

The Place of Gender in Earthquake Vulnerability and Mitigation

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Abstract

In bringing to mind a typical earthquake disaster scene, considerations of gender relations can seem an irrelevance; the 'tyranny of the urgent' makes gender issues appear a luxury. However, it is the intention of this paper to examine the place of gender in vulnerability to, and mitigation of, earthquakes. The case for gender analysis is presented in the context of the forces of globalization, which have particular impacts on women's vulnerability. It puts forward recommendations for gender-aware mitigation and argues for the centrality of gender in disaster policy-making and practice. In doing so, it points to the transformative potential of earthquake disasters in a re-evaluation of gender relations.

1. Why gender? The case for a gender analysis of disaster

In the following discussion, the primary focus will be women, albeit in the context of gender relations, which inevitably encompass men. The reason for the focus on women is their historic invisibility in disaster management and the continuing necessity to uncover their particular experiences and needs. While men also have particular experiences and needs, they operate from a position of relative power and thus, arguably, have a lesser case in terms of social equity. Furthermore, while there has been a steady increase in the research material on women, there is less available to date on men — a situation in need of correction. Additionally, there is a continuing need to focus on women specifically, rather than households because of the gendered power relations within households and family groups which can often disadvantage women.

1.1 *The invisibility of women*

Despite a number of recent research and practical initiatives, the incorporation of gender analysis in disaster is uncommon (Walker 1994; Blaikie et al 1994; Morrow and Enarson 1996; Fothergill 1996; Enarson and Morrow 1998; Fordham and Ketteridge 1998). The common practice has been to use men's experiences as a universal category. Women's particular experiences and needs have been invisible (Fordham 1998). This has been the case in both the developed North and the less developed South. And yet,

When women speak for themselves, they reveal hidden realities ... new perspectives emerge that challenge the truths of official accounts and ... existing theories. (Anderson, Armitage and Wittner 1987 in Hewitt 1998: 87).

This is becoming slowly recognized to be the case as many, largely qualitative, accounts have begun to map out a new perspective through women's eyes (Enarson and Morrow 1998). Women however are not confined to a single, homogeneous

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group and many varying experiences and needs must be recognized within such a gendered perspective (Fordham 1999).

1.2 Disasters – not the great levellers

We have learned from disaster research that disasters do not hit all equally and there is much variability in the ability to withstand, and recover from, them (Blaikie et al 1994; Hewitt 1997, 1983; Cannon 1994). Although the ‘therapeutic community’ (Fritz 1961) frequently emerges post-disaster, it tends, relatively quickly, to succumb to underlying social division. Some communities – particularly those involved in technological or toxicological disasters – have been labelled ‘corrosive communities’ (Freudenburg 1991 in Erikson 1994: 236) to indicate the extent of their destructiveness and divisiveness. While Erikson identifies such negative outcomes with technological/toxicological events specifically, others have challenged this analysis (see Quarantelli 1998 for a succinct overview, especially in the Epilogue pp. 234-273) and found communities hit by so-called natural disasters to be equally discordant and conflict-ridden (see for example Peacock et al 1997 for a hurricane example). Certain social groups have been identified as particularly at risk: the poor, the disabled, the elderly, children and – more recently – ethnic minorities and women. It is the latter category which is the focus below.

Domestic space is particularly at risk in earthquakes (Hewitt 1997: 202). Residential buildings are most often damaged in the greatest numbers and they tend to be occupied most often by women, children and the elderly; although data are not always available to confirm this. Some documented cases of greater fatality and injury to women include: Friuli, Italy 1976, where its timing — on a warm, early evening — caught more women at home (Hewitt 1997); Maharashtra India in 1993, where more men survived because of the tradition of men sleeping outdoors while women (and children) were crushed in their houses (Maybin 1994); and Afghanistan 1998, where men were safer praying in the mosque or working in the fields (IFRC 1999).

These examples are time- and space-specific and in some disasters (and given different cultural practices) more men die. However, the key point to recognize is the gendered nature of potential vulnerabilities.

1.3 Specific vulnerabilities of women

Women may not be particularly vulnerable qua women ... but more commonly poor women (e.g. class + gender), old, poor women (age + class + gender), or old, poor, minority women (age + class + ethnicity + gender) are most vulnerable. It is highly probable that, everything else being equal, the addition of disability (blindness for instance) would create a concatenation of vulnerability factors that more or less assure that this person will be most severely affected by most hazard events and, if she survives, will find it hardest to recover. (Wisner 1993: 22, quoted in Hewitt 1997: 148).

Researchers have begun to document the way women in particular can be vulnerable due to a range of factors indicative of fundamental social processes. While some of these factors are listed separately below, the categorisation is arbitrary to an extent as they are all closely inter-related. Gender also intersects with

class, race/ethnicity, age, and physical and mental ableness and cannot be seen to be a homogeneous category itself. The following list begins with biological factors but this should not be read as indicative of a static biological determinism:

Biological factors:

- Pregnancy and lactation can increase vulnerability in some women because of their greater need for food and water and their constrained mobility at these times.
- Longer lifespans than men can lead to increased levels of poverty in the elderly female population.

Economic factors:

- Reproductive work (the work that women do to bear and care for children, cooking and cleaning of the home which provide essential support for families and on which much male work in the public sphere depends) does not figure in economic (monetary) evaluations (Mies 1999: 77). Women's time inputs are not recognized (Hakim 1999: 53) and can thus be ignored when post-disaster relief and rehabilitation resources are being distributed.
- Women's identification with the private domain of the home can mean their increased workload throughout the disaster cycle goes unrecognised (women's work potentially occupies the productive, reproductive and community spheres).
- Their external work opportunities lie disproportionately in the part-time, temporary and low-level which places them at greater risk of poverty.
- Women lack access to credit (Childers 1999).
- Structural Adjustment Programmes exacerbate the negative impacts of the increasing flexibilization of work and decreasing numbers of social programmes; these contribute to the feminization of poverty, and make poor women targets for population control and violence (Mies 1999: 81).
- Priority in work opportunities may be given to men.

Social factors:

- Women and girls have unequal access to educational opportunities.
- Women generally have lower levels of literacy. UNESCO statistics (<http://www.unescostat.unesco.org/>) for estimated illiteracy rates illustrate the gender differential. The world illiteracy rate for 2000 is 14.7% for men and 26.4% for women. In Europe the rate is much lower but still shows a gender difference: 0.9% for men and 1.5% for women (the averages for developed countries are: 0.9% for men and 1.3% for women).

Political factors:

- There is a lack of universal suffrage.
- Women have limited access to, and occupation of, decision-making power structures.
- Women experience constraints on opportunities to participate in political activity.

Cultural factors:

- Women's culturally determined subordinate status to men — often based on religion — can place limits on their mobility; e.g. they may have to defer to men before evacuating or receiving healthcare (in the May 1998 earthquake in Afghanistan, many Afghan men would not allow their women to be “whisked away” for treatment unaccompanied (IFRC 1999: 78)); female Bangladeshis have been put at risk during floods and storms because of prejudice against women and girls learning to swim (Cannon forthcoming).
- Vulnerability to domestic and sexual violence: evidence is beginning to be collected which indicates a higher incidence of violence to women in disaster and post-disaster (Larabee 2000; Fothergill 1999; Wilson et al 1998; Enarson 1997) and yet a lack of recognition of this in disaster management policies and practices
- Heterosexism — which assumes a particular ('traditional') model of the family — funnels resources through a male head of household (who may use the resources for personal gain); and fails to recognize the needs of women-headed households (single, separated, widowed, lesbian women). In hurricane Mitch a major increase in female-headed households was noted: households up from 24.3% to 40% in Nicaragua and up from 20.4% to over 50% in Honduras (Delaney and Shrader 2000). This was partly as a result of an increase in male migration/desertion.
- Because of differential risk perception, women ('risk-avoiders') are at risk of men's ('risk-takers') risk-tolerant behaviour (Fothergill 1996; Cutter et al 1992).
- Gendered knowledge – women's responsibilities for food supply and family health lead them to develop knowledge in these fields which is pejoratively termed 'housewife's knowledge' and dismissed in the domain of decision-making power.

Environmental factors:

- The vulnerability of the domestic environment – mentioned above. An example given is the February 1998 earthquake in Afghanistan in which more women (and children) died because they were at home preparing the evening meal while the men were at the mosque or working in the fields.
- For many women, their home environment is their work environment and they are thus doubly impacted when earthquakes destroy their homes.
- Many women support families through local agricultural production — e.g. small-scale garden produce — on which families depend but which does not feature in assessments of economic production values and is less likely to be prioritised in disaster recovery programmes.

While these examples indicate women's greater vulnerability, it is important to recognize that they are not simply helpless victims — despite often being represented as such. Women also have great capacities to resist and overcome socially constructed disaster impacts.

1.4 The capacities of women

A vulnerability perspective can represent people negatively as disempowered and lacking in agency. It is important then to emphasise that this should be seen as a continuum and to balance any discussion with examples of capacities at the positive end (Blaikie et al 1994; Cannon 1994; Anderson and Woodrow 1998). (This paper concentrates on women in disaster rather than making the more general case for

women in society). Without repeating the list of categories above, it is possible to present a range of examples of what women *do* – as opposed to what women *have done to* them. However, a brief indication must suffice.

Women are active throughout the disaster cycle (mitigation, planning/preparedness, emergency response and recovery) although their activities may remain invisible or undervalued and often located in the informal rather than the formal disaster management domains (see Fothergill 1996; Neal and Phillips 1990). Women are active in disaster by preparing their homes and stockpiling supplies (Morrow and Enarson 1996); by initiating, and even leading, emergent (Neal and Phillips 1990) and environmental (Rocheleau et al 1996) groups; by heeding warnings and acting upon them (Drabek 1969); and in a variety of other ways (Fothergill 1996; Enarson and Morrow 1998; Wilson 1999). It must again be reiterated however that women's active contribution to disaster prevention and management has yet to receive full recognition or, indeed, acceptance in professional circles.

2 Local and global perspectives

2.1 “Globalisation is male-centred”

Globalization has become a ‘fuzzy’ term (Robertson and Khondker 1998) but most often associated, in general discourse, with a negative economic, political and cultural homogenisation. And it is perhaps globalization's threat to the heterogeneity of the local and the particular – the traditional sphere of concern for women – that is of significance here. While it is argued to have both positive and negative impacts (Giddens 1999-2000), globalization can be seen to have resulted in a number of negative effects for women:

Since the 1980s, the ever more deregulated, universalised, interests of global capital have produced deepening social inequalities, nationally and internationally. In the process, they have ensured a significant increase in the pressures of time on most women, and of poverty for some women, even as others, especially when child-free, seem to prosper in the spaces which have opened up for them in the expanding managerial, service and professional world (Segal 1999: 25).

According to Maria Guzman, President of Venezuela's National Women's Council, “Globalisation is male-centred”. Women are hit hardest by flexibilization and the growing instability of employment; by reductions in social spending; and by the privatisation of public utilities and services – especially health (Guzman 1998).

Global processes can have very local effects. Instability of employment has stimulated the movement of people across national and regional boundaries – immigrants, refugees, seekers-after-work (economic refugees) – who have become the unseen, invisible and therefore more vulnerable. In terms of disaster vulnerability, there are particular implications for an increase in homeless or illegal persons. Wisner and Takahashi (1997), in their United Nations University research on and with disaster managers in Tokyo and their conception of vulnerable groups, found that in most of the wards they studied, disaster managers specifically ruled out help for the homeless or illegal foreigners; they are thus doubly at risk. Furthermore, few of the available figures on the homeless so-called ‘underclass’ disaggregate by gender and so the specific effects on women are even less obvious.

As an example of the many ways that women (and children) around the world are impacted by disaster you are invited to visit the website of The Emergency Information Infrastructure Partnership where you can find a transcript of an online discussion led by Elaine Enarson following the conference 'Reaching Women and Children in Disasters' (4-5 June 2000 in Miami, Florida) (<http://www.emforum.org/vlibrary/lc000614.htm>). The full proceedings and other resources will shortly be available on the conference website (<http://www.anglia.ac.uk/geography/rwcidconference>) and the Gender and Disaster Network website (<http://www.anglia.ac.uk/geography/gdn>).

Ironically, these very websites offer an example of a positive benefit of the globalization of communications which has linked women from around the world, providing valuable disaster management information. A particular example would be the case of a member of *Puntos de Encuentro* (a Nicaraguan feminist NGO) who used her international network of friends and professional colleagues to ask for help during Hurricane Mitch (Bradshaw *pers. comm.*). Although an experienced worker in gender and development, she was unaware of the salient issues within gender and disaster and sought – and received – advice from an international informal support group.

David Harvey (1996) cautions against uncritical use of the term globalization. He argues that the globalization language is “disempowering” and that its rhetoric has replaced “the more politicised concepts of imperialism, colonialism, and neo-colonialism” (p. 420). He argues for a shift to the language of historical-geographical materialism, preferring “uneven spatio-temporal development” or “uneven geographical development” (p. 429). In this way, analysis is focused on the concrete conditions “within which socio-ecological action is possible and the way in which human activity in turn transforms socio-ecological conditions” (p. 429). It thus becomes a project of empowerment and action. Thus, the very term ‘globalization’ must be constantly questioned to avoid hiding the harsh realities of its processes behind what is becoming an increasingly nebulous concept. Ben Wisner (1999), in his study of the hazard vulnerability of Los Angeles, also emphasizes uneven development which leaves some at greater risk. Building on this he ends by linking the many victimising effects of the global with the positive potential of local action:

The economic force of globalization and the political force of possessive individualism both tend to work against integration and coordination. Yet many competent and caring professionals and energetic community groups in greater Los Angeles are working for a safer and more humane future. In these people is the hope of the mega-city” (p. 419).

For women (at least in the short term) active participation in local community groups is an important way to fight globalization’s uneven spatio-temporal development which results in increasing disaster vulnerability.

2.2 Disaster management is male-centred

Notwithstanding the positive benefits of many local community groups working to resist hazards and disasters, the presence and concerns of women are often not represented in the formal (and even the informal) structures and organizations of

disaster management. A number of authors have testified to the dominance here of men and masculine culture (see, amongst many: Myers 1994; Morrow and Enarson 1996; Enarson and Morrow 1998; Fordham and Ketteridge 1998). Despite a slow process of change which is beginning to see more women (and other under-represented groups) throughout the disaster management structure (Wilson and Oyola-Yemaiel 1998) yet it remains generally the case that, at whatever spatial level – from the international to the local – where women are present in organizations, they usually occupy positions of lower status and power. Ironically, in the light of this situation, some (Krajeski and Peterson 1999) have argued that women's local knowledge, amongst other skills, fits them for appropriate disaster management in preference to – or at least in addition to – more professionally qualified 'outsiders' who often converge on disaster sites.

Apart from the lack of a voice for women, their needs and experiences in formal disaster management organizations, there are a number of other implications arising from this gendered domain such as their differential risk perception and different priorities.

Much empirical work has documented women's greater risk/hazard perception (see Fothergill 1996 for a review of the literature). This leads to the paradoxical situation where men – the risk-tolerant risk-takers – are in charge of disaster preparedness and management, and women – the risk-avoiders – are subordinated. Where women are more sensitive to warnings and prepared to act and evacuate, men 'hear' them less and act reluctantly – often only at the behest of women.

Additionally, Delaney and Shrader (2000) have noted that men and women have different priorities and roles in post-disaster reconstruction. They found, in their study of Hurricane Mitch, that there was an over-emphasis on major infrastructure projects (especially roads) to the detriment of those aspects women prioritised: social housing, income-generation for woman-headed households, food security, water and sanitation, healthcare and psychosocial counselling. The tendency was to focus on high-tech, high profile solutions which overlook the household level ('men with bulldozers'; 'men with machines' were dominant). This echoes Anthony Oliver-Smith's (1994) research into the 1970 earthquake in Peru where he reports aid went to the rebuilding of cities and infrastructure but little to the rebuilding of towns and villages and rural areas. While it is accepted that major infrastructure repairs are necessary and also aid women and local areas, they tend to take the largest share (or even the totality) of available resources and have an ideological purpose (e.g. re-confirming and legitimating existing government). The everyday needs of small communities (with little power and few votes) can suffer disproportionate delays in reconstruction.

2.3 Learning from 'The South'

It is important here to acknowledge the contribution to understanding in the developed 'North' of the developing 'South'. Too often knowledge, information and resources are perceived to flow in a one-way direction from North to South but in disaster management, some in the North have begun to recognize the major steps which have been made in the South towards the insertion of gender analyses and frameworks into disaster planning and management, and have begun to adapt and

adopt these to developed world situations. This is referred to again below in ‘*The gender-disaster-development case*’.

2.4 Balancing technical versus social approaches

Linked to the male dominance of disaster management is an often inappropriate emphasis on the **technical over the social**. This can lead to less - or an ineffective – response. Two examples identify some of the issues.

Firstly, the May 1998 earthquake in Afghanistan where Bradley Foerster (UN Office for the Coordination of Humanitarian Affairs) concluded:

Our biggest mistake in the second [May] earthquake was the over-reliance on high-tech solutions in a desperately low-tech area (IFRC 1999: 82)

He reported that they were obsessed with finding helicopters when engaging local people in assessments and donkey convoys would have been quicker, cheaper and more effective.

Our Western approach to the problem was: Give me a machine. The voices of Afghans were not heard (IFRC 1999: 82).

Peter Marsden, British Agencies Afghanistan Group, emphasised local-level disaster preparedness:

In any disaster situation, those who are directly affected will have done 90% of the work before the agencies fly in. Self-help will happen automatically, and people will do what they can to cope. So local authorities should develop systems of disaster assessment and response, based on local knowledge, specific to each individual village (IFRC 1999: 82).

Similarly, with reference to the February 1998 earthquake in Afghanistan, the International Committee of the Red Cross external evaluator said the brief life-saving window of opportunity for saving lives was largely lost (IFRC 1999: 72):

Time is of the essence in earthquake response with few live rescues happening after the first 48 hours” (IFRC 1999: 72).

This last finding is reinforced by Louise Comfort (1996) who also emphasizes the importance of speed in rescue in order to save lives. In the 1995 Kobe earthquake there was a steep decline in survival rates by day of rescue:

Table 1

Number of Live Rescues, by Day of Rescue

Date	Jan. 17	Jane. 18	Jan. 19	Jan. 20	Jan.21
Total rescued	604	452	408	238	121
Total who lived	486	129	89	14	7
Percent rescued	80.5	28.5	21.8	5.9	5.8

who lived

From Comfort 1996 (Source: Kobe Fire Department, The Great Hanshin-Awaji Earthquake [Kobe City Area]: Record of Fire Fighting in Kobe. 1995: 12)

Louise Comfort underlines the importance of the social and the organizational in earthquake damage reduction. She notes the high costs paid by Japan in its adoption of a technical strategy for earthquake mitigation, compounded by under investment in public sector capacity at the local level.

Building sustainable disaster-resistant and resilient **physical** environments necessitates building more sustainable disaster-resilient **social** structures (Enarson and Fordham forthcoming). Mitigation is not a technical accomplishment but a social process.

3 From the reactive to the pro-active

3.1 From vulnerability to resilience

On the international scale, there is increasing recognition of the need to broaden the approach from simple hazard management to building disaster-resistant communities. The US Federal Emergency Management Agency (FEMA <http://www.fema.gov>) has developed Project Impact — Building Disaster Resistant Communities. FEMA claims this is changing the way America deals with disasters. Project Impact helps communities protect themselves from the devastating effects of natural disasters by taking actions that dramatically reduce disruption and loss. It does this through: preventive actions, to be decided at the local level; private sector participation; and long-term efforts and investments in prevention measures. It operates primarily through economic mechanisms, however, with little focus up to now on women's needs. Nonetheless, at the Reaching Women and Children in Disaster Conference in Miami (<http://www.anglia.ac.uk/geography/rwcidconference>) in June 2000, there was an indication that this may be changing. A senior officer from FEMA was very supportive of the Conference aims; stated FEMA's intention to sponsor the second conference of its kind; and acknowledged the need for more female emergency managers if we are to respond to the needs of women and children.

Similarly, the International Strategy for Disaster Reduction (ISDR <http://www.unisdr.org>) — the successor to the International Decade for Natural Disaster Reduction (IDNDR) — is another institution without a central focus on gender but which has also taken on board the need to focus at the local level and has several initiatives with regard to Disaster-Resistant Communities, including the Women's Initiative for Disaster Reduction. This aims to ensure women "play a substantive role in disaster reduction by actively involving them in the formal planning and decision-making process" (<http://www.unisdr.org/unisdr/resistantwomen/resist>).

Effective, sustainable disaster preparedness and response must incorporate analyses of local racial, class, and gender inequalities which are likely to impact on residents throughout the disaster cycle. Differentials in housing, economic security, family status, health and other living conditions in diverse populations offer important information about patterns of vulnerability and recovery. Thus social vulnerability

analysis, as a planning tool for emergency managers, can provide concrete knowledge of local community power structures and enable emergency planners to anticipate needs and target resources (Enarson and Fordham forthcoming). A major drawback, however, is the unavailability of disaggregated data. In many areas this simply has not been collected and thus represents a significant resourcing issue.

3.2 The gender-disaster-development case

The move from vulnerability to resilience cannot be made without disturbing the *status quo*. To return a disaster-struck area to the way it was before is to risk re-creating disaster prone communities for the future. The break in thinking can be helped by linking gender and disaster programmes, initiatives or ideas with those of gender and development. Disaster and development are two separate traditions within academic disciplines and in terms of practical outcomes. When disasters are experienced, they bring with them a convergence of external help focused on providing relief and returning the community to 'normality'. In doing so, they can overturn long-term development programmes (and this is not confined to the developing 'South'). The 'tyranny of the urgent' (BRIDGE 1996) drives out gender and other issues, or they are relegated to a lower priority. This is often done with the best of intentions but in a state of ignorance of the implications.

Such analyses examine how appropriate disaster relief can further development goals while cautioning that inappropriate development can increase vulnerability to disaster (Delaney and Shrader 2000: 12).

There is much for the disaster and development communities to learn from each other. Recognizing the added value of disaster-development initiatives in building disaster-resilience and sustainability is an important step in addressing earthquake vulnerability.

3.3 Recommendations for reducing women's vulnerability and building local capacity

It is not the disaster event but pre-disaster conditions and policies which create social and structural vulnerability, and differential risk to some social groups. The context is one of social justice. While this needs to be addressed at a range of scales (macro, meso and micro), this paper has generally referred to the more manageable meso (institution/organization/policy) and micro (household/individual) levels. It does not deny or underestimate the need to challenge patriarchal structures and the subordination of women but addresses itself at this more readily accessible and pragmatic level. However, two important concerns to be addressed, which straddle the macro and the meso scales, are decentralization and pre-event policy-making.

Decentralization. The local and the particular are not the exclusive domain or concern of women but they are often a place of women's action. Decentralization and the strengthening of local government capacity offer opportunities for women's greater involvement in decision-making. Allied to this is the need to strengthen NGOs (and women's place within them). Andrew Maskrey's work (1989) is indicative of the value of a community-based approach for ensuring sustainable disaster management and development. *Puntos de Encuentro* in Nicaragua (Bradshaw 2000) is but one example of the important role played by NGOs (and women's NGOs in particular) in rebuilding communities post-disaster. Indeed, Sarah Bradshaw has

made the point that getting reconstruction projects wrong is a major spur to increased domestic violence.

Pre-event policy-making. The point has already been made that disasters are created by the everyday conditions in which people live. Thus, policy issues are better addressed in the **pre-event** period without public and political pressure for immediate – possibly ill-considered - remedial action (Nigg 1996). This fits better within the gender-disaster-development continuum, where rehabilitation and recovery can be placed within broad social and economic goals.

Specific – selected - recommendations include:

- The need to support local capacity in disaster management;
- The need to examine the emphasis on physical infrastructure/technical projects; mitigation must include social vulnerability (poverty, literacy, age, gender, ethnicity);
- The need for data. There is a general lack of data on gender and disasters; much of what exists is qualitative (valuable though this is) and little is known of the social and geographical spread of many findings;
- The need for vulnerability mapping and analysis; here again quantitative data is lacking in many areas — furthermore, definitions of vulnerability are wide-ranging and characterised by a lack of consensus (Cannon forthcoming);
- Acknowledge women's triple productive role, provide support and avoid unnecessary overload;
 - In doing this we must recognize the economic contribution of women's time and home produce (garden produce, cooking, cleaning, family healthcare etc.);
 - Ensure women's home working environment is recognized, protected and rehabilitated;
 - Ensure equal opportunities to disaster work and within the work environment;
 - Ensure women have 'a seat at the table' in decision-making arenas but do not overload women with extra work;
- Recognize different models of the family and respond to their differential needs;
- Disaster managers must plan for women who are pregnant or feeding infants, i.e. that they have necessary resources (food, water, transport, privacy...);
- Ensure women's safety from domestic/sexual violence through the protection of women's refuges (provide secure access and protect communication links) and the provision of safe rooms and segregated entrances to communal disaster rest centres;
- Acknowledge and act upon women's higher risk perception; conversely, challenge masculinist notions of risk-taking;
- Recognize the protection needs of domestic space (when and how it is more vulnerable);

These are but a short selection of possible recommendations to reduce women's vulnerability. Readers are directed to the work of Elaine Enarson in this area (see the

Gender and Disaster Network and the Reaching Women and Children in Disaster websites).

4 Gender: from the margins to the centre

4.1 The centrality of gender

Gender is central to all our lives. When a baby is born, the first question asked is usually 'is it a girl or a boy?' However, through the process of socialisation, we do not see the gender inequity that is almost universal in its application. Slowly gender awareness is increasing and this paper has addressed its position in disaster management. What will happen if gender is marginalized still further?

The cost of continuing to ignore gender in the disaster recovery process is potentially tremendous. Failing to incorporate gender most likely results in overlooked damages, needs and priorities. It most certainly exacerbates, and potentially creates, poverty and inequity. It likely intensifies vulnerability and creates new categories of "victims". Finally, the lack of gender-sensitive assessments and programming replicates and intensifies previous patterns of political, social, and economic inequality (Delaney and Shrader 2000: 42).

In its occasional expressions of uncertainty, Delaney and Shrader's statement reveals our relative lack of hard data on just how gender does impact on societies in disaster situations. While recent years have contributed much to our knowledge, we still need to do much more work to identify, for example, the specific economic costs of gender blindness in order to persuade many decision-makers of the central place of gender in earthquake vulnerability and mitigation.

4.2 The transformative potential of major disasters

There are key insertion points in both development and disaster programming which represent substantial opportunities for social and economic transformation (Delaney and Shrader 2000: 12).

Nobody would wish for a disaster to happen. However, in their very destructiveness they can create the opportunity for positive change. It is of course easier to redesign and rebuild physical structures than social processes; nevertheless, disasters also become "focusing events for institutions, not only for internal reorganization, redefinition, and agenda-setting, but for ideological solicitations of public approval, support, and cooperation." (Larabee 2000: 12). The post-disaster environment is a time to question unsustainable practices and the occasion to address the fundamental social issues which create vulnerability.

In the Dominican Republic, the regional NGO FLACSO found positive community change was promoted after Hurricane George (Meyreles 2000). Men's attitudes to women changed in a more supportive way, and women created better relationships with local authorities and developed their leadership capacities.

In Nicaragua, Hurricane Mitch was as much a political as an environmental event and it became an opportunity for transformation. Bradshaw (2000) reports that most reconstruction work was done by national and international NGOs, not by the

government. In social surveys carried out by the women's NGO *Puntos de Encuentro*, 60% of the respondents (98% in one region) said the government had done nothing. Despite obvious concern that the government did so little, this shows the effectiveness and potential of NGOs in post-disaster situations.

However, it must be borne in mind that Delaney and Shrader's (2000) research in Nicaragua and Honduras lamented the overall lack of gender awareness and sensitivity. Thus, the disaster itself is not the automatic trigger to change and there is no intention here to posit an environmental determinist viewpoint.

5 Key concluding points

Finally and briefly I would like to borrow from the United Nations Development Programme, Gender in Development initiative (http://www.undp.org/gender/capacity/gm_tips.html) to emphasize three general points to keep in mind to emphasize the place of gender in the organizational context of earthquake vulnerability and mitigation:

- Have a good knowledge of the socio-economic context in which you are working;
- Be aware of the political context of your work environment and work strategically;
- Continually refer to the three main levels of gender mainstreaming:
 - a) Have women and men been consulted equally?
 - b) How many women versus men are involved in the decision-making processes?
 - c) What is the likely impact on women and men (on gender equality goals)? (UNDP 1998)

In many cases we do not know the answers to the last three questions but, more importantly, we have not begun to ask the questions.

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