

# VALUE CHAIN DYNAMICS AND VARIEGATED INSTITUTIONAL ENVIRONMENTS:

## INCLUSION AND UPGRADING OF WOMEN-OWNED BAMBOO MICRO-ENTERPRISES

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9 July, 2021



CEMCA



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July 2021



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### **CBDS WORKING PAPER 2021/3**

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[www.cbds.center](http://www.cbds.center)

ISBN 978-87-973170-2-0 (pdf)

CBDS publications can be downloaded free of charge from [www.cbds.center](http://www.cbds.center)

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# **Value chain dynamics and variegated institutional environments: Inclusion and upgrading of women-owned bamboo micro-enterprises**

Peter Lund-Thomsen, Uzma Rehman and Søren Jeppesen

## **Abstract**

This working paper explores how value chain dynamics and variegated institutional environments affect the prospects for inclusion/exclusion and economic upgrading of women-owned micro-enterprises to the Indian bamboo value chain. The paper combines insights from the literatures on value chain analysis and institutional theory to create a novel theoretical framework for answering these questions. It then applies this framework to analysis of the inclusion/exclusion and economic upgrading challenges of micro-enterprises in the bamboo value chains of four Indian states: Assam and Meghalaya in the Northeast, Odisha in the East, and Madhya Pradesh in the Center. The empirical analysis highlights how the interaction between value chain dynamics and regulatory, normative, and cultural-cognitive institutions at different scales (national, state, and local) both enhance and undermine the inclusion/exclusion and economic upgrading of micro-enterprises to the Indian bamboo value chains with subsequent implications for marginalized bamboo producer communities in India. The conclusion highlights the main findings, policy, and research implications of the working paper.

## **Acknowledgements**

The authors would like to thank the EU-Switch Asia Program II for the support provided for this study under the EU Switch Asia II project, Promote Bamboo MSME Clusters for Sustainable Development (Reference no.: EuropeAid/154338/DH/ACT/Multi), the Foundation for Micro, small, and medium-enterprise clusters (FMC), including national FMC staff, regional coordinators, support staff, and facilitating agencies in India for their extensive support, kindness, and cooperation in making this study possible. Any errors are the sole responsibility of the authors and should not be attributed to the European Commission or any of the agencies involved in the implementation of this grant.

## Introduction

In this working paper, we explore how value chain dynamics and variegated institutional environments affect the prospects for the economic upgrading and access of micro-enterprises to the Indian bamboo value chain. Our motivation and interest in unpacking this topic are related to several interrelated empirical, policy, and theoretical developments. First, it is widely recognized that micro, small, and medium-sized enterprises have an important contribution to make to job creation and local economic development in the Global South (Jamali et al., 2017; ILO, 2019). In particular, it has been argued that clustering of SMEs both lead to passive gains for these enterprises (such as access to a trained workforce, specialized subcontractors, service providers, and support institutions), and that SMEs can benefit from actively collaborating with one another (for instance, through joint infrastructure investments, training, facilitation of compliance with standard and regulatory requirements) (Schmitz and Nadvi, 1999; UNIDO, 2020). However, whereas we know a lot about the prospects for inclusion and economic upgrading of medium-sized and small enterprises in value chains in the Global South, we know less about the challenges faced by micro-enterprises in this regard.

While a variety of ways exist for defining MSMEs, we here understand micro-enterprises as those employing 1-5 people, small enterprises as including 6-25 employees, and medium-sized enterprises 26-50 staff (Jamali et al., 2017). Yet in spite of the limited attention paid to micro-enterprises in value chain studies, several academics, policy-makers and institutions have advocated that the participation of micro-enterprises may be an important source of income growth and poverty reduction amongst some of the most marginalized sections of populations in the global South, including those operating in the informal economy (Boyle et al., 2016; ILO; 2019).

It is this second factor, the (often) marginalized backgrounds of those running micro-enterprises in value chains in the Global South, which leads us to ponder whether such backgrounds of the owners or operators of these micro-enterprises mediate their prospects for economic upgrading and inclusion in value chains. For example, it is widely recognized that particular population segments, sometimes known as indigenous people in a wider international context, sometimes labelled scheduled castes and tribes in the South Asian context, have traditionally suffered from low educational levels, been subject to various types of discrimination (and sometimes even atrocities), and otherwise marginalized from 'mainstream' society in terms of income, employment, access to education, and health service benefits (Mamo, 2020). In short, they have faced discrimination in terms of their exclusion from, terms of participation, and treatment in value chains (ETI, 2019). To the best of our knowledge, linking the background of micro-enterprise owners in terms of their scheduled caste or schedule tribe origins to their prospects for enterprise upgrading and inclusion in value chains remains an underexplored topic in both academic and policy research on value chains.

Our third motivation for writing this working paper has been the recent interest in value chain analysis in unpacking the role of regional, national, and local value chains in the global South (Pasquali, et al. 2020; Pasquali, 2021). Until recently, the academic interest in value chain analysis focused almost exclusively on global value chains, particularly how multinational companies were able to organize such chains across time and space, and how local producers could strengthen their position, terms of participation, and the profits reaped from value chain participation (Lund-Thomsen, 2021). More recently, studies have demonstrated that South-

South trade now exceeds North-South trade, and that intra-regional trade commerce accounts for a large share of the Global South's improved trade performance (Barrientos et al., 2016; Horner and Nadvi, 2018). However, as Pasquali et al (2020) argue, our understanding of the dynamics behind regional value chains are at best limited. Hence, investigating the prospects for micro-enterprise upgrading and inclusion in regional, national, and local value chains appears to us as an interesting and worthwhile area of investigation.

This links up to another important current issue; namely, the increasing interest in finding more sustainable raw material sources for manufacturing and selling products across the world (Kampelmann, 2020; Ellen MacArthur Foundation, 2021). For instance, in the global fashion industry, the production of cotton has been associated with negative environmental implications such as the use of hazardous pesticides, occupational health and safety challenges for small-scale producers and workers, and the employment of child and forced labor (Riisgaard et al, 2021). This had led to an interest in exploring more sustainable raw material alternatives; one of which is bamboo. Bamboo is considered to provide several environmental, economic, and social benefits to society. Bamboo is a sustainable resource that can grow under a range of climatic conditions, but preferably a tropical climate. It provides approximately 35% more oxygen and absorbs 40% more carbon dioxide as compared to trees, which results in a substantial improvement in the air quality (FMC, 2018). Further, cultivation of bamboos offer carbon fixation, controls soil erosion, and purifies the environment. We focus on the Indian bamboo value chain as there are more than 5 million people, half of them being women in across 18 states out of the 29 states of India where abundant quantity of bamboo is available as a resource for their livelihoods. In the Indian bamboo processing and product manufacturing segment, the number of people earning their livelihoods from this work is estimated to be 3 million (FMC, 2018).

Finally, our working paper ties in with the increasing recognition that variegated institutional environments play an important role in shaping the functioning of value chains (Neilson and Pritchard, 2009; Eckhart and Poletti, 2018, Coe, 2021). Various authors have thus pointed to the importance of both formal institutions in terms of laws, regulations, and enforcement agencies of the state as well as informal norms and values amongst value chain participations in shaping not only how value chains are organized, but also the prospects for local producer upgrading, as well as the types of ethical guidelines that ought to guide local production (Lund-Thomsen and Nadvi, 2010; Dermawan and Hospes, 2018). Critically, in a country as large and diverse as India, variegated institutional environments have an important function to play in shaping value chain dynamics, producer upgrading options, and the inclusion/exclusion of women-owned micro-enterprises from the chain (Neilson and Pritchard, 2009). For this study, we therefore have to look at how value chain dynamics and variegated institutional environments shape the inclusion/exclusion and economic upgrading prospects of women-owned micro-enterprises in the bamboo value chain by zooming in on four states that illustrate the geographical and climatic diversity of India as a bamboo producing region: the states of Meghalaya and Assam in the Northeast, Madhya Pradesh in the Center, and Odisha (formerly, Orissa) in the East.

In theoretical terms, we innovate by combining the value chain framework and institutional theory, allowing us to conceptualize how the interaction between value chain dynamics and regulatory, normative, as well as cognitive institutions affect the inclusion/exclusion and upgrading prospects in the Indian bamboo value chain. We use a stylized case study to illustrate

how these value chain and institutional dynamics play out in both similar and different ways in four producer states in three key producing regions of India: Northeast, East, and Central India.

First, we develop the theoretical framework of the paper combining insights from the literatures on value chain analysis and institutional theory. Subsequently, we go onto presenting the context of our study: the bamboo industry of India and the four producer states of Assam, Meghalaya, Madhya Pradesh, and Odisha. Next, we describe the methodology for the study, including our fieldwork in Denmark and India (Assam, Meghalaya, Madhya Pradesh, and Odisha). In the empirical analysis, we first engage in a ‘vertical analysis’ of how chain dynamics in the Indian bamboo value chain affect the inclusion/exclusion and upgrading prospects of women-owned micro-enterprises in the industry. We then turn to a ‘horizontal’ analysis of how regulatory, normative, and cultural-cognitive institutions in India enable and/or constrain the economic upgrading and inclusion/exclusion of women-owned micro-enterprises in India’s bamboo value chain. Finally, the conclusion summarizes the paper’s main line of argument and outlines future research and policy implications of its analysis.

## **Theoretical considerations**

### *The value chain literature*

The value chain literature has made substantial progress in terms of analyzing how transnational industries were governed by large multinational companies through interfirm networks (Ponte et al. 2019). Thus, value chain governance has sought to analyze how power was exercised in such interfirm networks, particularly by multinational companies who organized their vast networks of suppliers on a global basis (Gereffi, 2019). Similarly, value chain governance was understood as multinational companies having the power to determine the kinds of products produced in such networks, their price, the quantities of products, the time of production and delivery, and select which manufacturers were to deliver these orders (Lund-Thomsen and Lindgreen, 2020). Moreover, multinational companies have been portrayed in the literature as having the power to dictate the social and environmental conditions under which goods and services were to be produced in factories – often, located in lower-cost locations in the global South (Khan et al., 2020).

The value chain literature has thus made strides in terms of analyzing how local enterprises could most usefully be inserted in such networks in order to maximize the economic gain they accrue from their participation (Kaplinsky, 2005). A key assumption in the literature has been that these enterprises could strengthen their position by upgrading their products, their production, processes, moving into higher value-added stages of the chain, and using skills learned from competing in one industry to gain competitive advantage in other industries (Gereffi, 2018).

We here distinguish between national, state-level and local level value chains in terms of governance, upgrading challenges, and the inclusion/exclusion of women-owned micro-enterprises in the bamboo value chain of India. In national-level value chains, lead firm governance of the chain is more pronounced. By lead firm governance, we mean that national-level retailers have the power to determine the kinds of bamboo products to be produced, where, when, how, in which quantity, at what price, and under which social and environmental

conditions. In other words, national-level retailers orchestrate their own value chain networks. We speculate that they do this right from: (i) owning/managing bamboo farms at the village-level, ensuring the scientific growing of bamboo as a raw material; (ii) ensuring the harvesting and transportation of bamboo to local producer cooperatives/self-help groups/factories that jointly manufacture products according to pre-specified criteria by the retailer; (iii) to intermediary agents that purchase these products and ensure their transportation to stores/fairs/markets from states throughout the country to 'national-level' cities such as Delhi, Mumbai or Calcutta.

In national-level bamboo value chains, in terms of upgrading, lead firms also actively support the training of artisans in the making of particular products and the capacity building of women-owned micro-enterprises in running small producer collectives where artisans may come and work in accordance with the orders specified by the retailer. In these chains, there is a direct link between information from urban markets (in terms of the types of products and designs that urban customers are interested in obtaining) and producers (who manufacture products in direct response to market demands). Retailers here play a critical role in terms of facilitating this type of information flow up and down the value chain. Regarding returns from value chain participation, these will typically be larger for women-owned micro-enterprises that run local producer collectives in villages. As bamboo-based products are typically of better quality and able to command a higher price in national-level, urban markets, women-owned micro-enterprises can also increase their earnings, and, in turn, pass on higher margins to local, artisanal producers at the local-level.

In state-level bamboo value chains, lead firm governance is much less pronounced. While some bamboo trading companies may still follow the value chain set-up experienced in national-level chains, urban consumers of bamboo-based products in medium-sized towns in individual states tend to be less demanding in terms of their quality requirements, while they also buy bamboo-products that command a lower price than what can be obtained from selling products into national-level value chains. Hence, while there are some retailers and government emporiums that orchestrate bamboo value chains at the state level, these value chains are more frequently characterized by the absence of lead firm governance. Here trading relations reflect market-based relations where several layers of intermediary trading agents buy and sell bamboo-based products that have been manufactured by women-owned micro-enterprises that gather products amongst local artisans. Hence, there is little information flow/exchange between consumers in towns and entrepreneurs that run women-owned micro-enterprises. In terms of upgrading, there is thus also a lack of systematic training of both women micro-entrepreneurs and bamboo artisans at the local level. Instead, basic and sometimes outdated products that may not match market demand are produced at the local level in both villages and towns. In relation to returns obtained by women-owned micro-enterprises from participating in state-level value chains, these are lower as they can 'only' sell products with more basic design to consumers in medium-sized and smaller towns that have more limited purchasing power throughout individual states.

In local-level bamboo value chains, there is a general absence of lead firm governance. Instead, the manufacturing and trading with bamboo-based products are typically characterized by market-based relationships. Women-owned micro-enterprises may sometimes procure bamboo raw materials, manufacture bamboo-based products, and sell them in local urban markets. Alternatively, some women-owned micro-enterprises may specialize in gathering

bamboo-based products as aggregators and selling them in urban-based markets. This aggregator function in the value chain may also be played by women-owned micro-enterprises through the procurement of bamboo as a raw materials and selling bamboo canes to local artisans in villages. In terms of upgrading, efforts by micro- enterprises at improving the products and production processes of bamboo artisans are largely absent, implying skills shortages, lack of knowledge of recent product designs, and non-awareness of market demands. In terms of returns to women-owned micro-enterprises from their participation in the bamboo value chain, these are minimal, possibly enough for these women-owned micro-enterprises to gain sufficient income to sustain themselves and their immediate household members. However, their returns from value chain participation will be so minimal that they will not able to undertake 'extra' investments in their enterprises, and they will be hesitant to engage in significant risk-taking in the running of their enterprises, as entrepreneurial failure could immediately affect their own and their family's survival prospects.

### *Horizontal relations*

In this working paper, we use institutional theory as an analytical lens to explain inclusion/exclusion and economic upgrading of women-owned micro-enterprises in the bamboo value chains of India (Welter et al., 2014). Institutions are here understood to be enabling and constraining boundaries for individual behavior and actions that affect the nature and spread of these enterprises (Smallbone and Welter, 2009a). On the one hand, institutions help reduce transaction costs, uncertainty and risks for individual entrepreneurial behavior. On the other hand, institutions may also increase transaction costs for entrepreneurs, influencing their prospects for developing their business and the returns they accrue from their entrepreneurial activities (Welter et al., 2014). In short, what Scott (2008) describes as regulative, normative, and cultural-cognitive institutions may – both directly and indirectly - impact upon whether entrepreneurial behavior is profitable and desirable (Amine and Staub, 2009).

In defining regulatory institutions, Amine and Staub (2009) argue that these institutions include laws, regulations and government policies that either enable or inhibit the creation of new businesses, reduce or increase the risks faced by entrepreneurs, and facilitate or hinder their access to resources. Examples may include regulations for market entry and exit and rules covering commercial transactions. Regulatory institutions may also relate to policies that influence the desirability and feasibility of entrepreneurship, such as tax and social security and labor market as well as business development policies (Welter et al, 2014). For instance, in relation to women's entrepreneurship studies, Amine and Staub (2009) also identify a number of regulatory institutions that particularly affect women's entrepreneurial behavior in Sub-Saharan Africa. These include (i) inheritance laws and ownership of property; (ii) lack of access to capital; and (iii) lack of access to micro-loans.

Normative institutions are values that regulate what is deemed preferable or desirable (Amine and Staub, 2009), along with standards for assessing conformity with these values, and norms that are non-written rules that help guide value-driven actions and behavior (Scott, 2008). As normative institutions define what constitutes acceptable behavior for individuals in a society or a group, for instance ethnic communities, they also tend to define the feasibility and prospects of entrepreneurial behavior, such as whether a particular business practice is in keeping with local cultural norms. For instance, normative institutions often define gender roles

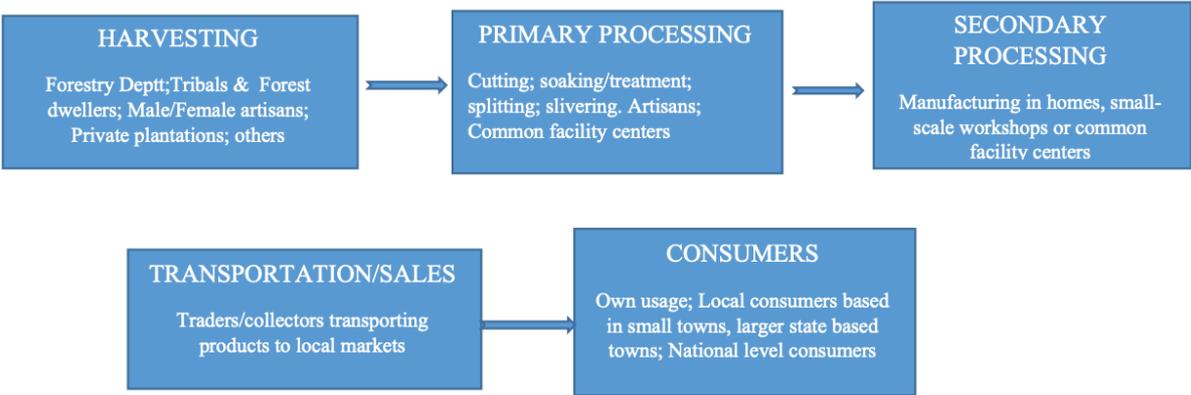
within a society, prescribing typical male and female behavior, sometimes implying that women’s entrepreneurship is considered less socially desirable, thus influencing the self-perceptions of women in ways that further discourage their engagement in entrepreneurship. Finally, cultural-cognitive institutions are closely related to normative institutions, as they are often both labelled informal or non-codified institutions that are deeply engrained within a society (Welter et al, 2014). However, cultural-cognitive institutions may be understood as the subjective interpretation of normative institutions; in short, they embody a shared understanding of individuals of ‘the way we do things’, allowing these individuals to engage in routine behavior (Scott, 2008).

Amine and Staub (2009) highlight that cognitive institutions are made up of a people’s cognitive structures and social knowledge. These institutions play an important role in influencing schemas, frames, and inferential sets, which determine how group members interpret and select information (Scott, 2001). Amine and Staub (2009, p. 200) furthermore suggest that the absence of an entrepreneurial tradition and formal educational support for entrepreneurial ventures may mean that individuals may not have sufficient knowledge to initiate a small business. In this connection, examples may include how family members overtly model entrepreneurial behavior. Real-life examples and direct personal advice may shape the entrepreneurial behavior by enabling to access knowledge about how to become and act as an entrepreneur.

**India in the Global Bamboo Industry**

The stylized bamboo value chain for India is shown below, including the growing of bamboo, harvesting, primary processing, secondary processing, transportation, marketing, and sales.

Figure 1: A stylized bamboo value chain for India



Source: Authors’ own elaboration

As a raw material, bamboo furthermore feeds into multiple higher-tier value chains including construction, furniture, handicrafts, and accessories. Most bamboo trade is done within Asia, within Europe, and between Asia and Europe and North America. Many countries in Asia including China, India, and Japan as well as African countries such as Ghana, Nigeria and Cameroon promote the cultivation of Bamboo. China and Vietnam are the world’s largest

exporters while EU, USA and Japan constitute the biggest importers of bamboo and its related products.

Within this wider global scenario, India has 30% of the world's bamboo resources – with the world's largest growing area of 15.69 million hectares (FSI, 2017). However, India taps only one-tenth of its bamboo potential – contributing to a 4 percent share of the global market for bamboo products. At the same time, India is the second richest country in the world in terms of bamboo genetic resources, after China (Baksy, 2013). Indian bamboo forests contain: a) 23 genera; 19 indigenous; b) 136 species, with 125 indigenous and 11 exotic. Research shows that there is an enormous potential for bamboo for “the development of a pan-Indian industry based on local sourcing of raw materials, and towards the potential for the Bamboo sector to achieve near-source value addition” (Baksy, 2013, 8).

If we take a closer look at the Indian bamboo value chains, bamboo harvesters are either farmers with their private bamboo plantations or tribal collectors from the state controlled forests governed by the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. This legislation, also popularly known as Joint Forest Management Act, recognizes rights of tribal people to manage and harvest forest resources, along with the state). Bamboo harvesters are most often poor, living in villages in and around bamboo forests. They sell raw & un-treated bamboo in small quantities to the local women entrepreneurs that run women-owned micro-enterprises for further value addition locally and to large paper factories as it is with no value addition for them. Bamboo harvesting is a source of partial livelihood for most of them along with farming, poultry and animal rearing. Some of them also undertake primary processing of bamboo.

Most of the bamboo products require shearing of bamboo on their nodes, splitting bamboo and then making slivers and stripe bamboo skin for further usage in traditional products. These operations are undertaken at cottage scale using hand-tools and primary equipment in households or neighbourhood in small groups of primary processors. The bamboo sticks can be used by primary or secondary producers to make incense sticks and woven blinds. Slivers are mostly woven to either make traditional baskets, bins & other utility products for local consumption or for a range of handicrafts such as lampshades, pen stands and fruit baskets as souvenirs for tourists. Slivers are also used for making tree guards (women sheets of bamboo to protect sapling and young plants) and mats as intermediary products to make industrial boards or tiles by secondary processors. The unusable parts of bamboo such as clumps and the waste bamboo can be used to make charcoal using traditional small pit furnaces for self-consumption or for selling locally. Basic furniture is also made using cut bamboo poles. The bamboo poles are often used without treatment to provide scaffolding to make local houses where bundled sheets of bamboo mats are used for roofing, partitions or doors. There exists local markets for these products through rural bazaars while intermediaries aggregate mats, sticks and select utility products for onward selling to the secondary processors and neighbouring urban markets (FMC, 2018).

Table 1 below outlines some the main similarities and differences in the climatic conditions, scheduled castes and tribes involved in bamboo production, the number of artisans involved in bamboo production, types of women-owned micro-enterprises in bamboo production, and livelihood options in Assam, Meghalaya, Madhya Pradesh, and Odisha.

**Table 1: Similarities and Differences in Characteristics of Four Bamboo Producer States**

	Assam	Meghalaya	Madhya Pradesh	Odisha
Geography/climatic conditions	Assam is a state in Northeastern India. With the tropical monsoon climate, Assam is temperate (summer max. at 95–100 °F or 35–38 °C and winter min. at 43–46 °F or 6–8 °C) and experiences heavy rainfall and high humidity.	Located in the Northeast Meghalaya in the wettest region of India. About 70% of the state is forested. Its mountain forests are distinct from the lowland tropical forests to the north and south. The forests are notable for the biodiversity of mammals, birds, and plants.	Madhya Pradesh is a state in Central India. It has a subtropical climate with a hot dry summer (April–June), followed by monsoon rains (July–September) and a cool and relatively dry winter. The area under bamboo has fallen by 44% over a period of roughly 25 years. Bamboo artisans often live in mountainous areas remote from larger cities.	Odisha formerly Orissa is an Indian state located in southeastern coastal India. The state has tropical climate, characterized by high temperature, high humidity, medium to high rainfall and short and mild winters.
Scheduled Caste/Tribes	Mostly from Muslim community but also some Hindus	The Garo, Khasis and the Jaintia are the chief tribes in the State. The Khasis observe matrilineal line of descent.	The Baser is the single largest SC community involved in Bamboo primary processing and trading. Scheduled castes involved in bamboo production also include Korku Gond.	The Thuri caste (including Betra and Mahar sub castes).
No. of Bamboo Artisans	There are 550 household skilled artisan	There are nearly 850 skilled household	2000 household units, 16 micro-	3419 families involved in

	families reside in the villages spending 300 days or more in a year to make bamboo products.	artisans present in different bamboo clusters in three blocks of two districts viz. East Khasi Hills and West Jaintia Hills.	units, 1 small unit.	bamboo production.
Types of Women- Owned Bamboo Micro-enterprises	a) Owner of Bamboo workshop. b)Aggregators/trader.	1. Own account enterprises. (Individual artisans that invest time and money and take risks). 2. Small budding business where they take orders, employ 2-3 people on seasonal basis. 3. Traders. 4. Social entrepreneur	1. Traders, 2. Village-based artisan-cum-traders. 3. Town- based-artisan-cum-traders.	N/A
Types of Products	Round bamboo furniture, Lampshades, Tray, Magazine holder, Beer Mug or Cup, Handcrafted decorative Items.	Conical basket handicraft items used for storing and transporting various goods. Breadbasket, bamboo mats, flower vase, miniature of conical basket, winnowing fan, basket for storing clothes etc. Bamboo decorative items, dry flower, etc.	Bamboo used in Fencing, Ice-cream/Kulfi making sticks, Incense sticks, Flag making; Wall tiles, Decorative ply of Bamboo);Wall tiles, Decorative ply of Bamboo; Mostly colored baskets, Bamboo mats, weaved products; life-style products.	Bowls, winnowing tray, bird net, rice containers, bamboo sheets, bamboo mats & other utility products and bamboo products for performing puja, marriage ceremony.
Livelihood Options	Vegetables, paddy in small quantities. Agricultural agricultural	Artisans have multiple source of livelihood activities – be it piggery, poultry,	Cattle and pigs, drum-beaters for the village. Daily-wage casual laborers	Secondary occupation as daily labours in agricultural fields,

	labor during rainy season (sowing seeds) and winter season (harvesting crops).	broom grass collection, bay leave collection, 100 days work in MNREGA.	and one subgroup, the Dumar work as scavengers.	construction work and other local jobs, devotional rituals, available time to time.
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If we compare the geographical and climatic conditions of four bamboo-producing states, Assam and Meghalaya in the Northeast benefit from substantial rainfall, biodiversity, and temperatures that constitute ideal conditions for growing bamboo. With substantially less rainfall, Madhya Pradesh is a less ideal location for growing bamboo. While all states have experienced a drop in the area of bamboo coverage in recent years, bamboo deforestation is particularly pronounced in the villages near Betul in Madhya Pradesh. Odisha represents a middle ground in terms of growing conditions in between the Northeastern states of Assam and Madhya Pradesh with its high temperatures, high humidity, medium to high rainfall and short and mild winters. In 2017, the Indian government amended the Indian forest act so that bamboo ceased to be defined as a tree and instead was categorized as a grass with the intention of increasing the income of farmers and the green cover of the country. Bamboo grown in forest areas continues to be governed by the provisions of the Indian Forest Act (Koshy, 2017).

If we look at the bamboo growing communities these are mainly drawn from scheduled tribes and castes. Scheduled castes and scheduled tribes are officially designated groups of people recognized in the Constitution of India and the groups are designated in one or other of the categories. The Indian constitution lays down the general principles of positive discrimination for scheduled castes and scheduled tribes. The Indian government has taken a range of initiatives to improve the situation of scheduled tribes and castes in the country. These include protective arrangements (from social discrimination and atrocities), affirmative action (privileged action to education and jobs), and development initiatives (initiated to reduce the socio-economic gap between scheduled tribes/scheduled castes and other communities. There are also a large number of government institutions at the national and state levels that support bamboo producer communities, such as Ministry of Tribal Affairs in New Delhi, the national and state-level bamboo missions, state-level livelihood missions as well as rural development and marketing societies. Access to and use of forest produce is regulated by state-level forestry departments.

Regarding producer groups, the picture is not uniform throughout the bamboo growing states. In Assam, mainly Muslim but also some Hindu artisans are involved in bamboo production. Bamboo is often grown within the household in villages throughout the state and serve a wide-range of functions in state’s socio-economic and socio-cultural economy right from material for house construction in the villages, to the production of items for household use, and handicrafts and furniture sold mainly in local markets (FMC 2019a). By contrast, in Meghalaya, mainly the indigenous Khasi tribe is involved in bamboo production. The Khasi tribe is the only Mon-Kher speaking people in South Asia and follow a matrilineal system of descent and inheritance. The Khasi people often live in remote villages on the steep slopes of Meghalaya’s hills. These villages are generally several hours drive from the capital of Meghalaya, Shillong (FMC, 2019b). In Madhya Pradesh, the Basor caste is a community of bamboo workers that has

been involved in this traditional occupation since centuries, making products such as weaving baskets and winnowing mats, sieves, rattles, and flutes. As a marginalized part of Indian society, they form part of low Sudra caste, which is considered the lowest class of servants and peasants (FMC, 2020c). Finally, in Odisha, the Betra and Mahar subcastes, also known as Thuri, are engaged in bamboo activity, The Mahar subcaste is a class that came from the lowest group of the Hindu caste system, which has also experienced increase in social mobility after India's independence in 1947. Traditionally, they lived at the "outskirts of villages and performed a number of duties for the entire village. Their duties included those of village watchman, messenger, wall mender, adjudicator of boundary disputes, street sweeper, and remover of carcasses. They also worked as agricultural laborers and held some land, though they were not primarily farmers. In addition, they are involved in weaving bamboo baskets (FMC, 2019d).

If we consider the types of women-owned microenterprises that emerge from these producer communities, they are mainly own account enterprises, for instance, home-based women artisans that go to the forest, pick the bamboo, make products at home and take them to local markets. They can also be traders that buy and sell bamboo products – for instance, buying bamboo products from local artisans, transporting them to the local market in nearby town, and then selling them in small shops or roadside outlets. Alternatively, aggregators take orders from larger traders, give these orders to village-based artisans, pick up and deliver the goods from artisans to the traders. Finally, we have also seen examples of small-scale women entrepreneurs who ran a village-based workshop for the making of bamboo products and then sell these products to traders.

If we compare the products made by these bamboo producer communities, they mainly involved a broad range of products, right from bamboo as a raw material in housing, to various types of handicrafts, and products used for domestic purposes. Mainly, the bamboo products are manufactured by hand and/or with the use of light machinery, and they are mainly sold in local markets. Some producer communities also make products that are sold in state-level, national, or (to a very limited extent) international markets. Within the producer communities (varying from village to village) some bamboo manufacturers work with bamboo on a full-time basis and others on a part-time basis.

A final characteristic that seems to cut across these producer communities is that they are often engaged in multiple livelihood activities. While we do find some producers who are engaged in full-time bamboo work, it appears that many bamboo manufacturers see bamboo work as one out of a number of income generating opportunities that can help them reduce their financial vulnerability on any one profession as a whole. For instance, in Assam, bamboo producers are also involved in growing vegetables and agricultural work such as sowing seeds and harvesting crops. In Meghalaya, the Khasi tribe is also gathering broom grass, betel nut, and bay leaf. In Madhya Pradesh, the Basor caste is involved in raising cattle and pigs as well as daily wage labor. Finally, the Mahar and Betra subcastes in Odisha are, apart from bamboo work, often working as daily laborers in agricultural fields, construction work and other small-scale jobs. This mainly owes to seasonal demand for bamboo products that makes these artisans switch to other means of livelihood. For instance, they sometimes make paper bags that replace plastic bags in keeping with the state government's policy of curtailing the use of single use, plastic-based products. Due to the seasonal demand for these products, artisans have to find other means of livelihoods throughout the year.

## Methodology

In terms of research design, this is a comparative case study whereby we identify similarities and differences between Madhya Pradesh, Odisha, Assam and Meghalaya with a view to explaining the value chain dynamics and institutions that facilitate the inclusion/exclusion and economic upgrading of women-owned micro-enterprises in the bamboo value chains of India. We undertake this task by looking at common themes and differences in terms of value chain dynamics and institutions affecting the participation and upgrading of bamboo women-owned micro-enterprises in each state.

As far as sampling criteria are concerned, we chose Madhya Pradesh, Odisha, Assam and Meghalaya because they are representative of the geographical diversity of growing and production conditions in the bamboo industry in India. The states represent four different bamboo producing regions in terms of climatic conditions, quality of soil and multiple livelihood activities among the bamboo artisans. However, there are also some similar patterns in terms of socio-economic and socio-cultural dynamics, finance, bamboo production, gender roles and role of government institutions of each state. Furthermore, there are certain features that are unique to individual states.

Regarding data gathering methods we made initial scoping visits to four states in center, east and northeast India in January, April, and October 2019. We visited government-sponsored bamboo exhibitions, government offices (we mostly made visits to government offices in Sambalpur, Odisha. Among these were offices of ORMAS and Odisha Livelihood Mission, Directorate of Industry in Sambalpur, the Forestry Department, and the Collector's office in Sambalpur). We also made visits to 3-4 villages in each state that are part of the FMC project cluster. Furthermore, we also made visits to a local bank in Sambalpur, bamboo plantations, CFCs, private emporiums, haats, and smaller shops & outlet stores in Madhya Pradesh, Odisha and Meghalaya, and a bamboo technology park in Assam.

In Round 1 of our scoping visits in 2019, we gathered primary data by way of conducting semi-structured interviews & focus group interviews with government officials, bamboo buyers, traders, artisans, private plantation growers, women entrepreneurs, NGOs, social enterprises, field staff & officers (key informants), university teacher and students, as well as a multistakeholder meeting in the FMC office in New Delhi to invite inputs on project methodology. In total, we undertook approximately, 40 interviews during these scoping visits. In addition, as we were interested in what would be required for bamboo women-owned micro-enterprises in India to be able to export bamboo-based products to more demanding international markets, we undertook a small market study in Copenhagen, the capital of Denmark, where our home university is located. We here spoke to seven retail brands, selling bamboo products, about their design, quality, and quantity requirements for bamboo products, as well as their social and environmental compliance requirements that bamboo producers would face.

In the second round of data gathering (September 2020 – May 2021), due to Covid19, we gathered data through local field officers and teams in each state. We conducted 25 interviews with women who were in charge of women-owned micro-enterprises, six-seven in each state. Based on the initial fieldwork in 2019, we undertook an initial mapping of the presence of women-owned micro- enterprises in the Indian bamboo value chain and sampled women-

owned microenterprises from each node. Moreover, we obtained access to NGO surveys, diagnostic studies, market reports, academic and policy documents including government reports on each state.

During our visits to cluster villages, we tape recorded interviews/field conversations as well as took notes. Subsequently, we made full transcription of the recorded data, translating from local languages into English (in Assam: Assamese; in Meghalaya: from Khasi; in Madhya Pradesh; Hindi; in Odisha: from Urya) and organized it in separate files.

We used the GIOA method for data analysis generating first order codes, second order codes and third level themes to understand how value chain dynamics and institutions affect the inclusion/exclusion and economic upgrading of women-owned bamboo micro-enterprises in Assam, Madhya Pradesh, Meghalaya and Odisha, in India. We first read the transcribed data and notes and marked themes relevant to the above research question according to this systematic process. Following that we noted down the first order codes on post-its and then transferred them on to larger sheets of paper generating second order codes. We then generated themes from these categories. Subsequently, we took note of the similarities and differences across the states in terms of bamboo production, gender roles, multiple livelihood options, climatic conditions for growing of bamboo, the bamboo value chain and bottlenecks for women's entrepreneurship. We have kept names of our key respondents anonymous throughout. We have also advised our research assistants in the field to take notes of the names and backgrounds of key informants. However, these names are kept anonymous throughout the paper.

## **Women-owned microenterprise inclusion and upgrading in the Indian bamboo value chains: the vertical dimension**

In terms of its geographical extent, the Indian bamboo value chain is primarily local in nature (from rural areas to nearby towns). To a lesser extent, it also reaches the level of state capitals and large metropolitan centers such as New Delhi or Mumbai. Less than two percent of Indian bamboo production is exported, forming part of global value chains.

In terms of value chain governance, the Indian bamboo value chain differs from the ones traditionally envisaged in the value chain literature. There are few lead buyers and the value chain can largely be categorized as “ungoverned”, because bamboo harvesters, village-based artisans, collectors/traders and – in turn – larger traders engage in the buying and selling of bamboo and bamboo-based products on the basis of market-based transactions. Some lead firms do exist, such as nation-wide retailer FabIndia, the social enterprise Bamboo India, and the Shillong-based trading company Shillong Bamboo. However, most parts of the value chain can largely be described as ‘disintegrated’ or lacking in governance. It should be noted that government agencies may also sometimes be important buyers of bamboo-based products within India.

If we look at when products are produced and delivered in this value chain, it is typically highly challenging village-based, women-owned micro-enterprises to produce bamboo-products to be delivered at a specific point in time – something that is critical when orders from smaller, medium- sized or larger buyers have to be delivered. In fact, a male bamboo entrepreneur in

Assam who both had a small workshop and an outlet store located in Guwahati, the capital of Assam explained that he stopped exporting his goods, because he could not meet the orders even though the margins he could obtain in Europe were two to three times higher than what he could obtain by selling his products in Guwahati.

“Artisans are generally not interested in taking on more work. I often have to make advance payments to them.... However, I will often not receive the products or the money back from artisans. The artisans do not deliver on time....The introduction of mobile phones has exacerbated the situation. Craftsmen now switch around quite a lot in terms of whom they deliver the products to. If someone comes and offers them a higher price, even though they have already committed to delivering an order for another entrepreneur, they will simply switch. There is very little loyalty amongst the artisans.”

As the village-level bamboo artisans are often engaged in multiple livelihood activities and have been involved in traditional craftsmanship, they are often not used to manufacture bamboo products against pre-specified orders with a specific delivery schedule.

Regarding quantity, women-owned micro-enterprises across the four states studied tend only to be able to produce bamboo-based products in relatively small quantities. Expanding the production and sales of bamboo products could therefore be a substantial challenge, particularly if women-owned Indian micro-enterprises are to sell their products to more demanding buyers at state, national or international level markets. For instance, a European retailer explained to us,

“Our company is sourcing most of its products through trading houses. For our company 100.000 units of a given product is not a high number. We often source products in the millions. Just counting the number of plastic bags sold/used by our last year, this was around 25 million.”

During our visits to several villages in the four states we studied, we were informed that women- owned micro-enterprises would be in a position to produce – for instance – 100, 200, 1000 or even 3000 bamboo products (baskets, for instance). However, when we probed whether the village-level artisans, through their micro-enterprises, would be able to manufacture 50.000 or 100.000 units of a given product (for instance, bamboo baskets), we were told that this would not be possible. This could also be due to seasonal demand for most of these conventional products such as baskets which are produced each year as per market demand. Here product upgrading could make a difference in terms of enabling the production of large quantities of bamboo-based products.

Only very few bamboo factories have been established in India in ways that allow for the specialization of work tasks, which could increase productivity levels in the industry, and increase the quantity of bamboo products that could be delivered at a given time. This is another critical constraint for the economic upgrading of women-owned micro-enterprises in the industry.

The questions of where bamboo products are produced is also important for at least three reasons. Bamboo products are primarily produced by women artisans at home. This is often due to gender roles in villages where women are required to take care of their household duties, upbringing of children, in addition to their work as bamboo artisans. First, in terms of

gender considerations, it matters whether women-owned microenterprises are located in distant villages or urban centers at the state level. If these enterprises are situated in urban centers, they may more easily access educational and support schemes that can help them upgrade their enterprises. At the same time, they can also more easily sell their products in urban markets, potentially obtaining higher prices for these products than may be possible in more distant village settings.

Second, if we compare the geographical and climatic conditions of four bamboo-producing states, Assam and Meghalaya in the Northeast benefit from substantial rainfall, biodiversity, and temperatures that constitute ideal conditions for growing bamboo. With substantially less rainfall, Madhya Pradesh is a less ideal location for growing bamboo. While all states have experienced a drop in the area of bamboo coverage in recent years, bamboo deforestation is particularly pronounced in Madhya Pradesh. Odisha represents a middle ground in terms of growing conditions in between the Northeastern states of Assam and Madhya Pradesh with its high temperatures, high humidity, medium to high rainfall and short and mild winters.

A third important factor that may enable and/or hinder entry of women-owned micro-enterprises into the Indian bamboo value chain is the proximity of producer villages to bamboo forests. For instance, in some states, women will need to individually, or with the help of others, to access bamboo from forests that are located at a significant distance from their homes. This is likely to put a significant break on their ability to invest in this business, if they are involved in manufacturing bamboo products. However, in other states, it may notably be so that women-owned bamboo micro- enterprises are practically living within bamboo forests, with an overwhelming and easy to bamboo of good quality that can be easily harvested. Hence, the geographical distance between the homes of women running micro-enterprises and bamboo forests/plantations may either facilitate or hinder their entry into the bamboo value chain.

Regarding the price of bamboo, female artisans and women-owned micro-entreprises will often only be able to sell products at very low prices, sometimes making it financially unviable to run a successful small-scale business in this industry. Typically, women-owned micro-enterprises manufacture bamboo products themselves, but sometimes they hire additional wage-laborers to help them in meeting increased, seasonal demand. Finally, the social and environmental conditions under which these products are manufactured by women-owned micro-entrepreneurs may also be seen as important. For some women entrepreneurs, social deprivation and an urgent need to generate cash income may become an important incentive to initiate a micro-enterprise. At the same time, as there is often a lack of access to bamboo as a raw material, women entrepreneurs may be constrained in their ability to expand their business.

Regarding product upgrading, it seems a critical challenge for many women-owned micro-enterprises that artisans only produce, relatively low-quality products, using bamboo of lesser quality. While these lower-quality bamboo products may be good enough to be sold in local markets for a very minimum price, there appears to be a critical need for introducing bamboo artisans to higher quality, more sophisticated bamboo products, made out of better bamboo raw material that are in line with market demand in state, national or international-level markets. By upgrading their products, village- level micro-enterprises will be able to obtain a higher unit price than if they sell primarily in local markets. Alternatively, product downgrading may also be an option for some of these women entrepreneurs if they wish to increase their

income from bamboo work. For instance, we observed that some women were making bamboo mats in Meghalaya. These were relatively more sophisticated products that often took long work hours and sometimes days to manufacture. If the women instead were to concentrate on making more simple products, for instance, bamboo straws, the women might be able to produce these in greater quantities, increasing their daily incomes even if the unit price for a bamboo straw is less than it is for a bamboo mat.

As far as process upgrading is concerned, we observed that most women-owned micro-enterprises were using very basic, older production technologies, such as for cutting or slivering. Here process upgrading, for instance, through the introduction of machinery that could mechanize some of these basic tasks might increase the productivity of women artisans. Hence, these micro-enterprises could introduce such machinery with the aim of expanding their business. They could also organize themselves more collectively – for instance, by engaging in collective work in small village-based bamboo workshops. For instance, we observed in a village in Meghalaya that such a unit did exist, run by female master craftswo/man who supervised the work done by a group of women artisans. These women were able to concentrate full-time on the bamboo work and thus produce against orders delivered by Shilling Bamboo. Alternatively, process downgrading – or essentially staying at the same level – implies that women artisans and women-owned micro-enterprises do not increase their productivity levels, being unable to sell a sufficiently large number of bamboo products in ways that would allow them to significantly increase their income from bamboo work.

If we look at functional upgrading of women-owned micro-enterprises, this appears to be gendered in nature in the Indian bamboo value chain. However, these upgrading paths are often not the same. For instance, some women – for instance, in Madhya Pradesh, invest their time in fetching bamboo from the forest located several kilometers from their own homes, make basic bamboo products at home with small-scale tools that they have themselves invested in, and then travel to local markets where they sell these products. Hence, functional upgrading takes place, as women move from not only procuring and making bamboo products to also selling and marketing these products. Another variant of this functional upgrading story relates to urban-based women-owned microenterprises that may not know how to manufacture bamboo products but instead buy these directly from artisans who transport the bamboo products to nearby towns. These women traders sell the bamboo products to even bigger traders or local shops in the towns where they reside. Functional downgrading may however be an option for women-owned micro-enterprises that want to exit this business. In speaking to some women artisans in Odisha, we were informed that they do not want to become traders of bamboo products, as they would not have the time and energy to combine their home-based work and child rearing with venturing outside the home to procure bamboo and sell this in different localities.

Interchain upgrading may be an option for women-owned micro-enterprises who use the skills they learn, for instance, through marketing bamboo products in their own towns to expand their business by selling other related items. For instance, in Madhya Pradesh, we met a number of women traders in the town of Amla, who not only manufactured their own bamboo products at home, but who also ran their own road-side shops where they sold saris and other products in addition to bamboo-based products. Alternatively, interchain downgrading may be a path for women-owned micro-enterprises whose owners learn that they cannot earn sufficient income by applying skills learned from competing in the bamboo industry to

competing successfully in other industries. For instance, if these micro-enterprises have developed skills in marketing of bamboo products, they may realize that they wish to further develop this business and exit other industries – for instance, by no longer marketing saris in local markets.

Finally, the value chain literature also highlights three other important dimensions: the notion of scale, the evolutionary nature of value chains, and their institutional embeddedness. In the case of women-owned micro-enterprises, scale is important in terms of whether these women-owned micro-enterprises are mainly able to sell their products in local, state, national, or international level bamboo markets. This matters because these micro-enterprises may be able to command higher if they sell their products beyond local-level markets in producer states such as Assam, Meghalaya, Madhya Pradesh and Odisha. However, should they successfully do so, it might also make their micro-enterprises more vulnerable in relation to changing levels of demand within individual producer states, at the national or international levels.

Understanding the evolutionary nature of women-owned micro-enterprises in value chains is also important. The configuration of value chains changes over time and hence do the market conditions under which micro-enterprises have to sell their products. For instance, in connection with COVID- 19 in early 2020, restrictions on the ability of women-owned micro-enterprises to bring their bamboo-based products from villages to nearby towns due to local lock-downs meant that some of these women and their families were living from hand to mouth at one point. Hence, COVID-19 has temporarily interrupted some local bamboo value chains in India to the detriment of village-based artisans and women-owned enterprises. Finally, the institutional embeddedness of value chains is important in relation to understanding both the formal and also the informal rules, norms, and values that guide bamboo entrepreneurship in bamboo producer states of Assam, Meghalaya, Madhya Pradesh and Odisha. Here the value chain literature is perhaps still underdeveloped – particularly in relation to understanding how this embeddedness of value chains matter as enabling or constraining mechanisms for the value chain inclusion and upgrading of women-owned micro-enterprises in variegated producer contexts.

## **Inclusion/exclusion and economic upgrading in the Indian bamboo value chain: the horizontal dimension**

### *Regulatory institutions*

In India, there are a number of regulatory institutions – in terms of laws, state agencies, and state-sponsored programs – that are favourable towards micro-enterprise participation in the bamboo value chains of the country. In particular, as the bamboo industry is dominated by artisans from scheduled castes (in states such as Madhya Pradesh and Odisha) and scheduled tribes (for instance, in the state of Meghalaya), micro-enterprise participation in the bamboo value chain must be seen in the light of the Indian constitution, which gives some particular privileges and protection to these groups. For scheduled tribes for instance, an Indian NGO director explained that,

“one privilege is that nobody can buy their land [i.e. of scheduled tribes]. So, just because they are few in numbers, you cannot go and say I will buy this land... nobody can take away their

land. If all, you can take it on lease or some sort of rent, etc. And also there are a lot of hurdles for that too. So, they make it extremely difficult for anybody to take their land. Then, they have various rights like if there is a jungle out there and normal people cannot go to the jungle and take the fruits or maybe even bamboos from those places. But scheduled tribes have the right to do that.”

The same NGO director also explained that it is not only that scheduled tribes and castes are given particular access rights to land and user rights in relation to bamboo grown throughout India. He also suggested that particular government institutions have been established to protect and advance their interests, such as the Ministry of Tribal Affairs (established in 1999) and the Tribal Cooperative Marketing Development Federation of India (TRIFED) (initiated in 1987).

“Then there is a special scheduled tribe ministry. Therefore, that ministry actually protects them from all sorts of atrocities, which happen with the scheduled tribes in the name of...because one of the major industry of the country is mining. Mining is basically happening in those places where there are too many scheduled tribes (concentration) because they inhabit remote areas. In remote areas, you do not have people like us. You will find people who belong to that end. Therefore, their interest has to be protected. So, that is why they have special rights and obligations, which have to be protected over there. Then there are specialist promotional organizations like there is an organization Trifed. Trifled is an organization, which promotes and markets products of scheduled tribes. If you are a scheduled tribe and you are making bamboo or handicrafts etc. Trifed will buy these products from you and sell it to people.”

As mentioned above, a large number of support schemes can enable the inclusion/exclusion and economic upgrading of women-owned micro-enterprises in the Indian bamboo value chain. For instance, a woman running a micro-enterprise in Assam stated that there are particular government support schemes such as PMEGP (The Prime Minister Employment Generation Programme) loan scheme with subsidies, SVAYEM scheme (Svami Vivekananda Assam Youth Empowerment Yojana) and Mudra scheme (a loan scheme initiated by the Indian government to offer loans up to 10 lakhs to individual entrepreneurs and MSMEs) which women-owned micro-enterprises in village clusters in Assam have been availing.

However, whereas bamboo producer communities across India benefit from supportive legislation, specialized technical assistance agencies, and targeted finance and capacity building programs, many micro-enterprises are unable to access these schemes. This was explained by an NGO representative in the state of Odisha,

“Actually, they are not registered. They are working in unorganized way. We are now organizing them. We are trying to register their units. Therefore, if they are registered in their units, they will get certain benefits from the government too. Most of them do not have the artisan card. We are also working with the District Commissioner handicrafts to help them get the artisan cards. Once they get the artisan cards, they will be able to participate in government-sponsored exhibitions. And they will be getting certain benefits and certain insurance schemes, i.e. health insurance, social insurance.”

The lack of awareness of many bamboo producers of these schemes, and the challenges they face in accessing support under these schemes can, at least to some extent, be explained by the short, formal education of many members of scheduled tribes and scheduled castes. This point was narrated by a school teacher in a village in Madhya Pradesh that was dominated by bamboo artisans.

“There is lack of education. Now, only children can go to school, not the adults. So, even children who go to school, they can go to primary level but they do not go to the level of middle school.”

The lack of formal education as a barrier to accessing support schemes, grants, and loans amongst scheduled tribes and schedules was not limited to a particular geography but could rather be witnessed throughout the four bamboo producing states that we witnessed. For instance, a social entrepreneur in the state of Meghalaya highlighted this point as follows,

“There are many dropouts here in our village. First, when they reach class 9, 10, they drop out and many proceed to class 10, they end up in matriculation. They fail though they try twice or three times and some appear five times still they could not. So, they drop out.”

However, it is not only the lack of formal education amongst particular bamboo producing communities that constitutes a barrier in their accessing government-support schemes. Sometimes particular schemes may also be designed in such a way that they do not take into account the particular circumstances, abilities, skills, and interests of potential bamboo micro-enterprises. In Assam, for instance, we witnessed a government technology park that had been established to help budding bamboo entrepreneurs develop their enterprises. The technology park was contained several types of equipment that could be used to ensure the process upgrading of bamboo production. However, most of the machines were idle, unmanned and not being used by any micro- enterprises. Part of the challenge appeared to be that the bamboo technology park had been located at a great geographical distance from the villages – around 100 kilometers – where many bamboo artisans resided.

In a similar way, the Indian government has established many common facility centers (CFCs) throughout the country. These centers are often aimed at economically upgrading micro, small, and medium-sized enterprises by providing common facilities for testing, raw material depots, machinery that enhances production, and training to managers and workers. In the view of several people we interviewed throughout our fieldwork, these common facilities are often not functioning- at least not to their full capacity. When we asked why this was the case, a NGO worker in Madhya Pradesh provided the following explanation.

“One [reason] is the mindset and the thought process of the traditional artisans. They prefer using hand tools and the second one is when bamboo machinery is purchased it was some basic research was missing with regards to the variety available in a particular area and how efficient will the machinery will be in order to do the processing of the bamboo. So that research part was missing and due to that the machinery was not that fruitful. The other thing is that most of the CFCs are located in the areas, which are far flung from the accessibility of the local community. That is why they find it difficult to use the facility. Then the most important part is the social dynamics. It is very difficult to actually explain the communities to start a social enterprise. CFCs are basically social enterprises as they are supposed to do business and taking

into the account the whole community. So, that part was mission such as training, capacity building and enhancement of knowledge. So, there were multiple factors. Institutional, mechanical and production factors. So, all in all, due to several factors CFC model is not that successful.”

This quotation highlights an important point in relation to ensuring the economic upgrading of micro- enterprises. Namely, the interconnectedness of regulatory institutions in India and normative institutions in the bamboo industry of India. In other words, if government regulation, agencies, and support schemes are to enable bamboo producer communities to economically upgrade throughout India, it is critical that the norms and values of these producer communities, as well as levels of awareness, regarding bamboo production are taken into account. Otherwise, it is possible to speak of a gap between regulatory institutions in the country and the normative institutions that guide the actions of bamboo producing communities throughout India’s bamboo producing states.

Whereas the Indian state in many ways has created a supportive policy environment for upgrading local producers in the Indian bamboo value chain, regulatory institutions in India also place particular restrictions on producer participation in the chain. In particular, the Indian Forestry Departments have traditionally been tasked with ensuring the ecological stability of the country through participatory sustainable management and protection of natural resources. Hence, there have been a history of conflict between forestry departments and communities living on the basis of forest- based products throughout India. However, in 2017, the Indian government amended the Indian forest act so that bamboo ceased to be defined as a tree and instead was categorized as a grass with the intention of increasing the income of farmers and the green cover of the country.

However, the objective of increasing farmer income through exploitation of bamboo as a resource is sometimes limited by local producers’ inability to access the bamboo of the right quality in sufficient quantity to expand their business. For instance, in Madhya Pradesh, the Forestry Department has a system of cutting the bamboo and bringing it to its depot from where it is sold in three categories. One is for commercial use, the second is for industrial use and the third is for the community in an open market in Basor. Members of the Basor community have the right to avail up to 1500 bamboos per year at no cost. Everyone else can obtain bamboo at the market price. Yet, in practice, this system does not meet the needs of the Basor community.

This point was explained by an NGO representative in Madhya Pradesh,

“In order to make [traditional bamboo products] that they [the Basor] need raw bamboos i.e. the green one. In addition, the issue they face is that from the time when the bamboo is cut by the forest department and it is brought to their depot and then it is open for the public procurement it takes around 6-8 months. What is required for the community is that they need the green bamboo. Once it is brought, it is dried and it takes 5-6 months to make less use.....as they have to moisturize it and keep it in the water and it takes a lot of effort to prepare it for use. On the other hand, if they had used the green bamboo directly from the forest which is fresh produce and it becomes very easy for them to cut and tear it.”

In Madhya Pradesh and Odisha, it appeared as if many bamboo producers went directly to the forest to cut bamboo. However, in doing so, they were at risk of breaking the law. This was explained by a representative of a local social enterprise,

“What they are doing [i.e. the Basor community] is that they are cutting the bamboo from the forest without approval from the forest department. So they are not supposed to cut the bamboo from the forest, instead the bamboo should first come to the depots and then be distributed. That is the distribution channel designed by the forest department and these people cut it straight from the forest. Ultimately, what happens is when the forest department finds out and since they are marginal people, they should not intervene. If [extraction of bamboo] begins on a commercialization scale [with] truckloads of raw material going in and out of the village, this will lead to a heavy exploitation of the bamboo area. Then the forest department will intervene and will start asking questions and penalizing the people.”

A woman who ran a bamboo micro-enterprise in a village in Odisha also narrated.

“If someone goes to the forest to cut the bamboos, they run the risk of being caught and losing their bicycle as well as the axe that they use to cut the bamboos and on top they have to pay a fine worth 500 Indian rupees.”

In our conversation with the Forestry Department in one of the four states, we found that there was a lot of openness towards considering ways in which the Department could collaborate with other government departments, NGOs, and the producer communities in enhancing the access of these communities to the use of bamboo resources, while ensuring that the bamboo reserve was exploited in a sustainable way. However, in practice, ensuring this type of collaboration between multiple actors with an interest the sustainability utilization of bamboo as a resource is not easy in India. Often officers from different government agencies stay only for 3-4 years in a given locality before their posting is shifted elsewhere, making prolonged institutional collaboration and consultation over several years very difficult.

Adding to the complexity of ensuring the (legal) access of marginalized bamboo producer communities to bamboo raw materials is that different states in India have different types of legislation governing access to and exploitation of bamboo as a resource. For instance, in Meghalaya, we were informed that the forest department does not visit far-flung villages in East Khasi hills to regulate the extraction and use of bamboo. As narrated by a local NGO representative, as Meghalaya is a sixth scheduled state,

“they have something called a Durbar Shong [a village committee]. So, in every durbar shong, there is a durbar and a headman. So, in a particular village, that headman will actually decide and their committee decides that this much of land belongs to each person. Actually, there are three to four types of land here. And all the lands are in hilly area. So, in hilly area, you have some community land. And it belongs to the community. The whole community. So, if you need to harvest something from the community land, you have to contact the community, i.e. durbar and you have to get the approval or something. Only then can you harvest it. IT can only be harvested if you need it for particular purpose. It is not allowed that every time you go there you can cut a bamboo and take it along. There is some area that is private land. There, particular parts of land are allotted to families. So, you can harvest from there and use it for your

livelihood. But for no commercial use. And some area is that is reserved for forest land. That is basically from the community and that you cannot harvest this land.”

In summarizing this section, we can say that regulatory institutions play a critical role in the Indian bamboo value chain, both in terms of facilitating (a) the economic upgrading of marginalized bamboo producer communities throughout the four states we studied: Meghalaya, Assam, Madhya Pradesh, and Odisha; and (b) regulating the access of marginalized producer communities to using bamboo as a sustainable resource in India. However, we also identified an important gap between regulatory institutions and normative institutions in the Indian bamboo value chain. On the one hand, the regulatory environment in India provides various forms of support for economic upgrading of microenterprises. On the other hand, the norms, ideas, and levels of awareness guiding the actions of bamboo producing communities, in part due to relatively low levels of schooling, are not quite aligned with the regulatory institutions of the state. At least, bamboo producers often do not avail of the many support schemes available to them. As a result, capacity-building organizations (whether state, NGO, or private sector organizations) serve an important function in bridging the gap between regulatory and normative institutions in the Indian bamboo value chain. In the next section, we demonstrate how this happens in practice.

#### *Normative Institutions*

‘Capacity-building’ programs for bamboo makers influence norms and values regarding what constitutes acceptable forms of entrepreneurial behavior for micro-enterprises in the bamboo value chain. For instance, scheduled tribes and scheduled castes in India tend to have a lower level of entrepreneurial behavior than what is the case for the rest of the population in India. This may be because scheduled castes – in the case of Madhya Pradesh and Odisha – have been engaged to bamboo making as part of their traditional occupation for centuries. However, instead of micro- enterprises, or artisans for that matter, only making ‘traditional products’, capacity building programs can help in introducing new product designs that may be more in demand in local, state-level, national and international markets.

These capacity-building programs can also play an important role in terms of introducing new habits such as bamboo producers beginning to calculate their time, costs, and earnings through the bamboo business. For instance, during our visit to Meghalaya, we observed that women artisans were engaged in the production of traditional bamboo mats, which were very time-consuming to make and yet generated little profit in local markets. A local social entrepreneur working with the bamboo makers in East Khasi Hills in Meghalaya explained this in the following way,

“If you calculate for one week they get 120 rupees for splitting for women and for men harvesting gives them 200 but at the end of the day 450 rupees is the cost. Rarely, they could sell for 500 rupees. They make a different size. Otherwise sometimes when this bamboo is down (out of season), they sell only for 400.....So, that is why if you really calculate the amount of work and the money which they sold for it is not really beneficial that is why. But in that area why [do they do it?]... they said that this is the way they have been doing it generation after generation.”

Hence, a simple but important step for capacity building programs in bamboo producer communities is to help them calculate their costs in terms of inputs and times spent on making the product versus the profits/losses obtained from selling bamboo-based mats – a form of process upgrading. Otherwise, sticking to producing ‘old’ bamboo mats could be described as a kind of product downgrading – making product of lesser quality that would be able to reap almost no profits in local markets. Instead, during our visit to Meghalaya, a NGO trainer suggested that the local artisans could start making new bamboo baskets, which were quicker to make, and sold well in the capital – Guwahati - of the neighboring state Assam. This could be seen as facilitating product upgrading amongst local bamboo makers.

Another example of how capacity-building programs can contribute to introducing new norms, values, and ideas regarding bamboo production amongst marginalized producer communities is that they may expose them to potential new markets. This was related by a woman running a bamboo micro-enterprise in Assam.

“Some women entrepreneurs have also been exposed to industrial exhibitions organized by DICC (District Industries and Commerce Centre). Some have been attending skill-training programs organized by NGOs or individual entrepreneurs or facilitated by government employees. Some of these women have an Artisan card and an identity card for participating in exhibitions organized throughout year. Those who have access to these exhibitions get daily allowance of INR 150 or more.”

Finally, capacity-building programs can help to introduce new norms and values into bamboo producer communities by organizing and/or convincing members of these communities is that they should engage in collective saving schemes through participation in self-help groups. Here, women bamboo makers may be at a particular advantage, as they are often perceived by local banks as more reliable in terms of being able to repay loans. These points were related by a female bamboo artisan participating in such a scheme and a NGO worker that we spoke to in the same village in Madhya Pradesh,

Female artisan, “We are always anxious about when the lender will come for his payment, whether we sell it are less or more , we have to collect the money to pay back.”

NGO worker, “one thing noticeable here is, women are often more enterprising compared to men. The women are more serious and it is the women who work together in group. The financiers prefer giving loans to women as they are more serious and do not fall back on their payments... there are two other reasons, why women are taking more interest in this work in this area. What actually happens, is say the man does this work.. He gets a token amount and the minute he gets the money he looks for a pub. However, women save the money and manage the households, children and other needs. Therefore, if they get 1000Rs in a week, that covers their needs but if a man gets that amount, he would spent 50% on drink. So that’s the reason why women are taking the incentive to work.”

In short, when it comes to initiating micro-enterprises in the bamboo value chain, or engaging in functional upgrading in the value chain, i.e. moving from being a self-employed home-based worker to starting their own micro-enterprise, women artisans were perceived to be at an advantage, as compared to male artisans, when it came to their relative ability to raise the funds, through bank loans, to initiate their own enterprises. However, this also relates to how

normative institutions interconnect with cultural-cognitive institutions. In other words, how subjective interpretation of normative institutions amongst bamboo artisans embody a shared understanding of 'the way we do things', allowing these individuals to engage in routine behavior in relation to running their micro-enterprises.

### *Cultural-cognitive institutions*

In practice, it is often challenging to distinguish between regulatory institutions, normative institutions, and cultural-cognitive institutions in understanding women's participation in bamboo value chains. For instance, land ownership – a formal institution - is often an important collateral when potential borrowers wish to take bank loans to initiate their own micro-enterprise, for instance, to buy new tools or machines to help mechanize parts of the bamboo-making process. In India, land ownership is often transferred to male heirs, when a landowner passes away. Hence, it is part of the norms and values, not only of bamboo-making communities but also of the wider Indian population than males not only tend to but also should inherit property. This could place women-owned micro-enterprises at a disadvantage in terms of their ability to take such loans.

Interestingly, in Meghalaya, the Khasi tribe is a part of a matrilineal society. Matrilineal here means that land ownership and property are inherited by the daughter in a given family, and that males move to live with the families of their wives after marriage. In theory, this could give women an advantage in terms of being able to raise capital to initiate their own micro-enterprises, moving from home-based women bamboo artisanry to become a local trader – a pattern that we observed in Madhya Pradesh for instance. However, in practice, this did not necessarily happen, as was related by a social entrepreneur in East Khasi Hills,

“But here in X village, they [the women] give the share to the males also in land and other property. So, in that way, that is the major part of the matrilineal system. But of course one thing is that when you look at the gender perspective, we see that women are not able to participate in the Durbar....The women don't have the rights to contest in elections. ”

This was further explained by the headman of the durbar [village-level committee] in the same village.

“No, in the Durbar, females cannot contest or participate. Only the males. And other groups like self- help groups males and females can be elected.”

Hence, whereas women formally had the right to inherit land and property in Meghalaya, often the men in the family were in charge of actual decision-making regarding the use of household finance, property, and other types of decision-making. Hence, as this example from Meghalaya shows, the links between a regulatory institution (land ownership and inheritance rights), normative values and norms (who should be in charge of decision-making regarding the use of this property and associated household income), and cultural-cognitive institutions (the way we do things around here in terms of men being in charge of household and wider societal decision-making, while women mainly raise children, cooking, and cleaning the house) may be very close and interconnected.

Even if a regulatory institution 'on paper' may seem to facilitate the functional upgrading of micro- enterprises (going from being a home-based bamboo maker to becoming a bamboo trader), it may de facto be mediated by normative and cultural-cognitive institutions in a society in such a way that it does not favor the creation of women-owned enterprises and their inclusion in the bamboo value chain of India. However, this process of mediation is not universal throughout India, but instead influenced by the variegated institutional contexts in different producer states.

An example of this may be that normative and cultural-cognitive institutions are also closely interlinked when it comes to the social construction of gender relations as it relates to the participation of women-owned enterprises in the Indian bamboo value chain. For instance, attitudes towards women engaging in bamboo entrepreneurship may differ across geographies, between, and within bamboo producing communities. For instance, in case of Odisha, we were informed that women in some villages would typically not go to the forest in order to pick bamboo. It is considered too dangerous for them, as they might have a run-in with wild animals such as tigers or elephants that roam about in the local forests where bamboo also grows.

However, in the town of Amla in the state of Madhya Pradesh, it was clear that some women had successfully initiated their own bamboo micro-enterprises – i.e. as trading/selling bamboo and other products - with the support of their husbands. Here it was generally accepted that it was a financial necessity for a household to have two income earners in order to improve its socio-economic situation of the family. As was related by a female entrepreneur who had started selling bamboo- based products, along with Saris, with the help of her husband,

*Interviewer: Why do you let your wife work?*

*Husband: We both have to work together..*

*Female entrepreneur: it will only benefit us, if we both work together. One person alone cannot do it by him or herself. It will only work out if we both do it together. If one goes one way and the other the other way, we won't be able to manage the house this way.....Everyone here works together.. There are no obstacles..*

In addition, there is another important factor which influences 'the way in which we do things around here' in relation to bamboo production: multiple livelihood activities. For instance, in Assam, bamboo producers are also involved in growing vegetables and agricultural work such as sowing seeds and harvesting crops. In Meghalaya, the Khasi tribe is also gathering broom grass and bay leaf. In Madhya Pradesh, the Basor caste is involved in raising cattle and pigs as well as daily wage labor. Finally, the Mahar and Betra subcastes in Odisha are, apart from bamboo work, often working as daily laborers in agricultural fields, construction work and other small-scale jobs. This mainly owes to seasonal demand for bamboo products that micro-enterprises (or artisans in general) have traditionally been making. Due to the seasonal demand for these products, owners of micro- enterprises have to find other means of livelihoods throughout the year. This may de facto mean that they do not invest the time, money, and energy into product, process, or functional upgrading within the bamboo value chain.

For instance, in rural settings, if they are significant alternative income options, for instance, through the harvesting and selling of fruits or other crops that command higher prices than bamboo-based products, this may convince women-owned micro-enterprises they should exit from the bamboo value chain. Alternatively, if bamboo work is the only significant income earning option in a given rural setting, or the only occupations that women have been exposed to, this may compel women to invest more in the running of micro-enterprises that can help them increase their generation of income through this kind of entrepreneurial activity.

Indeed, there may be a dark side to the engagement of bamboo producers in multiple livelihoods, particularly when bamboo makers are temporarily forced to exit the bamboo value chain due to seasonality of the bamboo work. In Odisha, we were told by a NGO worker that male members of the bamboo-making communities – due to the seasonal non-availability of bamboo work - would sometimes migrate to work in other parts of the state or other states.

*NGO worker: Another thing is that their livelihood..It is gradually moving on the low. In the marriage season...as well as in the rainy season, work in farming also gets reduced. Besides around 30% out of the state. They take money in advance from the middle men...and migrate to Tamil Nadu, Andra Pradesh, and Kerala and become involved in bondage labor.....They migrate in the summer season. They migrate to the brick kilns. They will go after the festival of Dasahra. When the rainy season starts, they would not be able to make bricks.....This is bonded labor.*

*Interviewer: Bonded labor means that they cannot leave the work there?*

*NGO worker They have taken money in advance.*

*Interviewer: Then they have to work the debt off?*

*NGO worker 2: Yes, they even get their hands chopped off if they try to return to their villages without finishing their work.*

*NGO worker: There have been many such cases.*

The dark side of engagement in multiple livelihood activities could also be noted by some bamboo makers diversifying their livelihood options by engaging in the illegal production and sales of liquor. This was noteworthy in states of Madhya Pradesh and Odisha. Hence, a state-level official explained to us how his/her agency was seeking to address this situation,

*“Actually, some vulnerable women..are selling liquor secretly, because they have no sustainable livelihood option. The majority of them were widows or destitute so this was actually a challenging task...We can offer them moral boosting by special people such as in the art of living and hire some teachers that have been counseling skills that can contribute to a change of mind...We are trying to find some entrepreneurs out of those vulnerable sections.”*

Finally, and a closely related point, there may be significant differences, not only between states but also within states, in terms of whether women engage in full-time or part-time bamboo activities. In particular, bamboo work and entrepreneurship may be a full-time activity for almost all inhabitants in some communities, whereas it may only be a part-time activity in

other villages for some of the inhabitants there. At the same time however, we also found examples of bamboo communities that were engaged in full-time work. For instance, in Korblang in Meghalaya, there were some members of the community that were engaged in full-time making of bamboo products. These were then sold via a local woman-owned microenterprise to a bamboo marketing and promotion company that was able to provide significant orders and thus work to the community. According to a director in the company,

“We have this idea in mind that we wanted to reduce plastic to some extent. If you want to reduce the use of plastic as much as possible in order to improve our bamboo products... that is why we developed these products. Our artisans are located here in Meghalaya. Some of them are semi- skilled and some of them are skilled persons so we combine them together. And we meet them and train them in our products. Whenever there is training require like in expansion of developing these products, more innovative products, we have to collaborate with Assam also. Because in Assam there are many skilled artisans. So we combine them to make fine products.”

In addition, national or global campaigns against plastic pollution or climate change can also have an impact on the progress in bamboo work in terms of motivating people to initiate micro-enterprises. Hence, ultimately, ‘the way we do things around here’ in terms of the time and effort devoted by men and women to bamboo work in different parts of India may ultimately be related to value chain dynamics, particularly whether there is a stable product demand and training available to local artisans. Moreover, as the amount of bamboo work available increases, the potential for women to create their own micro-enterprises, and thus functionally upgrade their position within the value chain, is also likely to increase.

## **Conclusion**

In this working paper, we have set out to answer the question: how value chain dynamics and variegated institutional environments affects the prospects for the inclusion and economic upgrading of micro-enterprises in the Indian bamboo value chain? To guide our analysis, we constructed a theoretical framework that linked insights into value chain analysis at different scales (national, state, and local) with attention to the regulatory, normative, and cultural-cognitive institutions that influence the production of goods within these chains. Empirically, our working paper analyzed both the ‘vertical’ chain factors affecting the inclusion/exclusion and upgrading of micro-enterprises in the bamboo value chain of India, as well as the horizontal analysis of how regulatory, normative, and cultural-cognitive institutions impacted upon these inclusion/exclusion and upgrading processes.

Our vertical analysis highlighted several challenges facing micro-enterprises in entering and economically upgrading with the Indian bamboo value chain. This first related to the general lack of value chain governance in the bamboo industry: i.e. dispersed micro-enterprises (and artisans) in a large number of geographically dispersed rural and urban locations selling low quality bamboo products with razor thin profit margins through market-based relations in local markets. There appears to be a need for value chain companies in the industry that can organize local producers and market their products in state-level or national-level value chains where they will be able to command higher prices. However, several factors prevent micro-enterprises in the Indian value chain making this shift. Micro-enterprises are often not used to producing against orders with specific delivery deadlines, they are not used to producing orders

in large quantities, that are uniform and conventional in nature, and which are designed in accordance with customer preferences. And they typically use outdated technology to produce these products.

These 'vertical' chain factors in turn intersect with the 'horizontal' regulatory, normative, and cultural-cognitive institutions in influencing the entry/exit and micro-enterprise upgrading prospects in the Indian bamboo value chain. These institutions play a critical role in the Indian bamboo value chain, both in terms of facilitating (a) the economic upgrading of marginalized bamboo producer communities throughout the four states we studied: Meghalaya, Assam, Madhya Pradesh, and Odisha; and (b) regulating the access of marginalized producer communities to using bamboo as a sustainable resource in India. In this connection, we identified an important gap between regulatory institutions and normative institutions in the Indian bamboo value chain. On the one hand, the regulatory environment in India provides various forms of support for economic upgrading. On the other hand, the norms, ideas, and levels of awareness guiding the actions of bamboo producing communities, in part due to relatively low levels of schooling, were not easily aligned with the regulatory institutions of the state. We thus argued that capacity-building programs played an important function in terms of mediating this gap between regulatory institutions and normative institutions in the Indian bamboo value chain. Finally, we suggested that cultural- cognitive institutions, i.e. the way bamboo micro-enterprises and artisans routinely engage in entrepreneurial behavior on the basis of normative institutions – tend to be highly gendered and geographically variegated within India.

This leads to a number of interconnected policy conclusions. First, in order to enhance the access, upgrading prospects, and profit margins of bamboo micro-enterprises in India, it is important to develop more integrated value chains that can help connect distant bamboo micro-enterprises with consumers in state or national-level markets within the country. Second, this calls for the development of value chain companies that can help in organizing micro-enterprises, conduct market research in state and national level markets, help design products in response to consumer trends and educate micro-enterprises in producing these items, as well as ensuring their transportation from far-flung villages and towns to the relevant markets in state, regional, and the national capital in India.

In this regard, capacity-building programs will be required in order to mediate the current gap between the supportive regulatory environment for the promotion of micro-enterprises and the normative institutions guiding the business behaviour of micro-enterprises within India. However, capacity building programs are not sufficient in their own; an important factor is that they need to be sustained over time, and that there is a clear link between actual demand and consumer trends in state and national level markets, and the types of bamboo products that local bamboo micro-enterprises produce in different states. One way of improving this kind of linkage is by involving national level and state level buyers of bamboo products from the outset of such capacity building programs in order to ensure that there are state-level and national-level market linkages for the products that bamboo micro-enterprises are taught to produce.

Moreover, our working paper points to a range of gendered and variegated institutional factors that need to be taken into account if bamboo micro-enterprises are to more effectively enter and/or upgrade their operations in the Indian bamboo value chain. A key policy implication is thus that capacity-building interventions to create and economically upgrade bamboo micro-

enterprises must identify and address these factors as part of the training process. Otherwise, culturally cognitive institutions may de facto limit the inclusion and upgrading prospects for these local producers.

## References

Amine, LS., Staub, KM. (2009) Women entrepreneurs in sub-Saharan Africa: an institutional theory analysis from a social marketing point of view, *Entrepreneurship and Regional Development*, 21(2), 183-211.

Baksy, A. (2013). *The Bamboo Industry in India: Supply Chain Structure, Challenges and Recommendations*, CCS Working Paper no. 283, Center for Civil Society, New Delhi.

Barrientos, S., Knorrinda, P., Evers, B., Visser, M., Opondo, M. (2016). Shifting regional dynamics of global value chains: implications for economic and social upgrading in African horticulture, *Environment and Planning A*, 48(7), 1266-1283.

Boyle, G., Gilbert, R., Cornes, P. (2016). *Growing Together – Strengthening Microenterprises in Value Chains. A Guide for Companies to Strengthen Micro-enterprise Market Systems*, SAB Miller/Care International, Corporate Responsibility Initiative at the Harvard Kennedy School and Business Fights Poverty, London.

Coe, NM. (2021). *Advanced Introduction to Global Production Networks*, Edward Elgar Publishing, Cheltenham.

Dermawan, A. and Hospes, O. (2018). When the state brings itself back into GVC: the case of the Indonesian palm oil pledge, *Global Policy*, 9(2), 21-28.

Eckhardt, J., Poletti, A. (2018). Introduction: bringing institutions back in the study of global value chains, *Global Policy*, 9(52), 5-11.

Ellen MacArthur Foundation. (2021). *Universal circular economy policy goals: enabling the transition to scale*. Ellen MacArthur Foundation, Cowes,

Ethical Trading Initiative, (2019). *Base Code Guidance – Caste in Global Supply Chains*, Ethical Trading Initiative, London.

FMC, (2018). *Promote Bamboo MSME Clusters for Sustainable Development*, Foundation for MSME Clusters, New Delhi.

FMC, (2019a). *Diagnostic study of Assam bamboo clusters*, Assam, Foundation for MSME clusters, New Delhi.

FMC, (2019b). *Diagnostic study of Meghalaya bamboo clusters*, Meghalaya, Foundation for MSME clusters, New Delhi.

FMC, (2019c). *Diagnostic study – report bamboo for sustainable development*, Madhya Pradesh, Foundation for MSME clusters, New Delhi.

FMC, (2019d). Diagnostic study report – Odisha – Promote MSME clusters for sustainable development, EU Switch Asia, Foundation for MSME clusters, New Delhi.

Forest Survey of India (FSI) (2017). Bamboo resources of the country, FSE, Dehradun, <https://fsi.nic.in/isfr2017/isfr-bamboo-resource-of-the-country-2017.pdf>; accessed on 30 June 2021.

Gereffi, G. (2018). Global value chains and development: redefining the contours of 21st century capitalism, Cambridge University Press, Cambridge.

Gereffi, G. (2019) Economic upgrading in global value chains, Chapter 14 in Ponte, S., Gereffi, G. Raj- Reichert, G. Handbook on global value chains, Edward Elgar Publishing, Cheltenham.

Horner, R. Nadvi, K. (2018). Global value chains and the rise of the Global South: unpacking 21st century polycentric trade, *Global Networks*, 18(2), 207-237.  
International Labor Organization, (2019). Small matters – global evidence on the contribution to employed, micro-enterprises and SMEs, International Labor Organization, Geneva.

Jamali, D., Lund-Thomsen, P., Jeppesen, S. (2017). SMEs and CSR in developing countries, *Business & Society*, 56(1), 11-22.

Kampelmann, S. (2020). Wood works: how local value chains based on urban forests contribute to place-based circular economy, *Urban Geography*, 41(6), 911-914.

Kaplinsky, R. (2005). Globalization, poverty and inequality: between a rock and a hard place, Polity Press, Cambridge.

Khan M, Ponte S and Lund-Thomsen P (2020) ‘The factory manager dilemma’: Purchasing practices and environmental upgrading in apparel global value chains. *Environment and Planning A: Economy and Space*, 52(4): 766–789.

Koshy, J. (2017). Bamboo ceases to be a tree, freed of forest act, *The Hindu*, 23 November.

Lund-Thomsen, P. (2019). Corporate social responsibility in global value chains, in Ponte, S., Gereffi, G., Raj-Reicherts, G. Handbook on Global Value Chains, Edward Elgar Publishing, Cheltenham, pp. 285-295.

Lund-Thomsen, P. (2021). Rethinking corporate social responsibility in global value chains in the age of COVID-19, Edward Elgar Publishing, Cheltenham. In Press.

Lund-Thomsen, P. Nadvi, K. (2010). Clusters, chains and compliance: corporate social responsibility and governance in football manufacturing in South Asia, *Journal of Business Ethics*, 93(2), 201-222.

Lund-Thomsen, P. Lindgreen, A. (2020). Corporate social responsibility in global value chains: where are we now? Where are we going? In Lund-Thomsen, P., Hansen, MW, Lindgreen, A., *Business and Development Studies: Issues and Perspectives*, Routledge, Abingdon, 159-179.

Mamo, D. (2020). *The Indigenous World 2020*, International Work Group for Indigenous Affairs (IWGIA), Copenhagen.

Neilson, J. Pritchard, B., (2009). *Value chain struggles – institutions and governance in the plantation districts of South India*, Blackwell Publishing, Chichester.

Palpacuer, F. Contestation and activism in global value chains, Ponte, S., Gereffi, G. Raj-Reichert, G. (2019) *Handbook on global value chains*, Edward Elgar Publishing, Cheltenham, pp. 199-213.

Pasquali, G., Godfrey, S., Nadvi, K. (2020). Understanding regional value chains through the interaction of public and private governance: insights from Southern Africa's apparel sector, *Journal of International Business Policy*, In Press.

Pasquali, G. (2021). Rethinking the governance of labour standards in South-South regional value chains, *Global Networks*, 21(1), 170-195.

Ponte, S., Gereffi, G. Raj-Reichert, G. (2019) *Handbook on global value chains*, Edward Elgar Publishing, Cheltenham.

Riisgaard, L., Lund-Thomsen, P., Coe, NM. (2020). Multistakeholder initiatives in global production networks: naturalizing specific understandings of sustainability through the Better Cotton Initiative, *Global Networks*, 20(2), 211-236.

Schmitz, H. Nadvi, K. (1999). Clustering and industrialization: Introduction, *World Development*, 27(9), 1503-1514.

Scott, WR. (2001). *Institutions and organizations*, Thousand Oaks, CA: Sage.

Scott, WR. (2008). Approaching adulthood: the maturing of institutional theory, *Theory and Society*, 37(5), 427-442.

Smallbone, D. & Welter, F. (2009). *Entrepreneurship and small business development in post-soviet economies*. London: Routledge.

UNIDO, (2020). *The UNIDO approach to cluster development: key principles and project experiences*, United Nations Industrial Development Organization, Vienna.

Welter, F., Brush, C., De Bruin, A. (2014). The gendering of entrepreneurship context, Working paper no. 1/14, Institut for Mittelstandsforschung, Bonn.