

Use of *Bambusa balcooa* Roxb. and *Bambusa tulda Roxb*. in traditional bamboo gadgets of Nath-yogi's of Sivasagar district of Assam, India

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Research

Abstract

Background: The present study was conducted in the Sivasagar district of Assam, India to study the traditional bamboo gadgets made from *Bambusa balcooa* Roxb. and *Bambusa tulda* Roxb. by the Nath-Yogi community. The study also aims to explore the role of the bamboo gadgets in village economy of the community.

Methods: During the study, 330 individuals from 8 villages were interviewed. Along with the interviews, semi-structured questionnaires were used to obtain data.

Results: Thirty four traditionally used bamboo gadgets were recorded in the study. These gadgets were used mainly in agriculture, fishing, handloom, music, and other household purposes. In 27 items, cane was used as an associated material to complete the making process. Fan tree and wood were also used in one item each. 31 items were made of *Bambusa tulda* Roxb. and only 3 items were made of *Bambus balcooa* Roxb.

Conclusions: Traditional bamboo crafts made of *Bambusa balcooa* Roxb. and *Bambusa tulda* Roxb. play a crucial role in the daily life of the Nath-Yogi community in rural areas. They are ecofriendly and an indispensable part of village economy.

Keywords: Nath-Yogi community, Traditional bamboo gadgets, Handloom, Ecofriendly, Village economy.

Background

Bamboos belong to the family Poaceae and are evergreen flowering plants, with approximately 1250 species across 75 genera worldwide (Yang *et al.* 2004). As a vital non-wood forest bio-resource, bamboo is particularly significant in India, which is considered as major global center for bamboo. Bamboo occupies around 12.8% of India's total forest cover and the country is the second largest producer globally (Tewari 1992). The forest area under bamboos is estimated to be around 14 million hectares (FSI 2011). Despite India's rich bamboo resources and long-standing tradition of using bamboo for daily livelihoods, the enormous potential of this bio resource remains largely untapped compared to countries like China, Taiwan

and Japan. Known as the poor man's timber, bamboo has the potential to significantly impact rural economies in India. Bamboo plays a multifaceted roles in the environment and is a crucial natural resource for mankind. India is home to around 125 species belonging to 23 genera (Tewari 1992), with approximately 66% of the bamboo population concentrated in the North Eastern part of the country (Adkoli 2002, Loushambam *et al.* 2017). The primary bamboo genera found in India include *Bambusa, Dendrocalamus, Gigantochloa, Arundinaria, Dinochola, Chimonobambusa*, and so on (Loushambam *et al.* 2017). North-East India, comprising states like Mizoram, Arunachal Pradesh, Nagaland, Meghalaya, Sikkim, Tripura, Manipur, Assam as well as the Western Ghats is particularly rich in bamboo resources, accounting for over 50% of the country's bamboo population (Rai & Chauhan 1998).

In North-East India, bamboo craftsmanship has evolved over time, as evident from the diverse range of bamboo products manufactured and used by different tribes and states. These products showcase exquisite craftsmanship including an array of baskets, bridges, fences, toys, houses, combs, gates, furniture, carts, smoking pipes, hats, storage bins, flutes, and ropes and so on. Beyond these products, bamboos are also utilized for weaving, fishing, farming and hunting (Bahadur & Jain 1981, Ranjan 1984).

The North-Eastern population comprises a diverse mix of tribes and ethnicities. While similarities exist in bamboo usage, differences are apparent between tribes and states, particularly in the crafting and utilization of bamboo products. The skill of bamboo craftsmanship is quite popular and widespread amongst the ethnic groups, although it is not an exclusive occupation for the people (Shirali 1983). Assam the gateway to the North-East India, occupies a geographical area of 78,438 sq. km constituting approximately 2.39% of the country's total area. The states forest cover spans around 26,832 sq. km (FSI 2015), with bamboo covering about 7, 238 sq. km (FSI 2011). A study by Nath *et al.* (2011) highlighted the traditional use of bamboo among the tea tribes of Barak Valley, Assam throwing light on the value of bamboo in the cultural and social lives of North-East India's ethnic communities. Moreover, Assam is a state inhabited by a diverse group of communities, such as Ahom, Konch, Kaibatra, Kalita, Bodo, Kachari, Rabha, and Nath-Yogi. The Nath-Yogi community, an ancient, traditional religious group in India comprises the Nath sect. This paper explores the use of *Bambusa balcooa* Roxb. and *B. tulda* Roxb. in traditional bamboo crafts among the Nath-Yogi community in Sivasagar district, Assam. The study aims to document and preserve the existing knowledge of bamboo crafts, as well as its role in the village economy.

Materials and Methods

Study area

Sivasagar district, one of the 34 districts of Assam in Northeast India, was formerly known as Sibsagar. This district's administrative centre is located at Sivasagar town, a historic place renowned for its rich biodiversity. With a total area of 2668 square kilometres, the district accounts for a small portion of Assam's 78,438 square kilometers. Sivasagar district comprises two subdivisions namely Sivasagar and Nazira. Geographically, it is located between latitudes 26.45°N and 27.15°N and longitudes 94.25°E and 95.25°E.

Field survey and collection of data

The study was carried out between January and September 2024 in 8 villages of Sivasagar district inhabited by Nath-Yogi community. The villages included Bokata Na-Nath gaon, Bokata Puroni Nath gaon, Podumoni Nath gaon, Huntolichiga gaon, Charing Nath gaon, Telial gaon, Khamun gaon and Hafaluting Napam gaon. These villages were chosen for their expertise in traditional bamboo crafts, with many families relying on it as a primary occupation alongside agriculture. The crafts produced include baskets, sieves, stools, agricultural equipment, fishing gadgets, and more. For the study, a total of 330 individuals were interviewed using a semi-structured questionnaire designed to gather information on various aspects, including local name of bamboo species used, other tools used in craft production, cost of materials, family-wise income from bamboo products per month, age of craftsmen and occupation.



Studied Villages in Sivasagar District of Assam

Figure 1. Map of the study sites

Results

Demographic description

A total of 330 informants were interviewed during the study of which 207 were male and 123 were female. The informants were classified into six different age groups (Table 1). Farming and handcrafting were the main occupation of the informants. In terms of educational background, 58% of males had primary education, 26.57% had secondary education, 12% had higher secondary education, and 3.86% had graduation. Among females, 62.6% had primary education, 28.45% had secondary education, 7.3% had higher secondary education, and 1.62% had graduation (Table 1).

Table 1.	Demographi	c description	of informants	(n= 330)
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	•	•	-	
Gender	Age	Number	Education	Occupation
Male= 207	15-24	20	P= 4 S= 12 HS= 3 D= 1	Student/ Handcrafting
	25-34	40	P= 16 S= 12 HS= 6 D= 6	Farming/Handcrafting
	35- 44	45	P= 21 S= 14 HS= 9 D= 1	Farming/Handcrafting
	45- 54	50	P= 36 S= 09 HS= 5 D=0	Teaching/Farming/Handcrafting
	55- 64	38	P= 32 S= 5 HS= 1 D= 0	Farming/Handcrafting
	65& Above	14	P= 11 S= 3 HS= 0 D= 0	Farming/Handcrafting
Female=123	15-24	8	P= 1 S= 5 HS= 1 D= 1	Farming/Handcrafting
	25-34	12	P= 2 S= 8 HS= 1 D= 1	Farming/Handcrafting
	35- 44	20	P= 10 S= 8 HS= 2 D= 0	Farming/Handcrafting
	45- 54	53	P= 36 S= 12 HS= 5 D= 0	Farming/Handcrafting
	55- 64	21	P= 19 S= 2 HS= 0 D= 0	Farming/Handcrafting
	65& Above	9	P= 9 S= 0 HS= 0 D= 0	Farming/Handcrafting

[P= Primary; S= Secondary; HS= Higher Secondary; D= Degree]

Agriculture-based gadgets

Bhar Pachi

It is an oval to semi-oval gadget used to carry different items like harvested rice, fodder, straw, cow dung, and soil. The frame is reinforced with threads made from cane, which are used to tie it together. This gadget is typically used in pairs, with each pair hung from a bamboo pipe to facilitate easy carrying from one place to another (Fig 2-a).

Chaloni

It is a traditional bamboo sieve used for cleaning rice after thrashing, effectively separating the grains from dirt and debris, which remain on top of the sieve. Additionally, the *Chaloni* is utilized for drying fish and vegetables. The other item used in the manufacture of *Chaloni* is cane which is used to reinforce the frame (Fig 2-b).

Dola

It is an instrument used to clean and winnow rice and other crops after harvesting. Additionally, it serves as a storage container dried fish and crops for domestic use (Fig 2-c). The instrument is crafted from thin, flat bamboo strips and features a round shape.

Doon

It is a small, intricately woven bamboo basket used to measuring container for crops. Crafted from thin bamboo strips, it features a narrow bottom and slightly broadened opening at the top. Beyond its practical use, the *Doon* also plays a role in socio-cultural activities (Fig 2-d).

Dooli

A large bamboo storage unit used to hold harvested crops, particularly rice after threshing, serving as a traditional granary. Crafted from long and thick bamboo strips and it provides a practical solution for storing crops. (Fig 2-e).

Gobar pachi

The *Gobar Pachi* is a traditional carrier basket used to transport cow dung to crop fields, as well as to carry harvested crops from the fields to home (Fig 2-f). Crafted from thin bamboo strips woven together, the basket is shaped and maintained by a round bamboo frame. A distinctive feature of the *Gobar Pachi* is a thick, long bamboo strip tied in an oval shape at its center, which serves as a handle, allowing users to comfortably carry it during agricultural activities.

Japi

It is a gadget used like an umbrella to protect from rain during farming. The leaves of the Himalayan fan palm are used along with a bamboo frame to make the gadget (Fig 2-g). The frame is woven with thin bamboo strips, forming an oval shaped structure. The center is woven like a hat, designed to fit on the head.

Khorahi

A bamboo basket, known as *Khorahi*, serves multiple purposes. It is used to measure crops and plays a role in socio-cultural activities. Additionally, *Khorahi* is utilized for storing crops and vegetables (Fig 2-h). The basket is crafted with thin and smooth bamboo strips, featuring minimal or no holes for durability. Its size varies depending on the specific needs and uses of the people.

Koola

This instrument is used for cleaning and winnowing rice and other crops, functioning similarly to a *dola* (Fig 2-i). It is skillfully woven with very thin and flat bamboo strips, approximately 0.5 cm in width.

Lahoni

This instrument, known as *Lahoni*, is used to channelize or distribute water in agricultural fields, as well as for pond draining and fishing (Fig 2-j). Crafted from flat bamboo strips, approximately one foot in length, it is woven and fitted onto a small boat shape frame, secured with cane threads. A narrow, 3-4 feet long apical section of bamboo serves as the handle, tied to the boat shaped part facilitating easy use in irrigation.

Moi

This instrument is used for rolling and flattening mud during paddy field preparation and doubles as a ladder for climbing low to medium height trees. Made from *Bambusa balcoa*, its construction involves splitting a 6-8 foot bamboo stem into two

halves for the frame. Holes are drilled at 1-foot intervals on both halves, and thick, hard bamboo pieces of 1 foot long are fitted into these holes, creating a sturdy structure (Fig 2-k).

Pachi

It is a big bamboo basket used to measure and store rice and other crops. Thin and smooth bamboo strips are woven to a desired and shaped with a tapered, narrow bottom and a wide, round open mouth (Fig 2-I).

Ukhon

This instrument, used for rice thrashing, is made from the apical part of a bamboo stem, typically measuring 7-8 feet in length (Fig 2-m).



Figure 2. Bamboo gadgets used in agriculture- (a) *Bhar pachi* (b) *Chaloni* (c) *Dola* (d) *Doon* (e) *Dooli* (f) *Gobar pachi* (g) *Japi* (h) *Khorahi* (i) *Koola* (j) *Lahoni* (k) *Moi* (l) *Pachi* (m) *Ukhon.*

Fishing gadgets

Chepa

This bamboo slit-based trap is designed to capture fish in water bodies by vertically buring into the body of water. It features a spindle-shaped structure with two pliable apertures on opposite sides, allowing fish to enter from both directions, one opening against and another along with the water stream. The trap is secured to the water bottom using six bamboo slits or sticks, with two sticks crossed at the base and two each at the end and centre (Fig 3-n).

Chupohi

Chupohi is a crucial component of a fishing net trap called jaal. It helps catch small fish by supporting the net's structure. Two *chupohi* are crossed at the center creating four tips to which the net is attached (Fig 3-o). A big bamboo pole is tied to the intersection, and a rope is used to tow and lift the net. The net is operated by casting it into the water, securing the bamboo, and then pulling the rope to retrieve the catch

Jakoi

It is a triangular fishing gear used to catch small fishes in ponds, bogs or streams (Fig 3-p). Crafted with very thin stilts woven into a triangular frame made of bamboo strips, it features a handle at the top for fishermen to hold while drawing it through the water.

Juluki

These bamboo structures have a cylindrical shape with a broad base that tapers toward the end. They feature intricate interlocking designs similar to *Polo*, but with a more complex pattern (Fig 3-q).

Khaloi

The *khaloi* is a pot-shaped container made from split bamboo, worn by fishermen at the waist with a fabric or rope tie. It stores caught fish, sometimes partially submerged in water to keep them alive longer. Available in various sizes, the *khaloi* is a practical tool for fishermen (Fig 3-r).

Khuka

Made of cylindrical bamboo trap features a wide base tapering to the top, with two internal flexible openings. Fish enter through the larger outer opening as water flows in, the fish getting trapped in the first flexible aperture and then the second. When submerged, the tapered end's opening closes, securing the catch. The trap is positioned vertically in shallow water currents to capture small fish (Fig 3-s).

Polo

Polo is a bell-shaped bamboo trap with a wide base and a narrow end. To protect against injuries from the sharp edges, a little tire piece covers the narrower end to prevent injuries. Fishermen use it in shallow water by plunging it into the water, feeling for fish with their hand through the narrow end, and capturing them in the mud. They then repeat the process at a distance.

Lahoni

A traditional instrument used for draining small ponds to catch fish (Fig 3-u). It is made up of flat bamboo strips, measuring approximately one foot in length. After woven, it is fitted into a small boat shaped frame and tied with cane threads. It features a 3-4 feet long apical part of bamboo handle attached for easy use during pond draining or irrigation.



Figure 3. Bamboo gadgets used in fishing- (n) Chepa (o) Chupohi (p) Jakoi (q) Juluki (r) Khaloi (s) Khuka (t) Polo (u) Lahoni.

Miscellaneous

Bo- chunga

A handloom tool, made from a hollow bamboo stem, is used to arrange the threads before weaving (Fig 4-a). Measuring around one foot in length, it plays a crucial role in preparing the loom for textile production.

Chereki

This bamboo gadget, featuring a semi-square frame, is used to organize threads in order. It serves as an intermediary step, allowing threads to be transferred from the *chereki* to the spinning wheel (Fig 4-b).

Chiri

It is a small bamboo scale like structure which is kept in between the fixed threads of the loom (Fig 4-c).

Ugha

This small, square-shaped frame is used to arrange threads in order before shifting them to the spinning wheel (Fig 4-d). Its compact design facilitates thread organization.



Figure 4 .Miscellaneous bamboo gadgets- (a) *Bo- chunga* (b) *Chereki* (c) *Chiri* (d) *Ugha* (e) *Barhoni* (f) *Bichoni* (g) *Chakoni* (h) *Fu-chunga* (i) *Jopa* (j) *Murha* (k) *Banhi* (l) *Gagana* (m) *Toka*

Barhoni

This traditional bamboo broom, widely used across the state of Assam is crafted by splitting small bamboo pieces into finer strips and tying them together (Fig 4-e). It's simple yet effective design makes it a popular household item.

Bichoni

It is a handmade bamboo fan comes in various shapes, from square to round. Crafted by thinly slicing bamboo pieces, stitching them together, and attaching the finished fan to a holder stick with cane thread, it is a functional and traditional accessory (Fig 4-f).

Chakoni

It is a bamboo strainer. Made from fine threads of tender bamboo, tied to a bamboo frame with cane thread. Its lightweight, cup-shaped design makes it ideal for straining tea (Fig 4-g).

Fu- chunga

This traditional fire-blowing tool is a hollow bamboo tube used to kindle fires, particularly for cooking with fire-wood (Fig 4h). Its simple design enables efficient airflow to ignite flames. *Jopa* It is a bamboo box. It is made from finely sliced 'kathi' bamboo strips tied with cane thread, is reinforced with a sturdy bamboo frame. It is designed for storing clothes, showcasing skilled craftsmanship (Fig 4-i).

Murha

This bamboo stool features a sturdy frame made from bamboo sticks, with a seat crafted from intricately woven cane. The cane threads are stitched in an interlinked network providing a durable and comfortable seating surface (Fig 4-j).

Banhi

This traditional flute is an integral part of Assam's cultural heritage, played during Rongali Bihu celebrations (Fig 4-k) and featured in folk songs. Its melodic sound adds to the festive spirit and rich musical traditions."

Gagana

It is a musical instrument played during Rongali Bihu celebrations in Assam. Crafted from thin slice of bamboo taken from the plant tip. Its unique sound adds to the festive atmosphere. Fig 4-I).

Toka

It is a musical instrument made from a single bamboo culm, split into two pieces with a node at the base. These split pieces are carefully attached to the node, creating a unique sound-producing instrument (Fig 4-m).



Figure 5. Use of Bambusa tulda and Bambusa balcooa in different bamboo gadgets

Sl. No.	Name of the item	Bamboo species used	Other items used
1.	Barhoni	Bambusa tulda Roxb.	Cane
2.	Banhi	Bambusa tulda Roxb.	N/A
3.	Bhar pachi	Bambusa tulda Roxb.	Cane
4.	Bichoni	Bambusa tulda Roxb.	Cane
5.	Bo-chunga	Bambusa tulda Roxb.	N/A
6.	Chakoni	Bambusa tulda Roxb.	Cane
7.	Chaloni	Bambusa tulda Roxb.	Cane
8.	Chepa	Bambusa tulda Roxb.	Cane
9.	Chereki	Bambusa tulda Roxb.	Cane
10.	Chiri	Bambusa tulda Roxb.	N/A
11.	Chupohi	Bambusa tulda Roxb.	Cane
12.	Dhora	Bambusa tulda Roxb.	Cane
13.	Dola	Bambusa tulda Roxb.	Cane
14.	Doon	Bambusa tulda Roxb.	Cane
15.	Dooli	Bambusa tulda Roxb.	Cane
16.	Fu chunga	Bambusa tulda Roxb.	N/A
17.	Gagana	Bambusa tulda Roxb.	N/A
18.	Gobar pachi	Bambusa tulda Roxb.	Cane
19.	Jakoi	Bambusa tulda Roxb.	Cane
20.	Japi	Bambusa tulda Roxb.	Cane/Fan tree
21.	Јора	Bambusa tulda Roxb.	Cane
22.	Juluki	Bambusa tulda Roxb.	Cane
23.	Khaloi	Bambusa tulda Roxb.	Cane
24.	Khorahi	<i>Bambusa tulda</i> Roxb.	Cane

Table 2: Traditionally used bamboo gadgets of the Nath-Yogi community

25.	Khuka	<i>Bambusa tulda</i> Roxb.	Cane
26.	Koola	<i>Bambusa tulda</i> Roxb.	Cane
27.	Lahoni	Bambusa tulda Roxb.	Cane
28.	Моі	<i>Bambusa balcooa</i> Roxb.	Cane
29.	Murha	Bambusa tulda Roxb.	Cane
30.	Pachi	Bambusa tulda Roxb.	Cane
31.	Polo	<i>Bambusa balcooa</i> Roxb.	Cane
32.	Тока	Bambusa tulda Roxb.	N/A
33.	Ugha	Bambusa tulda Roxb.	Wood, cane
34.	Ukhon	<i>Bambusa balcooa</i> Roxb.	N/A

Types of bamboo gadgets



Figure 6. Different types of traditional bamboo gadgets based on their uses

Income through bamboo crafts

Table 3 indicates the income of bamboo craftsmen. Notably, certain high demand bamboo products that are used throughout the year generate higher daily income for craftsmen compared to the average daily earning of rural Indian workers. Specifically, *Chaloni, Koola, Dhora, Jakoi, Juluki,* and *Chepa* each yield 2.04% more income than average daily earnings, while *Khorahi* and *Japi* yield 14.79% more, *Polo* yields 27.55% more, and *Dola* yields 37% more. Furthermore, *Murha, Doon,* and *Khuka* yield the highest increase at 78.57% each (Fig. 7 & Fig. 8). It is noteworthy that *Bambusa tulda* Roxb. is used to craft 31 (91%) items whereas *Bambusa balcooa* Roxb. is used only in 3 items (Fig. 5).

Table 3. Details of income of per person from one unit of bamboo (some "high demand" products)

ltem	Unit of products	Daily earning of	Average daily	Total earning	Total expenditure in	
	crafted per	per person	earning by rural	from one unit	crafting one unit of	
	person per day	(INR.)	Indian workers	of bamboo	bamboo (INR)	
			(2018-2022)	(INR)		
			INR. (Statista,			
			2023)			
Chaloni	4	4x100= 400	392	1000 (10)	200 (Bamboo-100;	
					Cane- 100).	
Dola	3	3x180= 540	392	1440 (8)	200 (Bamboo-100;	
					Cane- 100).	

Khorahi	3	3x150= 450	392	1800 (12)	300 (Bamboo-100;
					Cane- 200).
Murha	1	1x700= 700	392	7000 (10)	2100 (Bamboo- 100;
					Cane- 2000).
Doon	2	2x350= 700	392	5250 (15)	1600 (Bamboo-100;
					Cane- 1500).
Koola	2	2x200= 400	392	1600 (8)	500 (Bamboo-100;
					Cane- 400).
Dhora	4	4x100= 400	392	600 (6)	200 (Bamboo-100;
					Cane- 100).
Japi	3	3x150= 450	392	750 (5)	250 (Bamboo-100;
					Cane- 50; Chinese fan
					palm leaf- 100).
Jakoi	1	1x400= 400	392	2400 (6)	500 (Bamboo-100;
					Cane- 400).
Juluki	2	2x200= 400	392	800 (4)	250 (Bamboo- 100;
					Cane- 150).
Polo	1	1x500= 500	392	1500 (3)	400 (Bamboo-100;
					Cane-300).
Chepa	2	2x200= 400	392	600 (3)	200 (Bamboo- 100;
					Cane- 100).
Khuka	2	2x350= 700	392	1400 (4)	500 (Bamboo-100;
					Cane-400).



Figure 7. (a) Quantity of products & income per unit of bamboo

.



Figure 7. (b) Quantity of products & income per unit of bamboo



Figure 8. Comparison of average daily income of rural Indian workers and bamboo craftsmen of Nath-Yogi community of Sivasagar.

Discussion

A multipurpose material, bamboo is used to make a variety of products, including furniture, basketry, medicines, pickled or stewed bamboo shoots, scaffolding, paper pulp, construction materials, agricultural tools, weaving materials, plywood, and particle board. The rapid growth of this grass can be transformed into a robust raw material for building and a variety of semi-industrialized products through resource management and technological advancements. Bamboo's enormous potential has been demonstrated in both new industrial applications and contemporary building design (Jamatia 2012). Additionally, bamboo is utilized to create kitchen tools such as chopsticks, a spoon, and a spatula, straws, bottles, bowls, and so on. This craft is a vital source of livelihood for many in society. Dried culms of cane are also used for making walking sticks, musical instruments, fishing rods, fish traps, bag handles, and long roof cleaning brushes (Sahu & Das 2024). Our study recorded, 34 traditionally used bamboo gadgets, including 13 agriculture-based gadgets, 8 fishing gadgets, and 13 gadgets used for various purposes including traditional music (Fig. 6). Similar bamboo gadgets have been reported in different states of India (Chakravarty & Sharma 2013, Gurumayum & Choudhury 2009, Jha *et al.* 2014, Prasad *et al.* 2013). Cane was the mostly commonly used plant species alongside bamboo, with dried cane threads used in 27 items. Fan tree and wood were each used in one item.

The significance of non-timber forest products (NTFPs) in the everyday lives of rural residents in developing nations cannot be overstated. Numerous studies have explored the potential role of NTFPs as safety nets for the rural poor and their contribution to improving rural livelihood while concurrently conserving forests (Ambrose-Oji 2003, Delang 2006, Mahapatra *et al.* 2005, Tiwari 2005). The selling of NTFPs and goods made from them is a key component of the forest-dependent communities' strategies to diversify their sources of income (Shackleton & Shackleton 2004, Vormisto 2002). Moreover, NTFP sales help women, a vulnerable segment of society, cope with hardship (Shackleton & Campbell 2007). Our study highlights that bamboo crafts can increase the daily income of the craftsmen, by 2%- 78% compared to the average daily income of a rural Indian workers (Table 2).

Bamboo crafts are inextricable part of the rural Assam society. However, the craftsmen face significant challenges, primarily the scanty supply of bamboo. Despite the high demand for bamboo gadgets in the market, craftsmen struggle to access sufficient raw materials. The local communities' practice of eradicating bamboo forests to replace them with economically important timber plants and the rise of small-scale tea gardening further exacerbate the destruction of locally owned bamboo forests. The disinterest of younger generation poses another threat to traditional bamboo crafts. Notably, a large number of bamboo population are harvested at very tender stage due to the high demand of bamboo shoots as a food in the study region.

The limited supply and production of cane, another essential material, pose additional challenges. Since cane is produced in only some small pockets of the study area, its supply is insufficient for total bamboo gadget production. The irregular supply of caneleads to indiscriminate price increases, often beyond the buying capacity of craftsmen.

Conclusion

Traditional bamboo gadgets are a trademark of the Nath-Yogi community craftsmanship. Along with their eco-friendly nature, they have multifaceted utility prospects. Adopting modern techniques will provide a new direction to the traditional bamboo industry in the region, resulting in increased production and smoother products. Conservation of bamboo forests should be another priority for both the public and government. Elevating village level industries to a higher level will attract educated youngsters, solving rural unemployment issues and preserving traditional bamboo-based skills in the process.

Declarations

List of abbreviations: FSI: Forest Survey of India; NTFPs: Non Timber Forest Products.

Ethics approval and consent to participate: The data were collected with respect to confidentiality, anonymity and consent of the respondents who were informed about the objectives of the current study before the interview. **Consent for publication:** Not applicable

Availability of data and materials: Not applicable

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