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Bamboo Industry- Trade and Commerce with special reference to Jharkhand State.

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Abstract- Bamboo is a tree-like grass belonging to the Poaceae family. Bamboo is a renewable resource that serves a variety of functions, produces a high yield, and has significant economic worth. Its roots produce more oxygen than equivalent strands of trees, lower light intensity, protect against ultraviolet rays, sequester CO₂, and are an important atmospheric and soil purifier. They can also reduce soil erosion by up to 75%. Since the beginning of time, bamboo has played a significant role in our economy and is an essential part of our culture and way of life, particularly in the countryside. Given its many applications and adaptability, it is also frequently referred to as "Green gold" and "Poor man's timber". With 4.5 lakh hectares under bamboo cultivation, Jharkhand ranked 13th among Indian states in 2017 and had a stock of 25.2 lakh tonnes, or 1.3% of the Nation's total stock. It is discovered that Bamboo products possess a large potential domestic market base; further, an even larger export market. It is estimated that India is the second-largest country in the world with ~ 40% of the total bamboo forest area after China. In Ranchi, the most prevalent bamboo species in Jharkhand include *Bambusa bambos*, *B. nutans*, *B. tulda*, and *Dendrocalamus strictus*, which may be found in both woods and residential areas. According to International Bamboo and Rattan Organization (INBAR), there are more than 10,000 documented uses of bamboo globally, and both the use and trade are likely to grow at a faster pace. This paper describes bamboo industry and cultivation in Jharkhand. Additionally, it tells about varieties of bamboo made products which are traded to other states of India. It also throws light on market potential of bamboo industry in Jharkhand

Key words: Bamboo industry, resources, commercial uses, trade

INTRODUCTION

Bamboo is the fastest-growing wood resource on the planet and a potential replacement for tropical hardwoods and lumber. It has received a strong industrial response, and bamboo manufacture is gaining popularity worldwide.^{1,2} Bamboo, also referred to as "green gold," is a resilient, profitable, environmentally beneficial crop that is readily

cultivable for a variety of uses. Since the beginning of time, bamboo has played a significant role in our economy and has become a staple of our culture and way of life, particularly in the countryside.³

One of the plants with the fastest growth rates, bamboo can flourish in a variety of soil types and climatic situations. According to FAO (Food and Agricultural Organisation), they can be as little as a few centimetres (dwarf bamboo variants) or as tall as 30 metres with a maximum diameter of 30 centimetres. It is one of the most

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significant natural alternatives to steel, plastic, and other energy-intensive building materials as well as one of the most important replacements for the threatened forest hardwoods. It is a non-timber forest product that matures quickly (in 3-5 years), is adaptable, and expands at a rate of 10-30% per year as opposed to 2-5% for trees, which can take 50 years to mature. Additionally, bamboo can virtually eliminate waste because all of its components can be used to create a variety of products.

Due to its environmental friendliness and high biomass output as well as its value in preserving soil health and reducing erosion, it is a simple alternative to lumber. Food, fibre, fuel, building and engineering materials, panel products, charcoal, pharmaceutical products, paper, flooring, screens, and other uses are just a few of the many benefits that bamboos may provide. Based on its morphologies, it is separated into three groups: monopodial bamboo, sympodial bamboo, and amphipodial bamboo.

MATERIAL & METHODS

There are 20 cane and bamboo clusters in Jharkhand, of which one of them is in Dumka district. Dumka is amongst the largest bamboo cluster in Jharkhand. In some regions of Jharkhand like Ranchi, Gumla, Daltongunj etc. a random sampling through questionnaire was done between 2021 till 2022 July. The questionnaire contains different questions related to bamboo product, collections and their marketing. Based on the survey, uses of bamboo and its availability were known. In some regions it is self originated and in some it is cultivated.

BAMBOO CULTIVATION IN JHARKHAND

Jharkhand- a tribal state, the greatest producer of bamboo, celebrated World Bamboo Day on September 18 with considerable zeal and fervour. The state government planned to make the day unique by implementing a number of programmes that would improve tribe members' quality of life. On the one side, there was a focus on growing bamboo production, and on the other, there was also a focus on giving the craftspeople skill training. Jharkhand is a state with a lot of forests and natural resources. Bamboo is abundant in each district of Jharkhand which provides great potential to the residents in terms of employment. Jharkhand residents now have a tonne of career opportunities thanks to bamboo. Additionally, bamboo can be used in a variety of ways, from agriculture to alternative energy sources. The demand for everyday

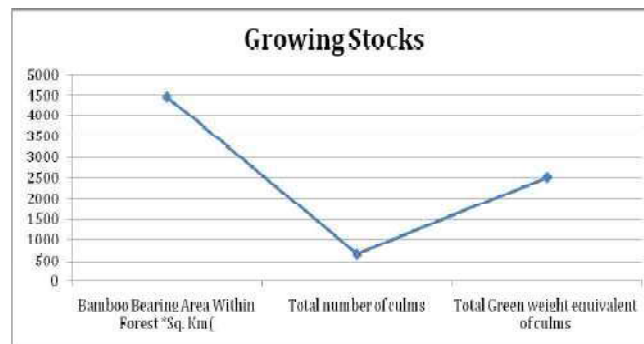
items made of bamboo, such as sofa sets, tables, bags, and creative materials, has surged recently, which has led to a growth in the global commerce of these products. Jharkhand has 23,478 square kilometers of forest cover, according to a report by the India State Forest. Today, bamboo from Jharkhand is more in demand than ever before. Half of India's bamboo is found in Jharkhand which includes *Bambusa tulda*, *Bambusa nutans*, *Bambusa balcooa* which are at increasing demand worldwide.

Jharkhand had a stock of 25.2 lakh tonnes, or 1.3% of the nation's total stock, of bamboo in 2017, placing it 13th among Indian states in terms of area under cultivation. The table below provides the most important data about the bamboo growing population in Jharkhand.⁴

Table 1: Key statistics for bamboo in Jharkhand

Indicator	Growing Stocks
Bamboo Bearing Area Within Forest *(Sq. Km)	4470
Total number of culms	666
Total Green weight equivalent of culms	2520

Fig. 1: Key statistics for bamboo in Jharkhand



Bamboo growing has advanced well in Jharkhand despite the poor production base. The state's entire stock of bamboo increased 131% from 10.9 lakh tonnes in 2017 to 25.2 lakh tonnes in comparison to levels in 2011. During the same time period, the bamboo-bearing area increased by 24%, from 3.6 lakh hectares to 4.5 lakh hectares. This exhibits a tremendous rise in density, going from 661 bamboo culms per hectare to 1,490 culms per hectare, a growth of 125%. Bamboo industry is providing the tribal people of Jharkhand work at home rather than forcing them to migrate to West Bengal. The bamboo cottage industry improved the lives of the tribal people in the state. Due to the growing demand for bamboo goods, the artisans are

receiving training in contemporary production techniques in order to maximize employment. About 500 different varieties of bamboo-made products are produced in Jharkhand and shipped to other states as part of the state's dominant industry, bamboo crafts. Every year, the government receives 50 lakhs from the production of bamboo.²

BAMBOO CRAFT IN JHARKHAND

The most prevalent bamboo species in Jharkhand are *Bambusa bambos*, *B. nutans*, *B. tulda*, and *Dendrocalamus strictus*, which can be found in both forests and residential areas.⁵

The study found that fourteen forest divisions, with availability ranging from 1% to 36%, cover more than 80% of the overall Bamboo Overlapping Area with the forests in Jharkhand. Koderma, Chatra North, Dhanbad, Latehar, Chatra South, and Garhwa South are the divisions having the highest percentage of bamboo-covered land in the forests.²

Table 2: Bamboo resources in Jharkhand

Division	Forest Area (in Ha.)	Bamboo Over Lapping Area (ha)	% of forest area
Chatra (North)	87,607	24,690	28.20%
Chatra (South)	101,893	21,447	21.00%
Daltongunj (North)	52,617	515	1.00%
Daltongunj (South)	72,679	6,231	8.60%
Dhanbad	26,380	6,291	23.80%
Giridhi+Bokaro	163,197	13,863	8.50%
Gumla	126,759	4,926	3.90%
Garhwa (South)	124,135	24,004	19.30%
Hazaribagh (East)	88,541	7,951	9.00%
Koderma	80,635	29,073	36.10%
Latehar	132,384	28,831	21.80%
Ranchi East	93,443	3,565	3.80%
Ranchi West	100,034	10,094	10.10%
Total	1,250,304	181,480	14.50%

[Source: Bamboo Resources of Jharkhand, ICFRE, Ranchi, 2012]⁶

USES OF BAMBOO-

In Jharkhand, bamboo has long been used for many purposes. The region's tropical climate encourages growth, and an availability of raw materials has allowed local artists to produce the goods they need while gradually perfecting their trade. The tribes in the area have long since mastered the technique and produce everyday objects like baskets, vases, carpets, and other handicrafts. Jharkhand has seen the use of bamboo in industry, and paper mills are known to utilize it as a raw material.

There are more than 10,000 recognized uses of bamboo worldwide, and that both the use and trade are set to increase quickly.⁷ It is widely used in a variety of industries, such as utilities, crafts, building supplies, laminated panels, boards, and mats, prefabricated homes, pulp, paper, fabrics, and apparel, musical instruments, and food.²

Following is a breakdown of bamboo usage or consumption in India. Scaffolding is used in the housing industry to the tune of 25% of total consumption, with handicrafts continuing to be the second-largest consumer of it.

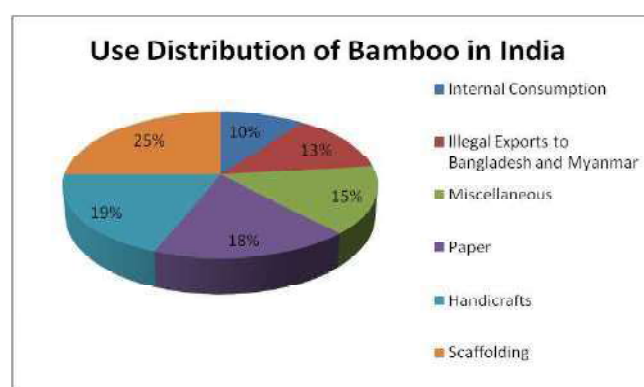


Fig 2: Consumption distribution of bamboo and bamboo products

[Source: National Bamboo Mission, Ministry of Agriculture]⁸

NEW COMMERCIAL USES OF BAMBOO

Many people's exposure to bamboo items is restricted to utilizing bamboo baskets, bamboo chopsticks, and bamboo furniture and matting for seating or for eating bamboo shoots. Commercial bamboo items include flooring, laminated furniture, building panels (similar to wood-based plywood, chipboard, or MDF), premium yarn and fabrics, activated carbon, and bamboo extracts have witnessed a dramatic increase in diversity during the previous 15 years. The development of bamboo as a timber alternative has occurred at the same time that demand for lumber is rising. Bamboo is becoming a more popular alternative to wood due to its attractiveness, strength, and hardness as well as its quick growth cycle and potential for sustainable harvesting. The bamboo sector has a promising future.

Because of these recent changes, there are now more options to target bamboo markets for rural development and poverty eradication. The sector's potential economic

influence on underdeveloped rural areas is particularly increased by the rise of near-source value-adding in contemporary supply chains.

Bamboo in three distinct sub-sectors:

- ◆ Handicrafts
- ◆ Bamboo Shoots
- ◆ Industrial processing

GENERAL OVERVIEW OF TRADE

Different varieties of bamboo are traded, some of which resemble goods made of wood with a timber base. Products made of bamboo can be categorized in a number of ways under the Harmonized System (HS) of international trade categorization. This includes bamboo chairs and furniture, engineered bamboo (laminated bamboo, flooring, and plywood), raw materials (bamboo for plaiting), 63 semi-finished plaits, bamboo shoots, mats, and screens,

basketwork, charcoal, chopping boards, chopsticks, sticks, pulp, and paper-based items.^{1,2} In 2020, each category of bamboo products will account for a certain percentage of global exports as shown in fig 3.

According to the United Nations Comtrade database, the total export value of goods made from bamboo was estimated to be \$3.03 billion in 2020, with China accounting for roughly 65 percent of that value. In 2020, the remaining top exporting nations were divided into distinct groups. The Philippines, Viet Nam, Canada, the Netherlands, Germany, India, the United States, Thailand, and Indonesia were among the top 10 nations exporting bamboo in 2020, along with China.⁹

BAMBOO AND THE ECONOMY

In the circular economy, which tries to reduce waste and utilize resources as efficiently as possible, bamboo is

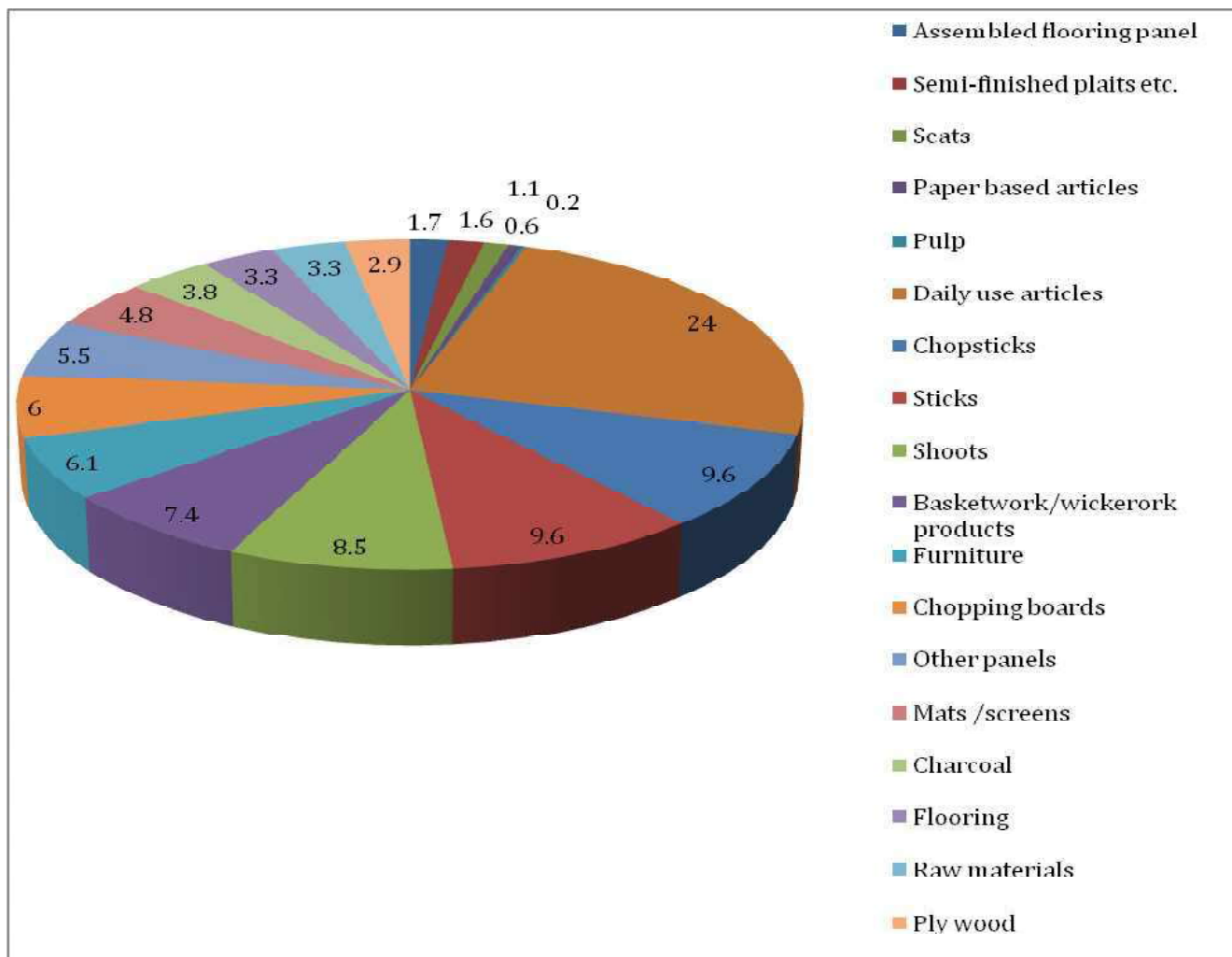


Fig 3: Global exports of all bamboo products, 2020

[Source: United Nations Comtrade database]⁶

emerging as a viable component. Bamboo is essential for halting deforestation and enhancing forest management. Bamboo forests can swiftly reforest areas that have been cleared because of how quickly they grow. Additionally, bamboo can be used in place of materials like wood. It can help save and restore the world's rainforests, especially the Amazon, where bamboo coexists with other forest species, by substituting wood in industrial applications. Where hardwood is either prohibitively expensive or difficult to access, bamboo is particularly practical as a wood alternative. More recently, bamboo plywood has become more affordable than other forest products.¹⁰

Numerous developing countries' ban on single-use plastics and rising deforestation. The usage of lumber creates opportunities for bamboo to be used in place of it. A greater dependence on bamboo as a plastics replacement could aid in the fight against marine plastic pollution. However, due to issues like low investment and the informal nature of the majority of activities, bamboo producers cannot access the bank loans or credit essential to acquire the processing machinery and training. Constraints on the demand side, like ignorance, also come into play. According to a recent study, eastern Maharashtra contains 87% of the world's bamboo potential.

India is yet undeveloped because of supply and demand issues. If adequately funded, the bamboo industry could be just as lucrative as businesses that deal in wood and wooden goods, like Sapele and Okoume.

CONCLUSION

Jharkhand's first bamboo-processing plant to be set up at Netarhat. According to some locals Netar means Bamboo and Hatt means market.

Thus, the present study concludes that bamboo is a motivating crop for both manufacturers with expansive estates and people living in Jharkhand. A family of four can labour and earn money on a single acre of land in a modest plantation as bamboo once planted lives long. Due to new commercial uses of bamboo in Jharkhand there are

now more options to target bamboo market for rural development and poverty eradication. Enough bamboo might be grown on medium-sized farms with several hundred hectares to supply local furniture makers and cottage industries. For those interested in the forestry and agriculture industries, bamboo generally offers a fantastic business opportunity. Bamboo growing will continue to be profitable as long as there is a market for wood.

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