



# The Challenges of Bamboo Handicraft Business from Forest to Digital Market in Chhattisgarh: A Descriptive Analysis

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## Abstract

The bamboo handicraft sector in the Bastar region of Chhattisgarh transforms locally available bamboo into a wide range of traditional and modern products, supporting the livelihoods of tribal artisans. With digital platforms, artisans now reach broader markets, shifting from forest-based production to online sales. This study examines the sustainable growth of the sector, focusing on resource management, digital adoption, and challenges such as limited access to raw materials, low incomes, and limited digital literacy. India produces 402 million tons of bamboo annually; however, all these problems remain unresolved. There is growth potential in the digital handicraft industry, valued at INR 4.2 billion. The study suggests enhancing the value chain, upgrading digital infrastructure, building artisans' capacity, and providing policy support. The study directly aligns with and contributes to many of the UN Sustainable Development Goals. By fostering this alignment, the study supports inclusive economic growth, eco-friendly entrepreneurship, and the responsible use of available resources in Chhattisgarh.

**Keywords:** Bamboo handicrafts, Chhattisgarh, SDGs, Digital marketing, E-commerce

## I. Introduction

India possesses approximately 13.96 million hectares of bamboo resources, with Chhattisgarh contributing significantly to this green

wealth through its 23% forest cover (Patel & Verma, 2022). Over 6 million artisans across the country work in the bamboo industry, which is a significant contributor to both rural employment and foreign exchange (Development Commissioner Handicrafts, 2024). Chhattisgarh is known as the "Bamboo State of India" and is the largest producer of bamboo in India, but it is also well known for its generations-old tribal handicrafts made from bamboo. The tribal and rural communities located in the state have been making bamboo handicrafts for many generations, providing sustainable livelihoods while also preserving their cultural heritage; however, there are many continual challenges faced by these artists, such as limited access to markets for their products, being exploited by middlemen, and not being sufficiently connected to modern digital commerce (Dutta et al., 2025). Despite India having enacted very ambitious and comprehensive Sustainable Development Goals (SDGs) and building out its e-commerce infrastructure, bamboo artisans in Chhattisgarh still lack access to lucrative digital markets, leading to underutilization of the forest's resources and a loss of economic opportunities (Bhakare, 2021).

The digital age has opened up a vast world of opportunities; with an estimated value of US\$100 billion, the handicraft sector in India represents only a 1.2% share of the global market. Digital marketplaces allow artisans to sell directly to



consumers, eliminating the previously necessary middlemen who took significant portions of profit.

A study conducted by the Digital Empowerment Foundation revealed that approximately 20% of artisans have been trained to use digital channels for product sales, demonstrating the dire lack of digital literacy within the artisan sector. Although extensive literature exists on bamboo resources, handicraft production, and digital marketing individually, there is currently no literature documenting the entire value chain from forest-based bamboo resource extraction to digital marketplace sales, especially in the context of Chhattisgarh (Mishra & Dubey, 2020; Singh & Sharma, 2020). This study analyses the sustainable development trajectories of the bamboo handicraft industry in Chhattisgarh, with relevance to the value chain from forest management to digital markets. The study aims to understand the challenges, assess current practices, and propose approaches to build a sustainable, economically feasible ecosystem that ensures the well-being of artisans while safeguarding environmental resources and cultural heritage.

## II. Literature Review

### 2.1 Bamboo Resources and Sustainability in India

Banik (2015) highlighted that India accounts for 30% of the world's bamboo resources, spread over a growing area of 14.94 million hectares, and dwarfs the total with 53,336 million culms weighing 402 million tons. Bamboo also has special sustainability features, as it grows to maturity in 3-4 years rather than 80 years for traditional timber. The outcome showed that bamboo is beneficial for stabilising soil, protecting watersheds, and sequestering carbon.

Dutta et al. (2025) conducted a systematic literature review on bamboo sustainability, revealing bamboo's significant environmental roles, including carbon sequestration, biodiversity enhancement, soil stabilisation, and ecosystem services. This study employed a systematic approach to analyse global research trends and the evolution of themes from 2004 to 2024, with particular attention to ecological and socio-economic aspects. Bamboo is highlighted as an important, environmentally friendly resource due to its rapid growth, carbon sequestration, and extensive ecosystem benefits. Nevertheless, there are still deficiencies in understanding the ecological effects of bamboo over longer periods, as well as in the socio-economic and regionally specific policy frameworks required for bamboo sustainability, particularly in Chhattisgarh. Therefore, there is a need for comprehensive, locally tailored research

and policy to advance bamboo sustainability in Chhattisgarh.

Patel and Verma (2022) highlighted Chhattisgarh's rich bamboo resources, with 23% of the forest area under bamboo and a wide variety of bamboo species, but noted that these resources have not been widely used for production and sale. The outcome revealed that traditional craftspeople lack design knowledge and have no way to access new markets. The researchers recommend government support for developing new skills and for helping establish bamboo-based businesses to support tribal economies.

Bhakare (2021) analysed the role of non-timber products in achieving the Sustainable Development Goals (SDGs) in tribal areas. Study found that bamboo handicrafts have become one of the most sustainable ways to earn a living and meet the requirements of Sustainable Development Goals 1 (No Poverty), 8 (Decent Work and Economic Growth), 12 (Responsible Production and Consumption), and 15 (Life on Land). The study discusses various gaps in policy implementation and value-added processes for Bamboo Handicrafters. Community participation and fair-trade practices are necessary to achieve sustainable development through forest-based businesses.

### 2.2 Chhattisgarh Handicraft Sector Status

The Planning Commission's baseline study (Socio-Economic and Educational Development Society, 2006) established Chhattisgarh as India's largest tribal handicraft centre, where handicrafts serve as the primary livelihood after forest produce collection.

Tambe et al. (2020) reported that more than 80% of India's bamboo resources remain underutilised. The results of their work show a shift from bulk bamboo trading to horticultural uses. They also highlighted the need for sustainable growth through demand-driven, innovative, and value-added cultivation methods. This information is particularly important for tribal artisans in Chhattisgarh who rely on bamboo handicrafts for their livelihood, as it may help them improve market access and diversify their products.

Kemro (2024a) conducted a study of the restrictions faced by artisans in Narayanpur District, using primary data collected from 50 artisans. High labour costs, limited availability of raw materials, lack of training facilities, limited market linkages, high commissions paid by intermediaries, and limited access to market information were among the top bottlenecks identified in his research. He found that there are systemic challenges in the



industry that need to be addressed through the development of integrated policies across the entire bamboo handicraft value chain.

Kemro (2024b) conducted a study of 120 handicraft artisans (Bastar and Kondagaon) and found that declining demand reduced their incomes, leading many to resort to alternative employment. The chi-square test revealed a significant association between income and job satisfaction, and a lesser association with training. The research has identified significant problems, including exploitation by intermediaries, inability to access loans, and lack of branding. Some of the measures it proposed to the government included the establishment of common facility centres, direct marketing connections, design enhancement programs, and low-cost credit to support artisans and maintain cultural heritage.

### **2.3 Digital Transformation and E-commerce Opportunities**

Singh and Sharma (2020) explored e-commerce adoption among Indian handicraft artisans. Their research revealed that digital platforms increased market reach by 300% but required training support. Artisans faced challenges with online payment systems and product photography. The study concluded that digital literacy programs significantly improved sales performance and customer engagement for traditional craftspeople across rural India.

Mishra and Dubey (2020) investigated how e-commerce platforms transformed rural handicraft businesses in central India. Digital marketing increased artisan income by 45% within two years. Challenges included internet connectivity, logistics, and standardisation of quality. The study emphasised the need for integrated digital ecosystems that combine training, market access, and financial support for sustainable artisan development.

Gupta et al., (2022) studied the maintenance of traditional bamboo craft techniques and their adaptation to modern markets. The study established that the combination of traditional skills and contemporary designs appealed to the urban consumers. Nonetheless, artists struggled to protect intellectual property and build a brand. Digital storytelling proved to be an effective tool for marketing genuine handicraft and cultural heritage.

### **2.4 Market Trends and Growth Potential**

The Chhattisgarh Hastshilp Vikas Board (2024) conducted a survey on bamboo craft in the Narayanpur and Bastar regions of Chhattisgarh, highlighting a booming industry worth US\$69.64

billion in 2024, expected to grow to US\$111.32 billion by 2034 at a CAGR of 4.80%. This growth is driven by increasing consumer awareness of sustainability and expanding applications of bamboo products. India plays a significant role globally, accounting for 14% of the global bamboo market with 143,285 export shipments. This survey also highlighted that the Indian handicrafts market size is INR 4.2 billion, driven by increasing demand for sustainable, culturally representative art from across the world. Major players include Fabindia, Craftsvilla, Jaypore, Tribes India, and The India Craft House.

### **2.5 Research Objectives**

The following objectives have been undertaken to address the issues.

1. To examine the current status and characteristics of the bamboo handicraft industry in Chhattisgarh.
2. To analyse sustainable forestry management practices and challenges in raw material procurement for bamboo handicrafts.
3. To identify challenges faced by artisans and opportunities presented by digital marketing and e-commerce platforms.
4. To propose strategies for the sustainable business development of the bamboo handicraft from the forest to the digital market.

## **III. Research Methodology**

This study is descriptive and uses secondary data to examine the sustainable bamboo handicraft industry in Chhattisgarh, spanning from forest resources to digital markets. It draws on credible sources, including government reports (Ministry of MSME and Ministry of Textile, Chhattisgarh Forest Department), Development Commissioner (Handicrafts), Chhattisgarh, Hastshilp Vikas Board, National Bamboo Mission reports and statistics, India Brand Equity Foundation (IBEF) reports, KVIC documents, UNDP and UNCTAD sustainability reports, research journals, policy papers, and e-commerce analytics. Through a systematic review of literature from 2006 to 2024, focusing on sustainability, livelihood, forest management, and digital entrepreneurship, data were analysed via content, trend, and comparative methods. Key themes examined include economic empowerment, environmental conservation, policy support, and technology adoption. Ethical standards and data reliability were ensured by verifying multiple sources and properly citing them.



### 3.4 Methodological Limitations

The research is mainly based on secondary data, which limits the depth of empirical validation and the capture of themomentary experiences of the bamboo artisans. The same goes for data availability and uniformity across various governmental and institutional sources. Further, regional differences within Chhattisgarh and the absence of primary field surveys may also limit the applicability of the results. Future research incorporating primary data and longitudinal analysis would help further understand the bamboo handicraft ecosystem.

## IV. Findings and Interpretation

### 4.1 Current Status of Bamboo Handicraft Industry in Chhattisgarh

#### 4.1.1 Bamboo Resource Availability

The forest cover in Chhattisgarh is about 59,772 sq. km, or about 44.2% of the total geographical area. 11,185 villages lie within 5 km of the forest among the 19,720 villages. That closeness, then, is a potential advantage in accessing raw materials. Bamboo is abundant across various districts of Chhattisgarh and is intrinsic to the way of life here, used to make fishing nets, homes, baskets, load-carrying poles, musical instruments, and even food. However, there are huge disparities in resource utilisation. Surveys show that 80% or more of forest bamboo production is wasted at the national level, and craftspeople also have trouble

obtaining raw materials. This paradox arises from the absence of institutions in the systems for managing and distributing resources. The bamboo and woodcraft industry in Chhattisgarh is predominantly composed of tribal artisans living in Bastar, Kondagaon, Narayanpur, and neighbouring districts. These craftsmen have inherited skills passed down through generations and are part of India's rich cultural fabric, but they face several socio-economic problems.

#### 4.1.2 Artisan Community Profile

Table 1 shows the socio-economic profiles of different bamboo handicraft artisans' communities in Chhattisgarh. These are primarily tribal communities (Madia Gonds, Muriya Gonds and Bansods) from the Bastar, Kondagaon and Narayanpur districts. The majority of these artisans are self-employed and work from their homes. Many of the females take part in weaving and finishing activities. There are, however, many issues confronting these communities, such as low incomes (and seasonal), neither of which provides year-round employment, inadequate educational opportunities and limited access to markets outside of their local area. The socio-economic vulnerabilities outlined above directly align with SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth). Both SDGs highlight the need for inclusive digital market interventions to create sustainable livelihoods for these marginalised artisan communities.

Table 1: Artisan Community Characteristics in Chhattisgarh

Parameter	Status
Primary Location	Bastar, Kondagaon, Narayanpur districts
Community Type	Predominantly tribal populations (Madia Gond, Muriya Gond, Bansod)
Employment Type	Self-employed, home-based production
Gender Participation	Significant female involvement in weaving and finishing
Income Pattern	Low with seasonal variations
Year-round Employment	Lacking; requires supplementary income activities.
Educational Levels	Limited formal education
Skill Development	Traditional knowledge transfer; limited exposure to modern techniques
Market Access	Primarily local markets; limited reach to wider markets

Source: Compiled by The Author

#### 4.1.3 Production Systems and Product Range

1. The work of an artisan may be functional, such as baskets, mats, and farming tools, or decorative, including tribal art, wall hangings, and ritual objects. The processing is still essentially traditional, with rustic tools and methods—the higher

labour input and the longer processing time are the result of the lack of mechanised processing.

2. The study seeks to assess the forest product harvesting policy to meet the raw material shortages, to introduce technology, to diversify products to meet growing



potential markets, and the socio-economic scenario of the craft artisans dependent on bamboo craft.

#### 4.2 Sustainable Forest Management and Raw Material Challenges

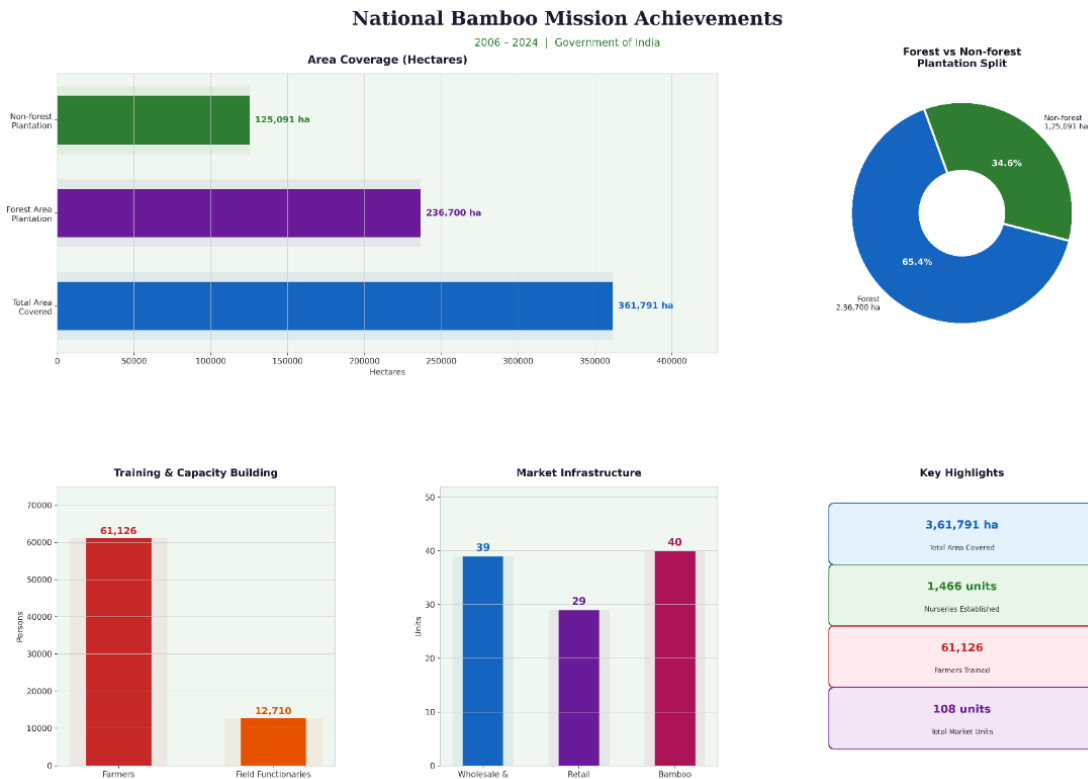
#### 4.2.1 Policy Framework

Table 2 shows that the National Bamboo Mission made progress across its components (plantation, training, and market infrastructure) from 2006 to 2024.

**Table 2: National Bamboo Mission Achievements (2006-2024)**

Component	Achievement
Total Area Covered	3,61,791 hectares
Forest Area Plantation	2,36,700 hectares
Non-forest Area Plantation	1,25,091 hectares
Nurseries Established	1,466 units
Farmers Trained	61,126 persons
Field Functionaries Trained	12,710 persons
Wholesale & Retail Markets	39 units
Retail Outlets	29 units
Bamboo Bazaars	40 units

Source: Compiled by the Author



**Figure 1: Graphical Representation of National Bamboo Mission achievements (2006-2024)**

Source: Compiled by the Author

The National Bamboo Mission made significant achievements (Table 2 and Figure 1) from 2006 to 2024. The total area planted was 3,61,791 hectares (ha): 2,36,700 ha (65%) as forest plantations and 1,25,091 ha (35%) as non-forest plantations. A total of 1466 nurseries were

established, 61,126 farmers trained, and 12,710 field functionaries trained under the Mission. The Mission has also established 39 wholesale and retail market locations, 29 retail outlets, and 40 bazaar locations to provide a strong marketing link for the commercialisation of bamboo products across



India. These successes indicate critical progress toward SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land). Bamboo large-scale plantation programs offer sustainability by providing materials sustainably and contributing toward ecological restoration through environmentally sustainable production practices.

#### 4.2.2 Raw Material Procurement Challenges

Despite policy reforms and abundant resources, artisans face significant raw material access challenges:

1. **Institutional Gaps:** Absence of organised supply chains connecting forest resources with artisan clusters
2. **Price Volatility:** Fluctuating prices due to unorganised procurement systems
3. **Quality Issues:** Inconsistent quality and a lack of proper seasoning facilities
4. **Harvesting Rights:** Limited awareness about Forest Rights Act provisions and procedural complexities
5. **Seasonal Availability:** Supply constraints during certain seasons affect continuous production

#### 4.3 Artisan Challenges and Digital Market Opportunities

##### 4.3.1 Marketing and Economic Challenges

Table 3 shows the key difficulties most bamboo artisans face across the five main categories. In the raw material acquisition category,

issues arise from fluctuating prices, poor quality control, and a lack of treatment facilities. On top of this, production processes are constrained by traditional hand tools, limited mechanisation, labour-intensive operations, and inadequate workspace. Due to poor standardisation of finished products, simple finishing techniques and a high level of rejected items, the quality control of the final product is therefore also poor. Artisans face many challenges in marketing their products, including being taken advantage of by intermediaries, limited access to markets, receiving unfair market prices, and lacking a recognised brand name. Artisans also have difficulty with creative design development, as they are limited to traditional design; they lack knowledge of current market trends. The craft sector in India recorded total foreign currency receipts of INR 35,000 crore from handicraft export sales in 2021. However, data from the India Handloom Census 2019–2020 shows that 66% of weavers make less than INR 5,000 per month. This type of information shows how financially vulnerable this sector is. The urgent need for well-structured digital interventions in the marketplace to enhance the livelihood of artisans is highlighted by the fact that all of these multifaceted obstacles (including lack of access to raw materials; inefficiencies in production; and lack of access to the marketplace) directly impede our progress towards both Sustainable Development Goal (SDG) 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth).

**Table 3: Major Challenges Faced by Bamboo Handicraft Artisans**

Challenge Category	Specific Issues
Raw Material	Procurement difficulties, price volatility, quality inconsistency, and a lack of treatment facilities
Production	Traditional tools, limited mechanisation, high labour intensity, and inadequate worksheds
Quality Control	Lack of standardisation, primitive finishing techniques, and high rejection rates
Marketing	Limited market access, intermediary exploitation, poor price realisation, and lack of brand identity
Design	Traditional designs only, limited innovation, no trend awareness
Financial	Low income, lack of working capital, limited credit access, seasonal earnings
Infrastructure	Poor connectivity, inadequate common facility centres, and limited storage
Skills	Limited digital literacy, no business management training, inadequate quality training

*Source: Compiled by the Author*

##### 4.3.2 Digital Market Landscape

The key indicators of the global and Indian bamboo markets are presented in Table 4; the current size,

future projection, and India's position in the global bamboo economy are also shown.



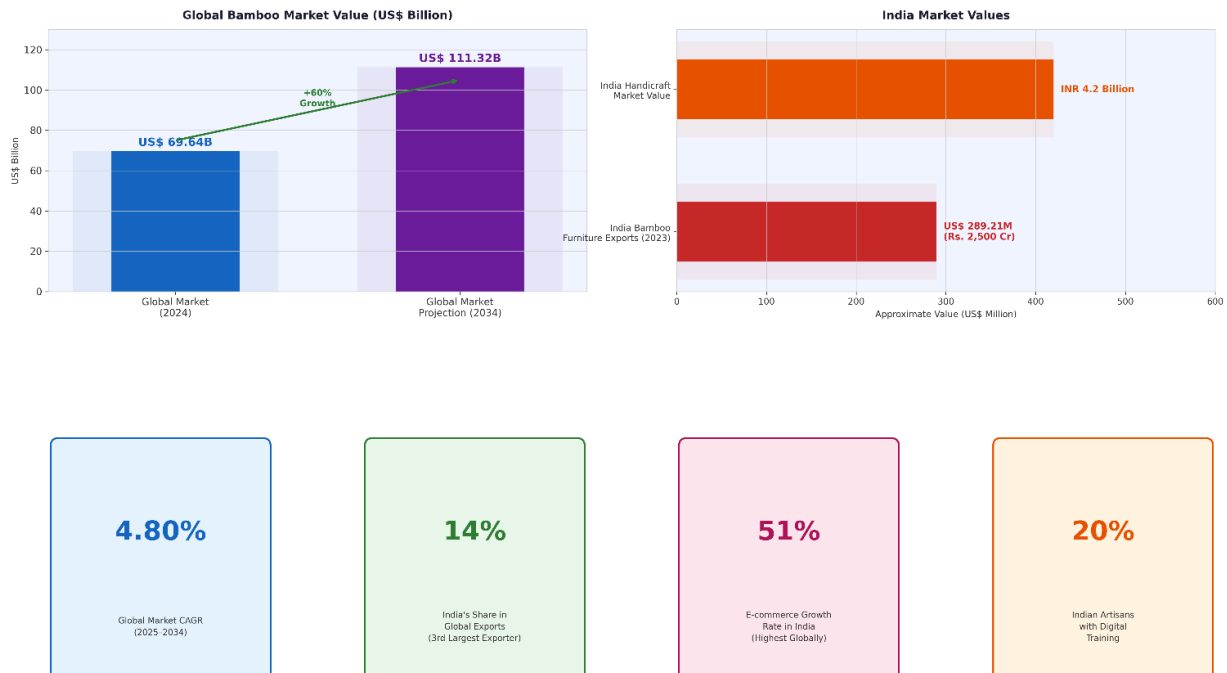
**Table 4: Global and Indian Bamboo Market Growth Trends**

Market Indicator	Value/Projection
Global Bamboo Market (2024)	US\$ 69.64 billion
Global Market Projection (2034)	US\$ 111.32 billion
Global Market CAGR (2025-2034)	4.80%
India Bamboo Market Share (Global Exports)	14% (3rd largest exporter)
India Bamboo Furniture Exports (2023)	Rs. 2,500 crore (US\$ 289.21 million)
India Handicraft Market Value	INR 4.2 billion
E-commerce Growth Rate (India)	Highest globally at 51%
Indian Artisans with Digital Training	Only 20%

Source: Compiled by the Author (based on IBEF reports, market research studies, and DEF survey)

**Global and Indian Bamboo Market Growth Trends**

Source: Compiled by the Author (based on IBEF reports, market research studies, and DEF survey)



**Figure 2: Graphical Representation of Global and Indian Bamboo Market Growth Trends**

Source: Compiled by the Author (based on Table 4)

According to Table 4 and Figure 2, the global bamboo marketplace was valued at USD 69.64 billion in 2024 and is projected to reach USD 111.32 billion by 2034, representing a CAGR of 4.80% over 2025-2034. As the third-largest exporter of bamboo products, India accounts for 14% of global exports. Bamboo furniture exports from India alone were USD 289.21 million (2,500 crores) in 2023, and the Indian handicraft market is currently valued at INR 4.2 billion. In comparison to other parts of the world, e-commerce in India is growing at 51%, which is the highest of any country; however, only 20% of Indian artisans have received any type of digital training, which suggests there is a significant difference between the potential for digital opportunities and the current level of

capability on the ground. The digital divide shows that large numbers of people have not been able to access a significant part of the digital economy, and that there is, therefore, a significant gap to bridge as we strive to achieve SDGs 8 and 9. For these two SDGs to be achieved and for economic growth to continue within artisan communities, the technology and skills gaps need to be bridged.

#### 4.3.3 Digital Readiness Assessment

At present, artisans selling on e-commerce platforms face limited visibility, as they can only connect with buyers on the same platform, requiring multiple registrations and high commissions to secure better listings. Major challenges to digital adoption include poor internet connectivity, inadequate electricity,



and a lack of digital devices in rural clusters. Skill gaps persist in creating listings, using digital payments, photography, customer communication, and marketing. Financial barriers such as limited funds for devices, content creation, and inventory management further restrict growth. Additionally, most platforms use English or Hindi, creating language barriers for tribal artisans who prefer local dialects. Structural and infrastructure barriers impede efforts to achieve SDG9 on Industry, Innovation, and Infrastructure because, without digital inclusion,

artisans in rural areas cannot fully participate in modern, universal markets.

#### 4.4 Government Initiatives and Policy Support

The National Bamboo Mission scheme has a budget allocation of Rs. 1290 crore for the period from 2020-21 to 2022-23. Multiple government schemes support the handicraft sector, including the National Handicraft Development Program, Ambedkar Hastshilp Vikas Yojana, and PM Vishwakarma Scheme.

**Table 5: Key Government Initiatives for Bamboo Handicraft Development**

Initiative	Focus Area	Key Features
National Bamboo Mission (Restructured 2018-19)	Complete value chain development	Plantation, processing, marketing, skill development; Rs. 1290 crore allocation
National Handicraft Development Programme	Artisan welfare and capacity building	Skill training, infrastructure, and marketing support
PM Vishwakarma Scheme	Financial assistance and skill training	Credit support, toolkit provision, training programs
Digital India Programme	Digital literacy and infrastructure	Internet connectivity, digital skills training
E-Bazaar Initiatives	Online marketplace access	Government-supported e-commerce platforms
Geographical Indication (GI) Tags	Product authentication and branding	Protection for traditional crafts
SARAS Aajeevika Mela	Market exposure	Periodic exhibitions and craft fairs

*Source: Compiled by the Author from government scheme documents and Ministry of Textiles reports*

So far, the Department of Handlooms and Textiles, Government of India, has partnered with nine e-commerce players and 70 retailers, thereby expanding the reach of handloom products. The Textiles Ministry has tied up with 21 e-tailers for handloom products in March 2018, with handloom sales of Rs. 9.54 crore during the 2017-18. Both of these policies and public-private partnerships are manifestations of a greater institutional emphasis on SDG 9 (Industry, Innovation and Infrastructure) and SDG 8 (Decent Work and Economic Growth). Government-supported digital linkages will expand artisan communities' market access, thereby fostering sustainable economic growth.

## V. Discussion

### 5.1 Bridging the Resource-Market Gap

The failure of institutions and markets is illustrated by the significant lack of access to raw materials for artisans, despite the abundant bamboo available. In this, the movement of bamboo from a "tree" status in India, while an excellent step, also has significant implementation gaps within its own structure. The way to bring these two facets together to ensure artisans can access the raw material is to

develop organised supply chains that connect forest resources to artisan clusters through consistent coordination with state forestry branches, cooperatives, and local government authorities. These structural inefficiencies will help to directly support the following SDGs: 1 (No Poverty) and 8 (Decent Work and Economic Growth), as equal access to raw materials is a prerequisite for a sustainable bamboo handicraft sector.

### 5.2 Digital Transformation Imperative

Digital markets can have a significant transformative impact by enabling enterprises to reach consumers anywhere in the world and by reducing their reliance on intermediaries. With more than 100 million e-commerce shoppers in India expected to shop online in 2023, along with growing consumer demand for handcrafted artisanal products, the shift toward a digital handicraft economy is one of the greatest opportunities available today. Successful realisation of this potential will require targeted investment in digital infrastructure, improvements in digital literacy, vernacular language, and user-friendly applications, and ongoing financial support for artisan integration.



Progress in these areas is critical to achieving SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation and Infrastructure), as inclusive digital transformation is a primary enabler of fair economic participation for marginalised artisan communities.

### 5.3 Sustainability Integration

Sustainable development requires a balanced approach to environmental protection, economic growth and social justice. Bamboo has a fast growth rate, can absorb large amounts of atmospheric carbon, and has a low environmental impact. Thus, bamboo can be viewed as an ideal material for ecological and higher-end markets. To leverage these ecological benefits into tangible monetary benefits, bamboo must be harvested scientifically, certified for sustainability at an international level, placed in strategic higher-end markets and managed in a community-based manner. Together, these activities support both SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land) and position bamboo handicrafts as a viable vehicle for achieving environmentally sustainable, ecologically restorative, and economically inclusive growth.

### 5.4 Policy and Implementation Synergy

While government initiatives are numerous, effective implementation faces many barriers, including artisans' limited knowledge, difficulty navigating complex administrative processes, and limited access to the benefits they are entitled to. Policymakers must implement and administer policy in a streamlined and consistent manner. Some examples of best practices for successful implementation include: development of simplified application processes; implementation of comprehensive awareness programs in all local languages; creation of streamlined delivery mechanisms; creation of outcome-based monitoring frameworks; and the establishment of comprehensive community-level support systems. To advance the 8th and 9th Sustainable Development Goals (SDGs) (Decent Work and Economic Growth), strengthening both the policy implementation process and the synergy between the two is critical. Additionally, developing inclusive and accessible governance frameworks is essential to translating policymakers' intent into meaningful socio-economic impact for marginalised artisan communities.

## VI. Conclusion and Suggestions

The study concludes that the sustainable bamboo handicraft industry in the Bastar region of Chhattisgarh is a strong driver of inclusive growth, environmental sustainability, and digital empowerment. The core findings indicate that tribal artisan communities, including Madia Gonds, Muriya Gonds, and Bansodis, are impacted by multiple forms of vulnerability that impede their progress towards SDG 1 (No Poverty) and SDG 8 (Decent Work and Economic Growth), including seasonal fluctuations in income, lack of market access, and insufficient digital literacy. With the global bamboo market expected to grow to 111.32 billion dollars by 2034, only 20 per cent of artisans in India have received digital skills training, indicating a lack of infrastructure and capabilities to meet the aspirations outlined in Goal 9 (Industry, Innovation and Infrastructure). Additionally, under the National Bamboo Mission, 3,61,791 hectares have been planted with bamboo, supporting approximately 61,000 farmer families, showing positive progress towards achieving SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land); however, there are still significant gaps in the ability of policies to deliver productive outcomes for the sector in terms of access to raw materials, effective delivery mechanisms, and coordination across institutions which are hindering the growth of this sector.

Future initiatives will focus on building digital capacity, providing vernacular e-commerce platforms, streamlining policy processes, and managing harvesting operations through science-based systems. A unified, multisectoral policy framework integrating digital change with ecological management may enable the bamboo handicraft industry to serve as a replicable model for ecologically aware startups and lifelong sustainable development within India's rural economy.

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