Indigenous Entrepreneurship and Agricultural Development: Insights from the Case of 'Darjeeling Tea' in Eastern Himalayas

Abstract

Indigenous entrepreneurship has emerged as a new area of research in the domain of entrepreneurship. Indigenous entrepreneurship is deemed to be essential to address the developmental needs of the millions of indigenous people who have been disadvantaged and marginalized throughout history. However, there is limited empirical work offering an indepth understanding of how indigenous entrepreneurship in a region evolves and how it promotes agricultural development, which is central to facilitate sustainable development of the nature-dependent indigenous communities. In this study, we use qualitative research to analyze how indigenous entrepreneurship centered around the production and marketing of tea by the natives of Darjeeling region (a globally renowned tea-producing region in the eastern Himalayas) using traditional knowledge and local resources is enabling pathways for sustainable agricultural development. We find that the evolution of indigenous entrepreneurship in Darjeeling region is deeply embedded in the historical events, sociocultural ethos, ecological setting, and local geopolitical developments, which is shaping the agricultural landscape of the region. The indigenous tea entrepreneurs of Darjeeling, through their resolution to create new ventures to benefit their community, have brought about several economic, social, and ecological changes, which have significant implications for conservation of nature, climate action, and sustainability.

Keywords: Indigenous entrepreneurship; local resources; alternative value chain; traditional knowledge; sustainable agricultural development

Author Details

- 1st Author: Nabajyoti Deka, MBA, Ph.D. (*Economics*) Assistant Professor, Faculty of Management Studies, Delhi University, India E-mail: u.nabadeka@gmail.com & nabajyotideka@fms.edu
- **Co-author:** Kishor Goswami, *Ph. D.*, Professor of Economics Department of Humanities & Social Sciences, IIT Kharagpur E-mail: kishor@hss.iitkgp.ac.in; kishor_00@yahoo.com

Introduction

As the anthropocentric activities exerts immense pressure on nature, putting the economic, environmental, and territorial concerns of the indigenous communities at the forefront is inevitable (FAO 2021, 1). Throughout history, the indigenous communities have been dependent on nature and land-based resources (agriculture, forestry, and related livelihood options) for subsistence. However, neo-liberalism and modern capitalism frequently jeopardize their livelihood options and threaten their existence. They have been facing discrimination, loss, and denial. Such communities are amongst the first to face the ill-effects of climate change due to their extensive reliance on nature (ILO 2016). Nevertheless, indigenous communities can be agents of change to achieving many of the Sustainable Development Goals (SDGs) with their traditional knowledge and practices including sustainable management of natural resources, biodiversity conservation, and climatesensitive innovations and business (ILO 2016, 10; United Nations 2023). Strengthening indigenous economies will fast-track the attainment of SDGs and facilitate inclusive growth. Creating an enabling environment for indigenous entrepreneurship and small business development at the regional and local levels would be one of the ways to achieve such outcomes (OECD 2019, 13-14).

Indigenous entrepreneurship is crucial for the development of the indigenous communities, which, fundamentally, shall drive regional development and build sustainable rural communities (Tretiakov et al. 2019, 191-192). Researchers often link indigenous entrepreneurship to agricultural practices and emphasize its sustainability implications (Carter 1996, 354; Logue 2018, 319; Giminiani 2018, 270; Tretiakov et al. 2019, 8). The potential of indigenous entrepreneurship to promote economic development among indigenous communities is already well recognized (Croce 2017, 888; Mika et al. 2022, 1-2). In this study, we seek to explore how indigenous entrepreneurship promote sustainable development, particularly in the context of agriculture owing to its centrality for the subsistence of the indigenous communities.

Indigenous entrepreneurship and sustainable agricultural development

Indigenous entrepreneurship is the scholarly examination of the formation of new enterprises and the pursuit of opportunities to create future goods and services to foster economic progress by redressing key issues of the disadvantage suffered by indigenous communities (Hindle and Moroz 2010, 358). The western-world model of entrepreneurship, though highly beneficial to the world, is not universally pertinent. History, culture, and institutions interweave to delineate the nature, scope, manifestation, and outcomes of entrepreneurship (Bruton et al. 2018, 357). While understanding indigenous entrepreneurship, the context of entrepreneurial development is vital, particularly in identifying the opportunities that underpin entrepreneurial activities. Opportunity is affected not only by cultural perception but also by the sociocultural context and location (Hindle and Moroz, 2010, 373; Croce 2017, 895). Indigenous people often take to traditional forms of self-employment but sometimes pushed to other income-generating activities out of economic need. Indigenous entrepreneurship often relies on immediately available resources. The entrepreneurial activities are community-oriented and environmentally sustainable, which mostly takes place in a remote-rural context and oriented more towards sustainable economic development (Dana, 2015, 163-164; Croce 2017, 896).

Sustainable agricultural development includes sustainability of agricultural production, sustainability of the rural economy, ecological and environmental sustainability within agricultural systems and sustainability of rural society (Zhao et al. 2007, 893). Sustainable agricultural development also means balancing economic, social, and environmental impacts of agricultural production while fighting some of the pressing issues like climate change (Reidsma et al. 2015, 160-173). Achieving sustainability in agriculture requisites efforts at both individual and collective level (Pretty 2003, 1). The role of entrepreneurship in providing solutions to the sustainable development challenges is well recognized (Hall et al. 2010, 439-448; Youssef et al. 2018, 232-241). Entrepreneurship that concerns preservation of the environment and the communities, and focus on the development of individuals, the economy, and the society, can be clearly linked to sustainable development (Patzelt and Shepherd 2011, 631-652). As already mentioned earlier, indigenous entrepreneurship concerns for the society and the surrounding environment in its endeavor to create economic value (Dana 2015, 163-164; Croce 2017, 895). Such entrepreneurial acts can assist in achieving sustainable development. Further, indigenous entrepreneurship often hinges on agriculture and nature-based activities (Giminiani 2018, 262-274; OECD 2019, 17), thus it can be closely associated to the notion of sustainable agricultural development in a region.

Research gap and research question

Studies examining the role of indigenous entrepreneurship in promoting sustainable development is emerging (Dana, 2015; Croce 2017, 886-887; Macpherson et al. 2021, 77-84; Padilla-Meléndez et al. 2022, 1). Yet, studies that relates indigenous entrepreneurial phenomena with that of sustainable development is limited to a few sectors and regions (Padilla-Meléndez et al. 2022, 1). Studies that discourse on indigenous entrepreneurship in the emerging economies like India, where several indigenous communities safeguard the natural resources and rely on agriculture for their sustenance, is rare. This provides an opportunity to explore how indigenous entrepreneurship can help achieving sustainable agricultural development. In this study, we seek to answer two specific research questions. First, how does indigenous entrepreneurship emerge in a particular community? Second, how does the emerging indigenous entrepreneurial phenomenon bring about the changes towards sustainable agricultural development?

Study area and methods

The present study was conducted in the region of Darjeeling in the eastern Himalayas in India. In addition to several reasons, two specific reasons encouraged us to select Darjeeling for the study. First, the popularity of Darjeeling tea as a global brand since the colonial period, which also manifests the colonial capital archetype of industrialization and its impact on the native communities even in the post-colonial era. Second is its rich history, a complex socio-cultural setting, and the diverse ecology that offers a unique opportunity to critically associate indigenous entrepreneurship to sustainable agricultural development.

A brief background to the study area: history, terroir, and tea

The history of Darjeeling dates to pre-colonial times when it was a part of the kingdom of Sikkim to the east of Nepal. In the 1830's, the British East India Company possessed a small region in the hills of Darjeeling to develop a sanatorium. With the snow-capped mountains in the backdrop, located at an altitude of about 2000 meters, the cool climate of Darjeeling offered the ideal conditions to develop it as a health resort for the Britishers. Prior to the arrival of British, most of Darjeeling and its surrounding area was uninhabited. With just a small part of it occupied by the aboriginal Lepcha community, Gorkhas from Nepal, and a few others who migrated to the region from nearby Sikkim, Bhutan, and Tibet, the region was otherwise a dense impenetrable jungle. The Britishers, after arriving at Darjeeling, started several commercial activities including the cultivation of tea. Over the following decades, the increase in demand of waged labor for various commercial activities in the British settlement led to large-scale migration of people into the region from the surrounding Nepal, Sikkim, Bhutan, and Tibet. Meanwhile, the Britishers managed to annex a substantial territory of land to expand the boundaries of Darjeeling to what constitutes the present Darjeeling hills region (Chetri, 2013, 293-308; Koehler 2015, 9-16; Sharma 2016, 87-101).

By the time commercial cultivation of tea began in Darjeeling, tea from China was already popularized in the western world by the British, Dutch, and French East India Companies. The British East India Company, which once dominated the tea trade, was making fortune by supplying large quantity of tea to the western world. By late 19th century, Britishers successfully established tea plantations in Darjeeling region and Assam in the east. The colonial period saw the Gorkhas, Bhutanese, Tibetans, and other communities from the hills intermixed to form a part of the greater "Nepali speaking" community or the "hill people" who shared common socio-cultural norms and beliefs, which eventually shaped its greater political identity for the "Gorkhaland Movement" post-independence (Chetri 2013, 293-308). The Bengalis, who were a part of British administrative jobs, and the Marwaris, who migrated to the region for trade and business were subsumed into the normative Nepali identity. The thriving tea business and burgeoning commercial activities including tourism gradually transformed Darjeeling into a vibrant Himalayan hub for vernacular modernity and local cosmopolitanism. After the independence of India, Darjeeling was made a part of the state of present West Bengal. While the political administration has been under the purview of the West Bengal government, most of the commercial activities and resources of production including the prospering tea estates went to the hands of businessmen and industrialists who barely had a strong connection to the region or much idea about the local culture (Koehler 2015, 9-16; Sharma 2016, 87-101).

Nevertheless, Darjeeling tea feature in the list of world's premium tea since colonial times. Tea in Darjeeling is grown at an altitude of 600 to 2,000 meters above mean sea level. Darjeeling's famous black tea is produced from hand-plucked tea leaves processed by traditional (orthodox) methods, hence popular as orthodox tea. The leaves are withered, rolled, fermented, and fired by the traditional method (Kang et al. 2019, 73-83). The cool and humid climate, the soil, the rainfall, and the sloping landscape provide Darjeeling tea a unique "muscatel flavor" and "exquisite banquet". The combination of natural factors makes Darjeeling tea unmatchable with tea from other regions. It is honored as the world's four most famous black teas along with Keemun, Assam, and Ceylon teas.

Research approach and data collection

We adopted a qualitative research approach that involved observing and interacting with the participants in their real-life environment. Given the nature of the research questions, we relied on participatory research to gain a comprehensive understanding of the matter. We took the help of semi-structured interview schedule, audio recorded interviews, focused group discussions, and participant observation for the fieldwork. Some of the questions asked to various respondent groups are exemplified in Appendix I. The participants included the tea farmers, owners of the mini tea factories and home-based tea processing units, ex-employees of big tea plantations, tea consultant, and head of a few local NGOs working for the tea farmers. The selection of the tea processing units, ex-employees of big tea gardens, and others was through snowball sampling. The specific locations covered to interview the respondents are represented in Figure 1. Further, the composition of the respondents is illustrated in Figure 2.



Figure 1. Map of Darjeeling with study areas





*Face to face interview could be conducted up to a satisfactory level.

Qualitative analysis

The qualitative data was analyzed by following the guidelines of Miles and Huberman (1994), Maxwell (1996), Creswell (2007), and Starr (2014). The analysis included coding and classification of data, and accordingly, representation of the useful information under certain themes and sub-themes deduced from relevant literature. For instance, data concerning tea production and marketing were first analyzed under the theme 'tea production' and eventually linked to relevant economic sub-themes such as supply chain and value chain. Similarly, interview excerpts concerning the emerging tea production landscape and observations were used to analyze the spatio-temporal changes. Various secondary sources like reports, newspaper articles, blogs, YouTube videos, and relevant websites were used for data triangulation.

Findings and analysis

In the findings and analysis section, we examine the evolution of indigenous entrepreneurship in the Darjeeling region. Subsequently, we discuss the role of indigenous entrepreneurship in bringing about the changes that have implications for sustainable agricultural development for the community members.

Adoption and spread of tea cultivation

Tea cultivation in Darjeeling was confined to 87 large tea estates. Although the tea industry in Darjeeling dates to the 1840s, it was only in the late 1980s and 1990s when a few farmers experimented with tea cultivation. Traditionally, the households of the region mostly relied on the cultivation of grains, potatoes, and vegetables. Cultivation of tea in the homestead was a new idea. An interest to experiment with the new idea was revealed by the farmers who were the pioneers in tea cultivation. A common aspect among these early tea growers was their connection with big gardens through someone either from the family or neighbors working as laborers in the nearby tea estates. Discoursing about tea was routine for the indigenous people, and association with tea production a part of their culture.

The pioneer tea farmers revealed extreme difficulties in tea cultivation in the beginning. The first and foremost challenge was to convince a big estate to buy their green tea leaves, as there was no such provision under the tea act. Next, they had to arrive at agreeable terms for the quantity and price of tea leaves with reasonable profit left in their hand. Besides, supplying of leaves to the tea estate was a big concern since the remote villages in the difficult mountainous terrains were not accessible by road. The farmers had no other option but to rely on manual labor to carry their harvest, which meant walking for more than 2 hours with a bamboo basket laden with tea leaves on the back.

The handful of early tea growers of Darjeeling may not fit into the generally perceived idea of an entrepreneur, but they certainly displayed several entrepreneurial characteristics. The farmers sought opportunities in the cultivation of a new crop. They took a calculated risk of venturing into tea farming, mostly by converting agricultural land for at least 5 years to see if it is a feasible option unlike in other crops which takes lesser time. While doing so, they explored new ideas and knowledge to achieve good yield in tea cultivation. Further, they overcome the numerous challenges to finally establish it as an alternative source of income. They saw their farm as a means of profit. Such farmers who take risks to make their farm profitable, seek new opportunities, and use innovative ideas are referred to as farmer entrepreneurs (McElwee 2008, 465-475; Deka and Goswami, 2020). Hence, we consider the pioneer tea growers of Darjeeling as farmer entrepreneurs and the phenomenon of tea cultivation as the first wave of indigenous entrepreneurship in the rural-agrarian society of Darjeeling.

The idea of tea cultivation soon caught up with the other farmers in the hills; several started planting tea bushes alongside other crops. The number of farmers cultivating tea has increased from about a few dozens to a few hundred in the late 1990s. However, most farmers relied on the cultivation of traditional crops like paddy, maize, millet, potatoes, and other seasonal vegetables. Besides, cash crops like cardamom and ginger were gaining popularity in the eastern Himalayan region owing to its increasing demand and high value.

Agricultural development in the mountains is often challenging when compared to the plains. The mountainous terrain of Darjeeling does not allow large land landholdings; hence farm mechanization is almost negligible among the farmers. In the absence of large agricultural areas and little control over irrigation, the application of chemical fertilizer is not sustainable for farming in the mountains. Cultivation in the region is naturally organic. Further, modern high yielding varieties of crops are also not considered suitable for the hills. Darjeeling considerably lacks behind the nearby hilly region of Sikkim (India's first organic state) in terms of state-sponsored agricultural support (Ghosh 2016, 32). Gradually, the cultivation of high-value crops like cardamom and ginger became challenging. Cultivation of food crops like maize and rice suffered due to the increasing labor shortage in rural areas due to migration to urban locations. Moreover, income from vegetables was uncertain due to fluctuating market prices.

Owed to burgeoning tourism in and around Darjeeling, deforestation, and tourism-based activities forced the wildlife to come out of the jungles in search of food. Such challenges coupled with the falling market price of the popular crops left the farmers with very limited options. Consequently, more farmers took to tea cultivation. The number of tea farmers in the hills soon increased from a few hundred to roughly 2,000 at present and more farmers converting a part of their cultivable land to tea plantations. A grower reasoned:

"It is a stable source of income. Once a plantation is established, which takes about 4-5 years, income is assured unlike other crops...there are plenty of tea factories in the region...".

The tea farmers organized themselves to form societies to facilitate the collection and supply of green tea leaves to the factories. The society primarily takes care of (1) price negotiation with the factories while renewing the yearly agreement, and (2) ensure undisrupted supply of green leaves from the farmers to the factories. Hence, established an organized supply chain for the tea farmers, as illustrated in Figure 3.



Figure 3. Supply chain for tea farmers

While tea cultivation offered a stable source of income to the mountain farmers, all is not well with the Darjeeling tea industry (Wenner 2020, 54-59). Reduced production from the aging big tea plantations, impact of climate change, increasing market competition, and labor absenteeism are some of the problems that grappled the industry amidst rising socio-political unrest among the indigenous communities to declare the Darjeeling hills region as a separate state of Gorkhaland. While the movement for Gorkhaland has its root in the political uprisings in the 1980s, its intensification and resulting influence in the tea industry and tourism that

forms the backbone of the economy of Darjeeling was more clearly visible in the series of agitations that took place in the 2010s. Along with those working in the tourism sector, the tea farmers were the ones who were affected the most by the agitation.

Nevertheless, there are certainly other issues specific to the tea farmers, which emerged as serious threats to their sustainability. The increasing livelihood opportunities in tourism and other sectors encouraged a considerable section of the villagers to look for income opportunities in the nearby urban locations. This created a shortage of labor for the tea gardens, and eventually, an increase in the cost of labor for the tea farmers. However, the increase in the price of the green leaves was relatively less, which left the growers to struggle financially. Moreover, many tea farmers criticized that their dependency on the big factories for tea processing often put them in disadvantageous situations.

Tea processing and the next-generation tea entrepreneurs

Amidst the growing socio-political tensions and the increasing manipulation by the big tea gardens, an alternative narrative of "us" and "them" based on ethnic sentiments was intensifying in the hills of Darjeeling. Some of the members from the tea growing communities also voiced their angst regarding the ownership of resources by people who never had a deep connection with the region. They feel that the merchants, capitalists, and petty traders, who do not have much knowledge about tea cultivation nor any long-term interest, took over the gardens and supply chain of Darjeeling tea. Eventually, the narrative of "us" vs. "them", a socio-political construct, deeply embedded in the geo-cultural ethos of the region, sowed the seeds for change in the tea-farming landscape. A few natives with a background in tea cultivation established mini tea processing units on their own. One of the owners of a processing unit argued:

"Why cannot we have our own tea processing units...why should we depend on the big factories? We entered the business of tea so that we can create a name of our own. The tea farmers deserve a better price for their effort...".

The Tea Board of India defines a tea processing unit with a capacity of up to 500 kgs of made tea per day as a mini tea factory (NEDFi 2017). Presently, there are 3 mini tea factories in the region and 4 very small home-based tea processing units. Some of the key attributes of these tea-based enterprises are mentioned in Table 1. Further, a pictorial illustration of the organic/

natural tea production aspects are illustrated in Appendix II. The tea entrepreneurs claim their tea to be superior or at least at par with the tea made in the big factories, which is evident from the awards and recognition won by some of them in international competitions. Quality of made tea depends on the quality of raw leaves, which again depends on farmer's care in tea cultivation and plucking. Paying the right price to the farmers and the tea workers is necessary to keep them motivated for good quality of raw leaves.

Type of tea	Name of the tea	Some key characteristics
processing unit	enterprises/ processing	
	units	
		 Capital investment under INR 1million;
		Most of the green leaves supplied is from the entrepreneurs own garden and a few growers
	Chata Daahara taa	located nearby
	Chota Poobong tea processing unit;	Total annual production of made tea less than
		1,000 kg;
Home-based tea	Rangbhang tea	Tea manufacturing mostly rely on hand-
processing unit	processing unit;	crafting and manual work;
		Most of the tea manufacturing and marketing
	Nokdara tea processing unit	activities depend on involvement of the family
		members;Amount spent on packaging is less, and hence,
		packaging not of superior quality;
		 Most of the products sold locally through
		loosely held informal networks
		> Capital investment ranges from INR 5 million
		to 10 million;
		> The processing units runs on the supply of
		green leaves by the other growers;
	Nirolas Tea Farm;	Total annual production of made tea usually
		ranges from 10,000 to 15,000 kgs;
Mini tea factories	Yanki Tea;	Tea manufacturing process, though orthodox,
		is mostly based on the use of rolling machines
	Adarsha Muna T.G.	and certain modern equipments;Tea manufacturing and marketing relies on
		skilled manpower;
		 Packaging is seen as a critical component and
		substantial attention is given to achieve
		superior packaging;

Marketing relies on formal networks and
professional dealings though informal
networks also plays a role.

The new tea processing units established by the indigenous entrepreneurs pay at least USD 0.13 (INR 10) to USD 0.20 (INR 15) more than what the big factories pay to the farmers for a kg of green leaves. Moreover, the price remains constant throughout the agreement-year irrespective of the plucking seasons, which is not the case for the growers supplying to the big factories. It was a reason big enough for many tea farmers to switch to the mini-factories. These enterprises are also capable of paying a decent wage to the tea workers. While paying a better price is necessary to attract the farmers and workers, the enterprises have been able to do so primarily for two reasons (1) a good response for their tea products in the market, and (2) a shortened supply chain (illustrated in Figure 4). Such tea enterprises sell a significant part of their products to the customers directly, thereby, able to transfer a part of their profit to the tea farmers and workers. Evidently, the involvement of the natives in tea production and marketing has led to the emergence of an alternative tea value chain (illustrated in Figure 5) controlled by the indigenous tea entrepreneurs. The above observations indicate how the tea entrepreneurs think beyond personal gains and are willing to transfer the economic gains to their community members, a depiction of an entrepreneurial orientation that has significance for achieving sustainable growth (Patzelt and Shepherd 2011, 631-652).



Figure 4. Supply chain for the growers supplying tea leaves to the mini factories

On the marketing front, the tea entrepreneurs have been quite successful in pushing their products to different markets. The indigenous tea enterprises sell a considerable part of their products to international customers. Darjeeling tea is a globally renowned brand. However, the idea of tea production by farmers-turned-manufacturers from the region is new. These

entrepreneurs are striving to build a brand of their own, developed on the narratives of the farmers blended with the heritage of Darjeeling. For example, one of the enterprises is committed to recognize the efforts of the tea farmers and ensures that the consumers are aware of the producers, as revealed in the excerpts of the interview of the owner.

"The story and the source must be there in the packaging, that is something I make sure of..."

The above observations clearly reflect the concern of the tea entrepreneurs for their community members, a characteristic common to indigenous entrepreneurship (Dana, 2015, 163-164; Croce 2017, 898). Such entrepreneurial action can also be linked to the notion of sustainable entrepreneurship, in which gain is broadly constructed to include economic and non-economic gains to the community members (Patzelt and Shepherd 2011, 631-652).

The tea entrepreneurs maintain a product mix that ranges from orthodox machine-made tea to the traditional hand-made tea varieties. They are trying to take the best from the two worlds, i.e., the modern world and the traditional world, in their pursuit of establishing the tea enterprises, a conspicuous characteristic of indigenous entrepreneurs (Mrabure et al. 2018, 17-18; Daher et al. 2020, 15-18). So far, they have received a good response for their products with even clients visiting their farms from different countries. However, the tea enterprises owning mini-factories also rely on domestic sales. On the contrary, the homebased tea manufacturers rely on the local market to sell their limited produce. They mostly sell their products to the tourists visiting Darjeeling through local retailers, tourist homestays, and resorts. Remarkably, it is often the family members of the tea enterprises. Indigenous enterprises are often considered as small business owned by families, as family and kinship ties are critical components of such enterprises (Dana, 2015; Tretiakov et al. 2019, 1; Macpherson et al. 2021, 1-2).



Figure 5: Value chain for organic tea produced by small-scale growers in Darjeeling

Note: 1. About 5 kg of green (raw) tea leaves is required to manufacture 1 kg of finished tea products.

- 2. *Special processing is done in a very limited quantity.
- 3. Black tea accounts for more than 80 percent of total production followed by the other varieties.
- 4. Due to the highly complex nature of pricing of tea products, which also varies within a particular category depending on various factors, the present study provides only an approximate range of the final value of the products for a general indication.

Some of the key challenges of the tea-based-enterprises include documentation and approvals for the mini-factory, raising capital, convincing the tea growers for the supply of tea leaves, hiring skilled laborers for tea manufacturing, and most importantly, developing market linkages. They managed to overcome most of the hurdles through their perseverance and prudent negotiation skills. Besides, the closedown during the Gorkhaland movement in 2017 and the COVID-19 pandemic are unfortunate setbacks to their business. However, this situation also offered them the opportunity to experiment with new products and plan to explore emerging opportunities like tea-tourism in the future. Nevertheless, the local socio-cultural, economic, ecological, political context, as well as the history, and institutions intertwined to shape indigenous entrepreneurship in the Eastern Himalayas (Bruton et al. 2018, 357). Further, the exposure of the entrepreneurs to the modern world has influenced their entrepreneurial outlook and motivation for profit to benefit the indigenous communities.

Discussion

The tea entrepreneurs see a bright future for tea production by the farmers of Darjeeling. They anticipate more farmers to take up tea cultivation and more mini-factories to come up in the region. Such developments are likely to have synergic effect in the rural-agricultural landscape of Darjeeling, empowering the indigenous people. Having said that, we feel, it is important to discourse in a broader sense on how indigenous entrepreneurship has changed the rural-agrarian backdrop of the region so far, and thereby, led to 'agricultural development' that one can observe today.

The idea of 'development' can be associated to a multitude of meanings, and the meaning of the term often depends on the context in which it is used. Development, in its simplest form, can be defined as some sort of action bringing about social change that allows people to realize their human potential. It is an experience of liberty in deciding what people choose to do, and thereby, attain dignity and self-respect. It is not an outcome but a process which involves change from one state to another (Sengupta 2022, 67-82). The idea of agricultural development, thus, can be inherently associated to the developments in agricultural scenario, which essentially means introduction of new knowledge and ideas to bring about change in the lives of farmers and their families. With this broad understanding, we draw from the changing agricultural scenario in Darjeeling to discuss the role of indigenous entrepreneurs in

fostering agricultural development. Our discussion locates the changes within three broad sub-themes, i.e., technological, reformist, and structural changes, as broadly prescribed to understand agricultural and rural development by Oakley and Garforth (1985, 1-6).

Technological changes

Technological changes emphasis the transformations that happen in the agricultural production system, for instance, change in cropping pattern, generation of knowledge related to the art of production, or introduction of a new farming technology (Just et al. 1979, 1277; Oakley and Garforth 1985, 1-6). The narratives of the tea farmers in Darjeeling clearly reveal that the onset of tea cultivation also led to a change in cropping pattern, and to a certain extent, changes in land use pattern. Over the period, the partial shift from cultivation of traditional crops to plantations crops like tea demonstrate crop diversification. Subsequently, the farmers learnt through the mutual exchange of knowledge and from own experiences to improve productivity of tea. Besides, the farmers also learnt better farm management practices from the occasional training and workshops organized by local agricultural department and TBI. Recently, with the support of the new mini factories, the tea cultivators are implementing better harvesting techniques to supply superior quality of green leaves to these factories and realize a better price. While several factors contributed to such gradual transformations, the indigenous tea entrepreneurs are certainly the forerunners of such changes.

Another significant change that emerged in the tea-production landscape is the introduction of sustainability certification to the small farmers. Usually, farming systems in the mountains of Darjeeling including the small tea plantations are considered naturally organic owing to the traditional methods of cultivation, which include the use of natural farm inputs instead of chemical fertilizers and pesticides. The big tea plantations already possess sustainability certifications like Fairtrade and Organic. The tea entrepreneurs believe that organic certification will generate a greater awareness about environmental conservation among the farmers along with economic benefits, which certainly reflect the inclination of the indigenous entrepreneurs towards sustainable economic development (Dana, 2015; Croce 2017, 898). However, the farmers are yet to be fully certified due to the several hurdles in organizing the certification process. Nevertheless, the tea growers are exploring more about organic cultivation methods including preparation of organic fertilizers and pesticides in the process of adhering to the standards required to attain organic certification. As the tea entrepreneurs recognized, the adoption of organic certification is a market driven change. Organic certification has helped small-scale tea farmers to get linked to different markets or attain better prices for their produce (Deka and Goswami 2020, 458).

Reformist changes

Reformist changes emphasis more on the means by which farmers can play a bigger role in the development process, for example, organizational development or the formation of farmers' collectives (Oakley and Garforth 1985, 1-6). Changes of this nature empowers the farmers, manifested through their greater participation in the agricultural supply chain. In the context of Darjeeling, we see some remarkable reforms set forth by the tea entrepreneurs, which includes the development of a network of farmers for collective actions like collection and supply of tea leaves, exchange of knowledge through workshops and training, and introduction of organic certification. The role of Darjeeling Organic Ekta Society, a tea farmers' association formed by the pioneer tea cultivators in early 2000's, in bringing the tea farmers of the remote and difficult-to-access mountainous terrains into one platform is well recognized. The influence of the society was not confined to the tea growers alone but also to the other farmers, creating social capital in the region and generating a sense of empowerment among the indigenous people.

Another remarkable change is the alternative the new tea factories offers to the tea growers to deal with the perceived unfairness of the big factories concerning grading and pricing of tea leaves. The mini factories provide a relatively better access of tea processing facilities to the farmers, which itself is a significant change since picked tea leaves needs to be processed within a couple of hours. The new factories considerably mitigate such risk associated with the supply of leaves enabled through a faster and well-organized green leaves collection process. Indigenous entrepreneurs can transform the supply chain for the local farmers (Logue et al. 2018, 320), and the tea entrepreneurs of Darjeeling indeed exemplify such potentials. Such changes can also be better understood as the development of an alternative value chain rooted within the indigenous community context in which a greater value is captured for the community members (Kawharu 2018, 242). Small-scale processing can be instrumental in improving rural livelihood by offering improved involvement in the supply chain to the smallholders (Fellows 2011, 5-10). The entrepreneurial capacity of the small local

entrepreneurs is quite relevant in promoting the small and medium enterprises in rural areas for developments (Castellano-Alvarez et al. 2020, 125-140).

Structural changes

Structural changes may be referred to as transformations in the existing economic, social, and political relationships such that it improves the position of the disadvantaged section (Oakley and Garforth 1985, 1-6). Apparently, the indigenous tea entrepreneurs in Darjeeling, through their pursuit for enterprise development, have been able to bring about considerable alterations in the existing economic and social relationships, which, to a certain extent, is also influencing the political matters, particularly the one concerning the farmers. The recognition of the tea farmers by the state approving their registration with the tea board is a demonstration of such influence. The technological and reformist changes, as discussed earlier, are gradually restructuring the economic relationships for the farmers, evident from the interest of the tea growers to work in close collaboration with the new tea enterprises denouncing the traditional relationship with the big plantations. The young tea entrepreneurs are developing new ways of relating with customers, using social-networks, making their products and processes more transparent, and developing a narrative with their own experience and knowledge. Young entrepreneurs often express their entrepreneurship through continuous innovation driven by the sharing of new social values (Milone and Ventura 2019, 48-49), which in case of the tea entrepreneurs, is a set of values inherently influenced by their indigeneity.

Discussing the context of agribusiness enterprises, social structure can have a negative effect on agriculture-based entrepreneurship (Adobor 2020, 237). Therefore, entrepreneurs need to look for new ideas and diverse knowledge, beyond the existing social structure to grow their business. However, earning a positive reputation is integral to being an entrepreneur in tight-knit, relational communities like indigenous societies (Pushkarskaya et al. 2021, 1). Hence, to proceed with new business idea, people need to have faith in the ability of the entrepreneur to navigate the complexity of social networks and to be seen as reputable member of the community. So far, the tea entrepreneurs of Darjeeling have been quite successful in developing the social organizations through their reputation and faith. Social organization among indigenous communities is based on kinship ties, rather than created in response to market needs (Dana 2015, 166). The social organizations so formed are changing the way the farmers' groups interact with themselves and with the local political system or even with the laws and the norms in the existing system. For instance, the constant lobbying by the entrepreneurs with the Tea Board and the local political system to get various clearances for the factory, or their pressing to amend the right to Geographic Indication tag to bring under regime the new tea enterprises, can be seen as a process of political empowerment.

Sustainability implications

One of the remarkable developments in the context of tea production in Darjeeling is the alternatives the new tea processing units offer to the tea farmers to deal with the perceived unfairness of the big factories concerning grading and pricing of tea leaves. Besides, the mini-factories provide relatively better access to tea processing facilities to the farmers. Such changes can be seen in the light of process innovation in the tea supply chain introduced by the entrepreneurs to bring efficiency in the small-scale tea production system (Plotnikova et al. 2016, 939-954). Further, the establishment of an alternative value chain can also be seen as an attempt by the tea entrepreneurs to promote resilience and sustainability in the indigenous tea growing community.

The indigenous tea growing communities of Darjeeling face complex socio-economic and environmental challenges. Because of the changing climate, agricultural products on which the mountain farmers relied on like oranges and cardamom, stopped growing. There is very limited alternative source for the farmers to self-sustain, and tea is one of such alternatives. The tea entrepreneurs strongly believe that the ownership of tea processing and marketing activities in Darjeeling should be controlled by the farmers. Such arguments indicate not only the willingness of the entrepreneurs to reap commercial benefits but also their ability and inclination to initiate transformative changes in the system. The tea entrepreneurs look forward to change the way tea is produced (using traditional knowledge and innovation). The tea producers believe that product innovations would be necessary for them not only to create a distinct identity in the market but also remain competitive, an idea found to be relevant for agriculture-based small family enterprises too (Dias et al. 2019, 125-138).

Nearly a quarter of the world's land area is owned, managed, used, or occupied by indigenous peoples and local communities. The impact of climate and ecosystem change has a direct

impact on livelihoods of these communities (Drissi 2021). Most indigenous peoples suffer unduly from loss of biological diversity and environmental degradation owing to their subsistence economies and spiritual connection to lands and territories. Their lives, survival, development chances, knowledge, environment, and health conditions are threatened by environmental degradation, large-scale industrial activities, toxic waste, conflicts and forced migration, as well as by land-use and land-cover changes (Drissi 2021). Hence promoting developmental activities that does not threaten the ecological balance in the regions occupied by the indigenous communities is a must. Establishment of income-generating projects like sustainable tourism, sustainable forestry, production of organic cash crops and other traditional products can offer sustainable livelihood to indigenous communities. However, such efforts need to emphasize traditional land management practices to combat declining biodiversity, soil, and water quality (Kessler 2005, 588).

Given the ecological setting of Darjeeling, small-scale tea cultivation combined with agroforestry or tea-tourism are seen as potential alternatives for sustainable livelihood opportunities for the indigenous people of Darjeeling. The young tea entrepreneurs also emphasized the need to preserve the natural environment. Darjeeling is rich in biodiversity and they are conscious that their economic activities does not harm its biodiversity. They are determined to establish a tea production system that is economically viable but at the same time environmentally sustainable.

Conclusion

Discoursing on indigenous entrepreneurship is essential to (1) explore more about this relatively new domain of scholarship and (2) to understand the multitude of perceptions associated with indigenous entrepreneurship from the development perspective. This debate could be instrumental in examining the centrality of entrepreneurial activities for indigenous communities in empowering them towards achieving the SDGs. Our article, through the examination of the evolution of indigenous entrepreneurship in a complex socio-ecological system of Darjeeling in the eastern Himalayas, manifests the significance of diverse historical, ecological, socio-cultural, political, and economic aspects in enabling entrepreneurial activities by indigenous people. Development of indigenous communities is deeply embedded in the changes taking place in the agricultural sector, as these communities are mostly dependent on agriculture and nature-based livelihood options for their sustenance.

Indigenous entrepreneurship indeed possesses the potential to bring about substantial transformations to the lives of the indigenous farmers demonstrated through the changes taking place at different levels of the agrarian society, i.e., the technological, reformist, and structural changes. Further, indigenous entrepreneurship can also be seen as a mechanism to help indigenous people to claim their rights over the resources they already own and to control the economic activities based on such resources, which will empower them to achieve preserve nature and be the agents of change for climate action.

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Appendix I

Module	Interview questions
General	1. What motivated you to pursue the business of tea manufacturing and marketing? How has been your entrepreneurial journey so far?
	2. What does it mean to be one of the first natives to own a tea processing unit? What does your family and community think about it?
	3. How do you see the future of the small tea growers of Darjeeling?
	1. Whom do you sell the tea products and in what quantity?
Market access and trends	2. Describe the relationships you have with the buyers? (Who decides what to produce, how much to produce, and the purchase amount?
	3. How strong is the market for the Darjeeling tea coming out of the new processing units? What trends do you see in the future?
Standards and certifications	1. What standards or certification requirements do your processing units or products need to conform to?
	2. Did you face any problems regarding obtaining those standards and certifications?
Technology/ product development related	 What are your major needs/ opportunities in manufacturing and packaging of tea products?
	2. What are the different tea products you sell? What have you done to improve your products?
Management/	1. What are your major management requirements?
Organization	2. Who takes care of the various activities like management/supervision, purchasing, production, accounting, marketing, and others?
Finance	 How do you manage your financial requirements? What sources (formal or informal) have you approached for loans, and what have been the key problems you encountered, if any?
Policy/Regulation	1. What government policies/regulations benefit your business?
	2. What are your expectations from the government/ the tea board?
Infrastructure	 What are the most important infrastructure constraints affecting your business' growth and profitability?
	2. How do you plan to address such problems?
Related to tea growers	1. How did you convince the small tea growers to supply green leaves to your factory? What problems did you face while doing so?
	2. What do the farmers expect from you? Do you think you can meet their expectations?

Table 1. A few example questions to the owners/co-owners of the tea enterprise	s.
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Appendix II. Pictures showing different aspects of the small tea farmers' sector in Darjeeling



A mini tea factory

A tea farmer showing his tea



A certificate provided to a tea grower's society



Made tea packed in bulk and stored in a mini tea factory



Green tea leaves withered for further processing



A set-up to dry green tea leaves in a processing unit



A rolling machine at a home-based tea processing unit



Tea packaging by a home-based tea processing unit