

POLITICAL ECONOMY
OF VULNERABILITY:
A GENDERED ANALYSIS OF DROUGHT
AND LIVELIHOOD STRUGGLES AMONG
FARMING COMMUNITIES IN PURULIYA
(WEST BENGAL, INDIA)

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Abstract: Globalisation is a complex phenomenon that humankind is facing in the present times. However, one cannot deny that there is less agreement as to which aspects are “good” or “bad” and for whom. Despite understanding globalisation as offering many opportunities, it has placed pressures on the global environment, straining the carrying capacity of vulnerable ecosystems and the people dependent on them. Specifically, marginalized women whose access to resources are limited, are often doubly exposed to forces of globalisation and climate variations. The aim of this paper is therefore to examine the contemporary global and local forces shaping vulnerability among women to drought. The paper is based on qualitative research carried on in a traditional farming community in a village in eastern India. The findings of this paper show that globalisation in-itself functions as a dynamic macro pressure on the root causes like patriarchy and access to resources, in addition to deforestation, land fragmentation, migration and commercialisation of agriculture. The women have been severely impacted through forces of globalisation: technological modernisation as well as market reforms. In this context there has been changes in women’s work role and gender relations leading to feminisation of labour, single women headed households, food insecurity and unsafe habitats, thus, impacting women’s day to day existence. Globalisation acting as a key macro force, however has failed to address the micro level issues like enhancing women’s skills towards livelihood diversification, education and learning opportunities; strengthening local markets and access to key resources to overcome discrimination, achieve equality and improved state of well-being.

Keywords: women, globalisation, drought, vulnerability, farming.

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INTRODUCTION

Globalisation may be understood as a complex phenomenon and process including economic, social, cultural, political and environmental aspects that are underway. It brings about a realization that “symbolizes a world in motion, providing people with resources to new ways of being human in the fast-changing world” (Guenther 2015: 28). Yet, one cannot deny that there is less agreement as to which aspects are “good” or “bad” and for whom. Despite understanding globalisation as offering many opportunities to better the human condition, it involves significant potential threats and environmental risk is one among them. It has placed pressures on the global environment and natural resources, straining the capacity of the environment to sustain itself, exposing human dependency on the environment as well as widening global inequities (Najam et al. 2007). Specifically, marginalized women whose access to resources are limited are often doubly exposed to climate variations and globalisation. It is evident that since India has opened its market in the 1990s, people of all regions, religions, classes, castes, and gender have experienced changes in their working and living situation (Guenther 2015). Marginal land holding among the farmers especially the women are experiencing gradual and drastic transitions due to on-going processes of globalisation. They are modifying or exacerbating existing vulnerabilities, and at the same time reducing their opportunities and making them more vulnerable to climate induced hazards like drought. These changes have profound implications for food security, maintaining adequate health conditions, human well-being and their identity.

The aim of this paper is to examine the contemporary global forces shaping women’s vulnerability to drought among two farming communities in Puruliya, India. The main components of vulnerability are those conditions that increase and determine the likelihood of crisis, scarcity and disruption of livelihoods among women and similar actors in marginalised communities. Experiencing vulnerability has a gendered dimension and, given the contexts of scarcity and famine in the study region, the links between gender, environment and uncertainties



has to be unearthed clearly. Moreover, the gendered accounts and susceptibility of vulnerable groups to drought could also demonstrate the interlinkages between local contextual factors to the complex web of global forces shaping population vulnerability.

GLOBALISATION AND VULNERABILITY TO CLIMATE CHANGE

The rapid world-wide integration has brought the global ecosystem under great pressure from humanity's expanding trade, greater mobility, greater access to new varieties of seeds, market and technology. Vulnerability to climate uncertainties acutely manifests this hyper-connectivity. Environmental crisis as well as epistemic changes are all crucial drivers of change that are radically transforming the way we envision globalisation. Vulnerability to climate change has been traditionally studied in isolation from other stressors, including structural changes associated with economic globalisation (O'Brien, Leichenko 2000). Miller and Edwards (2001: 3) argue that climate change "can no longer be viewed as simply another in a laundry list of environmental issues; rather, it has become a key site in the global transformation of world order". Acting together, globalisation and environmental stress may directly threaten the livelihoods of the poor. It may affect the capabilities, material, social assets and activities required for a means of living, and decrease their ability to cope up with, and recover from environmental stresses and shocks. For "winners" of the process, globalisation becomes an integrating phenomenon – one that brings together markets, ideas, individuals, goods, services and communications. For the "losers" in the process, however, it can be a marginalizing phenomenon (Basu 2005)¹.

While the market integration and technology adoption due to globalisation can assist in handling increased resource competition, they may also lead to loss of critical ecosystem services. Many critical ecosystem services including climate stability and soil fertility are often unvalued (or undervalued) and, therefore, as these ecological services are threatened, there are no market

signals that would spur technological development of alternative supplies (Najam et al. 2007). Populations dependent on natural resources, could lose their livelihoods as local sources such as forests, water and soil bases are depleted or degraded forcing them to seek alternative livelihood options. Environmental degradation, global and local, will affect the agricultural sector, on which majority of the world's poor depend directly for their survival. For example, WorldWatch Institute estimates that 28 per cent of crop-land in India, is seriously degraded by erosion, water-logging, desertification and other forms of degradation (WorldWatch Institute 2006: 15).

When the effects of climate change exist alongside other stressors usually stemming from globalisation, such processes are often referred to as “double pressure” (Thorpe, Figge 2018). The double pressure is a concern in the agrarian sector as well, since farmers have to constantly respond to a variable climate under conditions of economic stress – particularly when there is a mis-match between climate compatible crops and market driven demand for those crops (O'Brien et. al 2004). Studies in different parts of the world have illustrated that, this combined marginalization can destroy the resilience that poor communities might otherwise possess (Najam et al. 2007; (Leichenko, O'Brien 2002).

At the same time, the farmers are equally vulnerable to structural changes resulting from trade liberalization and related policies (Gulati, Kelley 1999). The effects of liberalization of agricultural trade and other economic reforms since 1991 are expected to be uneven (Gulati, Kelley 1999). For example, the trade liberalization in edible oils and oilseeds led to a crash in domestic oilseeds prices in the late 1990's due to imported cheaper Malaysian palm oil (Shiva 2000). India is considerably influenced by forces of both globalisation and climate change leaving farmers vulnerable (O'Brien et al. 2004). This globalizing process reinforces vulnerability where agricultural productivity is closely related to the time and spatial distribution of the north-east and south-west monsoon.

THEORETICAL FRAMEWORK

Most researchers have used insights from social vulnerability approach to frame disaster research on gender and vulnerability (Wisner, Blaikie, Cannon, Davis 2004; Hewitt 1997; Bolin, Jackson, Crist 1998). An argument extended by these researches is that disaster risk is socially distributed in ways that reflect the social divisions existing in the society. In this regard Wisner et al. (2004) have asserted that risk of disaster has to be understood as the function between natural hazard and the number of people characterised by varying degrees of vulnerability to that of hazard that are spatially and temporally located. Social vulnerability to disaster is a social dynamic rooted in gender, class, race/ethnicity, culture, nationality and age (Enarson, Fothergill, Peek 2006). Studies have also looked into the specific structural forces of vulnerability to the effects of climate change of gender, from the perspective of reproductive health and violence, to property rights and poverty (Enarson, Morrow 1997). Feminist political ecology have examined gender relations contextually with an emphasis on women's practical knowledge related to their environment and the nexus of gender inequalities, ecological degradation and disaster vulnerability (Rocheleau, Thomas-Slayter, Wangarai 1996).

There is often a relationship drawn between poverty and disaster experiences, as disasters frequently leave poor women even more impoverished (Dolan et al. 2001; Enarson 2000; Enarson, Fordham 2001). However, feminisation of poverty is a problematic assertion, contested by various scholars (Chant 2010: 1; Arora-Jonsson 2011). A few empirical works have found less accuracy in such associations (Sen 2008: 6). According to Jackson (1996: 501), it is easier to project gender association with poverty than to view gender disadvantages crossing boundaries of class and ethnicity. In her article *Gender and the Poverty Trap* Jackson shows the inconsistencies in the assumption that all women-headed households are poor (Arora-Jonsson 2011).

On the other hand, women's vulnerability is often ascribed to cultural and gender mores specifically during responses to natural hazards. For instance, during the Asian Tsunami, it was

said that women and children under the age of 15 were impacted the most (Demetriades, Esplen 2008). It was documented that in the floods of Bangladesh, women did not leave their houses due to cultural constraints on female mobility and those who did were not equipped to swim (Demetriades, Esplen 2008). The lack of institutional access has been significantly put forth by Lambrou and Nelson (2010), in a report that compared men's and women's responses to climate variability in the context of drought in villages of Andhra Pradesh, India. The author highlights the institutional disadvantages for different groups of men and women. The disadvantages to women were the main hindrances towards building resilience to long-term climate change. Further, vulnerability of women is as much dependent on climate as it is on the condition and response to wider markets and economic instruments that need to be examined (O'Brien et al. 2004). We need to direct our attention to connections to the larger political economy and power relations and use of discourses that exacerbate and cause vulnerability and social inequalities (O'Brien et al. 2004; Arora-Jonsson 2011).

Certain root causes are an interrelated set of widespread and general processes within a society and the world economy that could affect the allocation and distribution of resources among different sections of the population (Wisner et al. 2004). Some of the root causes includes characteristics of this region that combine environmental, economic and political aspects to render them historically vulnerable. They encompass aspects of colonial rules and policies, lack of access to decision-making structures, resources and prevailing dominant ideologies. For women, the ecological and economic crisis during the colonial rule further eroded their status, as their customary land interests were challenged in the patriarchal village community. Women's struggle over legitimate share on landed property continued. The pressures of rapid ecological changes combined with erosion of common property rights and deforestation meant that women were increasingly made targets of violence.

The Pressure and Release (PAR) model, which is based on the political economy framework, demonstrates that the potential for people to be exposed to natural hazards depends

fundamentally on how social systems and their associated power relations impact different social groups represented through their class, gender, caste/race and ethnicity (Wisner et al. 2004). A disastrous event is understood often as the manifestation of a process with deep historical, cultural, political, economic and environmental roots. The conditions that make women vulnerable are specific relations of exploitation, unequal bargaining and discrimination within the political economy. The model not only explains the factors inducing vulnerability but also provides sufficient scope to address underlying driving forces and root causes (Birkmann 2006; Wisner et al. 2004). With this assumption, this paper attempts to examine the linkages between globalisation, gendered intersectionality and climate change among the drought affected communities of Puruliya district in the State of West Bengal, eastern India.

The PAR model is an important framework that guides us to examine how globalisation as a macro dynamic pressure could contribute to the existing forces shaping women's vulnerability. Dynamic pressure is a link between the root causes and unsafe conditions that progresses to outcomes quite vulnerable for certain segments of the community. The notion of dynamic pressures includes all processes and activities that channel the effects of root causes into unsafe conditions such as deforestation, rapid urbanization and loss of natural resources like decline in soil fertility (Wisner et al. 2004: 54). At the macro level, the processes of globalisation have exposed women in this region to new kinds of risks such as risks due to free trade policies, that affect women's capacity in determining prices of seeds and fertilizers. At the same time the local markets are shaped by forces of patriarchy preventing women to access their spaces with dignity. Further increased migration of men for wage work, leave more women and children impoverished. Root causes adds on to the dynamic pressures that ultimately progresses to unsafe conditions. Unsafe conditions encompass vulnerable habitats (to heat and erratic rainfall) for living and production, having livelihoods that are at risk or having entitlements that are prone to rapid and severe disruption (Wisner et al. 2004).

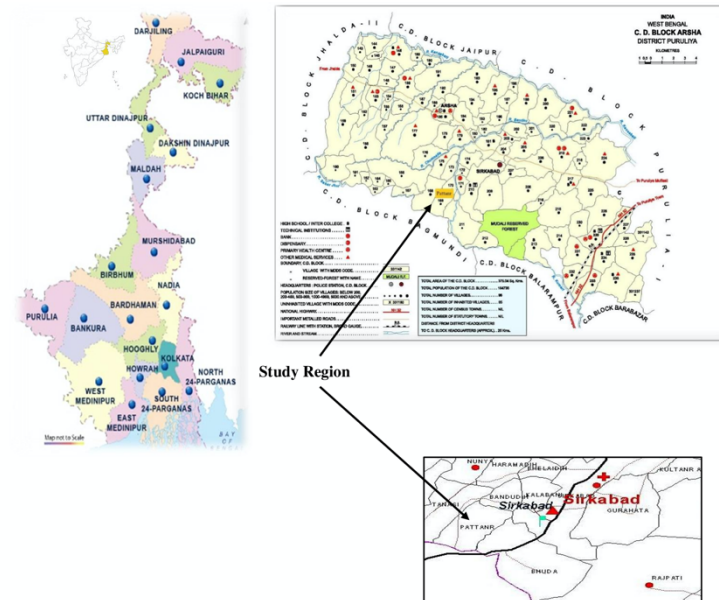


FIELD SETTING AND RESEARCH CONTEXT

The district of Puruliya, Arsha block, Pattanr village is chosen for the present study. Puruliya is one of the administrative districts in the State of West Bengal, chronically affected by drought conditions² (fig. 1). This region is historically drought-prone. Both men and women are largely involved in rainfed agriculture and face diverse livelihood challenges. This region is known for high level of drought-induced out-migration. This paper is centred around the lived experiences of two traditional farming communities, the Santhal and Bhumij. Both these communities are classified as “Scheduled Tribes” according to the Indian constitution³. The village is located at the fringes of the Ajodhya forest reserve⁴.

Historically, the Santhal and Bhumij have been marginalised and isolated from the processes of mainstream development in India. Our primary visits to the field revealed that the village of Pattanr had no primary health centre and other institutional facilities such as Integrated Child Development Services (ICDS) that were almost dysfunctional⁵. Access to water is limited to two natural streams running down from the hills, flowing at a distant, a hand-pump and dug-well. The hand pump installed recently in the Bhumij community seldom showed any signs of water flow due to administrative mis-management in selection of location. While the age-old dug wells show signs of breaching to the extent that villagers have complained of water contamination and health impact. Commuting to the village was extremely difficult and the only motorable road was located almost four kilometres away from the village. Women are often seen carrying wood logs and travelling by foot, crossing forests and few streams to access the market (including ration).

Extreme drought occurs in north-west and south-west part of the district. The south-west monsoons are characterized to be the moisture laden and the harbinger of the rainy season. This region experiences extreme weather variations and ecological regime with 7-8 months of dry period between October and May. This is followed by a short but intense wet season, when most of the agricultural activity is carried out.



(L-R) Map of Districts of West Bengal, the district of Puruliya in the west. On the inset is the Map of India with the state of West Bengal highlighted. Map of Arsha Block with the selected village of Pattanr. (Map not to scale. Some modifications made to insert text and remove toolbars)

Fig. 1. Map Identifying the Study Region

Distribution and variability of precipitation is an important aspect, peaking during the months of July and August. A recent study conducted in this region has found a significantly decreasing trend of rainfall during the period 1953-2002 (Kundu and Mandol 2019). Oral history narratives reveal that the pattern of precipitation is marked by spatio-temporal variation in the onset, distribution and termination of the rains, thereby impacting germination of seeds and harvest.

However, the phenomenon of drought is not new to this region, rather they are recursive. The historical landscape (then part of the Chotanagpur plateau) has references to the great famines of the past (Damodaran 1998: 885)⁶. The district has a history of chronic famine in the colonial and post-colonial years (1866, 1874, 1892, 1897, 1903, 1904-5, 1906-7, 1939-45, 1953,

1958)⁷. The oral history of the villagers reflected severe climate variability and drought like situation over the last 50 years. The period between 2008-12 witnessed severe drought in the region. Farmers were unable to cultivate their summer crops and the fields were left fallow. The fodder crisis was so acute that people had to sell their livestock. However, the year 2013 witnessed heavy rainfall, but the quantity of rainfall destroyed the standing crops. The winter crops were destroyed due to fog and unprecedented drop in temperature. Since 2014, similar drought cycle of 2008-12 continued in the region. The district is often termed as “drought prone area”, despite an average annual rainfall ranging between 1100-1300 mm. The topographic features and characteristics of soil further adds to the intense dry spell and erratic rainfall causing acute water shortages leading to drought condition.

Pattanr village is predominantly a traditional farming community. The number of households has increased from 112 to 162 and the total population from 612 to 833 in 2018⁸. The Santhals are the main inhabitants occupying 120 households while the Bhumij resides in nearly 42 households⁹. The settlements of the Santhals and Bhumij communities are separated from one another in demarcated areas locally known as *Kuli*. Out of the total 162 households, 150 are farming households but not all possess land entitlements. About 30 per cent of the total households have reported possession of *patta* to forest lands, which give them access to certain usufruct rights over non-timber forest produce¹⁰. *Patta* lands do not grant ownership rights¹¹. There are around fifteen marginal farming households who either lease lands from the smallholders and cultivate as sharecroppers or work as farm labourers. There are also five single women headed households who may have access to land but do not practice farming in the absence of male members.

The sample of the study selected is particularly vulnerable to climate variability and long-term change, because of small land holdings. These farmers also face precarious financial instability due to high input costs and are forced to take loans to cover costs as well as to compensate reduced yields, and procure food for their families. Field visits to the region were carried out in the year 2015-16 when community was exposed to

severe weather variances. The Ethnographic fieldwork that we carried out for almost one full agrarian year enabled us to analyse the inter-linkages and dynamics associated with climate variability, agriculture and globalisation. This approach also enabled us to capture the voices of multiple subjugated actors from their social positions and in its situatedness in terms of their ethnicity, gender, occupation, land-holding status and age. The fieldwork was supported by data collected through in-depth interviews and focus group discussions. Data for this paper has been primarily collected from women, who belonged to different sectoral groups like farming, pastoralists and agriculture labourers from the village. The study focused on elderly women, women with health risk, landless women, widow with dependents and women with debt burden and lack of productive assets. Other respondents included male farmers, state representatives from the agriculture, forest and disaster management department and social activists.

CONTEXTUAL FACTORS SHAPING WOMEN'S VULNERABILITY

This section of the paper elaborates on various contextual factors and progression of women's vulnerability.

Patriarchy and Property Rights

The research participants belong to households with strong patriarchal traditions. Here we would like to invoke a prevalent practise among both the communities, that extends limited property rights to women, only till marriage. After which the property falls back on the male member of the family. It is like handing of temporary rights permitted through the customary laws. Here descent is always traced through male lines. Men in these communities widely believe that if women are given property rights after marriage, it will disrupt the balance of property distribution and harmony among families and the community. Similarly, if a woman is given property rights and if she marries

outside the community, the right will be extended to the man, which in turn threatens the economic and existential interest of the group.

For instance, Madhori Manjhi (52 years) is a widow who resides in the village with her only daughter¹². She is vulnerable due to lack of entitlement to land and shelter. She is often exposed to exploitative relationships (with her extended family) and is often excluded from accessing state's welfare opportunities like food subsidies. She says,

tilling my husband's land or supervising was not possible since they are located in my husband's native place, which is far from this place (place of stay). I had to mortgage that land to my brother-in-law. I was forced to mortgage patches of fertile land in return of some money to meet health emergencies in my family. I had also leased out some land to a share-cropper. They too did not give equal share of grains this time and sometimes they give nothing stating reasons of crop failure or inability to cultivate. I did not even receive government's food subsidy as I don't have ration card...they say I don't have records of residence in this village (Madhori Manjhi, 52 years, widow, agriculture labourer, Santhal, Pattanr).

Moreover, we have observed that chronic food deficits force single women to marry off their daughters at a very early age. For instance, Madhori, unwillingly married off her daughter at a young age of 15 year. In return she received a bride price from the groom's family. Nevertheless, the couple got separated within a year of marriage, and her daughter returned home. Presently, her daughter is also working as an agricultural labourer. Madhori is still hopeful to receive some bride price and free her mortgaged lands. She is also awaiting to benefit from the state's housing assistance to enable her a safe and secured shelter.

While in another case Sadaki Manjhi (40 years) is a mother of two young daughters. Following her husband's demise, the only land they had was transferred to her husband's nearest relative. According to her,

I do not have the rights to till the land. Even if I try to cultivate, I require support from the men in the community to plough. But no

one is willing to work these days without money. The land that I have, has become a waste land...I only have the axe and the forests to earn my living (Sadaki Manjhi, 40 years, widow, firewood seller, Santhal, Pattanr).

Quite differently from the situation of two women mentioned above, another widow and a small Santali farmer, Moni Manjhi (40 years) in the absence of her husband, has the ownership of overseeing the land without any legal substantiation. However, the property right will inevitably pass down to her sons. As she says,

I have an elder married son; he has separated from us. I stay with my two younger sons and one daughter. If the land records are legally transferred in the elder one's name, I'm sure we will be deprived of the land. Hence, I take care of cultivation and my younger son helps me in that, I have given the elder one his share. He does his own bit. (Moni Manjhi, 40 years, widow, marginal farmer, Santhal, Pattanr).

Compared to others, Moni has been able to lead a decent life, due to her inheritance of around 1.5 acres of fertile farm lands, one water pump and few cattle. With the active support of her two sons she could survive the hardship. Thus, the denial and recognition of equal property rights to arable land shaped through patriarchy and gender norms, constrain women's access to extension services, agricultural credit and equal control over agricultural produce and income. This prevents women like Madhori and Sadaki to plan and maintain food self-sufficiency at the household level during years of scarcity and uncertainty. Women's lack of access to resources in both the communities reinforce their social and economic vulnerability and force them to always depend on men for their livelihoods.

Changes in household's composition and land fragmentation

There has been a significant trend towards increase in individualisation of households and subsequent fragmentation of land. The individual members decide about the allocation of resources they have access to, which is no longer a jurisdiction

of the household head. This has been particularly significant in the female-headed household. Young members mostly male children decide in relative autonomy about which income opportunities to explore or resources to be allotted. This may be the outcome of changes in the land holding pattern and household composition. Single joint family ownership of ancestral land has given way to fragmented ownership in nuclear families. With the fragmentation of land, people have constructed their own houses and developed their own livelihood pathways. In the words of a 65-year-old Bhumij female research participant, the concerns of certain sections of the village has been narrated here.

Land fragmentation has increased the cost of production in terms of expensive seeds, labour, fertilizers and pesticides. In the absence of it, productivity has declined. Productivity is also decreasing due to small size and scattered patches of land (especially the State distributed forest lands). Hence the opportunity of securing the benefits from agriculture is also declining. Declining fertility of land is increasing the exploitation of other natural resources, which in turn impacts other sub-systems. Who is to be blamed? No one is held accountable for the alarming mis-management of resources. The young are on their way, they do not seek any advice from us! (Mandhi Singh Mura, 65 years, marginal farmer, Bhumij, Pattanr).

According to the elders of the village, such development has disrupted the functioning of the land and ecological balance. With land fragmentation, people have stopped tilling their lands, since it requires more pooling of natural resources and human labour.

Ecological Degradation

In the larger study region, both colonial and post-colonial policies of forest destruction through felling of trees for timber, agrarian invasion and charcoal production led to degeneration of the traditional Sal forests. It was understood that, women resorted to desperate measures to avert the crisis of hunger or scarcity, often in response to emerging livelihood opportunities.

For instance, sometimes wild fruits and edibles were harvested through felling of trees, so that it would enable the process of collecting fruits. The unripe fruits were difficult to harvest since they would not fall from the high branches through trembling. While the weak bark and a fragile trunk of the trees would be risky for the villagers to climb them. Hence the only solution was to fell the trees. The consequences of tree felling to collect unripe fruits meant less fruits are available both for human and non-human beings. Harvesting fruits at the cost of large quantities of native tree species may have negative impact on the eco-system. This may lead to reduced organic matter in the soil, harsh climate and enable destruction of crops being attacked by wild animals.

Similarly, tree felling for firewood trading has increased alarmingly, causing a serious threat to the environment. For example, many young and middle-aged women respondents often emphasized on how the collection of greenwoods in addition to dead wood from the forests has evolved as an important economic activity. Collection of deadwood and other forest booty is considered legal, recognizing the importance of forest fuelwood to meet their energy needs. The reduced availability of deadwood makes people cut green wood to meet their needs despite the fact that collecting and axing greenwood is illegal, laborious and risky. Globalisation and urban development have shrunk the virtual distance between rural households and the market for forest produce. The ever presence of retail buyers and intermediaries have made it easier for the men and women to sell their forest produce at the village level itself. However, such transactions happen at a greater environmental cost. Women reflect and say that their forests are degrading rapidly in the recent years. With the increasing market penetration, it has become easier to retail forest goods from their households rather than entering the formal market. Such market exchanges are often preferred by the community, since it reduces the cost of visits to the market and the negotiations that it requires. These desperate solutions to the problem of recurrent drought and food deficits will continue to hinder women to face difficulty in finding forest food and other significant resources.

Subsequently, denuding the land of its forest cover will result in impoverished soils and consequently poor crop yields.

Similarly, with new livelihood opportunities to tap the emerging cash economy, many young members have shifted to sand mining as a means of employment. Sand from the *koirebera* stream is preferred by the builders for construction since it requires less processing and is of better quality, says a social activist. But there's a huge cost to the people and the riverine ecology, as it may alter the course of the stream, erode its banks leading to flood. It has also begun to destroy the habitat of aquatic animals, besides affecting the groundwater recharge. This has huge implications on the women and young girls, forcing them to travel farther to meet the drinking water needs of households.

Access to Commons

Over a period of time due to various factors, women's access to common property resources like forests have also declined. The women are of the opinion that State's intervention in afforestation and forest conservation through 'people's participation' and Forest Protection Committees have failed to achieve the original aims of such schemes. According to one women respondent,

The choice of the species was neither need-based nor ecologically appropriate. They did not support undergrowth. Moreover, such steps reduced the availability of fodder for animals, so did our access to forest edibles and firewood got constrained. Only some species of Sal trees escaped felling, owing to their religious significance (Nirashi Mandi, 42 years, widow, marginal farmer, Santhal, Pattanr).

Planting of quick growing species after clear felling the natural forests were against the interests of these women. Past conflicts over resources with capitalist logging and agri-business has been prevalent. The forests of this region were famous with rich patches of Sal trees. Around the same time, a widespread movement broke out in this area against the forest development corporation to replace Sal with Sagwan (teak)¹³. Teak fetches

more price as wood in the market compared to Sal. This has grave consequences for the people on their lifestyle and cultural order. This also justified the increasing invasion of food crops by wild elephants. Since it was experienced by the community that nothing grew under the teak, and particularly the grass roots and tubers on which local wildlife, cattle and people survived.

Gradually such planned interventions subsequently hindered woman to procure food from forests in times of scarcity, forcing them further into the cash economy. As the resources over which women had the most control—the forest and the food products, became less important for the survival of the household, they were forced to find avenues elsewhere. All these factors posed significant threat to livelihoods and significant changes in women's access to resources and the basis for their livelihoods. While women in normal times stood a good chance of being self-reliant, their dependence on mono-cropping and gathering forest produce for trading made them particularly vulnerable during the drought.

Similarly, the community has constructed ponds for different purposes like water for human and cattle, irrigation as well as for religious (sacred) purpose. Although few such water harvesting structures were traditionally in principle privately owned, but in effect functioned as sites of 'collective responsibility' and the marginalized community enjoyed access¹⁴. Such common resources also defined norms of allocation, distribution and maintenance through reciprocal social arrangements based on care and trust in sustaining them. In both the community, practices of collective sharing and maintenance were prevalent with respect to various water harvesting structures. As further elaborated by a woman here,

With respect to a pond, the norm was to allocate water to all village users. In response, the users will be collectively responsible for maintenance and cleaning of these water bodies. Similarly, the fish that was cultivated by the owners will be shared by the village water users after the first catch was harvested by the owner (Moni Manjhi, 40 years, widow, marginal farmer, Santhal, Pattanr).

Reciprocity increases trust and hence there is a simultaneous exchange of goods. Emphasis on water sacredness is a practice that is a reflection of the community's inter-dependence with water and the reciprocal responsibilities that connects humans, water and other living beings. Reciprocal relationships and responsibilities also contribute to the development of long-term obligations in the community and constitute a healthy ecosystem. However, such practices of sharing water are disappearing in the village largely due to factors such as globalisation and privatisation of resources.

IMPACT OF GLOBALISATION ON WOMEN'S VULNERABILITY

Changing patterns of Women and Work

The oral history with elderly women in the two clusters provided an understanding of how earlier livelihood practices around farm and forests co-existed with no discernible patterns in division of labour by sex. But there existed few gendered roles. Earlier women were involved in farm-based activities, gathering wild food and fodder from forests and fetching water for household chores and managing livestock. The forest produce collected or exchanged generally represented a source of income that provided them an autonomy, un-controlled by men. Even in these agricultural communities where women were denied property rights, they had some measure of control over their labour and work. All members had crucial responsibilities with respect to livelihood practices, however they were not regarded as sharply distinct. There was considerable gender sharing of work as well, between men and women. However, all this was to change under the onslaught of diverse contextual factors, shaping transitions in addition to increasing population of migrants, thereby contributing to "feminisation of labour".

Globalisation has opened up new channels of work for men in towns and cities. Many families have by default turned into female-headed households due to out-migration of men. These men are trapped in the city/town's life and often return to the

village after few years. Women remaining in the villages end up with increased burden of work both in the private and public sphere. With the introduction of cash crops, labour requirement has doubled. Women are now hired as labourers in the neighbouring paddy fields and sugarcane farms for transplanting, weeding and harvesting. To offset the deficit of men (with increasing off-farm livelihood opportunities) women have continued to take up the additional burden in agriculture. Nevertheless, such labour-intensive cropping patterns have sustained the inherent gender inequalities as their wages have not proportionately increased compared to their male counterparts.

This increased burden on women has often resulted in reduced agricultural productivity and food deficit in the village. This in turn has reinforced the strategies of men to migrate to cities in search of work. The female headed households are doubly vulnerable both as labourers, due to their gender, where they are constrained in negotiating for better wages. Women as employers are unable to pay higher wage rates to employ men for ploughing, due to the constriction of the labour market and erosion of traditional practices of labour exchange. The normative arrangement of labour exchange not only reduced the costs of production, it facilitated co-operation in farm activities. The community furthered such collective activities knowing that others will reciprocally do so when required. As illustrated here, in the words of an elderly male farmer,

earlier we were all connected. We contributed our labour by working in each other's fields, knowing that I will also get labour support in return. But such practices no longer exist, no one is willing to work without money. Nowadays land is divided...even if I engage my daughter-in-law during the harvest, I have to either give her a share of the harvest or cash (Kanaicharan Manjhi, 68 years, medium farmer, Santhal, Pattanr).

Labour scarcity and unavailability of the draught cattle for traditional modes of ploughing has forced few women of female headed households to suffer even more. A female research participant narrates here a situation as follows,

These days it's easy to find labour for tractor but not for ploughing with the bullocks. Also, the owners who are willing to rent their bullocks will have conditions applied. It is only after they have ploughed their fields, they will allow us to hire for ploughing. So, tell me what will I do with the bullocks after the sowing season, almost at the end of Sraban month (sowing season) (Sabita Mura, 46 years, widow, inactive marginal farmer, Bhumij, Pattanr).

The resultant reduction in draught power means that women have to till the fields by hand, which is a strenuous work for them. Hence women are often forced to reduce the area they cultivate. While for young women with migrant husband, labour scarcity compels them to take up additional burden, practically increasing her drudgery. Such continuous engagement in strenuous work has additional health impacts. Poor health, in turn, makes them cultivate less, reduced agricultural productivity and consequently food shortages.

Technological modernisation and labour displacement

Green revolution was popularized with a focus to use fewer crop varieties and higher production per unit of land. Modernisation in seeds and technique replaced local varieties and their genetic traits. This is further accelerated by the processes of globalisation, that exposed the community to new risks and “living with scarcity”. The main agendas of the State Government have been to promote agricultural modernization through uniformity in agrarian practices. India's diverse agricultural practices have been subject to restructuring that focused on productivity and intensifying agriculture. One group discussion session was held to understand the resilience of the communities coping strategies. Few farmers are concerned of the grave consequences as has been illustrated by a group of female farmers in a focussed group discussion.

There has been a wide-spread use of the modern seed varieties since 1980's. The premature release has destroyed the well adapted staple grains and other food crops where a down-side impact is a

visible reality and it has become too late to return back (focussed group discussion, marginal and small farmers, Santhal and Bhumij, Pattanr).

The process of green revolution, focussed on biological innovations, in terms of high-input responsive and genetically modified organisms (GMO) seeds and chemical fertilizers¹⁵ Such patented seeds not only failed to recognize the rights of the women over local seeds but also made them dependent on GMO seeds, resulting in indebtedness. Along with the loss of agro-ecological diversity, women who are economically and politically marginalised are more likely to stop trusting and doubting their local agrarian practices and lose confidence in their own agronomic knowledge.

Globalisation facilitated the green revolution movement, into new arenas that entails a shift in inputs from human to technological modernisations. Mechanization according to the State is seen as an integral part of sustainable crop production and intensification based on certain principles and practices. The State attempts to tap the potential of young farmers, by promoting the modernisation and mechanization of farming. As illustrated by the district agriculture officer,

Mechanization not only eliminates unpaid or arduous labour. It will also help mitigate labour scarcity to a large extent. Secondly intensive ploughing (through bullock) has been proved to be counter-productive that contributes to soil erosion especially with the erratic monsoons (Assistant Director Agriculture, Information, Puruliya Zilla Parishad).

Many global firms are today making their presence in the modernisation drive of agriculture in Puruliya. For example, firms such as MAHENDRA, as a leading tractor making company, KRILOSKAR for harvesting machines, BAYER and PAN as seed producers, IFFCO and Mitsubishi Corporation for pesticides and fertilizers. However, the communities' responses are varied. The women agricultural labourers believe mechanization is highly capital intensive and modernisation in agriculture ultimately lead to labour displacement. As depicted in the words of a Santali women,

A machine will displace so many labourers from their job. Earlier we were paid 6 sher (4 kg) of paddy while men got 8 sher (5 kg 500 gms). From that it changed to 12 sher (8 kg) for the women and 14 sher (9kg 500 gms) for men. In money it is 120 rupees for women while men earn 160 for the same work. Many women live through working as agriculture labourers. These are mostly seasonal work, not available throughout the year in this region, since paddy cultivation is mostly rainfed (Madhori Manjhi, 54 years, widow, agricultural labourer, Santhal, Pattanr).

On the other hand, mechanization is favoured mostly by young men since they are unwilling to engage themselves as manual labour. These days these men consider such works as insignificant and seek out for more lucrative employment outside the village. They view farming as less viable and dignified. However, few mid-aged and elderly women farmers contested such understanding since they were unsuited for the inundated paddy fields. They believed bullock ploughing helped in increasing the soils moisture retention capacity, reduces pest invasion, avoids compacting of soil and helps in managing of weeds. While there were few Bhumij farmers (men) who spoke against it. These farmers, owning few stretches of low lands cultivating paddy, spoke in favour of mechanised ploughing citing reasons of high cost of maintenance of draught animals, shortage of manual labour and the need for intensive cropping.

The introduction of new technology will restructure agrarian production processes and work patterns. However, the cost of globalisation is being largely borne by women. Women's productive role in agriculture tends to be ignored, for having not directly linked to the market or the formal economy. Examples across the globe show more intensive production for the market, displaced women who had to resort to low-paying informal work, resulting in "de-skilling of labour" (Roy 1995). There have been role reversals from being 'primary producers to subsidiary workers' further marginalizing their participation and knowledge (Das, Das 2006). All this will eventually restructure family and social relations. However, though not evident from our study village, we could observe trends of young men and women finding casual work in these global corporates. The

companies are also eager to provide casual work opportunities at a cheaper wage rate or at a reduced monetary cost.

Globalisation has also increased the market demand for aquaculture-based produce such as fish and shrimps. In this context, the state government has encouraged many farmers who customarily own water bodies to privatise their ponds and engage in fish production. Along with this trend of privatisation, changes in family structures, migration, labour scarcity, losing trust in collectives and emergence of new livelihood opportunities have disrupted the earlier collective water management practices. However, with the persistence of severe drought like conditions and less availability of water, the pond owners began to impose restrictions on the use of both water and fish, taking advantage of the State schemes for revenue maximization. In the wake of privatisation, only the owners (elite farmers) benefited from the use of the water and furthered their livelihood practices and the village people at large were bereft. The consequence of privatisation was that there was gradual depletion of the water bodies. Due to lack of maintenance such ponds are also getting silted and often left as barren grounds. Women, today have to traverse farther distance in search of water.

GLOBALISATION AND CLIMATE CHANGE AS A DOUBLE PRESSURE

Compounding the inherent ecological fragility of the globalisation process are climate change and widespread depletion of natural resources, which made agriculture highly risky venture for the women. It is significant to the extent that they undermine women's efforts to fend for their families. Earlier when the main crop was impacted due to weather anomalies, they could have been supplemented by other dry-land crops like millets, pulses or food from the forest. Control over food implied a sense of decision-making ability over household resources. But with declining control over traditional sources of food (farm and forests) there has been simultaneous erosion of access to resources and decision-making structures.

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As the region became climatically more sensitive and vulnerable, experiences of over maturing of saplings, unripe fruits and reduced yield from low-land is a common phenomenon. Such a distressing situation also goes to the extent of keeping the fields fallow or uncultivated for most of the *Kharif* crop during the drought years. This has a subsequent impact on the availability of fodder resulting in trading cattle to overcome the loss and meet next seasons input cost. They grew rice in the terraced hillsides by flooding the terrace (as soon as the monsoon rain sets in) and retained the water until the crops ripened. In the absence of artificial irrigation systems, agriculture continued to depend on rain-fed food and fodder crops. However, there has been a shift in cropping systems and practices over the time. Rain-fed upland rice and coarse grains and millets were hardy and resistant to long dry spells, requiring less expensive inputs. They were discontinued over-time, due to lack of market conditions, poor yield, extinction of seeds, changing food habits and increased scarcity of labour. There has been a marked shift from upland rice to low-land transplanted paddy due to weather anomalies followed by high-value but risky perennial cash crops like sugarcane and short-term vegetables.

Preferences for farmer's seed varieties by the women are not just based on their productivity and performance but other culinary practices characterised by its cooking time, smell, stickiness, colour, taste and grain elongation after cooking. Seeds have traditionally been nurtured, multiplied and exchanged for the purpose to make the most of its utilization with the objective to create abundance. Farmers planted, harvested, stored and exchanged seeds, and fed themselves and others. In doing so, they built a considerable amount of knowledge about crops, their characteristics and possible uses, and their interactions with the surrounding environment. A female farmer explains here this process,

in the seeds produced locally, there is local reproduction, using local seed selection, production and careful observation of the environment. The process involves saving some for the next planting season and distribute some to other farming households often within the community or extended families in the uplands when they visit us (Buli Manjhi, 60 years, medium farmer, Santhal, Pattanr).



With the wide-spread use of the modern seed varieties and erratic climatic conditions, few women are concerned that the premature release have destroyed the well adapted staple grains. A visible reality is a down-side impact and it has become too late to return to traditional practices.

On the other hand, rapid agricultural intensification is leading to more demand for water on the one hand and labour scarcity on the other. Mechanisation is gradually becoming the panacea of all problems and signifies progress and development. In the process, the micro-environment is exploited and natural resource base is depleted as policies favour such modern farm technologies induced by globalisation. This not only has disrupted the traditional resource use and management systems in the region, but have completely neglected the ecosystem linkages and carrying capacities of vulnerable resource systems. This leads to a critical phase, where there is requirement of more intensification while the need to protect and maintain the micro-environment is lost. Climate variability including erratic and unpredictable monsoons and recurring drought-like-situation have also added to the vulnerable resource systems.

Similarly, the sense of architecture in building traditional earthen houses is also a reflection of women's sensibility and preparedness for the monsoon damages. Traditional houses of both the community can be easily discerned from others for their structural precision as well as their artistic walls. Their dwellings are built in *murrum mati* – a locally available clayey soil. The walls are protected from the rains through projections and the technique of plastering that restrict rain to wash off the wall surface immediately. But today with the uniform patterns of housing structures provided by the State, the community is dominated by these government sanctioned standard houses. The government officials are keen on distributing cost-effective, standard concrete houses with asbestos roofing. But many find it difficult to reside in them. For instance, the elderly women complain that with the increased heat in summer these houses get extremely hot, preventing them from residing in it. Alternatively, few of them have continued to build traditional houses alongside the standard houses and the latter are often used to store harvested crops, agriculture equipment's like

pump-sets or small ruminants. Many government officials, on the other hand, view the marginalised traditional farming communities as regressive and unwilling to adhere to the State's "housing for all" policy guidelines. For them, building traditional houses is a reflection of observance to primitive tradition rather than realizing their genuine problems of inhabiting "uniform" and "standard houses".

Such interventions work to improve the material conditions of life without actually looking into well-being of the women. This is also reflected in the conventional drought addressal mechanism. The institutionalised drought relief measures are heavily biased towards short-term solutions such as food-for-work projects, supplementary feeding schemes or distribution of seeds for the next cropping season. However, they do not empower women to fend for themselves in a future drought. Similarly, current relief programmes – standardized methods of drought recovery often focusses on men with ownership to land, barring women (farmers and share-croppers) with no land records.

Women believe that the formal institutions are not fair in their mechanisms of distributing benefits. As a marginal women farmer voices her dissent here,

who will compensate us (as women), we have such little land-holdings, the State does not even consider us, forget about giving us credits for doing farming? They say we have no proof of land records. We have been suffering crop loss for years, there is no assistance for us (Nunia Manjhi, 50 years, marginal farmer, Santhal, Pattanr).

The State agencies contest various such allegations and regards these women to be uneducated and irrational. As a senior agriculturalist speaks,

the women are illiterate and do not understand the importance of land records as a key criterion for receiving benefits. Despite land holding, farmers often fail to maintain or update land records and in the absence of valid proof of land holding they remain excluded. In case of a bargadar (share-cropper), farmer should have formal records to its discretion else neither the bank nor the insurance agency will

consider them as cultivator (Deputy director Agriculture, Puruliya Zilla Parishad).

The counter-voices of women to such arguments are as follows,

these schemes and programmes (pointing to the drought management policies) do not compensate loss of income from minor forest produce. Drought relief entirely focusses on loss of crops and neglects the impact of reduced income from forest produce. Forest dwellers like us, who are mostly dependent on forest edibles and wood for our survival, how are we going to survive! (Sadaki Manjhi, 40 years, widow, firewood seller, Santhal, Pattanr).

Such natural resources are hardly integrated in the drought-proofing process. In a similar vein, a social and environmental activist points out to the neglect and injustice done to the forest dwelling communities, who are dependent on the minor forest produce. He says,

A family who owns few mahua trees (around 12-15) is better able to cope during the drought years or at times of food crisis than a person who has 2-3 hectares of land. But all the programmes of the agriculture department are crop centric, which denies any relief measures to a large number of people living on forests, that has been a significant source of food and livelihood (Sishir Manjhi, 68 years, social and political activist, Sirkabad).

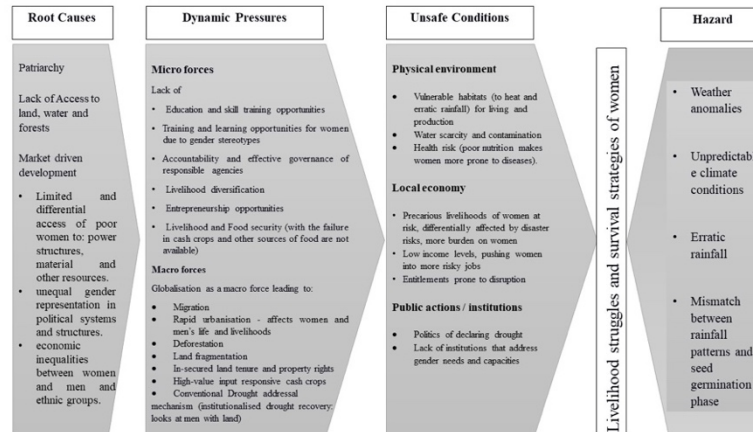
Losses suffered by biodiversity, livestock fertility, perennial forest plantations extend over many years after incidences of drought. However, such damages are not accounted for either in the drought-declaration or mitigation process. There is a complete delinking of drought assessment and platform on which drought compensation is given, which alienates the forest dwelling communities. Recovery is mostly defined in terms of vegetation index and land records which is mostly dependent on global trends to locate relief. Hence, both drought declaration and compensation lack transparency. Further, the global politics of drought entails assessment and declarations at the *tehsil* or block level (administrative division comprising of many villages)

thereby subsuming and ignoring the micro realities (Sainath 2019).

In addition, the findings of this paper highlight the importance of bringing out the dimensions in relation to often-incompatible values, interests, beliefs, power and knowledge of various actors. These interfaces may be between the formal actors mainly the agriculturalists and bureaucrats, or internally between the Santhal and Bhumiij, or between men and women, or between the young and old; and the way in which social relationships, technologies and other resources are organized by these actors. Their diverse situated understanding has a role in drought mitigation and meeting livelihood and ecological uncertainties, and its consequences is reflected in the pluralistic and socially constructed nature of the complex realities.

The aforesaid characteristics of women's vulnerability are summarized in the tab. 1. Having discussed on experiences of women's vulnerability, we shall now briefly understand how women have been able to use their agency both individual and collective in coping with vulnerability. Though the scope of the paper in this regard is limited, we would mention here some of the key strengths making them resilient. Through formation of self-help groups to access loans and resources, women have been able to enhance their resilience. Unlike the formal financial institutions, this thrift groups organized by women provides access to loans based on mutual trust. Loans are provided on a very low interest rate and collateral free. This enables them to diversify livelihoods or increase farm investment. As a collective these women are adhering to innovative practices of food storage and preserving seeds. The collective takes the responsibility of seed distribution for cultivation and for paying as wages to villagers who depends on private shops for seed access. To a certain extent this helped the community to address the challenges and needs during times of resource scarcity. The knowledge of these women to utilize a wide variety of seeds, maintaining important in situ reserves of genetic resources directs the adaptive measures the group is able to undertake.

Diversifying to non-farm activities has been another crucial survival strategy adopted by these women. Women at large have diversified their livelihoods through rearing small ruminants

Tab. 1. *A Pictorial Representation on the Progression of Women's Vulnerability*

Source: *Adapted and Modified from Wisner et al. (2004)*

like goats, pigs and chicken. As the dependence on market is on the rise, women had to gradually hone their market skills to perform in the male-dominated spaces. The women of the village mostly travel in groups (as a collective) to the local daily haat in Sirkaband to sell fuel wood, fodder and fencing wood.

In these spaces they must perform under certain set conditions and often possess less power to control them. Sometimes even young girls come to the market in circumstances when the mother is sick, and the father is away for some work or has passed away. Women's groups have started becoming a key player in the daily haats in their capacity to market and has gained a somewhat monopoly over it (though in limited conditions). However, their experience in this has made them adept in negotiating and making the final deal. Women-to-women or women-to-men channels, helped retain their rights and to be the best judge of the quality traded. Through dealing in cash, these women had for this brief period managed to maintain some measure of control and power over their exchange. This earning helped women gain some social and financial autonomy as the meagre amount would provide for the 'salt and oil' and

personal spending. Although these women have not been able to further their education as adults, what is interesting is that they have prioritised their children's education. 5-6 women spoke about how they have been finding ways to continue their children's education of both female and male.

CONCLUSION

The women in these two communities are oppressed within a larger political, economic structure that shaped their vulnerability. Some of the key contextual factors exposing them to various risks are patriarchy and property rights; erosion of access to land, forest, water and male centred drought mitigation policies. This progression of vulnerability has been severely impacted through forces of globalisation and largely induced through technological modernisation as well as market reforms. In this context there has been changes in women's work role leading to feminisation of labour. It reinforces existing vulnerabilities that are historical but at the same time are reducing their opportunities and making them more vulnerable to climate induced hazards, impacting women's day to day existence. This is leading to complex phenomenon such as out migration of men, increase in the number of single women-headed households, and worsening of everyday livelihood struggles of marginalised women.

Here, globalisation in itself functions as a dynamic macro pressure acting at the micro level, inducing new practices favouring men, the elites and powerful actors of the village. In an attempt to achieve economic security, the women have adopted numerous alternative livelihood strategies to supplement their income. Nevertheless, their strategies are further dependent on factors such as access to resources and decision-making structures. Women's voices and situatedness has to be recognised and represented in all strategies of vulnerability reduction, risk pooling and livelihood enhancement. Globalisation favoured by gender insensitive and positivist framework of agrarian development and market penetration can reinforce women's vulnerability in newer complex social arenas. Actors shaping

globalisation therefore have a moral responsibility to engage with women in having shared conversations on their lives, risks, daily struggles, caring relationships and future aspirations.

NOTES

¹ Basu (2005) discusses the relationship between globalisation, inequality and marginalization within and across nations.

² “Drought in India”, *Poorest Areas Civil Society (PACS) Programme*, 2008.

³ According to The Constitution (Scheduled Tribes) Order, 1950- the term “Scheduled Tribes” first appeared in the Constitution of India. Article 366 (25) defined scheduled tribes as “such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution”.

⁴ According to the district plan, Ayodhya Hills is an extension of the Dolma Hills of Jharkhand. The areas are bounded by Ranchi and Hazaribag districts of Jharkhand in West and Singhbhum district of Jharkhand in South and Bokaro and Hazaribag Districts of Jharkhand North respectively. Physio-graphically the forest areas under this Division falls under a Sub-region of North-Eastern part of Chotanagpur plateau with undulating and rolling topography. The degradation processes are active in the area due to the presence of isolated hills and dissected plateau.

⁵ Launched on 2nd October, 1975, the ICDS is one of the flagship programmes of the Government of India. It represents one of the world’s largest and unique programmes for early childhood care and development; and caters to the challenge of providing pre-school non-formal education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality on the other. The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women and lactating mothers (GOI 2009).

⁶ Eventually, even the scheduled tribes were impacted by the severe famines which had been affecting the lowland population for a much longer period. The penetration of the colonial economic system into the deep forest regions severely disturbed the age-old balance between people and the environment.

⁷ West Bengal District Gazetteers: Purulia and Mukti, 1953, 1958 and West Bengal District Gazetteers: Purulia mentions that after 1866, more famines occurred one after the other in 1874, 1892, 1897 and 1907-08. Purulia suffered persistently from periodic droughts which usually lasted from April to early July.

⁸ Data received from Arsha administrative block office in the district of Puruliya.

⁹ In the absence of census data on separate households of Bhumij and Santhals, the number is based on authors field notes.

¹⁰ Patta is a government tenure document, recognising the stated rights of the holder, in a specified area.

¹¹ The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 came into force on 31 December 2007 followed by the notification of rules on 1 January 2008. The most significant institutional reform of rights in forested landscapes since Independence. It was promulgated with the objective of granting the tribal population of the country legal rights to forest land that they inhabit. Under the provisions of the FRA, the official land deeds or *pattas* are handed over to eligible candidates by designated officials of the State government after a process of verification and review. There are two sets of rights that may be granted – individual



rights and community forest rights. The eligibility criteria states that these rights have been granted to those primarily residing on forest land for three generations (75 years). The rights are granted to those who occupied forest lands prior to 13 December, 2005 and depend on the forest or forest land for livelihood needs (Banerjee et al. 2010, discussion paper series 49, IPPG).

¹² Pseudonyms have been used to protect the identity of the research participants.

¹³ It has been mentioned that often teak nurseries were raised by clear felling fruit-bearing trees in the past, thus depriving tribes of their source of food (Bhabha 1995: 20).

¹⁴ In this context, as Popke (2009) explains, “commons” are potential site of ethical transformation, the realm of which encompasses a sense of responsibility and community. Popke advocates such spaces to be understood as sites of collective responsibility.

¹⁵ The World Health Organization has defined Genetically Modified foods as those derived from organisms whose genetic material (DNA) has been modified in a way that does not occur naturally, e.g. through the introduction of a gene from a different organism. Currently available GM foods stem mostly from plants, but in the future foods derived from GM microorganisms or GM animals are likely to be introduced on the market. Most existing genetically modified crops have been developed to improve yield, through the introduction of resistance to plant diseases or of increased tolerance of herbicides.

REFERENCES

- S. Arora-Jonsson (2011), *Virtue and vulnerability: Discourses on women, gender and climate change*, in “Global Environmental Change”, 21, pp. 744-751.
- K. Basu (2005), *Globalisation, Poverty and Inequality: What is the Relationship? What Can be Done?*, in Research Paper N. 32 (Helsinki, Finland: UNU-WIDER).
- J. Birkmann (2006), *Measuring vulnerability to promote disaster-resilient societies: Conceptual frameworks and definitions*, 1, pp. 9-54, accessed 27 September 2019 from https://fenix.tecnico.ulisboa.pt/downloadFile/282093452031945/Joern_I.pdf.
- R.C. Bolin, M. Jackson, A. Crist (1998), *Gender inequality, vulnerability, and disaster: Issues in theory and research*, in E. Enarson, B.H. Morrow (eds.), *The gendered terrain of disaster: Through women's eyes* (Westport, CT: Praeger), pp. 27-44.
- S. Chant (2010), *Gendered poverty across space and time: introduction and overview*, in S. Chant (ed.), *The International Handbook of Gender and Poverty: Concepts, Research, Policy* (Cheltenham: Edward Elgar).
- V. Damodaran (1998), *Famine in a Forest Tract: Ecological Change and the Causes of the 1897 Famine in Chotanagpur, Northern India*, in R.H. Grove, V. Damodaran, S. Sangwan (eds.), *Nature and the Orient: Essays on the Environmental History of South and Southeast Asia* (New Delhi: Oxford University Press).
- V. Damodaran (2002), *History, Landscape, and Indigeneity in Chotanagpur, 1850-1980, South Asia*, “Journal of South Asian Studies”, 25, 2, pp. 87-91.
- K. Das, B. Das (2006), *XIV International Economic History Congress* in Helsinki, Finland, 21-25 August 2006, Session 14, “Technology, Gender and the Division of Labour”.
- J. Demetriades, E. Esplen (2008), *The Gender Dimensions of Poverty and Climate Change Adaptation*, in “IDS Bulletin”, Institute of Development Studies.
- A.H. Dolan, B. Smit, M.W. Skinner, B. Bradshaw, C.R. Bryant (2001), *Adaptation to Climate Change in Agriculture: Evaluation of Options*, Department of Geography, Guelph.
- E. Enarson (2000), *Gender and natural disasters*, Working Paper 1 (Recovery and Reconstruction Department) (Geneva: ILO).



- E. Enarson, A. Fothergill, L. Peek (2006), *Gender and Disaster: Foundations and Directions*, in H. Rodriguez (ed.), *Handbook of Disaster Research* (New York: Springer).
- E. Enarson, B.H. Morrow (1997), *A gendered perspective: the voices of women*, in W.G. Peacock (ed.), *Hurricane Andrew: Ethnicity, Gender and the Sociology of Disasters* (London: Routledge).
- E. Enarson, M. Fordham (2001), *From women's needs to women's rights in disasters*, in "Environmental Hazards", 3, pp. 133-136.
- J. Guenther (2015), *Gender and Globalisation: Power Relations at India's Margins*, in "Journal of Developing Societies", 31, pp. 1-7.
- A. Gulati, T. Kelley (1999), *Trade Liberalization and Indian Agriculture: Cropping Pattern Changes and Efficiency Gains in Semi-Arid Tropics* (New Delhi: Oxford University Press).
- K. Hewitt (1997), *Regions of risk: A geographical introduction to disasters* (Reading, MA: Addison Wesley Longman).
- C. Jackson (1996), *Rescuing gender from the poverty trap*, in "World Development", 24, 3, pp. 489-504.
- S.K. Kundu, T. K. Mondal (2019), *Analysis of long-term rainfall trends and change point in West Bengal, India*, in "Theoretical and Applied Climatology".
- Y. Lambrou, S. Nelson (2010), *Farmers in a Changing Climate Does Gender Matter: Food Security in Andhra Pradesh* (India: FAO, Rome).
- R.M. Leichenko, K.L. O'Brien (2002), *The dynamics of rural vulnerability to global change: the case of southern Africa*, in "Mitigating Adaptation Strategies Global Change", 7, 1, pp. 1-18.
- C.A. Miller, N. Edwards Paul (2001), *Introduction: the globalisation of climate science and climate politics* in C.A. Miller, P.N. Edwards (eds.), *Changing the Atmosphere: Expert Knowledge and Environmental Governance* (Cambridge, MA: MIT Press), pp. 1-30.
- A. Najam, D. Runnalls, M. Halle (2007), *Environment and Globalisation: Five Propositions*, in "International Institute for Sustainable Development".
- K. O'Brien, R. Leichenko, U. Kelkar, H. Venema, G. Aandahl, H. Tompkins, A. Javed, S. Bhadwal, S. Barg, L. Nygaard, J. West (2004), *Mapping vulnerability to multiple stressors: climate change and globalisation in India*, in "Global Environmental Change", 14, pp. 303-313.
- K. O'Brien, R.M. Leichenko (2000), *Double exposure: assessing the impacts of climate change within the context of economic globalisation*, in "Global Environment Change", 10, pp. 221-232.
- D. Rocheleau, B. Thomas-Slayter, E. Wangari (eds.) (1996), *Feminist political ecology: Global issues and local experience* (London: Routledge).
- B. Rogaly (2001), *Seasonal Migration, Social Change and Migrants' Rights: Lessons from West Bengal*, in "Economic and Political Weekly", 36, 49, pp. 4551.
- S. Roy, K. Debal (1995), *Women, New Technology and Development: Changing Nature of Gender Relations in Rural India* (New Delhi: CWDS Manohar).
- P. Sainath (2019), *A flood of assessments, a drought of humanity*, <https://psainath.org/a-flood-of-assessments-a-drought-of-humanity-2>.
- G. Sen (2008), *Poverty as a gendered experience: the policy implications*, in D. Ehrenpries (ed.), *Poverty in Focus* (Brasilia: International Poverty Centre).
- V. Shiva (2000), *Stolen Harvest: The Hijacking of the Global Food Supply* (Cambridge: South End Press).
- A. Thorpe, F. Figge (2018), *Climate change and globalisation as "Double Exposure": Implications for policy development*, in "Environmental Science and Policy", 90, pp. 54-64.
- B. Wisner, P. Blaikie, T. Cannon, I. Davis (2004), *At risk: Natural hazards, people's vulnerability, and disasters* (London: Routledge).
- Worldwatch Institute (2006), *State of the World 2006, Special Focus: China and India* (New York: W.W. Norton and Company).

