

Supply Chain Management of Furniture Industries: A Comparison between Private and Public Sector

By

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of the requirements for the degree of
Masters of Procurement and Supply Management

Brac Institute of Governance and Development

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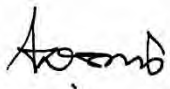
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2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
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Subject: Submission of the “Supply Chain Management of Furniture Industry: A comparison between Private Sector and Private Sector”, as a part of MPSM degree.

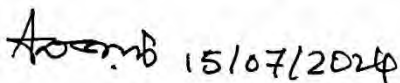
Dear Sir

This is my pleasure to inform you that I have completed writing the Report on “Supply Chain Management of Furniture Industry: A comparison between Private Sector and Private Sector.” as a part of MPSM degree.

I have done my best to complete the report.

I believe that the report will meet the requirements of the above-mentioned course.

Sincerely yours,



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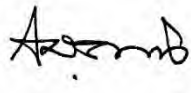
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Non-Disclosure Agreement

This Non-Disclosure Agreement is made and came into force between the undersigned a student of BRAC University and Bangladesh Forest Industries Development Corporation (BFIDC). I have access to the organization's information. I agree that I will keep all information strictly confidential and will not share it with anyone outside of the organization


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Executive Summary

The furniture sector in Bangladesh has developed in keeping with the changing times and the growing tastes and demands of the customers. Against this backdrop, the Government of Bangladesh (GOB) declared the furniture industry a 'thrust sector' (The Daily Star, 2014). The private sector has been playing a vital role in the furniture sector. The public sector is also a player in this industry. The purpose of this report is to compare the supply chain management of private-sector furniture industries with public-sector furniture industries. HATIL from the private sector and Lumber Processing Complex (LPC) Kaptai of Bangladesh Forest Industries Development Corporation (BFIDC) from the public sector have been selected as case studies for this study. This report shows that the Supply Chain Management (SCM) of private sector is more efficient and effective than SCM of the public sector. To enhance the efficiency in the SCM in the furniture industries of public sector, some recommendations such as modernization and automation in manufacturing processes, sophistication in design of furniture, strengthen waste management, and innovation are recommended in the conclusion. The report suggests that public-private collaboration is indeed needed in the area of technology transfer, knowledge sharing and exchange of technical knowhow in the furniture industries to unlock its full potential.

Keywords: Supply Chain Management; Private sector; Public Sector; Furniture industry.

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List of Acronyms

BFIDC	Bangladesh Forest Industries Development Corporation
LPC	Lumber Processing Unit
BCIC	Bangladesh Chemical Industries Corporation
BIGD	Brac Institute of Governance and Development
HATIL	H. A. Timber Industries Ltd.
SCM	Supply Chain Management
PSO	Procurement and Sales Organization
MDF	Medium Density Fiber Board
USD	United States Dollar
BDT	Bangladesh Taka
EPB	Export Promotion Bureau
CNC	Computer Numerical Control
GOB	Government of Bangladesh
FSC	Forest Stewardship Council
BMTF	Bangladesh Machine Tools Factory
R&D	Research and Development
SOE	State Owned Enterprise
UVR	Ultra Violate Ray

Glossary

Lacquering	The act or process of using lacquer to something. Lacquer is a special liquid that is applied on wood or metal to keep from harm and to make it shiny.
Lumber	Lumber refers collectively to timber processed for use as a construction material and timber swanned and cut into boards or planks. This cutting occurs in a lumber mill and the completed product is sold to a lumber yard.
Public corporations	Public corporations refer to all corporations controlled and governed by government units or by other public corporations.
Sanding	Sanding is a process which is done before removing imperfections over the top side of the wood that will affect the appearance and performance of the finish applied to the wood later.
Seasoning	Seasoning is the wood drying process that removes the trapped moisture in the wood cell walls to produce seasoned wood. Seasoning can be attained in several ways, but the goal is to take out water at an even amount to stop the destruction of the wood while drying.
State owned enterprise	A state-owned enterprise (SOE) is created by an act of the parliament and controlled by the government. The

objective of an SOE is to participate in business enterprise to produce goods or services and sell them in the market at economically significant prices on behalf of the government. The ownership of an SOE lies wholly or partially on a government and is usually specified to engage in certain commercial activities.

Upholstery

The upholstery process makes the furniture comfortable and attractive by fixing seats with padding, springs, webbing, and fabric or leather covers.

Chapter 1

Introduction

Furniture is one of the essential products to use in a household or office. Apart from daily requirements, furniture is used for decoration purposes. In many ways, furniture portrays the customer's taste in aristocracy. The furniture sector in Bangladesh started to develop in keeping with the changing times and the growing tastes and demands of the consumers. The size of the furniture industry in Bangladesh is BDT 25,000 crore and has been growing yearly (United News of Bangladesh, 2023). After meeting the needs of domestic customers, producers are also exporting abroad, that have created new opportunities for Bangladesh's export. Furniture is a labour-intensive sector. Plenty of low-cost labour is available in Bangladesh. This is an important factor in achieving competitive advantage over the competitors. So, furniture export shows good potential and the furniture industry of Bangladesh is ready for it. Against this backdrop, the Government of Bangladesh (GOB) has declared this industry a 'thrust sector' (The Daily Star, 2014).

Furniture has traditionally developed as a cottage industry in Bangladesh. In the early 90s, the furniture industry in Bangladesh started transforming from a small cottage industry to a mechanized industry. The furniture business started developing with hi-tech machinery, innovative and attractive designs, and versatile materials from that time. Most types of furniture are manufactured from wood, medium-density fiberboard (MDF), processed wood, particleboard, melamine board, and steel. Now, Bangladesh is producing various types of

furniture of international standards and quality. Nowadays, people prefer domestic furniture instead of imported foreign furniture.

Before independence (1971), there were some small cottage-based furniture factories in the country. After the independence, most of the large furniture brands started operating. The industry transformed into a mass-production-based sector and gradually became one of the country's major economic contributors because of the increasing demand in the early 1990s. The private sector is playing a major role in the furniture sector. Among the top brands in Bangladesh, HATIL, Akhtar, Regal, Navana, and Otobi are renowned brands. Brands like Partex and Brothers are mid-range brands, and Homes and Legacy are known as low-tiered brands. Besides, the public sector is also a player in this industry. Bangladesh Forest Industries Development Corporation (BFIDC) and Bangladesh Machine Tools Factory (BMTF) have been manufacturing furniture in the public sector.

The purpose of this report is to compare the supply chain management (SCM) of private and public sector furniture industries. HATIL from the private sector and Lumber Processing Unit (LPC), Kaptai of BFIDC from the public sector have been selected as case studies for this study. This report shows that the private sector SCM is more efficient and effective than the public sector SCM. Against this backdrop, BFIDC should undertake necessary reform initiatives like modernization and automation in manufacturing processes and adopt sophistication in design of furniture. In addition, BFIDC should strengthen waste management so that waste comes to at a zero level and bring innovation to enhance efficiency in the SCM. The government i.e., Ministry of Environment, Forest and Climate Change and Ministry of Finance should provide financial supports and/or incentives for

research and development and provide policy guidelines to encourage furniture exports. The report suggests that public-private collaboration is indeed needed in the area of technology transfer, knowledge sharing and exchange of technical knowhow in the furniture industries to unlock its full potential.

The rest of the paper is organized as follows. The Section 1.1 of Chapter 1 states the review of literature, Section 1.2 outlines methodology, and Chapter 2 and Chapter 3 describe supply chain management of HATIL and BFIDC respectively. Chapter 4 compares the SCM of HATIL and LPC Kaptai. Chapter 5 examines the results and the final Chapter concludes the paper.

1.1 Review of Literature

The business world uses the term SCM without changing much over the centuries. Hugos (2018) says that in the late 1980s, the term SCM came into light and applied to be widely used in the 1990s. Before that, businesses applied terms such as logistics and operations management instead. Before discussing SCM, it is better to describe the supply chain. Lambert, Stock, and Ellram (1998) define a supply chain as the arrangement of companies that bring goods and services to the market. Chopra and Meindl (2015) define the supply chain more broadly; they assert that the supply chain includes all stages, directly or indirectly, that accomplish a customer demand. According to them, the supply chain accommodates manufacturers, suppliers, retailers, transporters, warehouses, and customers. Ganeshan and Harrison (1995) define a supply chain as a network of activities and distribution facilities that accomplish the procurement of raw materials, modifications of

these raw materials into intermediate and final goods and services and the delivery of these goods and services to the end consumers.

So, we can define SCM as the process that intervenes in supply chain activities to get the desired results. Mentzer, et. al. (2001) defines SCM as:

“The systemic, strategic coordination of the conventional business functions and the strategies across these business functions within a particular firm and across businesses within the supply chain, to improve the long-term performance of the individual companies and the supply chain as a whole.” (Mentzer, et. al., 2001, Vol. 22(2), p. 18).

On the other hand, Hugos (2018) defines SCM in the following way:

“Supply chain management is the coordination of collecting raw materials, manufacturing, inventory, transportation, and distribution among the players in a supply chain to attain the best mix of responsiveness and efficiency for the market being served.” (Hugos, 2018, pp 4).

However, I found no information from past research about comparing the SCM of furniture industries between the private sector and the public sector in Bangladesh. For this reason, the present report provides a new look at the comparative study of the SCM of the furniture industries between the private sector and the public sector in Bangladesh. In doing so, I selected HATIL from the private sector and LPC Kaptai of BFIDC from the public sector as case studies for this study.

1.2 Methodology

To complete this study, I relied on both primary and secondary data. I visited LPC Kaptai and the HATIL factory at Jirani, Savar, to collect primary data. I interviewed the Company Secretary, HATIL Doors and Furniture and the Manager, LPC, Kaptai, BFIDC. I received important opinions/ suggestions from them that helped writing the results and formulate recommendations.

In addition, a desk review of a few kinds of literature on the subject has contributed to the formulation of recommendations. I have been working at BFIDC since September last year as General Manager. For this reason, I have selected my workplace for the internship. This study is conducted from January to July 2024.

Chapter 2

Supply Chain Management of HATIL

HATIL is a leading furniture producer and retailer in Bangladesh. The company was set up in 1989. HATIL stands for 'H. A. Timber Industries Ltd.', a firm commenced in 1963 at Farashgonj in Old Dhaka by Mr. Habibur Rahman, the father of Mr. Selim Rahman, the present Managing Director of HATIL. Selim Rahman started his career by joining his father's business in the 1980s. He invented the idea of making doors commercially and started the trade named 'HATIL Doors', a small door-making retailer in Dhaka. The firm began to manufacture cupboards and beds in 1995, and it started to expand a variety of household furniture by the following year.

HATIL imports beech wood from Germany and oak wood from North America. They import fabrics from India and China and hardware such as locks, handles, and latches from Malaysia and China. They also import knitting machines, robotic cutting machines, and robotic spray machines from the USA, Italy, and Germany. Lacquering, ultra violet curing, computer-aided design, precision cutting, and CNC machining are operated by automated robotic systems (Fig 1). To set up modern machinery and appropriate technology at its factory at Zirani Bazar HATIL spent over BDT 200 crore in 2019. As of 2024, HATIL has set up 75 showrooms within the country, 27 in neighbouring India and 2 in Bhutan. It operates in Australia, Canada, the United Arab Emirates, the United States, Kuwait, Saudi Arabia, Egypt, Thailand, and Russia. As HATIL's activities, needs, and scopes have increased, they have expanded their workforce too. The company, which commenced with

just 6-7 staff, recruited around 3,000 employees. To meet the growing, needs, demand and preferences, HATIL brought automation in the manufacturing processes and they use robots in their production. HATIL produces office and household furniture from timber, melamine-laminated particle board, medium-density fiberboard, still and cane (Fig 2 - Fig 18). It can manufacture 1,600 items of furniture per day.



Fig 1: A robotic arm applying lacquer polish to a chair at HATIL factory (Source: HATIL).



Fig 2: HATIL manufactures smart and slim furniture (Source: HATIL).

The flow chart of supply chain of HATIL is delineated below:

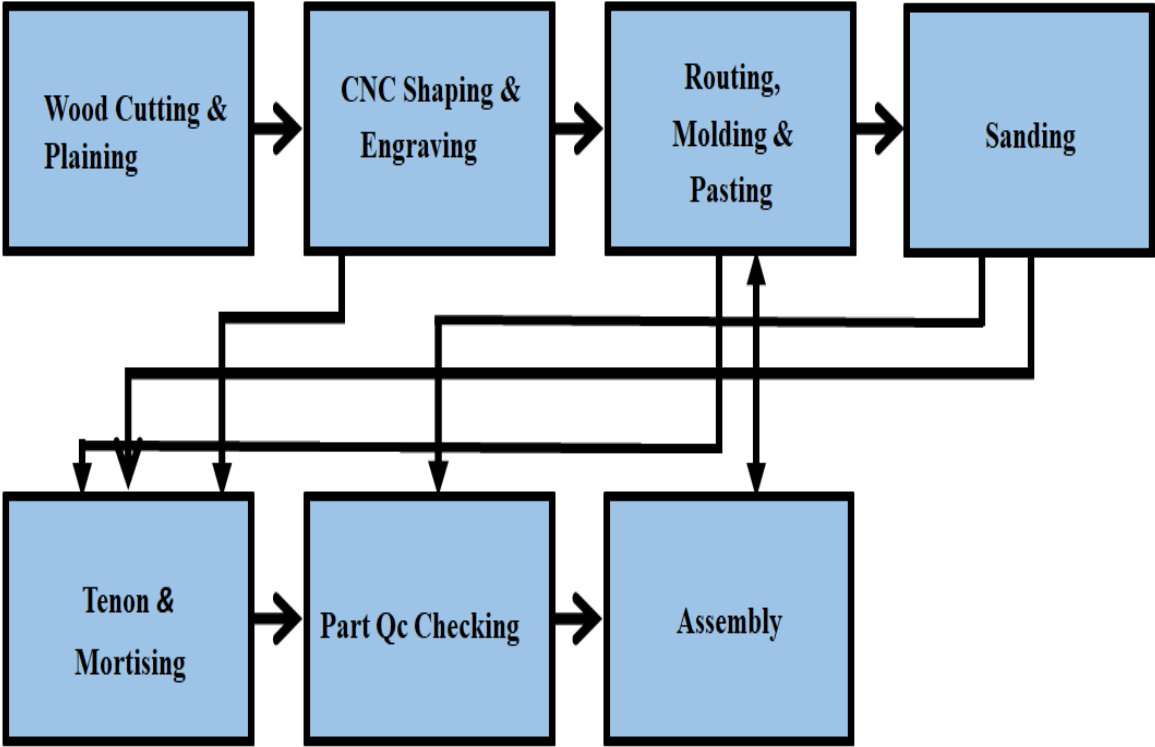


Fig 3: Solid wood Production process



Fig 4: Bed Assembly (Source: HATIL)



Fig 5: Chair Assembly (Source: HATIL)



Fig 6: Door Assembly (Source: HATIL)

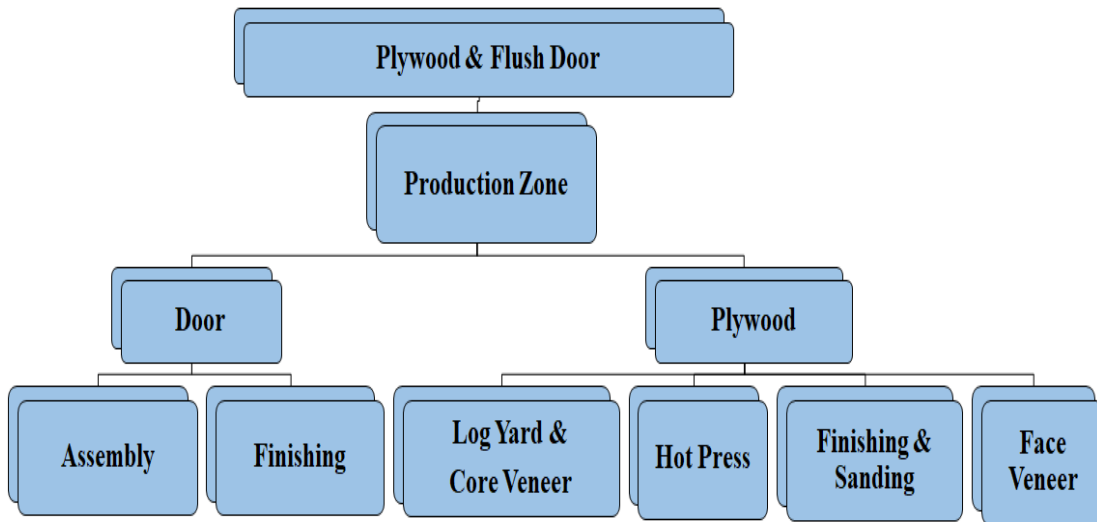


Fig 7: Process Flow of Plywood & Flush Door (Source: HATIL)

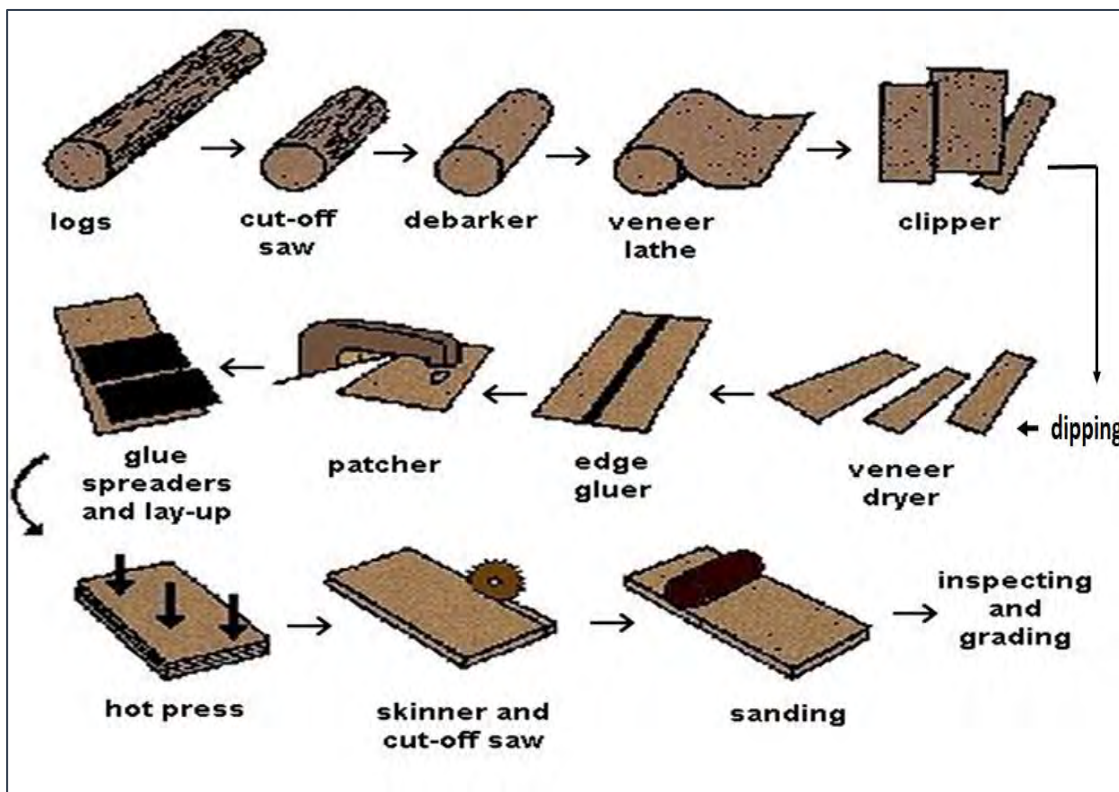


Fig 8: Plywood Production Process (Source: HATIL).



Fig 9a: Particle Board Production



Fig 9b: Particle Board Cutting



Fig 9c: Particle Board Thickness and Planing



Fig 9: Particle Board Processing (Source: HATIL).



Fig 10a: Slicing



Fig 10b: Cutting



Fig 10c: Thickness planing



Fig 10d: Finger jointer

Fig 10: Solid Wood Processing for Flush door (Source: HATIL)

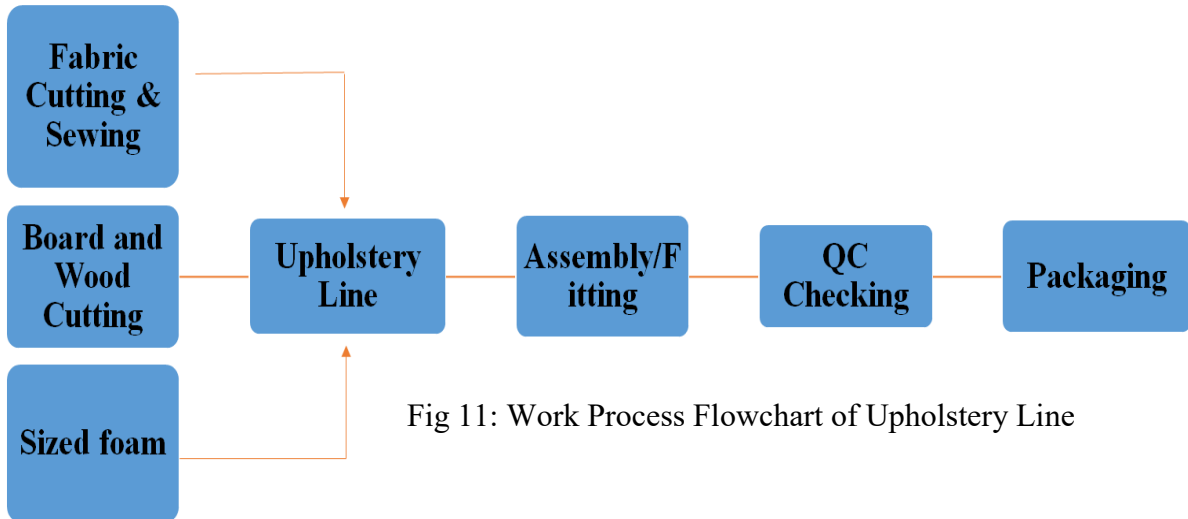


Fig 11: Work Process Flowchart of Upholstery Line



Fig 12a: CNC (Italy)

Fig 12b: CNC (Germany)

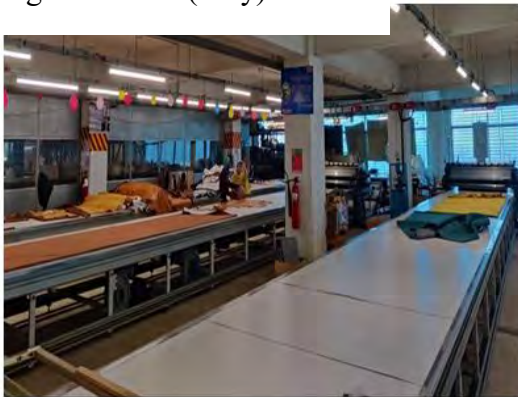


Fig 12c: Cutter- CNC (USA)

Fig 12: Upholstery Hi-tech Machines (Source: HATIL).

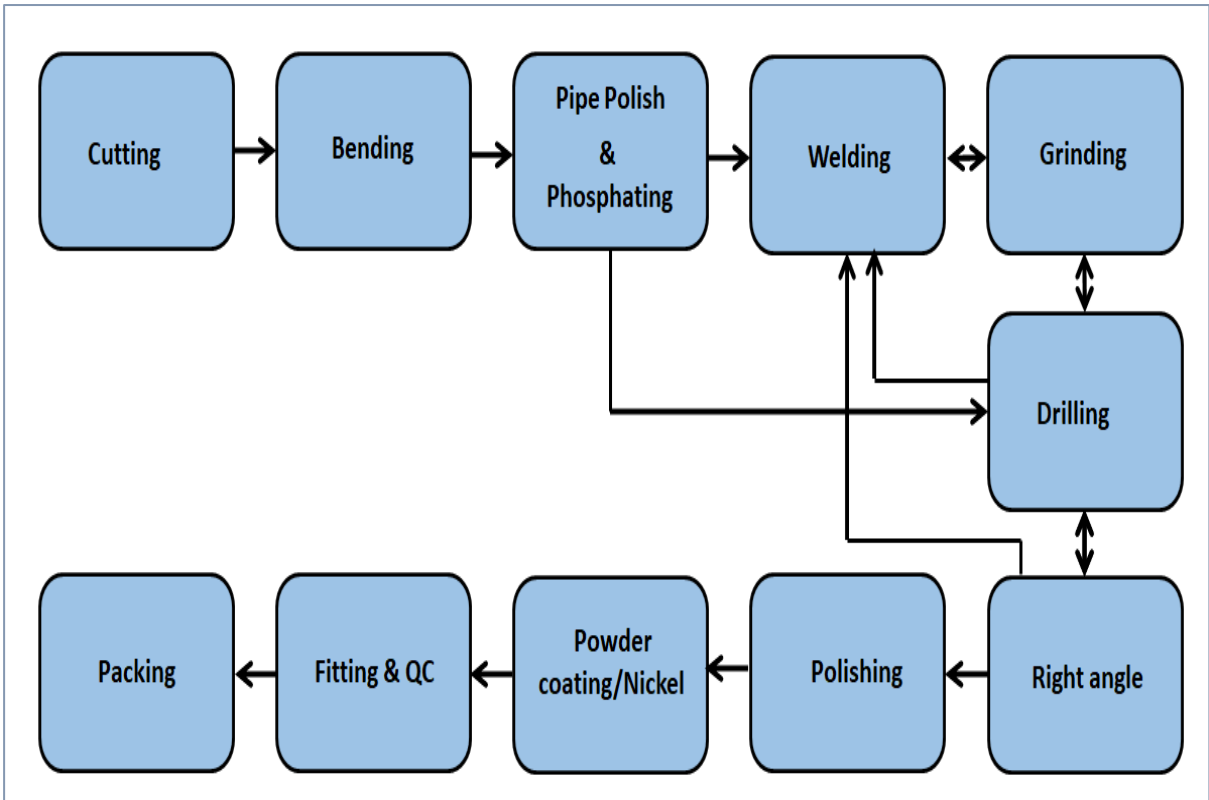


Fig 13: Production Process of Metal Unit (Source: HATIL).

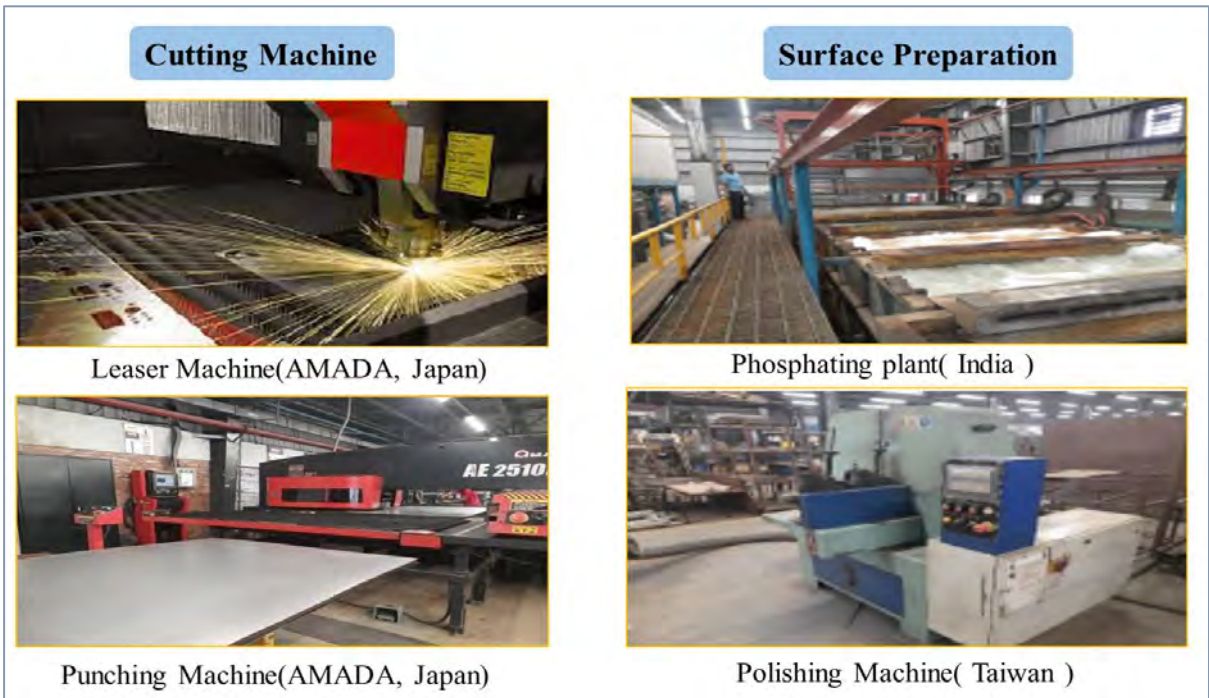


Fig 14: High Tech Machines Used In Metal Unit (Source: HATIL).

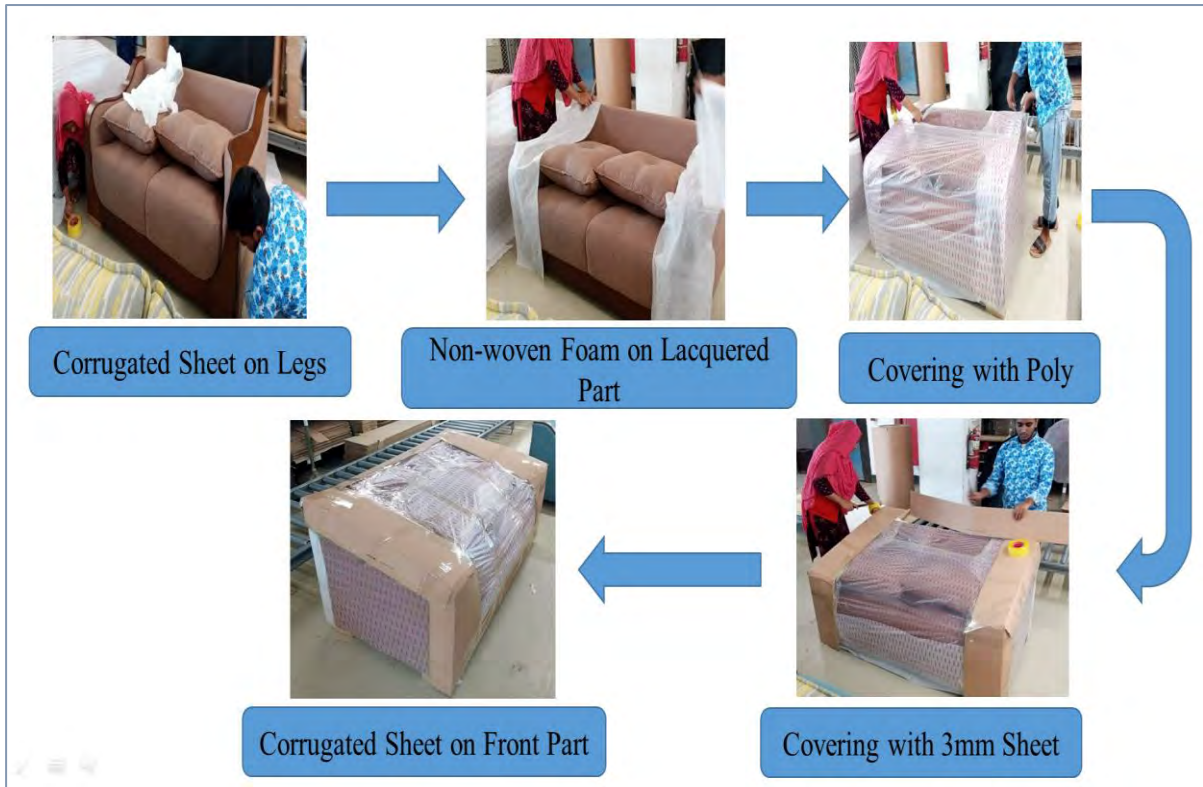


Fig 15: Steps in Packaging of Sofa

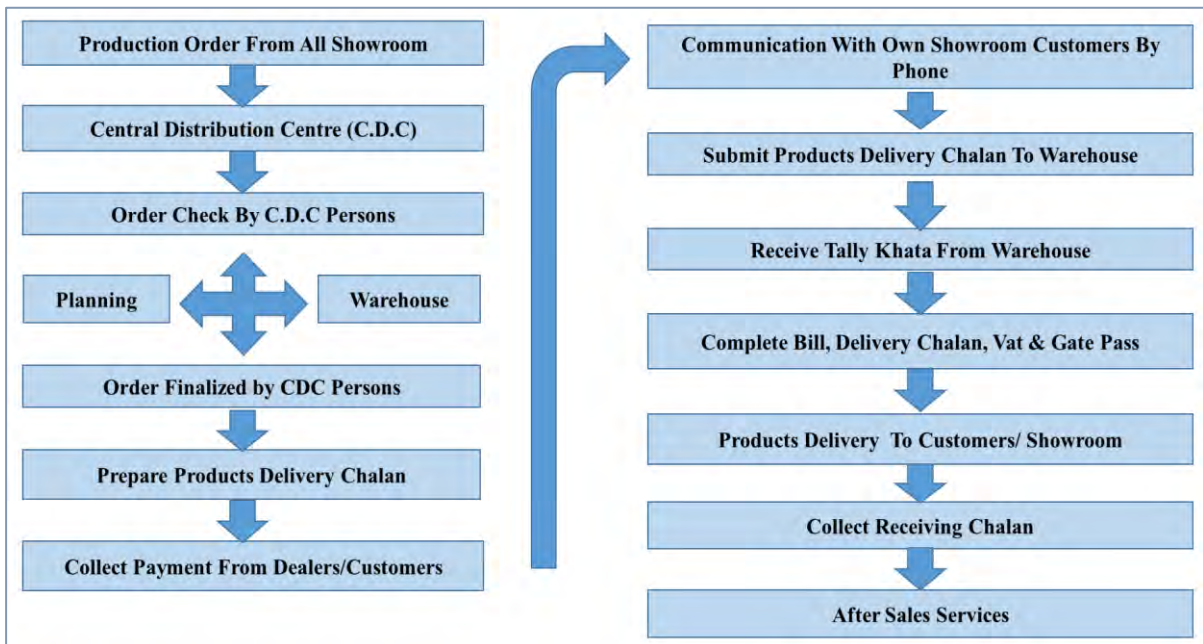


Fig 16: Working Process Flowchart of Central Distribution Center (Source: HATIL)

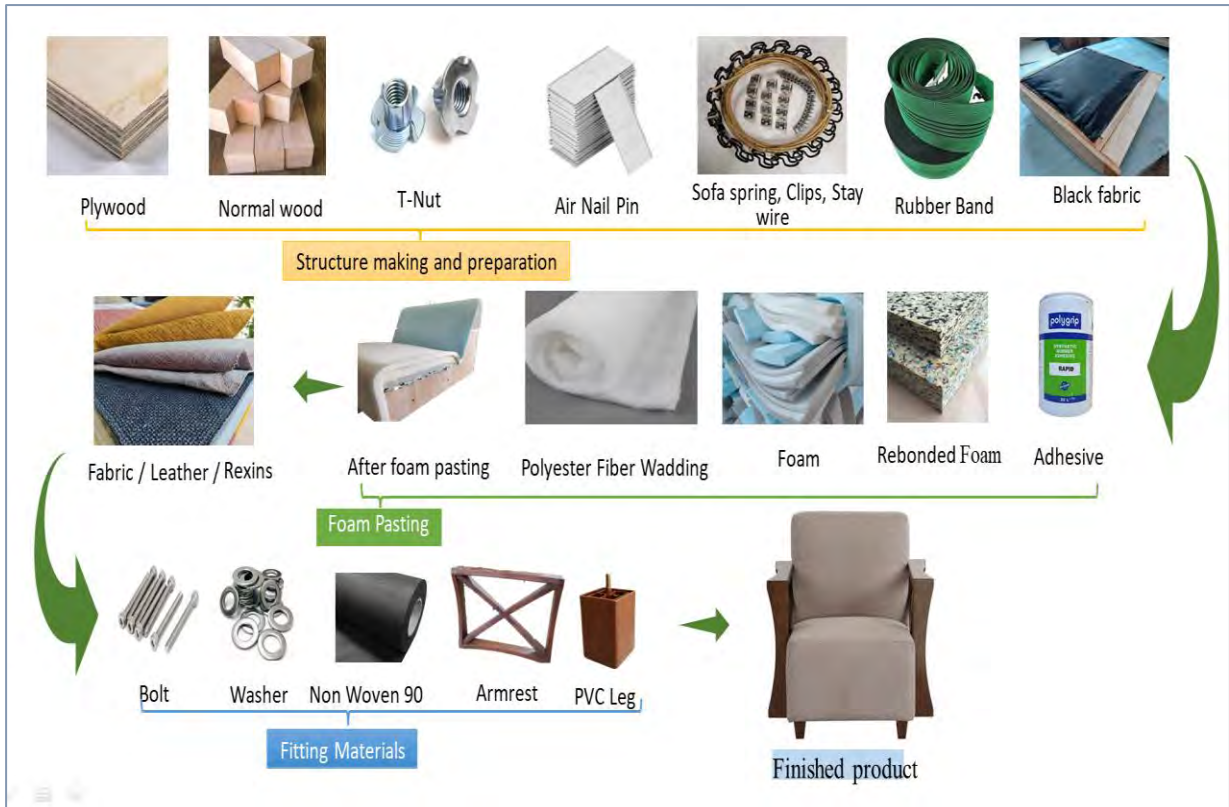


Fig 17: Production Process for Sofa (Source: HATIL).

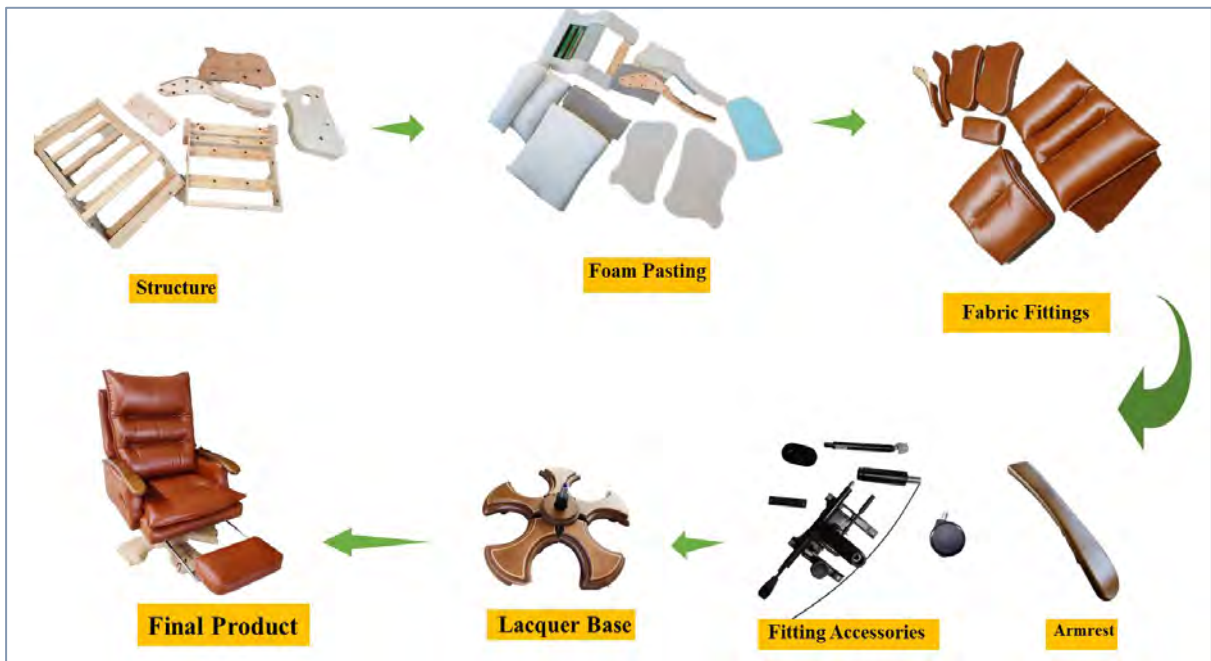


Fig 18: Production Process for Chair (Source: HATIL).

Chapter 3

A Brief of BFIDC

East Pakistan Forest Industries Development Corporation was set up under Ordinance No. LXVII of 1959. It was renamed Bangladesh Forest Industries Development Corporation (BFIDC) by Presidential Order No. 48 of 1972. It is one of the state-owned enterprises (SOE) or public corporations of the Government of Bangladesh and operates under the Ministry of Environment, Forests and Climate Change. BFIDC strives to extract timber, rubber and other forest woods, manufacture office and household furniture and sell it at economically significant prices.

BFIDC works with the vision to “production and marketing of eco-friendly and sustainable natural rubber and wood products”. The mission of BFIDC is to “production of natural rubber and smart wood products for domestic and international markets through research, modern and sustainable technologies and innovations” (BFIDC, 2024).

The strategic objectives of BFIDC are (BFIDC, 2024):

- a) It shall supply furniture and fixtures to all government and private offices, semi-government, autonomous bodies, households and public and private universities, medical colleges, and hospitals.
- b) To meet the increasing demand for wood products in the competitive market and to create employment opportunities by making maximum use of rubber wood and forest resources by setting up industrial factories.

- c) Harvesting/ gathering/ collection of mature timber/ rubber wood and other forest products from forest and rubber plantations of BFIDC.
- d) Treating, extraction of wood/ seasoning of harvested wood and manufacture of office and household furniture, dunnage, railway sleepers etc.
- e) Setting up industries/ factories for commercial use of forest products and rubber wood.
- f) Successful, sustainable, and commercially highly profitable plantations of rubber plantations, fruits, forest medicinal plants and social forestry on less fertile, degraded hills, hills, and uplands – where food crops do not grow, other crops do not do well.
- g) Creation of need-based employment opportunities for (rural) poor men and women and poverty alleviation and improvement of standard of living in hilly and remote areas.

The furniture sector of BFIDC consists of 08 (eight) industrial units and its one and only showroom is located at Bangabandhu National Stadium Market, Dhaka. The furniture manufacturing units of BFIDC are as follows:

- a. Cabinet Manufacturing Plant (CMP), Mirpur, Dhaka
- b. Eastern Wood Works, Tejgaon, Dhaka
- c. Sangu Matamuhuri Timber Extraction and Furniture Unit, Kalurghat, Chattogram
- d. Cabinet Manufacturing Plant (CMP), Kalurghat Chattogram
- e. FIDCO Furniture Complex, Kalurghat, Chattogram

- f. Wood Treatment Plant (WTP), Kalurghat, Chattogram
- g. Lumber Processing Complex (LPC), Kaptai, Rangamati
- h. Rubber wood Processing and Pressure Treatment Plant, Srimangol, Sylhet.

Among the 8 (eight) industrial units, 3 (three) units are engaged in the collection of wood from Chattogram Hill Tracts (CHTs) and the economic life cycle lost rubber trees from 18 rubber gardens of BFIDC, making furniture, seasoning and treatment of woods. The rest 5 (five) units are manufacturing doors, windows, *chow-kat*, dunnage, chairs, tables, benches, sofa sets and high-quality furniture for government offices, educational institutes, and households.

3.1 Supply Chain Management of LPC Kaptai

Lumber Processing Complex & Sawmill Unit (LPC), Kaptai, Rangamati Hill District, is a large industrial unit of BFIDC 54 km northeast of Chittagong, Bangladesh's second-largest city. It stands at 24.10 acres of 100 acres of land leased from the Department of Forest. The LPC was established in 1966 under government patronage. The largest sawmill in Asia was set up at the premises of LPC. The machinery and the infrastructure were worth BDT 278.34 lakhs at that time. This institution aimed to create long-lasting and sustainable use of the country's forest resources. LPC Kaptai processes forest resources in different ways to meet the furniture and wood demands of various government and non-government organizations. It supplies lumber to inter-units after harvesting, processing, seasoning, and treating of rubber woods extracted from the economic life cycle lost rubber trees from 18 rubber gardens of BFIDC. It manufactures and sales furniture too.

This unit depends on the forest department's timber extracted by BFIDC from the reserved deep forests of Chittagong Hill Tracts. The Department of Forest allots wells in favour of the Karnaphuli wood extraction unit. From those wells, forest wood was extracted mechanically, carried by elephants, and supplied to BFIDC through Kaptai Procurement and Sales Organizations (PSO). Like other industrial units, LPC collects 4.5 lakh cubic feet of wood annually from PSO, Kaptai. LPC also extracts rubber wood from different rubber gardens of BFIDC after the elapse of the economic life cycle of productive rubber trees. After cutting, processing and treating these mature and high-quality round logs, LPC produces railway sleepers for Bangladesh Railways, electric poles, anchor logs and cross arms for Bangladesh Rural Electrification Board and Bangladesh Power Development Board, cable drums for Eastern Cable Limited, sized woods and poles for Bangladesh Navy and Department of Roads and High Ways and wooden plate (dunnage) for Department of Food, BCIC, TCB. Besides, LPC produces furniture for government offices, educational institutes, hospitals and households and lumbers for other industrial units of BFIDC. A brief of the SCM of LPC Kaptai is described below:

Extracting of round rubber wood: The life-cycle lost rubber trees from various rubber gardens of BFIDC are brought to LPC Kaptai units after cutting them into pieces and transporting them by road through suppliers (Fig 19).

Harvesting of forest wood: Different types of forest rounded wood/sized wood seized from different bits/ranges of forest department are allocated through allotment of lots. Forest products are supplied by road/river on payment of aggregate value of trees of

different lots, income tax and Value Added Tax (through separate cheques) in favor of the allotment letter.



Fig19: BFIDC's owned truck carries wood log extracted form forest.

Sawing of rubber wood: Rounded rubber wood extracted from rubber gardens is cut into specified sizes to make lumber and furniture. Waste wood is used as firewood in boilers after cutting into specified sizes. Surplus firewood is sold through a tender process.

Selling of rounded/sized forest wood: Rounded/ sized forest wood and seasoned wood are sold to various industrial units of BFIDC as per their requirement.

Sawing of forest wood: Forest rounded wood collected from different bits/ranges of the forest department is cut into specified sizes for making furniture. Waste wood is used as firewood in boilers after cutting into specified sizes. Surplus firewood is sold through a tender process.

Seasoning of rubber wood: Sawn rubber sized timbers are seasoned in the seasoning chambers for drying. Seasoning is mainly done to remove water from the plant in specified temperature so that the sized wood gets the appropriate amount of moisture.

Seasoning of forest wood: Swanned timbers are seasoned in seasoning chambers for drying. Seasoning is carried out to remove water from the plant at a specified temperature so that the sized wood gets the appropriate moisture.

Treatment of rubber wood: In the first step, after finishing the seasoning, the sized rubber woods are treated with borax and boric powder to protect the wood from various fungi, insects, and spiders and make it durable.

Seasoning of rubber wood: After treating with borax and boric powder, the sized rubber woods are re-seasoned for 7-8 days to reduce moisture content.

Selling of sized rubber wood: Sized, seasoned and treated rubber woods are sold to various industrial units of BFIDC as per their requirement.

Making furniture from rubber/forest wood: Seasoned and treated rubber/forest woods are now prepared for making various types of furniture. Skilled and trained carpenters manufacture furniture as per the requirement/specification of the buying organization.

Polishing of furniture: After making furniture as per specification, polishing is done by Polish men as per the requirement/ sample of the buying organization.

Wrapping of furniture: Wrapping papers are used to wrap the polished furniture and deliver it to buyers in different locations by both owned trucks of BFIDC and hired trucks.

Distribution of furniture: Orders are collected from various public/ private offices and households for supplying ready-made furniture. The furniture is delivered to the specified address of the buyer organization as per the work order. The furniture is invoiced upon

arrival. Later, the bill is prepared per the invoice collected from the buying organization, and the buying organization clears payment accordingly. The flow diagram of the supply chain of LPC Kaptai is delineated below (Fig 20 – Fig 21):

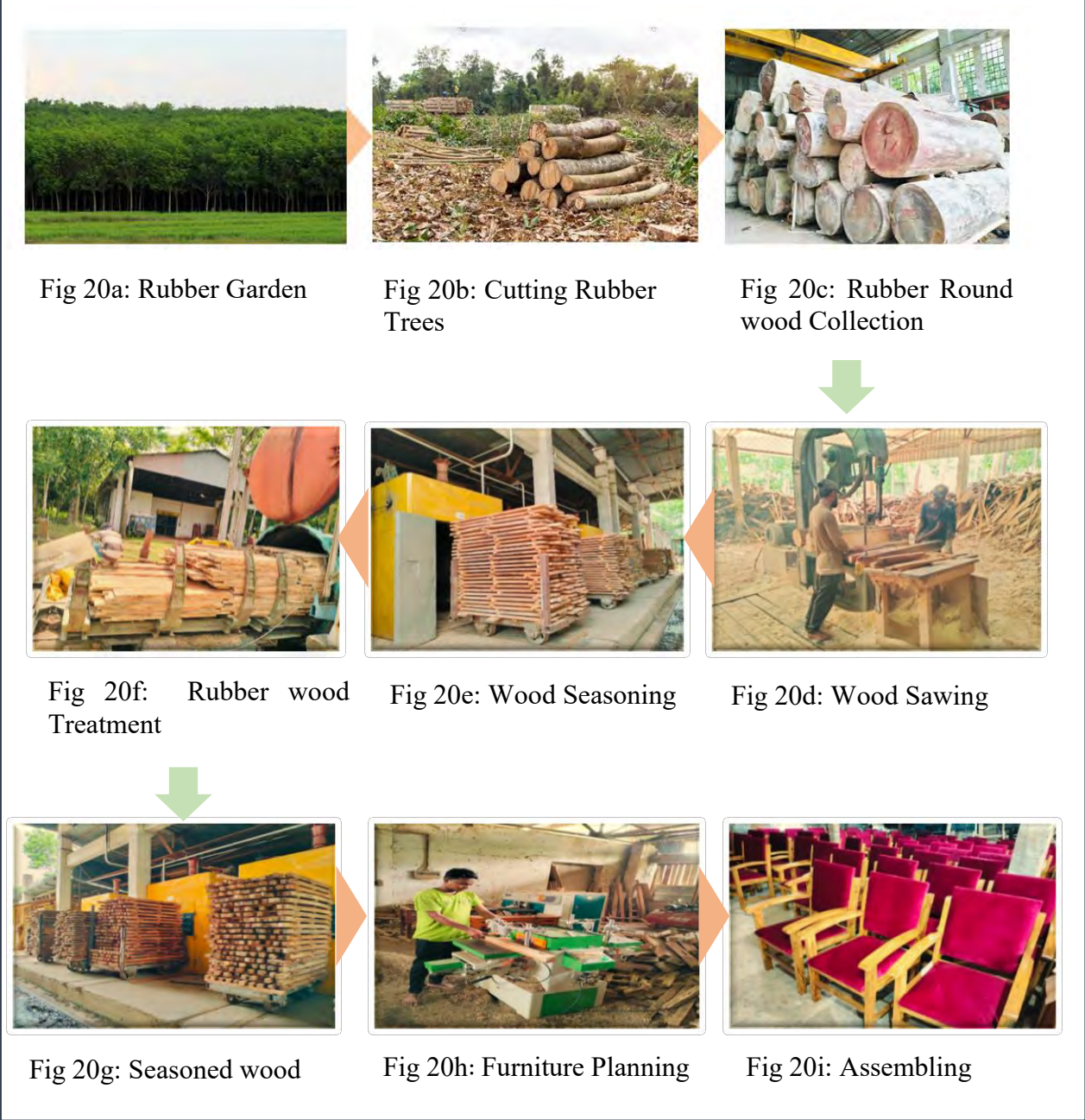


Fig 20: Supply chain of furniture from rubber wood (Source: LPC Kaptai).



Fig 21a: Wood under Forest Department



Fig 21b: Rounded wood Collection



Fig 21c: Wood Sawing



Fig 21f: Furniture Assembling



Fig 21e: Furniture Planning



Fig 21d: Wood Seasoning

Fig 21: Supply chain of furniture from forest wood (Source: LPC Kaptai)

Chapter 4

Private Sector SCM Vs Public Sector SCM

Supply chain management (SCM) of the private (HATIL) and public (LPC Kaptai of BFIDC) sectors are described briefly in the following two chapters with a comparison.

4.1 Private Sector SCM

HATIL is strongly dedicated to working towards its sustainable commitment to the environment. There are certain criteria to ensure that the company or the industry is sustainable. The first criterion is environmental sustainability, which includes sustainable sourcing, recycling, and reuse of waste. HATIL is committed to sustainability in sourcing raw materials from abroad. Since good quality wood is scarce, they do not use local wood to produce furniture. HATIL source Forest Stewardship Council (FSC) certified beech wood from Germany and pine wood from Spain. They use the FSC-certified wood as per their commitment to environmental conservation. At the same time, HATIL contributes to increasing afforestation as they do not use local wood. A timber accredited by the FSC meets the "gold standard" of ethical production.



Fig 22: Imported FSC-certified Beech wood.

"Minimize Waste, Maximize Productivity" is one of HATIL's strategies for achieving maximum efficiency. To execute the strategy, they introduce better technology and modern machinery for overall productivity. It also includes recycling and reuse of waste. To collect dust HATIL sets up a coral anti-pollution system. They gather dust from every corner, recycle it, make compressed blocks, and use it in thermal fluid heaters (Fig 23 – Fig 24).



Fig 23: Compressed blocks (briquettes) made from dust Fig 24: Thermo fluid heaters

HATIL also reprocess and uses wood scraps to make particle boards. In this way, they stressed reducing activities that distress the environment. The same applies to the furniture industry. They ensure they are not assisting in degradation of forest and reduce their wood consumption as much as possible in making furniture.

Design plays a vital role in the furniture industry's success. HATIL brings innovation in design and takes a slim and smart strategy to satisfy consumers' preferences. HATIL takes visionary plans for exports considering it as their key priority. They aspire to export their products to 25-35 countries by 2030. The inventory management system (Fig 25) of HATIL is modern and updated and the packaging system is sophisticated.

They distribute furniture to retailers by covered van (Fig 26). With the change of time, they focus on research and development and hiring qualified workers in those areas.



Fig 25: Warehouse from where the packaged furniture is distributed to different outlets.

To maintain economic sustainability, HATIL complies with VAT and income tax payments. HATIL complies with and obtains all local and international licenses, accreditations, and certifications required to conduct business. They also subscribe to the overall economic growth of the country.



Fig 26: Covered van of HATIL carries furniture to its different outlets/ points of delivery.

In addition to HATIL's commitment to environmental sustainability factors, HATIL is pledged to follow and contribute its sustainable operations towards society and the economy. HATIL abide by a zero-tolerance policy regarding child labour and maintains gender equality in its workplace. HATIL offers a competitive salary package and extended retirement benefits. They provide comprehensive health care support in case of workplace accidents. Being the largest furniture brand in the country, HATIL also honours its commitment to economic sustainability.

4.2 Public sector SCM

Though manufacturing quality and durable furniture for government institutions is one of the main activities of BFIDC, since inception, they have invested very little in machinery, tools and equipment to manufacture state-of-the-art furniture and have gradually lost their share in the current market. Most industrial units, wood refineries, sawmills etc. of BFIDC have been running with outdated machinery tools and techniques (Fig 27).



Fig 27: An outdated sawing machine at LPC Kaptai (Source: LPC Kaptai).

Wood dust is also causing problems in the furniture factories of LPC. Like other industrial units, LPC has a poor dust collecting system that causes air pollution and creates health hazards to workers (Fig 28). It causes machinery to deteriorate, reducing production capacity and increasing repair and maintenance costs. Workers work without following safety rules, and personal safety gear may cause serious accidents.



Fig 28: Wood dust causes machinery to deteriorate and health hazard (Source: BFIDC).



Fig 29: LPC Kaptai manufactures old-fashioned, thick, and heavy furniture. (Source: LPC Kaptai).

LPC Kaptai depends on local forest wood collected from the Department of Forest and the timber extracted from life cycle lost rubber trees from 18 rubber gardens of BFIDC. It promotes deforestation indirectly. Furniture manufactured by LPC Kaptai is old-fashioned, thick, and heavy (Fig 29). They have no designer to make the furniture slim and attractive to the customers. They are following the ‘Push Strategy’ of marketing, collecting orders from different government offices, and supplying accordingly. Currently, there is no research and development in the public sector SCM. The inventory management system is outdated. Poor-quality packaging and transportation (Fig 30) systems may cause damage to the furniture quality, and repair and polishing costs increase. Currently, any unit of BFIDC has no policy to export furniture abroad.



Fig 30: Poor-quality packaging of furniture and transportation system at LPC Kaptai.
(Source: LPC Kaptai)

BFIDC has a negligible presence in the furniture market, with one showroom and two units in Dhaka. For this reason, BFIDC could not establish a brand name though it commenced its operations much earlier than its competitors.

Unlike BFIDC, HATIL is structured with strong marketing, sales, and production departments, and recruits professionally qualified and experienced managers who are very

much focused on their R&D. Based on market trends and customer preferences, they launch new furniture after regular intervals following a 'Pull Strategy' of marketing. They can manufacture 1,600 items of furniture per day. Like most companies, HATIL has about 50+ product categories in their product line. Even another company in the public sector, the BMTF, entered the furniture business with all its uniqueness, style, and quality. With the latest state-of-the-art technology and machinery, BMTF offers a wide selection of office and household furniture that values customers' preferences and lifestyles.

From the above discussion, it is evident that the private sector SCM is more efficient and effective than public sector SCM.

Chapter 5

Result and Discussion

HATIL sources raw materials from abroad. They source Forest Stewardship Council (FSC) certified beech wood from Germany and pine wood from Spain (Fig 22). A product certified by the FSC meets the "gold standard" of ethical production. By doing so, they show their commitment to environmental conservation. Moreover, HATIL attempts to reduce deforestation in Bangladesh. On the contrary, furniture units of BFIDC are heavily dependent on local forest wood (Fig 21), and the timber extracted from the life cycle lost rubber trees from its 18 rubber gardens (Fig 20).

HATIL adopts strategies for achieving maximum efficiency: "Minimize Waste, Maximize Productivity". HATIL introduces better technology and machinery that will increase overall productivity (Fig: 31).



Fig 31: Some Hi-Tech Machine in Finishing Unit of HATIL (Source: HATIL)

On the other hand, most industrial units, furniture, wood refineries, and sawmills of BFIDC have been running with outdated machinery, tools, and techniques. Since its inception, BFIDC has invested very little in machinery, tools and equipment to manufacture state-of-the-art furniture.

To collect dust, HATIL sets up an anti-pollution system for every tool. They recycle it and turn it into compressed blocks (Fig 23). They use compressed blocks as fuel for their thermal fluid heaters. HATIL also reprocess and uses wood scraps to make particle boards. In this way, they stressed reducing activities that distress the environment. By contrast, in the absence of a dust collector, wood dust is causing problems in the furniture factories of BFIDC. Wood dust causes machinery to deteriorate (Fig 28), reducing production capacity and increasing repair and maintenance costs on one side, causing air pollution and health hazards to its workers on the other.

Design plays a vital role in the furniture industry's success. HATIL follows a 'Slim and Smart' strategy (Fig 2) to satisfy customers. HATILS follows quality assurance in each of its production lines. Furniture manufactured by all units of BFIDC, on the other hand, is old-fashioned, thick and heavy (Fig 29). They have no designer to make the furniture slim and attractive to the customers. BFIDC has no quality checks on its production line. As a result, defects (Figure: 32) are identified after the furniture is delivered, and customer complaints and dissatisfaction arise. BFIDC has no research and development in its SCM.

HATIL takes visionary plans for exports considering it as their key priority (Table 1). They aspire to export their products to 25-35 countries by 2030. By 2024, HATIL has set up 75 showrooms in Bangladesh, 27 in India and 2 in Bhutan. In 2004, due to increasing demand

and struggling to meet increasing production demands, HATIL decided to expand its operations. With the change of time, they focus on research and development and hiring qualified workers in those areas.

Table 1: *Export of furniture HATIL of the last 10 years (Source: HATIL).*

Sl. no	Country name	Amounts (USD)
1	Australia	54278.44
2	Bhutan	1410035.09
3	Canada	266089.04
4	Egypt	29422.69
5	India	6409682.42
6	Kuwait	121280.35
7	Malaysia	66536.2
8	Nepal	173756.18
9	Qatar	105758.77
10	Russia	13167.61
11	Saudi Arabia	1694093.37
12	Thailand	10997.00
13	United Arab Emirates	448352.73
14	United States of America	937937.70
15	Netherland	8284.69
	Total (USD)	11749672.28

On the contrary, BFIDC is following the ‘Push Strategy’ of marketing, collecting orders from different government offices and supplying accordingly. BFIDC has a negligible presence in the furniture market. They have one showroom and two units in Dhaka. The showroom is at Dhaka Stadium Market, one unit is named Cabinet Manufacturing Plant (CMP) in Mirpur, and the other is named Eastern Wood Works at Tejgoan Industrial Area. The inventory management system is backdated and inefficient. Low quality of packaging and transportation systems causes damage to the furniture quality and repair maintenance and polishing costs increase. Currently, no unit of BFIDC has a policy to export furniture abroad.



Fig 32: A crack is identified after supplying of dunnage to the Department of Food due to no-compliance of quality check.

To maintain economic sustainability, HATIL complies with VAT and income tax payments. HATIL complies with and obtains all local and international licenses, accreditations and certifications required to conduct business. They are also subscribing to the overall economic growth of the country. In addition to HATIL's commitment to environmental sustainability factors, HATIL is pledged to follow and contribute its sustainable operations towards society and the economy. HATIL abide by a zero-tolerance policy regarding child labour and maintains gender equality in its workplace. HATIL offers a competitive salary package and extended retirement benefits. They provide comprehensive health care support in case of workplace accidents. Being the largest furniture brand in the country, HATIL also honours its commitment to economic sustainability. However, at no stage of SCM, from sourcing raw materials to the latest technology and machinery to design, marketing and distribution, BFIDC does not apply social, economic and environmental sustainability.

HATIL is structured with strong marketing, sales and production departments, recruits professionally qualified and experienced managers who are very much focused on their R&D. Based on market trends and customer preferences, they launch new furniture after regular intervals. They can manufacture 1600 items of furniture per day. Like most

companies, HATIL has about 50+ product categories in their product line. Even another company in the public sector, the BMTF, entered the furniture business with all its uniqueness, style, and quality. With the latest state-of-the-art technology and machinery, BMTF offers a wide selection of office and household furniture that values customers' preferences and lifestyles (Finance Division, 2024). On the contrary, it has been evident that BFIDC has not established a brand name despite resuming its business much earlier than its competitors. The production capacity is very low in comparison to its competitors. The expenditure of last 5 years shows that BFIDC invests insignificant amount of money in purchasing machineries in comparison to HATIL (Table 2).

Table 2: *The expenditure of last 5 years in purchasing machineries of HATIL & BFIDC.*

BDT in Lakh				
Year	HATIL	BFIDC	% HATIL against BFIDC	% BFIDC against HATIL
2018-19	2009.29	22.30	9010.27	1.11
2019-20	1292.87	24.88	5196.42	1.92
2020-21	163.21	79.17	206.15	48.51
2021-22	224.41	102.68	218.55	45.76
2022-23	97.21	331.38	29.33	340.89
2023-24	1261.31	264.59	476.70	20.98
Total	5048.30	825.00	611.92	16.34

(Source: HATIL and BFIDC)

Finally, we can summarize the above comparative study in the in the following Table 3.

Table 3: Comparison of HATIL and BFIDC with reference to the evaluation criteria.

Issues to compare	HATIL	LPC Kaptai of BFIDC
Raw material sourcing	Exports from abroad and from Forest Stewardship Council certified forest	From local forest and rubber gardens, encourages deforestation
Design	Slim and smart	Old fashioned, thick and heavy
Machineries	Hi-tech and automatic, introduces robotic system	Primitive and manually operated
Lacquering & polishing	Uses UVR, done by robotic system	Backdated, mostly done by old machine and manually
Marketing	Follows pull strategy of marketing, 72 showrooms at home, 29 showrooms aboard	Follows push strategy of marketing, only one showroom at Dhaka
Distribution	By covered van to retailers and showrooms	By ordinary open truck and outsourced truck
Sustainability practice	Follows social, economic & environmental sustainability	No sustainability factor is practiced
Waste management	Follows ‘minimum waste, maximum productivity’ principle	Poor waste management
Export	Export is the key priority	No export
Branding	HATIL is a global brand	No branding

Chapter 6

Conclusion

The furniture sector in Bangladesh has developed in keeping with the changing times and the growing tastes and demands of the customers. Currently, apart from meeting the needs of domestic consumers, producers also export furniture abroad. The private sector has been playing a major role in the furniture sector. Besides, the public sector is also a player in this industry. It is evident from this report that considering issues such as Raw material sourcing, Design, Machineries, Lacquering & polishing, Marketing, Distribution, Sustainability practice, Waste management, Export volumes, and Branding initiative, the private sector SCM is more efficient and effective than public sector SCM. Against this backdrop, BFIDC should undertake necessary reform initiatives like modernization and automation in manufacturing processes and adopt sophistication in design of furniture. In addition, BFIDC should strengthen waste management so that waste comes to at a zero level and bring innovation to enhance efficiency in the SCM. Moreover, BFIDC should introduce appropriate technology and modern machinery and employ skilled carpenters, polishers, and designers to produce state of art furniture. BFIDC should provide regular training program to build capacity and enhance skills to its workers to make them efficient. The government i.e., Ministry of Environment, Forest and Climate Change and Ministry of Finance should provide financial supports and/or incentives for research and development and provide policy guidelines to encourage furniture exports. The report suggests that public-private collaboration is indeed needed in the area of technology transfer, knowledge sharing and exchange of technical knowhow in the furniture industries to unlock its full potential. Finally, it can be stated that the furniture industry is a potential industry and every stakeholder, private or public, should play a role in developing this sector.

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