides barring a small part where it shares a border with Myanmar to the southeast and by the Bay of Bengal to the south. It is one of the most densely populated countries in the world. Nepal is a land-locked country located in the Himalayas and shares a border with China and India. Nepal has rich geography with the ten tallest mountains in the world including Mount Everest (8 848 meters above sea level), which is the highest point on earth. Sri Lanka is an island country off the southern coast of the Indian sub-continent. Bhutan is a tiny land-locked country located in the eastern Himalayas. It shares a border with India on three sides, i.e. south, east and west, and its northern part shares a border with China. Myanmar is bordered by Bangladesh, India, China, Lao People's Democratic Republic and Thailand. Its border with India spreads over four north-eastern Indian states, which are Arunachal Pradesh, Manipur, Nagaland and Mizoram.

Shared borders mean that India trades with Bangladesh, Bhutan, Myanmar and Nepal using land routes. Bhutan and Nepal, being land locked, use the Kolkata seaport and land transit through India for trade with third-party countries, while Sri Lanka being an island can only use sea routes for trade. Bangladesh, Myanmar and India also use sea routes for trading among themselves. India's trade in timber and timber products with Nepal and Bhutan is over the land route, while its trade with Bangladesh is through both land and sea routes. Myanmar's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation (SAARC) region and any other country in the world, to be legal, should pass through the Yangon seaport. The SAARC region study countries also use the sea route for exports to Myanmar (stakeholder consultation). The major trade and transit routes between the study countries are shown in Figure A7.1.

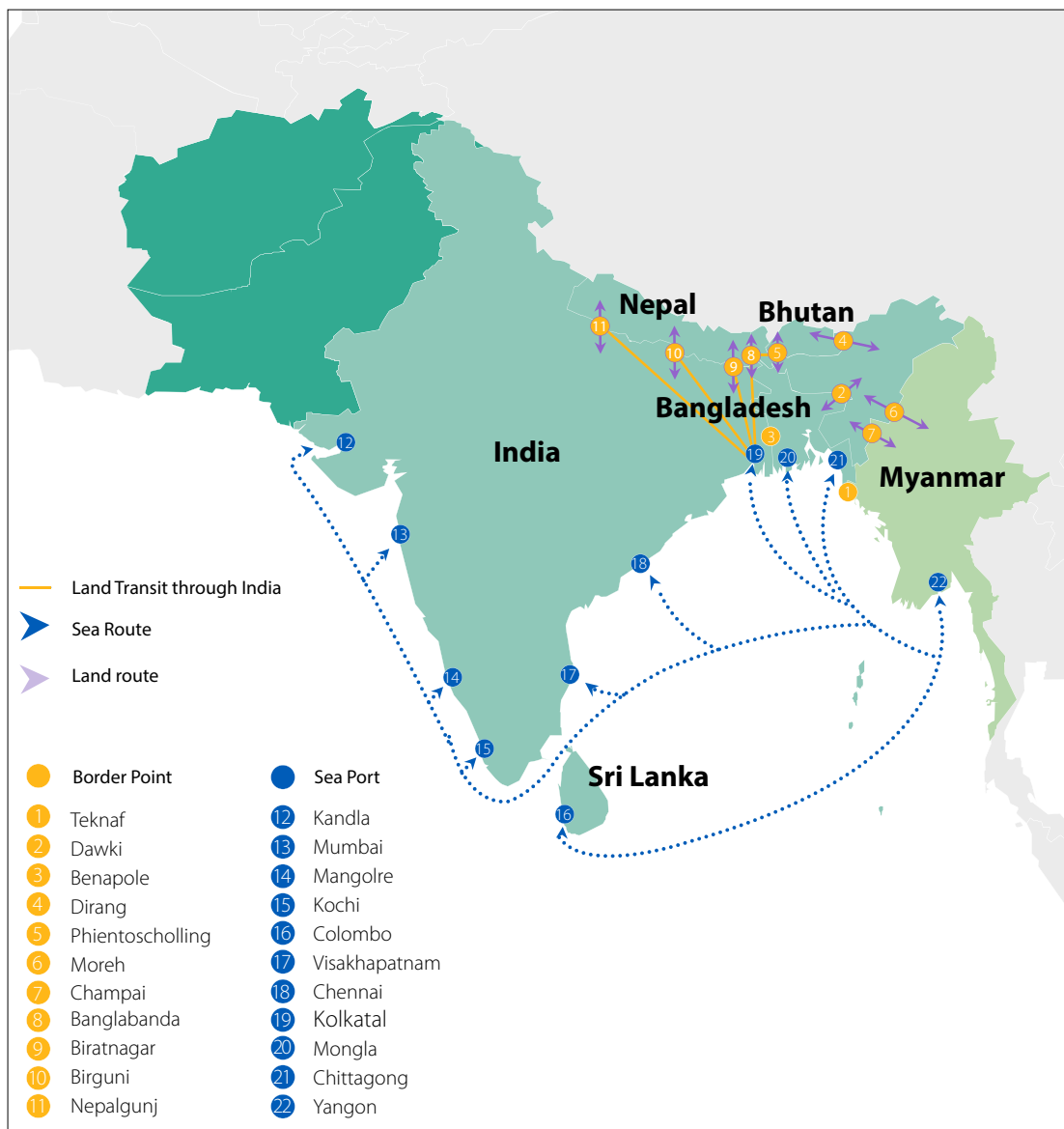


Figure A7.1 Major trade and transit routes between the study countries

The borders are porous and inhabited by people belonging to the same ethnic communities on both sides. The communities share the same culture, religion, language and livelihoods. These similarities enable cross-country movements and border trades (with fewer legal restrictions) among these nations with India being the epicenter of cross-country trade links. Legally, Indian citizens are allowed to cross the border to Nepal and Bhutan without a passport, and vice versa. The locals from both sides of the border between India and Myanmar can walk freely up to 16 km without a visa. However, these visa-free movements do not permit trading of goods beyond permitted limits of consumables (i.e. a maximum value of USD 95) for personal use. They are not allowed to trade in timber and timber products.

Demographic factors

The demographic profiles of these countries are presented in Table A7.1. India is the largest country occupying an area of about 3.3 million km² accommodating a population of 1.2 billion people.

Table A7.1: Area and population in the study countries

Country	Area (km ²)	Population (million) in 2013			Population projection (million)	
		Total (million)	Annual growth rate (%)	Density (person/ km ²)	2030	2050
Bangladesh	144 000	156.8	1.2	1 174	185.06	201.95
Bhutan	38 394	0.73	1.6	19	0.90	0.98
India	3 287 263	1 210	1.2	368	1 476.40	1 620.05
Myanmar	676 578	48	0.9	71	58.70	58.64
Nepal	147 181	26.5	1.2	180	32.85	36.48
Sri Lanka	65 610	20.3	1.0	296	23.27	23.83

Sources: World Development Indicators; World Bank; World Statistics Pocketbook; UN DESA, 2013; Country Profiles; and official web portals of the respective country governments 13

The countries are in the process of mass urbanisation, industrialisation and developing their infrastructure. The development is causing tremendous growth in demand for timber. A shortage in the supply of timber causes imports and illegal harvesting as well as a search for alternative timber production sources. The pressure from the cattle population for fodder (a stock of about 530 million in India alone)¹⁴ and the demand for fuelwood are other biotic pressures on the region. The situation will be more demanding in the future since the overall population growth is likely to be more than 1% per year in the study countries as a whole in the coming decades (UN DESA, 2013).

The demographic features of the northeastern part of India and the bordering nations are complex. These areas are dominated by tribal people who are assigned special status under the constitutions of the concerned country. These tribes have their own traditional and customary rules and governance structure. The land tenure is also different and complex. For example, in the northeastern part of India, the land ownership structure means that there are fourteen types of forests but the central and state government rules prevail on only one type, which is the forest under state government ownership. Other forests are governed by the customary and traditional rules followed by the community through the village headman and the autonomous district councils (ADC) (Farnandes and Barbora, 2008). These demographic features loosen the administrative control adding fuel for unrecorded and illegal harvesting of timber and its internal and external trade.

13 World Statistics Pocketbook: Available at <http://unstats.un.org/unsd/pocketbook/>
The web official portals of respective country governments: Bangladesh (www.bangladesh.gov.bd), Bhutan (www.bhutan.gov.bt/government), India (india.gov.in), Nepal (www.nepal.gov.np/), Sri Lanka (www.gov.lk/web) Myanmar (www.mofa.gov.mm). (accessed on 19 September 2014).

14 Livestock census 2007, Ministry of Agriculture, Government of India.

One common socio-demographic feature in all the study countries is the high community dependence on forests for livelihood. In these countries a considerable portion of the population live in and around the forests and are dependent on forests for food, fodder, fuelwood and timber for construction. Up to 400 million people (i.e. 33% of the population) in India live in and around the forests (ENVIS CoF, 2012). For Myanmar the figure is about 19 million people or about 40% of the population (UK, Government, 2014). In Nepal about 79% people live in and around the forests and are dependent on them (ERI, 2011). Although no estimates are available for Bangladesh, Bhutan and Sri Lanka, the portion of the population that is directly dependent on forests and tree resources is thought to be high. In Bangladesh and Sri Lanka, most of the people live in the rural areas surrounded by home gardens, which satisfy most of the demand for forest products in these countries (Choudhury and Hossain, 2011 and Ruwanpathirana, 2014). Forests cover 70% of Bhutan's land surface (FAO, 2010) and most people live near the forests suggesting a close connection of people with forests in day-to-day life. Despite the above- mentioned socio-demographic similarities, the per capita consumption of fuelwood and industrial roundwood per year vary across the study countries. In 2013, the fuelwood consumption per capita was the highest in Nepal, while Bhutan had the highest industrial roundwood consumption per capita (Table A7.2).

Table A7.2: Fuelwood and industrial consumption per capita in the study countries in 2013

Country	Fuelwood consumption per capita (m ³ /year)	Industrial roundwood consumption per capita (m ³ /year)
Bangladesh	0.171	0.009
Bhutan	0.130	0.077
India	0.246	0.045
Myanmar	0.069	0.067
Nepal	0.444	0.056
Sri Lanka	0.236	0.052

Sources: Estimate based on FAOSTAT; UN Comtrade; and UN DESA, 2013

Macro-economic conditions

The annual GDP growth in all the study countries except Nepal was at least 5% in 2013. India is by far the largest economy among the study countries, while Bangladesh is the distant second largest. Domestic and foreign trade combined constitutes a significant share of total GDP in each study country (Table A7.3).

Table A7.3: Macro-economic conditions in the study countries in 2013

Indicators	Bangladesh	Bhutan	India	Myanmar	Nepal	Sri Lanka
Gross domestic product (GDP), Current USD in Billion	129.86	1.88	1 876.80	57.44	19.29	67.18
Annual GDP growth (%)	6.0	5.0	5.0	5.5	3.9	7.3
GDP per capita, PPP, Current USD	2557.4	7669.2	5410.3	1490.30	2244.3	9735.7
Trade (% of GDP)	53.8	102.6	53.2	--	48.3	54.5

Sources: World Development Indicators; World Bank; World Economic Outlook Database, 2013; and IMF

The GDP growth in all the study countries is much higher than the developed countries average, i.e. 1.4% in 2013 (IMF, 2015). As a result, the growth in all the timber consuming sectors has also been higher creating a clear demand for timber. Construction is the sector creating the greatest demand for timber and timber products.¹⁵ The annual growth in the construction sector in the study countries is presented in Table A7.4.

Table A7.4: Growth in the construction sector in the study countries (2013)

Countries	Annual growth in construction sector (%)	% contribution to GDP
Bangladesh	20.0	10.0
Bhutan	14.7	16.3
India	8.0	4.8
Myanmar	8.0	4.0
Nepal	6.9	10.0
Sri Lanka	9.3	8.0

Sources: Bhutan National Statistics Bureau, 2012 ; ADB, 2013 ; and ICRA, 2013

The Government of India launched a “Make in India” policy on 25 September 2014, which focuses on encouraging production and processing in 25 sectors, construction being one of them. The policy stringently restricts exports of raw materials, particularly industrial roundwood (www.makeinindia.com). Other countries are also following the trend and Myanmar has recently banned industrial roundwood exports to encourage domestic processing. The policies of all study countries will encourage looking for timber supplies from alternative production sources domestically or from new destinations for imports.¹⁶ It is likely that processing facilities will develop in India, Myanmar and Bangladesh and to some extent in Sri Lanka. Nepal and Bhutan are focusing on hydro-electric projects to strengthen their economies, and timber processing has little importance in their macro-economic policies.

15 Both consultants involved in this study (they are originally from two of the study countries) observed that in rural areas of all the study countries timber is predominantly used for construction. In urban areas bricks and concrete are the main material for house construction. Timber and timber products are used for interior decorations both in rural and urban houses. There is no apparent trend toward shifting from timber to brick for house construction in these countries.

16 Forest policies in all the study countries focus on an increasing timber supply from sources outside of natural forests such as community and social forestry plantations, agro and farm forestry and private plantations. The trade policies in Bangladesh and India favour importing raw materials such as industrial roundwood over finished products through the reduction in import duties (See Sections 2.3 and 2.4 in the main report).

Socio-political situation

All the study countries except Bhutan have been facing internal and/or external security threats or problems. The internal security problems include terrorism, ethnic clashes, riots, political instability and separatist movements. Bangladesh has experienced political instability in recent years. Rallies and politically organised shut-downs have been common. Encroachments and land grabbing in forests are politically patronised making effective forest law enforcement a challenge. In Bhutan the socio-political situation has traditionally been stable and amicable. Overall, forest law enforcement is not challenging as the Bhutanese tradition is deeply rooted in protecting forests. Nevertheless, illegal logging happens sporadically due to misunderstanding of rights and concessions given to the communities.

The so-called seven sister states¹⁷ of northeastern India, West Bengal and Sikkim border on the SAARC countries and Myanmar (see Figure A7.1). Except for West Bengal and Tripura, all states (or at least part of the states) enjoy special status under the Indian Constitution (Article Schedule 6A, Article 370, etc.) with full or partial autonomy. In territorial matters they are governed by customary and traditional tribal acts and systems. The majority of these states are under the administrative or management control of the ADCs. These traditional administrative practices sometimes conflict with the central acts. Even though in cases of conflict the central rules and acts prevail, in practice the local systems are dominant. The states have been traditionally affected by political and ethnic clashes. They are rich in forest cover, but land tenure systems result in multiple land ownership, with private and community forests as the prevalent forest types. This leads to unplanned harvesting and destruction of even Government-owned forests through encroaching and pilfering. As a vast tract of land in northeastern India is located close to international borders with Myanmar, Bangladesh, and Nepal have been a 'paradise' for the illegal cross-border timber trade. Due to ongoing militancy, government control is loose and as a result forest law enforcement is inadequate in many border areas in a number of northeastern Indian states. This contributes to illegal logging and the illegal cross-border timber trade.

In Sri Lanka, the Tamil separatist movement and the resulting clashes that effectively ended in 2009 have had a long-standing effect on Sri Lanka's social, economic, political and environmental landscape. The major challenges that Sri Lanka faces are poverty, unemployment and poor infrastructure. Despite various government initiatives, the rates of deforestation and forest degradation have been high in the country (FAO, 2010) and illegal logging continues. Nevertheless, Sri Lanka, being an island, does not share a land border with any country and its sea borders are strictly controlled. Illegal cross-border timber is not a problem for the country.

Nepal has experienced political unrest and chaos in the recent past. During the last twenty years, the country was ruled by a series of unstable political coalitions. Although exports of logs and sawn timber from Nepal are prohibited, there is evidence of illegal log exports to India. The porous borderline with India and China makes illegal timber trading easy. The Maoist cadres were renowned for timber smuggling and exchanging timber for arms in order to support their violent movement. As the Maoist insurgent movement stopped in 2006, timber smuggling and exchanging timber for arms have also stopped. This could be the reason for the reduced illegal logging in the country.

Myanmar has just come out from under repressive rule and self-imposed isolation and has begun an unprecedented array of fundamental political, economic and social changes. The country still faces several challenges, including widespread poverty, under development, lack of institutional and administrative capacity, lack of accountability in governance, ethno-nationalist insurgent movements and also religious violence amongst Buddhists and Muslims. These pose a threat to forests as, for example, armed groups are believed to be involved in illegally logging and trading timber. The deforestation rate has been high in the country in recent decades (FAO, 2010). However, the Myanmar Government has banned log exports from April 2014 onwards to boost domestic processing and ensure sustainable forest management. The country is preparing for the negotiations for the Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreement (VPA). The FLEGT VPA will certainly give a big boost to the country for improving forest law enforcement and government.

17 Assam, Arunachal Pradesh, Meghalaya, Manipur, Nagaland, Mizoram and Tripura.

Annex 8: Overview of the forest sector and forest management in the study countries

Forest sector's economic contribution

The latest available data suggest that the forest sector makes a minimal contribution to the economy in all the study countries (Table A8.1). Its small contribution is in the formal segments such as primary production/material supply (i.e. forestry and logging) and processing (i.e. wood, pulp and paper industries). Informal contributions like non-timber forest products (NTFP), fuelwood collection, or timber for personal use are not counted. A vast proportion of the forest industry in the countries operates informally without any licences and, therefore, is not reflected in any official GDP accounting. In fact, in all the study countries, most people live in the rural areas. Forest and tree resources are the mainstay of rural economies providing food, fodder, fuelwood and employment. The official gross domestic product (GDP) statistics underestimate the economic contribution of the forest sector.

Table A8.1: Forest sector's contribution to the economy in the study countries±

Country	GDP share (%)			Employment (%)		
	Material supply	Processing	Total	Material supply	Processing	Total
Bangladesh	1.50	0.20	1.70	Negligible	Negligible	<0.10
Bhutan	5.54	1.36	6.90	0.07	1.30	0.20
India	0.74	0.16	0.9	0.05	0.05	0.1
Myanmar	0.27	0.03	0.3	0.10	0.10	0.2
Nepal	4.14	0.16	4.3	0.06	0.04	0.1
Sri Lanka	0.80	0.20	1.0	0.22	0.08	0.3

Sources: FAO Forestry Country Profiles

± Data presented are from the year 2006, which is the most recent available

Forest types and growing stock

The dominant forest type in all the study countries is the natural forest. Among natural forests, the primary forests, which are normally reserved forests with multiple restrictions and protection legalities, constitute a maximum of 30% of the total forest area in all the study countries. Other naturally regenerated forests, which mostly consist of open and degraded forests, are the major forest types in the countries. Plantation forests are also emerging, mostly as an alternate source for timber especially in India, Sri Lanka and Bangladesh (Table A8.2).

Table A8.2: Forest types in the study countries

Country	Primary forest		Other naturally regenerated forest		Planted forest	
	1 000 ha	% of total forest area	1 000 ha	% of total forest area	1 000 ha	% of total forest area
Bangladesh	436	30	769	53	237	16
Bhutan	413	13	2833	87	3	<0.1
India	15701	23	42522	62	10211	15
Myanmar	3192	10	27593	87	988	3
Nepal	526	14	3067	84	43	1
Sri Lanka	167	9	1508	81	185	10

Source: FAO Forest Resource Assessment, 2010

The growing stock in the forests in terms of volume and yield per ha is depicted in Table A8.3. The yield per ha is reported to be the highest in Bhutan at 200 m³ per ha while the lowest is in Sri Lanka at 21 m³/ha. In terms of total volume India has the most with 5 489 million m³, while Sri Lanka has just 39 m³. The available data on India reveals that Sal (*Shorea robusta*) constitutes the largest share of growing stock (13.06%) followed by *Tectona grandis*, *Pinus roxburghii*, *Terminalia crenulata* and *Picea smithiana*. The details are presented in Table A8.4.

Table A8.3: Forest growing stock in the study countries

Country	Total growing stock, million m ³			Growing stock per ha, m ³
	Coniferous species	Broadleaved species	Total	
Bangladesh	0	70	70	48
Bhutan	406	244	650	200
India	550	4 940	5 489	80
Myanmar	–	–	1 430	45
Nepal	–	–	647	178
Sri Lanka	–	–	39	21

Source: FAO Forest Resource Assessment, 2010

Table A8.4: Growing stock of top 10 forest tree species in India

Name of species	% of total volume	% of total stems
<i>Shorea robusta</i>	13.06	10.02
<i>Tectona grandis</i>	5.37	7.79
<i>Pinus roxburghii</i>	3.40	2.02
<i>Terminalia crenulata</i>	3.35	3.65
<i>Picea smithiana</i>	3.24	0.30
<i>Anogeissus latifolia</i>	3.12	3.97
<i>Pinus excels</i>	1.86	0.73
<i>Lannea coromandelica</i>	1.84	2.46
<i>Quercus semecarpifolia</i>	1.81	0.64
<i>Boswellia serrata</i>	1.71	1.28

Source: FSI, 2013

In all the study countries, including Myanmar/Burma, plantations of commercial species both on government and private lands are becoming popular. Policies in all countries are oriented more towards conserving natural forests and encouraging forest plantations, for example, through leasing government land, for increasing forest cover as well as for meeting the growing demand for timber. Business motives also contribute to establishing plantations, especially private plantations. Community forestry, forests under joint forest management (JFM), agro and farm forestry and captive plantation (industrial) are the most common forms of forest plantations in these countries. The plantations are established dominantly with commercial species for pulp wood such as eucalyptus (*Eucalyptus* spp.), poplar (*Populus* spp.), subabool (*Leucaena leucocephala*), pongamia (*Pongamia pinnata*) and acacia (*Acacia* spp.), construction timber mainly sissoo (*Dalbergia sissoo*), teak (*Tectona grandis*), garjan (*Dipterocarpus* spp.) and koroi (*Albizia* spp.). The typical commercial timber species in natural forests and plantations are presented in Table A8.5.

Table A8.5: Typical commercial timber species in natural forests and plantations in the study countries

Country	Commercial tree species	
	Natural forests	Plantations
Bangladesh	Garjan (<i>Dipterocarpus spp.</i>), civit (<i>Swintonia floribunda</i>), chapalish (<i>Artocarpus chaplasha</i>), shimul (<i>Bombax ceiba</i>), toon (<i>Toona ciliata</i>), sissoo (<i>Dalbergia sissoo</i>), teak (<i>Tectona grandis</i>) mango (<i>Mangifera indica</i>), koroi (<i>Albizia spp.</i>), sal (<i>Shorea robusta</i>), sundri (<i>Heritiera fomes</i>), and gewa (<i>Excoecaria agallocha</i>)	Euclapytus (<i>Eucalyptus spp.</i>), acacia (<i>Acacia auriculiformis</i> ; <i>Acacia mangium</i>), rubber (<i>Hevea brasiliensis</i>), teak (<i>Tectona grandis</i>), mahogany (<i>Swientenia mahagoni</i>), raintree (<i>Albizia saman</i>), gamhar (<i>Gmelina arborea</i>)
Bhutan	Chir pine (<i>Pinus roxburghii</i>), blue pine (<i>Pinus wallichiana</i>), fir (<i>Abies spp.</i>), spruce (<i>Picea spp.</i>), sal (<i>Shorea robusta</i>)	Pine and some broadleaved species
India	Sal (<i>Shorea robusta</i>), teak (<i>Tectona grandis</i>), chir pine (<i>Pinus roxburghii</i>), spruce (<i>Picea smithiana</i>) <i>Terminalia crenulata</i> , <i>Anogeissus latifolia</i> , <i>Pinus excels</i> , <i>Lannea coromandellica</i> , <i>Quercus semecarpifolia</i> , <i>Boswellia serrata</i> , <i>Mangifera indica</i> , <i>Azadirachta indica</i> , <i>Cocos nucifera</i> , <i>Borassus flabellifer</i> , <i>Madhuca latifolia</i> , <i>Pinus roxburghii</i> , <i>Acacia arabica</i> , <i>Bombax ceiba</i> , <i>Atrocapus heterophyllus</i> ,	Poplar (<i>Populus spp.</i>), euclapytus (<i>Eucalyptus spp.</i>), acacia (<i>Acacia auriculiformis</i> ; <i>Acacia mangium</i>), rubber (<i>Hevea brasiliensis</i>), teak (<i>Tectona grandis</i>), mahogany (<i>Swientenia mahagoni</i>), raintree (<i>Albizia saman</i>), pungamia (<i>Pungamia pinnata</i>), <i>Prosopis juliaflora</i> , <i>Cassia fistula</i> , <i>Casuarina equisetifolia</i> , neem (<i>Azadirachta Indica</i>)
Myanmar	Teak (<i>Tectona grandis</i>), pyinkado (<i>Xylia xylocarpa</i>), taukkyan (<i>Terminalia tomentosa</i>), Padauk (<i>Pterocarpus spp.</i>), ingyin (<i>Pentacme siamensis</i>), kanyin (<i>Dipterocarpus spp.</i>), pine (<i>Pinus spp</i>)	Teak (<i>Tectona grandis</i>), eucalyptus (<i>Eucalyptus spp.</i>), acacia (<i>Acacia auriculiformis</i> ; <i>A. mangium</i>), rubber (<i>Hevea brasiliensis</i>), Teak (<i>Tectona grandis</i>)
Nepal	Sal (<i>Shorea robusta</i>), oak (<i>Quercus spp</i>), asna (<i>Terminalia tomentosa</i>), chir pine (<i>Pinus roxburghii</i>), talis patra (<i>Abies spectabilis</i>), laligurans (<i>Rhododendron spp</i>), utis (<i>Alnus nepalensis</i>), sissoo (<i>Dalbergia sissoo</i>), champa (<i>Michaelia champaca</i>), teak (<i>Tectona grandis</i>), shimul (<i>Bombax ceiba</i>).	Teak (<i>Tectona grandis</i>), eucalyptus (<i>Eucalyptus spp.</i>)
Sri Lanka	Hora (<i>Dipterocarpus zeylanicus</i>), Berrya cordifolia, neem (<i>Azadirachta indica</i>), kanthal (<i>Artocarpus integrifolia</i>), Khaya senegalensis, Albizzia spp	Eucalyptus (<i>Eucalyptus microcorys</i>), rubber (<i>Hevea brasiliensis</i>), acacia (<i>Acacia auriculiformis</i> ; <i>Acacia mangium</i>), teak (<i>Tectona grandis</i>), pine (<i>Pinus caribea</i>)

Forest ownership

The Rights and Resources Initiative (RRI) (2014) provides the most recent forest ownership data (from 2013) for 52 countries which include three of the study countries, i.e. India, Myanmar and Nepal. For Bangladesh, Bhutan and Sri Lanka, the latest data available is from 2005 compiled in the FAO Forest Resource Assessment, 2010. The stakeholders consulted in these three countries have stated that the changes in forest ownership have been insignificant since 2005. The forest areas under different ownership in the study countries are presented in Table A8.6.

Table A8.6: Distribution of forests by ownership types in the study countries

Ownership (%)				Of private ownership (%)	
Country	Public	Private	Others	Individuals, businesses and institutions	Indigenous and tribal communities
Bangladesh	62	36	2	33	67
Bhutan	100	0	0	100	0
India	83*	17	0	82	18
Myanmar	100	0	0	0	0
Nepal	100*	0	0	0	0
Sri Lanka	93	7	0	100	0

*About 36% of public forests in India and 32% in Nepal are managed by the communities

Sources: RRI, 2014 and FAO Forest Resource Assessment, 2010

Bangladesh and India are the two countries with some tracts of forests owned by indigenous and tribal communities. Such forests are subjected to customary community management. Northeastern India has a total of about 1.84 mha of forests that constitute 37% of forests in these states and are managed by 10 autonomous district councils (ADCs), which follow traditional and customary laws for forest management (see Table A8.7). The customary laws are followed for all the practical purposes of land tenure, and right and concessions. The state laws prevail for maintaining revenue records, policing, and for judicial, technical and financial assistance in developmental works. In case of conflict between customary and state laws, the state laws prevail, and it is also the duty of the state government to implement the Central Government's laws in the state.

Table A8.7: Forests managed by autonomous district councils (ADC) in the northeastern region of India

States	Name of ADC	Forest area in the state in ha	Forest under ADCs	
			Area in ha	% of total forest area in state
Assam	The North Cachar Hills The Karbi Anglong The Bodoland Territorial Areas	2 683 200	632 900	23.60
Meghalaya	The Khasi Hills The Jaintia Hills The Garo Hills	949 600	837 100	88.15
Mizoram	The Chakma The Mara The Lai	1 671 700	367 600	22.00
Tripura*	Tripura Tribal Areas District	629 400	0	0
Total		4 933 900	1 837 600	37.24

* The area under control of the Tribal Areas District in Tripura is still managed by the State Forest Department

Source: ICFRE, 2010

Key focus areas of forest management

Bangladesh

Recently, there has been a substantial shift in forest management from maximising yields towards maximising sustainability through the increased participation of the local population, conserving biodiversity and maintaining forest services. Priority has been given to homestead plantations, strip plantations, participatory forestry on degraded forest land, mangrove afforestation on newly accreted land in the coastal areas, as well as conservation area management to preserve wildlife habitats and biodiversity. A complete ban on harvesting in natural forests was imposed in 1989, which was partially lifted in 1998. It allows harvesting in forests in the northeastern part of the country. However, continued deforestation since then clearly suggests that the ban has failed to save the country's natural forests. A common perception among the forestry experts and professionals is that the ban led to more illegal logging to meet the growing timber demand in the country (stakeholder consultations).

Bhutan

Forest management in Bhutan has always been conservation oriented. The key feature of forest management in the country comprises is the use of Forest Management Units that are managed under written management plans. All plans are prepared in line with the provision link under the "Forest Management Code of Bhutan 2004" and recognise the demand for timber in the country. Bhutan has low biotic pressure and does not face any alarming degradation threats. It is only the customary usufruct rights, which sometimes encourage excessive logging but only sporadically. Participatory management is an emerging concept and one of the key focus areas of forest management in Bhutan (DFPS, 2013). Overall, the forest management provisions and practices provide a conducive environment for law enforcement in the country.

India

Indian forestry is on the 'concurrent list'. This means that the technical, policy and monitoring aspects are primarily governed by the Central Government and the territorial affairs are controlled by the state governments. Forest management mainly focuses on conserving natural forests with limited harvesting, and on increasing the forest cover through JFM, farm-agro and social forestry plantations. JFM is a form of participatory forest management practice in all the states. In this system, the forest departments and the community jointly plant, protect and use the forests through mutual agreements. JFM is progressing fast in India and about 24.7 mha of mainly degraded forest land has been brought under the system (ICFRE, 2010). The non-natural forest resources are managed to provide raw material for industrial purposes. In fact, the conservation-oriented management practices for natural forests prompted the industry to look for alternative sources. As a result, agro forestry, farm forestry and captive plantations came in, and currently the bulk of the industrial timber requirements are being met from these sources. Such management practices of natural forests also resulted in increasing imports of timber for the growing domestic demand (stakeholder consultations).

Myanmar

Forest management in Myanmar has traditionally been production oriented. In natural forests the Myanmar Selection System has been the principal system applied. Under the system forests are divided into 30 annual coupe of equal productivity and equal size, and a 30 year felling cycle is followed. Only mature trees are selected and harvested. Harvesting is regulated based on annual growth and controlled by girth limits (prescribed per species). The annual allowable cut (AAC) for teak and non-teak hard woods are periodically revised. The AAC for teak remains constant at 49 206 m³ for teak since 2012–2013 (MoECF, 2015a), while for non-teak hardwoods it increased slightly from 789 143 m³ in 2012–2013 to 817 343 m³ in 2014–2015 (MoECF, 2015b). In official records of the country, the actual production since 2006–2007 of teak mostly remained above the AAC (MoECF, 2015a), while for other hardwood it remained below the AAC (MoECF, 2015b). When combined, the actual production remained below the ACC (except for 2011–2012). However, deforestation in the country continued at an alarming rate during the period from 2000–2010 and before (FAO, 2010). Woods (2015) reported that logging is one of the main causes of deforestation in Myanmar. This suggests that the total timber production in the country may have exceeded the AAC.

Nepal

The focus areas of forest management in Nepal are conservation of natural forests with limited harvesting, rehabilitation of degraded forests, and increase in timber production through community forestry (CF) and other participatory forestry models such as collaborative forest management (CoFM) and leasehold forestry. In CF, community forestry user groups (CFUG) manage government-owned degraded forests. About 1.65 million ha of Nepal's forests are currently under community forest management. Communities generate almost 100% of their income from selling timber and other products. The CFUGs prepare the forest management plan with the supervision of the forest department and harvest the forest according to the plan (Amatya, 2012). One common problem in CF in Nepal is that CFUGs are harvesting more timber than the limit prescribed in the management plan. Such harvesting is illegal (stakeholder consultations). In CoFM, communities and forest departments share the management responsibilities, and the benefit is shared 50/50. Leasehold forests are usually degraded national forests given to low-income households on a 40-year lease so they can generate income by managing the forests (Amatya, 2012).

Sri Lanka

The present management practices in Sri Lanka focus on conservation of natural forests and on increasing timber production from forest plantations, home gardens and other non-natural forest sources. There are no provisions for harvesting in the natural forest unless it is necessary for infrastructure development, such as building roads, and then a permission is required from local government officials or the Central Government. The rate of deforestation was alarming between 1990 and 2010 (FAO, 2010). Infrastructure development was not among the main causes of deforestation (University of Colombo, 2014). This suggests that Sri Lanka's management approach, which focuses on conserving natural forests, has failed to achieve its objective. In recent years CF is becoming more popular. The community establishes a plantation with support from the Government both on private and on Government land. If established on Government land, the communities have harvesting rights but the land right remains with the Government. In this case, 80% of the harvesting values go to the communities and the remaining 20% to the Government (stakeholder consultation).

Overview of forest-based industries in the study countries

The forest-based industries in the study countries in the SAARC region are mainly sawn timber, pulp and paper, and plywood and panel mills. The timber-based furniture industry is also emerging in these countries. The key feature of the forest industries in the study countries in the SAARC region is that they are mostly all small scale, and produce products mainly for the domestic market (Asia Pacific Forestry Commission, 2012). The sawmilling industry is the biggest consumer of timber and supplier of sawn timber to construction and furniture industries in the study countries in the SAARC region (Choudhury and Hossain, 2011; DFPS, 2013; Dhital, 2009; ICFRE, 2010; MoEF, 2009; MoFSC, 2009; and SLFD, 2009).

Bangladesh has only one wood-based pulp and paper mill (Khulna Newsprint Mills Ltd), which has an installed capacity of 50 000 tonnes of newsprint per year. The mill is currently on the verge of closure due to a severe shortage of wood raw material (<http://myknm.org/WebUI/aboutus.php>). There are no wood-based pulp and paper units in Bhutan, Nepal and Sri Lanka (stakeholder consultations). Only India has a well-developed pulp and paper industry in the SAARC region. About 31% of India's 653 pulp and paper mills use wood/bamboo as raw material (IPMA, 2015). The mills depend on the private plantations (such as agro and farm forest plantations) for wood. Eucalyptus (*Eucalyptus* spp.), and poplar (*Populus* spp.) are the major pulpwood species being used by Indian pulp and paper mills (Manoharan, 2013). The plywood and panel industry, with more than 2 500 mills, is well developed in India. The industry is almost entirely dependent on supplies from agro and farm forestry plantations (ICFRE, 2010). There is a heavy concentration of plywood and panel mills in Yamuna Nagar in Haryana State due to the availability of wood from such plantations (stakeholder consultations). The plywood and panel industry in Bangladesh, Bhutan, Nepal and Sri Lanka is tiny (Choudhury and Hossain, 2011; DFPS, 2013; Dhital, 2009; MoFSC, 2009; and SLFD, 2009).

The timber industry in Myanmar is dominated by sawmills. There are also a number of plywood/veneer factories and wood-based furniture and molding factories (NEPCon, 2013 and Woods and Canby, 2011). The sawmills use domestic timber only. The Myanmar Timber Enterprise (MTE) owns and manages about 91 sawmills each of which has an annual production capacity not exceeding 21 600 m³. The sawn timber from these mills is exported as well as sold to the local market (Woods and Canby, 2011). There are 228 private saw mills in the country (Htun, 2009). These sawmills are usually smaller and mostly supply timber to the local market (Woods and Canby, 2011 and stakeholder consultations). Foreign firms have recently expressed an interest in Myanmar as a place to establish their manufacturing units especially in the plywood and veneer sector. There are two factories from India, Century Ply and Green Ply, already operating in Yangon area. A couple of South Korean firms are also manufacturing plywood and veneer in Myanmar. These factories export to their respective countries. There is just one pulp and paper mill, which is state-owned. It uses eucalyptus wood in a mixture with bamboo (stakeholder consultation). Furniture and moulding factories in Myanmar are mostly privately owned and export oriented (Woods, 2011). The timber industry is discussed from the perspective of timber consumption in Section 4.1 in the main report.

Annex 9: Key regulations affecting timber production, processing and trade in the study countries

Country	Regulations	Coverage
Bangladesh	Bangladesh Forest Act, 1927 (amended in 2000)	Timber production, processing and trade, forest protection
	Social Forestry Rules, 2004 (amended in 2011)	Timber production, forest protection
	Transit Rules 2011	Timber processing and trade
	Sawmill Rules 2012	Timber processing and trade
	Forest Industries Development Corporation Ordinance, 1959	Timber production and processing
	Customs Act, 1959	Timber trade
	The Exports and Imports (Control) Act, 1959	Timber trade
	Prohibition and Rules Affecting Protected Forests in the Sundarbans, 1959	Forest protection
	Attia Forest Protection Ordinance, 1982	Forest protection
Bhutan	Forest and Nature Conservation Act, 1995	Timber production, processing and trade, forest protection
	Forest and Nature Conservation Rules, 2006 (amended 2008)	Timber production, processing and trade, forest protection
	Land Act	Timber production
	Sales Tax, Customs and Excise Act, 2000	Timber trade
	National Environment Protection Act, 2007	Forest protection
	Biodiversity Act, 2003	Forest protection
India	Indian Forest Act, 1927	Timber production, processing and trade, forest protection
	State Forest Acts and State Transit Rules	Timber production, processing and trade
	National Working Plan Code	Timber production
	Indian Supreme Court Order (No 202/1995)	Timber production
	State Land Revenue Codes/Acts, State Forest Manuals/Codes, State Tenancy Acts, and State Consolidation and Fragmentation Acts	Timber production
	State Saw Mill Establishment Rules	Timber processing
	Indian Industries (Development and Regulation) Act, 1951; Indian Factories Act, 1948; Indian Air (Prevention and Control of Pollution) Act, 1981; and Indian Water (Prevention and Control of Pollution) Act, 1974	Timber processing
	Indian Foreign Trade (Development Regulation) Act, 1992; Indian Customs Act, 1962; Indian Destructive Insects and Pest Act, 1914; and Indian Plant Quarantine Order, 2003	Timber trade
	Forest Conservation Act, 1980 (amended in 1988); Forest Conservation Rules, 2003; Environment Protection Act, 1986; and Scheduled Tribes and Other Traditional Forest Dwellers Recognition of Forest Rights Act, 2006	Forest protection

Country	Regulations	Coverage
Myanmar	Forest Law, 1992	Timber production, processing and trade, forest protection
	Forest Rules, 1995	Timber production, processing and trade, forest protection
	National Code of Forest Harvesting, 2000	Timber production and forest protection
	Myanmar Timber Enterprise Extraction Manual	Timber production
	Community Forestry Instructions ,1995	Timber production
	Environmental Conservation Law, 2012	Forest protection
	Protection of Wildlife and Conservation of Natural Areas Law, 1994	Forest Protection
	The Sea and Land Customs Act, 1878	Timber trade
Nepal	Forest Act, 1993	Timber production, processing and trade, forest protection
	Forest Regulation, 1995	Timber production, processing and trade, forest protection
	Scientific Management Guidelines, 2014	Timber production, forest protection
	Customs Act, 2007	Timber trade
	Forest Protection Special Act ,1967	Forest Protection
	National Park and Wildlife Conservation Act, 1973	Forest Protection
Sri Lanka	The Forest Ordinance No 16 1907 (amended in 2009)	Timber production, processing and trade, forest protection
	Customs Act, 1991	Timber trade
	Import Export Act, 1987	Timber trade
	Fauna & Flora Protection Ordinance No 2 1937 (amended in 2009)	The National Environmental Act, 1980
	The National Environmental Act, 1980	The National Environmental Act, 1980

Sources: Bangladesh Forest Department (<http://www.bforest.gov.bd/>); National Portal of Bhutan (<http://www.bhutan.gov.bt/>); Law Lanka (www.lawlanka.com); Joshi et al., 2011; Chokkalingam and Vanniarachchy, 2011; Näsström and Mattsson, 2011; Amatya, 2012; Overdorf, 2012; NEPCon, 2013; Seneviratne and Wijesinghe, 2013; and stakeholder consultations in all countries

Annex 10: Timber products allowed and not allowed for export from Myanmar/Burma

Broad timber product category	Specific timber product	Photo
Products banned from export		
Industrial roundwood	Log	
Sawn timber as primary stage without having exact dimensional measurement	Boule Cut Log	
	Baulks Square	
	Hand Saw	
Products allowed for export		
Sawn timber as secondary stage having exact dimensional measurement	Square	
	Post	
	Plank	
	Board	
	Scantling	
Other products	Furniture	
	Veneer	
	Plywood	
	Flooring	

Source: Myanmar Timber Merchant Association

Annex 11: Examples of necessary documents and marks used in exports and imports in the study countries

CERTIFICATE OF ORIGIN
Malaysia
ISSUED IN _____ (Country)

SIBU CHINESE CHAMBER OF COMMERCE AND INDUSTRY
1st Floor, Niter Chinese Chamber Building, Chambers Road,
P.O. Box 541, 06097 Sibu, Sarawak, Malaysia.
Tel: 60 8864-336959, 337831 Fax: 60 8864-325813
E-mail: sibuchc@ibm.com

1. Country of origin (Name of Producer, business name, address, country):
Company Name (Full)
Sibu, C/o J Looing, 20 A2,
Sibu, P.O. Box No. 1489,
Sibu, Sarawak, Malaysia.

2. Name of Importer (Name & Address):
Sibu Chinese Chamber of Commerce
111 Chin Seng Street, Hecid 03
Singapore 169676.

3. Name of Transport and Route (to the seaport):
Port of Loading: T. Merau, Malaysian Port
Port of Discharge: Kolkata, Indian Port
Route Description: By Sea

4. Item No.	5. Marks and Numbers on Packages	6. Number & Types of Packages, Description of Goods (with quantity where appropriate and HS Code of Importing country)	7. Gross Weight or Other Quantity and Value	8. Number and Date of Invoice
	TK, JB, JR, HP	MALAYSIAN ROUND LOGS 1731 Pieces (One Thousand Seven hundred and thirty one only)	3686.8909 CBM	

9. Declaration by the Exporter:
The undersigned hereby declares that the above details and statements are correct and that all the goods were produced or processed in Malaysia.
(Country):

10. Declaration by the Importer:
It is hereby certified, on the basis of control carried out, that the declaration by the exporter is correct.
Date: 11.7 OCT 2014
Place and date, signature and Common Seal of Certifying Signatory

11. Signature of Exporter:
QUESTAR SEN. BHD.
(253941-W)

Annex 11.1: Certificate of origin for industrial roundwood imported from Malaysia through the Kolkata seaport in India

ANNEXURE 'A'

(See rule 8)

**Forest Department
Himachal Pradesh.**

PASS FOR EXPORT OR TRANSPORT OF FOREST PRODUCE

From _____ Forest Division.
 At. No. _____

(Original/ duplicate/triplicate/Quadruplicate)

Pass No. _____ Date _____

1. Name and full address of the person(s) to whom the pass is granted.
2. Date of issue.
3. Forest Produce covered by the pass (Details correctly attached and countersigned under office seal).
4. Route(s) by which forest produce will be transported.
5. Whence obtained.
6. Place to which consigned.
7. Date of expiry of permit.
8. Property Marked.

NOTE:-

(1) In case of Forest Produce being loaded by rail from any railway station in Himachal Pradesh of the Northern Railway the concerned Station Master may please endorse on the back of the pass, the quantity of timber or any other Forest Produce so loaded along with the date and the destination so as to facilitate further checking.

(2) After the expiry of permit (pass) the grantee will please report as to whether it has been availed of in full or in part.

 DIVISIONAL FOREST OFFICER,
 FOREST DIVISION
 (SEAL OF OFFICE TO BE AFFIXED)

At _____ Date _____

1. Range Officer _____ for information and necessary action with reference to his report No. _____
2. _____ for information and necessary action.
3. _____ for information and necessary action.

 DIVISIONAL FOREST OFFICER,
 FOREST DIVISION

Annex 11.2: Pass for export or transport of forest products (transit pass)

(Challan Form)

(See Rule 10)

At. No. _____ Challan No. _____ Date _____
 issued by DFO Forest Division _____ to FORTICOR OF _____

Date and Time of issue _____
 Date and Time of Receipt _____

Sr.	Details of Timber Description No.	VOL. IN CUM	Final weight checked at Chk.	Other Forest Produce Description
1	2	3	4	5

Remarks
 Property Marked
 Export Number marked

 Name of person in charge Forticor _____
 Designation _____

 Clerk Forticor/Vid _____
 one copy of challan to be kept in each office party

 Volume (Kard) and No. 491 _____

 Signature of grantee
 Or
 Authorized Agent

Annex 11.3: Challan form

ANNEXURE 'C'
(See Rule 11)

**REGISTER OF EXPORT OF TIMBER AND OTHER FOREST PRODUCE
AT CHECK POST _____**

1. Name and full address of permit holder
2. Issuing authority of permit
3. Permit No. and date of issue with details of timber or other forest produce allowed for transporting / exporting.
4. Date of expiry of permit
5. Distinctive property or Brand Mark
6. Place to which / where from carried
7. Place to which consigned / destination
8. (a) Route and
(ii) Check post (s) specified for transport

Book No. / Chapter No.

Description of timber or other produce							
To Be	Dept. of	Quantity			Summ. total	Date of Clearance	State of
	Export				of Quantity	with	Transport
		No.	Volume	Weight	Imported /	Transported	Vehicle No.
					Exported		
1	2	3	4	5	6	7	8

Signature of permit holder or other forest produce	Signature of official with description	Signature of inspecting officer	Remarks
9	10	11	12

- 10 -

Annex 11.4: Export register



Annex 11.5: Hammer mark on industrial roundwood imported into Nepal
Photo credit: Sepul K Barua

Annex 12: Glossary – Export and import documents

Bill of lading: A bill of lading is a legal document between the shipper of particular goods and the carrier detailing the type, quantity and destination of the goods being carried. It also serves as a receipt of shipment when the goods are delivered to the predetermined destination. This document must accompany the shipped goods, no matter the form of transportation, and must be signed by an authorised representative from the carrier, shipper and receiver. A bill of lading is issued by the carrier.

Cargo dispatch note: A cargo dispatch note states that a certain cargo has been shipped. It is issued by the exporter. It helps to identify the cargo easily.

Cargo release order: A cargo release order is a document from a consignor, a shipper, or an owner of freight that orders the release of the transportation of cargo to a specified party.

Certificate of origin: A certificate of origin is a document declaring the country of manufacture of the goods. The certificate of origin also contains information regarding the product's destination and country of export. In order to be valid, the certificate of origin must be signed by the exporter, and countersigned by the local chamber of commerce.

Clearance from the Handicraft Export Council: Export Promotion Council for Handicrafts is India's premier council promoting the export of handicrafts from India. Clearance from this council ensures that the handicrafts are of high quality and made following all applicable international standards and specifications.

Clearance from the forest department: Timber and timber products are subjected to this clearance in case of exports. The clearance ensures that the timber was harvested or timber products are made following all applicable national and international laws and regulations.

Commercial invoice: A commercial invoice is required by the customs authority to determine the true value of imported and exported goods for calculating the amount of duties and taxes. A commercial invoice must identify the buyer and seller, and clearly indicate the: (i) date and terms of sale, (ii) quantity, (weight and/or volume) of the shipment, (iii) type of packaging, (iv) complete description of goods, (v) unit value and total value, and (vi) insurance, shipping and other charges (as applicable). A commercial invoice is issued by the exporter and directed to the importer in order to charge the importer for the goods.

Customs clearance: Customs clearance is the permission issued by the concerned national customs authority for imported goods so they can enter the country, or it is issued to exported goods so they can leave the country. The customs clearance is typically given to a shipping agent to prove that all applicable customs duties have been paid and the shipment has been approved.

Customs export/import declaration: The exporter or importer issues a customs export/import declaration providing details of goods being exported or imported. This statement verifies and regulates outgoing and incoming cargo (including re-exported goods) and collects the statistical data (of the product, quantity, value, and destination) for export and import references.

Customs transit declaration: A customs transit declaration is issued to the importer by the government of the importing country in the case of imports from a third-party country via another country. This is required for Nepalese importers importing from third-party countries via India. It must be presented at the Kolkata seaport in India.

Delivery order: A delivery order is a written direction from a consignor (or shipper) of a shipment to a carrier or freight forwarder to release the shipment to another party mentioned in the document.

Export declaration form: An export declaration form is issued by a national customs authority.

Export licence/permit: An export licence/permit is granted by the government to a person or entity for the right to export specified goods to specified countries during a specified period. A government designated body issues the licence/permit.

Foreign currency exchange form: An authorised financial institution issues an official statement, or a foreign currency exchange form, for exchanging foreign currencies into domestic currency.

Foreign exchange control form: The exporter or importer issues a foreign exchange control form declaring that the export/import is being made following the existing foreign exchange control regulations in the country of export/import.

Import licence/Import control licence: A government designated body issues an import licence/import control licence to a person or entity (the importer) that allows the importer to bring in a specified quantity of certain goods during a specified period. An Import licence can be used: (i) as a means of restricting the outflow of foreign currency to improve a country's balance of payments position; (ii) to control the entry of dangerous items such as explosives, firearms, and certain substances; and (iii) to protect the domestic industry from foreign competition.

Inspection report: An inspection body must inspect all imported goods and make an inspection report. The inspection ensures that the price charged by the exporter reflects the true value of the goods, prevents substandard goods from entering their country, and mitigates attempts to avoid paying customs duties.

Insurance certificate: An insurance certificate is a supporting document against an importer's/exporter's declaration on terms of delivery. It is required for export/import customs clearance procedures. This document helps customs authorities to verify whether or not the selling price includes insurance. This is required to assess the value in order to determine the import/export duty amount

Letter of credit: A letter of credit is a written commitment for the importer's bank (called the issuing bank) to pay to the exporter's bank (called the accepting bank, negotiating bank, or paying bank).

Letter of guarantee: The letter of guarantee represents an importer's obligation to accept and pay a bill of exchange when it is presented at a certain bank. The objective of this letter is to secure that bank's acceptance of an exporter's draft for payment through its correspondent bank (where the draft will be presented).

No objection certificate: The no objection certificate, which is commonly known as a NOC, is a certificate issued by a government-designated body for the export/import of particular goods. If an export/import good receives a NOC, it means that it is in line with the foreign trade policy of the country of export/import and is not a threat to local manufacturers of those goods regarding competition with foreign manufacturers.

Packing list: The packing list is an inventory of the incoming/outgoing cargo required for customs clearance. It generally includes (i) information of exporter, importer and transport company, (ii) date of issue, (iii) number of the freight invoices, (iv) type of packaging (such as drum, crate, carton, box, barrel and bag), (v) number of packages, (vi) content of each package (description of the goods and number of items per package), (vii) marks and numbers, (viii) net weight, gross weight and measurement of the packages.

Pre-shipment inspection (clean report of findings): A government-designated body in the exporting country will perform a pre-shipment inspection to check shipment details such as price, quantity and quality of goods ordered overseas.

Product manual: The exporter/manufacturer prepares a product manual detailing how to use the goods being exported.

Sales contract: Both parties sign a formal sales contract, by which an exporter agrees to export and an importer agrees to import, under certain terms and conditions made clear in the document.

Shipping instruction, shipping note or boat note: Also known as a shipper's letter of instruction, a shipping instruction, shipping note or a boat note directs a carrier to prepare shipping documents for a specific shipment, and provides for the necessary declarations.

Single administrative document: A customs form, known as a single administrative document, was developed to control the import and export of goods arriving into and departing from a country. The document uses harmonised codes to identify the countries of origin and destination, the exporter or carrier, the party or parties responsible for making the customs declaration and settlement payments, an inventory of the goods and the number of containers.

Road/dispatch challan: A government-designated body issues a road/dispatch challan, which is a document containing a description of the goods, the name of the owner, and a description of the condition and quantity. It is used for transporting the goods to the port of shipment.

Technical standard/health certificate: An appropriate authority in the exporting country issues a technical standard/health certificate stating that the goods being exported do not have any substance or organisms that could be harmful for human health.

Terminal handling receipts: A terminal handling receipt is the receipt of payment of a tariff charged by the shipping line to the shipper. The payment covers the terminal handling costs, which the shipping line pays to the terminal operator.

Transit declaration: The Bhutan Customs issues a transit declaration to the owner of the goods or to his agent to move the goods, including timber and timber products, from one part of Bhutan to another through the Indian territories. In the case of goods from a third-party country, the transit declaration also carries an undertaking from the customs department of Bhutan stating that the goods are meant for consumption in Bhutan only, and in cases of deflection, the laws of both the Indian and Bhutan Customs would be applicable. Moving goods through India accompanied by the transit declaration shall not be subject to any sample checking by the Indian authorities except in cases where specific information is made available to the Indian Customs authorities about consignment(s) carrying goods which are contraband in nature or contrary to the importability of those in any manner.

Sources: Vissar. 2003; Department of Commerce, Government of India (<http://commerce.nic.in/trade/bhutan.pdf>); Business Dictionary (www.businessdictionary.com); Investopedia (www.investopedia.com); How to Export Import (www.howtoexportimport.com); UNECE (www.unece.org); Government of USA (www.export.gov); European Commission Export Help Desk (<http://exporthelp.europa.eu>); Nepal Embassy in India (www.nepalembassy.in/treaty-of-transit.htm); and China International Electronic Commerce Network (<http://www.ec.cn>)

Annex 13: Timber and timber products included in the Sensitive List under the South Asia Free Trade Area Agreement

Member states	Timber and timber products in the Sensitive List			
	For Least Developed Member States		For Non-Least Developed Member States	
	Harmonisation System Code	Product name	Harmonisation System Code	Product name
Afghanistan	48 30, 40, 50, 60	Wooden furniture	48 30, 40, 50, 60	Wooden furniture
Bangladesh	4412	Plywood, veneered panels and laminated wood	4412	Plywood, veneered panels and laminated wood
	48 02 - 04, 08, 10, 11, 13, 18, 20, 23	Paper and paper board	48 02 - 04, 08, 10, 11, 13, 18, 20, 23	Paper and paper board
	48 30, 40, 50, 60	Wooden furniture	--	--
Bhutan	44 10	Particle board	44 10	Particle board
	4412	Plywood, veneered panels and laminated wood	4412	Plywood, veneered panels and laminated wood
	48 02	Uncoated paper and paperboard	48 02	Uncoated paper and paperboard
	48 30, 40, 50, 60	Wooden furniture	48 30, 40, 50, 60	Wooden furniture
India	--	--	48 03, 08, 09, 11, 17, 21, 23	Paper and paperboard
Maldives	44 09	Wood continuously shaped along any edges	44 09	Wood continuously shaped along any edges
	44 18	Builders joinery and carpentry of wood	44 18	Builders joinery and carpentry of wood
	44 21	Articles of wood, not necessarily classified	44 21	Articles of wood, not necessarily classified
Nepal	48 02, 09, 11, 16 - 21	Paper and paperboard	48 02, 09, 11, 16 - 21	Paper and paperboard
Pakistan	44 10	Particleboard		
	44 11	Fiberboard		
	44 12	Plywood, veneered panels and laminated wood		
	48 02 – 05, 10, 11, 18 - 20	Paper and paperboard	48 02 – 05, 10, 11, 18 - 20	Paper and paperboard
	48 30, 40, 50, 60	Wooden furniture	48 30, 40, 50, 60	Wooden furniture
Sri Lanka	48 02, 08, 16 – 21, 23	Paper and paperboard	48 02, 05, 08, 16 – 21, 23	Paper and paperboard
	48 30, 40, 50, 60	Wooden furniture	48 30, 40, 50, 60	Wooden furniture

Source: SAARC, 2015c

Annex 14: Time-series econometric analysis of industrial roundwood consumption in the study countries in the South Asian Association for Regional Cooperation region and Myanmar/Burma

Bangladesh

The econometric analysis of the consumption time-series from 2000–2013 for Bangladesh yields (Eq. 1):

$$\ln \text{CpC} = -2.1070 + 0.0093 \ln \text{GpC} + 0.5604 \ln \text{lagCpC}; \quad F \text{ Probability} = 0.018 \quad (\text{Eq. 1})$$

Where \ln = natural logarithm, CpC = Consumption per Capita, GpC = GDP per Capita, lagCpC = Consumption per capita in the previous year.

Population is incorporated in the model for Bangladesh and other countries indirectly as the dependent and explanatory variables are per capita basis. F probability, a measure of statistical validity of a model, of (Eq. 1) is 0.018 suggesting that the model is valid at 98% level of significance. According to the regression (Eq.1), both GpC and lagCpC have positive elasticity of consumption, i.e. they positively affect the consumption per capita. A 1% increase in GpC increases CpC by 0.01%, while a 1% increase in CpC in a year increases the CpC in the following year by 0.56%.

Bhutan

The econometric analysis of the consumption time-series from 2000–2013 for Bhutan yields (Eq. 2):

$$\ln \text{CpC} = 0.008 - 0.531 \ln \text{GpC} - 0.598 \ln \text{lagCpC}; \quad F \text{ Probability} = 0.0004 \quad (\text{Eq. 2})$$

F probability of (Eq. 2) suggests that the model is valid at 99% level of significance. According to the regression (Eq.2), a 1% increase in GpC decreases CpC by 0.53%, while a 1% increase in CpC in a year decreases the CpC in the following year by 0.6%.

India

The econometric analysis of the consumption time-series from 2000–2013 for India yields (Eq. 3):

$$\ln \text{CpC} = -3.9625 + 0.1348 \ln \text{GpC} + 0.0205 \ln \text{lagCpC}; \quad F \text{ Probability} = 0.00003 \quad (\text{Eq. 3})$$

The time series model (Eq. 3) is valid at 99% level of significance as per F probability. According to the regression (Eq.3), both GpC and lagCpC positively affect the consumption per capita – a 1% increase in GpC increases CpC by 0.13%, while a 1% increase in CpC in a year increases the CpC in the following year by 0.02%.

Nepal

The econometric analysis of the consumption time-series from 2000–2013 for Nepal yields the following equation:

$$\ln \text{CpC} = -1.4769 + 0.2694 \ln \text{GpC} + 1.0356 \ln \text{lagCpC}; \quad F \text{ probability} = 0.05 \quad (\text{Eq. 4})$$

The time series model (Eq. 4) is valid at 95% level of significance as per F probability. According to the regression (Eq.4), both GpC and lagCpC a 1% increase in GpC increased CpC by about 0.27%, while a 1% increase in CpC in a year increases the CpC in the following year by about 1.04%.

Sri Lanka

The econometric analysis of the consumption time-series of 2000 -2013 for Sri Lanka yields the following equation:

$$\ln \text{CpC} = -1.8721 + 0.1111 \ln \text{GpC} + 0.6747 \ln \text{lagCpC}; F \text{ probability} = 0.0002 \quad (\text{Eq.5})$$

The time series model (Eq. 5) is valid at 99% level of significance as per F probability. According to (Eq.5), both GpC and lagCpC positively affected the consumption per capita – a 1% increase in GpC increased CpC by about 0.11%, while a 1% increase in CpC in a year increases the CpC in the following year by about 0.67%.

Myanmar

The econometric analysis of the consumption time-series from 2000–2013 for Myanmar yields the following equation:

$$\ln \text{CpC} = -6.7778 + 0.4861 \ln \text{GpC} - 0.2897 \ln \text{lagCpC}; F \text{ probability} = 0.014 \quad (\text{Eq.6})$$

The time series model (Eq. 6) is valid at 98% level of significance as per F probability. According to (Eq.6), GpC positively affected the consumption per capita – a 1% increase in GpC increased CpC by about 0.49%, while lagCpC effect was negative, i.e. a 1% increase in CpC in a year decreased the CpC in the following year by about 0.29%.

Annex 15: Selected photos depicting production and trade of timber and timber products in the study countries



Annex 15.1: Poplar logs stored in the yard of a plywood factory in Yamunanagar Haryana India. Logs were sourced from farm forestry plantations, one of which can be seen behind the boundary wall. Photo credit: Sepul K. Barua



Annex 15.2: Imported logs in the yard of a sawmill in Birgunj, Nepal. Photo credit: Sepul K. Barua



Annex 15.3: A Sri Lanka State Timber Corporation wooden furniture showroom in Colombo, Sri Lanka. Photo credit: Sepul K. Barua



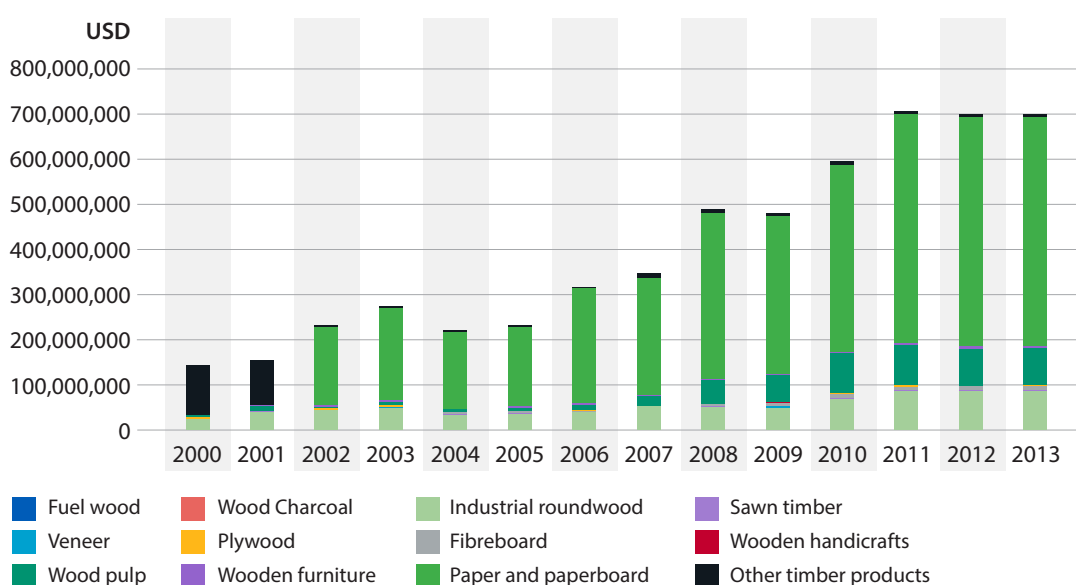
Annex 15.4: Truckload of logs imported from Malaysia through the Kolkata seaport in India waiting at the Birgunj border point before being transported inside Nepal. Photo credit: Sepul K. Barua



Annex 15.5: Truckload of sandal wood being smuggled to China from India caught in Nepal. Photo credit: Sepul K. Barua

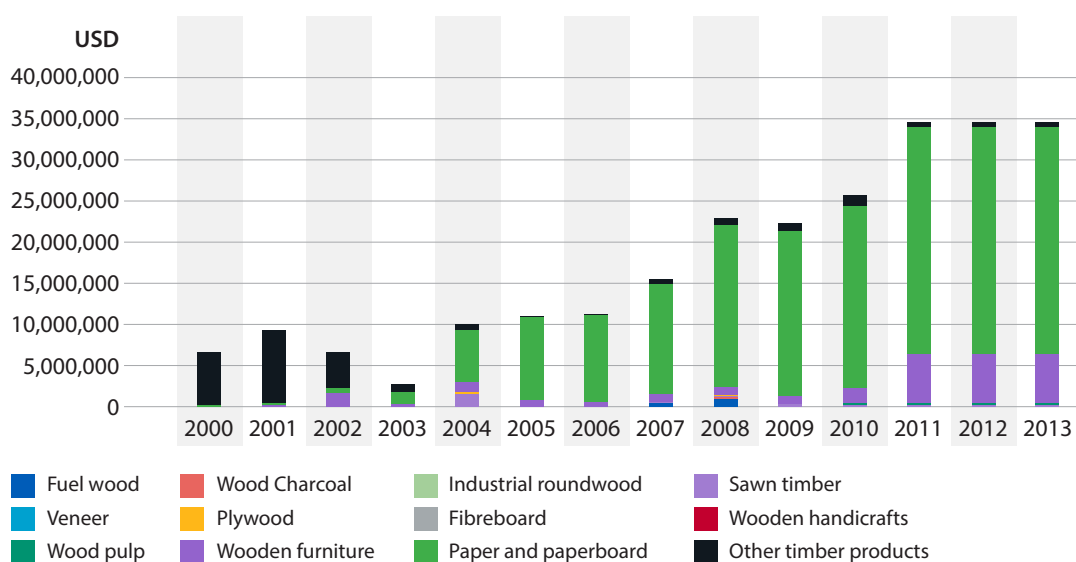
Annex 16: Trend in total exports and imports of timber and timber products

Bangladesh



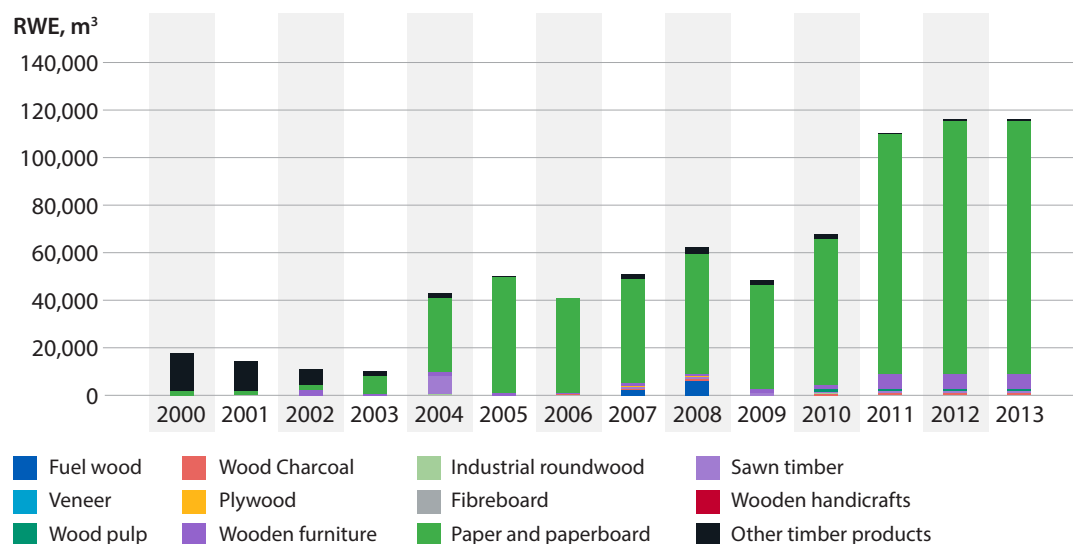
Annex 16.1: Product-wise imports of timber and timber products to Bangladesh (value)

Sources: UN Comtrade and FAOSTAT



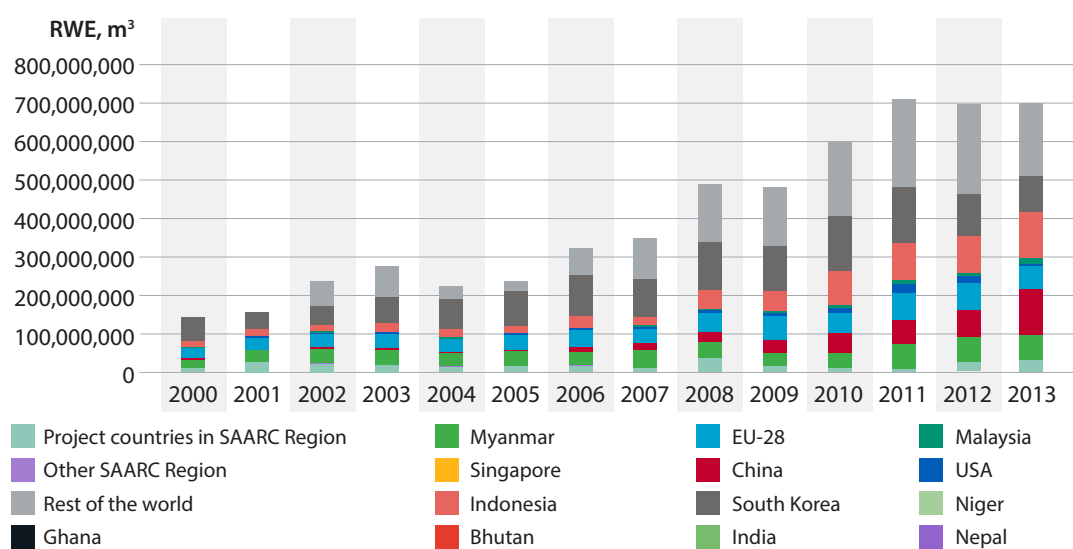
Annex 16.2: Exports of timber and timber products from Bangladesh (value)

Sources: UN Comtrade and FAOSTAT



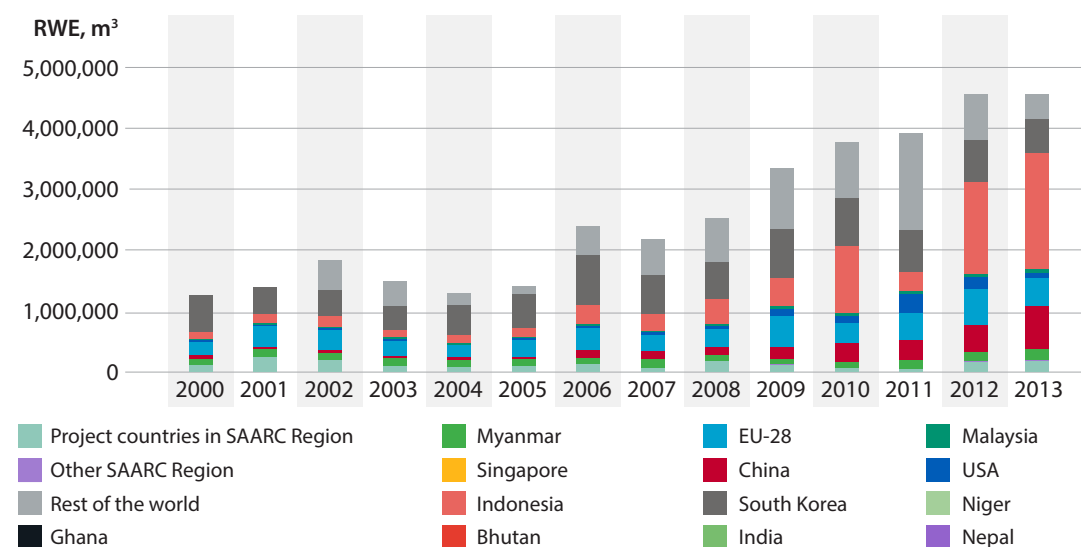
Annex 16.3: Exports of timber and timber products from Bangladesh (volume)

Sources: UN Comtrade and FAOSTAT



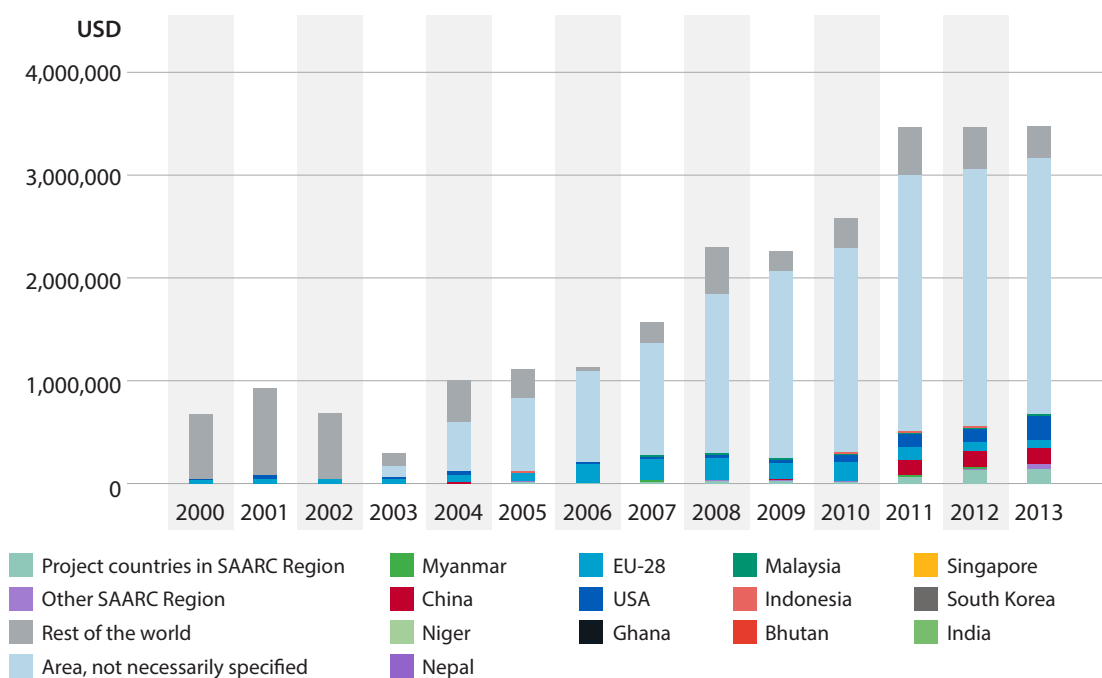
Annex 16.4: Bangladesh's import partners for timber and timber products (value)

Sources: UN Comtrade and FAOSTAT



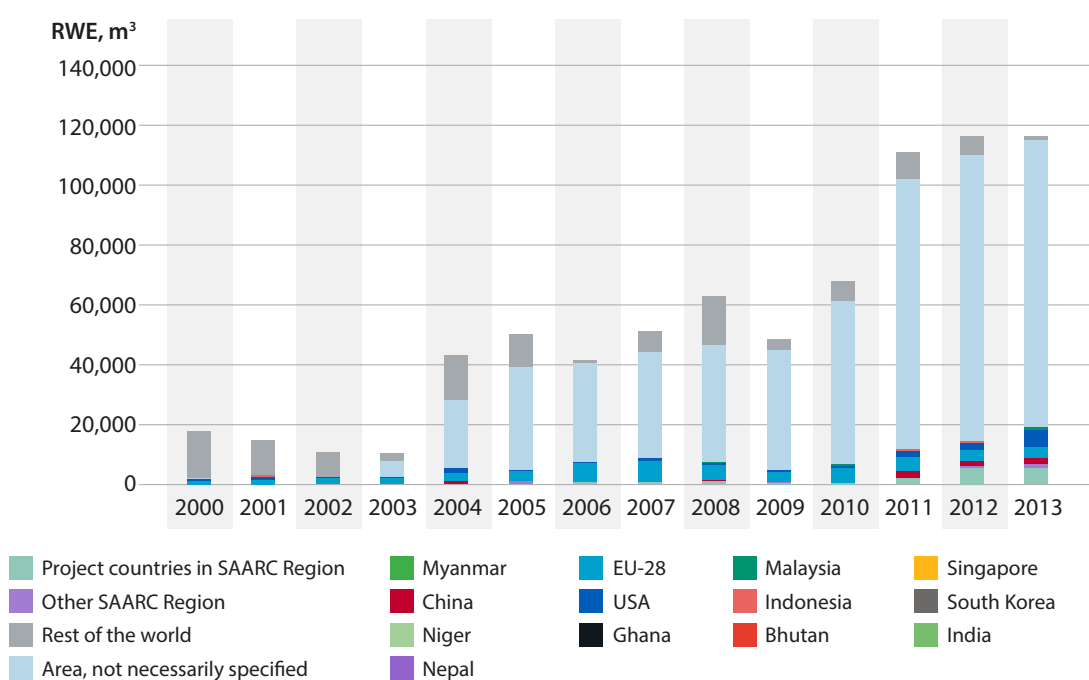
Annex 16.5: Bangladesh's import partners for timber and timber products (volume)

Sources: UN Comtrade and FAOSTAT



Annex 16.6: Bangladesh's export partners for timber and timber products (value)

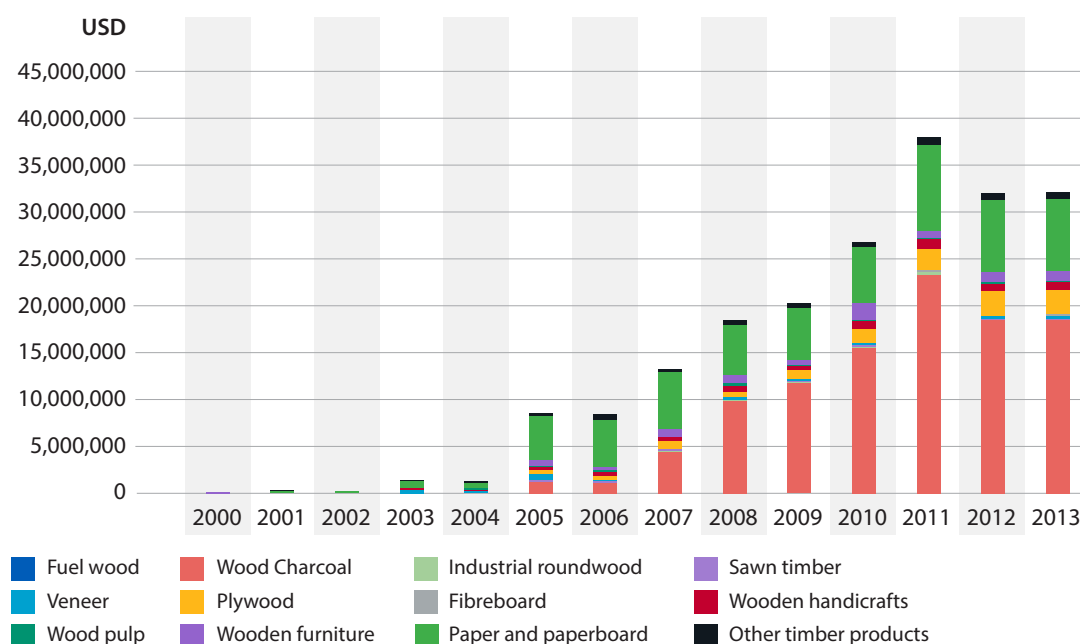
Sources: UN Comtrade and FAOSTAT



Annex 16.7: Bangladesh's export partners for timber and timber products (volume)

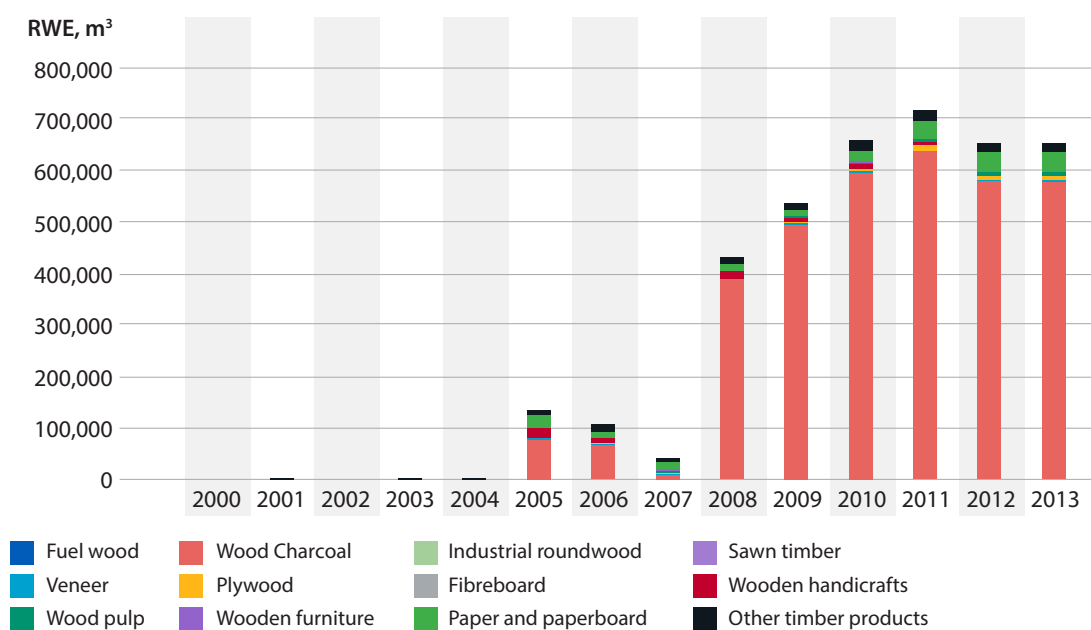
Sources: UN Comtrade and FAOSTAT

Bhutan



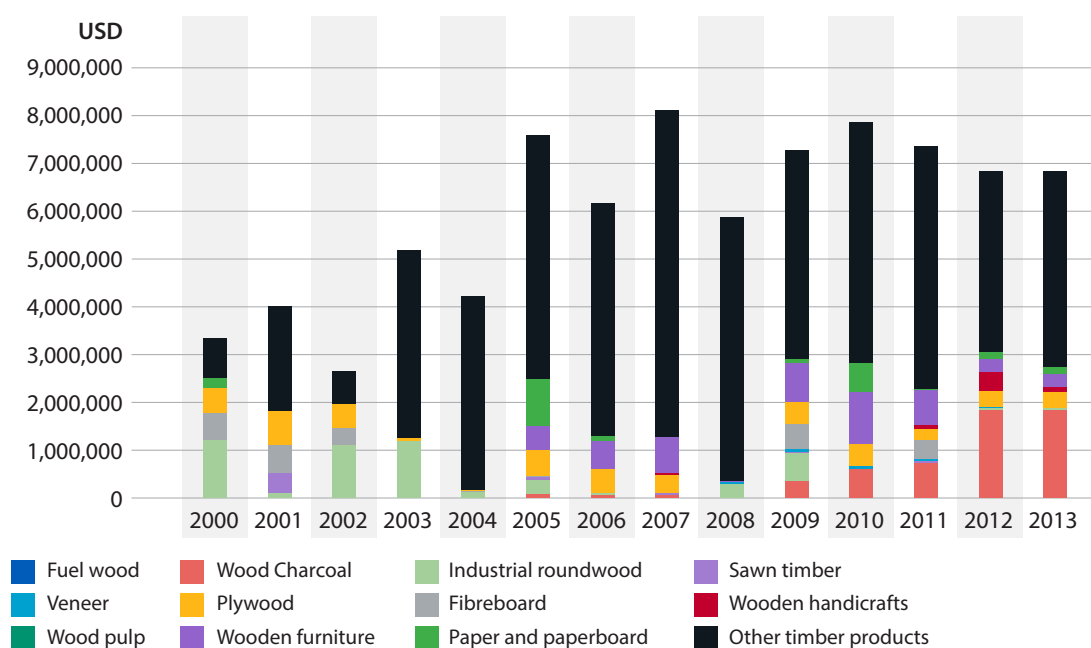
Annex 16.8: Imports of timber and timber products to Bhutan (value)

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics.



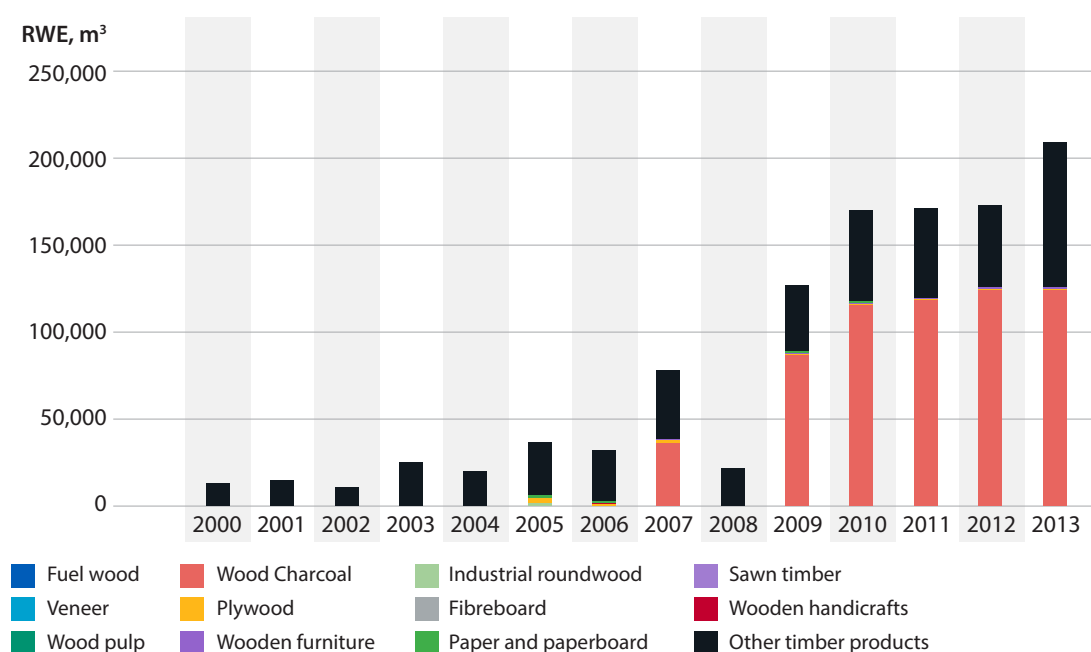
Annex 16.9: Imports of timber and timber products to Bhutan (volume)

Source: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



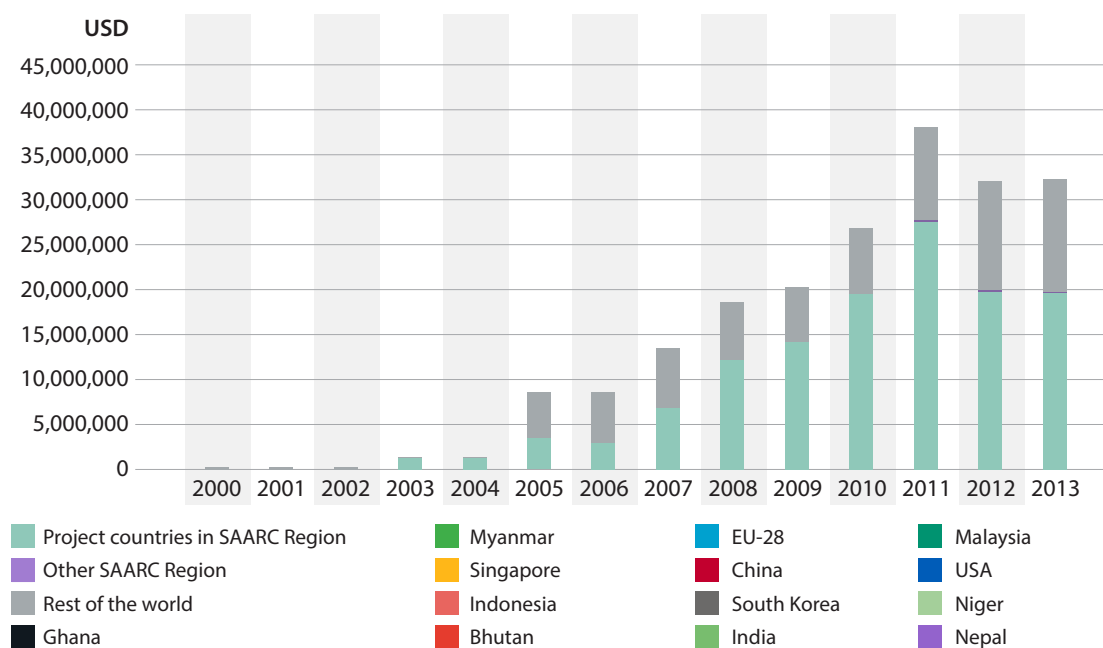
Annex 16.10: Exports of timber and timber products from Bhutan (value)

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



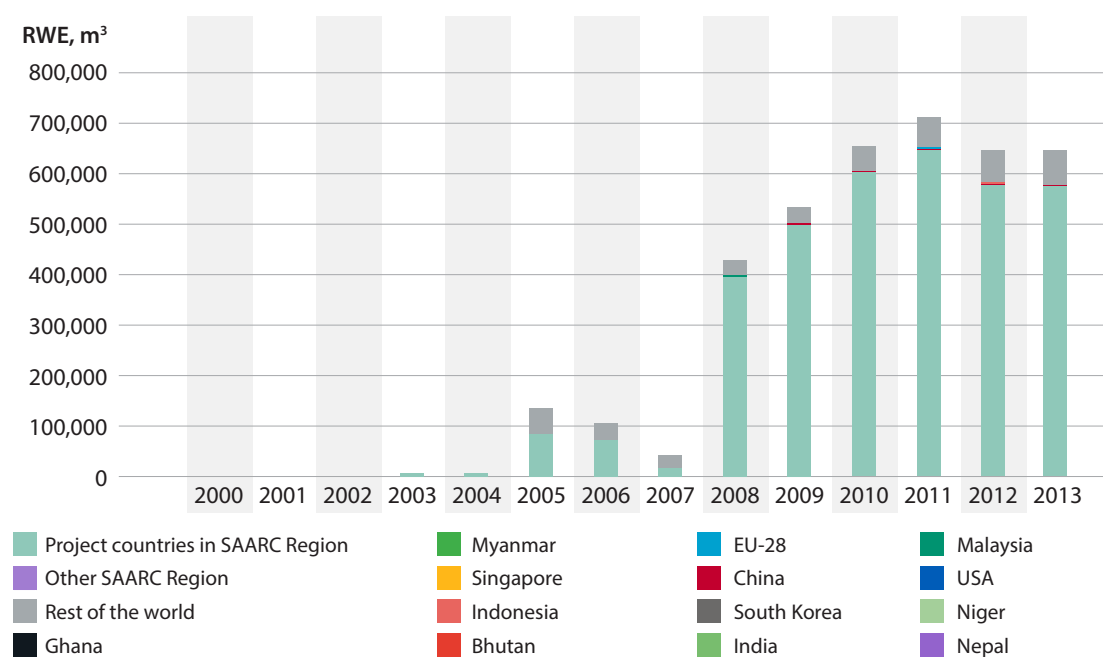
Annex 16.11: Exports of timber and timber products from Bhutan (volume)

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



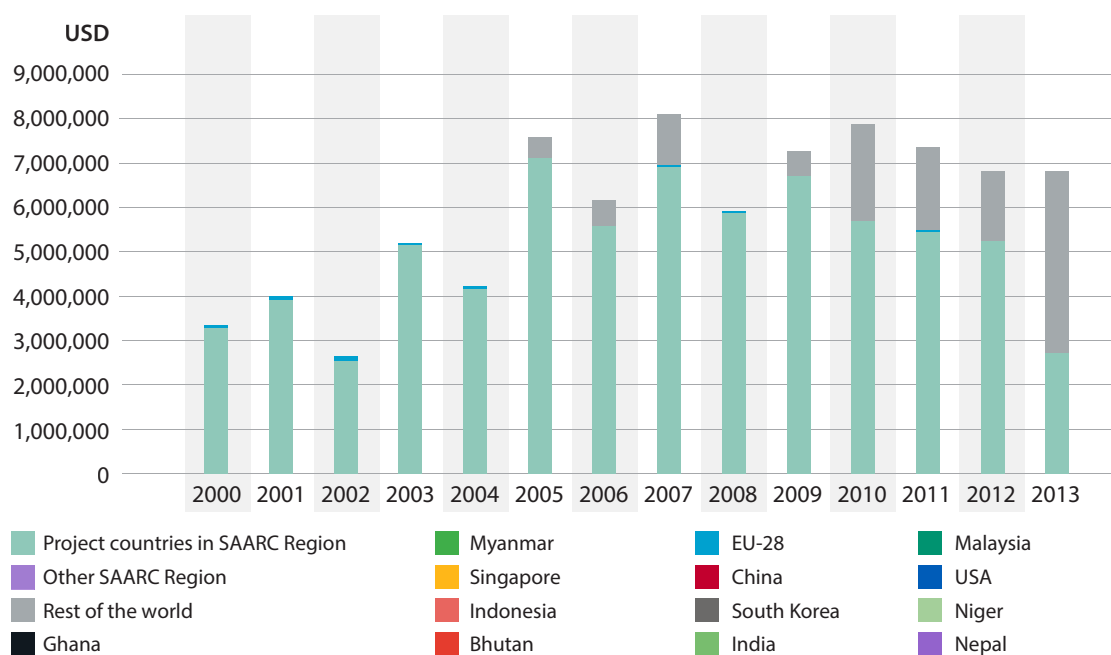
Annex 16.12: Bhutan's import partners for timber and timber products (value)

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



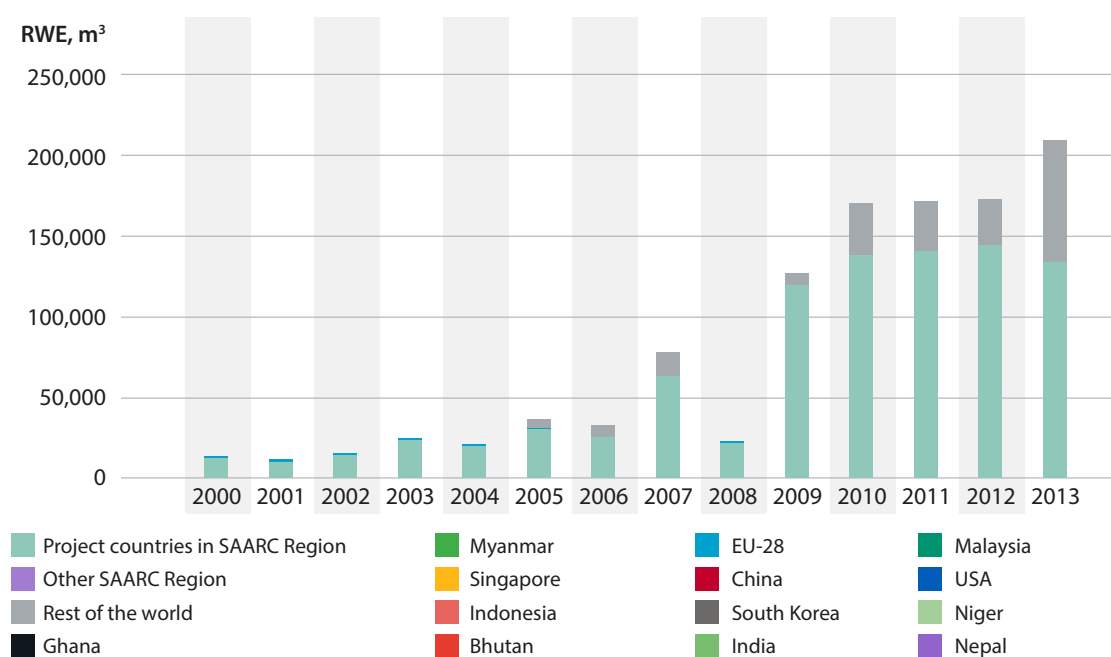
Annex 16.13: Bhutan's import partners for timber and timber products (volume)

Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



Annex 16.14: Bhutan's export partners for timber and timber products (value)

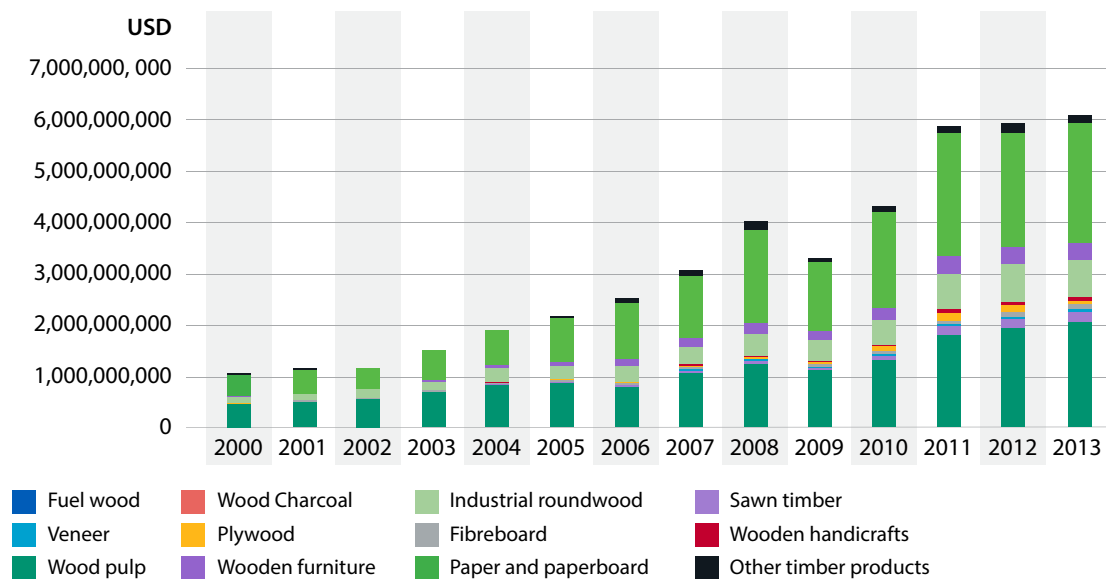
Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics



Annex 16.15: Bhutan's export partners for timber and timber products (volume)

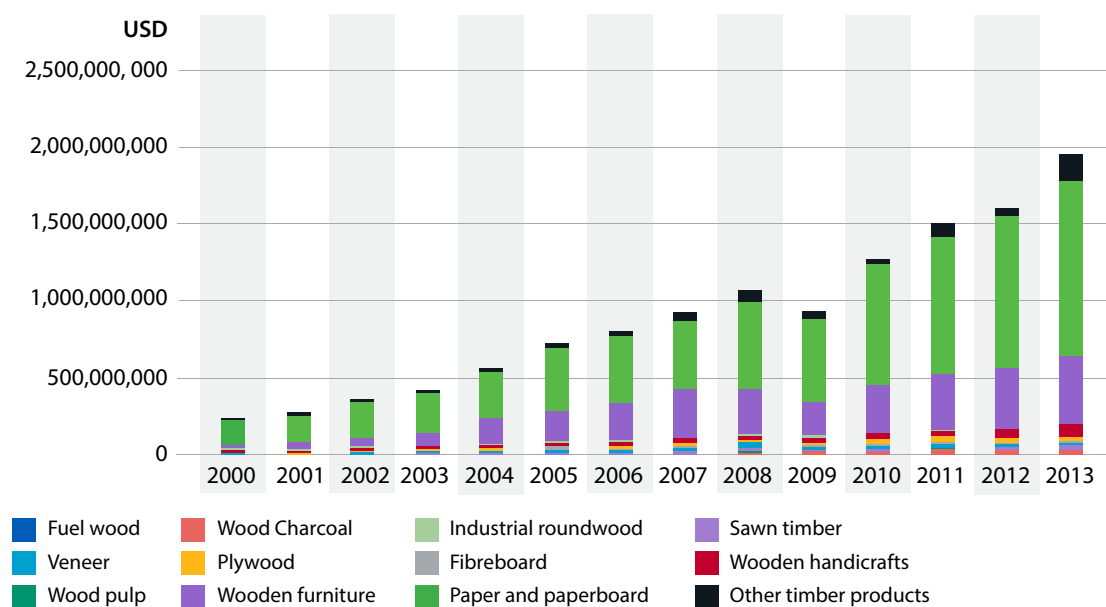
Sources: UN Comtrade; FAOSTAT; and Bhutan Trade Statistics

India



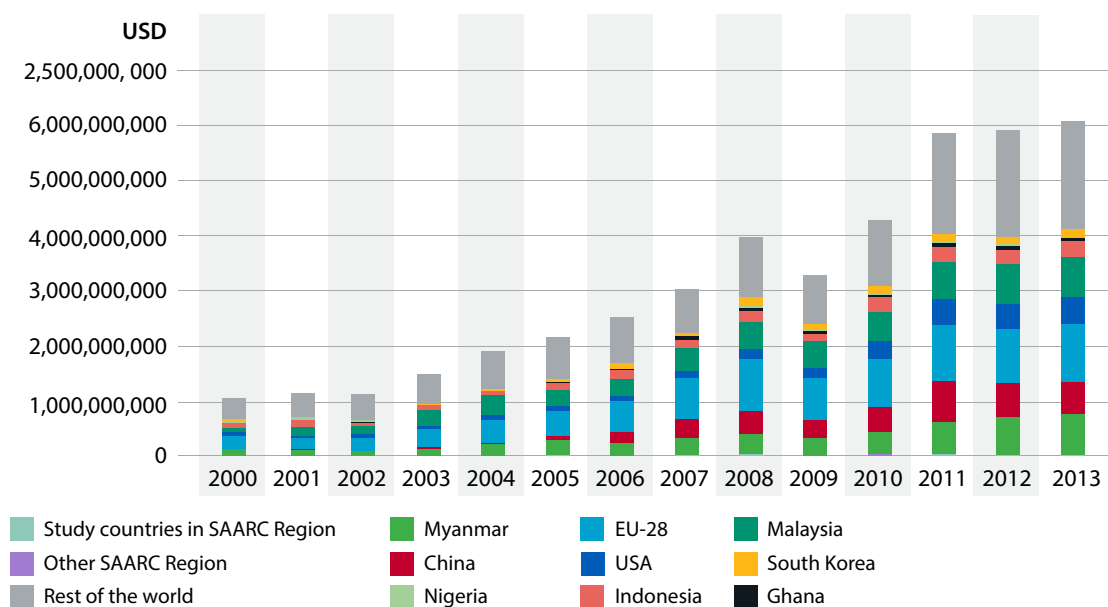
Annex 16.16: Product-wise imports of timber and timber products to India (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India



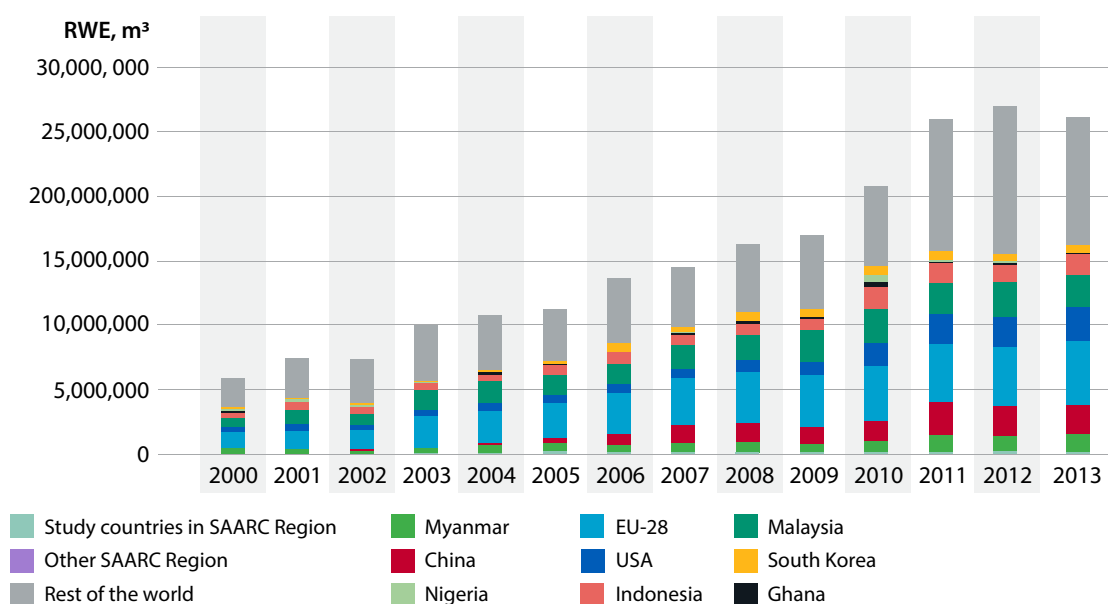
Annex 16.17: Exports of timber and timber products from India (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India



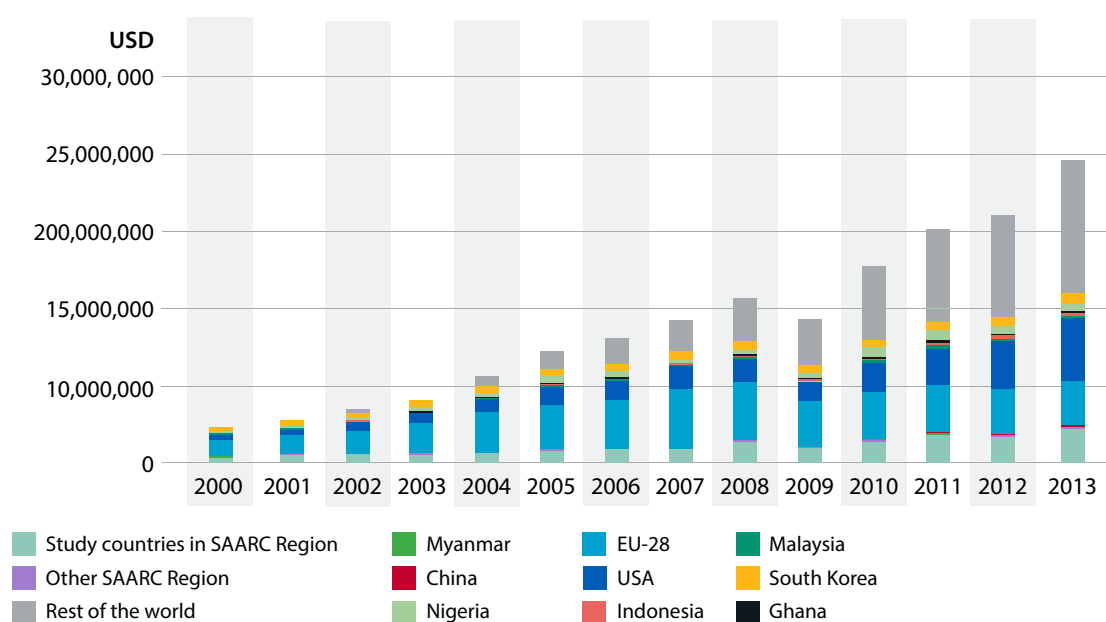
Annex 16.18: India's import partners for timber and timber products (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India



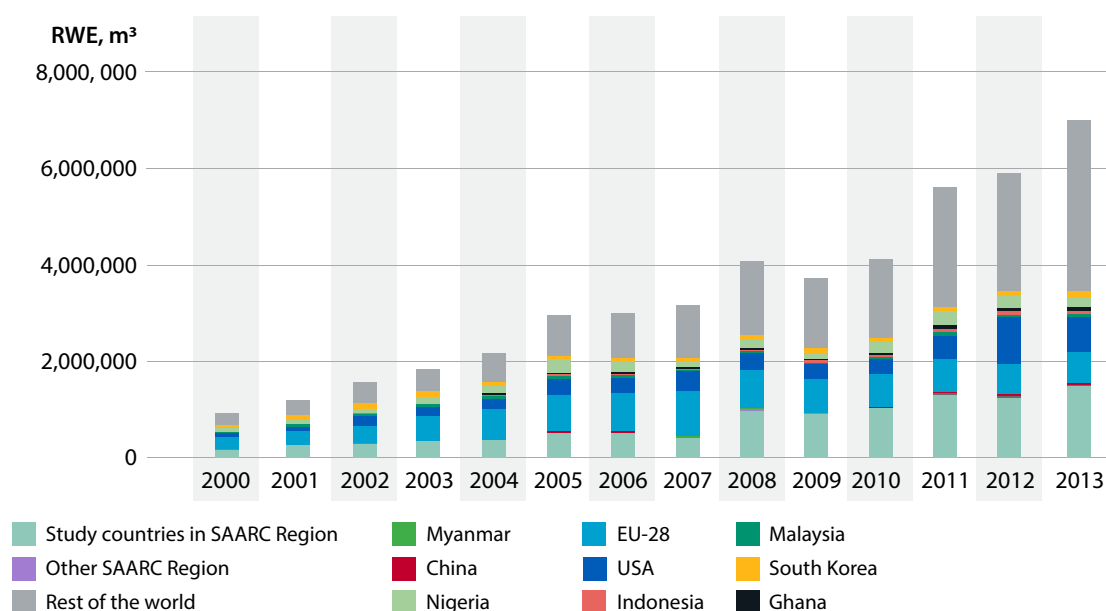
Annex 16.19: India's import partners for timber and timber products (volume)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India



Annex 16.20: India's export partners for timber and timber products (value)

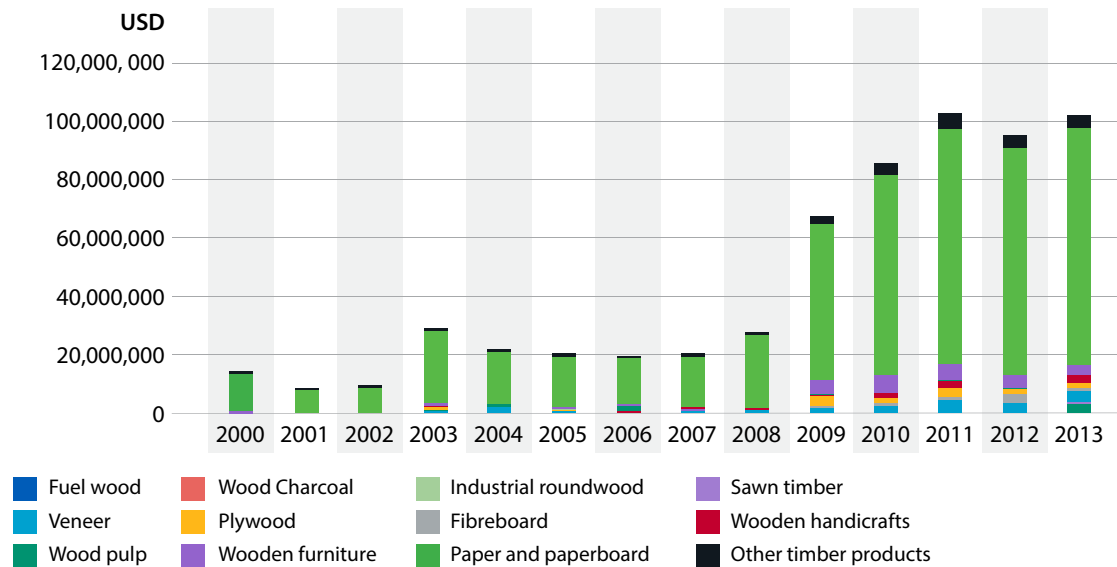
Sources: UN Comtrade FAOSTAT; and Export Import Data Bank of India



Annex 16.21: India's export partners for timber and timber products (volume)

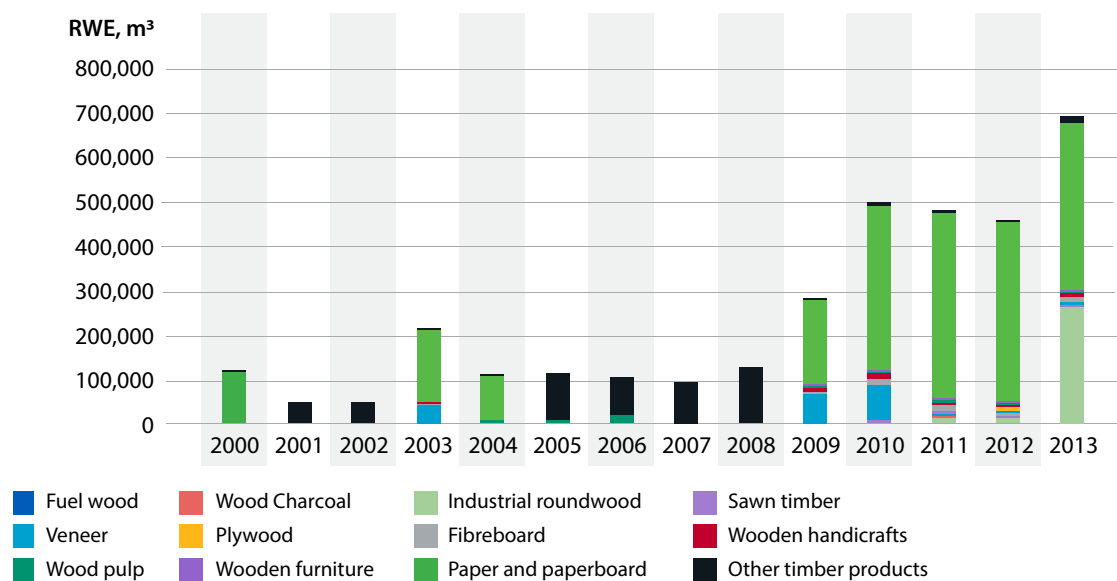
Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of India

Nepal



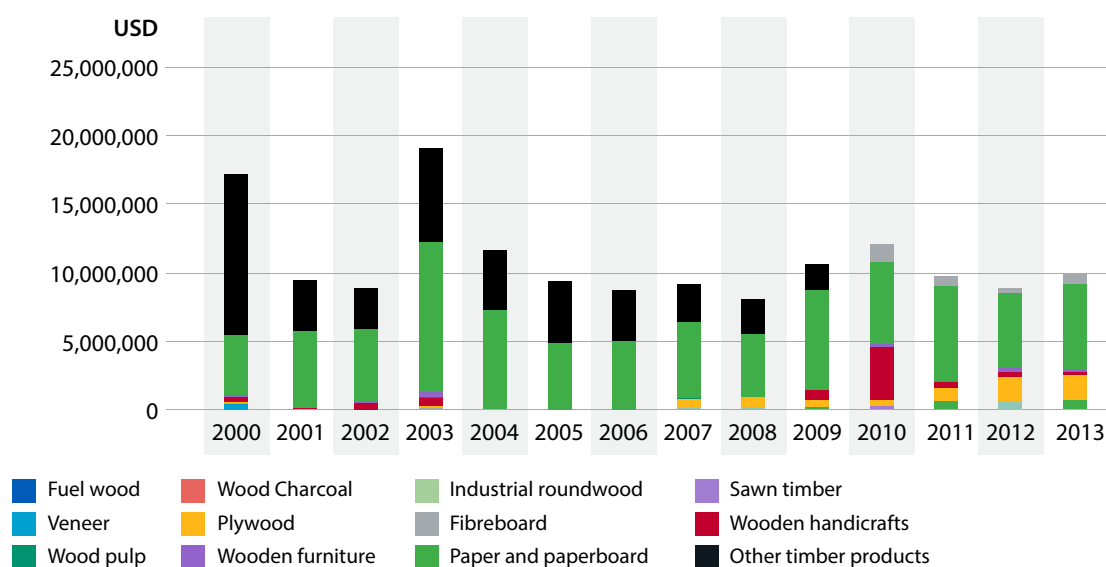
Annex 16.22: Imports of timber and timber products to Nepal (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal



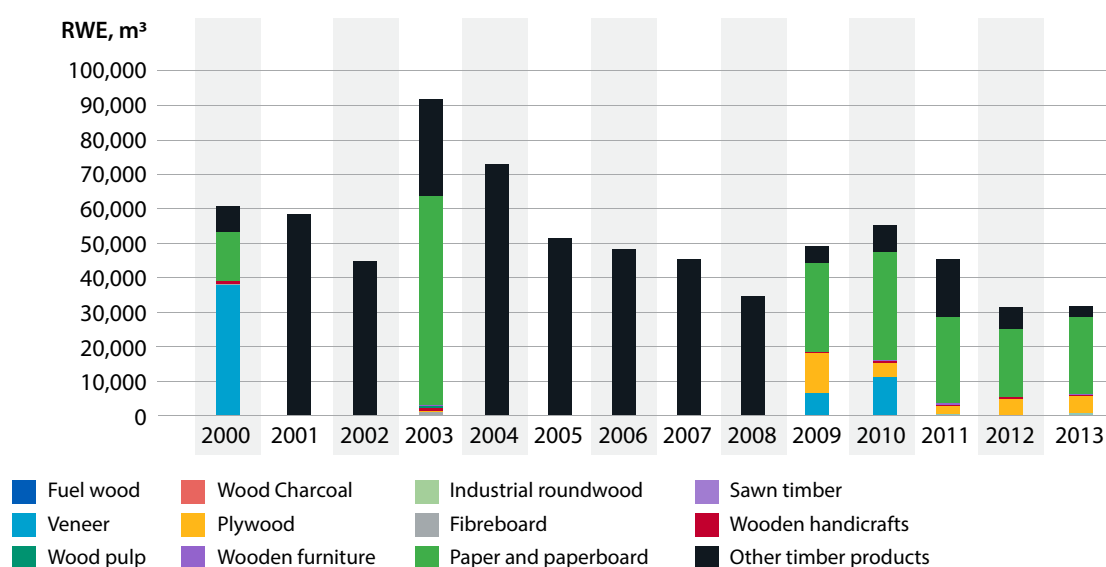
Annex 16.23: Imports of timber and timber products to Nepal (volume)

Sources: UN Comtrade FAOSTAT; and Export Import Data Bank of Nepal



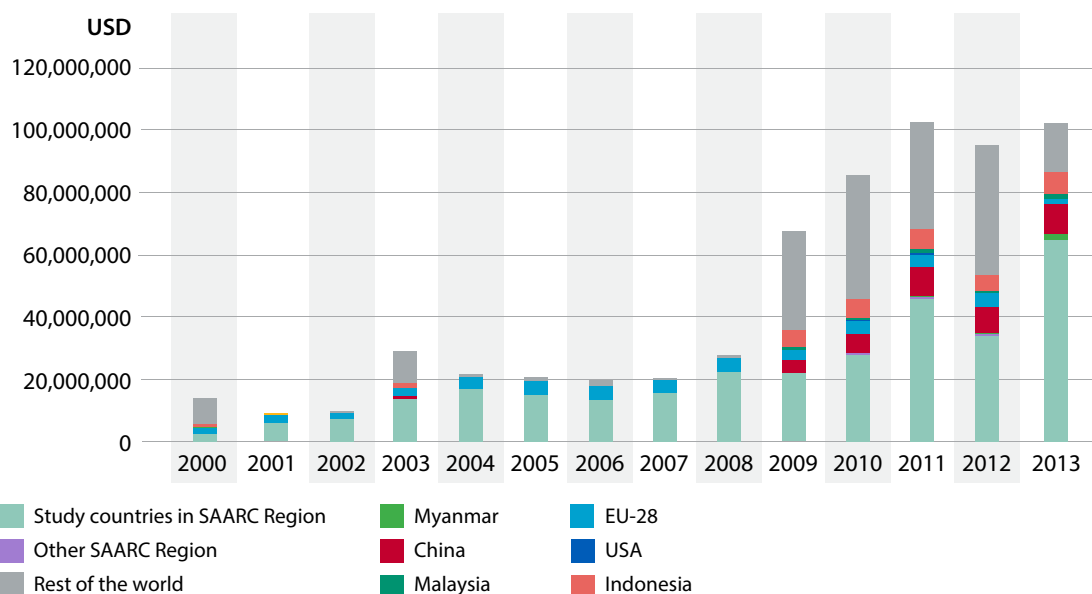
Annex 16.24: Exports of timber and timber products from Nepal (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal



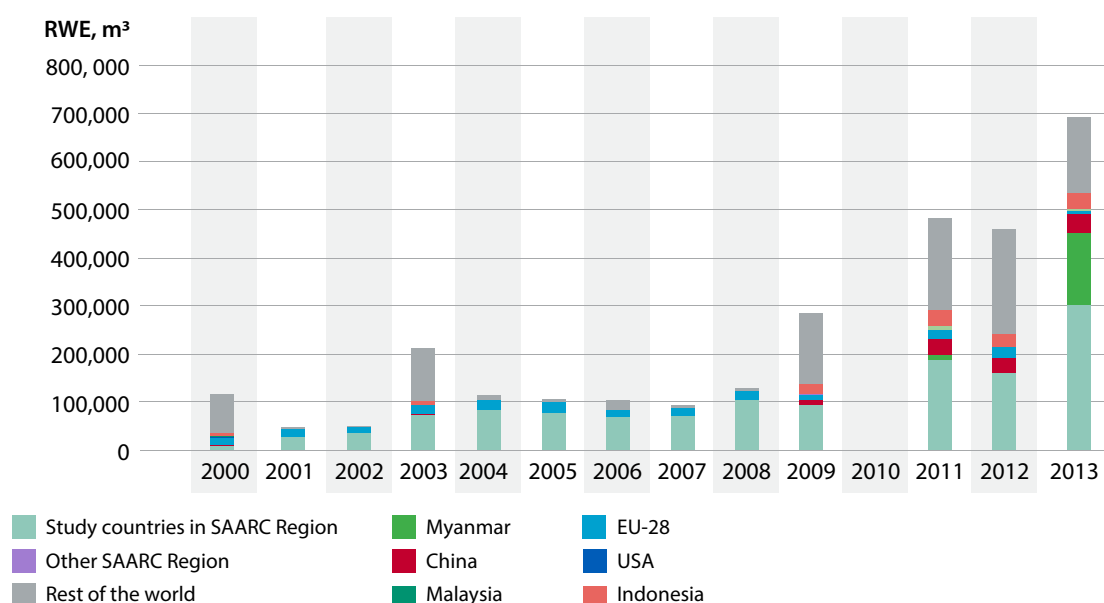
Annex 16.25: Exports of timber and timber products from Nepal (volume)

Sources: UN Comtrade FAOSTAT; and Export Import Data Bank of Nepal



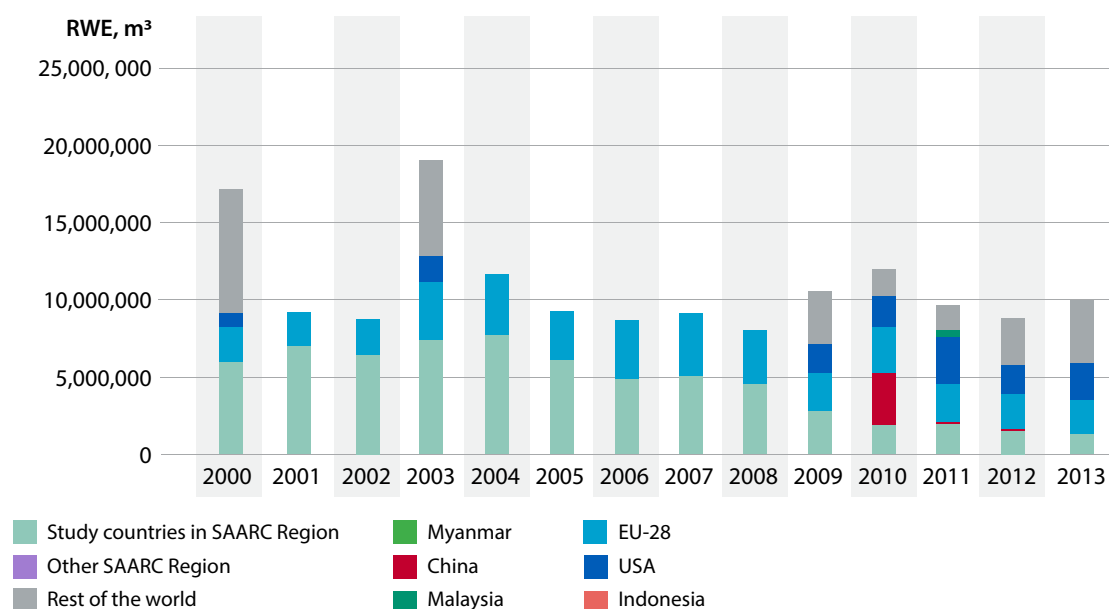
Annex 16.26: Nepal's import partners for timber and timber products (value)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal



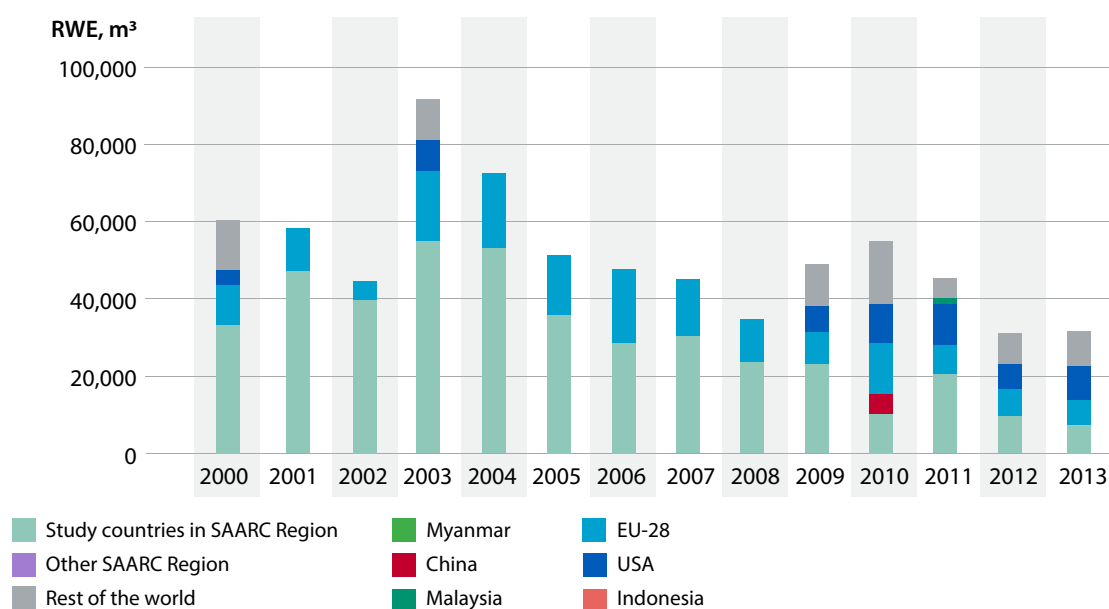
Annex 16.27: Nepal's import partners for timber and timber products (volume)

Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal



Annex 16.28: Nepal's export partners for timber and timber products (value)

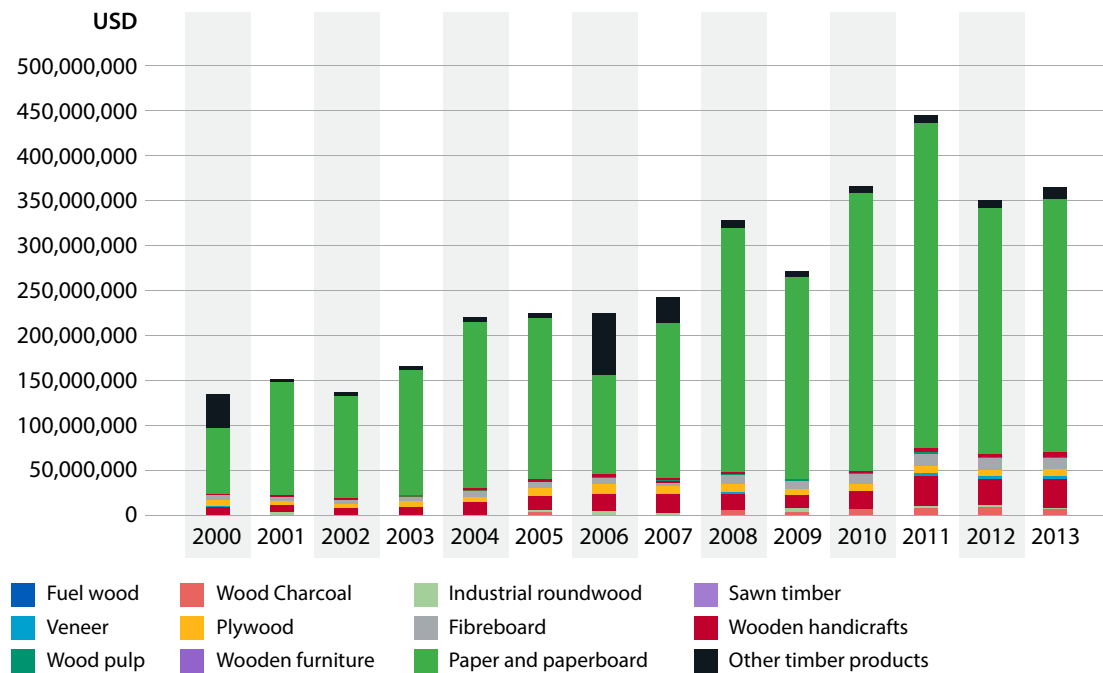
Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal



Annex 16.29: Nepal's export partners for timber and timber products (volume)

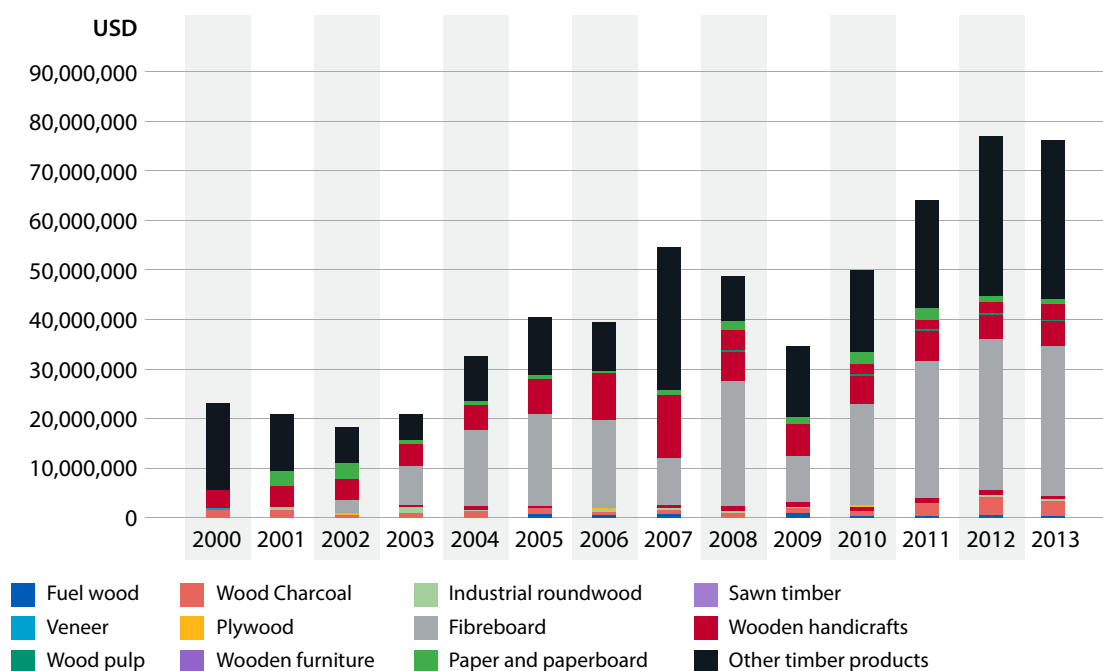
Sources: UN Comtrade; FAOSTAT; and Export Import Data Bank of Nepal

Sri Lanka



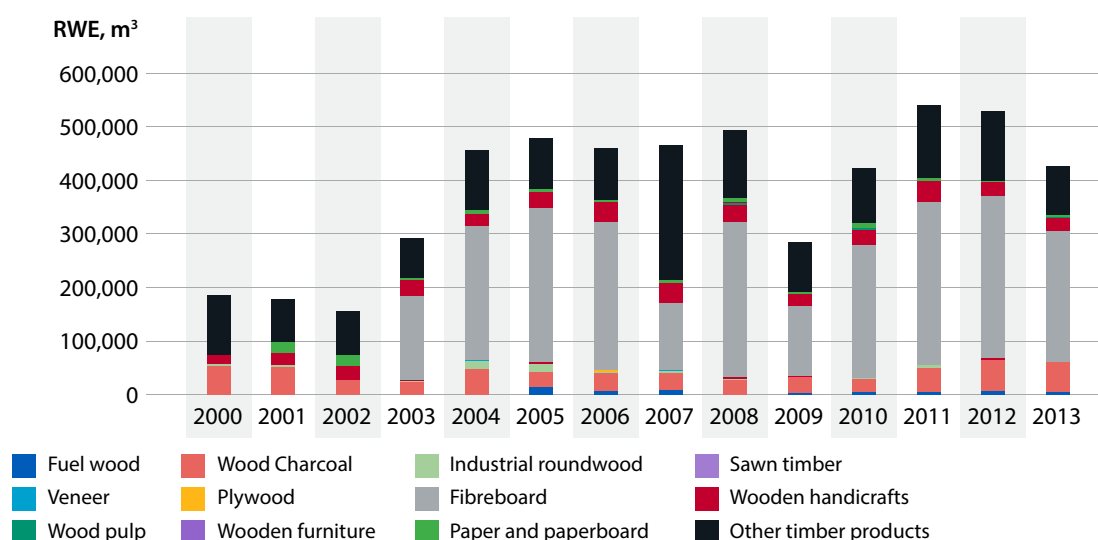
Annex 16.30: Imports of timber and timber products to Sri Lanka (value)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



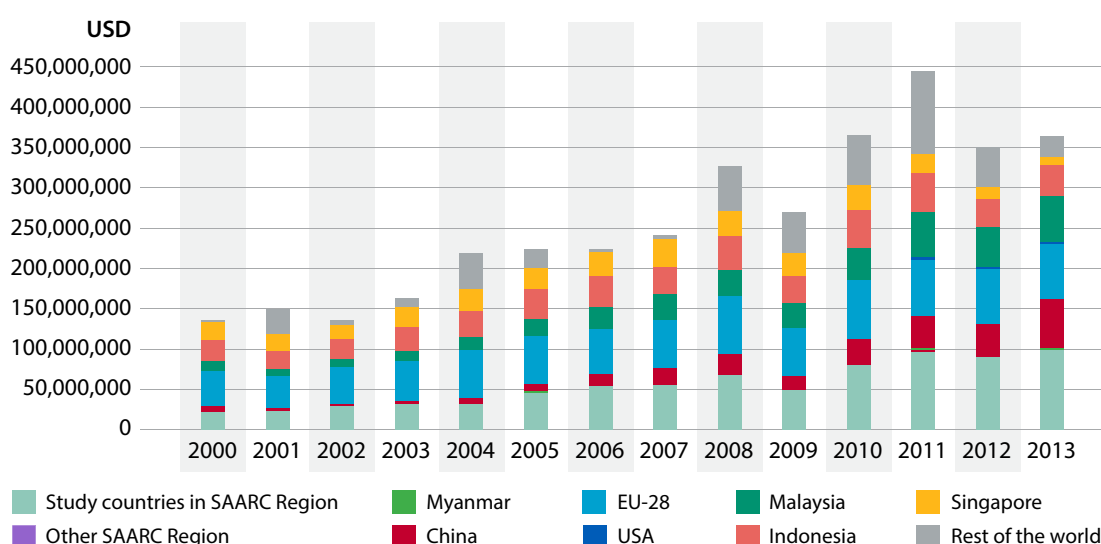
Annex 16.31: Exports of timber and timber products from Sri Lanka (value)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



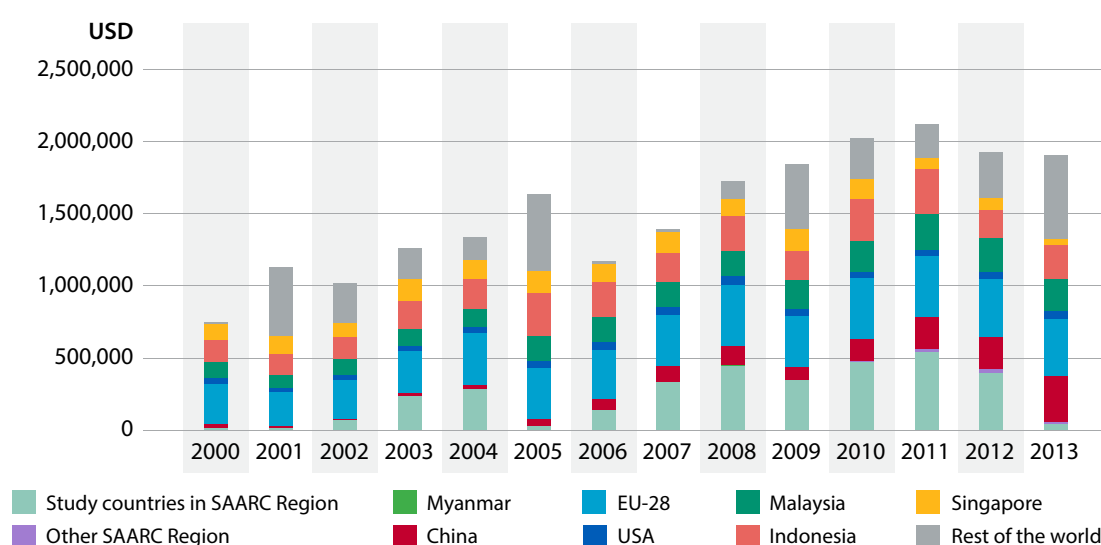
Annex 16.32: Exports of timber and timber products from Sri Lanka (volume)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



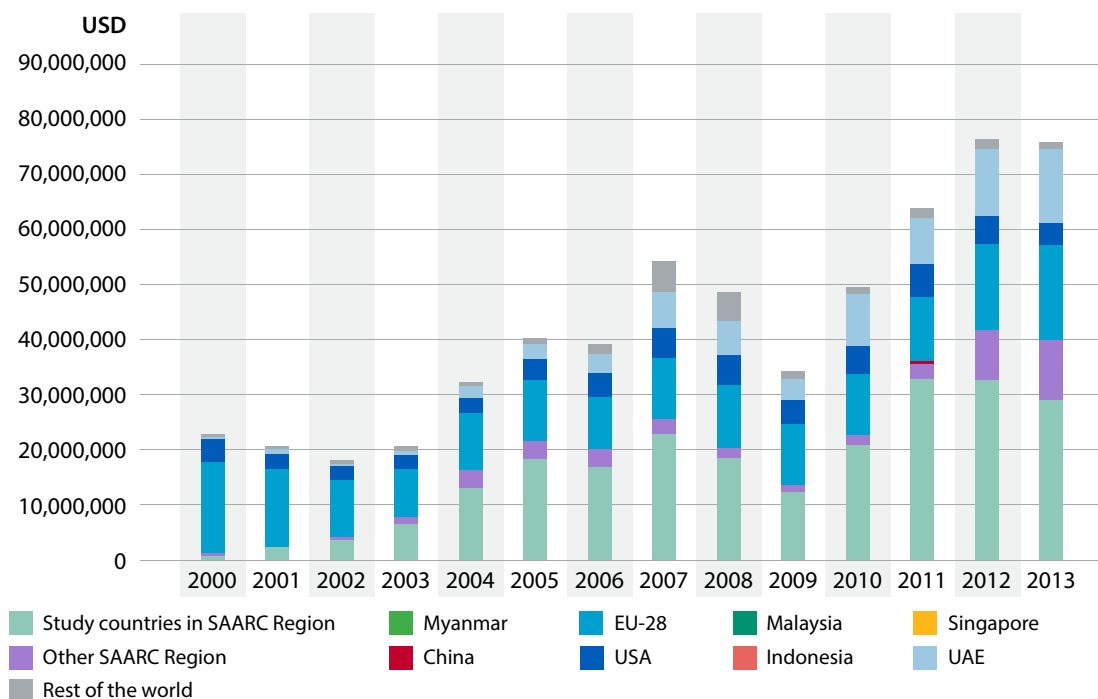
Annex 16.33: Sri Lanka's import partners for timber and timber products (value)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



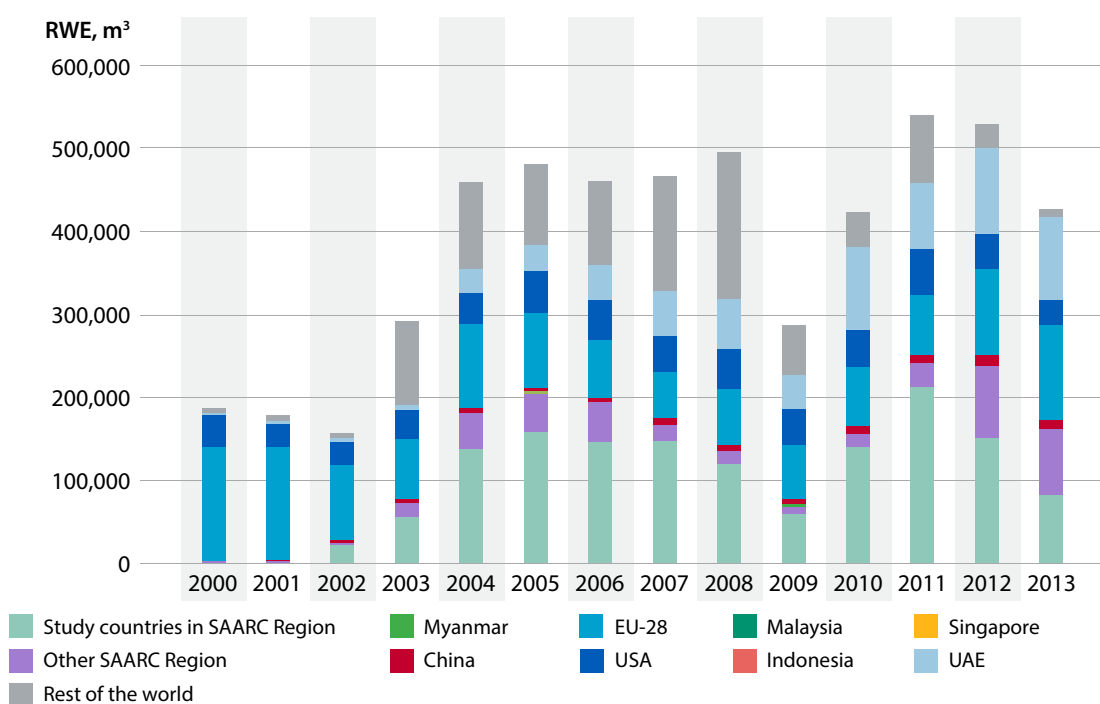
Annex 16.34: Sri Lanka's import partners for timber and timber products (volume)

Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



Annex 16.35: Sri Lanka's export partners for timber and timber products (value)

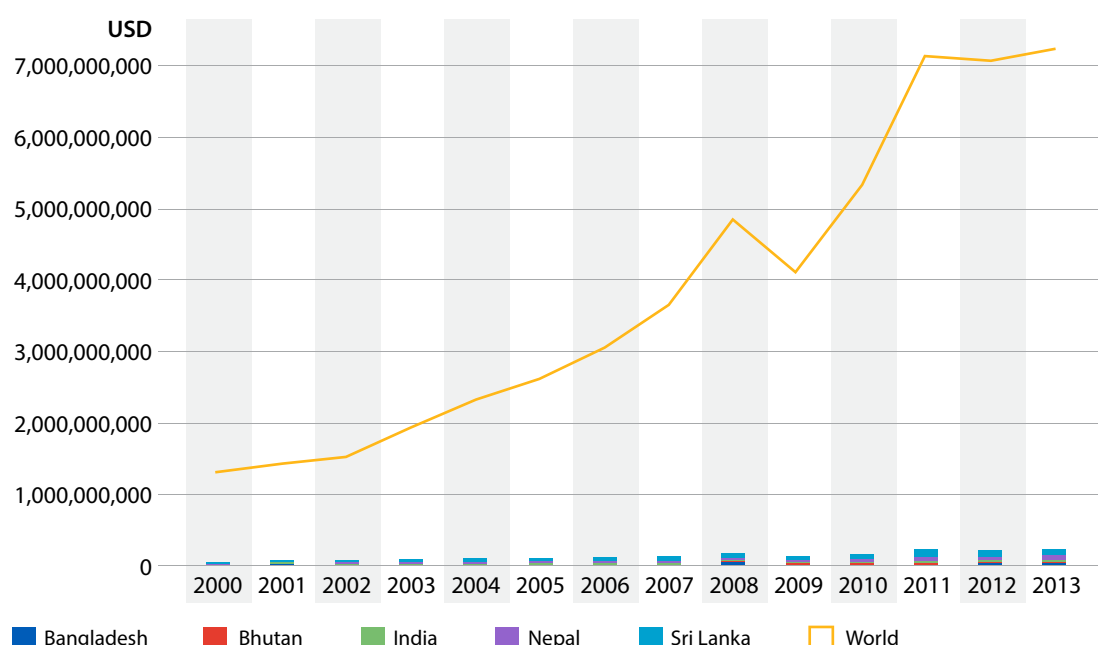
Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs



Annex 16.36: Sri Lanka's export partners for timber and timber products (volume)

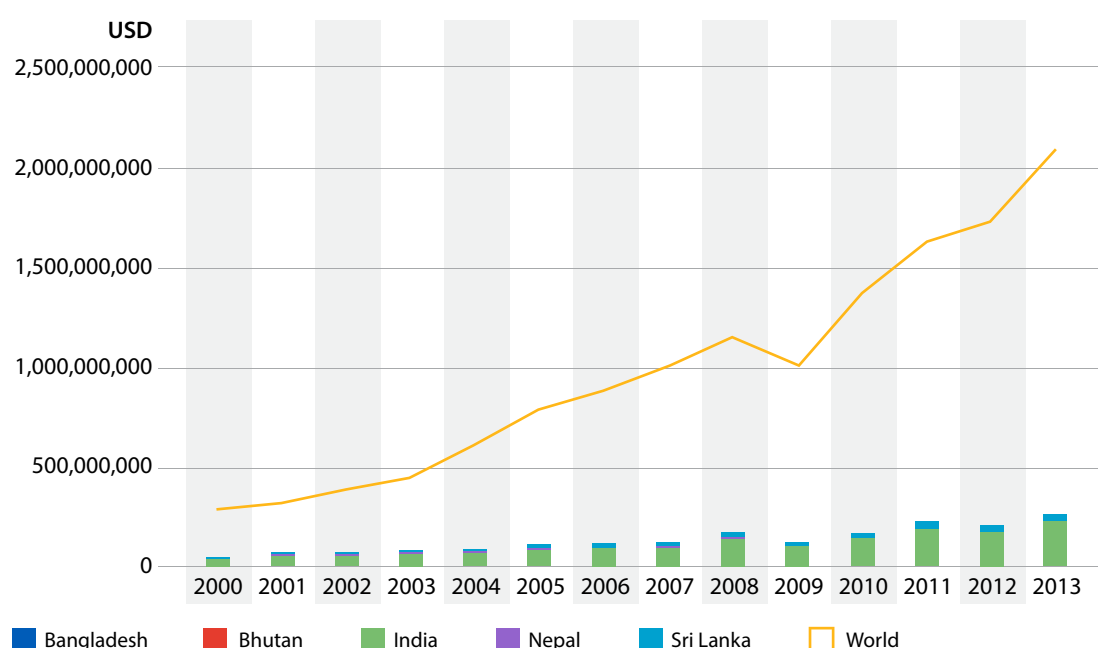
Sources: UN Comtrade; FAOSTAT; and Sri Lanka Customs

Annex 17: Trend in exports and imports of timber and timber products among the study countries in the South Asian Association for Regional Cooperation region



Annex 17.1: The study countries' imports in the South Asian Association for Regional Cooperation region from each other and the world

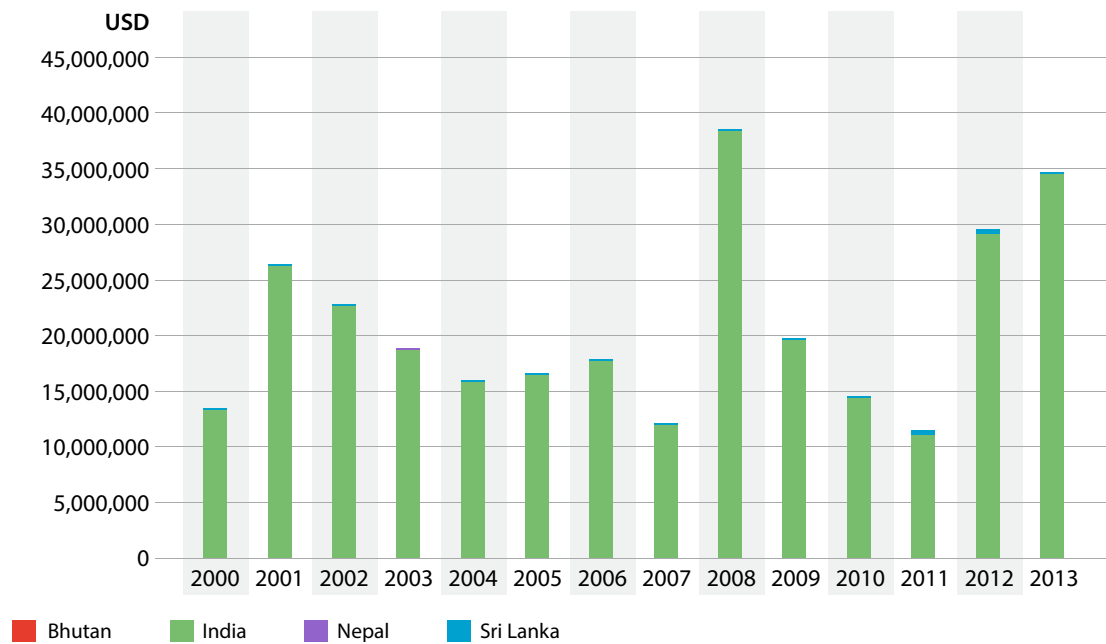
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.2: The study countries' exports in the South Asian Association for Regional Cooperation region to each other and world

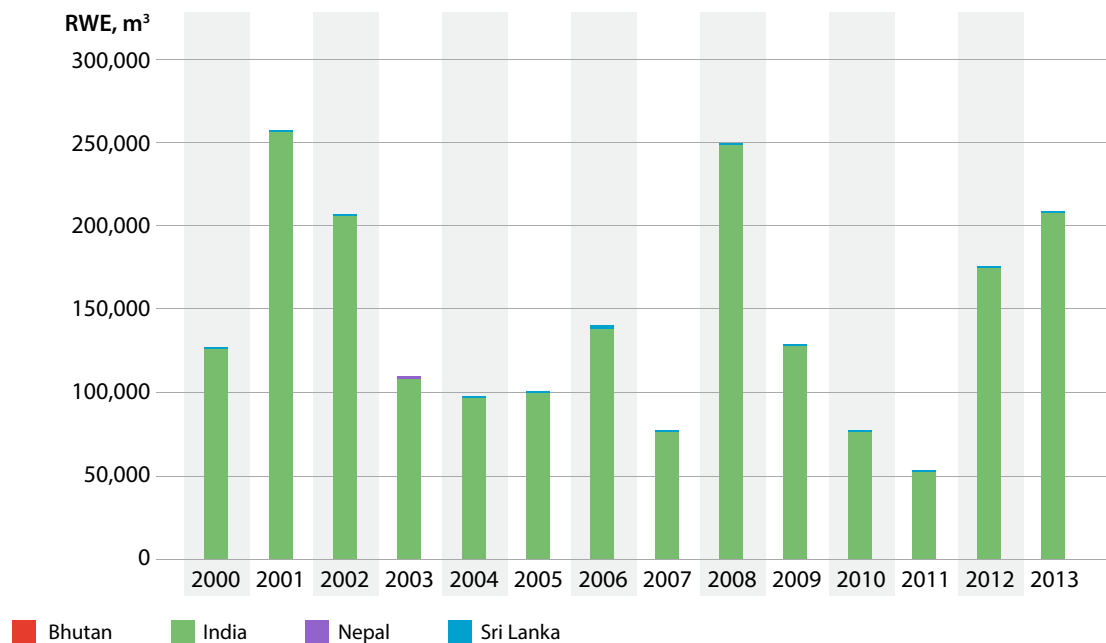
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Bangladesh



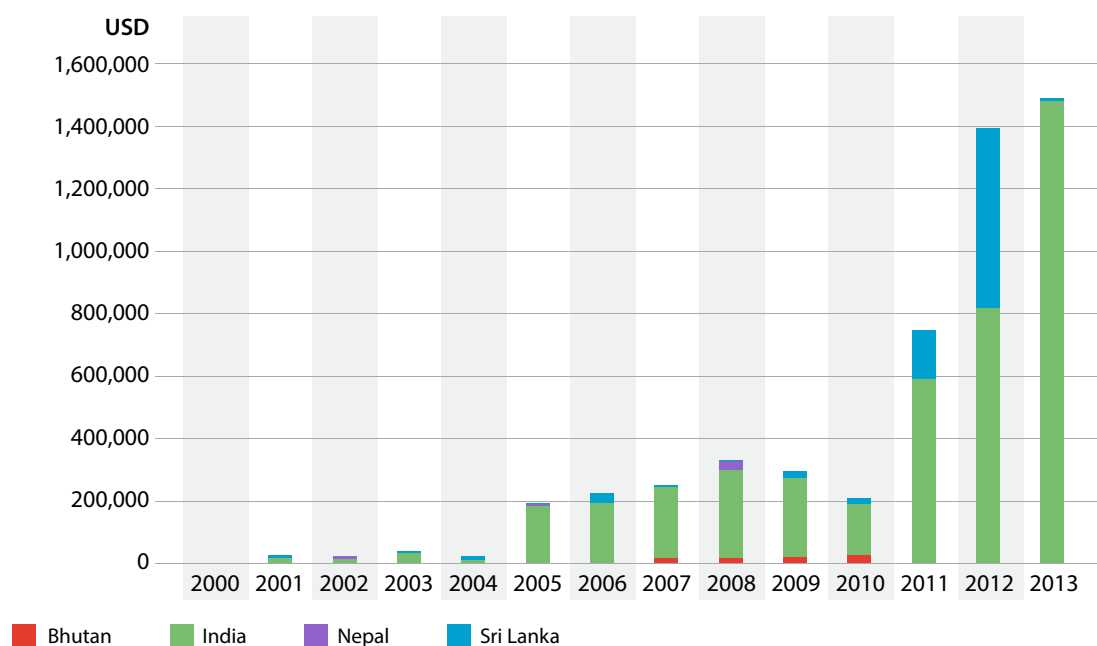
Annex 17.3: Bangladesh's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



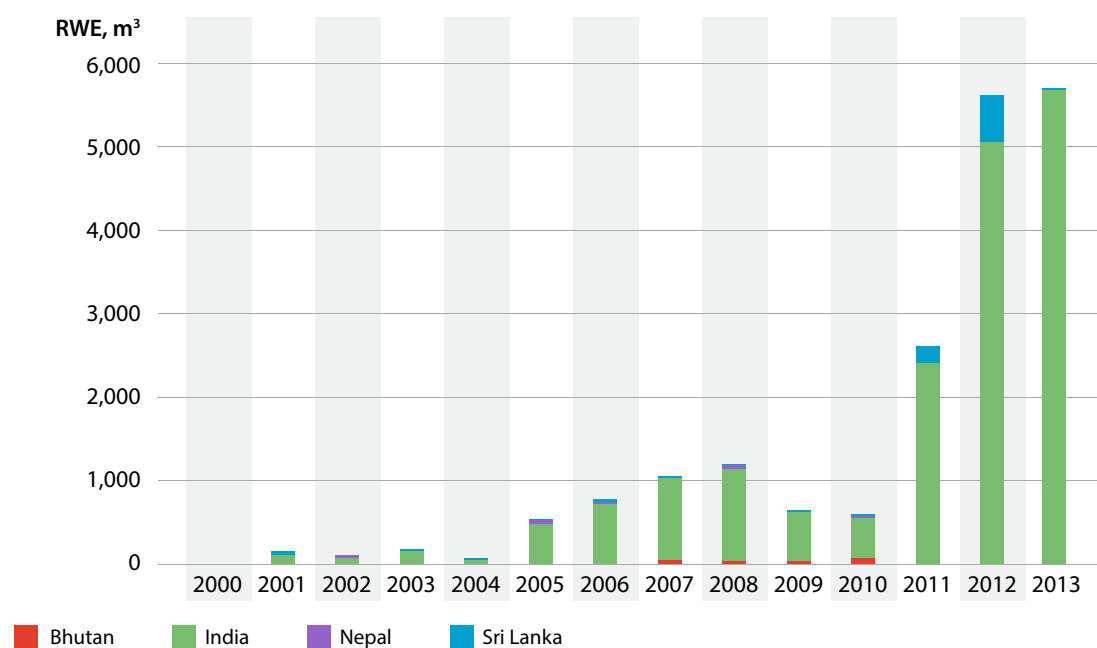
Annex 17.4: Bangladesh's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



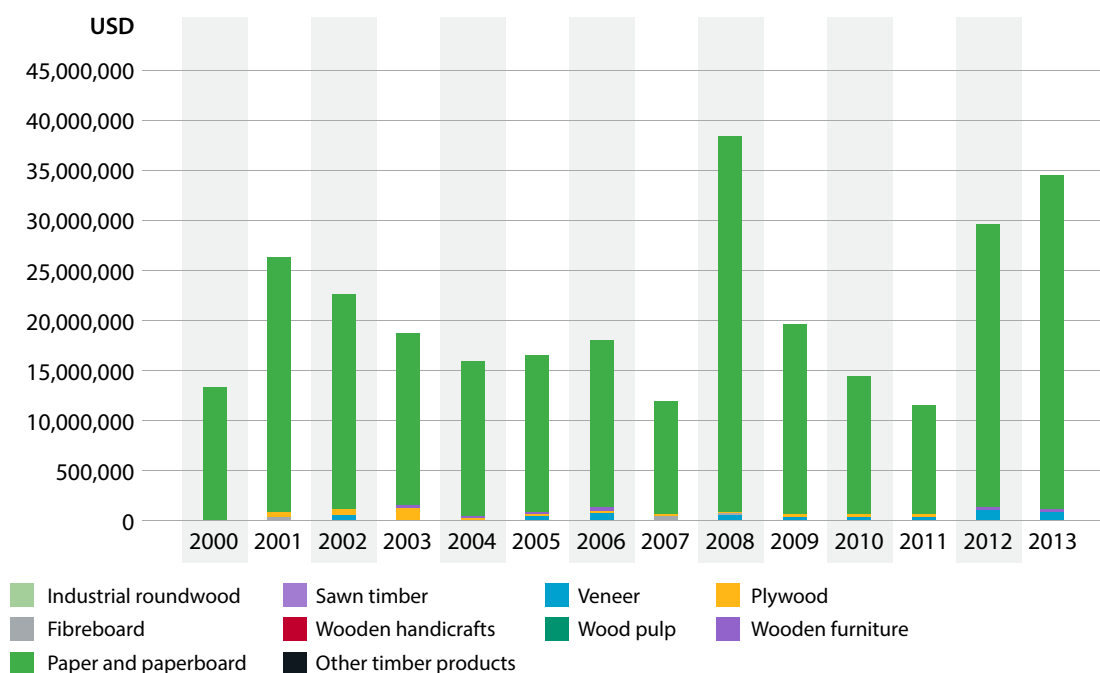
Annex 17.5: Bangladesh's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



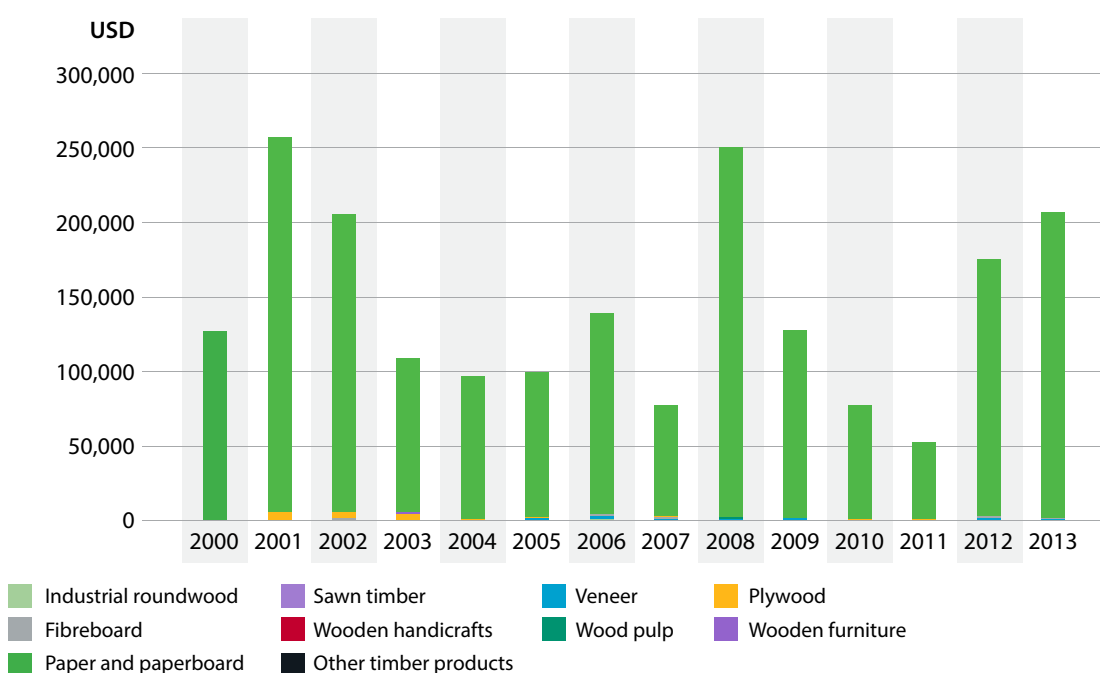
Annex 17.6: Bangladesh's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



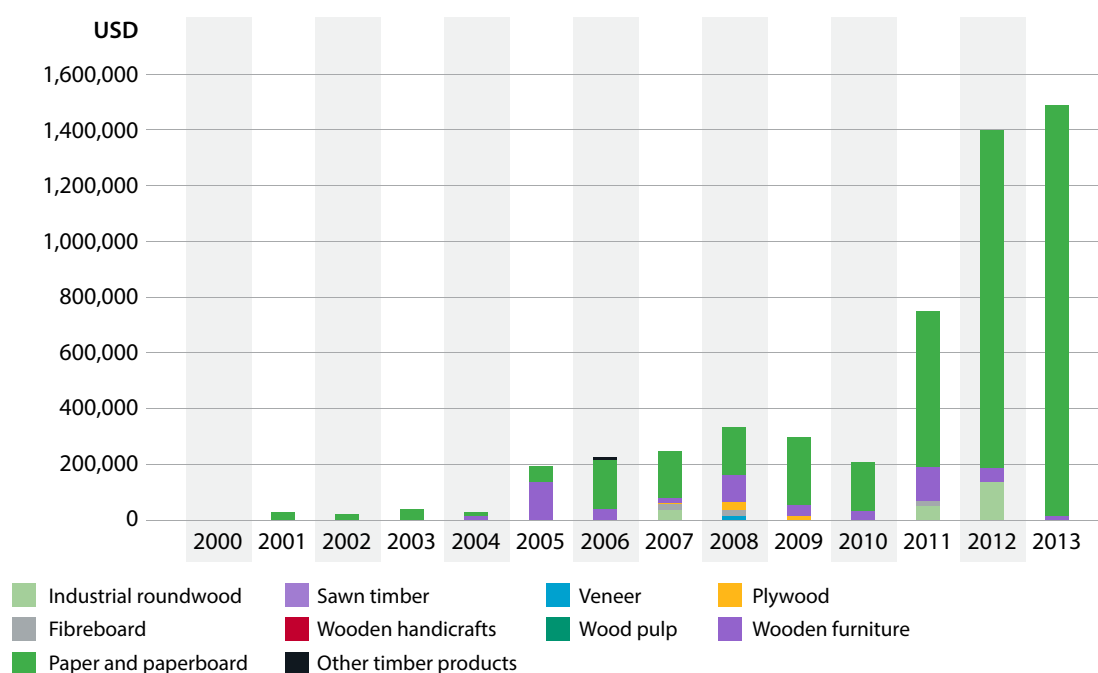
Annex 17.7: Bangladesh's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



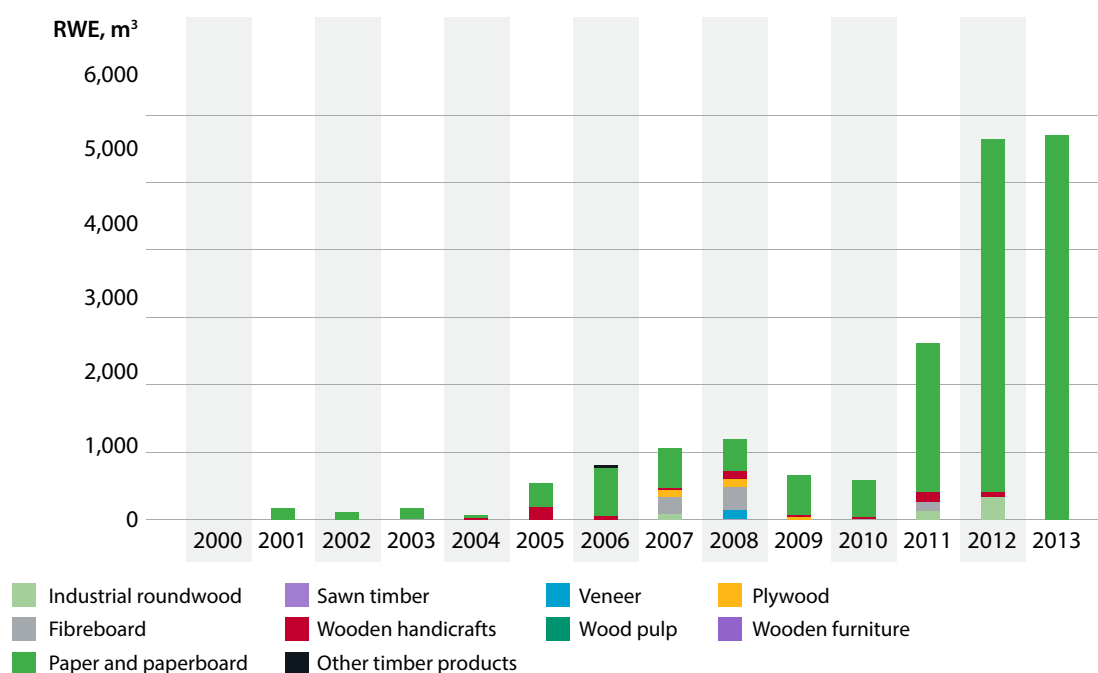
Annex 17.8: Bangladesh's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.9 Bangladesh's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

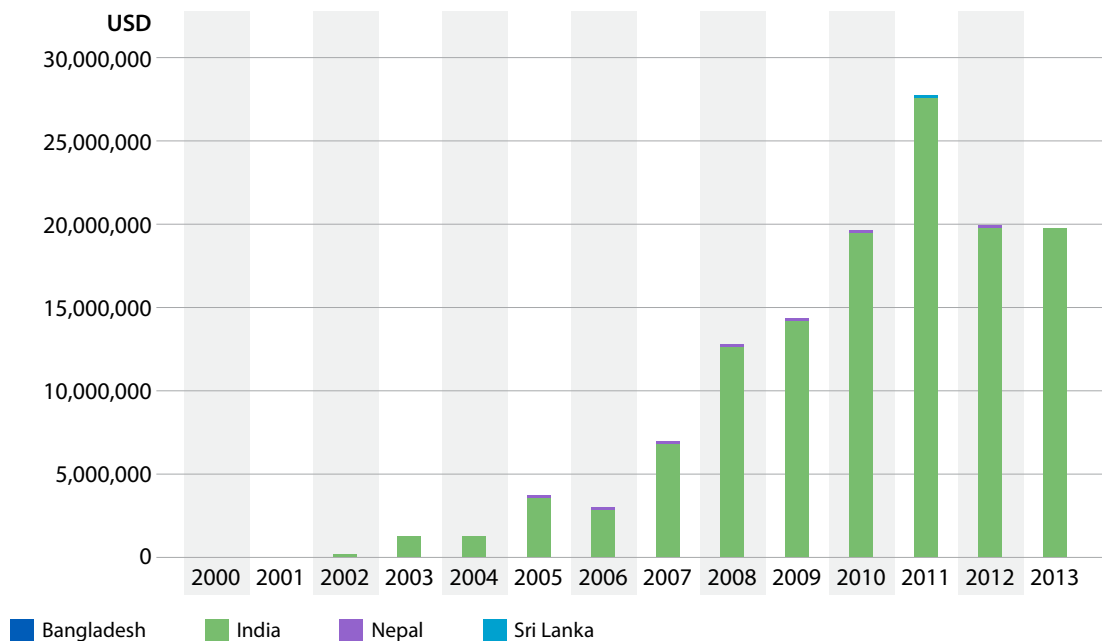
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.10: Bangladesh's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

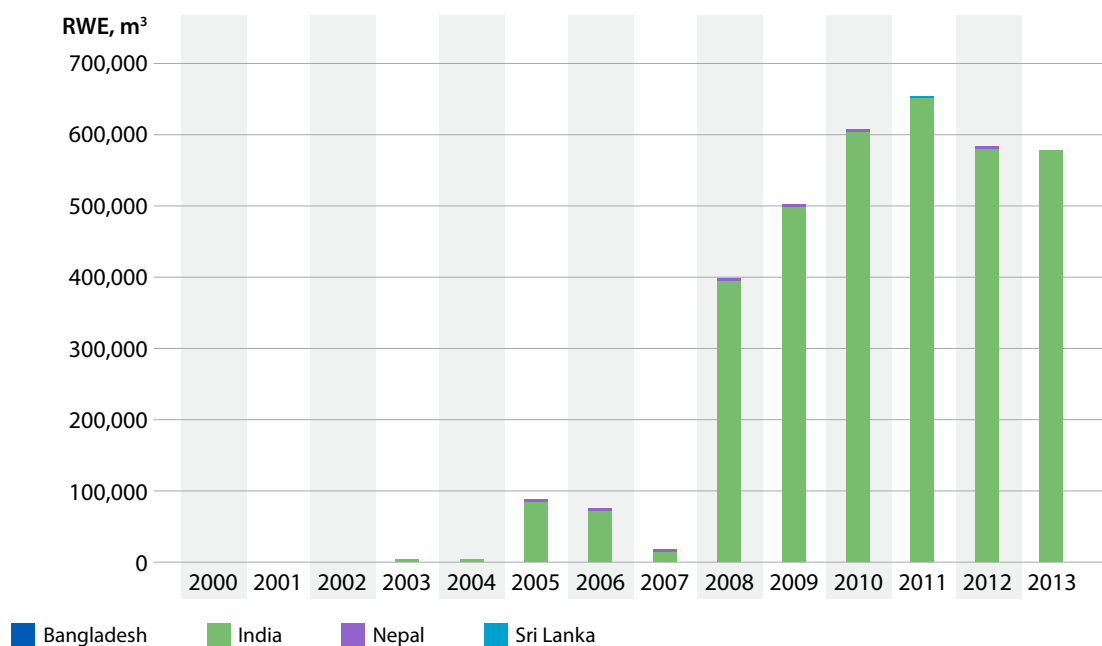
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Bhutan



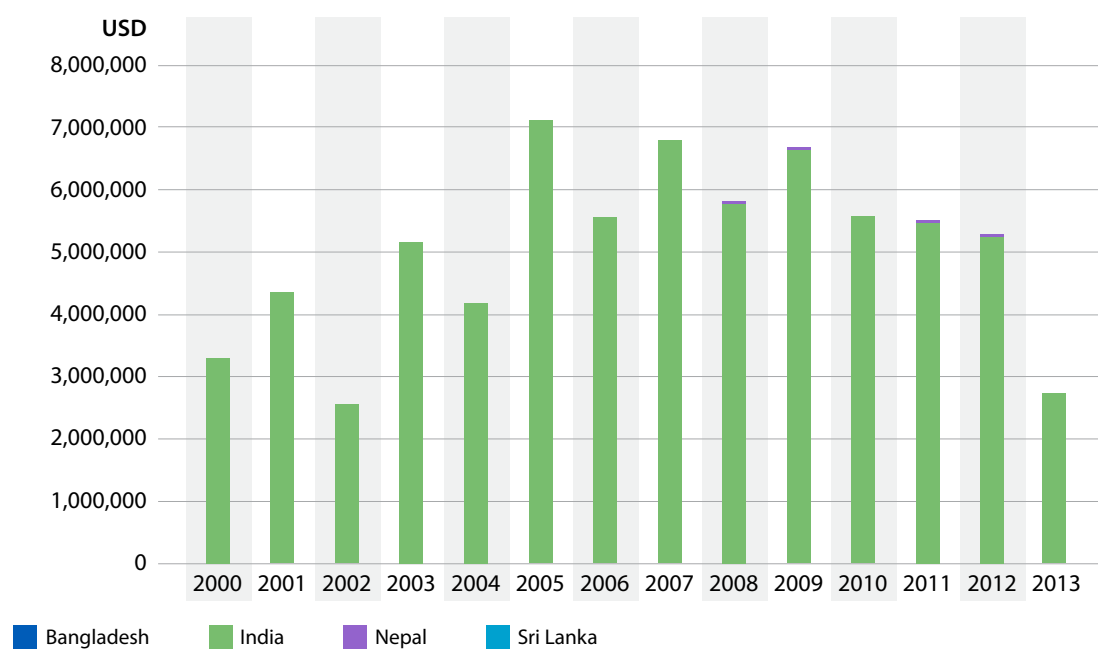
Annex 17.11: Bhutan's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



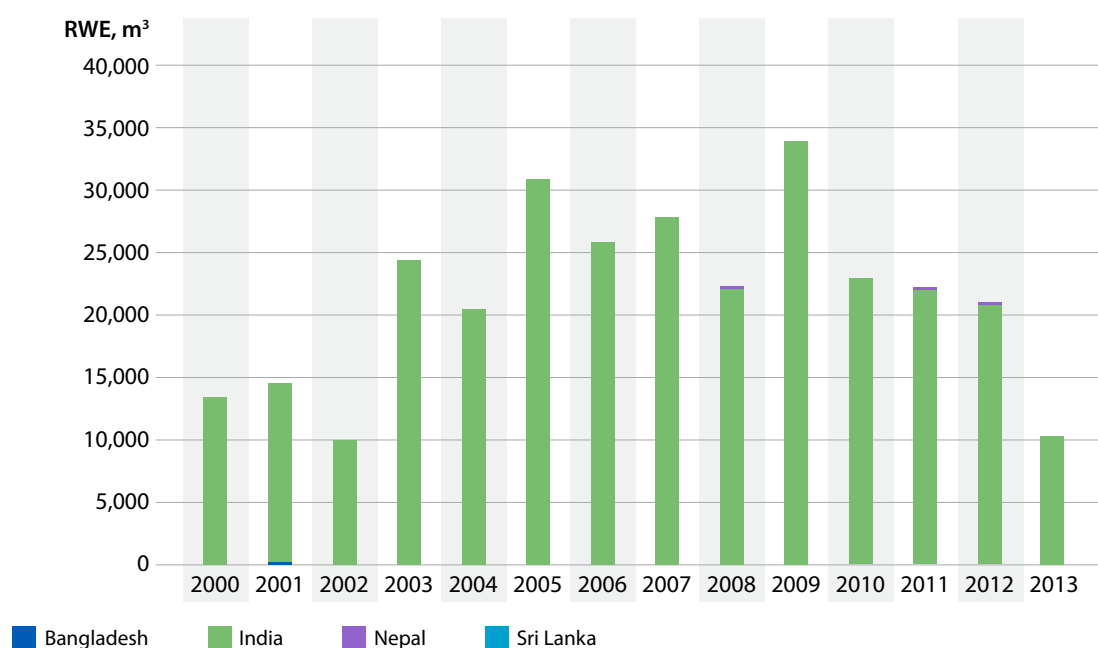
Annex 17.12: Bhutan's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



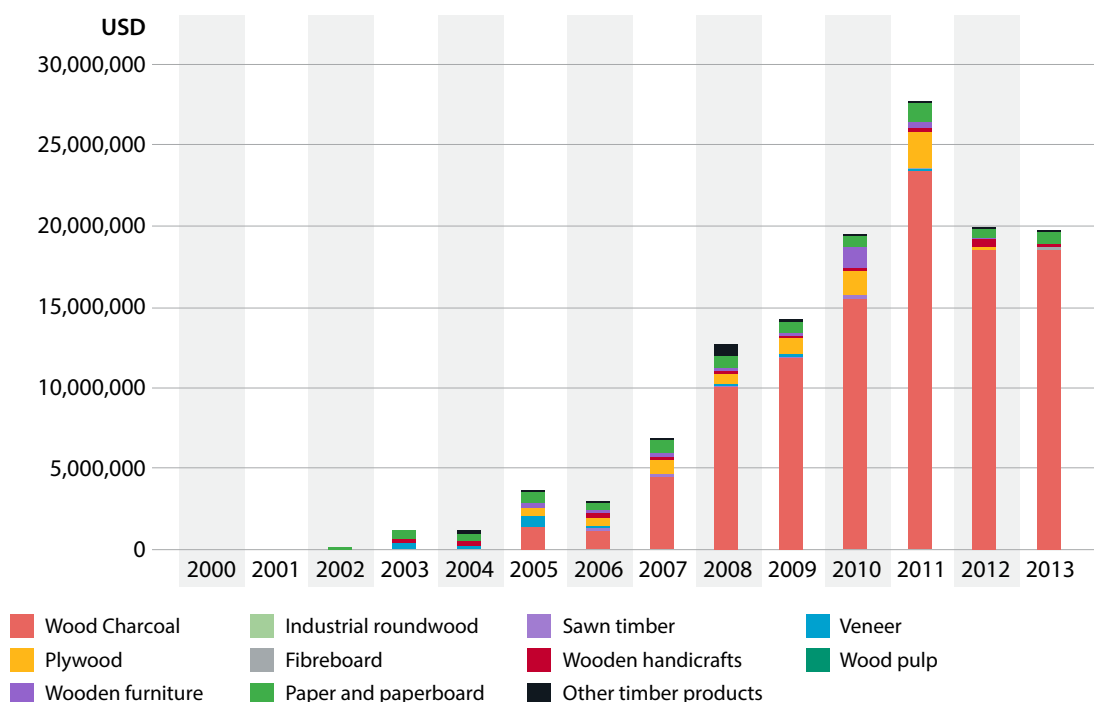
Annex 17.13: Bhutan's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



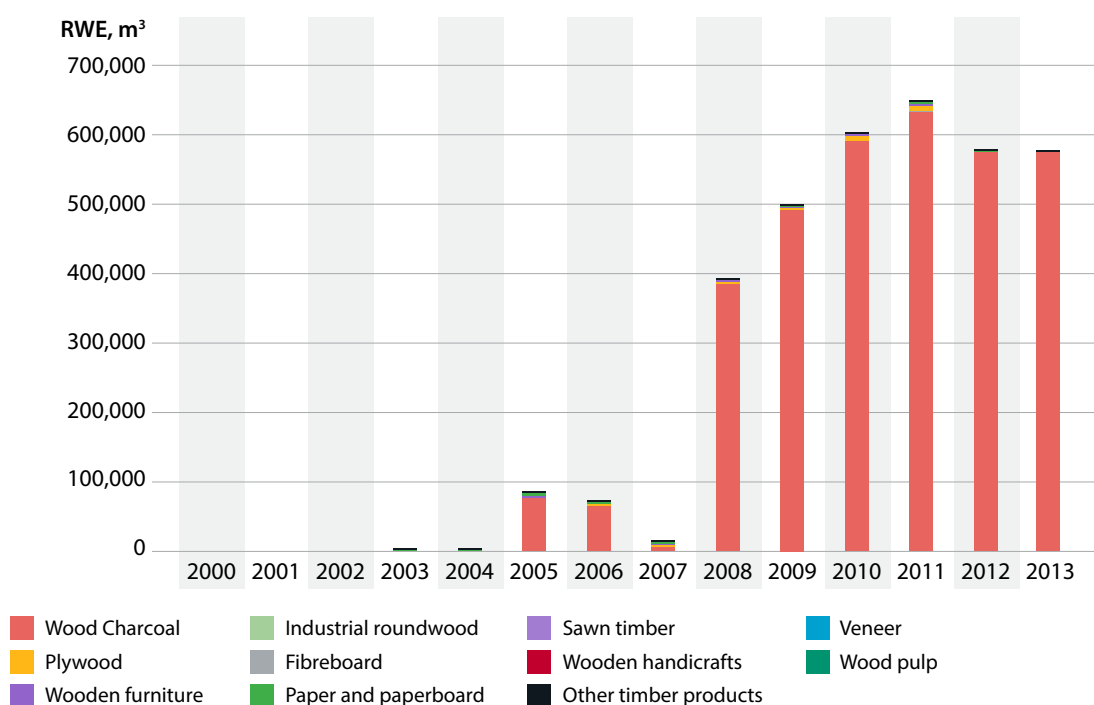
Annex 17.14: Bhutan's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



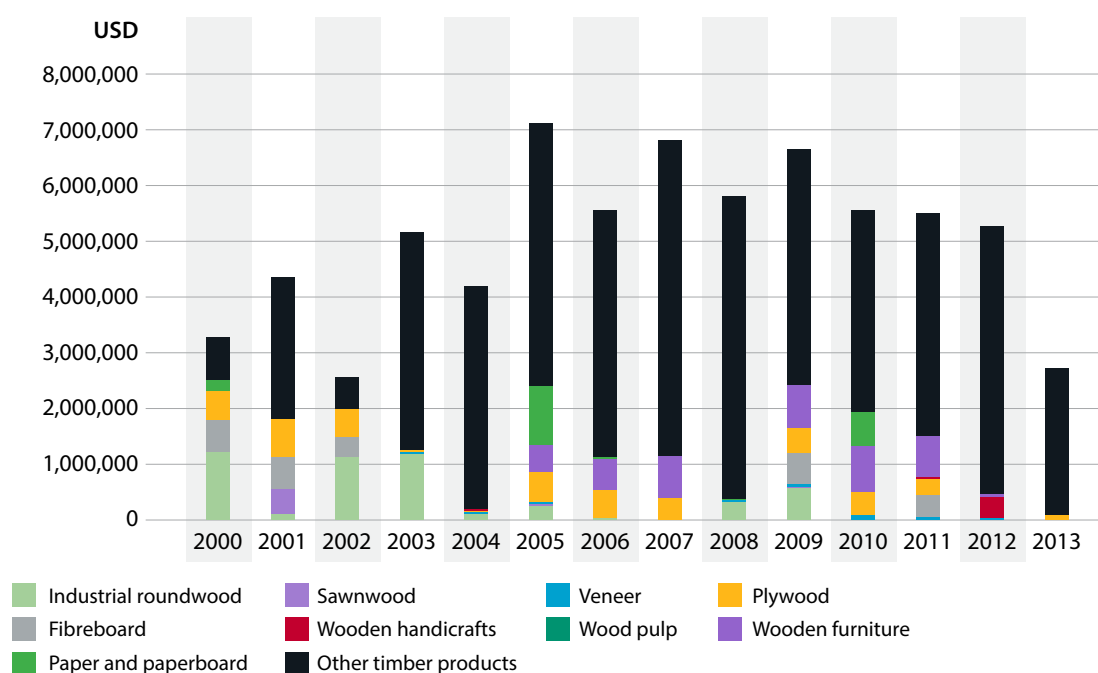
Annex 17.15: Bhutan's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



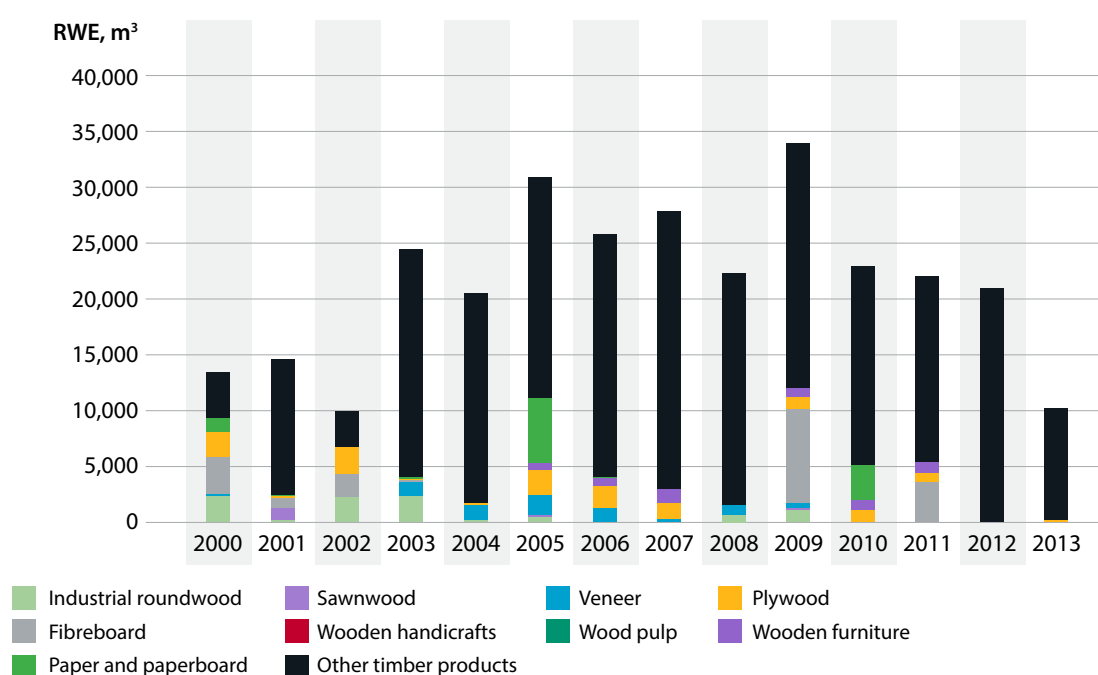
Annex 17.16: Bhutan's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.17: Bhutan's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

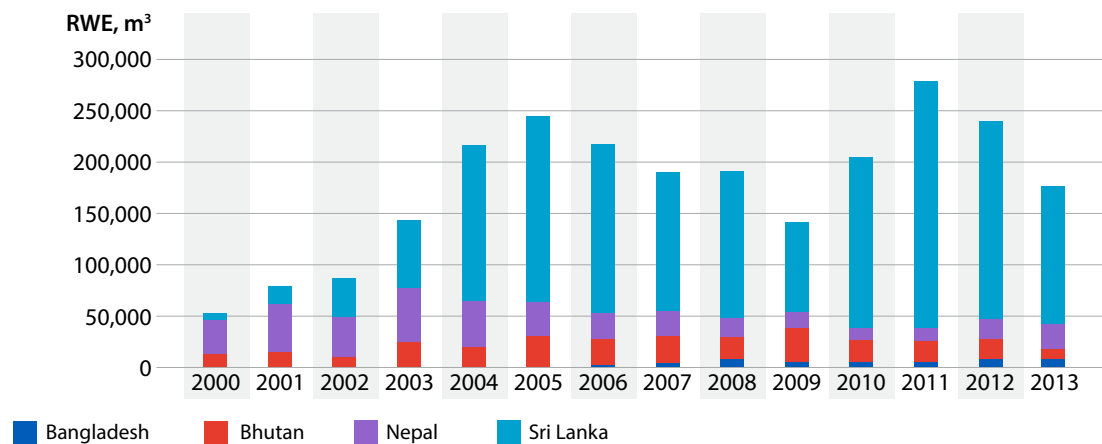
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



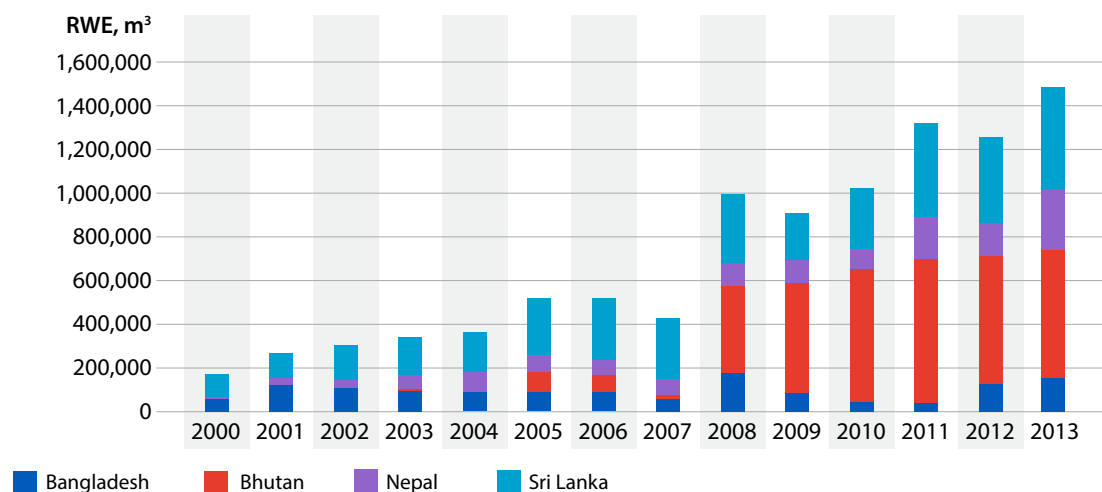
Annex 17.18: Bhutan's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

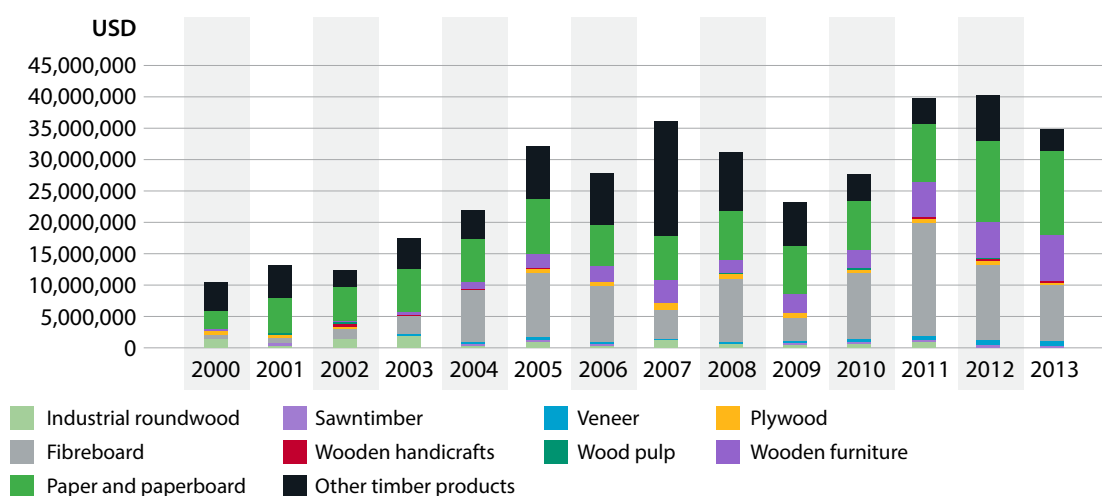
India



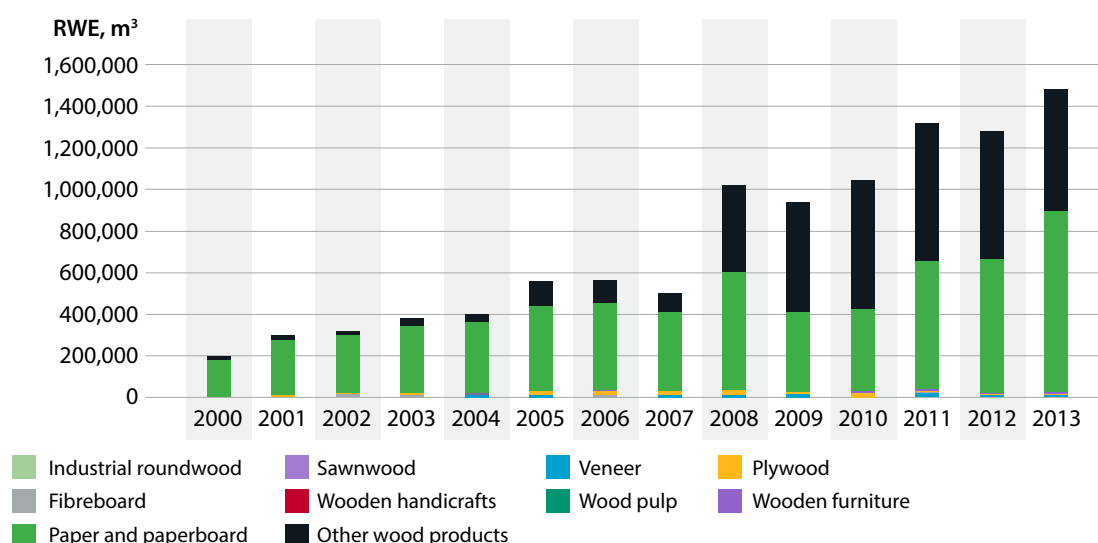
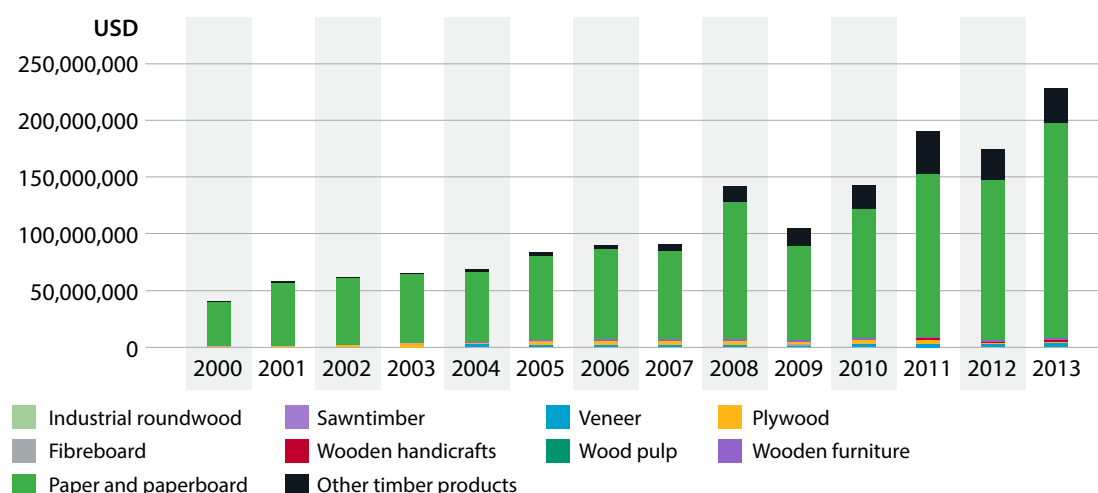
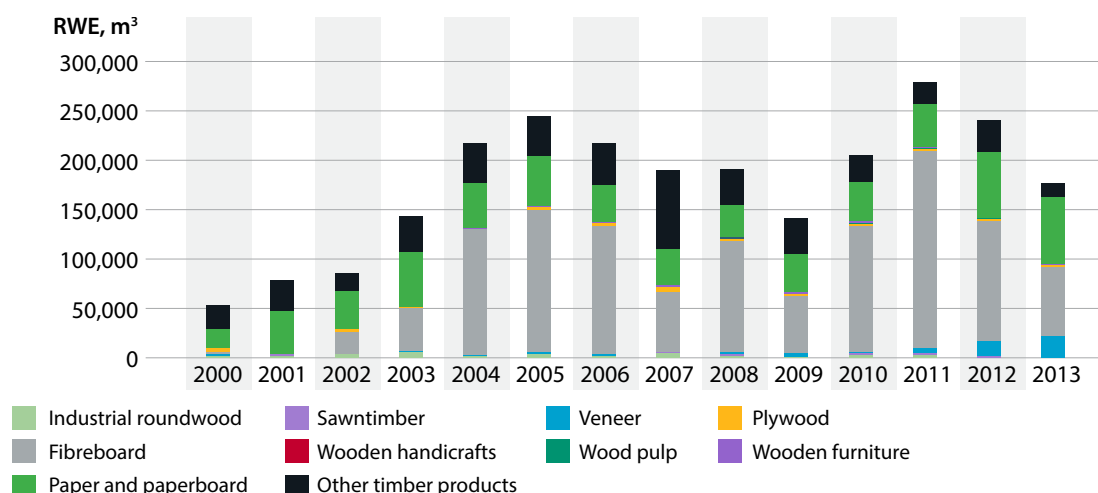
Annex 17.19: India's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics Export Import Data Banks of India and Nepal; and Sri Lanka Customs



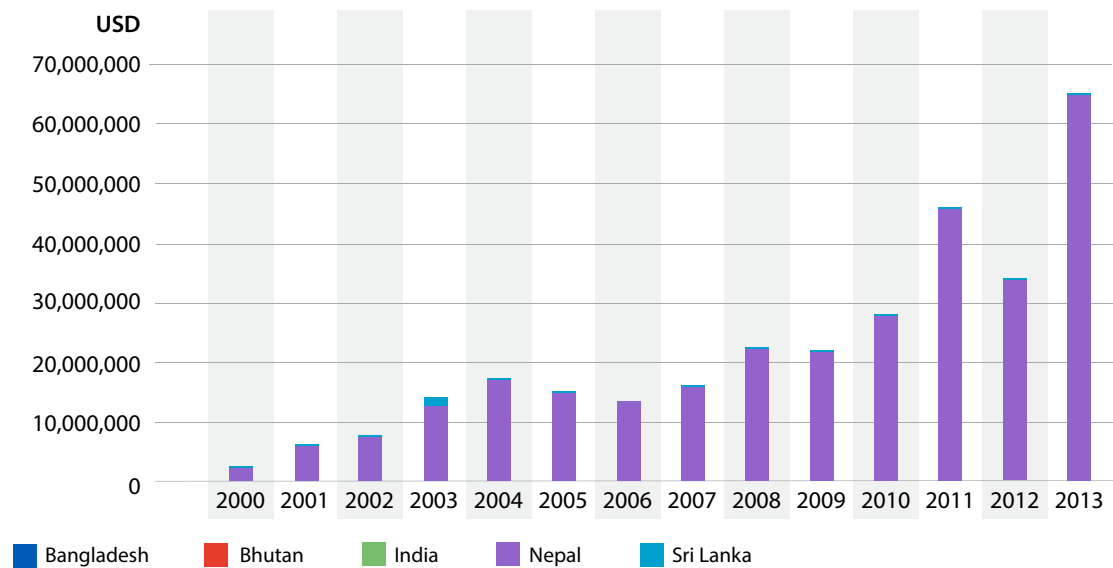
Annex 17.20: India's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.21: India's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

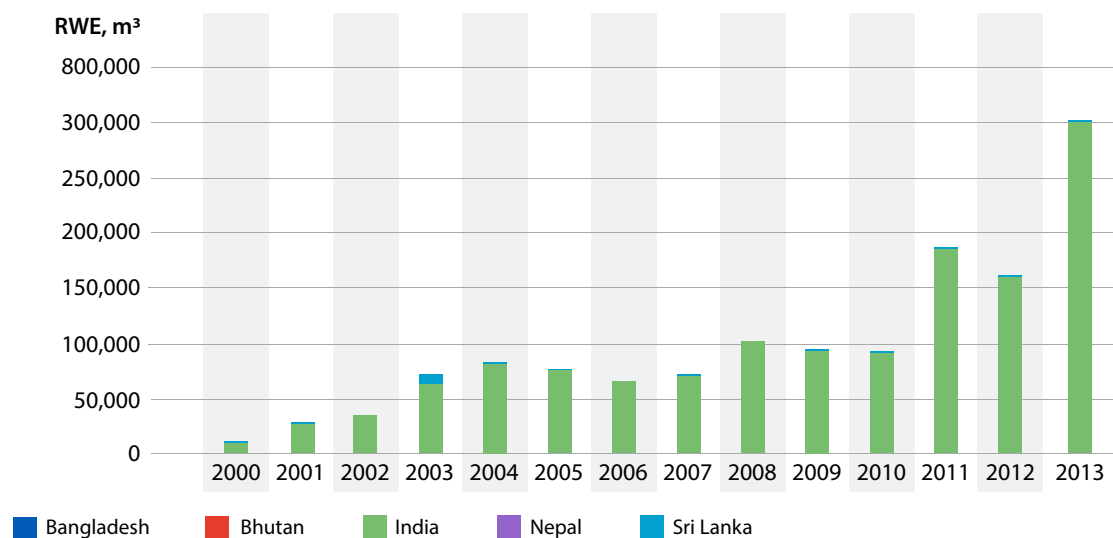


Nepal



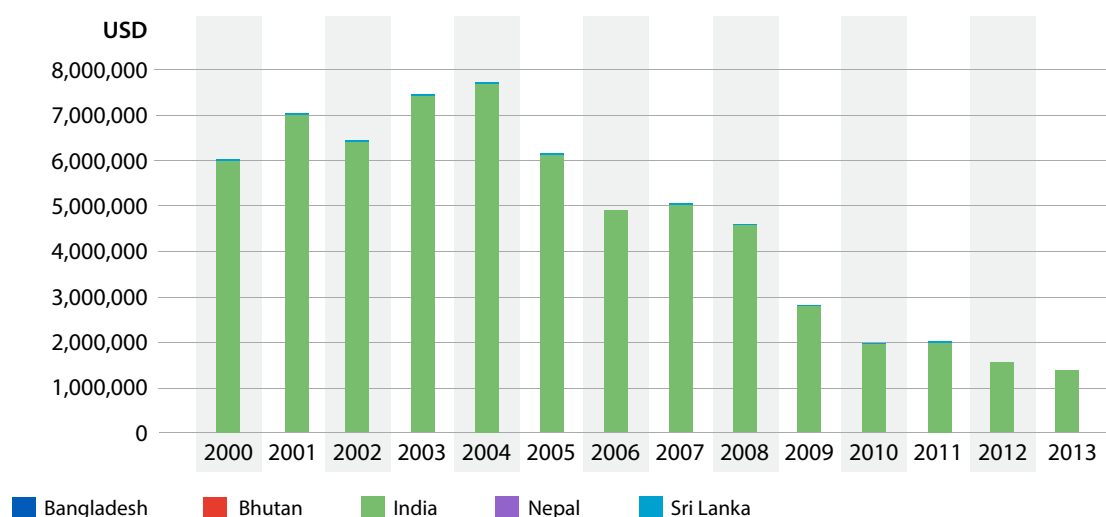
Annex 17.25: Nepal's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



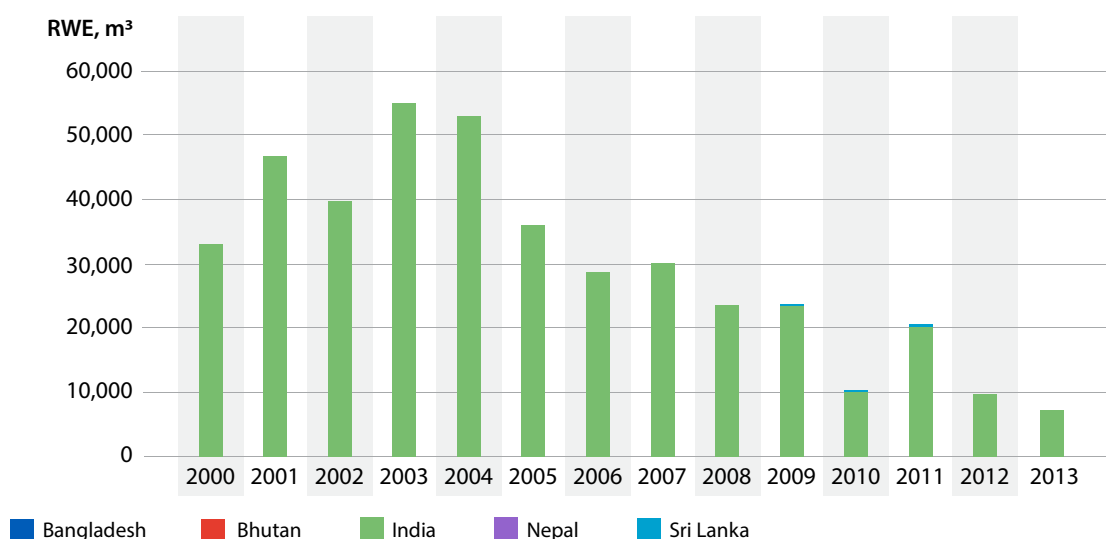
Annex 17.26: Nepal's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



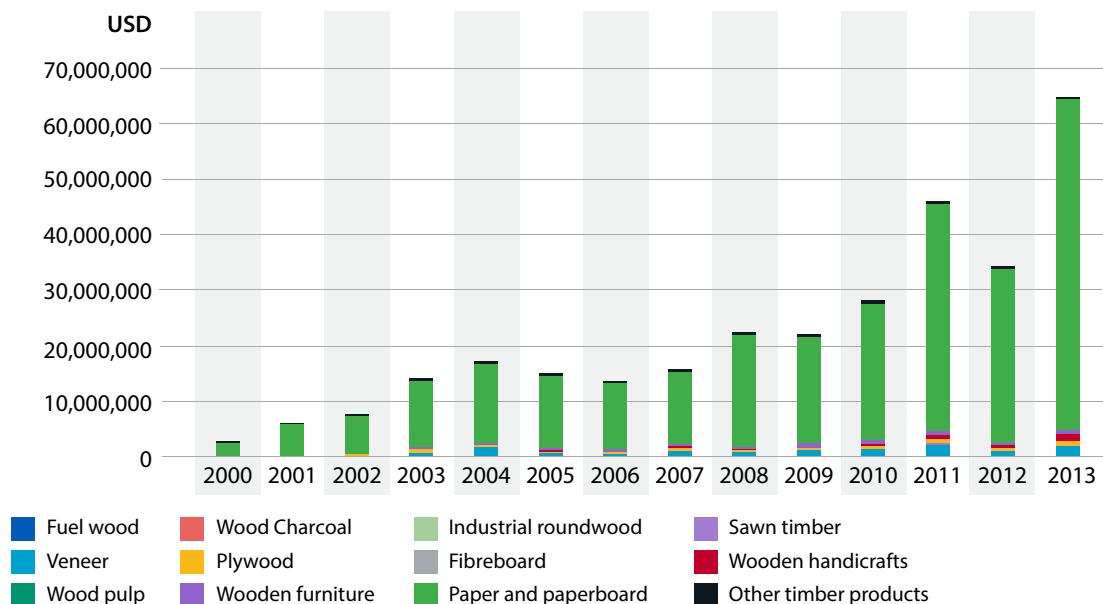
Annex 17.27: Nepal's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



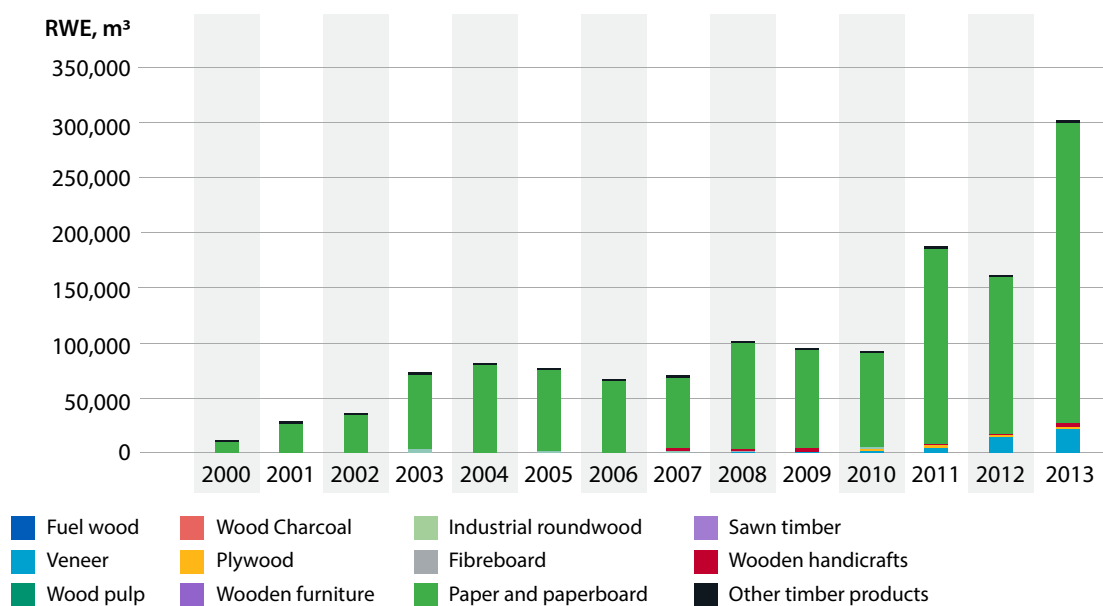
Annex 17.28: Nepal's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



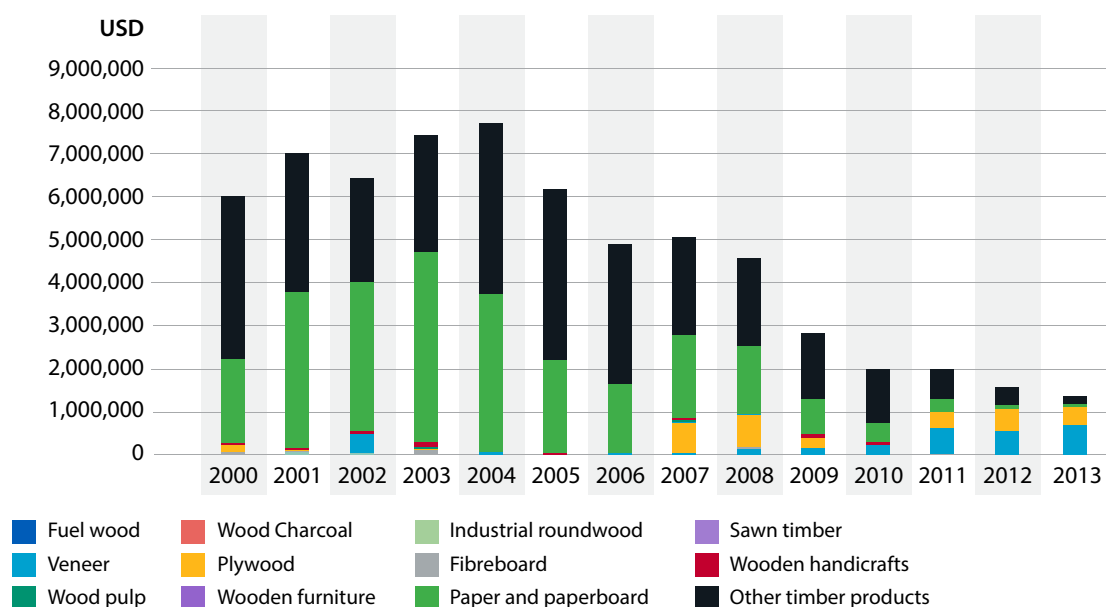
Annex 17.29: Nepal's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



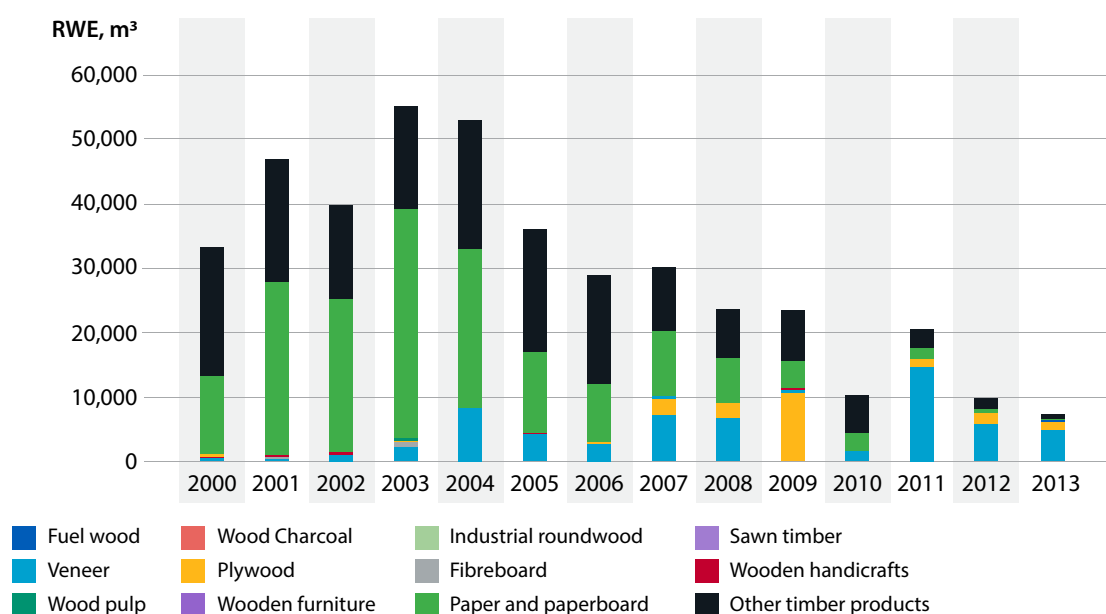
Annex 17.30: Nepal's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.31: Nepal's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

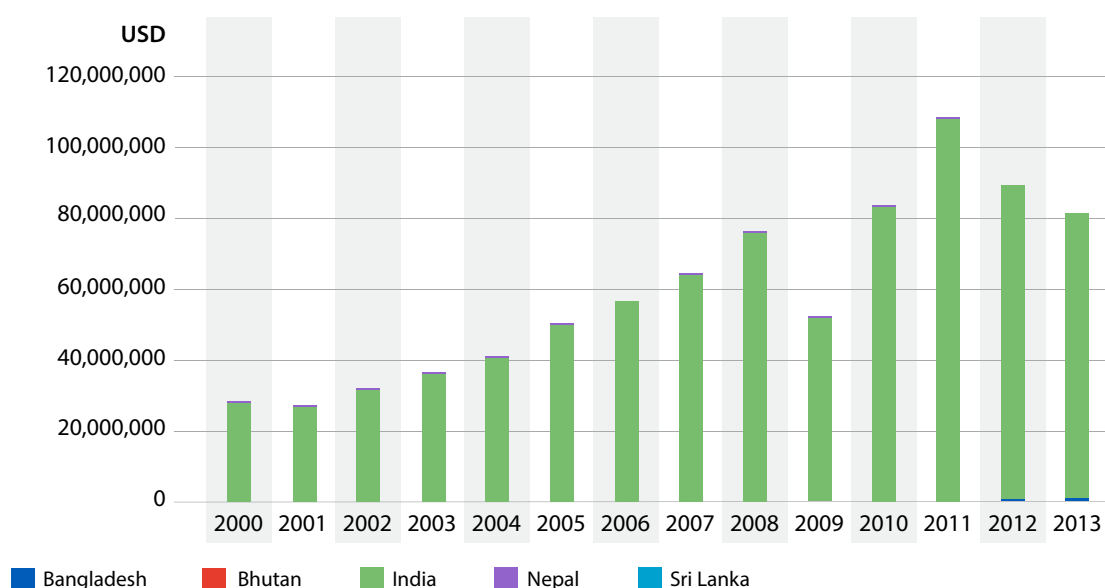
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 17.32: Nepal's product-wise exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

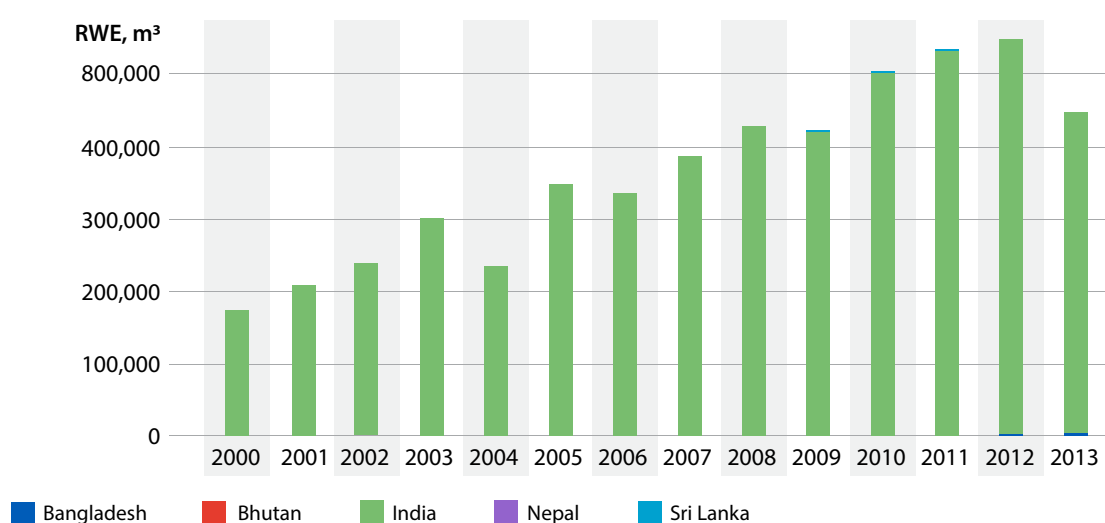
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Sri Lanka



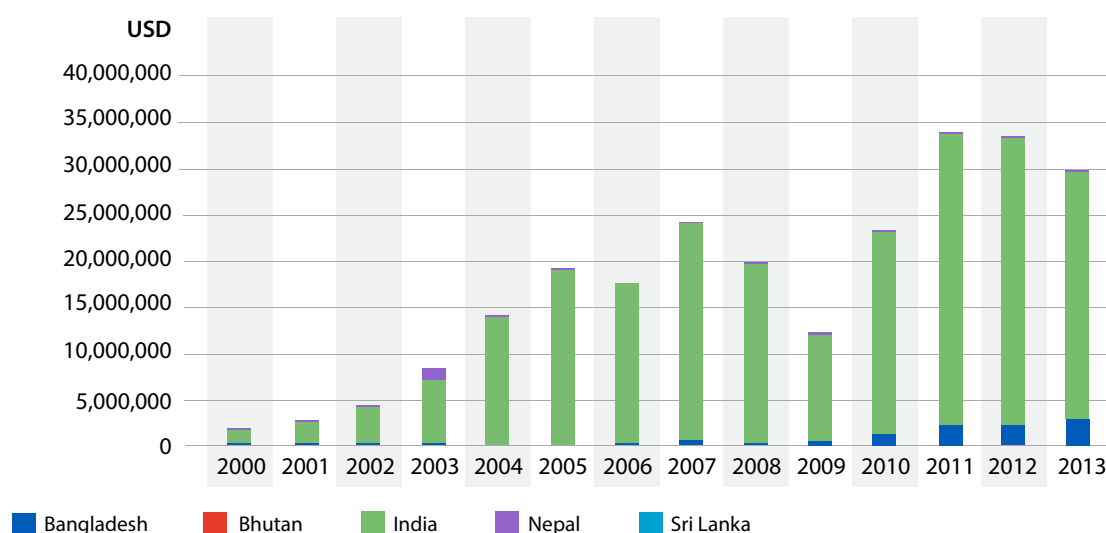
Annex 17.33: Sri Lanka's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



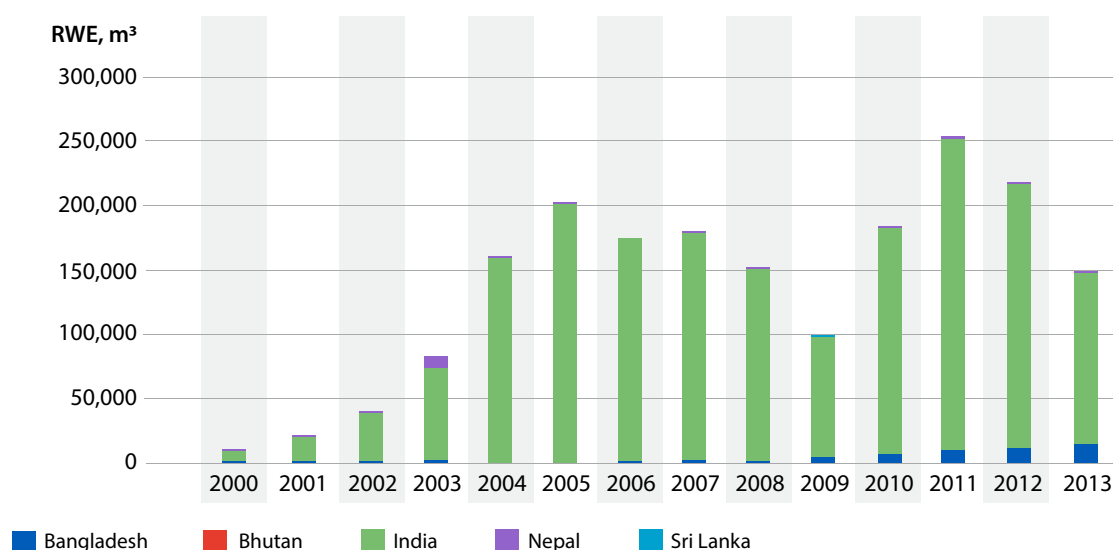
Annex 17.34: Sri Lanka's imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



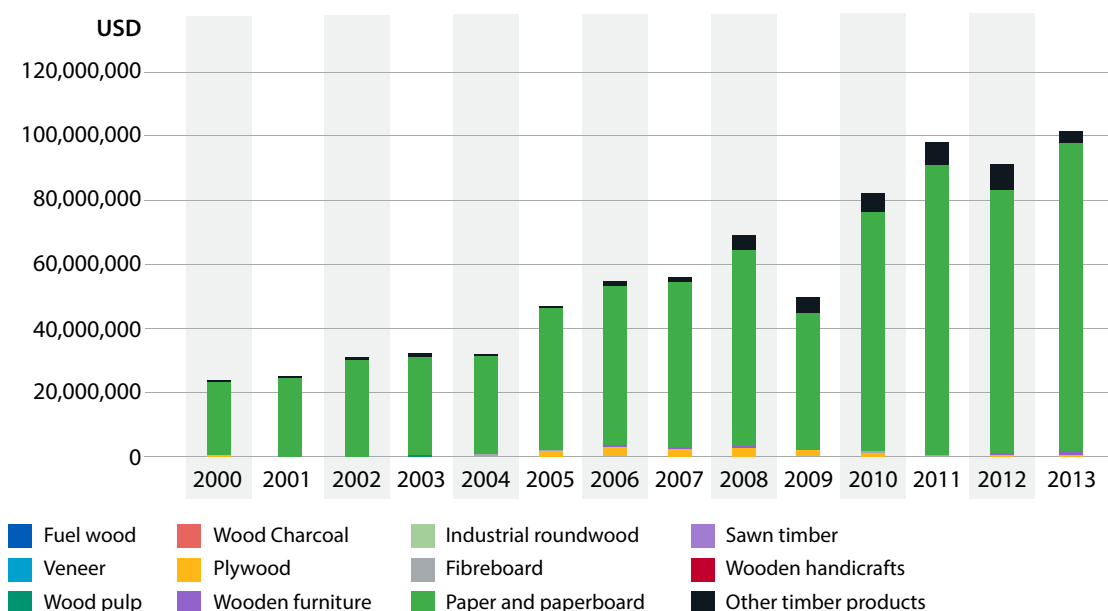
Annex 17.35: Sri Lanka's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



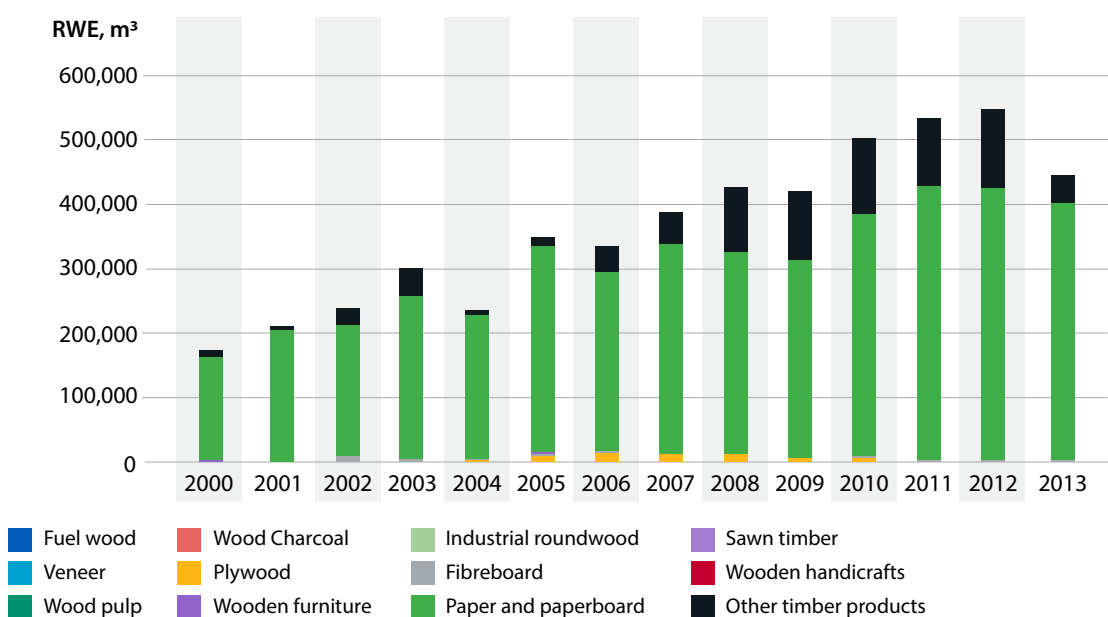
Annex 17.36: Sri Lanka's exports of timber and timber products to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



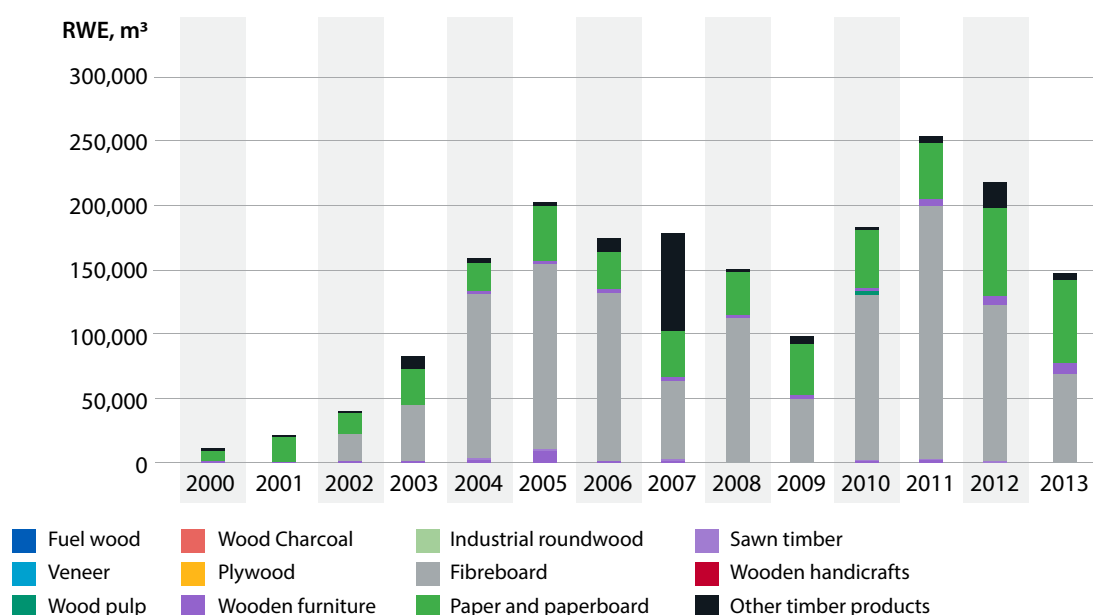
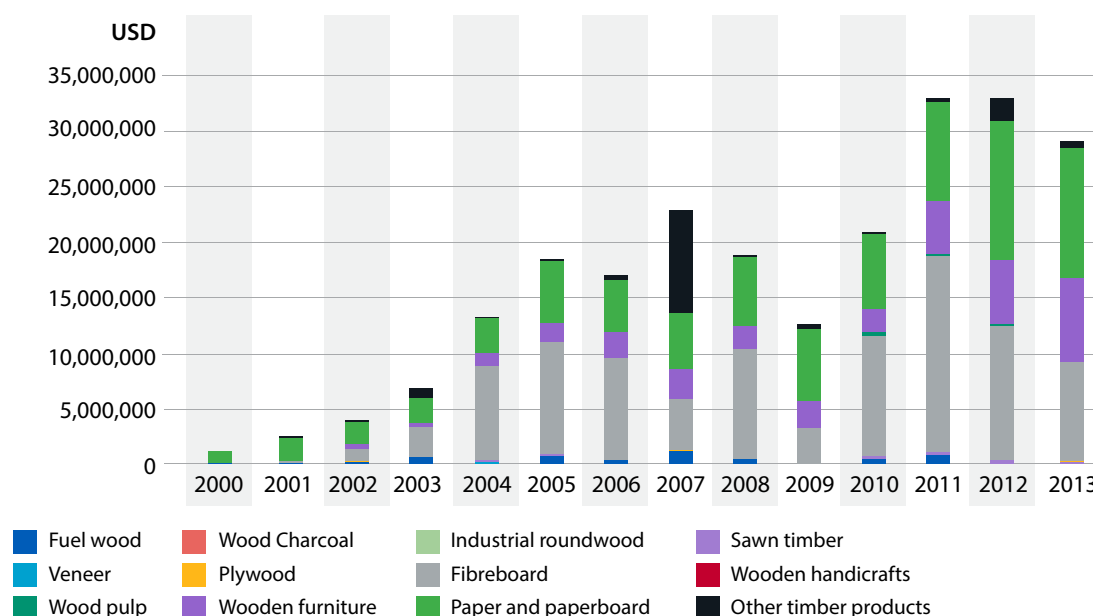
Annex 17.37: Sri Lanka's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

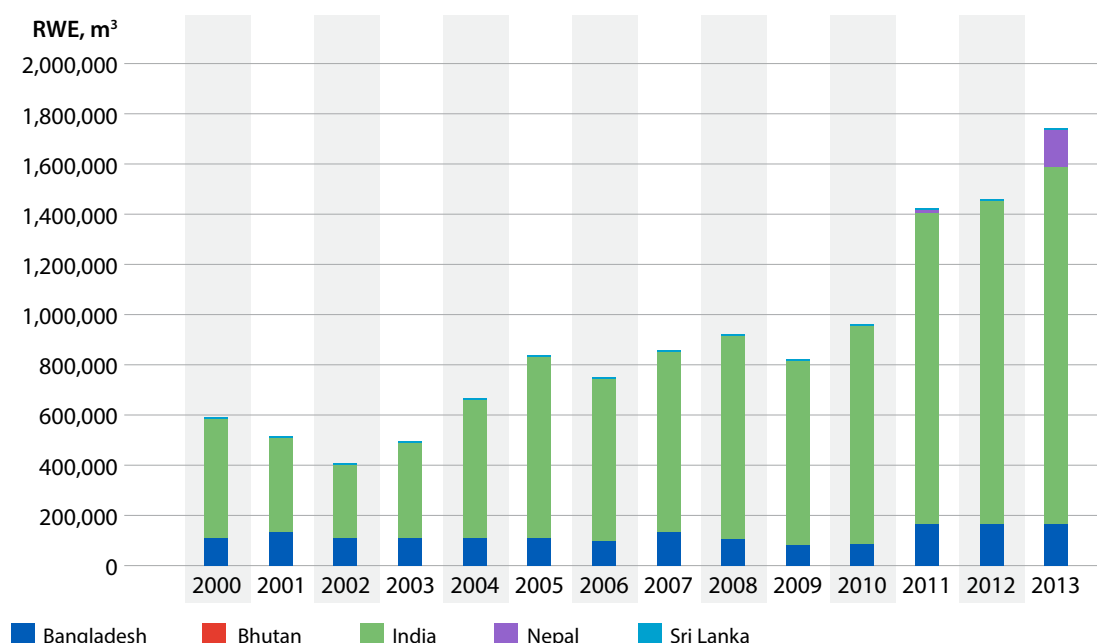


Annex 17.38: Sri Lanka's product-wise imports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

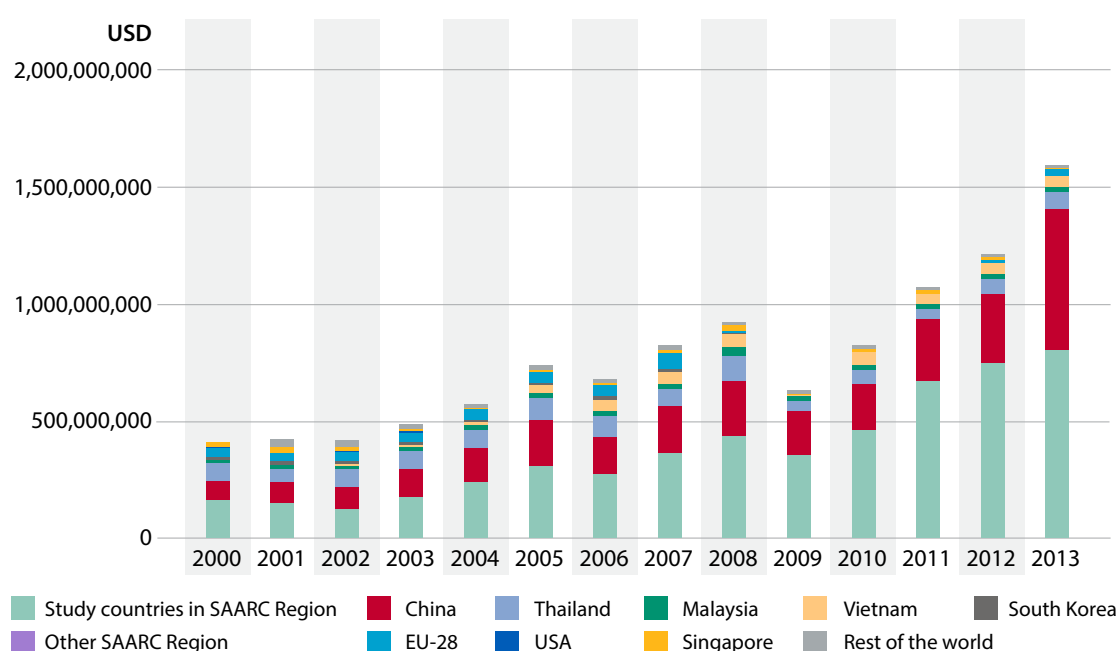


Annex 18: Trade link between the study countries in the South Asian Association for Regional Cooperation region and Myanmar/Burma



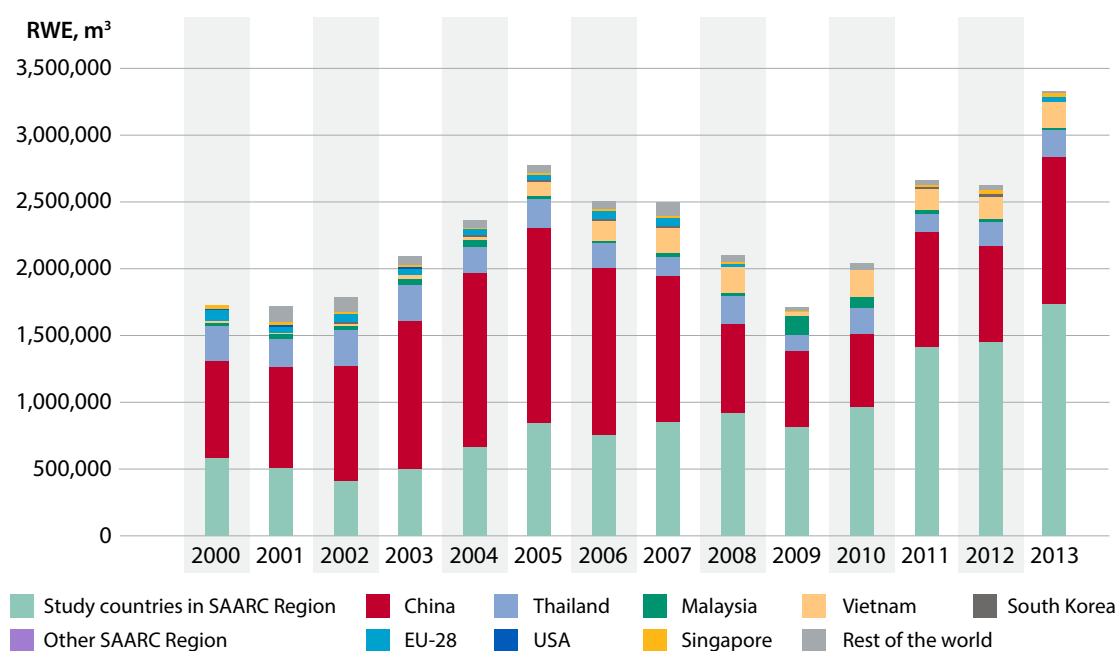
Annex 18.1: Country-wise breakdown of the imports from Myanmar/Burma to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



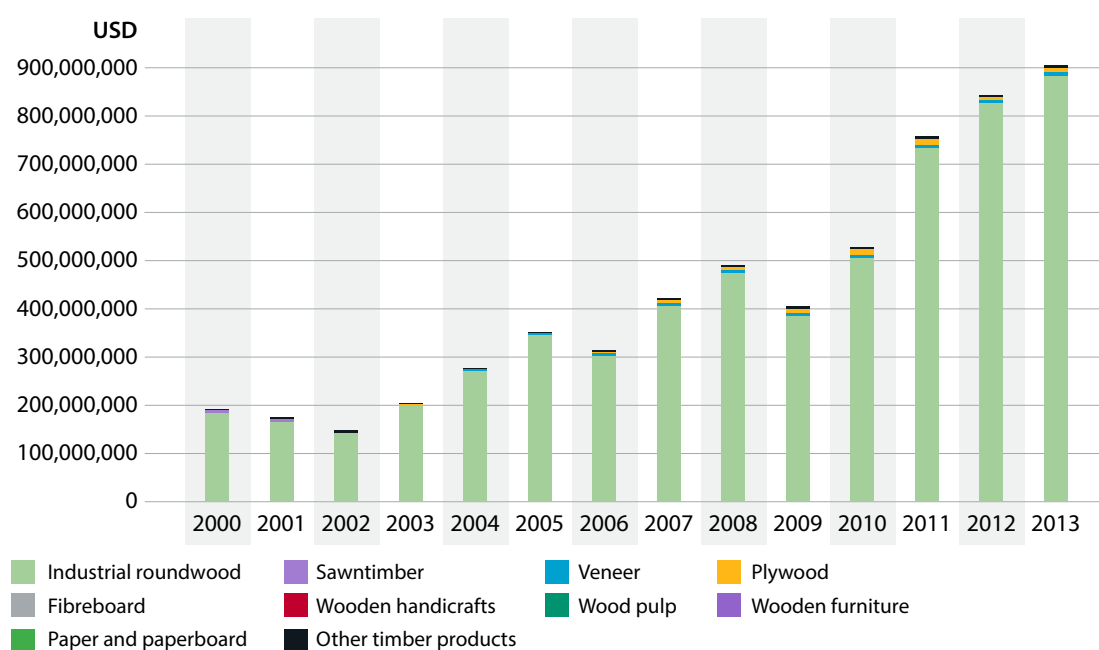
Annex 18.2: Myanmar/Burma's worldwide export partners for timber and timber products (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



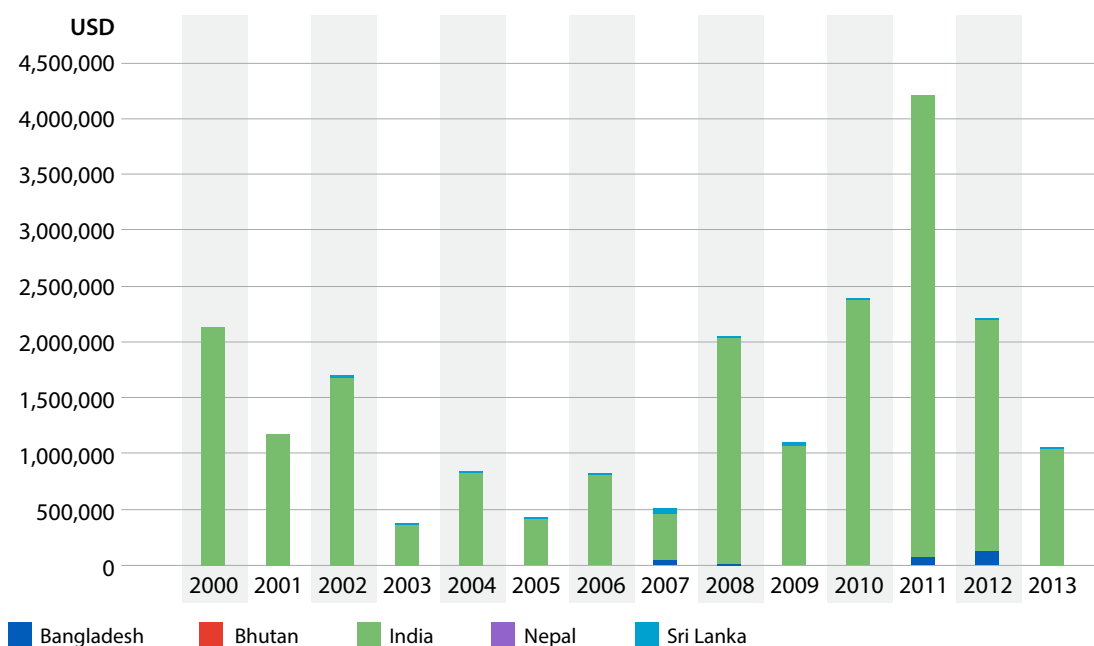
Annex 18.3: Myanmar's/Burma's worldwide export partners for timber and timber products (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



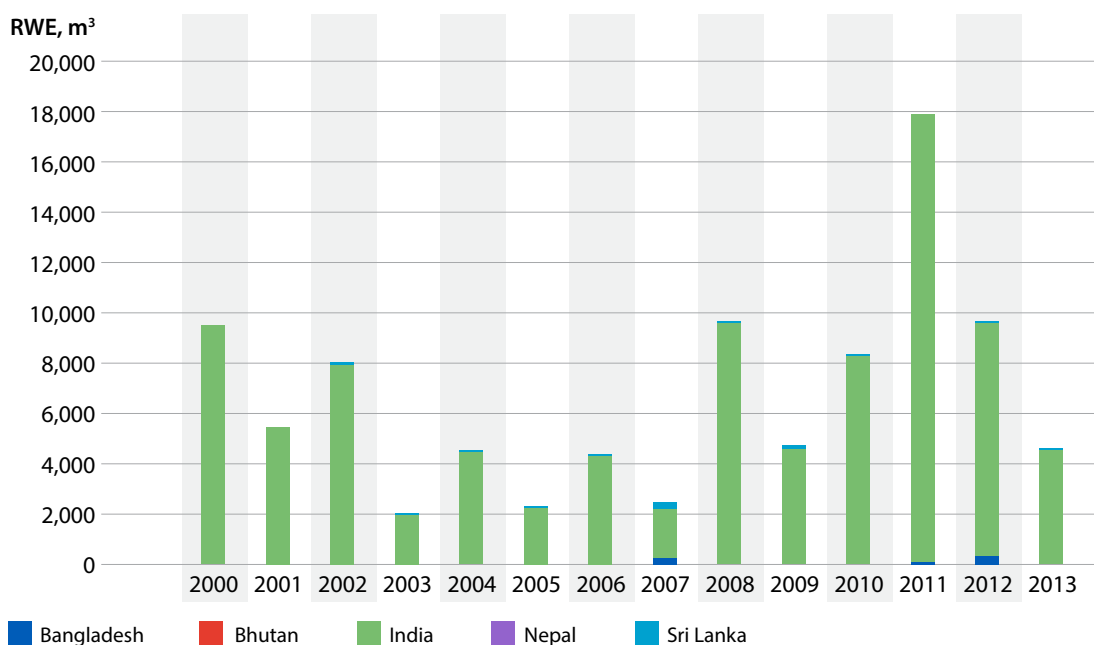
Annex 18.4: Product-wise imports of timber and timber products from Myanmar/Burma to the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs.



Annex 18.5: Country-wise exports of timber and timber products from the study countries in the South Asian Association for Regional Cooperation region to Myanmar/Burma (value)

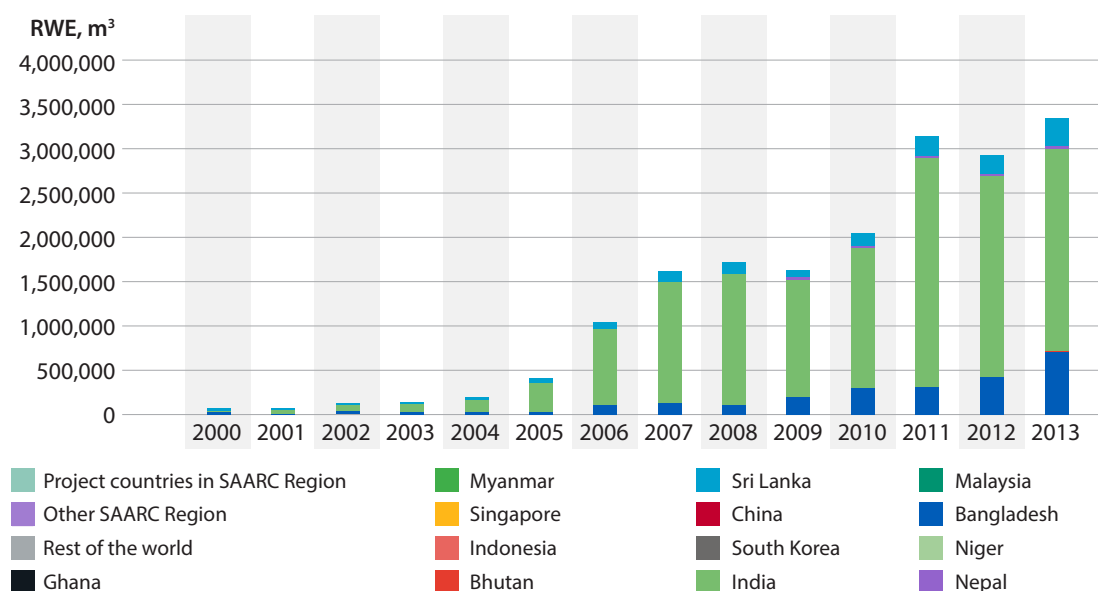
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 18.6: Country-wise exports of timber and timber products by the study countries in the South Asian Association for Regional Cooperation region to Myanmar/Burma (volume)

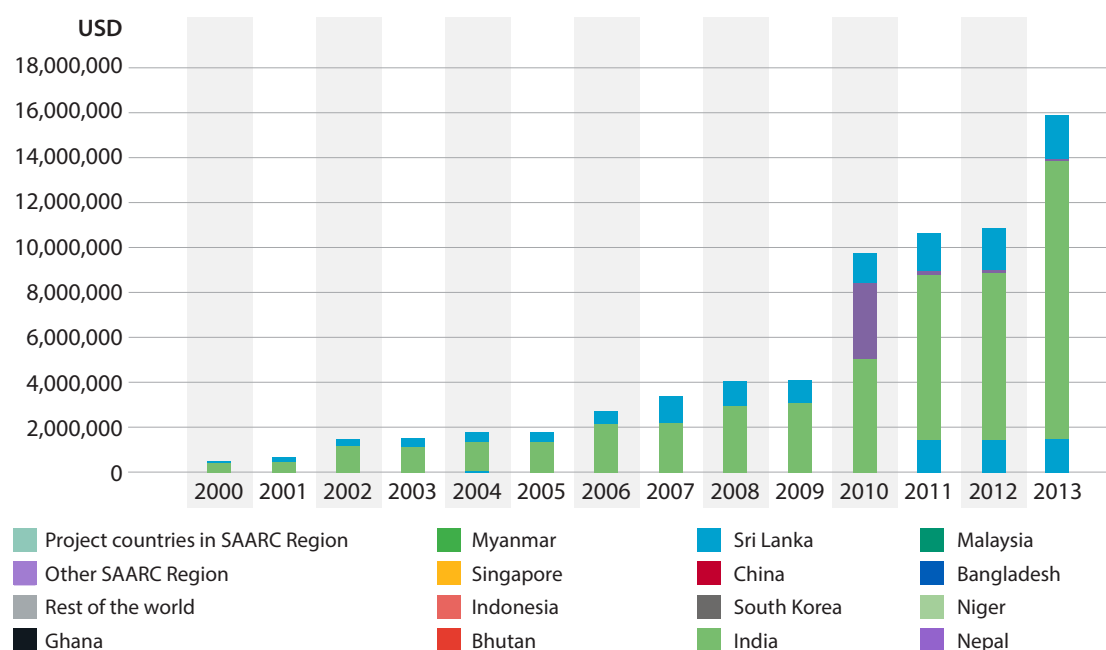
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

Annex 19: Trade link between the study countries in the South Asian Association for Regional Cooperation region and China



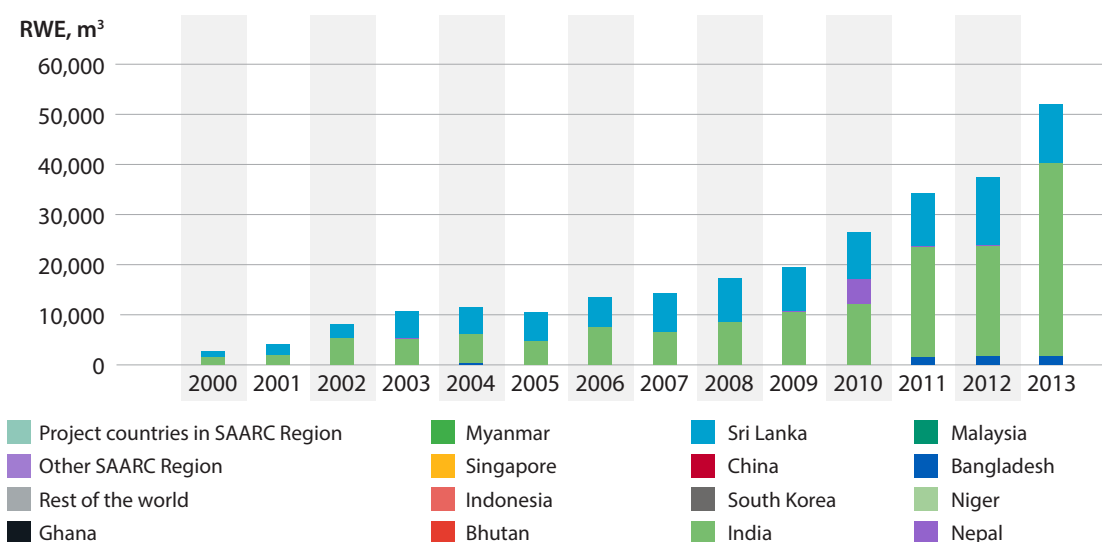
Annex 19.1: Country-wise breakdown of imports from China to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

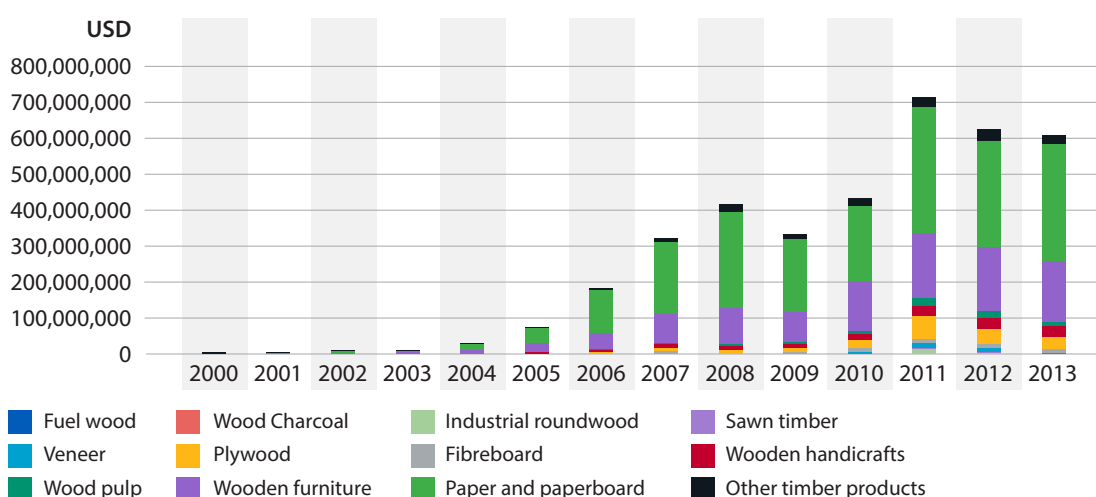


Annex 19.2: Country-wise breakdown of exports from the study countries in the South Asian Association for Regional Cooperation region to China (value)

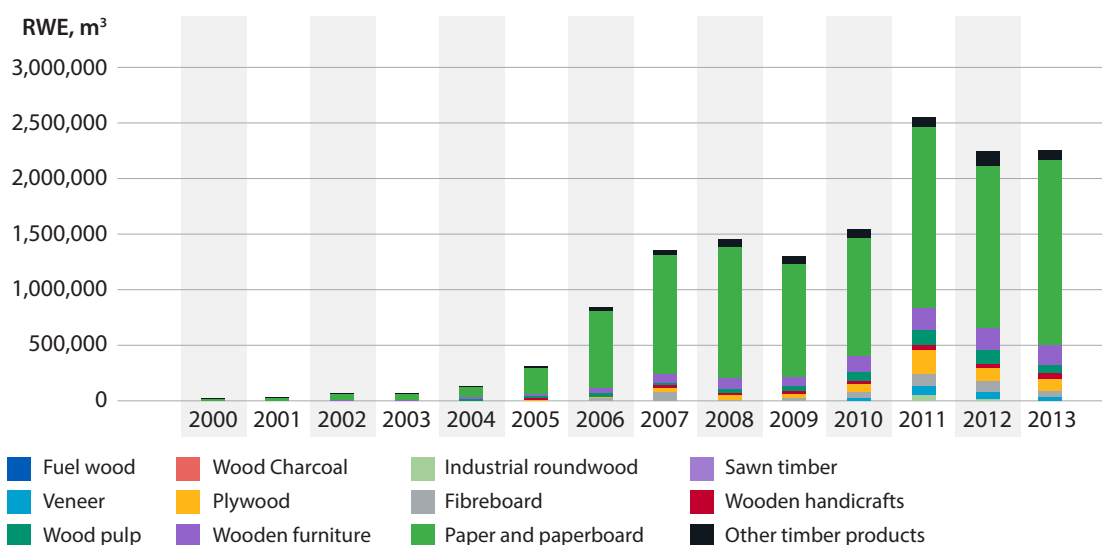
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 19.3: Country-wise breakdown of exports from the study countries in the South Asian Association for Regional Cooperation region to China (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs

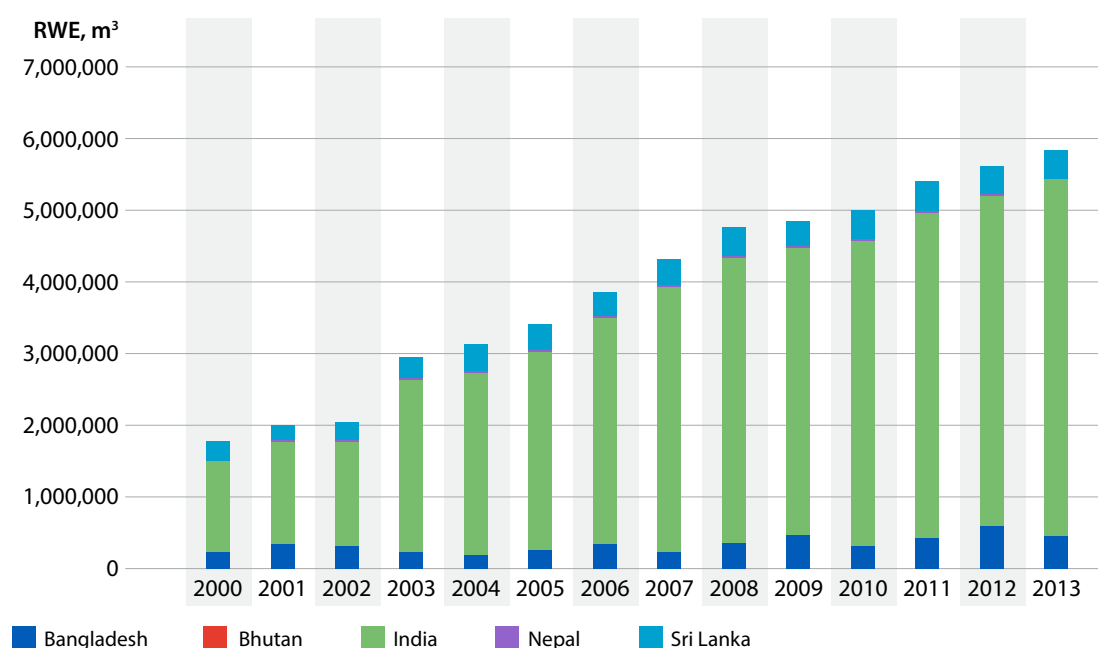


Annex 19.4: India's product-wise imports of timber and timber products from China (value)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



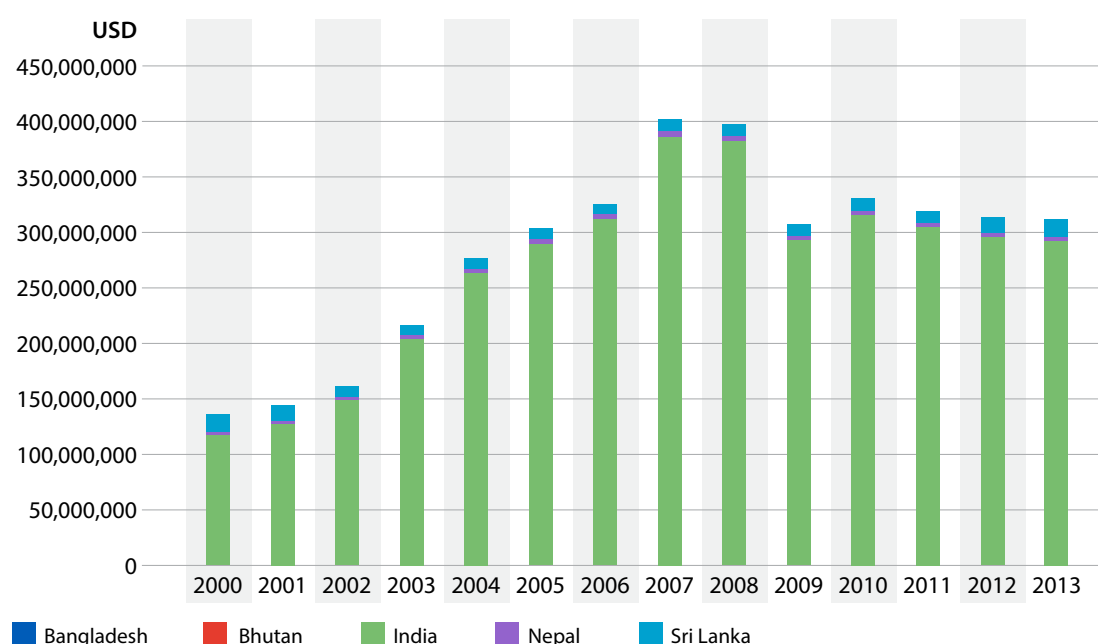
Annex 19.5: India's product-wise imports of timber and timber products from China (volume)
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India

Annex 20: Trade link between the study countries in the South Asian Association for Regional Cooperation region and the European Union



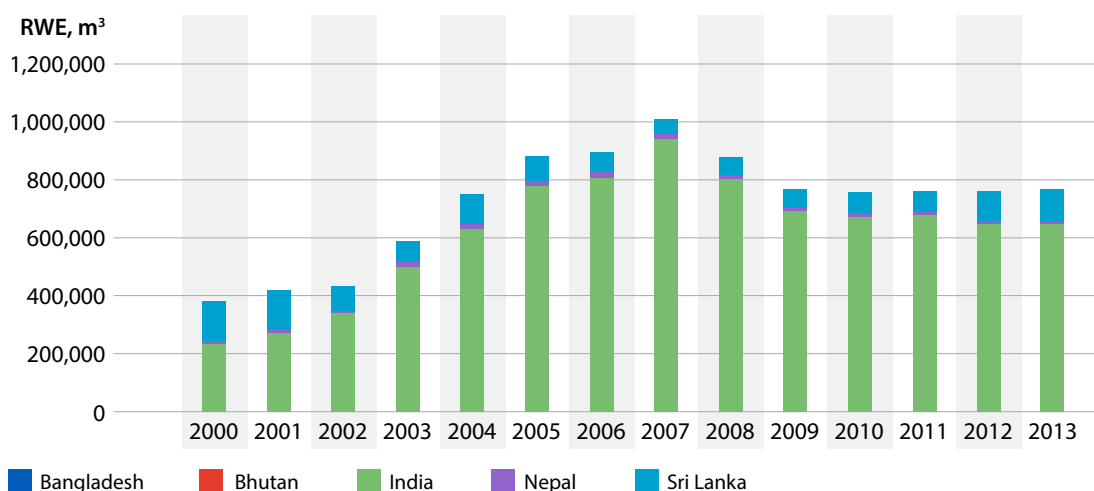
Annex 20.1: Country-wise breakdown of imports from the European Union to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



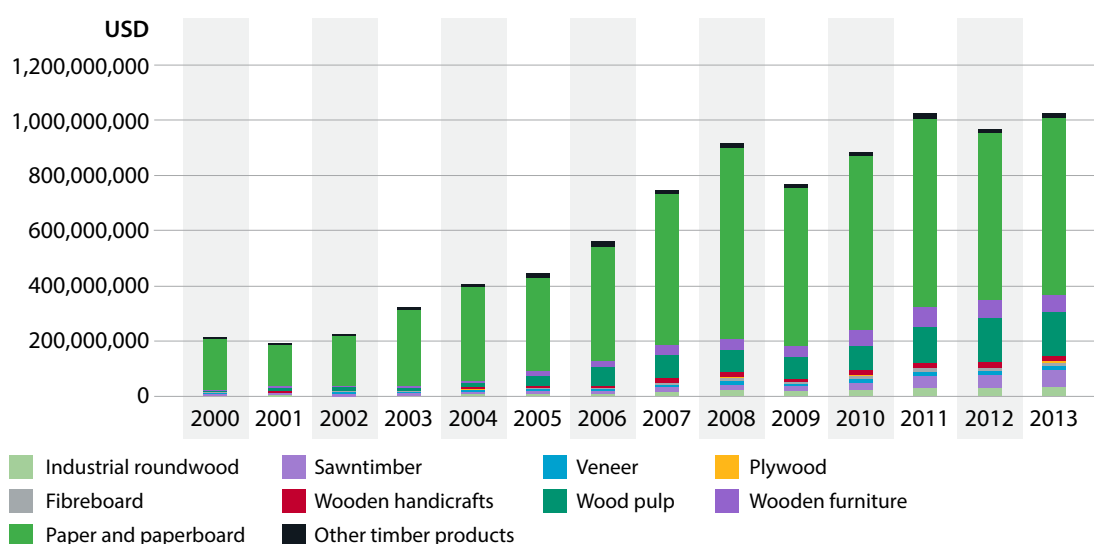
Annex 20.2: Country-wise breakdown of exports to the European Union from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



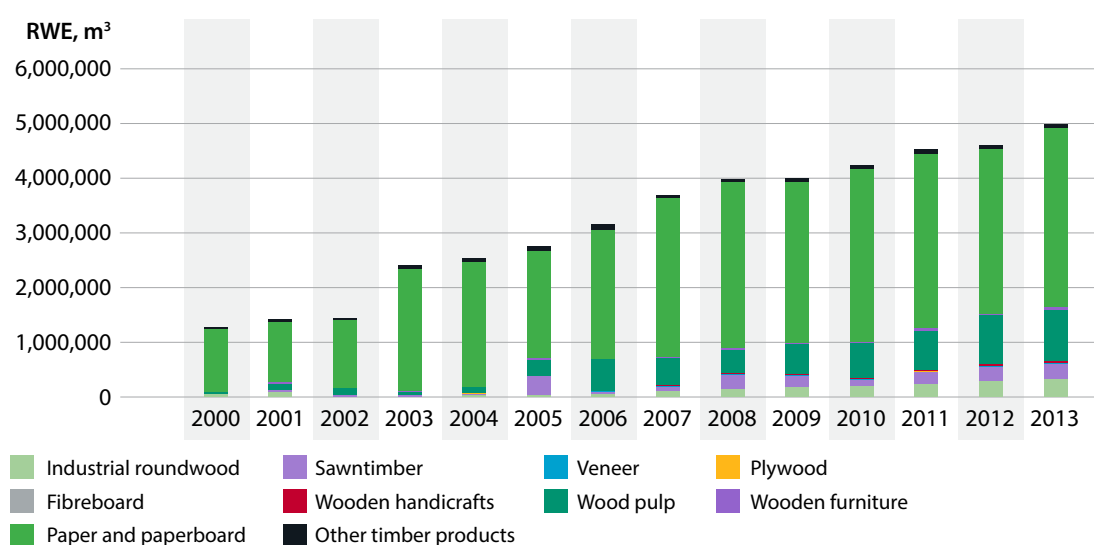
Annex 20.3: Country-wise breakdown of exports to the European Union from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



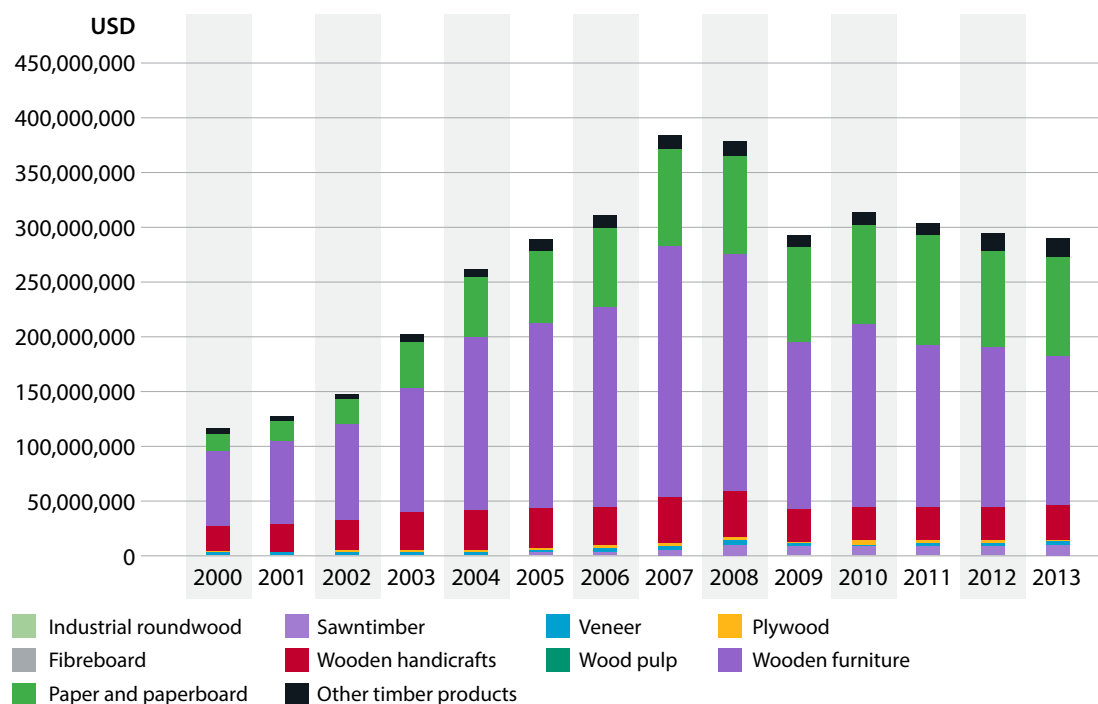
Annex 20.4: India's product-wise imports of timber and timber products from the European Union (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



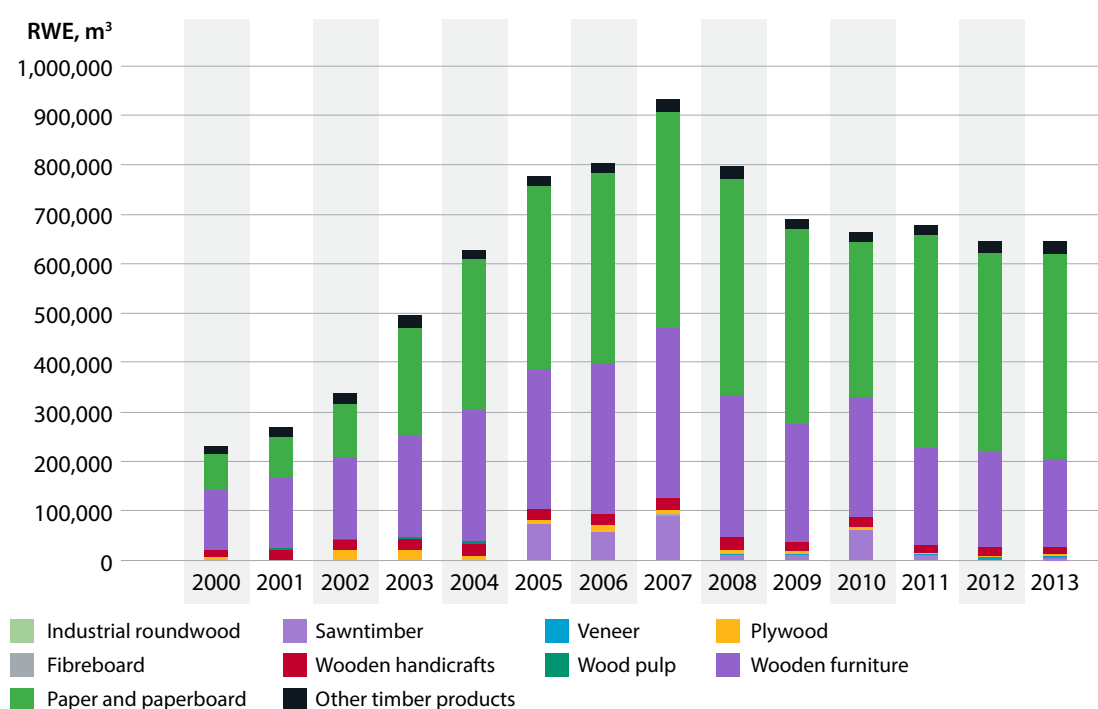
Annex 20.5: India's product-wise imports of timber and timber products from the European Union (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



Annex 20.6: India's product-wise exports of timber and timber products to the European Union (value)

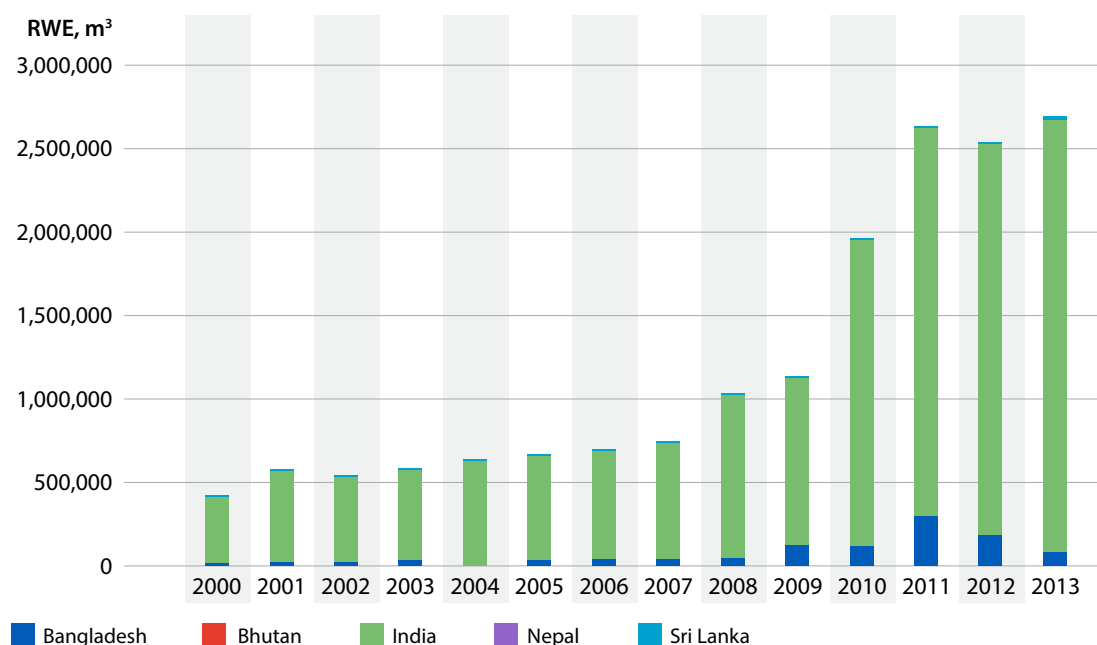
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



Annex 20.7: India's product-wise exports of timber and timber products to the European Union (volume)

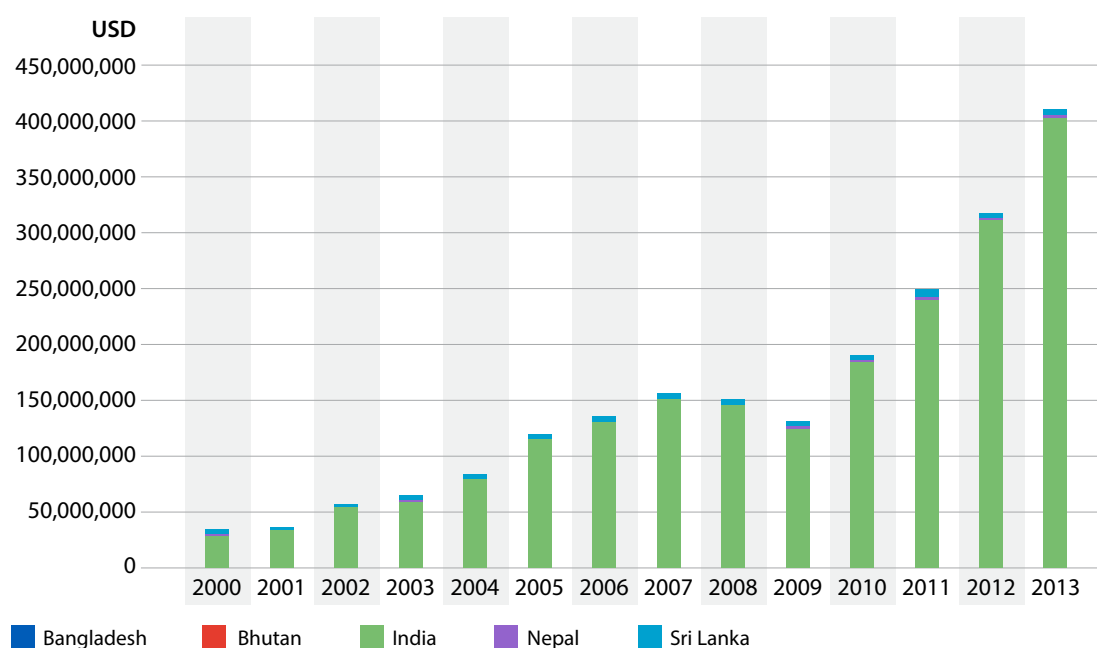
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India

Annex 21: Trade link between the study countries in the South Asian Association for Regional Cooperation region and the United States



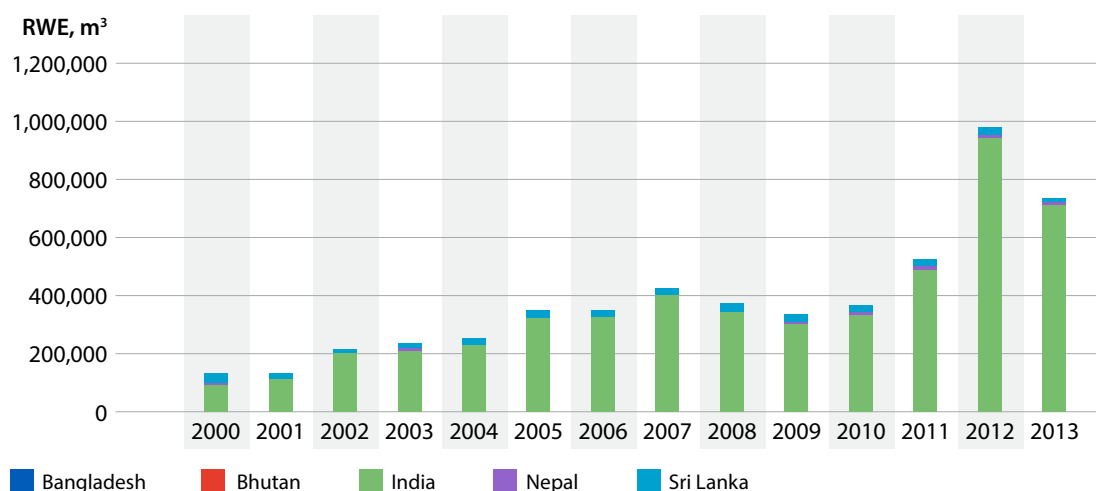
Annex 21.1: Country-wise breakdown of imports from the United States to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



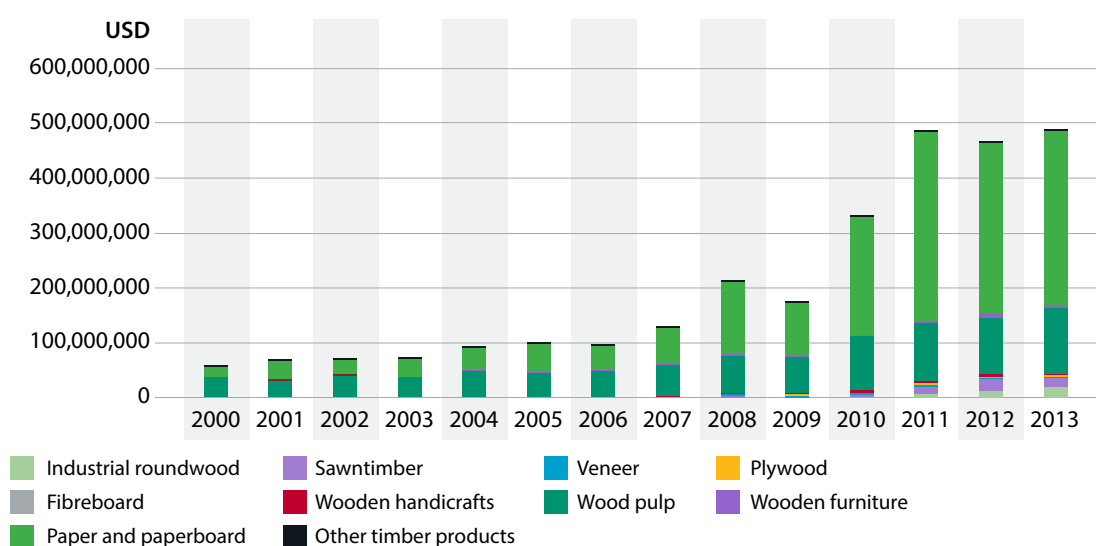
Annex 21.2: Country-wise breakdown of exports to the United States from the study countries in the South Asian Association for Regional Cooperation region (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs.



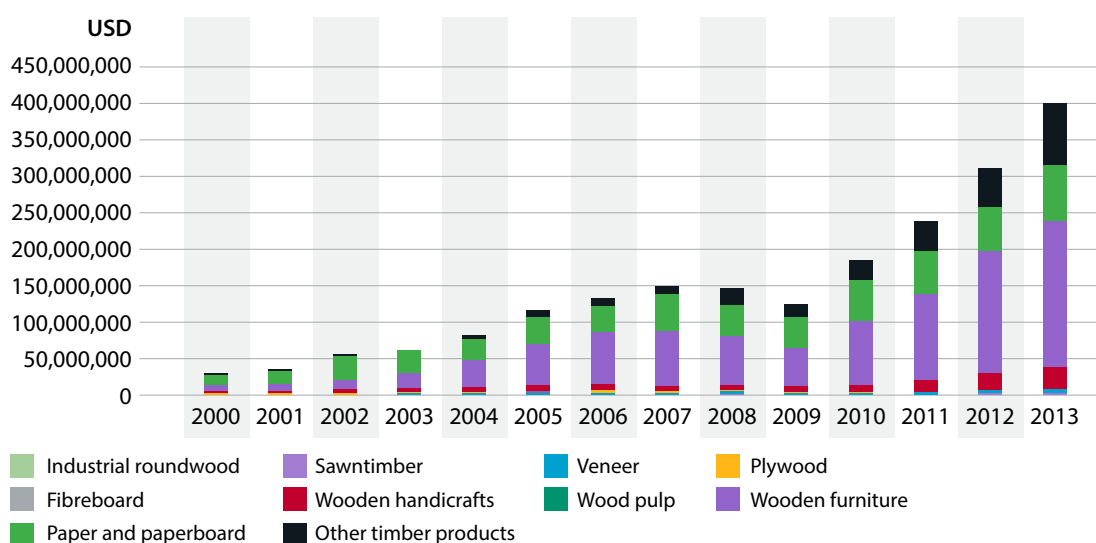
Annex 21.3: Country-wise breakdown of exports to the United States from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



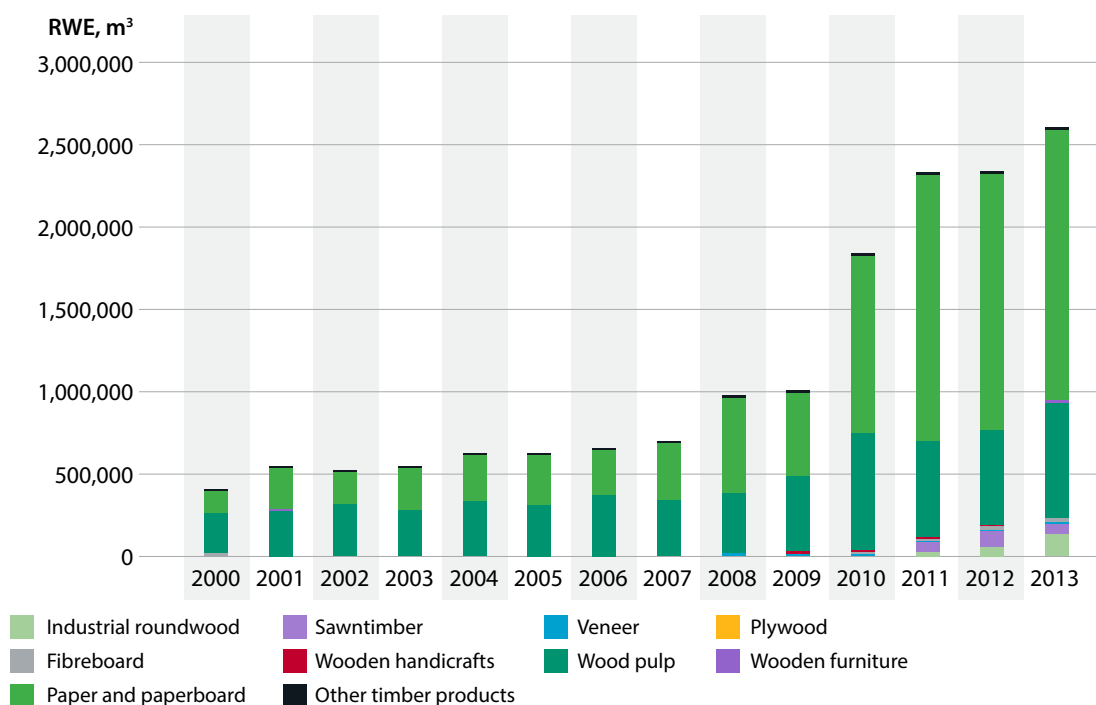
Annex 21.4: India's product-wise imports of timber and timber products from the United States (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



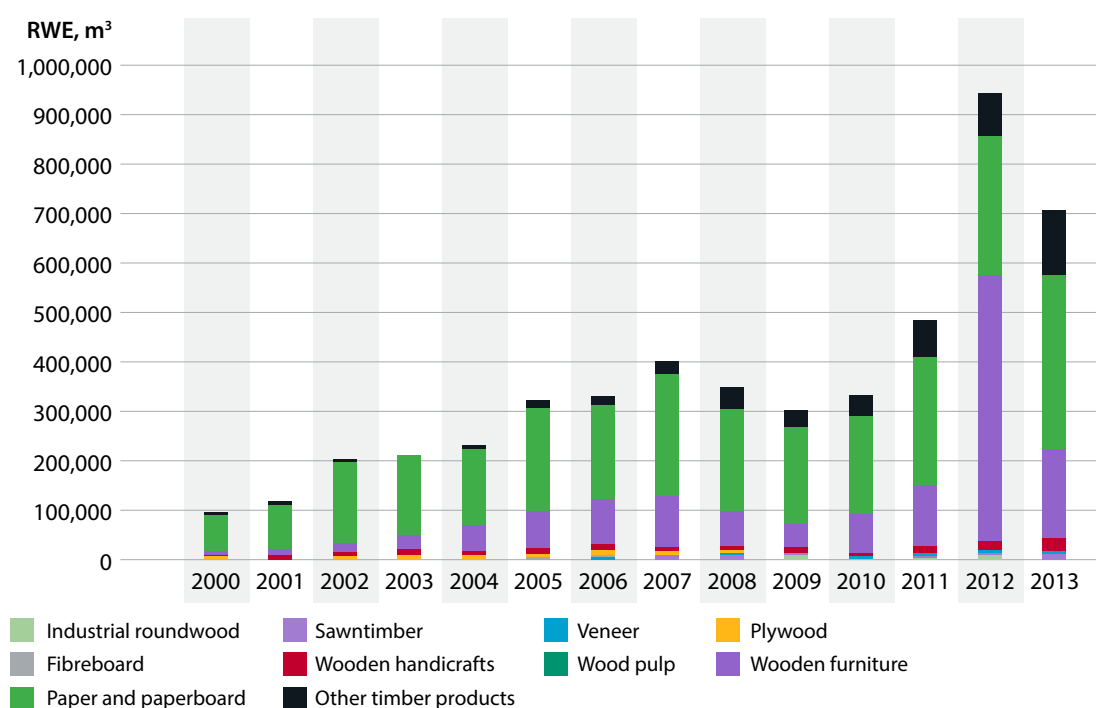
Annex 21.5: India's product-wise exports of timber and timber products to the United States (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



Annex 21.6: India's product-wise imports of timber and timber products from the United States (volume)

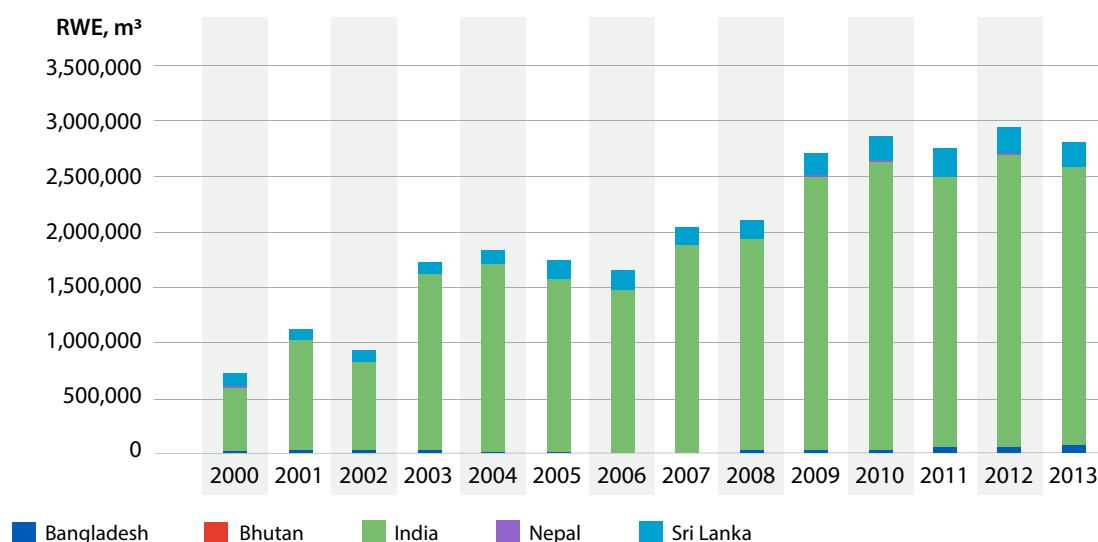
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



Annex 21.7: India's product-wise exports of timber and timber products to the United States (volume)

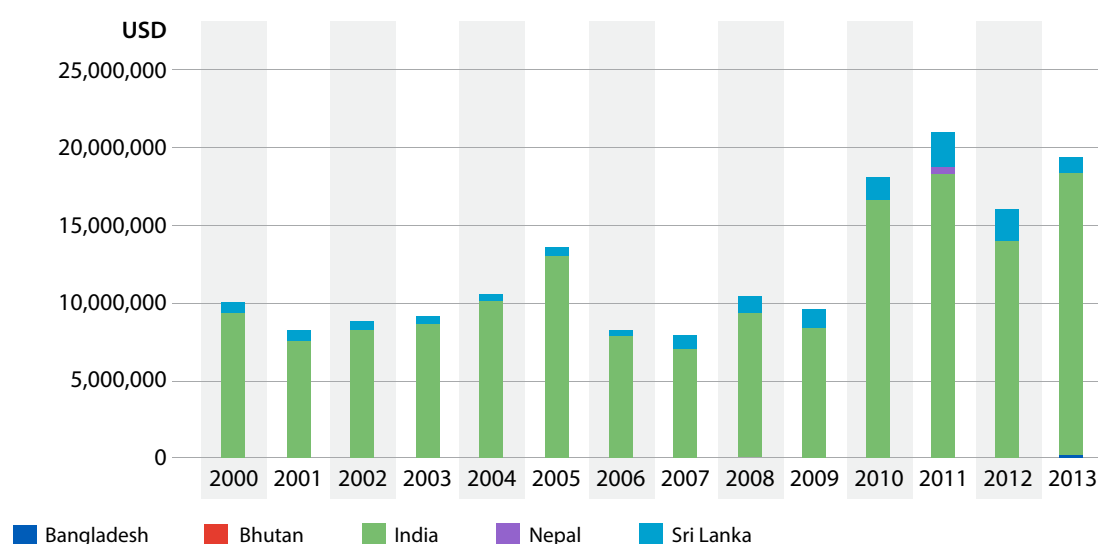
Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India

Annex 22: Trade link between the study countries in the South Asian Association for Regional Cooperation region and Malaysia



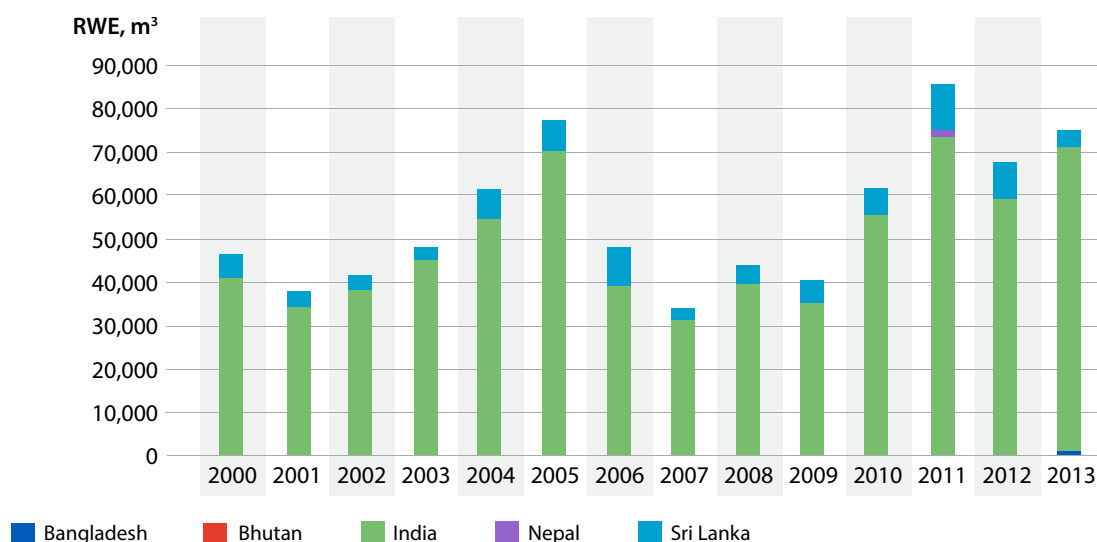
Annex 22.1: Country-wise breakdown of imports from Malaysia to the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



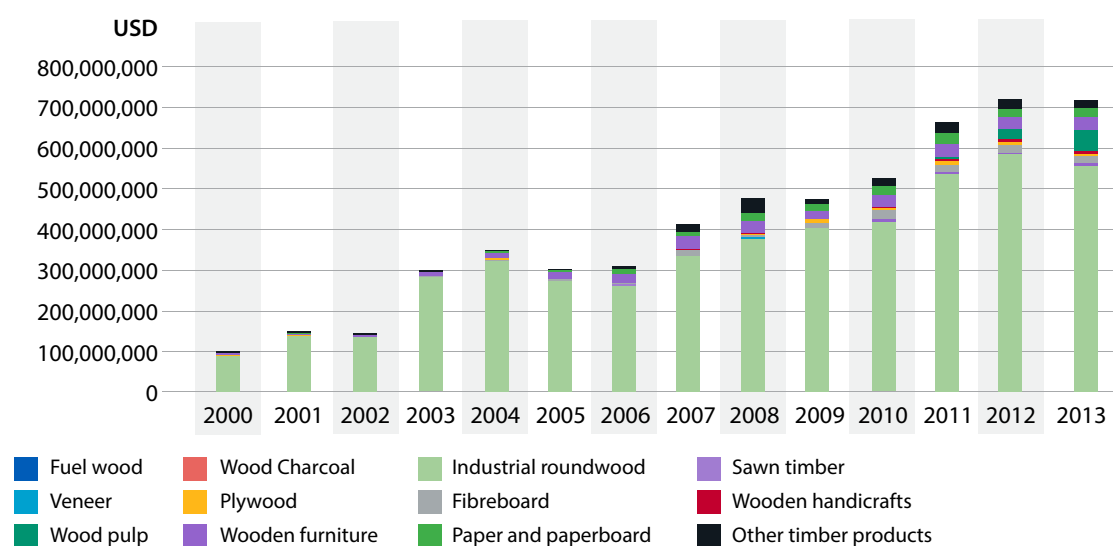
Annex 22.2: Country-wise breakdown of exports from the study countries in the South Asian Association for Regional Cooperation region to Malaysia (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



Annex 22.3: Country-wise breakdown of exports to Malaysia from the study countries in the South Asian Association for Regional Cooperation region (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; Export Import Data Banks of India and Nepal; and Sri Lanka Customs



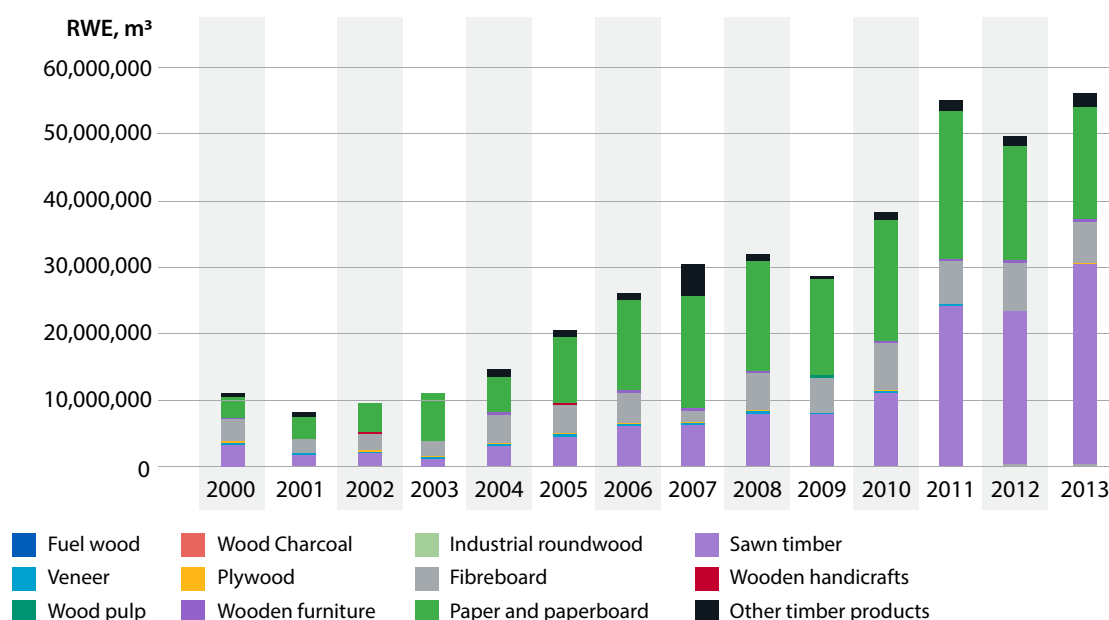
Annex 22.4: India's product-wise imports of timber and timber products from Malaysia (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



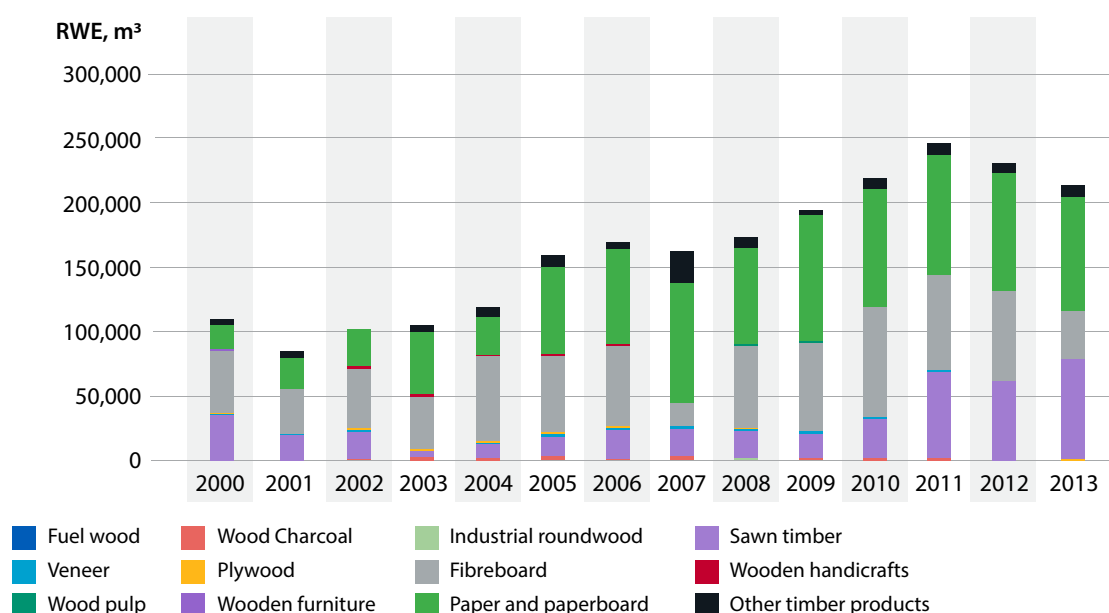
Annex 22.5: India's product-wise imports of timber and timber products from Malaysia (volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Export Import Data Bank of India



Annex 22.6: Sri Lanka's product-wise imports of timber and timber products from Malaysia (value)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Sri Lanka Customs

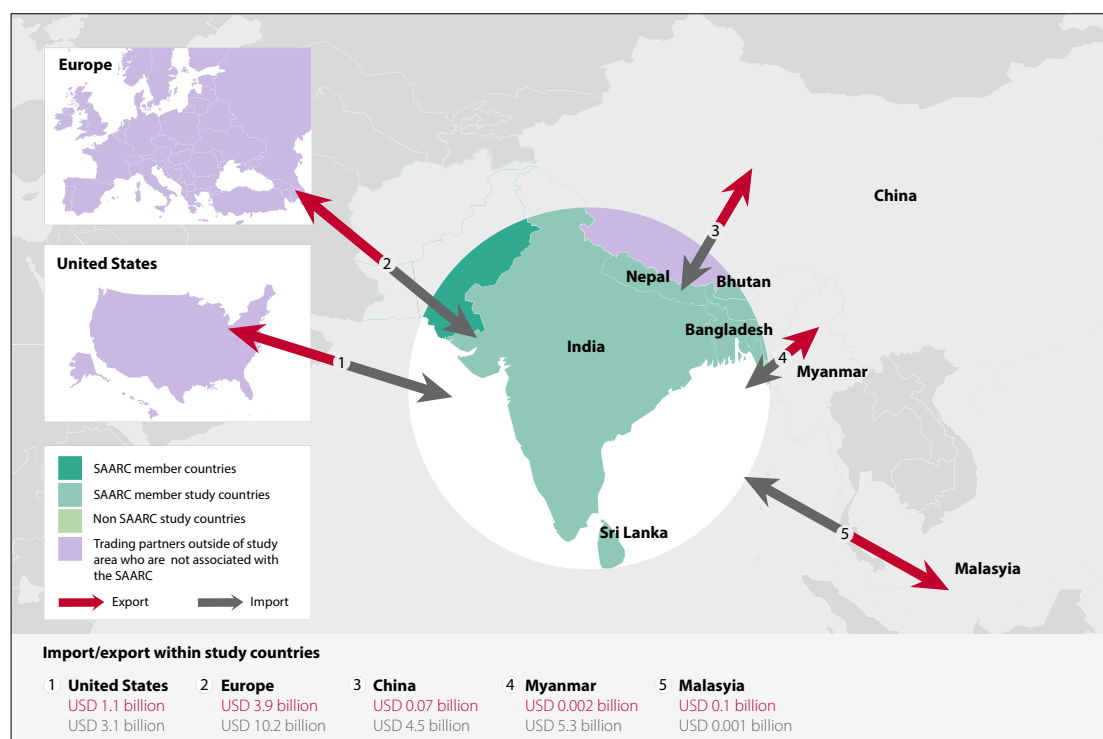


Annex 22.7: Sri Lanka's product-wise imports of timber and timber products from Malaysia

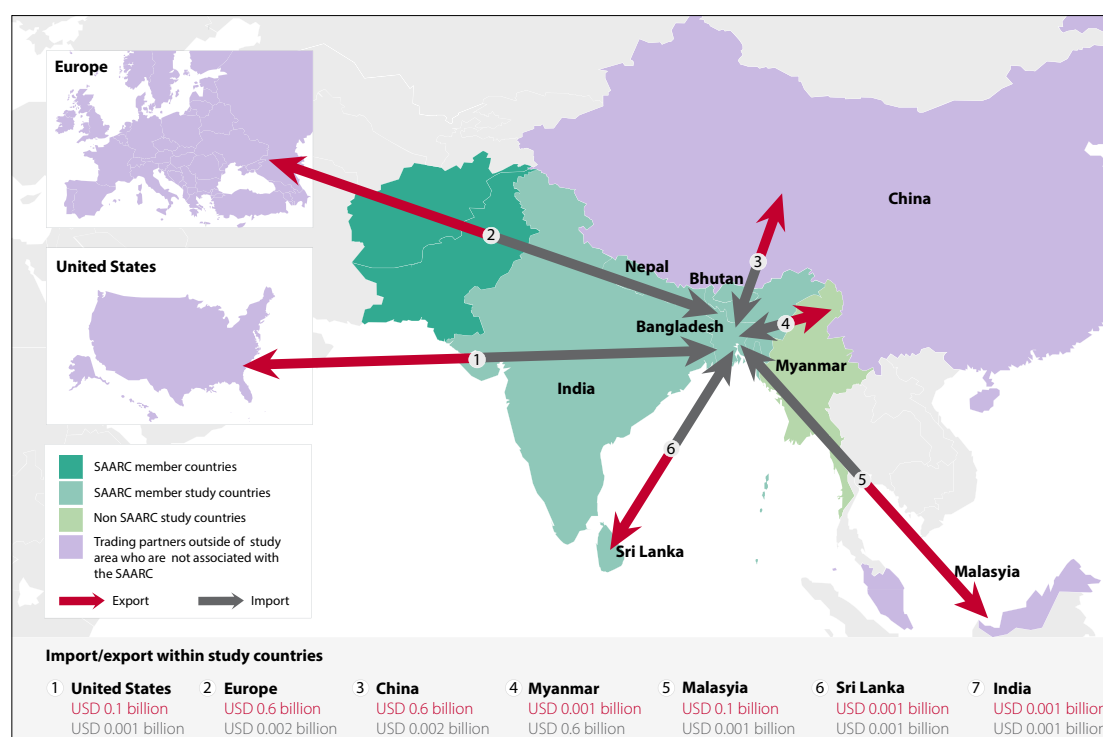
(volume)

Sources: UN Comtrade; FAOSTAT; ITTO Annual Review Statistics; and Sri Lanka Customs

Annex 23: Combined trade flow from 2000–2013 between the study countries and their major partners

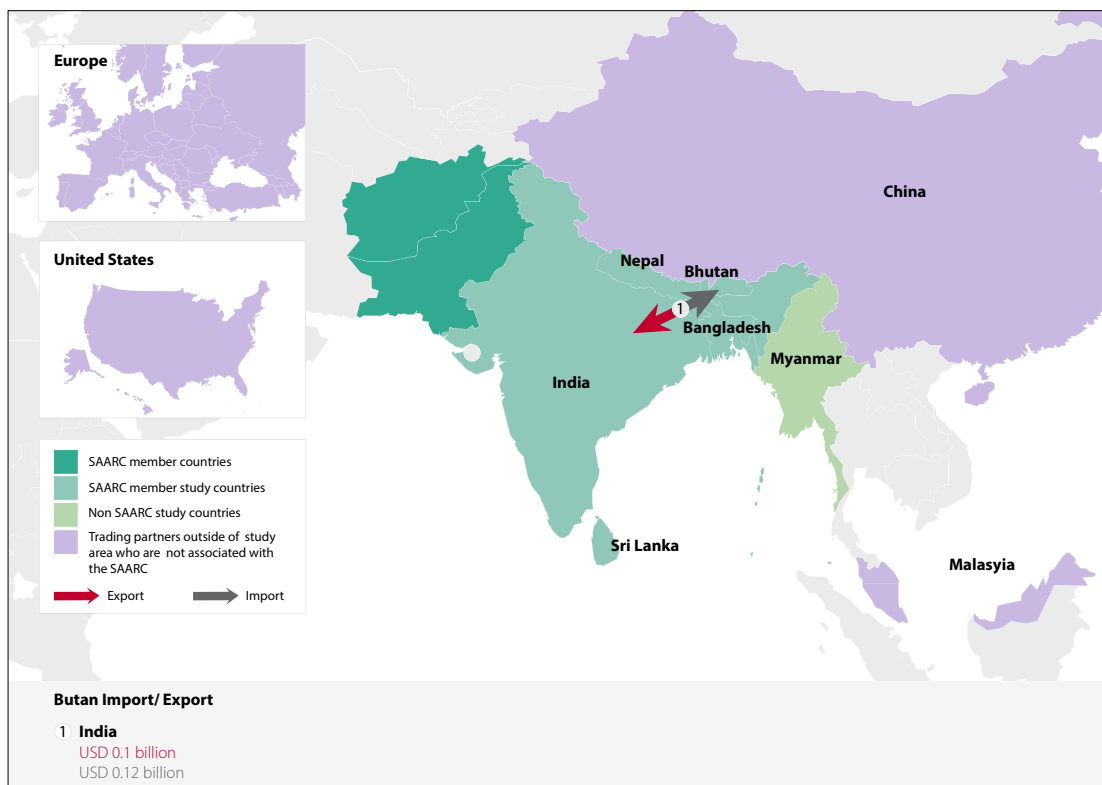


Annex 23.1: Combined trade flow from 2000–2013 between the South Asian Association for Regional Cooperation region (five study countries combined) and its major partners



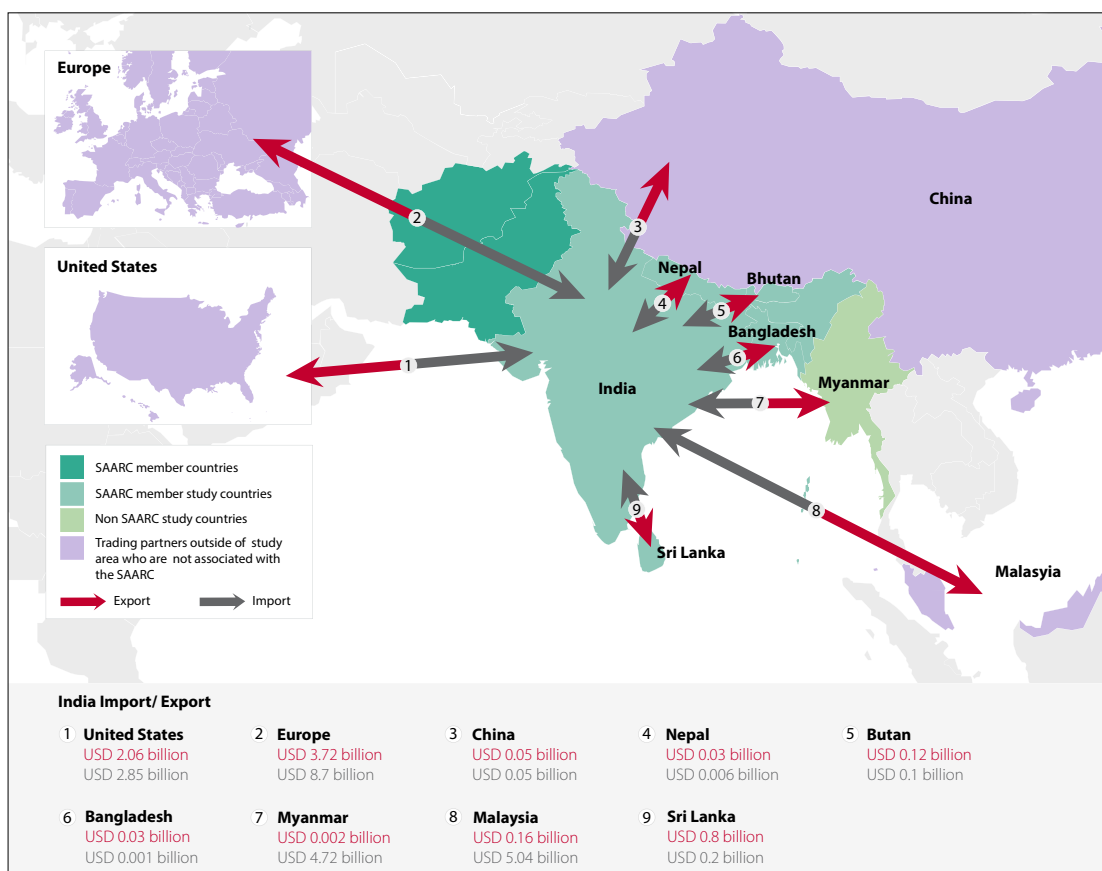
Annex 23.2: Combined trade flow from 2000–2013 between Bangladesh and its major partners *

*No functional trade link with Bhutan and Nepal

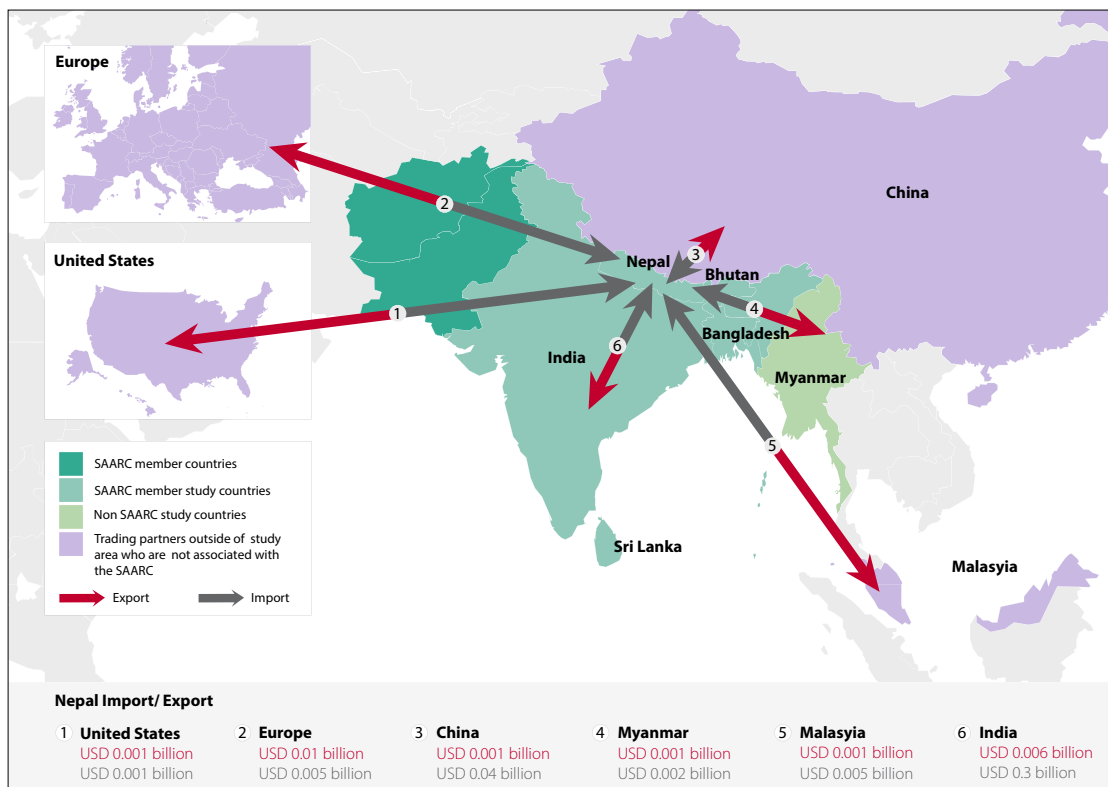


Annex 23.3: Combined trade flow from 2000–2013 between Bhutan and its major partners*

*No functional trade link with any other countries or region except India

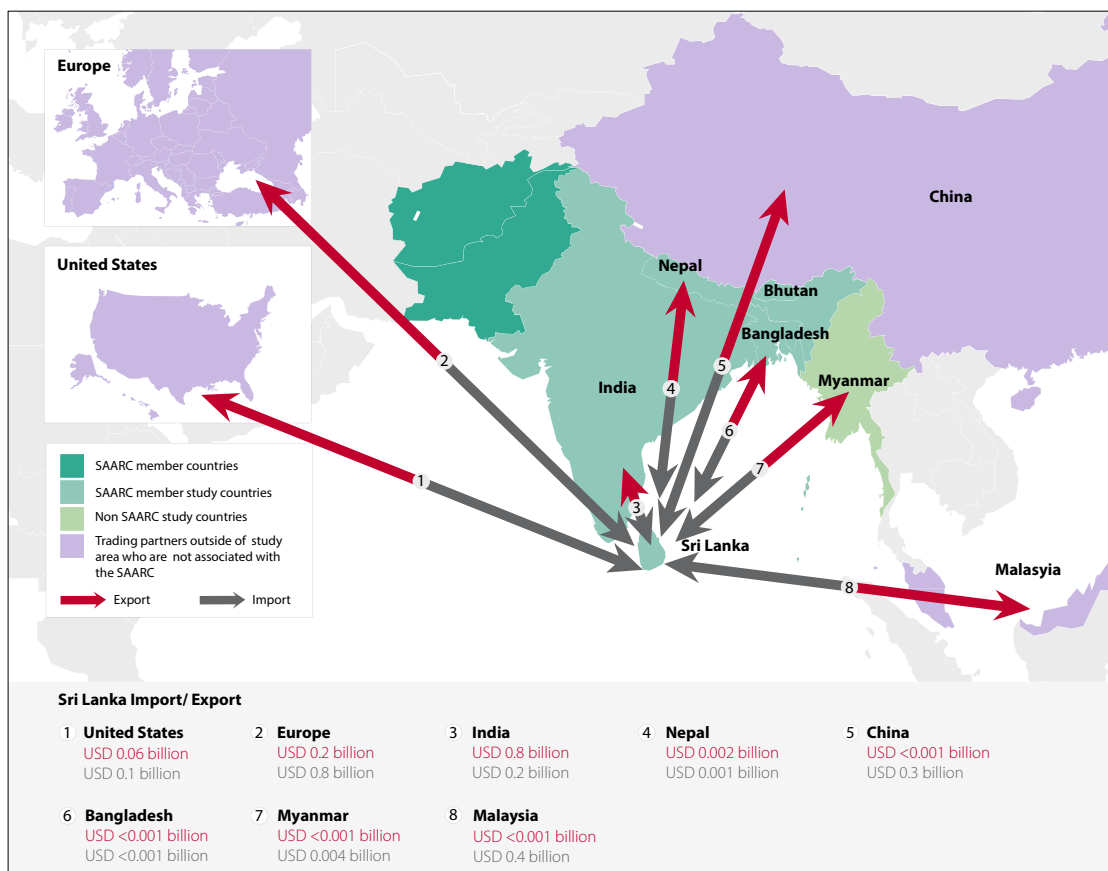


Annex 23.4: Combined trade flow from 2000–2013 between India and its major partners



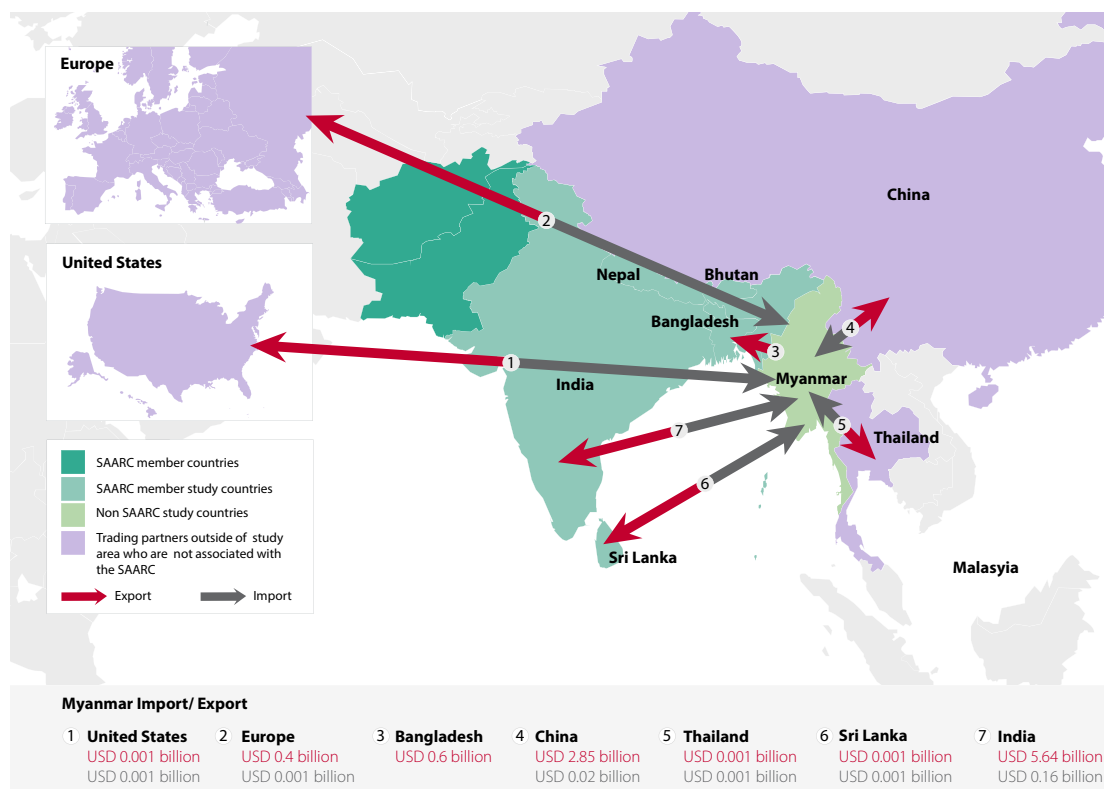
Annex 23.5: Combined trade flow from 2000–2013 between Nepal and its major partners*

*No functional trade link with Bangladesh and Bhutan



Annex 23.6: Combined trade flow from 2000–2013 between Sri Lanka and its major partners*

*No functional trade link with Bhutan.



Annex 23.7: Combined trade flow from 2000–2013 between Myanmar/Burma and its major partners

Annex 24: Forest Stewardship Council certified plantations in India, Sri Lanka and Nepal

Annex 24: Forest Stewardship Council certified plantations in India, Sri Lanka and Nepal

Organisation	State/ district	Certification obtained	Area (ha)	Species	Product type	Activity
India						
Patneswari Agri. Cooperative Ltd.	Odisha	2011	2 305	<i>Acacia mangium</i> ; <i>Eucalyptus camaldulensis</i> ; <i>Eucalyptus tereticornis</i>	Roundwood	Logging
Society for Afforestation, Research And Allied Works	Karnataka	2011	15 091	<i>Acacia harpophylla</i> ; <i>Dalbergia sissoo</i> ; <i>Eucalyptus pellita</i> ; <i>Eucalyptus spp.</i> ; <i>Eucalyptus tereticornis</i> ; <i>Eucalyptus urograndis</i> ; <i>Eucalyptus urophylla</i> ; <i>Leucaena leucocephala</i>	Roundwood	Logging
ITC Limited, Paperboards and Specialty Papers Division (PSPD) Bhadrachalam	Andhra Pradesh	2012	22 805	<i>Casuarina spp.</i> ; <i>Eucalyptus spp.</i>	Roundwood	Logging
Bhamragarh Forest Division, Maharashtra Forest Department	Maharashtra	2012	367 732	<i>Bombax ceiba</i> L.; <i>Dalbergia sissoo</i> ; <i>Dendrocalamus strictus</i> ; <i>Pterocarpus marsupium</i> Roxb.; <i>Tectona grandis</i> ; <i>Terminalia spp.</i>	Roundwood; fuelwood	Logging
Tamil Nadu Newsprint and Papers Limited	Tamil Nadu	2012	15 304	<i>Acacia mangium</i> ; <i>Dalbergia sissoo</i> ; <i>Eucalyptus spp.</i> ; <i>Gmelina arborea</i> Roxb.; <i>Melia azedarach</i> L.	Roundwood	Logging

Organisation	State/ district	Certification obtained	Area (ha)	Species	Product type	Activity
India						
New Ambadi Estate Private Limited	Tamil Nadu	2012	688	<i>Hevea brasiliensis</i>	Rubber/latex	
Lok Vaniki Kissan Samiti	Madhya Pradesh	2013	175	<i>Dalbergia sissoo; Tectona grandis; Terminalia spp.</i>	Roundwood	Logging
International Paper APPM Ltd	Andhra Pradesh	2014	28 636	Not specified	Roundwood, fuelwood, wood chips and twigs	Logging
JK Paper Ltd., Unit- JK Paper Mills	Odisha	2014	2 616	<i>Eucalyptus camaldulensis; Eucalyptus deglupta Blume; Eucalyptus spp; Eucalyptus urophylla</i>	Roundwood	Logging
Kasu Brahmananda Reddy National Park	Andhra Pradesh	2014	143	Not specified	Not specified	--
Total			455 494			

Organisation	State/ district	Certification obtained	Area (ha)	Species	Product type	Activity
Sri Lanka						
Kelani Valley Plantations PLC	Whole country	1996	6 375	<i>Hevea brasiliensis</i>	Roundwood and natural rubber	Logging, rubber tapping
Lalan Rubbers Private Limited	Whole country	2010	8 902	<i>Hevea brasiliensis</i> ; <i>Cocos nusifera</i> L.	Roundwood, natural rubber and non-timber products	Logging, rubber tapping
Forestry and Timber Certification Foundation	Whole country	2011	19 108	<i>Acacia mangium</i> ; <i>Albizia procera</i> (Roxb.) Benth.; <i>Eucalyptus</i> spp.; <i>Grevillea robusta</i> A.Cunn. ex R.Br.; <i>Hevea brasiliensis</i> ; <i>Swietenia mahagoni</i> ; <i>Swietenia macrophylla</i>	Roundwood, natural rubber and non-timber forest products (NTPF)	Roundwood, natural rubber and NTPFs
Horana Plantations PLC	Whole country	2013	3 132	<i>Hevea brasiliensis</i> ; <i>Cocos nusifera</i> L.	Roundwood, NTPFs	Logging and gathering NTPFs
Total			37 516			
Nepal						
Federation of Community Forest Users, Nepal	Whole country	2011	17 205	Various	Non-timber forest products	Gathering NTPFs
Total			17 205			

Source: FSC Database

Annex 25: Models for predicting industrial roundwood consumption and their root mean square errors

Country	Projection model	Root Mean Square Error (in % of average observed consumption)
Bangladesh	$\ln CpC = -2.1070 + 0.0093 \ln GpC + 0.5604 \ln lagCpC$	+/-2.62
Bhutan	$\ln CpC = 0.008 - 0.531 \ln GpC - 0.598 \ln lagCpC$	+/-3.84
India	$\ln CpC = -3.9625 + 0.1348 \ln GpC + 0.0205 \ln lagCpC$	+/-1.59
Nepal	$\ln CpC = -1.4769 + 0.2694 \ln GpC + 1.0356 \ln lagCpC$	+/-4.44
Sri Lanka	$\ln CpC = -1.8721 + 0.1111 \ln GpC + 0.6747 \ln lagCpC$	+/-5.47

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