

3.11 Gender and Water-Related Disasters

Introduction

All over the world natural climatic variability exacerbated by human-induced climate change are putting societies, particularly women, the poor and vulnerable, at greater risk.¹ While drought and floods are seen as normal recurring features of our climate, their impact is heightened by human interventions such as the over-exploitation of groundwater or construction of embankments in flood-prone areas, increasing population density and changing land use patterns arising from intensive agriculture, deforestation and the expansion of human settlements in hazard-prone areas. In areas subject to periodic drought and flooding, women and men have developed complex adaptive strategies, differentiated by gender, to cope with seasonal climate change, including spatial mobility, migration and institutional arrangements to manage water and land resources, crops and livestock diversification (Moench and Dixit, 1994; Yamin et al., 2005).

Understanding gender, vulnerability and disasters

Although poverty is a core dimension of vulnerability – all poor people are vulnerable – not all vulnerable people are poor (ActionAid, 2005: 7). Vulnerability is a more dynamic concept than poverty as it captures the changing degree of susceptibility to loss caused by exposure to disaster or unequal risk of individuals, communities and systems. The contextualization of climate change within everyday, overlapping “geographies of vulnerability” (Fordham, 1999) recognizes the role of pre-existing, interlocking systems of physical and social space in structuring vulnerability. These include: the location and nature of dwellings; access to physical infrastructure, information and communication systems; patterns of social capital; and the ability of different groups or individuals to secure alternative livelihoods and ensure the flow of resources – financial, social and political – to maintain livelihood security (Twigg, 2001).

Throughout the world, poor women, children and the elderly carry disproportionate ‘vulnerability bundles’ which place them in the highest risk category, even amongst communities marginalised by caste, ethnicity, race or religion (Wisner et al., 2004). Women’s differential work, lack of control over productive resources and limited access to common coping mechanisms such as formal credit facilities, (micro)-insurance, or survival skills (e.g. swimming in flood-prone areas) as well as restricted mobility (e.g. the practice of *pardah* or seclusion) heighten the impact of disasters for them. In addition, women’s rights are often violated in disaster processes when mitigation, relief and rehabilitation efforts do not consider the differential disaster impacts, capacities and needs across diverse social categories (Ariyabandu and Wickramasinghe, 2003: 45).

The differential impact of drought and floods on gender relations

Droughts have direct impacts on rural livelihoods through crop failure or lower yields, which can lead to urban migration, hunger and in extreme cases starvation. There are also

¹ Natural climatic variability refers to variations in the amount and distribution of rainfall, while human-induced climatic change can be caused by the impact of say greenhouse gas emissions on global warming.

indirect consequences when, for example, water scarcity can lead to the spread of disease because of inadequate safe water for human consumption, sanitation and hygiene. Floods are recurrent phenomena in many parts of the world and some types of floods, for example, periodic riverine floods, can have positive impacts: the maintenance of ecosystems and biodiversity in floodplains and deltas; ensuring fish migration and groundwater recharge; riverine transport; and access to fertile soils. In recent decades, the effects of increasing population, unplanned urban settlements, deforestation, removal of wetlands, and inappropriate structural solutions have resulted in floods – especially urban flash floods - that have had serious negative impacts on livelihoods, land use, houses and public infrastructure in both developing and developed countries. Although there are limited sex-disaggregated data on the impact of floods and droughts, there is a growing body of qualitative and quantitative empirical material on gender-differentiated impacts, as summarized below:

Economic impacts

Increased time spent on unpaid work

- Women spend more time and energy on domestic water collection in drought-prone areas which affects the time available for productive work (Enarson, 2000);
- Women's workload increases after a flood as they have to help with house repairs, cleaning and maintenance in addition to their routine work (Nasreen, 2000).

Loss of assets and entitlements

- Women farmers lose food security when floods destroy their land, stored seeds and livestock;
- Families may be forced to sell household assets or pawn women's jewellery;
- Food consumption patterns and access to food may be gender differentiated.

Reduced opportunities available for productive work

- In both rural and urban flood-prone areas women labourers may lose sources of paid work as fields or workplaces are inaccessible (Enarson and Morrow, 1998);
- Women who do not migrate often end up doing government drought relief work which is very arduous and impacts their health (Fernando and Fernando, 1997);
- Seasonal or long-distance male out-migration puts an added burden on women to manage land often without the security of tenure or access to critical inputs.

Social impacts

Education

- Extended drought years can have an impact on enrolment/retention rates;
- In flood-affected areas schools remain closed until waters recede, while schools located on higher land may be used as temporary community shelters.

Health, hygiene, water supply and sanitation

- During drought periods limited water available for personal hygiene affects women's ability to bathe regularly, particularly during menstruation;

Limited access to sanitation after floods compels many women, especially the elderly, to eat and drink less to avoid going through the arduous task of finding a safe place for defecation or urination, leading to an increased incidence of Urinary Tract infections (UTI) related diseases;

- Often girls in community shelters go in groups as it provides more security in an uncertain environment.

Conflicts and gendered violence

- An increase in conflicts between women at water queues in drought prone areas has been well documented (see: www.utthangujarat.org);
- Marginalised women, such as *dalits* and *adivasis* in India face additional sexual harassment (Malekar 2000) and are often pushed into sex work.

Adaptive strategies: building community resilience

Historically, women and men in drought and flood-affected communities have evolved their own strategies and coping mechanisms to prepare their families, protect assets and ensure livelihood security. These include seed storage and the preparation of dry foods to support families during floods and for cultivation later. Community-based natural resource management initiatives can be developed around soil and water conservation (e.g. watershed management). Livelihood diversification, whether into non-farm based micro-enterprises or seasonal migration, is also an important strategy for generating income to prepare for drought or flood (Little et al., 2004; Verhagen and Bhatt, 2003). Drought proofing, such as roof rainwater harvesting in the semi-arid Jordan Valley and the high plains of East Africa, South and Southeast Asia has had a significant impact on household water security (www.idrc.ca).

NGOs and other civil society organisations play an important role in enabling households and communities to acquire skills, assets and resources necessary to adapt to ongoing change and restructure their livelihoods. For example, the mobilisation of women and the formation of Self Help Groups (SHGs) to encourage savings and access to micro-credit and micro-insurance before or after a disaster have proved advantageous for many women who would otherwise have had to pawn their jewellery or sell their livestock. In Zimbabwe, the Association of Women's Clubs, in partnership with Oxfam, has been helping rural women to diversify their income, learn new skills and support a micro-credit revolving fund (www.oxfamamerica.org/emergency/art3158.html).

In addition, many NGOs are facilitating women's participation in mixed community level institutions responsible for natural resource management, building leadership skills for disaster mitigation and linking disasters to livelihood, rights and human security.

The role of the state in disaster mitigation

Although the Hyogo Framework for Action (ISDR, 2005) calls for a gender perspective to be integrated into all disaster risk management plans, policies and decision-making processes, in most countries, the state's response to disasters has been short-sighted – for example, drought relief through food-for-work programmes or compensation for flood affected households. Typically, such efforts are characterised by corruption and poor planning, despite the huge amounts spent on disaster management agencies. Civil society participation, particularly of gender-sensitive professionals who can identify gender differentiated needs, priorities, skills and capacities before and after disasters is important (see: <http://www.gencc.interconnection.org/contact.htm>). Initiatives such as the multi-stakeholder Dialogue on Water and Climate launched in 2001 by a consortium of

international agencies, is primarily focusing on how water resources can be managed in a world of increasing hydrological variability (see: <http://www.waterandclimate.org>).

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Twigg, J., 2001. *Sustainable Livelihoods and Vulnerability to Disasters*, London: Benfield Greig Hazard Research Centre. Available at:
http://www.benfieldhrc.org/disaster_studies/working_papers/workingpaper2.pdf

Verhagen, J. and M. Bhatt, 2002. *Community-Based Disaster Risk Mitigation: A Case Study in the Semi-Arid Areas of Gujarat* presented at ADB Conference on Water and Poverty. Dhaka, Bangladesh.

Wisner, B, P. Blaikie, T. Cannon and I. Davis, 2004. *At Risk: Natural Hazards, People's Vulnerability and Disaster*, London and New York: Routledge.

Yamin, F, A. Rahman and S. Huq, 2005. "Vulnerability, Adaptation and Climate Disasters: A Conceptual overview," *IDS Bulletin*, 36(4). Pp 1-14.

Additional Resources

Aguilar, L., 2004. *IUCN Fact sheet: Climate Change and Disaster Mitigation – Gender Makes the Difference*.

Fact sheet about the linkages of the gender equity approach in climate change and disaster mitigation initiatives, supported in lessons learned in international initiatives.

Available at:

http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Climate.pdf

Ariyabandu, Madhavi, M. and Maithree Wickramasinghe, 2003. *Gender Dimensions in Disaster Management: A Guide for South Asia*, Colombo: ITDG (Intermediate Technology Development Group) South Asia Publications. Available from: ITDG South Asia, 5 Lionel Edirisinghe Mawatha, Kirulapone, Colombo 5, Sri Lanka.

This resource guide looks at the specific vulnerabilities and capacities of women and men and the gender and social dynamics of disaster situations which are not often visible. The book is targeted at policy makers and development practitioners in South Asia, whose contribution is vital for effective disaster risk management and sustainable development in the sub-continent.

Bradshaw, Sarah, 2004. *Socio-Economic Impacts of Natural Disasters: A Gender Analysis*. United Nations Sustainable Development and Human Settlements Division, Chile, CEPAL-Series Manuales 32.

This work analyses the socio-economic effects of Hurricane Mitch (Honduras and the Pacific Coast, 1998) using a gender approach and proposes new indicators to analyse crisis situations that could show in a better way the situation of inequity of women compared to men.

CARE, 2002. *Flood Impact on Women and Girls in Prey Veng Province, Cambodia*. Funded by DIPECHO and carried out for CARE by IDP Education Australia and CARE, Cambodia.

Enarson, E. et al., 2003. *Working with Women at Risk: Practical Guidelines for Assessing Local Disaster Risk*. International Hurricane Centre, Florida International University. Available at:

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United National Environment Programme (UNEP), 2005. *Mainstreaming Gender in Environmental Assessment and Early Warning*.

This report seeks to help the understanding of key questions relating to gender mainstreaming into UNEP's early warning and assessment programme. It analyses key issues in the areas of gender and the environment as they relate to water, poverty, security, conflict, early warning, disaster and vulnerability to environment change.

Available at:

<http://www.earthprint.com/show.htm?url=http://www.earthprint.com/cgi-bin/ncommerce3/ProductDisplay?prfnbr=514436&prmenbr=27973>

Spanish Language Resources

Alegría, María Angélica, sin dato. *Desastres naturales, análisis de la capacidad de respuesta comunitaria desde una perspectiva de género*. Disponible en:

<http://www.aprchile.cl/modules.php?name=News&file=article&sid=327>

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Bradshaw, Sarah, and Ángeles Arenas, 2004. *Análisis de género en la evaluación de los efectos socioeconómicos de los desastres naturales*. UN Economic Commission for Latin America and the Caribbean. Series Manuales 33, División de Desarrollo Sostenible y Asentamientos Humanos, Unidad Mujer y Desarrollo, COOPERACIÓN ITALIANA, Santiago de Chile, Chile. Disponible en:

http://www.aprchile.cl/pdfs/genero_desatres_cepal.pdf

From the Arab Region:

Saad, Samia Galal. 2001. *Environmental management and Natural Disasters mitigation: Middle Eastern gender perspective*, EGM/NATDS/

Available at: http://www.un.org/womenwatch/daw/csw/env_manage/documents/EP3-2001Oct22.pdf

Mohammad, Baqie Badawi. No date. *Famine, women, creative acts and gender dynamics in Manawashai, Darfur, Western Sudan.*

Available at: www.jendajournal.com/vol2.1/muhammad.html

Key Web Sites

Durvog Nivaran

A Sanskrit word meaning disaster mitigation, this web-site advocates alternate perspectives on disasters and looks into their social dimensions. The site contains research on the issues of livelihoods and disasters, case studies containing best practices on community-based disaster risk reduction from South Asian countries, information on the publications of the network, and a photo gallery depicting various disaster situations.

<http://www.duryognivaran.org>

The Intermediate Technology Development Group

This web-site contains information on ITDG's approach to strengthen the ability of poor people to use technology to cope with threats from natural disasters, environmental degradation and civil conflict by: strengthening the ways that people who live in fragile environments cope with the environmental degradation which threatens their livelihood opportunities; improving vulnerable communities' ability to prepare for, survive and rebuild homes and livelihoods after natural disasters; preventing and managing conflicts over scarce natural resources and competition for common property resources.

<http://www.itdg.org/>

Gender and Disaster Network

This is an education project initiated by women and men interested in gender relations in disaster contexts. The network intends to document and analyse women and men's experiences before, during and after disasters, situating gender relations in a broader political, economic, historical and cultural context.

<http://www.gdnonline.org/>

The British Columbia Provincial Emergency Programme web-site has made this entire workbook on disaster preparedness and response among women's services available on-line. "It Can Happen to your Agency – Tools for Change: Emergency Management for Women's Services prepared by the B.C. Association of Specialised Victim Assistance and Counselling Programmes focuses on how women's service agencies can prepare to meet the problems and increased demands for services that will accompany any disaster.

<http://www.pep.bc.ca/management/Women in Disasters Workbook.pdf>

CRID: Regional Disaster Information Center maintains an international collection of Spanish and English-language documents, with a growing collection of gender and disaster writing. See: www.crid.or.cr/

RADIX: Radical Interpretations of Disaster Includes gender-sensitive analysis of disaster vulnerability, response, and prevention.

See: <http://www.radixonline.org/>

Case Studies

The complete case studies are found in the annex of this resource guide

- Bangladesh: Gender Mainstreaming Processes in Community-based Flood Risk Management