
Analyzing the situation of demand and supply of wood-based products in the Madhesh Province, and assessing the current status of forest-based enterprises

Forest Research and Training Center
Madhesh Province
Sagarnath, Sarlahi

Submitted by:
Institute of Forestry
Tribhuvan University, Nepal
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Summary

This study is to assess the demand and supply of forest products particularly timber and fuelwood; and assess the situation of forest-based industries in Madhes province. Both primary and secondary data were collected for the study. Primary data were collected through consultation with entrepreneurs, households, private forest owners, and forest officials. Secondary data were collected through Division Forest Offices, Nepal Ban Nigam, Community Forest User Groups, Traders, and Partnership Forests. The results of the study are given below:

Demand and supply of timber products

- Annual fuelwood demand is between 36.36 million to 40.92 million cft, and annual sawn timber demand is between 2.24 million to 5.78 million cft,
- The supply of timber in the FY 2079/80 is 0.97 million cft, which is just 17 to 43 percent of the total timber demand. The supply of fuelwood is 1.20 million cft, which is around three percent of the total demand.
- The low volume of fuelwood supply may be due to the fact that many households collect fuelwood by their own from the respective community and Partnership forests, which are not accounted in formal system,
- Private forests are the main supplier of timber and fuelwood. It constitutes 42 percent of the total timber supply and 74 percent of the total fuelwood supply in the province,

Forest-based industries

- There is total 2,151 forest-based enterprises in the province. These enterprises are of four categories (furniture, sawmill, veneer/plywood and kattha). Furniture and Sawmill constitute 97 percent of the total forest-based enterprises in the province,
- Most of the industries are facing short supply of raw materials. Saw mills operate eight months and katha industries operate three months in a year.
- Uncertain policy in forest management, and a change in log volume estimation formula are major factors behind the short-supply of log in the market,
- Improper piling techniques and lengthy forest products sales and distribution process is facilitating the decay of logs, particularly of softwood, in the log yard,

- Private forest owners are not satisfied with the timber price they are receiving as they have to rely on mediator due to the hectic timber sales and distribution process. In addition, they are neither receiving technical support nor financial incentives,
- However, increasing population, changing economic contexts, and increased awareness towards forest management is creating favorable environment for timber-based industries, as it increases the demand of these products,

Recommendations

- Promote tree plantations in private land through providing technical support and financial incentives. In addition, the Province Ministry of Forests and Environment should facilitate to ease timber harvesting process in private land in coordination with local governments.
- Providing incentives for installing seasoning and treatment plants in furniture and saw-mills may contribute to increase the consumption of soft-wood species. This will also reduce the price of timber products.
- Provision of loan to forest-based enterprises based on the project can encourage them to invest in new technologies. This will help to increase the productivity and reduce the cost of production.
- Province Ministry of Forests and Environment should request the federal ministry to revise the log volume calculation formula. So that traders will participate happily in auction process, and market will realize the increased supply.

Table of Contents

1.	Introduction	1
1.1	Background.....	1
1.2	Rational of the Study.....	2
1.3	Objective	3
1.4	Scope of Work	3
2.	Technical approach and Methodologies.....	5
2.1	Study Area	5
2.2	Data collection	6
2.2.1	Literature Review/Desk Study	6
2.2.2	Consultation meeting and expert opinion	6
2.2.3	Field visit/forest-based enterprises	7
2.3	Data analysis.....	7
2.3.1	Demand for forest products.....	7
2.3.2	The supply of forest products.....	8
3.	Results.....	9
3.1	Policy provisions.....	9
3.2	Demand of the timber-based forest products in the province	16
3.2.1	Fuelwood	16
3.2.2	Timber	17
3.3	Supply situation of the Timber based Forest products	19
3.4	Major Forest Based Enterprises in the Province	22
3.5	Strength of timber-based enterprises in Madhesh	23
3.6	Area of improvement for promoting timber-based enterprises.....	23
3.7	Opportunities for timber-based enterprises	25
3.8	Threats for timber-based enterprises	25
4.	Conclusions and recommendations	26
	References.....	27
	Annexes	29

List of Tables

Table 1: Forest Cover in Madhesh Province by District.....	5
Table 2: Forest policies related to timber business their provision and implications.....	12
Table 3: Fuel wood demand by the household (Source: CBS 2021).....	16
Table 4: Timber demand by district (cft).....	18
Table 5: Timber supply from different forest management regimes	19
Table 6: Number of forest-based enterprises in Madhesh Province.....	22

List of Figures

Figure 1: Annual Timber Demand by District in cft (Source: Census 2021).....	17
Figure 2: Timber supply by agencies (%).....	20
Figure 3: Fuelwood supply by agencies (%).....	21

List of Annexes

Annex 1: Checklist for data collection	29
Annex 2: Consultation plan	34
Annex 3: List of enterprises consulted	36
Annex 4: List of the person consulted	37

1. Introduction

1.1 Background

Forests are one of the key resources of Nepal. Forests and other wooded land cover 6.51 million ha of land, which accounts for 44.74 percent of the country's total geographical area (DFRS, 2015). Forests are one of the key resources of Nepal and considered one of the major inputs of economic growth in Nepal. Forests can contribute to the production as it supplies raw materials, and support other sectors directly and indirectly. Besides, forest products are considered one of the major inputs of household production functions in the farming community (Rai et al., 2016). It contributes to the local economy through the generation of employment and maintain rural livelihoods supplying forest products required for daily activities.

Previously forest products are utilized for subsistence use. Fuelwood and fodder were the most frequently used forest products to maintain farm household activities. Timber was used occasionally during the construction of new houses in the past. But, with changing socio-economic contexts, dependency on fuelwood and fodder has been decreasing and demand for timber is increasing for construction and furniture (Sharma et al., 2017).

Madhesh Province has 263,630 ha of land under forest cover, which accounts for 27.49 percent of the total geographical area of the province (DFRS, 2018). Forests are disproportionately located in the north-west part of the province. Out of 136 local levels in the province, 84 do not have forest area, and 16 local levels have less than one percent forest cover. Despite the proportion of forest cover, the province forests are dominated by Sal (*Shorea robusta*), the most valuable hardwood species. Due to the improved accessibility, these forests are comparatively easier to manage than other provinces.

The plain land of Terai- Madhesh has a high potential for timber-based enterprises while the Chure region is potential for non-Timber Forest Products (NTFPs). In the province, plywood/veneer, furniture, and bio-energy are common forest-based enterprises. Additionally, briquette was the dominant bio-energy industry and now there is the first pellet industry in the province, these forest-based enterprises have provided employment to the local people and also generate revenues for the government. They are the one, which is encouraging farmers to plant

trees in their farmland. The records of Division Forest Offices indicate that plantation in the private land is increasing.

In Madhesh province, about 79157 ha forest has been handed over to 522 CFUGs and 6750 ha forests are being managed under partnership forest management (CFM). Altogether, 85,907 ha forests are under the control of community, which is nearly the one third of (32.58%) the total forests area of Madhesh the province (MoFE, 2020).

In the Madhesh province, a total of 522 industries are registered under the Department of Industry. Out of the total industries, the production-based industry shares 80 percent (418 industries), and only 24 industries are related to the agriculture and forestry sectors (<https://nepaloutlook.com/province-2>). Madhesh Province has only 3.9 percent of the total country's forest cover. But it harbors 20.98 percent of the total population in Nepal, with the highest density (630 people/sq km) as per Nepal Census 2021.

In the last decade, the population of Madhesh province has increased by about 13 percent from 5,404,145 in 2011 to 6,158,649 in 2021 (CBS, 2021). Increased population has direct relationship with increased consumptions of timber products for house construction as well as meeting the energy need of the household for cooking and heating purpose. This means demand for wood products is increasing with increased population and changing socio-economic contexts. Therefore, it is important to understand the timber demand in the province, in order to make the proper forest management plan at the province level. In addition, it is equally important to understand the current status of forest-based industries to link forest management with the market.

1.2 Rational of the Study

Forest has potential of enhancing local, provincial and national economy. Promoting forest-based economic activities may have dual objectives of increasing internal production, and fighting against the climate change. Considering forest as an industry can contribute to achieve the provincial and national economic agenda of prosperity. In the present economic condition, it is important to increase and promote the primary production section for the country's growth.

Analyzing the market and assessing the market situation may contribute to promote sustainable forest management.

Madhesh province is also advanced in terms of forest management compared to the other provinces as it has the first and largest plantation forest project for the production of small woods. In addition, several partnership forest and community forests (CFs) have adopted scientific forest management to increase the production and improve the productivity of forests. In addition, increasing population and deforestation have also raised the concern for the provincial forestry strategy.

The understanding of the existing demand and supply of timber products suggest policy-makers to develop an appropriate strategy to fulfill the gap if demand outweighs the supply; and marketing plan to sell the excess forest products. The value addition of raw materials increases profitability and royalty; and open up the employment opportunities.

1.3 Objective

The broad objective of the study is to carry-out a critical assessment of the existing demand of fuel wood and timber and supply situation of these products in the Madhesh province of Nepal. Similarly, the study also aims to assess the current status of forest-based enterprises running in the province.

1.4 Scope of Work

The following tasks were identified to accomplish the objects stated above.

- Intensive literature reviews on forest policies/legislative frameworks, forest-based enterprises, taxation, international trade, import exports convention and legislative frameworks
- The policy and legal context which have positive influence on the production and market chain of these forest products.
- Analyze enabling elements of the environment for the sustainable production, supply, and sales under different forest ownership and management regimes;

- Setting criteria/processes for assessing the demand and supply of wood-based products and identifying the various sub-sector of forest-based enterprise of the Madesh Province,
- Consultation with key stakeholders (Provincial Ministry of Industry, Tourism, and Forest, Sagarnath Forest Development Project, DFO, Forest Enterprises Division of Federation of Nepalese Chambers of Commerce and Industries, CFUGs, partnership Forest User Group etc.),
- Interview of private companies who imports timbers/timber products from abroad,
- Developing sound calculating methods of demand and supply with datasheet
- Data acquisition from reliable sources (DFO, provincial Ministry of Industry, Tourism and Forest, Company registrar office etc.)
- Field visit of forest-based enterprises/industries representing all applicable sub-sectors, interaction with stakeholders involved in the value chain.

2. Technical approach and Methodologies

Both technical as well as social methodological approaches were adopted for the study. The technical approach was the framework that allows methodologies to fit into the structure complementing all elements of methodologies and data collection tools in a consistent manner. Similarly, participatory tools were used to gather some of the other aspects from the field. The team of experts was selected and developed the technical approach of the study.

2.1 Study Area

The study was conducted in Madhesh province of Nepal. The province covers total of 996,100 ha of landmass of which about 20 percent area is under the forest cover (Table 1). The lowest forest coverage is in Parsa district (12.73%) and the highest is in Bara districts. Though the province has the low forest coverage, several districts have good practices of public land agroforestry practices since 2001 due to the decade long initiatives of the Biodiversity Sector Support Program from Terai and Siwalik (BISEP-ST) implemented by the then Ministry of Forest and Soil conservation and supported by SNV-Nepal (BISEP-ST, 2011).

Table 1: Forest Cover in Madhesh Province by District

District	Total Area (Ha)	Forest area (Ha.)	Percentage of Forest coverage
Bara	119,000	46,132	38.76
Dhanusha	118,000	26,862	22.76
Mahottari	100,200	22,061	22.01
Parsa	135,300	17,224	12.73
Rautahat	112,600	26,083	23.16
Saptari	136,300	20,234	14.84
Sarlahi	125,900	25,578	20.31
Siraha	118,800	18,028	15.17
Total	996, 100	263, 630	26.46

Source: (DFRS 2018, MoFE, 2020)

2.2 Data collection

2.2.1 Literature Review/Desk Study

A review of relevant policies, legislative frameworks, previous technical and research reports on the demand and supply of wood-based products primarily timber and fuel-wood were carried out. In addition, the literature review was done about forest-based enterprises of Nepal in General, and Madhesh Province in Particular. Mostly, relevant legal provisions in federal as well as provincial acts and regulations were reviewed. Similarly, previous studies relevant to this study were also reviewed. Based on the literature review and secondary sources, the consulting team rigorously reviewed the technical approach and detailed methodologies of the study. The relevant literatures that were reviewed, but not limited to, were:

- Forests Act 2076
- Forest Regulations 2079
- Company Act 2063
- Provincial Industrial Management Act, 2019 (प्रदेश उद्योग व्यवस्थापन ऐन २०७७)
- Provincial Forest Act, 2019 (प्रदेश वन ऐन २०७७)
- Community-Based Forest Enterprises in Nepal 2002
- A study on demand and supply of wood products 2011
- Reports of the relevant organizations
- Data from Division Forest Office
- Population Census Reports (2011, 2021)
- The Industrial Enterprises Act (2020)

2.2.2 Consultation meeting and expert opinion

The study team has carried out consultation meetings with stakeholders such as officials of DFO, CFUGs, CFM committee members, forest corporation Nepal (Ban Nigam), private forest owners and experts in all eight districts. The meeting was focused on the existing situation, issues, opportunities, challenges and trade in forest-based enterprises, and demand for wood products. Similarly, the meetings were also covered about the alternatives on such timber and fuel-wood in local level. Altogether 103 individuals were consulted representing 32 different organizations in the province.

2.2.3 Field visit/forest-based enterprises

The team had visited different forest-based enterprises in the province. The forest enterprises are categorized into different sub-groups: saw-mill, veneer, plywood, furniture, and bio-energy. Representative of all sub-groups were consulted and Strength, Weakness, Opportunity and Threat (SWOT) analysis was carried out to explore the barriers, challenges, issues, and opportunities including the investment part. The coverage of districts was carried out after the consultation with the Madhesh Province Forest Research and Training Center team.

The following enterprises were the major that consulted during the research periods. Altogether, 30 different forest-based enterprises were surveyed during the study periods representing the all districts of the province.

- i. Saw-mill (10)
- ii. Veneer /Plywood (10)
- iii. Furniture (8)
- iv. Kattha Industries (2)

2.3 Data analysis

The major basis for identifying the demand of timber was based on the application submitted to the District Forest Products Supply Committee and distributed quantity of forest products by community forests, partnership forests and private forests. Another way of analyzing the demand for forest products was based on population.

2.3.1 Demand for forest products

Demand for fuelwood was determined by the number of households in the province who use fuel-wood for cooking purpose multiplied by the average annual consumption of fuelwood per household.

Demand = f (number of households, percentage of household using fuelwood, per capita consumption of fuelwood) (eq. 1)

The per capita consumption of fuel-wood was considered as 456 kg per annum as suggested by Kanel et al. 2011. As per Population Census 2021 report, there are 677,732 (58.60%) households use fuelwood for cooking in Madhesh Province. The formula was used to estimate the demand of the fuel wood in the province.

Similarly, the **Demand for timber** was determined by population growth, which indicates the number of houses to be built annually, from the two consecutive census data (2011 and 2021), and the required timber for the construction of single household. In addition, discussion with local people said that they are using around 50 to 150 cft per house for the construction. They also stated that each household require a new house in every 20 years due to the family separation and/or renovation. However, the timber requirement is based on the type of house built and furniture installed. Therefore, we estimated that one house requires 100 cft.

2.3.2 The supply of forest products

It was estimated based on DFOs record. That was estimated based on the “katan Aadesh (harvest permit)” in community forests, partnership forests, government managed forest and private forests. Similarly, the confiscated timber was also considered as supply of the forest products though it was officially illegal.

3. Results

3.1 Policy provisions

Forest Act, 2019 (2076) has encouraged the management of both private and national forests. It encourages to improve the forest management and increases the supply of timber in the market. Section 11 highlights the management of national forests. It clearly states that The Government of Nepal prepares the integrated or province specific strategic plan for the management of the national forest with the province and inter-provincial forests in the consultation with the Provincial Government. Then the provincial government may make necessary provisions for the protection, development and utilization of the national forest within the Province and Inter-Provincial Forest. The Division Forest Office shall prepare the strategic plan of the national forest within his/her jurisdiction in a participatory manner. The Forest Regulations 2022 (2079) has emphasized the silvicultural system-based forest management to improve the production and productivity of forests.

Regarding the promotion of private forest, the Forest Act 2019, Section 36 stated that the owner of a private forest may develop, protect and manage the private forest and utilize the forest products or sell and distribute such products by fixing their price; and Division Forest Office at the request of the owner provide necessary technical and other assistance. The Forest Regulation, 2022 has made a provision there is no need of harvesting permits from the Division Forest Office for the harvest of 28 species from the private forests. It may have a positive impact on the development of private forest however the provision was yet to be fully implemented in the field. In addition, the Act and Regulation have made a provision that concerned local government regulate the private forest.

After discontinuing the Scientific Forest Management Programme in January 2021, there is almost no harvest in the national forests. Some harvests in national forests are related to the forest clearance for development projects, and collection of dead, dying and diseased trees. This has reduced the production of timber. In addition, a new provision of log volume calculation as per the Forest Regulation 2079, dissatisfied timber entrepreneurs, which has reduced the demand for log. These two factors have reduced the supply of timber in the market.

Section 34 of Forest Act 2076 has made a provision that the forest users' group may operate forest enterprise and eco-tourism programs following the procedures as prescribed in the approved work plan on its own or in partnership with the local level or organization or the

private sector or cooperatives. The forest enterprise also includes wildlife farming. The Section 72 has elaborated that forest product-based industries shall give information about the business potentiality and goods and services to be produced to the concerned Division Forest Office prior to its operation. But this is not application to the micro and cottage enterprise.

Forest Regulation 2079, has elaborated this provision of forest enterprise and eco-tourism by community forest user groups (CFUGs). Rule 52 specified that the forest user groups cannot construct physical infrastructure in the area larger than 0.5 ha for eco-tourism program. In addition, forest user groups cannot cover more than five percent of the total area or maximum five ha, whichever is less, forest area for the operation of eco-tourism activities. Province Forest Act 2077, has also made the similar provision regarding the forest industry and eco-tourism program.

The Industrial Enterprises Act 2076 (2020) has classified industries based on the fixed capital. These are: micro-industry, cottage industry, small industry, medium industry, and large industry. Similarly, it has classified industries into eight categories based on the nature of goods or services to be produced. They are: energy-based industry; manufacturing industry; agriculture and forest product-based industry; mining industry; infrastructure industry; tourism industry; information technology, communication technology and information dissemination technology-based industry; and service industry. It has also made a provision of additional facilities for female entrepreneurs in Section 27. Any industry or firm registered with the sole ownership of a female entrepreneur is entitled to thirty-five percent exemption on the fee or charge leviable on the registration of that industry or firm under the prevailing law.

Company Act, 2063 (2006) has the provision to register the forest-based enterprises in the district however there is no any provision for the assurance of the raw materials to be provided for running of such enterprises. Recently adopted the listing system of entrepreneurs for the timber auction purpose from the Division Forest Offices had not included the small entrepreneurs including furniture industries for getting the timber. Only the big sawmills, who the members of the Federation of Forest-based Industry and Trade, Nepal (FenFIT-Nepal), are eligible to participate in auction. Due to this provision, small furniture enterprises have been excluded for getting subsidized raw materials. They have to purchase required timber for furniture making from the local saw mills whether they have to pay comparatively higher price

for the raw materials. Table 2 presents the major policy provisions regarding the timber and its supply and trade purpose.

Table 2: Forest policies related to timber business their provision and implications

S.N.	Polices	Provision related to timber	Implications
1.	Forest Act 2076 (GoN 2019)	A license is required for the utilization, removal, sale, and distribution of timber from Government Managed forests. The price of the product is prescribed by the Government. Government managed forests allow the felling of the dead, dying, and diseased trees but not the green trees. Any part of national forest can be handed over to user groups to conserve, use and manage the forest and sell and distribute the forest products independently by fixing their price according to the work plan (Chapter 5, article 25). The act legalized already implemented partnership forest management in the name of partnership forest. The partnership between DFO, local levels and forest users (Chapter 6, Article 23). The forest products from partnership forest should be used internally and only the remaining products should be sold outside of the group (Chapter 6, Article 25). The collection and transportation of forest products from private forests or private cultivation for commercial purpose will require an approval of local government during the transportation of forest products from one local level to another for commercial purpose would require an approval from DFO. For household purpose, the transportation of forest products from one local level to another within same district requires an approval of local government while transportation from one district to another requires an approval from DFO (Chapter 10, article 36).	The Act favors community to manage the forest and engage in the timber business independently. It focuses on the internal use of forest products rather than their trade. The regulatory requirements regarding the transportation and use of forest products from private forest for commercial as well as household purpose is complex which demotivates private tree growers in timber business.
2.	Forest Regulation 2079 (GoN, 2022)	Article 25 highlights the provision of auction process for timber sale from government managed forests and the royalty rate of different	The Regulation has increased the royalty rate of timber species which can affect timber

	species (listed in Annex 6). Only the registered forest-based industry which is also listed at DFO can compete in auction but in case of hilly district, local sawmill can also compete. The buyer can sell log only after sawing or one level of processing (Article 27). CFUG should harvest timber based on AAH mentioned in operational plan (Article 48, Sub article 3). CFUG need approval from DFO even for the internal use (Article 48, Sub article 4). CFUG are allowed to cut more than AAH if they have to distribute to the user that suffered from natural hazards or other hazards (Article 48, sub article 5). If the timber amount crosses the limit of AAH during collection of naturally fallen trees, the AAH should be compromised with next year AAH (Article 48, sub article 6). CFUG can hire firm/company to extract timber from the forest, but those firms will not be valid for auction process (Article 48, sub article 11). Article 49 prioritizes the internal use of timber and the sell/trade of remaining wood only. During internal use, the poor, marginalized, women should be given priority. Similarly, it also includes the provision of the supply of wood to enterprise managed by CFUG at the royalty rate fixed by government. CFUG can establish forest-based enterprise alone or with cooperation of other CFUGs outside community forest (Article 51). The local government should list all private forests and help DFO in the identification and registration process (Article 81). To transport timber within the same local level, permission from local government is needed whereas to transport timber from one local level to another local level, permission from DFO is required (Article 81). Private forest owners are encouraged to practice agroforestry and cultivate medicinal plants in their private land. Private forests can sell timber,	business and promote alternatives. The forest-based industries require recommendations from associations which can create syndicate of certain traders in timber business. However, the provision of allowing local sawmill of hilly region in auction process can motivate small holders in timber business. The Regulation encourages internal use of timber and supply of timber to locally managed enterprise at the royalty rate which can flourish the establishment of forest-based enterprises and domestic consumption of forest products. The involvement of local government in exercising private forestry would need a strong coordination between local government and DFO. The regulatory requirements regarding the transportation of timber from private forest are complicated which discourages private tree growers in timber business.
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		medicinal plants, and non-timber species (species listed in Annex 48) like other agricultural crops. The species that private forest or private tree grower can sell are mostly softwood species (Article 82). To list the forest-based industry at DFO, forest-based industry needs a recommendation from the subdivision forest office and FenFIT-Nepal along with industry registration document (Article 128).	The Regulation supports private tree growers to diversify their production through agroforestry; however, it restricts the cultivation of hardwood species in private land.
3.	National Forest Policy 2019 (GoN, 2019a)	Milestone by 2025: One million m³ of timber will be commercially supplied to the domestic market annually and imports will be reduced to zero through additional supply. Action: The present royalty system on timber will be reviewed and revised based on market prices for timber and international best practice. Further the strategy envisions identifying investment opportunities for private sector partnerships with CFUGs to enhance sustainable and productive forest management, and marketing and processing of forest products, especially timber. The strategy also plans to conduct awareness campaigns amongst the public and timber enterprises to create a better understanding and demand for legitimately sourced forest products	It promotes the domestic timber use by reviewing timber price, encouraging private investment, and forest-based enterprises thereby creating an opportunity for local enterprises to flourish in timber business.
4	Custom Tariff 2020/2021 (GoN, 2020)	The export tariff for fuel wood, logs, rough wood, Hopwood, sawn wood accounts for 200% whereas the tariff for veneer sheets is NPR 6 per kg and paper board is NPR 5 per kg. The import tariff for fuel wood in logs, rough wood, Hopwood, and sawn wood amounts NPR 5 per m³. The import tariff for veneer sheets and particle board when imported from SAARC countries is NPR 6 per kg and NPR 7.25 per kg respectively whereas if imported from other countries is NPR 10 per kg and NPR 15 per kg respectively.	The export tariff is very high which restricts Nepali traders to export their products while the low import tariff encourages traders to import wood from foreign countries.
5.	Industrial Enterprises Act 2020 (GoN, 2020a)	Forest-based industries are entitled to hundred percent exemptions on dividend tax. Possessory right of a forest within any specific area may be provided on bond or lease under the prevailing law to a forest	Through different incentives such as tax exemption, facilities, and land possessory

		product-based industry by specifying necessary terms. The Government of Nepal may provide incentives, exemptions, facilities, or concessions, as prescribed, to the forest product-based industries.	rights, the Government of Nepal supports forest-based enterprises that can motivate entrepreneurs to invest in forest-based industries
6.	Industrial Policy 2011 (GoN, 2011)	Industries based on forest products are listed as prioritized industries. The policy aims to promote micro enterprises, cottage, and small industries based on forest products. The industries based on forest products will be made on available forest on lease.	Prioritization of forest-based industries and envisioned support to promote forest-based enterprises can generate local employment and support local and national economy.

3.2 Demand of the timber-based forest products in the province

Timber and fuelwood were considered as timber based forest products in this study.

3.2.1 Fuelwood

Fuelwood demand was calculated through the calculation of percentage of the household using fuel-wood from the total of the household present in the district. More than half of the households, ranging from 49 percent to 66 percent using fuel wood for their daily energy requirements for cooking and heating purpose (Table 3). A total annual fuelwood demand in the Madhesh province is approximately 41 million cft. Sarlahi district has the largest demand for fuelwood, as it has the highest proportion of population depending on fuelwood. Parsa district has the lowest demand of fuelwood in terms of quantity, while Dhanush has the lowest proportion of household using fuelwood. Except Dhanusha, which is almost fifty percent household using fuelwood, all districts have more than half percentage of population are depending on fuelwood for the energy.

Table 3: Fuel wood demand by the household (Source: CBS 2021)

District	Total household	Fuelwood using household	Percentage of household using fuelwood	Average household size	Number of people	Fuelwood demand (Cft)
Dhanusha	177,091	87,599	49.47	4.9	867,746	4,893,280
Mahottari	137,886	88,223	63.98	5.13	707,355	5,159,458
Sarlahi	164,824	1,09,720	66.57	5.23	862,030	6,541,730
Rautahat	137,025	85,569	62.45	5.94	813,929	5,794,390
Bara	131,179	78,615	59.93	5.81	762,150	5,206,986
Parsa	113,013	60,141	53.22	5.79	654,345	3,969,667
Siraha	148,549	86,870	58.48	4.98	739,774	4,931,784
Saptari	146,816	80,995	55.17	4.81	706,185	4,441,280
Total	1,156,383	677,732			6,113,513	40,938,575

Estimated demand of this study is also similar to the national census. The estimation of fuelwood demand as per the equation (1) is:

Fuelwood demand = Population $\times$ percentage of population using fuelwood $\times$ per capita annual fuelwood consumption

$$= 6,126,288 \times 58.6 \times 456 \text{ kg}$$

$$= 1,637,042,174 \text{ kg}$$

Assuming that,

$$1 \text{ cft} = 45 \text{ kg fuelwood}$$

Then total annual fuelwood demand = 36,378,715 cft

When 1 cft = 40 kg fuelwood

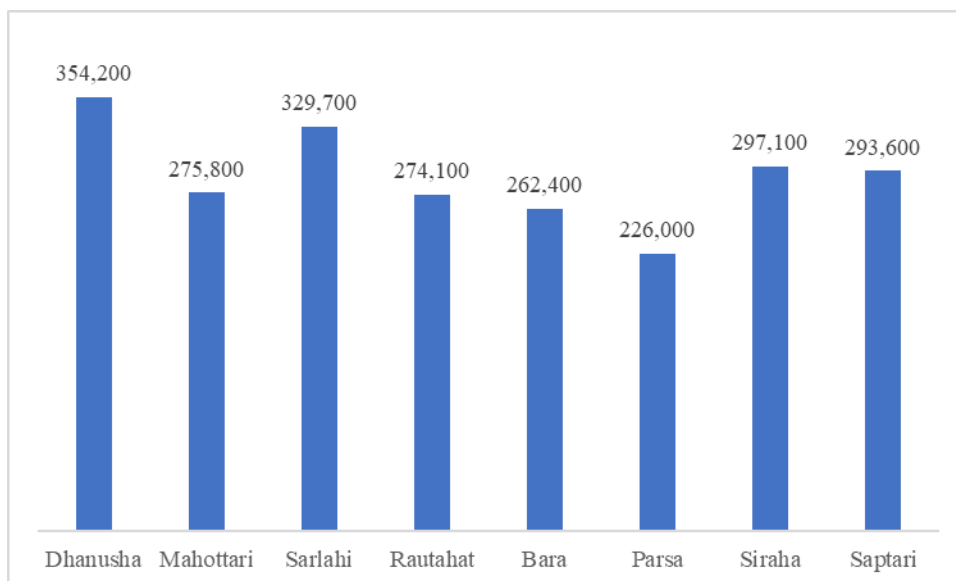
Then total annual fuelwood demand = 40,926,054 cft

Therefore, total annual fuelwood demand in Madhesh province is between 36 to 41 million cft.

3.2.2 Timber

As per the National Census 2001, annual timber demand is 2,312,900 cft in Madhesh province (Figure 1). Dhanusha district has the highest demand for timber and Parsa district has the lowest timber demand. This estimate shows that timber demand is related to the population of the district with an annual rate of 2 cft per household.

Figure 1: Annual Timber Demand by District in cft (Source: Census 2021)



We estimated the timber demand in two different ways with the assumption of new house construction. The Scenario I, is based on the difference in household number between two census reports of 2011 and 2021. There were 932,308 households in 2011, which is increased to 1,156,383 in 2021. This means 224,075 households were increased between the 2011 and 2021 at an annual the rate of 22,408 household.

The Second scenario is based on the local people's assumption that they require additional house in every 20 years. This means every five percent household construct new house annually. Based on the 2021 census data, every year 57,819 house is constructed and / or renovated.

Table 4: Timber demand by district (cft)

District	Household-2021 (a)	Household-2011 (b)	Scenario I		Scenario II	
			Annual New construction (c=a-b)	Timber requirement (d= c*100 cft)	Annual new house construction (e= a*0.05)	Timber demand (f= e*100)
Dhanusha	177,091	138,249	3,884	388,420	8,855	885,455
Mahottari	137,886	111,316	2,657	265,700	6,894	689,430
Sarlahi	164,824	132,844	3,198	319,800	8,241	824,120
Rautahat	137,025	106,668	3,036	303,570	6,851	685,125
Bara	131,179	108,635	2,254	225,440	6,559	655,895
Parsa	113,013	95,536	1,748	174,770	5,651	565,065
Siraha	148,549	117,962	3,059	305,870	7,427	742,745
Saptari	146,816	121,098	2,572	257,180	7,341	734,080
Total	1,156,383	932,308	22,408	2,240,750	57,819	5,781,915

The annual demand of sawn timber in Madhesh province is between 2.24 million cft to 5.78 million cft based on the scenarios. The lower bound is equal to the estimation of the Population Census 2021 report.

3.3 Supply situation of the Timber based Forest products

Overall timber supply in the fiscal years 2078/79 and 2079/80 were 912,590 cft and 976,668 cft respectively (Table 5). Similarly the fuelwood supply was 1,513,825 cft and 1,201,490 cft respectively. This could only fulfill timber demand between 15 to 40 percent in the FY 2078/29 and 17 to 43 percent in the FY 2079/80, based on the timber demand scenario. Similarly, the fuelwood demand is 3.69 to four percent in FY 2078/79 and around three percent in the FY 2079/80. The gap between fuelwood demand and supply is wider; this could be due to the fact that many households collect fuelwood regularly from forests, which is not in the record.

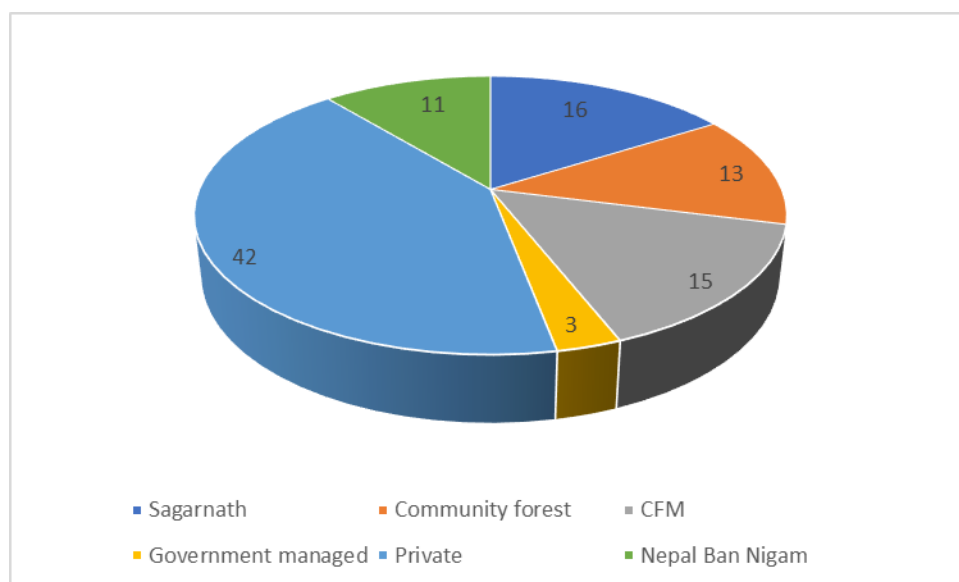
Table 5: Timber supply from different forest management regimes

District	Management Regime	Supply (cft)		Remarks
		Timber	Fuelwood	
Bara	Nepal Ban Nigam	37,179	50250	
	Community Forest	50,422	36500	
	Partnership Forest	24,983	21610	
	Government managed	18,617	8850	
	Private forest/land	850	125	
Parsa	Nepal Ban Nigam	36,500	9625	
	Partnership forest	38,634	10750	
	Government managed Forest	24,000		
	Private forest/land	30,000	3500	
Rautahat	Nepal Ban Nigam	33,932	10000	
	Community Forest	16,049	25750	
	Partnership forest	44,500	76375	
	Government managed	11,529		
	Private forest/land	1,177	500	
Sarlahi	Community Forest	12,075	6640	
	Partnership Forest			
	Government managed Forest			
	Private forest/land	246,349	763500	
	Sagarnath Forest Development Project	157,000		
Mahottari	Community Forest	5,653	5000	
	Partnership Forest	45,522	40475	
	Government managed Forest			
	Private forest/land	88,188	109000	
Dhanusha	Community Forest			
	Partnership Forest			
	Government managed Forest			

	Private forest/land	20,064	6000	
Siraha	Community Forest	3,650	6315	
	Partnership Forest			
	Government managed forest			
	Private forest/land	13,685	6425	
Saptari	Community Forest	6,193	2750	
	Partnership Forest			
	Government managed forest			
	Private forest/land	9,913	1550	
Total		976,668	1,201,490	

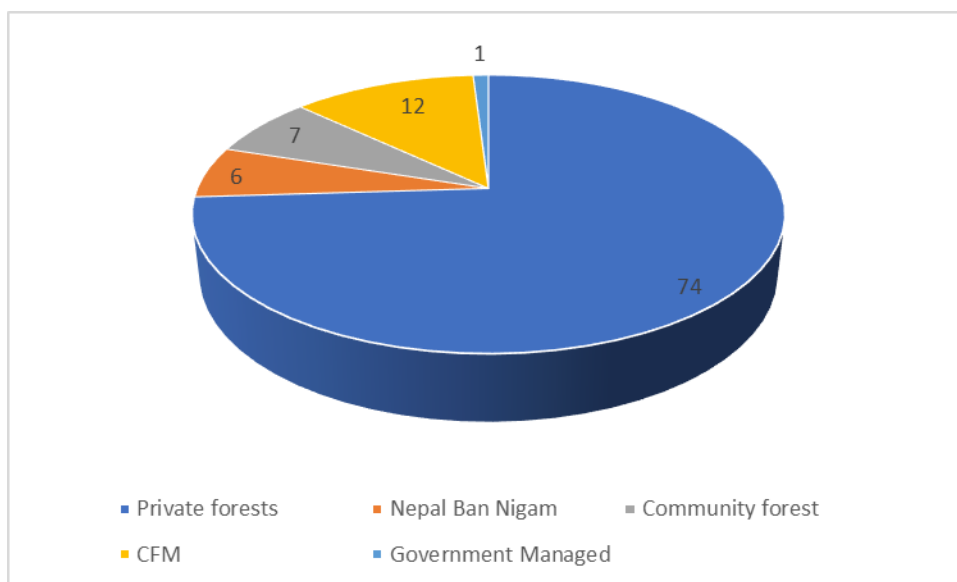
Private forests contributed significantly to supply timber in the market (Figure 2). This is followed by Sagarnath Forest Development Project, and Partnership Forest Management. In addition, Nepal Ban Nigam has also a substantial role in timber supply, but they may have collected either from CFM or Government Management Forests.

Figure 2: Timber supply by agencies (%)



Private forests are the lead suppliers of fuelwood in the province (Figure 3). Nearly, three forth of the total quantity of the fuel wood (74%) is supplied from the private forests. This is followed by CFM and CF. The lower contribution of CFM and CF in fuelwood supply is mainly due to the fact that most of the forest users collect fuelwood regularly, which is not entered into the accounting system. The fuel wood supplied from the government managed forest was mostly distributed during the winter season as per the request of District Disaster Prevention Committee during the cold wave in the month of winter and some amount was also distributed for funeral purpose to burn the dead body.

Figure 3: Fuelwood supply by agencies (%)



3.4 Major Forest Based Enterprises in the Province

A total of 2,151 timber-based enterprises are in operation in the province (Table 6). Among them, furniture (48%) and sawmill (49%) are the dominant enterprises. Among eight districts, Siraha district has the highest number of forest-based enterprises and Mahottari district has the least number of enterprises. There are two Kattha industries in Siraha and Bara districts.

Table 6: Number of forest-based enterprises in Madhesh Province

District	Furniture	Sawmill	Veneer/Plywood	Kattha	Total
Saptari	75	200	2		277
Siraha	283	212	7	1	503
Dhanusha	129	171	3		303
Mahottari	27	58	2		87
Sarlahi	175	127	32		334
Rautahat	117	115	4		236
Bara	75	52		1	128
Parsa	160	123			283
Total	1041	1058	50	2	2,151

Most of the industries are running fulltime. However, in the case of Kattha factories, they operate only three months in a year. This is mainly due to the availability of raw materials. Most of the raw material (*Acacia catechu*) was supplied from the eastern mid-hill districts including Khotang. The entrepreneurs stated that they are facing tedious transit process to transport raw materials from originating district.

Furniture industries are receiving raw materials mostly from private forests and some from nearby sawmills. After the enforcement of the Forest Regulation 2079, furniture industries become ineligible to participate in the timber auction process. Otherwise, they used to get timber from the auction process. In addition, they purchase plywood from the nearby plywood/veneer

industries or from the dealers in the market. Small furniture industries did not report any shortage of timber supply during the field visit.

Sawmills are in the short supply of raw materials. As a result, they are not operating in the full capacity. They are operating for maximum of eight month annually. Small saw mills are limited to provide services to local people. They bring timber from partnership or community or private forests and pay rent for using the mill. Saw mills have also reported there is decreased demand of timber due to the increased price of timber. In the market, there are substitutes of timber available. These substitutes particularly aluminum, glass and plywood, for windows and door, are available in lower price.

Similarly, a change in the log volume calculation formula also making timber expensive. As a result, saw mill owners are not participating in the auction process of Division Forest Office (DFO), Sagarnath Forest Development Project and Nepal Ban Nigam. This is also another cause of creating shortage of raw materials in the saw mills. As a result, logs harvested by authorities remained unsold. The situation more challenging in Sagarnath Forest Development Project.

3.5 Strength of timber-based enterprises in Madhesh

Timber based industries have a long history in Madhesh province. Despite the low production of logs in the province, it has many numbers of enterprises. This is because it can get timber from mid-hills, and the eastern terai as it is enroute to the capital city. In addition, due to the road accessibility, these industries can easily get require products. For instance, a furniture industry can easily access to plywood factory and saw-mill. Proximity to Indian border is another positive aspect. Forest-based enterprises have easy access to the Indian market. In addition, they can also have access to modern technology in Indian cities.

3.6 Area of improvement for promoting timber-based enterprises

The harvesting of timber in Nepal becomes difficult when discouraging policies are executed without reformation (Baral and Vacik, 2018). Forest Regulation 2079 has put forward some changes on the provision of timber use and sale. For instance, only registered and listed forest-based industries can participate in the auction process, but they need a recommendation from the

Federation of Forest-based Industry and Trade, Nepal (FenFIT-Nepal). This has created conflict among traders. Small entrepreneurs particularly the furniture entrepreneurs have been excluded to get the timber from government agencies due to not listing in FenFIT.

The study team is unable to find any saw mill operated by the imported timber in the entire province. Though, 150 cubic meter timber was imported through Birgunj customs in the fiscal year 2078/79, which was supplied to Kathmandu and was not used in Madhesh province. Timber is mostly imported from Indonesia, Malaysia, Lao-PDR, USA and Brazil. If the situation of the pricing and log volume calculation formula remains unchanged, there is a high potentiality of increasing imports of timber and further promote timber alternatives in the market.

Following are the reasons behind limiting the promotion of timber-based industries:

i. Poor capacity of timber producers

Although, private forest owners are the major supplier of timber and fuelwood, but they are not receiving any kind of support (technical and financial) from the authorities. They are in dilemma that whether they have to regenerate after harvest or change land use as they are not getting fair price. This is because they have to follow a lengthy process of selling timber. So, they mostly rely on mediator in the market. In addition, majority of community forest user groups do not have adequate technical capacity to manage timber auction process. A lengthy auction process is increasing the damage of log, particularly of soft wood species as there is no proper logging system.

ii. Multi taxation provision

The traders have to pay tax separately to all three tiers of government. Traders have to pay VAT plus tax to local and provincial governments. Traders pay tax twice, once after purchasing log and then after processing. This is putting financial burden to timber traders. In the document, an income tax is exempted for forest-based enterprises however, in practice, 1.5% of income tax is being paid by the traders in the province.

iii. Timber transportation

Traders are facing hurdles during the raw material transportation from different agencies. It is posing additional cost to the traders. There are many instances that security personnel asked to

remeasure the sealed truck on route. This demand extra cost and for loading and unloading the materials.

iv. Fiscal policies

The provision of loan to private forest and forest-based enterprises is key for the promotion of private forests, product diversification and processing. This is also recognized by Industrial Enterprise Act 2076 (GoN, 2020a) and National Forest Policy (GON, 2019a). The provision of insurance for trees, considering tree as a collateral and project-based loan can promote the forest sector as an industry, which is lacking.

3.7 Opportunities for timber-based enterprises

Madhesh province is experiencing a growth of population significantly. The population growth means increased demand for timber products for construction and furniture. The increased demand is always an opportunity to grow forest-based industries in Madhesh. Second, there is an increasing trend in tree plantations in private land. This means log supply will be more in near future. This will ensure raw-materials for industries. So, they can operate in full capacity and can earn more profit. In addition, the provision of silvicultural based forest management in national forests and increased awareness of developing forestry as an economic sector will also increase the supply of raw materials to forest-based enterprises.

3.8 Threats for timber-based enterprises

Uncertainty in decisions regarding forest management is one of the major threats for timber-based industries. Sudden change in policy, particularly for timber harvesting has forced timber-based industries either to shut-down or to import timber. Increased timber price is also another threat to timber-based enterprises, particularly for furniture. There are several players in international furniture market, who are supplying cheaper and well finished products. Competing with them in such uncertainty and with expensive raw materials is almost not possible. Such situation may threaten the existence of furniture industries.

4. Conclusions and recommendations

There is a huge gap between demand and supply of timber products in the province. Fuelwood for subsistence use and timber for commercial purpose are equally important for the prosperity of Madhesh province. This is because a large number of populations still heavily depend on fuelwood for cooking, and there is an increasing demand of timber in the province. The increasing trend of planting trees in the private land is another positive aspect of growing timber industries in the province. This will ensure the raw materials for industries, so that they can operate in full capacity and can earn more profit. The recent revisions on some provisions particularly on the measurement of log volume dissatisfied timber traders. This provision has made traders not to purchase logs from the auction process, and they have to rely on private trees. This provision has increased timber price and made the domestic timber market more expensive.

The study team has made following recommendations to improve the timber supply and promote timber-based industries in Madhesh province.

- Promote tree plantations in private land through providing technical support and financial incentives. In addition, the Province Ministry of Forests and Environment should facilitate to ease timber harvesting process in private land in coordination with local governments.
- Providing incentives for installing seasoning and treatment plants in furniture and saw-mills may contribute to increase the consumption of soft-wood species. This will also reduce the price of timber products.
- Provision of loan to forest-based enterprises based on the project can encourage them to invest in new technologies. This will help to increase the productivity and reduce the cost of production.
- Province Ministry of Forests and Environment should request the federal ministry to revise the log volume calculation formula. So that traders will participate happily in auction process, and market will realize the increased supply.

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Annexes

Annex 1: Checklist for data collection

Checklist for DFO/SFDP/CFUG/CFM/Ban Nigam

District :

Name of Agencies/ Industry/Enterprise: =====

Address:

Name of Information provider : =====

Timber

S.N.	Fiscal year	Demand (cft)	Supply (cft)	(-) cft	(+) cft	Remarks
1.	2078/079					
2	2079/80					

Fuelwood

S.N.	Fiscal year	Demand (Chatta/Kg))	Supply (Chatta/kg)	(-) (Chatta/kg)	(+) (Chatta/kg)	Remarks
1.	2078/079					
2	2079/80					

Demand supply questionnaire – Saw Mill

District: Municipality/ Rural Municipality/ward no:

Type:

Production capacity:

Established date:

Number of employees: regular wage labor Skilled non-skilled

Species	Source	Annual sawn (cft)	Demand (cft)	Supply (cft)	Profit (Rs.)	Loss (Rs.)	Supply condition	Remarks

Annual production: Fuel woodKg

Annual production: Saw dust..... ..Kg

Demand supply questionnaire – Furniture

District

Municipality/ Rural Municipality/ward no:

Type

Production capacity:

Established date:

Number of employee:

regular

wage labor

Skilled

non-

skilled

Species	Source	Annual sawn (cft)	Demand (cft)	Supply (cft)	Profit (Rs.)	Loss (Rs.)	Supply condition	Remarks

Annual production: Fuel woodKg

Annual production: Saw dust..... Kg

Demand supply questionnaire – Ply Wood/Veneer

District : Municipality/ Rural Municipality/ward no:

Type:

Production capacity:

Established date:

Number of employee: regular wage labor Skilled non-skilled

Species	Source	Annual production (Sq.ft)	Demand (Sq.ft)	Supply (Sq.ft)	Profit (Rs.)	Loss (Rs.)	Supply condition	Market Condition National/international	Remarks

Annual production: Fuel woodKg

Annual production: Others.....

Demand supply questionnaire – Kattha

District : Municipality/ Rural Municipality/ward no:

Type:

Production capacity:

Established date:

Number of employee:	regular	wage labor	Skilled	non-skilled

[illegible]

Annual production: Fuel woodKg

Annual production: Others..... ..

Annex 2: Consultation plan

S.N.	Date	Office
1.	14 th Jestha	DFO Bara, Simara, Bara
2.	14 th Jestha	Thanimai CF, Bara
3.	14 th Jestha	Pragati CF, Bara
4.	15 th Jestha	Halkhoriya CoF, Bara
5.	15 th Jestha	Gadhimai Sawmill, Kalaiya-02, Bara
6.	15 th Jestha	Ganga Sawmill, Kalaiya-04, Bara
7.	15 th Jestha	Pashupati Kathha Mills Pvt. Ltd., Bara
8.	16 th Jestha	DFO Parsa, Birgunj, Parsa
9.	16 th Jestha	Sabaiya Partnership Forest, Parsa
10.	16 th Jestha	Shyam Kastha Suppliers & Furniture, Pratima Chowk, Birgunj-15, Parsa
11.	16 th Jestha	Dakshinkali Sawmill, Pratima Chowk, Birgunj-15, Parsa
12.	17 th Jestha	TCN Office, Pathlaiya, Parsa
13.	17 th Jestha	DFO Rautahat, Chandranigahpur, Rautahat
14.	17 th Jestha	Parwej Aalam Sawmill, Brindaban-06
15.	17 th Jestha	Riddhi Siddhi Plywood & Veneer, Sakuhawa, Rautahat
16.	18 th Jestha	Rayamajhi Sawmill Pvt. Ltd., Chandrapur, Rautahat
17.	18 th Jestha	Brick Industry
18.	18 th Jestha	DFO Sarlahi
19.	18 th Jestha	Bishojeet Furniture, Lalbandi-5, Sarlahi
20.	18 th Jestha	OM sawmill, Lalbandi-5, Sarlahi
21.	19 th Jestha	Jay Bajrang Plywood Industries
22.	19 th Jestha	Jay Bajrang wood product
23.	19 th Jestha	Sagarnath Ban Bikas Pariyojana, Sarlahi

24.	20 th Jestha	DFO Mahottari Jaleswor
25.	20 th Jestha	Durga Sawmill, Jaleswor-02, Mahottari
26.	20 th Jestha	Laxmi Sawmill, Jaleswor-01, Mahottari
27.	20 th Jestha	Sitaram Bairagya Saw Mill
28.	21 st Jestha	DFO Dhanusha Janakpur
29.	21 st Jestha	Aadhunik Kastha Udhyog, Janakpur-04
30.	21 st Jestha	Nawa Durga Kastha Saw Mill, Janakpur-04
31.	22 nd Jestha	Sub-division office
32.	22 nd Jestha	Himalayan Kathha Udhyog, Mirchaiya-05
33.	22 nd Jestha	Division Forest Office Siraha
34.	22 nd Jestha	Bijendra Furniture Udhyog, Lahan-06
35.	23 rd Jestha	Annapurna Plywood Udhyog
36.	23 rd Jestha	Krishna Kastha Udhyog Lahan-06
37.	23 rd Jestha	Brick Industry
38.	23 rd Jestha	Brick Industry
39.	23 rd Jestha	Division Forest Office Saptari, Rajbiraj
40.	23 rd Jestha	Shiva Parwati Saw Mill and Veneer, Rajbiraj
41.	24 th Jestha	Shiva Shakti Saw Mill, Rajbiraj
42.	24 th Jestha	Noor Kastha Udhyog, Kusaha, Surunga-05
43.	24 th Jestha	Imran Saw Mill & Furniture, Kusaha, Surunga-05
44.	25 th Jestha	Returned Hetauda

Annex 3: List of enterprises consulted

S.N	Name of Enterprise	District	Remarks
1.	Shyam Kastha Suppliers and Furniture Center	Parsa	
2.	Sunrise Sawmill	Parsa	
3.	Dachinkali Sawmill	Parsa	
4.	Pashupati Kattha Mill	Bara	
5.	Gadhimai Sawmill	Bara	
6.	Ganga Sawmill	Bara	
7.	Prabej Alam Sawmill	Rautahat	
8.	Ridhi Sidhi Plywood	Rautahat	
9.	Rayamaajhi Sawmill and Furniture	Rautahat	
10.	Shivajit Furniture	Sarlahi	
11.	Om Sawmill	Sarlahi	
12.	Bishojeet Furniture	Sarlahi	
13.	JayaBajrangabali Plywood Industry	Mahottari	
14.	Laxmi Sawmill	Mahottari	
15.	Aadhunik Kastha Udhyog	Dhanusha	
16.	Nawa Durga Kastha Saw Mill	Dhanusha	
17.	Himalaya Kaththa Mill	Siraha	
18.	Annapurna Plywood Udhyog	Siraha	
19.	Bijendra Furniture Udhyog	Siraha	
20.	Krishna Kastha Udhyog	Siraha	
21.	Shiva Parbati Sawmill	Saptari	
22.	Nur Kastha Mill	Saptari	
23.	Imran Saw Mill & Furniture	Saptari	
24.	Brick Industry	Siraha	
25.	Brick Industry	Sarlahi	

Annex 4: List of the person consulted

S.N.	District	Office	Name	Contacts
1.	Bara	DFO Bara	Sandip Patel	9815299732
2.	Bara	Pashupati Kathha Mills Pvt. Ltd.	Shova Kant Sharma	-
3.	Bara	Gadhimai Sawmill	Mohan Kumar	9855045368
4.	Bara	Ganga Sawmill	Hiralal Prasad Jaiswal	9855045581
5.	Bara	Thanimai CF	Shyam B. Thapa	9845119936
6.	Bara	Halkhoriya CoF	Ram Paribesh Yadav	
7.	Bara	Pragati CF	Sitamaya Ghalan	
8.	Parsa	DFO Parsa	Mutak Alam	
9.	Parsa	Shyam Kastha Suppliers & Furniture	Ranjit K. Chaudhary	98416282973
10.	Parsa	Dakshinkali Sawmill	Sureshlal Jha	9845033388
11.	Rautahat	DFO Chapur	Sunil Kumar Karn	9855041823
12.		DFO chapur	Madhu Kant Singh	9854078523
13.		DFO chapur	Mahalaxmi Sharma	9845537065
14.		DFO chapur	Ram Prasad Shah	
15.		DFO chapur	Yogendra Prasad Shah	
16.		DFO chapur	Mahesh Acharya	
17.		DFO chapur	Aman Bhandari	
18.		DFO chapur	Hirohit Chaudhary	
19.		DFO chapur	Om Prakash Singh	
20.		Parwej Aalam Sawmill	Isham Ahmed	9845378650
21.		Parwej Aalam Sawmill	Pramod Patel	
22.		Parwej Aalam Sawmill	Shambhu Shah	
23.		Riddhi Siddhi Plywood & Veneer	Ratinath Jha	9855025123
24.		Riddhi Siddhi Plywood & Veneer	Manish Shah	9861909807
25.		Rayamajhi Sawmill	Chandra Bahadur Rayamajhi	
26.		Rayamajhi Sawmill	Mahindra Sahani	
27.		Rayamajhi Sawmill	Rupesh Baitha	
28.	Sarlahi	DFO Sarlahi	Manjur Ahmed	
29.		DFO Sarlahi	Sajan Chaudhary	9851217970
30.		DFO Sarlahi	Rakesh Ranjan Das	
31.		DFO Sarlahi	Bhuwaneshor Mahato	
32.		DFO Sarlahi	Binay Kumar	
33.		DFO Sarlahi	Rajdev Shah	
34.		Bishojeet Furniture	Krishna Bachhar	9864047572
35.		Bishojeet Furniture	Bibek Chaudhary	
36.		Bishojeet Furniture	Aayan Chaudhary	
37.		Bishojeet Furniture	Dev Sharma	
38.		OM sawmill	Ram Naresh Jaiswal	9844034620

39.		OM sawmill	Bibek Chaudhary	
40.		OM sawmill	Jitendra Chaudhary	
41.		OM sawmill	Lagan Raya	
42.		Sagarnath Ban Pariyojana	Chandeshwor Patel	
43.		Sagarnath Ban Pariyojana	Pradip Aryal	
44.		Sagarnath Ban Pariyojana	Lal Bahadur Magar	
45.		Sagarnath Ban Pariyojana	Shashiram Acharya	
46.		Sagarnath Ban Pariyojana	Santosh Shah	
47.		Sagarnath Ban Pariyojana	Lohari Tharu	
48.		Sagarnath Ban Pariyojana	Prem Prasad Upadhyay	
49.		Sagarnath Ban Pariyojana	Ram Dayal Thakur	
50.		Sagarnath Ban Pariyojana	Maniram Regmi	
51.		Sagarnath Ban Pariyojana	Jeevan Poudel	
52.		Jay Bajrang Plywood Industries	Bikash Goyal	9801136000
53.		Jay Bajrang Plywood Industries	Ramesh Jha	
54.		Jay Bajrang Plywood Industries	Ram Naresh Tiwari	
55.		Jay Bajrang Plywood Industries	Chita Ranjan Singh	
56.		Jay Bajrang wood product	Sunil Sharma	9844063520
57.	Mahottari	DFO Jaleswor	Nabin K. Yadav	9846448523
58.		DFO Jaleswor	Kapildev Bhandari	
59.		DFO Jaleswor	Maniram Yadav	9824894337
60.		DFO Jaleswor	Shikha Singh	
61.		Durga Saw Mill	Ram Shankhar Mandal	
62.		Durga Saw Mill	Bechan Mandal	
63.		Durga Saw Mill	Shyam Sundar Mandal	
64.		Durga Saw Mill	Jitendra Kumar Singh	
65.	Dhanush a	DFO Janakpur	Bechan Chaudhary	
66.		DFO Janakpur	Shankar Narayan Jha	
67.		DFO Janakpur	Ram Kishor Yadav	
68.		DFO Janakpur	Janak Airee	
69.		DFO Janakpur	Sanjib Kumar Thakur	
70.		DFO Janakpur	Ram Naresh Thakur	
71.		Adhunik Kastha Udhyog	Jitnarayan Mahato Ram Kailash Prasad Shah	
72.		Nawa Durga Kastha Udhyog	Premnath Nayak	9854021341
73.		Nawa Durga Kastha Udhyog	Gyanu Thapa	
74.	Siraha	DFO, Lahan	Shailendra Kumar Mishra	
75.		DFO, Lahan	Hari Narayan Chaudhary	
76.		DFO, Lahan	Devendra Paswan	
77.		DFO, Lahan	Santosh Kumar Shah	
78.		DFO, Lahan	Gyan Kumar Shah	

79.		DFO, Lahan	Jay Prakash Kumar Shah	
80.		DFO, Lahan	Ram Bhagat Mahato	
81.		DFO, Lahan	Gauri Shankhar Chaudhary	
82.		DFO, Lahan	Yogendra Prasad Yadav	
83.		DFO, Lahan	Dev Kumar Shah	
84.		DFO, Lahan	Shrawan Paswan	
85.		DFO, Lahan	Pradip Kumar Singh	
86.		DFO, Lahan	Ram Dayal Thakur	
87.		Bijendra Furniture Udhyog	Devnath Shah	
88.		Bijendra Furniture Udhyog	Baijanath Shah	
89.		Bijendra Furniture Udhyog	Dhaneshwor Prasad Shah	
90.		Himalayan Kathha Udhyog	Santosh Kumar Barnawal	
91.		Himalayan Kathha Udhyog	Akshay Kumar Upadhyay	
92.		Annapurna Plywood Udhyog	Samundra Prasad Yadav	9801500103
93.		Annapurna Plywood Udhyog	Ram Bhagat Yadav	9827712350
94.		Krishna Kastha Udhyog	Krishna Hari Gairel	9852832441
95.	Saptari	DFO, Rajbiraj	Manoj Kumar Karna	
96.		DFO, Rajbiraj	Sunil Kumar Singh	
97.		DFO, Rajbiraj	Ganesh Kumar Hada	
98.		Shiva Parwati Saw Mill & Veneer	Shyam Kumar Das	9807766587
99.		Noor Kastha Udhyog	Mohammad Daud	9807701750
100.		Noor Kastha Udhyog	Mohammad Hajrat	
101.		Noor Kastha Udhyog	Ataul Raham	
102.		Noor Kastha Udhyog	Karimullah	
103.		Noor Kastha Udhyog	Mohammad Hajrat	