

The Gendered Context of Vulnerability: Coping / Adapting to Floods in Eastern India

Sara Ahmed¹

Introduction

Typically, dominant perceptions of disaster construct it as a naturally occurring, largely environmental hazard which may occur relatively suddenly, e.g. cyclones, volcanic eruptions and earthquakes, or with some degree of regularity in terms of seasonality, such as periodic 'cycles' of drought and/or flood years as a result of climate change (Enarson 1998).² As the state counts up the human and economic losses, or administers relief, those who experience *disasters* are conceptualised as a homogenous group called 'victims', a category which overlooks differences in terms of gender, caste, class, age or physical and mental ability (Fordham 1999: 15). However, 'disasters' unfold in varying geographic, political, socioeconomic and cultural contexts (Enarson 2000: vii) and people's ability to respond, cope with or adapt reflects unevenly distributed patterns of vulnerability structured by access to and control over resources, the extent of diversified livelihood strategies, physical location (community settlement patterns, population density) or personal endowments (skills, education, key survival and recovery resources) and access to information and communication systems (DFID 2003).³

While poor nations and the poor as a social class are more at risk, the extent of vulnerability varies according to the ability of different groups or individuals to secure alternative livelihood options and ensure the flow of resources – financial, social and political – to maintain livelihood security. According to Cannon (1994): "there are no really generalised opportunities and risks in nature, but instead there are sets of *unequal access to opportunities and unequal exposure to risks* which are a consequence of the socio-economic (*and increasingly, political*) system....It is more important to discern how human systems themselves place people in relation to each other and to the

¹ Gender and development researcher, T-19, IIM(A) Campus, Ahmedabad 380 015, Gujarat, India, sara@sustainablewater.org. This paper has been written as part of the Adaptive Strategies project, funded by USAID through ISET (USA/Nepal) which looks at how communities cope/adapt to drought and floods by reshaping their livelihood strategies as actors rather than passive victims (Moench and Dixit 2004).

² There is an extensive literature on different perceptions of disaster, natural and otherwise, and the social context of risk and uncertainty which this paper is not going to review.

³ Vulnerability is a more dynamic concept than poverty as it captures the changing degree of susceptibility to loss caused by exposure to disaster or risk of individuals (access to a 'basket' of assets), communities (governance of resources) and systems (adaptive strategies).

environment than it is to interpret natural systems,” (cited in Morrow 1999: 2). That is, vulnerability is linked to complex sets of interacting conditions, some related to geography and location (for example, where do the poor reside in flood-prone villages) others with the nature of the dwelling (kuccha or pucca houses) and access to physical infrastructure (potable water supply systems), and some with everyday patterns of social interaction and organization (social networks, community institutions). Thus, the contextualisation of disasters within *everyday* vulnerabilities recognizes the role of interlocking systems of vulnerability in both physical and social space that is, the construction of overlapping ‘geographies of vulnerability’ (Fordham 1999: 19).

In the context of India and indeed most of South Asia, it is well recognised that poor women, children and the elderly carry disproportionate ‘vulnerability bundles’ which places them in the highest risk category, even amongst marginalised communities (by caste, ethnicity, race or religion) and the poor (Ariyabandu 2000, Fernando and Fernando 1997). Writing almost a decade ago, Blaikie et al. (1994) acknowledge that vulnerability is structured by relations of gender and power intersecting at different institutional sites:

“Gender is a pervasive division affecting all societies, and it channels access to social and economic resources away from women and towards men. Women are often denied the right to vote, the right to inherit land, and generally have less control over income-earning opportunities and cash within their own households. Normally their access to resources is inferior to that of men. Since our argument is that less access to resources, in the absence of other compensations to provide safe conditions, leads to increased vulnerability, we contend that in general women are more vulnerable to hazard.”

(cited in Enarson and Morrow 1998: 2)

Although there has been some progress in recent years to link gender, disasters and development, partly arising from the work of non-governmental organisations (NGOs), donors and others to strengthen the resilience of disaster-prone communities and challenge unequal relations of gender and power, the overriding discourse on disaster management is still largely un-gendered. That is, not only is the field of emergency relief and ‘crisis’ management predominantly male, engineering solutions such as embankments and check dams are also designed by men, often without consulting water users, particularly marginalised women. On the other hand, we also know “...as

little about men's emotional work during disaster recovery as about women's physical work," (Enarson and Morrow 1998: 4).⁴

However, bringing the voices of women and men into the discourse on disasters as a 'strategic site' embedded in everyday social relations is generally obscured by quantitative analysis of *difference* between sexes. That is, gender becomes an independent variable, like caste or class that is used to account quantitatively for variation in a dependent variable for example, landholding or expenditure on food or access to wage labour. While no doubt 'visibility' is an important starting point, and gender disaggregated data is important in this respect, all too often there is little analysis of the complexity underlying the 'why' or 'how' of processes of gendered power and negotiation. As Fothergill points out: "gender differentiation, conceptually, does not mean inequality, as 'different' does not mean 'unequal'" (1998: 23), yet given the socio-economic status of the large majority of poor women in India, gender stratification and differentiation tend to coincide. Bourdieu (1977) terms this as 'doxa', that is, gendered relations of power play themselves out in everyday life in such a way that they appear as natural and self-evident, as part of undisputed tradition. But doxa can be subject to challenge and change through processes of mobilisation of the poor/women, structural changes in the economy (globalisation and liberalisation policies) or shifts in cultural meanings and the nature of the 'community'.

This paper begins by briefly describing the physical, economic and institutional context of disasters in India, outlining the largely top-down and gender-blind approach to disaster management by the state apparatus. Drawing on insights from qualitative research, both primary and secondary, the paper then looks at women's lived experience of floods in Eastern Uttar Pradesh (U.P.), using the narrative form where appropriate to better understand the social context of disaster impacts. How do women, particularly the most vulnerable perceive 'disasters', how do they respond to them (cope) and to what extent do they *adapt* in terms of changing livelihood strategies (or otherwise)? In the face of state failure to look at disasters holistically in an integrated

⁴ This is perhaps more true in the context of developed nations which have an older history of disaster research funded by federal agencies concerned with how to 'manage'; see Bolin et al. 1998 for a good discussion of how disaster research in the USA has been gender-blind. While developing countries have to some extent, at least in the post-colonial period, begun to address disasters as social phenomena too, the early Famine (drought) or Irrigation (floods) Commissions were largely technical in their approach.

framework of natural resource management, rights and gender justice, the role of civil society actors in facilitating social mobilisation, participatory resource management and community flood mitigation plans raises critical questions of replicability (scaling-up) and sustainability.

Coping with Disasters? The Role of the State

According to the Reinsurance Company 'Munich Re' the costs associated with natural disasters has gone up 14 fold since the 1950s. Each year from 1991 to 2000, an average of 211 million people were killed or affected by natural disasters – seven times greater than the figure for those killed or affected by conflict. As the 20th century drew to an end, it was estimated that there were more than 25 million environmental refugees in the world (UN World Disasters Report 2001).

Asia as a continent is particularly vulnerable to disasters: between 1991-2000 it accounted for 83 percent of the population affected by disasters globally. India accounted for 24 percent of disaster deaths in Asia during this period, mostly due to floods and cyclones. Nearly 4 crore (hundred million) hectares of land area in the country are flood prone, while 68 percent of the net sown area is vulnerable to drought. Given the economic magnitude of these disasters (see table 1), the Tenth Five Year Plan (FYP 2002-07) has for the first time got a separate chapter on the need for disaster mitigation from a development perspective (Chapter 7). Traditionally, responses to disasters have been seen as non-planned expenditure (calamity relief), but the Orissa cyclone (1999) and the Gujarat earthquake (2001) have made it apparent that the country needs to plan for disaster preparedness and mitigation to minimise the impact on development objectives:

“The message for the Tenth Plan is that in order to move towards safer national development, development projects should be sensitive towards disaster mitigation. With the kind of economic losses and developmental setbacks that the country has been suffering year after year, it makes good economic sense to spend a little extra today in a planned way on steps and components that can help in the prevention and mitigation of disasters, than be forced to spend many multiples more later on restoration and rehabilitation,” (Tenth FYP: 202).

While the chapter does not focus on droughts and floods per se, maintaining that there are several other components which cover these types of disasters⁵, the basic thrust of the chapter is on the need for integrated planning and management systems, information (a sound data base), coordinated communication and networking channels and extensive capacity building at different levels (panchayats, armed forces, schools and knowledge centres, communities) to support this institutional infrastructure. Although the Plan recognises the need for community participation and within this, the need for identifying vulnerable groups (women and children, elderly, physically challenged), it does not match this commitment in principle with resource allocation. Rather, the entire approach to disaster mitigation is top-down and technocentric rooted in an ‘engineering’ paradigm (e.g. afforestation, earthquake resistant housing) based on trained experts who are meant to interface with and support local communities, organised by NGOs/CBOs, into self-reliant teams empowered to ‘cope with disasters’.

Such a perspective sees the vulnerable as ‘passive victims’ or beneficiaries and calls for “special assistance in terms of evacuation, relief, aid and medical attention to them in disasters,” (Tenth FYP: 200).⁶ Not only does it overlook contextualised social relations of power underlying vulnerability it fails to recognise the resilience of livelihood strategies based on longstanding experience of living with, instead of *coping with*, disasters.

Table 1: Annual damage due to heavy rain, landslides and floods 1999-2001

Year	Districts affected	Villages affected	Population affected (lakhs)	Crop area affected ha	Houses damaged (no.)	Human lives lost (no.)	Cattle Loss	Value of loss to homes Rs cr
1999	202	33,158	328.12	8.45	884,823	1,375	3,861	0.72
2000	200	29,964	416.24	34.79	2,736,355	3,048	102,121	631.25
2001	122	32,363	210.71	18.72	346,878	834	21,269	195.57

Source: Annual Reports, Natural Disaster Management Division, Ministry of Agriculture, Tenth FYP: 192.

⁵ For example, the Drought Prone Area Programme (DPAP), Desert Development Programme, Flood Control Programme and various natural resource management and food for work programmes.

⁶ This is the typical welfare approach of the state towards the poor and vulnerable and dates back to the community development programmes of the 1950s with their focus on reaching out to women to be better mothers and homemakers through health, nutrition, education and small scale income-generating projects which they could do in the safety of their homes without questioning access to or control over resources.

Table 2: Annual loss due to drought, 1999-2001

Year	Districts affected	Villages Affected	Population affected in lakhs	Damage to crop area lakh ha	Value of damaged crops	Cattle population affected in lakhs
1999	125	--	369.88	134.22	6.44	345.60
2001	110	54,883	378.14	367.00	371.87	541.67
2001	103	22,555	88.19	67.44	NA	34.28

Source: Annual Reports, Natural Disaster Management Division, Ministry of Agriculture, Tenth FYP: 193.

Although in terms of the sheer extent of human population affected and the subsequent loss of lives the impact of floods is greater, drought has a more significant (and longer) impact on cattle and livestock numbers as well as cultivated area which directly impacts on the livelihoods of small and marginal farmers and in turn, on relations of gender and power *within* households.⁷ In order to understand how drought and floods unfold in the context of a gendered “geography of vulnerability” (Hewitt 1997 in Fordham 1999: 19), we need to first understand the interlinked dimensions of gender relations, caste and class underlying household dynamics of resource allocation (consumption and expenditure patterns), work and decision-making. This also has important policy implications – relief (whether in terms of food, work or cash) is usually extended **to** households, typically to male heads of households (fathers, sons or other male relatives) rather than looking **within** households at the differential impact of disasters on household members depending on gender, age, social status and how these determine their access to resources, the public domain and other institutions. The allotment of sites for the construction of houses after a disaster for instance, is invariably in the names of husbands and sons, which does not take into account the specific vulnerability of single, deserted, widowed or old women.⁸

⁷ Note that there is no disaggregated data on the impact of disasters whether by gender, caste or age, except for the limited and small, geographically confined studies by NGOs and/or development researchers.

⁸ It is not uncommon to find examples of sons denying mothers/sisters any share in the property or turning them out of the house to fend for themselves.

Re-conceptualising the household – the gendered dimensions of vulnerability⁹

Over the last twenty years or so there has been a considerable body of literature contesting the neo-classical positioning of households as unitary and altruistic decision-making units headed by a benevolent dictator who is assumed to act in the general interest and welfare of all family members (Kabeer 1994). In contrast, bargaining models characterise households as arenas of 'cooperative conflict' between members with different degrees of power and conflicting interests in certain decisions, each seeking to maximise her/his benefits without necessarily destroying the household system. The outcome of decision-making then depends on the relative bargaining power of different household members which according to Sen (1990) is determined by the strength of their **fallback** position. This, in turn, depends on a range of inter and intra-household social and economic factors, the most critical of which for rural poor women in India would include (adapted from Agarwal 1992: 183):

- Access to and ownership/control over productive resources such as land, labour and credit
- Access to employment and other income-generating opportunities
- Personal endowments such as education (functional literacy skills), physical and mental health status (freedom from all forms of violence, access to food, healthcare)
- Access to communal resources (village commons, wells, forest resources, determined both by factors underlying social exclusion, e.g. caste and increasing privatisation and/or state control over the 'commons')
- Access to external social support systems (networks of kinship, patronage and friendship, i.e. the moral economy)

In addition, a woman's bargaining position is also intrinsically linked to Sen's concept of **entitlements** and **perceptions** of (i) interest and well-being and (ii) contributions to the household. The notion of entitlements from a gender perspective is used to define what

⁹ Households as an institutional site (the most basic and visible unit of social organization) intersect not only with social relations of caste and class but also markets, the state, communities and civil society actors. Thus, they cannot be seen in isolation from this macro-external environment which is especially critical in the current context of liberalization and globalisation. Moreover, given both the extent of theoretical and empirical work on household decision-making models and the diversity of India any discussion on gender and rural households needs to be contextualised – hence, this section only outlines a broad canvas of the different dimensions on vulnerability while subsequent sections draw on literature and field insights from the field areas for a more context specific analysis of gender relations and vulnerability.

a particular society considers different members to be 'entitled to under normal conditions'.¹⁰ For example, it is 'normal' (accepted practice) for girls to receive less or no schooling compared to boys, or it is 'normal' for men to accept dowry or for women/girls to eat last in a family. Not only does investment in household members vary with gender and age, women's economic contribution to the household, both paid and unpaid labour, tend to be undervalued.

In a 'disaster' context, women's entitlements and perceptions of interest and well-being are further contested as households struggle to survive: "Women themselves underestimate the enormous range of burdens they bear, they may harbour negative images about themselves and be unused to perceiving of themselves as strong and effective survivors, managing a wide spectrum of household and social responsibilities," (Parasuraman and Unnikrishnan 2000: 11). It is during these moments that the intersection of gendered identities with other cultural identities for example, of caste, community or tribe become critical, either providing a means of social support or at worse, denying access to basic rights – for example, a *dalit* women in the drought prone districts of northern Gujarat may have to walk further to collect water than say a Koli patel woman if she is not allowed access to the village (allegedly) 'common' well or tank. Furthermore, in such conditions, sexual exploitation by upper caste men is not uncommon, particularly when familial men are not around (migrated) to 'protect' their wives/daughters/sisters, though in many cases the vulnerability of the poor is so critical that protection becomes a meaningless concept for women.

Thus, while household level analysis provides us with a means of looking at certain critical types of gendered inequality it cannot be separated from wider social norms shaped by patriarchy, class and caste which define or prescribe women's movements, behaviour and attitude (sex role stereotypes) or larger economic policies (globalisation, structural reforms) and demographic trends (often sharply contrasting, e.g. longevity of life and a declining sex ratio). This does not mean that women only remain as victims of embedded social, economic and political processes even though they are 'victimised' during disasters. Rather we need to move beyond the material reality of households to

¹⁰ Sen had developed this argument in his seminal analysis of poverty and famines (Sen 1981) where he drew attention to the need to distinguish between what *exists* in terms of overall food availability and who can *command* what.

look at how the less tangible and more symbolic notion of 'home' interweaves with women's life course/cycle to shape their physical expression of self, familial relationships and the trauma and hardship of enduring environmental encounters. The sections that follow look at how recurring floods in the districts of Gorakhpur and Deoria in Eastern Uttar Pradesh (U.P.) have shaped women's livelihood strategies, their gendered identities and coping mechanisms from both a life-cycle and 'stages of disaster' approach.¹¹ The paper concludes by assessing the role of the Gorakhpur Environmental Action Group (GEAG) in enabling collective action – mobilising women's self help groups (SHGs) and facilitating (adaptive) livelihood strategies to minimise vulnerability.

Troubled waters, shattered lives: women and floods in Eastern U.P.

Eastern U.P. situated along the foothills of the Himalayas, comprises 26 districts traversed by numerous small rivers flowing into the Saryu or Ghaghra (the main river) and its major tributaries, the Rapti and Little Gandak (PGVS 1999). Although the region is rich in water and land resources, it has some of the highest poverty levels in the country. Poor resource management policies have left the area prone to extensive flood damage impacting land productivity, infrastructure and livelihoods (PGVS 2001).¹² Village communities claim that they have grown to live with and accept the almost annual floods that devastate their lives for nearly three to four months each year. While this culture of acceptance at one level legitimises a social order which sees floods as *natural* ('our destiny, an act of God'), much like the doxa of patriarchal structures which govern women's lives, at another it has created an environment of dependency which has made it legitimate for men and women to *naturally* expect, indeed demand, handouts in cash or kind.¹³

Agriculture is the main source of livelihood in the districts of Gorakhpur and Deoria with the majority of farmers belonging to the small and marginal category. Agricultural growth, characterised by a heavy dependence on Green Revolution led inputs has affected soil

¹¹ There are typically four stages which define the disaster process (and not simply the event itself): preparedness, response, recovery and mitigation.

¹² The region accounts for 44 percent of the flood prone area of U.P.

¹³ This almost naturalized dependency affected the collection of qualitative case histories in flood-prone villages to such an extent that in many cases interviews were abandoned half-way through because of the persistent demands being made. Part of the reason is that the villages we chose had limited, if any, NGO facilitated interventions and so people were used to the patronizing benevolence of the state and welfare agencies.

sustainability and productivity as well as increased social inequity by enhancing the power of the middle and large peasants.¹⁴ Average landholdings are less than an acre and about 25 percent of the rural population is landless, working as agricultural labourers or in other non-farm activities.¹⁵ The practice of sharecropping – *adhiya* – is widespread with about 50 percent of the produce going to the landowner in return for seeds, fertilisers and other inputs.¹⁶ Salinity and waterlogging are perennial problems, while mechanisation has caused considerable labour displacement. Male out-migration has put an additional burden of responsibility on women who have little access to or control over productive resources.¹⁷

Land fragmentation is high, partly due to the high population density and partly to the large size of families and the tendency to divide land among sons to avoid land confiscation under the Land Ceilings Act (1960).¹⁸ Women, as in most parts of the country, generally do not inherit or own land, despite declarations in the Sixth FYP (1980-85) that the state would endeavour to give joint titles when distributing agricultural land or home sites (Agarwal 2003).¹⁹ Apart from the reluctance of the bureaucracy to implement joint ownership, where families have granted women some land in their name it is primarily to avoid stringent land ceiling measures. However, women's ability to manage or self-control land which is legally theirs is questionable given the cultural

¹⁴ While the Zamindari Abolition and Reform Act (1950) did away with the *zamindars* and *talukdars* who collected revenue for the colonial state as a system, it left them with rather generous money compensation as well as fairly large landholdings, see Brass (1980) for a good account of the relationship between the new middle and backward castes and the Congress party in the immediate post-Independence period.

¹⁵ Amin (1995) in his vivid description of the famous Chauri Chaura uprising in 1922, a small market town and railway junction not far from the villages surveyed in Gorakhpur, carries a brief description of agrarian relations and non-farm employment opportunities for wage labour, including female labour in the area.

¹⁶ While *adhiya* is the most common system of sharecropping with apparently little conflict between farmers, there are other systems in practice such as *honda*, where the land is hired on fixed terms with the sharecropper responsible for all inputs, loss and damage and *rehan*, where land is leased at an agreed price for 1-3 years by resource poor farmers or a group of farmers (Tripathi and Wajih 2003b).

¹⁷ Migration is not a new phenomena – Amin describes migration to Rangoon, Burma in the early 1900s from Gorakhpur district and the impact it had on the natal village (money-order economy) as well as on wives who had “to sustain themselves through prolonged periods of separation and mental torture at the hands of sisters - and mother-in-laws,” (1995: 37).

¹⁸ The initial ceiling on land was rather high at 40 acres per individual; it was only in 1973 that the ceiling was reduced to 27.5 acres per family by which time most large farmers had already divided the land amongst their family members (Brass 1980).

¹⁹ See Agarwal (1994) for a full discussion of gender and land rights in the context of land reforms and inheritance laws – changes in the Hindu Succession Act of 1956 exempted tenancy rights in agricultural land from its purview. Thus, women's inheritance rights in tenancy land depends on state laws and in U.P. the definition of tenants in the land reform law is so broad as to include interests arising from *all* agricultural land (Agarwal 2003: 203).

context, limited mobility or access to agricultural inputs, including male labour, which is especially important at the time of ploughing given the cultural taboo associated with women touching the plough.

The agricultural reform process initiated in the early 1990s is also affecting rural livelihoods (Duvvury 1998); for example, nearly 60 percent of sugarcane production has stopped because of changes in the cropping pattern and cheaper imports of sugar. Increase in mono-cropping has an impact on biodiversity and food security as more and more farmers turn to cash crops (Sharma 2000). And in all probability the four lakh hectares of land recently acquired by the state government under the Land Ceiling Act is likely to go towards corporate farming rather than be distributed among the landless including rural poor women.

Not only are women denied land rights, there are marked gender differentials in agricultural wages, in the gender division of labour and in the valuation of women's work. In addition, the low status of women, particularly *dalits*, *adivasis* and Muslim minorities, is indicated by the sex ratio, gender discrimination in terms of access to education, health and nutrition, exploitative marriage practices such as dowry and son preference, and limited access to contraceptives or autonomy over one's fertility (Murthy 2000, Wajih 2000).²⁰ Over the last decade or so a number of international donor agencies have begun to fund development programmes together with the U.P. state government focusing on poverty alleviation, sustainable livelihoods, access to basic social services (health, education, water supply, shelter) and women's empowerment.²¹

Despite the growing allocation of resources and the creation of new departments or organisations changes in the lives of most rural women in Eastern U.P. remains a slow, uphill struggle. Floods in this cultural and institutional context add to women's social and economic vulnerability, not only severely and dramatically affecting their lives during actual flood/water-retention periods, but also overtime increasing their marginalisation and testing their endurance. The narratives that follow are poignant testaments to some

²⁰ Interesting the sex ratio for Gorakhpur district has improved from 924 (1991) to 959 (2001) which is significantly higher than the state sex ration of 898 (2001 census). Female literacy rates have also improved from 22.5% (1991) to 44.5% (2001), though admittedly there are a lot of questions about the government's definition of who is literate (the literacy rate is the percentage of literates, m/f, to population age 7 plus).

²¹ Examples include, the UNDP Women and Agriculture Project, the World Bank Swa Shakti programme and the ongoing Mahila Samakhya women's empowerment through (functional) literacy programme.

women's struggles with the forces of nature and society – literally, a double bind. These are old women, some widows, some deserted, living on their own or with daughter-in-laws who have attempted to reconstruct their lives in the face of incredible adversity when both material and emotional support has been almost negligible.²² Most of the women are either from an upper caste or backward caste background, yet they share a common bond of gender-based discrimination, poverty and economic vulnerability. The problem of translation not only in a literal sense from Bhojpuri (a dialect of Hindi) to English, but also in respect of women's perceptions, the *meanings* they attribute and the ability to recall notwithstanding, I have tried wherever possible to let the women I talked to speak for themselves. While these are not complete oral histories they do enable us to begin to unravel the complex and dialectical relationship between structure and agency, "or more specifically, between oppression based on caste, class and patriarchy, and changing forms of women's struggles within the broad context of ecological crisis," (Rao 1996: 91).

Water, water everywhere, but we could not swim: Remembering floods as girls

The village of Ghaighat (Rudrapur block, Deoria district) is bordered by the Rapti River on the western and southern side and the Bathua *nala* to the east. Floods, particularly severe after two embankments were built around 1985, coupled with the shifting course of the Rapti, has meant that the river has 'cut' the village at least thrice in the past fifty years and each time affected hamlets/populations have had to relocate themselves. The house where seventy year old Anuradhaji now lives was built on the family's agricultural land – she moved here two years ago with their cattle when they lost their home and land to the Rapti (2001 flood), while her two sons and the rest of her family live further inside the village. As a young girl, like most of the other old women of her generation, Anuradhaji did not go to school, but stayed at home and helped her mother with the housework. Her two brothers did not go to school either and worked in the fields with their father.²³

²² I had initially wanted to do generational studies of selected households crosscutting gender and age with other dimensions of social inequity to look at different coping strategies and responses to floods from the perspective of grandmothers, mothers and daughters. But given the time and difficulty in getting old women themselves to share their experiences (see fn. 11) it was not possible to follow-up on the second and third generation testimonies.

²³ Educational opportunities were limited in most parts of colonial India, particularly in the eastern states and continue to be limited.

“I must have been about 10 years old when I saw the first flood that I can clearly recollect– the fields were waterlogged but no water came into our house. I stayed at home with my mother for almost two weeks – we lived on the grains we had stored at home,” Anuradhaji describes, referring to her natal village, Beria about 4 kms away.

Surji, also around 75 years spent her short childhood in the village of Kalidar, about 16 kms away from Ghaighat and not prone to flooding. Like most of the women interviewed, she got married at the age of 12, but only came to live with her husband and in-laws when she was 15 years old:

“I had heard that this was a flood prone area, but my parents had already decided my marriage and there was little I could do. I was very scared when I saw the first floods just after I came here – the water was coming up to our house and I did not go out for three days. Then my father came and took me home.”²⁴

Adhari’s childhood remembrances are similar – from the Kevat (boatmen community) her natal village is only 3 kms away from the flood prone village of Chandipur (Campierganj block, Gorakhpur district) where she moved to after marriage:

“Ours was a joint family: my father worked as a chowkidar (watchman or security guard) while my uncle looked after the 2 acres of land we owned. There was a school in the village, but in those days it was not customary to send girls so I stayed at home and helped my mother with the housework. How could we go to school – we did not even wear underpants! Look at the girls these days – they are all wearing such short dresses!

I was 12 years old when I got married and 18 when I joined my husband in Chandipur – I did not know anything about the floods in this area even though this village is only 3 kms away from my parents’ home. As girls we did not go out much in those days. When I saw the Rohin (a tributary of the Rapti) flood for the first time – water came at night from all

²⁴ It’s not clear whether Surji returned to her parents’ home out of fear or because she was pregnant and as was/is customary pregnant women are usually taken or sent away to relatives *before* the expected floods. Perhaps in this case her father was not able to come and fetch her earlier.

our sides and our house just fell into the river. I started to cry and then some days later, I went home to my parents' place."²⁵

Kalavati, a 65 year old woman living in the village of Chittari, Brahmpur block, Gorakhpur district was one of the rare women for whom the memory of floods as a girl was one of incredulity, albeit tempered with some apprehension:

"We lived in the village of Simra, near Madhanpur, on the other side of the embankment and therefore not in a flood prone area. When I was a small girl, maybe 10 years old, I do remember some flood waters coming near our village. There were these small insects swimming around in the water and as children we thought that if we drank the water, we would be able to swim just as the small insects were doing! At night, I remember my father used to tie the boat so that it would not float away."

For all the old women interviewed their early memories of floods are not only contextualised by their gendered identities intersecting with poverty and caste, but also by geographical place. As girls they had little opportunities for education, partly because there were simply no schools nearby for either girls or boys, and partly because poverty and patriarchal hierarchies meant that for most families educating girls was of little priority. If they lived in flood prone villages, they would stay indoors with their mothers (during flood periods) and only venture out if they needed to go to the toilet. This would basically be a wooden plank or *machan* kept over the flood-water, just outside the house. Because they could not swim, unlike perhaps their brothers, and because they would inevitably be helping with domestic preparations, their early memories of floods are usually of awe at nature's fury.

For those who did not live in a flood prone village, seeing floods for the first time usually as a young bride, they would simply break down and cry with fear, missing the security of their own home and parents as they struggled with domestic responsibilities to keep the house and belongings safe and secure. Recounting similar experiences of poor lower and middle-class women in flood affected communities in Scotland, Fordham

²⁵ Here too there is some confusion – Adhari remembers seeing her first flood in her marital home, yet since she was still a new bride then it would have been customary for her to be sent to a safer place, i.e., her parents' home *before* the flood.

(1998: 131) describes how hazard perceptions are governed by the 'prison of past experience' where we expect the present and the future to be like the past. For these young brides, their only experience of 'home' was one of security, where floods did not occur. Even though they may have known that after marriage they would have to move to a flood prone village, they would have had to keep their anxieties and apprehensions to themselves as their husband-to-be was not someone they could choose. If they were lucky they would be sent home as a young bride, particularly if they were pregnant, either before or at the onset of floods. Not surprisingly, most of the women who had daughters, did not want them to get married to boys from flood prone villages as they were well aware of the hardships they had endured.

Initially, cultural practices of *purdah* dictated that a young, new bride would be largely confined to the domestic sphere of the household while her mother-in-law would continue to work in the fields. Only after her children were born and/or after the mother-in-law died, did the daughter-in-law start going out to work on their land or as agricultural labour. The nature of agricultural work was also 'simpler' in those days according to women: "*We never used fertilisers or pesticides and there was no irrigation either. Men would do the ploughing and sowing then go off in search of daily work and return to do the harvesting. We used to maintain the fields, do the weeding,*" recounts Anuradhaji (Ghaighat village).²⁶ Women assumed more responsibility for the household once the family's land was divided between the sons and each decided to maintain a separate kitchen.²⁷

I was all alone with my children: Preparing for floods

Typically, floods are attributed to the (mythical) release of water by Nepal. Although old people remember living with 'floods' since their childhood, the intensity of flooding has become most acute after the construction of embankments from the early 1980s, depending of course on which side of the embankment you live on.²⁸ In most cases,

²⁶ The river used to be the main source of irrigation – buckets were used to draw water which was then channeled into the fields (see Gorakhpur District Gazetteer).

²⁷ The extent of independence or mutual interdependence varies from household to household depending on family bonds, enmity between sons or between sons and fathers, the extent to which daughter-in-laws get on with each other, etc.

²⁸ Embankments, heavily promoted as a flood control measure by the state after Independence are known to constrict the river's natural flood plain, increasing drainage congestion and forcing the sediment load to be deposited over a smaller area thus reducing the natural fertility potential of silt (CSE 1991).

floods do not occur suddenly – women described how the men would watch the level of water in the river rise while they would make their preparations accordingly, packing together a few clothes and utensils, storing non-perishable food, largely grains in dry places, either on their roofs or at designated places in the village, and sending new brides, pregnant mothers, small children and the old to relatives nearby. While women and girls would largely do the packing, men and boys would transport their belongings, including livestock, to safer places. Upper caste women in particular would rarely come out of their homes – all outside work in terms of buying essentials such as salt, oil, kerosene, etc. and transporting and storing items would be done by men. Sometimes women would stitch together plastic bags to make large plastic sheets for covering their belongings or to use as a temporary shelter.

Once floods are imminent, men take their family members to higher and safer places, either to live on the embankment temporarily or across the river/nallah to a drier village as in the case of Ghaighat where affected communities would move to the hamlet of Gollanagar at the time of floods. For the village of Chandipur, the forests nearby provide a temporary shelter for women and children. Sometimes if they are caught unawares, families immediately move to the roof of their homes or their neighbour's (depending on the nature of the house/roof) and then seek a safer abode. In such instances, transport becomes critical – often boats are the only means of navigation in the swelling waters and while government sponsored boats are meant to assist, private boatmen (from the *malhar* and *nesvat* communities) also try to seek profits out of the plight of the poor.

Since women's mobility during floods is largely dependent on men, for women on their own with small children or other dependents, the struggle is against both nature and social norms.²⁹ Kalavati describes how she barely survived the terrible flood of 1998, the worst in the present living memory for most villages in Gorakhpur district:

"I was all alone with my two younger sons, my daughter-in-law and my little grandson, just two months old. My husband and eldest son had gone to work in Gujarat so I was responsible for everyone in the family. I took them to the village across the river in a boat and we stayed with the family of a religious man till the waters abated. Then I sent my

²⁹ There is the much quoted example from Bangladesh of a father holding on to both his son and daughter for dear life to keep them from being swept away by a tidal surge, but when he cannot hold on any longer, he helplessly releases one child – his daughter (quoted in Rashid 2000).

daughter-in-law and grandson to Gujarat with my middle son, and I and my younger boy, just 15 years old at the time, went back to look after our house, or rather what was left of it. We had lost our entire house and two cows, so we had to stay in a temporary shelter with plastic roofing. I remember being very sick at the time, I had high fever and vomiting, so my neighbours helped me with food. Even my little boy was not well – something had bitten his hand in the flood waters and it had all swollen up. But he still looked after me as best as he could.”

The 1998 floods were so intense that in just two days most of the village was submerged in 10 feet of water! People explained that they hadn't seen such floods before and were not quite prepared for the enormity of the damage: “*All my assets – my utensils, animals... were swept away in front of my eyes and I could not do anything to save them,*” recounted another woman from Chitthari village, recalling the 1998 floods.

Coping with floods: the immediate aftermath

It is well documented that in emergency/disaster situations, women lose control over activities which are typically in their domain – for example, fodder and fuel collection, food preparation, looking after livestock and child care. This does not mean that they are not responsible for these activities, but rather because of their limited mobility they are dependent on men and boys for accessing the raw materials that they need to cook with for example, like dry fuel or the provisions provided by relief agencies or simple safe drinking water. Typically, men/boys would either swim or take a boat across the river to get fodder, fuel and basic essentials like kerosene oil for cooking. Sometimes they would collect the wood from their fallen houses to be used as fuel.

Although the community takes shelter en masse either on the embankments or across the river or in a community centre, they maintain their own individual cooking and sleeping arrangements. Occasionally, usually in the first few days, there is mass cooking of food by relief agencies (kichari, puri sabzi) as women try to come to terms with the trauma and psychological shock of displacement, set up their temporary ‘homes’ and take stock of their family members and belongings. Soon women busy themselves preparing food for the family – food is cooked only once in the day for the whole day as it takes too long to cook in an open (uncovered) space. The nutritional content tends to decline overtime as there are no green vegetables available and the stock of pulses, etc.

is difficult to replenish (limited access to markets). Sometimes there is no food to eat for a day or so – women, though they are reluctant to admit it, generally eat less as gender practices of food distribution prevail.

But women, particularly the elderly, also eat and drink less to avoid going to the toilet which is for them one of the biggest problems during the floods: *“We can live without food or taking a bath, but defecation is a compulsion. It is very difficult for us if we feel we have to go to the toilet during the daytime when there is little privacy,”* (focus group discussion, Chittari village, 2003).

Means of defecation vary depending on where the women are living: typically, a bamboo platform (*machan*) is put just outside the house or attached to the edge of the roof if that is where they are taking shelter. Sometimes women are simply forced to wade into the flood waters and squat to defecate. It is a bit easier for women sheltering in the jungles as privacy and open spaces are not such a problem. However, despite the fact that they were staying under the public gaze, women maintained that neither they nor their daughters encountered any harassment, unlike the examples of socially vulnerable young women in Bangladesh:³⁰

“We are all from the same community, like neighbours together and it is the responsibility of the men to guard the family/community honour. Problems only arise when young men from other villages come to our sites,” (focus group discussion with women in Loharpurva village, 2003).

Health problems arise when the same flood water is used for cooking, bathing and defecating – though some women maintained that they even took the water from the top for drinking if they could not access a (functioning) hand pump. The spread of waterborne diseases like typhoid, cholera, conjunctivitis and skin rashes are not uncommon. But for pregnant women the biggest problem is delivery – each village has stories of women who give birth on thatched roofs raised on bamboo poles. Someone (the father or other male relative) will bring the *‘chamai’*, the woman who cuts the

³⁰ Being a predominantly conservative Moslem society with a high population density it is not surprising that young girls in Bangladesh claim to feel ashamed, exposed and emotionally vulnerable living in cramped relief camps forced to share common spaces with male strangers (Rashid 2000).

umbilical cord, a traditional caste-based occupation, on a boat; otherwise women manage the delivery process largely on their own with the help of friends/family.

The impact of floods on gender relations and livelihoods

“Water used to stay in the field for almost a month – to be born in the kacchar is useless. We used to have 10-12 bighas of land earlier, now only 2 bighas are left as most of the land has gone into the river,” recalls Surji in Ghaighat village.

Apart from the immediate loss of homes, lives, crops and livestock, most households face a continuous process of impoverishment either due to the direct loss of land and hence a means of livelihood, or the more gradual loss of land productivity/fertility as a result of sand deposits brought by the flood waters. Rebuilding livelihoods is a painful, slow process, but the resilience that some of the old women showed as they narrated their experiences, was remarkable.

Kalavati who stayed alone with her younger son while her daughter-in-law joined her husband and father in Gujarat, rebuilt her house in along the banks of the river Rapti in Chittari village with the help of a local NGO: *“They provided all the raw materials and we provided all the labour. My husband and other sons (two) sent us some money too, but it was just a small amount.”* Although Kalavati comes from the upper caste Thakur community, she struggles to make ends meet as her husband has deserted her and the family – she did not even know where he was (probably in Gorakhpur city) nor was she expecting anything from him – though he does occasionally send her some money.³¹

“We had 5 bighas³² of land but we lost 3 bighas in the 1998 floods, apart from the house and two cows. I gave 1 bigha of land on lease for Rs 5,000/- and I used that money to buy a buffalo which then had a calf and both were giving us 6-7 litres of milk a day (together), some of which we sold. Now my daughter-in-law has come back with two small children so we do need some milk at home,” explained Kalavati (interview 2003).

However, to add to her woes the buffalo and calf were ‘stolen’ in June 2003 – they simply ‘wandered off’ according to Kalavati and she looked for them everywhere but to

³¹ This can be paralleled with the case of deserted women in drought prone areas (see Rao 1996).

³² Units of land vary with productivity - in the village of Chittari for example, 1.5 bighas = 1 acre of land while in Ghaighat and Chandipur villages, 3 bighas = 1 acre of land.

no avail. So after much deliberation she took a loan and with the help of some money from her husband and sons, has just bought another buffalo which gives about 4 litres of milk a day. They sell 2 litres of milk daily to a private dairy @ Rs 10/litre, but are not paid regularly. On the 1 bigha of land which they have left they grow wheat and mustard. The younger son looks after the land and production is about 5-6 quintals a year. Her daughter-in-law helps with the housework and looks after her children, but because of her caste background she does not go out to work.

Adhari in the village of Chandipur has also coped on her own though being from a lower caste (kevat, or boatmen community) she has suffered the additional burden of social oppression. She lived in a joint family after marriage with her husband and his three brothers. Her father-in-law owned 22 bighas of land, but once the grandchildren were born the land was divided with each brother getting about 3 bighas (roughly 1 acre) and 1.5 bighas was acquired by the state when they built the road connecting Chandipur with the main highway from Gorakhpur.³³ Like most of the other men, Adhari's husband went to work in the construction business in Nepal for many years; later he returned to Delhi to do the same work, but died around 1991 in an accident on a housing site. She has two sons and one daughter (one daughter and her husband died recently in an accident), but both sons work outside, one in the neighbouring district of Maharajganj and the younger one in Punjab. Today Adhari lives on her own, although her younger daughter-in-law also resides in the village.

With her husband gone, Adhari was responsible for most of the agricultural operations on their land and she recalls only too vividly what happened when the floods came and swept away her home and ruined their crops time and time again:

"In those days we had to pay a lagaan – land tax – to the local zamindar (landlord) of Rs 20/bigha. However, when the floods came and ruined our crops we were simply unable to pay this tax. So the zamindar's henchmen would tie five of us women together by our hair and make us carry heavy bricks on our back around the village for almost two hours as a punishment. I remember this happened to me at least four to six times," described Adhari her eyes moist as she pulled her hair to show us how they were tied together.

³³ It is unclear what happened to the remaining 4.5 bighas, perhaps they were given to tenant farmers?

Although there is some debate about the period Adhari is referring to and the nature of land rights,³⁴ what is clear is that women like her whose husbands had migrated in search of work were at the mercy of powerful landed interests. In addition, because of her low caste status, Adhari would probably have had little support from the village community. Today she supports herself by working on other fields, primarily weeding, in return for which she has access to male labour for ploughing and harvesting. She is one of the few people who seem to have benefited from the construction of the embankment in 1982 – her house has not fallen since then.

For women dependent on land as the primary source of food security, but with no tenure rights and few alternative income-generating opportunities as they rarely, unlike men, go out of the village in search of work, recurring floods not only threaten their ability to sustain their families but also uncover numerous gender differentials as these few life-stories have illustrated. In this context, the role of NGOs in providing alternatives becomes critical. The Gorakhpur Environmental Action Group (GEAG) has been working in two blocks of Gorakhpur district since the early 1980s on questions of gender, livelihoods and sustainable agriculture. More recently, it has begun to look at the development of small-scale flood models based on space and time management.

GEAG: Strengthening women's access to productive/livelihood resources

GEAG was initiated in 1975 by a small group of faculty and students from the Centre for Ecology at Gorakhpur University as a response to gender and environmental issues in and around Gorakhpur city. Registered in 1984, it currently works with small and marginal farmers, particularly women and landless, on low external input agriculture (LEISA techniques) in 40 villages covering two blocks – Sardarnagar and Campiergang – in Gorakhpur district. At the core of GEAG's participatory approach to sustainable agriculture are self help groups (SHGs), mostly women's, but increasingly being formed with male farmers too. Ranging in size from 10-20 members, SHGs are mostly *tola* or hamlet-based, providing women farmers with access to credit (albeit still covering only some of their credit needs), agricultural extension services, capacity building and more importantly a forum to meet collectively (Tripathi and Wajih 2003a). In addition to SHGs,

³⁴ It is not clear what period Adhari is referring to as the zamindar system was abolished in the late 1950s early 60s, although remnants of it still linger or what kind of land rights her husband / father-in-law had. Most probably, Adhari's family were sharecroppers following one of the more severe sharecropping arrangements, that is, *honda*, where the landlord only supplies the land and the tenant is responsible for all inputs, including loan repayments.

there are a number of other community organisations such as Farmer Field Schools, Agro-Service Centres and 'morcha' units³⁵ which support the process of collective institution building, especially the formation of village-level federations. GEAG's rural campus at Campierganj has a training centre and small experimental site and lab for 'testing' new techniques or potential farm-based opportunities (bee keeping, medicinal herbs). Strong documentation and information dissemination on sustainable agriculture literacy through a variety of media supports GEAG's networking and alliance-building efforts in U.P. with a range of stakeholders.

In addition, GEAG is currently working with 3-4 NGO partners in developing community-based, flood mitigation models which address 'time' (quick growing, water resilient crop species, such as early varieties of paddy or sugarcane) and 'space' management (farmers in the area have small landholdings and have to meet food and livelihood security within limited physical space). Early sowing paddy varieties such as 'Narendra' or N-97 which can be harvested in 90 days are being experimented with by some farmers. But with no floods in the last two years it is difficult to assess the viability of this crop. However, observations from a recent field visit show that farmers have already been making adjustments by beginning to sow paddy in late May and spacing the crop to allow for better growth. Traditional varieties of millet which can grow in 60-70 days and are high in nutrients are also being experimented with by GEAG and some of its partners (field discussions, June 2004). Plantation of trees like bananas and walnuts on bunds and *boro* cultivation (early growing paddy) in the lake bed are other interventions to strengthen livelihood security.

More recently, GEAG has been experimenting with the sale of ducks to some women's SHGs on a pilot basis. Bahri tola (Kailash Nagar) is one of the flood prone hamlets in Loharpurva village, Campierganj block. The hamlet comprises backward and scheduled caste families including *chamars*, blacksmith, *kevat* and *nishat* (boatment) caste groups. In May 2003 the ten members of the Ma Kali SHG, mostly landless women, got together and took a bank loan to purchase ducklings as ducks are known to weather the floods well, and can be a small immediate source of income for women – there is a tremendous

³⁵ Morcha or collective protest and action units use a range of social mobilization strategies to advocate the rights of small and marginal farmers and the landless on land issues, agricultural wages and fair prices. There are more than 300 morcha units all over Eastern and Central U.P. with a state-level steering committee.

demand for duck eggs in the local/regional market. The SHG took a bank loan for Rs 1000/- - each woman got Rs 90/ to buy 10 ducklings @ Rs 9/duck and the balance money went towards necessary medicines for the ducks. Ducks provide benefits with respect to paddy too – weeding, aeration and manuring. They are easier to manage, have a fixed laying time/place and lay on average an egg a day (280-300 eggs in the year). The table below shows the status of the ducks with Ma Kali SHG members in November 2003. Two women, Indravata and Taramani have lost all their ducks.

Table 3 Ducks as livelihood security?

Name of woman	No. of ducks presently held	Benefits?
Malti, group presd.	3 ducks have died, of the 7 left, 1 male was sold, for Rs 75 and of the 6 ducks she has, 3 are female.	Gets one egg a day from the female ducks which she can sell @ Rs 2/egg. Earned about Rs 100 last month, selling mostly in village
Kesari	Only 2 ducks left, 1 male/ 1female	Only gets one egg a day, eaten by daughter
Monadevi Somna joint family	12 ducks left from the 20 purchased, most died from heat and ill health	Sold 2 males @ Rs 90 each, duck eggs mostly eaten at home, large family, 15-16 members
Pushpa	Only 1 duck left, cat took 3-4 ducks, rest died of heat	
Sonera	4 ducks left, 3f/1m	Eggs sold and eaten at home
Sona	Only 7 ducks left	Sold 2 male ducks, 3 left, plus 4 females, eggs eaten at home
Dharma	5 ducks left	4 female, 1 male duck, some eggs sold, some consumed at home

Source: Field visit, November 2003.

The table shows that while ducks do provide nutrition for the family, particularly children, and have income-generating potential, there are a number of risks associated with keeping ducks, not least the menace of stray cats and foxes. It appears that most of the women kept ducks in small coops which got congested as the ducks grew and the summer heat increased. However, on the whole discussions with other SHGs who had also started similar initiatives revealed that ducks are easy to keep / manage, unlike chickens which need constant attending to.

In a return field visit in June 2004, we found some SHGs had been caught the stray cats and left them in the neighbouring jungles. Currently, 15 SHGs in the flood prone area of Campierganj block have bought ducks through group loans and while the demand is increasing daily, supply is limited – ducklings are bought from a private breeder in Varanasi as the government provided ducks have a poor survival rate (they come from Bangalore and cannot withstand the heat of eastern U.P.). However, given the limited returns as illustrated in table 3, it may be necessary to think of economies of scale in duck production; that is, enabling women to invest in more ducks and creating the appropriate infrastructure support to ensure better survival rates.

Sustaining livelihood, enabling communities to adapt to floods

Floods are an annual reality in Eastern U.P., yet models for livelihood security which are sensitive to gender concerns and built on community participatory processes are limited. GEAG and its partners have on the one hand, been promoting small-scale flood models which address questions of vulnerability and risk and on the other, working with communities to strengthen participatory micro-planning processes for flood mitigation, relief and rehabilitation. However, many of these initiatives remain target and time-driven, largely by donor agendas and as GEAG has been experiencing when action-research funds finish, there is limited scope for implementation on a larger scale. Strengthening institutional capacity, addressing issues of governance, gender and rights requires working not only with diverse social actors and strategies, but also ensuring that ownership of processes and assets is vested in the most marginalised and vulnerable.

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