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RESEARCH ARTICLE

Interaction of Capitals and the Climate Change Vulnerabilities: A Study on Santal People of Ramdevpur Abasan of Barind Tract Region of Bangladesh

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Abstract

In spite of Bangladesh's vulnerability to climate change because of its geographical location, geomorphology, and greater dependence on nature, all the communities of the country are not vulnerable to climate change in the same ways. The Santals of Bangladesh are one of the most climate change-vulnerable communities because they are marginalized because they have fewer physical, natural, economic, human, and social capitals. Truly, there is much research on the climate change vulnerability of Bangladesh; however, existing research does not discuss this matter. This research was conducted with the objectives of knowing the interaction between Bangladeshi Santals' different types of capital, the effects of climate change, and the vulnerability of indigenous peoples to climate change. Following the qualitative methodology, this research found that Santals of research field are already marginalized because of having no ownership of land, homesteads and livestock, least access to fresh water, naturally-grown vegetables, trees, and crop seeds), no alternative income sources, less annual income and savings, less educational qualifications, less or no knowledge about climate change, no training on climate change and climate change adaptation, no skills for alternative income, and no access to prior warning about natural calamities, less connectivity to organizations, least access to government services, and having few helpful kin relatives, and interaction among these capitals; climate change effects are making them more vulnerable.

Key Words: Climate Change Vulnerabilities; Santals of Bangladesh; Capitals; Marginalization

Introduction

Climate change is among the most pressing concerns on the globe today. People, ecosystems, and livelihoods have already been impacted by climate change all around the world (Masson-Delmotte et al., 2019). Due to many influences, the world's climate has always fluctuated between warmer and cooler times. According to the IPCC, global temperatures will climb between 1.8 and 4 degrees Celsius by the end of the twenty-first century (Goosen et al., 2018; Ministry of Environment and Forests, 2009). On the other hand, capitals are another important thing on which human beings depend for their survival. Enrichment with natural capitals, physical capitals, economic capitals, human capitals, and social capitals ensures quality life and wellbeing, and low capitals, on the other hand, are known as poverty (Flora & Thiboumery, 2005). All kinds of capitals are connected with one another (Drexler, 2022), and a decrease in one type of capital affects other types. Basically, climate change vulnerability is strongly connected with different types of capitals since the interaction of climate change effects and different capitals significantly determines how vulnerable one community will be to climate change. Significantly, climate change

doesn't affect all countries in the same way. Developing countries are more vulnerable to climatic change as they have reduced capital and social, financial, and technological means to adapt. Developing countries are most vulnerable to potential climate change impacts (UNICEF, 2016).

Geographically and geomorphologically, Bangladesh is one of the world's most climate-vulnerable countries, and climate change is worsening it (Ministry of Environment and Forests, 2009; Displacement Solutions, 2012). The agriculture industry is already feeling the effects of climate change and will face increasing issues as climate change increases through altered rainfall patterns, drought, salinity incursion, and soil degradation. Climate change has spatial and seasonal effects on the country's water cycle. Too much water in the monsoon season and too little in the dry periods, as well as altering rainfall patterns, hinder agricultural production, navigability, ecology, and biodiversity (Ministry of Environment and Forests, 2012). However, all parts of this country aren't equally vulnerable to climate change since Bangladesh is separated into various climatic areas and each region is subject to climate variability (Goosen et al., 2018; Ministry of Environment and Forests, 2009). At the same time, all communities in climate-vulnerable regions aren't equally vulnerable to climate change. Climate change can make vulnerable people more vulnerable (UNICEF, 2016). Indigenous populations are marginalized and vulnerable because they live in climate-sensitive areas, face discrimination and exploitation, and lack rights. They are more vulnerable to climate change than others (International Labour Organization, 2017; UNICEF, 2016). There is a lot of research on the effects of climate change on natural and economic capitals in Bangladesh; however, research on the effects of climate change on the indigenous peoples of Bangladesh has not been conducted yet. As a result, a complete scenario of Bangladesh's vulnerability to climate change is hardly found. However, in order to set a long-lasting and effective policy, there is also required research on the climate change vulnerabilities of Bangladeshi indigenous people. Considering its importance, this research has been conducted.

The Santals are also indigenous people of Bangladesh who mainly live in the northwestern part of the country (Islam, 2003), which is very vulnerable to climate change (Rahman & Lateh, 2016; Goosen et al., 2018). As indigenous peoples are already marginalized and vulnerable to climate change (International Labour Organization, 2017; UNICEF, 2016), the Santals of Bangladesh can be considered one of Bangladesh's most vulnerable communities.

In this research, the climate vulnerability of the Santal people of a village in Rajshahi district has been discussed.

Research Objectives

The study has been conducted with the following objectives:

- To understand how the interaction of different types of capital in the Santal community and the effects of climate change are occurring, and
- To know the nature of the vulnerability of Santals to climate change.

Literature Review

According to the Ministry of Environment and Forests (2009), climate change hinders Bangladesh's potential to achieve high economic growth due to severe floods, tropical cyclones, storm surges, and droughts. Bangladesh's natural catastrophes kill people, ruin infrastructural and economic assets, and harm the underprivileged. Frequent and intense tropical storms are causing coastal damage; heavier and more irregular rainfall during the monsoon is leading to heavier river flows, river bank erosion, and higher sedimentation; the Himalayan glaciers' melting causes heavier river flows and salt intrusion; lower and more irregular rainfall is increasing drought; and sea level

rise causes saltwater to enter coastal rivers and groundwater; warmer and drier conditions are also contributing to the problem. Each of these shifts affects agriculture and agriculture-dependent communities, reducing crop yields and production. Coastal erosion and saline water intrusion cause people to migrate. However, how the specific communities of Bangladesh, such as indigenous communities, are differently affected by these climate change vulnerabilities has not been revealed by the Ministry of Environment and Forests (2009). In the same way, according to Goosen et al. (2018), as a result of climate change, the intensity of droughts, rainfall, cyclones, storms, and coastal flooding is increasing. Droughts cause soil dryness and hydrogeological inequity, resulting in water scarcity, overexploitation, very reduced stream flows, scarcity of food, livestock fodder insufficiency, and drinking water scarcity; floods have impacts on life, livelihoods, drinkable water, sanitation, health, electricity, and infrastructure; cyclones, storms, and coastal flooding also have impacts on the economy and society. During such events, cattle and poultry frequently die or are lost, further impacting local people who rely on livestock and agricultural supplies. However, how the specific communities of Bangladesh, such as indigenous communities, are differently affected by these climate change vulnerabilities has not also been revealed by Goosen et al. (2018). Similarly, UNICEF (2016) also found that, as a result of climate change, the intensity of floods, droughts, cyclones, river erosion, and tidal surges is increasing in Bangladesh, which has impacts on health, agriculture, education, cattle, water, and infrastructure. UNICEF (2016) also did not focus on how specific communities in Bangladesh, such as indigenous communities, are differently affected by these climate change vulnerabilities. The World Bank Group (2021) also found that because of climate change, the intensity of floods, droughts, cyclones, river erosion, and tidal surges is increasing in Bangladesh, which has caused death, unemployment, damaged assets, agriculture, and infrastructure, and reduced income. The World Bank Group (2021) also did not focus on how specific communities in Bangladesh, such as indigenous communities, are differently affected by these climate change vulnerabilities. In the same way, Ahmed (2006) mentioned that climate change has increased the intensity of climatic disasters such as floods, droughts, river bank erosion, and sedimentation in Bangladesh, which has already had an impact on agriculture, aquaculture, shrimp culture, livestock, forests, human health, infrastructure, and livelihood. However, Ahmed (2006) also did not value how specific communities in Bangladesh, such as indigenous communities, are differently affected by these climate change vulnerabilities.

Research Methodology

This research was conducted in Ramdevpur Abasan in Tanore Upazila of Rajshahi district, which consists of 40 households of mainly 2 categories of occupation, i.e., sharecropper[1]s and wage laborers. This research is basically qualitative; however, the researcher also gave importance to the quantitative information to understand the community's status. Both primary and secondary information were used in this research. To collect quantitative primary information, the researcher visited all the households. A questionnaire was used to collect the quantitative primary information. On the other hand, to collect qualitative primary information, the random sampling method was used while selecting samples for this research. The sample size for collecting qualitative information was not predetermined; however, information was collected from the members of this village until data saturation. The researcher had discussions with 15 people from this village using different qualitative research tools. Among these discussions, 1 was a key informant interview, 6 were in-depth interviews, and 1 was a focus group discussion (FGD) consisting of 8 people. During the researchers' first appearance at the village, the key informants were selected from the villagers among the oldest and most knowledgeable members by discussing with people. Then the researcher conducted the focus group discussion (FGD) to learn about different professional groups'

[1] Sharecropping is known as *bagi* in the research field.

perceptions of climate change and community experience. The researcher also met with six people from different professional groups in order to conduct in-depth interviews to learn about their personal experiences with climate change. On the other hand, for secondary sources or literature, the researcher has collected literature, both global and local, that goes with this study's objectives and is relevant to this study and sorted it out under a larger categorization. The document review method was used as a secondary qualitative data collection tool. After the completion of data collection, information collected by qualitative research tools such as key informant interviews, in-depth interviews, and focus group discussions (FGDs) was coded based on their similarities and analyzed following the thematic analysis method, i.e., categorized under the broader themes. At the same time, quantitative information was analyzed using Microsoft Excel software, and relationships among the same items of coded information were drawn. Unstructured interviews and observation methods were used in order to collect primary data. The household has been considered a unit of analysis in the study. The inductive analytical method has been used in this research.

Findings and Discussion

Findings

Interaction of Physical Capitals and Climate Change Vulnerabilities

Livestock ownership is the only physical capital for the Santals of Ramdevpur Abasan. Among the Santal households of Ramdevpur Abasan[2], only 66.7% of households have cattle, and the rest, 33.3%, have none. Among these cattle, goats are found in most households since they can be bought easily at a comparatively low price and can be sold when needed. Many of the Santal people prefer goats to cows since the households' small children can also cut grass for the goats. On the other hand, these goats can be gotten by bagi[3], and their offspring can be regarded as household assets within a few months. But many of them brought goats from their previous residences. There are some households that raise cows. Generally, those who cultivate more rice in the bagi fields and do not go outside for work rear cows the most. It is true of both cows and goats that people bring them from their previous residence. Their livestock rearing is affected by climate change. It is found that when it rains repeatedly for a few days, they cannot feed them grass. On the other hand, when grass dies because it is not raining, their livestock suffer from hunger. As a result, the Santal residents of the Abasan are quitting rearing livestock, and income from selling them is not coming from it, which forces them to take loans from the Mohajon[4]s at high interest rates when they need money.

Except for ownership over livestock, the Santals of Ramdevpur Abasan do not have any type of physical capital; they neither have nor have had homestead lands of their own. The place where the Abasan is located also does not belong to them since it is Khas[5] land, and they will not also live here for a long time. They also did not have homestead land in the villages from where they once came. Some of them lived on other people's land, building small houses. As a result, they do not have alternative residences. At the same time, as they do not have ownership in the lands in the Abasan, they are not permitted to build residences with concrete, and they build additional houses with straw, which results in damages every year because of wester storms. As a result, they repair their

[2] Abasan is a government-built shelter for the poor, especially in rural areas.

[3] In the *bagi* system of rearing cattle, the *bagi* takers receive cattle and rear them. The first cab is given to the rearers, and the second one is given to the owners of cattle.

[4] Village elite who lend money with high interests.

[5] Government-owned land.

houses every year, which increases their loans, food shortages, and obstacles to savings. The Santal households that reside in the Abasan also have no land ownership from long ago. They do not even have cultivable lands in their native villages, from where they once came here. Lack of cultivable lands has forced many of them to work as wage laborers and few of them to cultivate rice in the bagi system, where produced rice is divided into three portions and the producers get two thirds of the rice. Generally, they are given comparatively high lands in the bagi system, which is not production friendly; they can produce not more than 15 mon[6] of rice in 1 bigha[7] of land and get 10 mon of rice in the bagi system. However, all the household expenses are difficult to manage with the rice they get. Especially when crops are damaged due to droughts and temporary floods, their investment in cultivation goes to waste. As a result, they are forced to take loans.

Interaction of Natural Capitals and Climate Change Vulnerabilities

Natural resources such as fresh water, naturally-grown vegetables, trees, and crop seeds are found as natural capitals among the Santals of Ramdevpur Abasan.

In Ramdevpur Abasan, water comes from tube wells (ground water), rain, and ponds. Among them, water from a tube well is treated as drinking water since their ancestors used ground water for drinking. Water from rain and deep tube wells is used in cultivation. There are four ponds in this village, and water from the ponds is used for fish cultivation, taking baths, washing cloths, and cocking instruments. It is found that a total of 72.2% of the Santal people of Ramdevpur can access drinkable water, which they fetch from a mini-deep tube well. However, the water crisis is a major problem in Ramdevpur Abasan. It is found that 5.6% of them, 11.1% of them, 27.8% of them, 50% of them, and 5.6% of them cannot get drinkable water consecutively for 6 months, 7 months, 8 months, 9 months, and 12 months in a row. Especially during the drought, Santals in this region face a variety of challenges in obtaining water. Santals are not allowed to collect water from the tube wells belonging to Bengali people because of their love for eating pork and the meat of hunted animals. When the tube wells of the Abasan cannot fetch water in the early drought period of November to January, they fetch water from neighboring villages, which are two kilometers away from the Abasan. Besides drinking water from deep tube wells, pond water, which they also use for bathing, cleaning clothes, and cleaning plates and dishes, is also unavailable to them because of their lack of ownership and the use of animal dust, heavy fertilizer, and chemicals by Bengali people with the intention of commercial fish cultivation. Because they do not have ownership over ponds, they are not allowed to forbid Bengali people from using dirt in ponds. Their poverty also does not allow them to dig deep tube wells to overcome water scarcity.

Like fresh water, naturally-grown vegetables are found to be natural capitals among the Santals of Ramdevpur Avasan. 77.8% of households in this Abasan can have access to naturally growing vegetables for 15 days. Basically, the votua shak, knata shak, and other wild vegetables can be taken until they do not get old. Only 22.2% of households can avail themselves of access to natural resources for 30 days. It is kochu shak, which grows on the pond side in the rainy season. However, people are unable to consume it because it dries up during the drought season. Households with members who work outside the community are more likely to have limited access to natural resources. Apart from naturally-grown vegetables, trees are important natural capitals at Ramdevpur Abasan. There are bamboos and palm trees at the Abasan. Santals living here make baskets with bamboo and mats with the leaves of palm trees. Their houses are also made and repaired with bamboo and palm leaves.

[6] 1 *mon* contains 40 kg of product.

[7] 1 *bigha* contains 33 decimals of land.

Crop seeds are also found to be Ramdevpur Abasan Santals' natural capitals. It is found that 16.7% of households keep the seeds as they cultivate vegetables on homesteads and rice in the jhina system. If they do not have seeds or comparatively good seeds, they collect them from their close relatives. These people sometimes buy seeds from the market since they are easily found there, which sometimes leads them to not conserve seeds at home. However, 83.3 percent of households do not have crop and vegetable seeds because they believe they will be useless due to insufficient land in the Abasan, uncertain living conditions in the Abasan, and no land of their own.

Interaction of Economic Capital and Climate Change Vulnerabilities

The economic capitals of the Santals of Ramdevpur Abasan include the number of income sources, earning members of households, annual income, and family regular savings. It is found that more than half of the households (56.6%) do not have multiple income sources, and the household members of these households work as agricultural daily wage laborers. Basically, there is no opportunity to do other activities, which makes people depend more on wage labor and rice cultivation in the Jhina[8] system. On the other hand, the total households that have multiple income sources account for 44.4% of the total households. Basically, the household members of these households work as daily wage laborers, cutting rice in the Jhina tradition and digging soil. Ramdevpur Santal's expertise also extends to making baskets and mats, which they learned from their ancestors and neighbors. It can be seen that whatever income sources the Santals of Ramdevpur have are basically agricultural and nature-based. As a result, the effects of climate change on the income of the Santals of Ramdevpur Abasan are well imagined; people cannot grow rice and other rabi crops[9] in the winter season due to water scarcity. On the other hand, in the monsoon season, it rains here a lot, just as it does in other parts of Bangladesh. As a result of excessive rain, land at lower levels goes under water. In the rainy season, when Aus[10] and Aman[11] rice are cultivated, this place remains uncultivated because of the flood-like situation. People can also not tend cattle or cut grass for their cattle on these lands. On the other hand, people who are wage laborers lose their jobs in their community when there is no water due to droughts or floods. Those who have expertise in making baskets and mats are also about to make no use of their skills since there is a lack of trees because of draught. Being engaged in nature-based income sources leads people to a shortage of food, jobs, cattle, and grass and forces them to migrate to Mohanpur, Durgapur, or Rajshahi city. Sometimes, the Santal males of this Abasan migrate to Faridpur for 15–20 days and work as agricultural day laborers. Those who migrate to Dhaka generally work as garment workers with low wages.

Besides the number of income sources, earning members of households also play an important role as economic capitals. It is found that 44.4% of Ramdevpur households have one earning member, and 38.9% of households have two. Only 5.6% of households have three, and 11.1% of households have four earning members. Most households with one earning member have a male earning member. However, female-headed households, as a result of the husband's illness and death and having no one left behind, lead women to earn. Sometimes, as partners of males, female members of these households work to reduce poverty and ensure food security. Children who are not continuing their studies are engaged in income-generating activities.

Based on the number of income sources and earning members, the annual income of the 18 Santal households of Ramdevpur Abasan also differs from each other. It is found that 5.6% households, 11.1% households, 11.1%

[8] A traditional harvesting system where the wage labourers cut and thresh paddy in exchange for 7-8 kg of rice per 40 kg paddy and distribute among themselves.

[9] Crops that are sawn in the winter season.

[10] A type of paddy planted in the month of May and harvested in July.

[11] A type of paddy planted in the months of July-August and harvested in November-December.

households, 11.1% households, 16.7% households, 22.2% households, and 5.6% households consecutively have a yearly income of BDT 15000, BDT 16000, BDT 18000, BDT 20000, BDT 22000, BDT 24000, BDT 25000, BDT 30000, and BDT 40000. The difference in households' yearly income is caused by the difference among the incomes of their earning members and the employment opportunity, since the households with more earning members have more income opportunities, and people are employed as agro-wage laborers for 15 days in January for planting Boro rice, 15 days in April-May for harvesting Boro rice[12], 15 days in July-August for planting Aman rice, and 15 days for harvesting Aman rice. At the same time, there is discrimination in the wages of males and females, which causes the comparatively decreased yearly income of households with female earning members compared to households with male earning members. However, the household members who are going to Godagari and Tanore, where cultivation is made possible with the help of deep tube wells, are likely to have more income. The households with less income are to take loans from different sources. It is found that 7 households out of a total of 18 households have loans, whereas 11 households do not have loans. Among these 7 households, 16.7%, 33.3%, 16.7%, and 33.3% of households have loans consisting of consecutively BDT 2000, BDT 5000, BDT 10000, and BDT 14000, which are taken from the Mahajons and Abasan Co-operative. Basically, the formalities of Abasan Co-operative in taking loans lead people to the Mahajons since it is easier to take loans from them than from the co-operatives. Santals of this Abasan generally take loans to buy food in times of food scarcity and impending needs for visiting doctors and building tube wells. Salman says, "When you need BDT 500–1000, you will think selling your cattle is illogical since you will not get it back because of your family's needs. When the time of harvesting comes, the heads of these households pay the loans by working without taking wages. But those who cultivate rice in Jhina lands sell their rice and give the money back. People who cultivate fewer jhina lands are likely to be more vulnerable to food crises since they sell most of their rice to pay the loan with high interest. In the last 5 years, the occurrence of taking loans increased because of damaged crops due to droughts in November–March, hailstorms in April–May, and temporary floods in May and November.

Savings, which act as economic capital, are also found to be lower among the Santal households of Ramdevpur Abasan. 88.9% of Ramdevpur Santal households do not have savings. There is one household that has a regular monthly savings of BDT 100 and another household that saves BDT 200 per month. Their more frequent expenses than income because of repayment of debt, buying food, production costs, and damages to crops and assets do not let them save money in their account regularly. Kangana Soren asserts, "We are living hand to mouth since we do not have savings and are lending money when we do not have it."

Interaction of Human Capital and Climate Change Vulnerabilities

The human capital of the Santals of Ramdevpur Abasan includes educational qualifications, knowledge about climate change, training on climate change and climate change adaptation, skills for alternative income, and prior warning about natural calamities.

It has been observed that there is a government primary school just beside the Abasan. However, only 11.1% of the household heads have primary-level education, 5.6% have secondary-level education, and 83.3% of the household heads are illiterate, i.e., they have never gone to school. Basically, poverty, being far away from schools, the unconsciousness of their parents, their little knowledge regarding education, and the unfamiliar environment of schools resulted in their limited access to education. The nearly constant presence of primary schools inspires the Abasan people to send their children to school. As many of the Santal household heads of

[12] A type of paddy planted in January and harvested in April-May.

Ramdevpur Abasan lack formal education, they do not have the opportunity to engage in service jobs, which are not affected by climate change.

At the same time, 44.4% of household members can imagine that the climate is changing, whereas 56.6% of household members do not have knowledge regarding climate change. Those who have knowledge of climate change think that the Barind[13] region is drought-prone, but the recent hotter climatic situation has never been felt before, and their traditional adaptation strategy is not working well. Heavy rain in recent inaccurate times has been decreasing their crops, which has made many of them realize climatic changes.

The people of Ramdevpur also do not have training on climate change and climate change adaptation since there was no training in this Abasan in which they could have participated. Moreover, they do not even know their relatives who participated in such training. As a result, they have no idea how they can cope with climate change and mitigate climate vulnerabilities.

It is also found that 83.3% of societal households' members do not have alternative income skills and are dependent on agriculture for their livelihood. The rest (16.7% of households' members) got training on cow health and sericulture, but these skills are not meeting their practical needs since they lack the cows they need. On the other hand, the skills of making baskets with bamboo branches and mats with palm leaves have been acquired by seeing their relatives, which are of no use since there is a lack of these trees in this Abasan because of droughts.

At the same time, no household members get any prior warning regarding disasters, and none of them have been to any organization or agency office to get information in this regard since they did not even know that this information could be known from any offices. All they know about climate change is based on their perceptions and experiences. Their lack of confidence stemmed from a lack of educational qualifications, poverty, and the experience of being ignored solely because they were Santals, so they did not dare go to any offices for information. As a result, they cannot prepare for any natural calamities, which results in damage to their assets.

Interaction of Social Capital and Climate Change Vulnerabilities

The social capitals of the Santals of Ramdevpur Abasan include connectivity to organizations, access to government services, and having helpful kin relatives. However, not all households have access to these capitals. There is a cooperative organization in this Abasan, and all the households, regardless of their ethnic identity, are members of the Abasan Cooperative. Besides this, only one Santal man is found to be a member of the managing committee of a local school. 33.3% of households' members have membership in any ethnicity-led organization (clubs, social, and cultural). There is no Union Parishad member from this Abasan, and the Santals of this Abasan also do not have any connection with Union Parishad members. Aside from that, only a small number of Santal people are members of national-level ethnic organizations and NGO-led small groups. As a result, they cannot request any Union Parishad member to set a tube well in this Abasan.

At the same time, since the Santals of Ramdevpur Abasan do not have connectivity with the Union Parishad office, they do not get information about safety nets and government assistance. As a result, the local Union Parishad office provides almost no assistance to the Santal people of Ramdevpur Abasan; there is only one (5.6%) household whose members got allotted a residence in the Abasan in 2017, and the rest, 94.4% of households, did not get any kind of aid.

Among the 18 households, 27.8% have kin or relatives who can help them in disasters. Many of these households' members recently got married and have connections with their parents. They have shared money, rice, and vegetables with them. This sharing also happened with the fictive relatives. On the other hand, 72.2% of

[13] Ramdevpur *Abasan* is located in the Barind tract region, which contains the northern-southern part of Bangladesh with fewer trees, hard and stair-like geographical landscape, and less rainfall.

households do not have such relatives who can help them in crisis situations. Many people who reside in this area have no social connection with the place where they once lived and have left their neighbors and kin. The rest of the people who have little ties to their previous residence and kin relatives also lack the assistance of relatives because their relatives are poor as well.

Discussion

Although Bangladesh is a multicultural country, Bangladesh's Santals and other indigenous communities are among the country's most vulnerable and marginalized groups for a variety of reasons, including the ongoing loss of land and natural resources, language and culture, and a lack of access to adequate public services (International Labour Organization, 2017). Indigenous peoples are marginalized due to high levels of illiteracy, unemployment, exploitation by political leaders and middlemen, a lack of infrastructure, and the media's unsupportive role (Sahoo, 2016). Their limited access to education and knowledge stops them from getting accurate information about government and development agency opportunities (Sharif, 2014). Santals' cultural food habits restrict eating at local restaurants and food shops, and the Bengali community's carelessness and disdain of ethnic food systems create a situation where ethnic children do not sit in the same classroom as Bengali children (Sarker & Davey, 2009). Indigenous peoples have already been socially, economically, politically, and geographically isolated as a result of discrimination and hatred.

The Santals of Ramdevpur Abasan are found to have similarities with the other Santals of Bangladesh in terms of different types of capitals, e.g., physical capitals, economic capitals, natural capitals, human capitals, and social capitals. Similarly, physical capitals such as livestock ownership, homestead ownership, and cultivable land ownership among the Santals of Ramdevpur Abasan are found to be poor. There are no cultivable or living lands owned by any households in that Abasan, and only a few households have cattle. Like their physical and economic capitals, their natural capitals, such as fresh water, naturally grown vegetables, trees, and crop seeds, are limited in their access. Pond water, which is a source of fresh water in this Abasan, is also dirty and unusable for domestic purposes because of animal and chemical dust. Their economic capital is also found to be short since many of the households have loans with high interest rates, less yearly average income, less family regular savings, fewer multiple income sources, less nature-based income, and fewer earning members of households. Human capital among the Santals of Ramdevpur Abasan is also poor. Many household heads are found to have no educational experience, have no ideas regarding climate change, have no training on climate change and climate change adaptation, have no capacity for alternative income, and have no access to information. Their social capital is also found to be poor since they do not have connectivity to organizations, have a smaller number of helpful relatives, and have no access to government services.

Again, all types of capitals are also found to be linked to each other. Ramdevpur Abasan’s Santal households’ lack of land is making them more dependent on daily wage labor and producing crops in an exploitative bagi system. Less income from agricultural wage labor jobs does not help them save; rather, it sometimes leads to higher amounts of loans, which force them to give large sums of money and crops to others. In addition, people suffer from a food crisis again. Their poverty, in collaboration with being far away from schools, the unconsciousness of their parents, their little knowledge regarding education, and the unfamiliar environment of schools, creates obstacles to getting an education, and it finally keeps them from non-agricultural jobs. Their lack of participation in jobs is making them less diverse in their earning sectors. Again, jobs in different development, government, and corporate organizations are thought to be prestigious because they require education and increase the possibility of earning more money, which could be helpful in creating physical, social, economic, and human capital. At the same time, their experience of being hated and neglected by people of the Bengali community led

them to have no membership in any organizations of other communities, which led them to get no government and NGO opportunities or information regarding these opportunities, which could assist them in overcoming their situation. On the other hand, their lack of ownership of physical and social capital is not allowing them to access natural capital, e.g., pond water.

In the existing situation of marginalization of the Santals of Ramdevpur Abasan, the climate change effects are about to interact with the different types of capitals of Ramdevpur Abasan's Santals and are forcing them to be more marginalized as a result. The natural hazards in Ramdevpur, namely drought, flood, and storm, which are occurring more frequently in recent years as a result of climate change, are bringing a number of changes to this village. Santal farmers cannot grow Boro rice and other Robi crops in the winter season due to drought. On the other hand, in the monsoon season, it rains here a lot, and as a result of excessive rain, land at lower levels goes under water. In the rainy season, when Aus and Aman rice are cultivated, this place remains uncultivated due to a flood-like situation. On the other hand, people cannot also tend cattle or cut grass for their cattle on these lands. This condition leads to a shortage of food, jobs, cattle, and grass. On the other hand, Santals who do not cultivate are bound to work on other people's lands. When there is no water because of droughts, they lose their jobs in their locality. Both heavy rain in the monsoon and no rain in the drought season lead to joblessness and poverty.

Apart from cultivation, climate change effects also interact with natural capital. During the drought, Santals in this region face a variety of challenges in obtaining water. Since Santals are not allowed to collect water from the tube wells belonging to Bengali people only because of their love for eating pork and meat from hunted animals, they are to bring water from other Santal villages. At the same time, alternative sources of water, e.g., ponds, are coming to no use as the Santals of Ramdevpur Abasan do not have control over them. Their poverty also does not allow them to dig deep tube wells to overcome water scarcity. Having no cultivable lands allows them to work on other people's lands.

Indigenous peoples around the world, including the Santals of Bangladesh, are vulnerable to changes in climate. In terms of social, economic, and environmental vulnerability, Indigenous peoples are among the poorest and most threatened portions of the world's population. Their economic, social, and cultural activities depend on natural materials that are subject to increased risk due to climate change and extremes. They continue to live in geographical areas and ecosystems that are most vulnerable to climate warming. Indigenous peoples' sensitivity to changes in climate can necessitate migration. In most situations, this leaves individuals more exposed to prejudice, exploitation, and environmental concerns in their destination countries. Migration typically causes the loss of economic, social, and cultural activity. Climate change exacerbates gender inequality, a crucial determinant of indigenous women's impoverishment. Indigenous women play an important role in traditional and nontraditional sources of income, unpaid work duties, and food security, but they face internal and external discrimination. Indigenous peoples' rights and institutions are often ignored (International Labour Organization, 2017; UNICEF, 2016; International Labour Organization, 2016). If the climate change effects continue to be higher, the indigenous peoples will have no other options but migration to cope (International Labour Organization, 2017), as it has already started among the Santals of Ramdevpur Abasan on a temporary basis.

Conclusion

It can be analyzed from the above discussion that the Santals of Ramdevpur Abasan lack different types of capital: physical capital such as land ownership, homestead ownership and livestock ownership, economic capital, natural capital such as access to fresh water, naturally-grown vegetables, trees, and crop seeds, human capital such as alternative income sources, annual income and savings, educational qualifications, knowledge about climate change, training on climate change and climate change adaptation, skills for alternative income, and access to

prior warning about natural calamities, and social capital connectivity to organizations, access to government services, and having few helpful kin relatives, which force them to be marginalized by interacting among themselves. In the context of their already marginalization, climate change effects such as draughts, floods, and storms make them more marginalized and dependent on loans from the local Mohajons, and finally force them to migrate, which puts them under the threat of cultural loss.

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