Chapter 9
Climate Change, Gender and Natural Disasters: Social Differences and Environment-Related Victimisation

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Introduction

Climate change is likely to bring with it an increase in the frequency and/or severity of natural disasters such as flooding, heat waves and cyclones. The combination with other impacts such as rising sea levels will intensify these events. Disasters exacerbate existing inequalities and vulnerabilities in the community, meaning that there will be a range of effects for men and women, adults, youth and children, in the developing and Western worlds. Opportunities for such crimes as sexual assault and exploitation of women and children increase, and situational factors such as overcrowding and stress leading to domestic violence will also rise. Natural disasters therefore bring many challenges, but few of them are unique, and many of the recommendations for reducing harms to victims align well with the crime prevention principles of criminology.

It is said that existing social inequalities and vulnerabilities will shape the outcomes of events such as disasters (Mutter and Barnard 2010). It follows then that disadvantages and discrimination faced by women and children in varying forms and to varying degrees throughout the world will be exaggerated by the onset of natural disasters. Indeed, the impacts are different for men and for women, for adults and for children, for boys and for girls, and these are largely a reflection of the existing society and culture. Those who do not know how to swim will fare worse in a flood that those who do. So if a cultural norm is for males but not females to learn to swim, the potential for a higher death toll among women as well as children is in place long before the rains

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begin. This chapter looks at some of the different experiences of males and females, and of adults, youth and children in natural disasters across the world.

References to gender as an issue in climate change debates and international protocols on disaster management in particular have been made since at least the 1994 Yokohama World Conference on Natural Disaster Reduction, with efforts to empower women and include them as well as men in all stages of disaster management programs (Hannan 2009). Despite this, there is a recognised lack of research and evidence about climate change and gender, related to the paucity of research about climate change and social issues generally, making it difficult to identify and understand the complex links (Terry 2009). This may be no coincidence as it has been suggested that women's voices are more likely to be heard when the social consequences of climate change and variability are debated, but these debates are rare (Alston 2011). We do know that climate change is likely to hamper efforts to achieve both the Millennium Development Goals as it contributes to the cycles of poverty; and the Convention on the Rights of the Child which includes rights to life, survival, development and health (Arts 2009). The current state of knowledge regarding risks particular to men and women, male and female youth, girls and boys is outlined in this chapter, along with some unanswered questions and issues for the future.

Social Vulnerability and Extreme Events

Long-term climate change is likely to have ramifications for gender relations, as well as agricultural, ecological and human systems (Nelson et al. 2002, p. 51). Much of the knowledge about the gendered impacts of disaster is contextualised by humanitarian and natural disasters. The gender lens falls disproportionately on women and girls in the developing world and to a lesser extent, marginalised populations in the developed world, such as the African American women and girls of Katrina. The environmental lens falls disproportionately on agriculturally based communities suffering slow-onset prolonged events such as drought, crop failure and water insecurity or communities affected by rapid-onset natural disasters like earthquakes or extreme-weather events such as hurricanes, cyclones and tsunamis. Less attention is paid to co-occurring natural and technological disasters, like the recent Tohoku earthquake and tsunami in Japan (but see Chap. 11). While much can be learned from the plight of women and girls in these circumstances, comparable attention is not given to the perspectives, priorities, needs and experiences of adult men, male youth and boys. This is addressed in the latter sections of this chapter.

Gender relations place men and women differently at risk in the face of climate change, extreme weather events and natural disaster: "Gender shapes men's interactions with men as well as women during crises, and differently in different contexts" (Enarson 2009, p. 1). Gender expectations can be self-imposed, reinforced by intimate partners, family, friends, work colleagues and peers as well as being embedded in the social norms of particular communities. Gender norms are reproduced by

the institutions of the state, by stereotypical images in the mass media especially during high-profile events, and by the discourses surrounding climate change, disaster and environmental degradation. Gender norms and values and resulting behaviours can have negative effects (e.g. on health), but gender norms and values are not fixed, can evolve over time, vary substantially from place to place, and are subject to change (WHO 2010, p. 2).

Gender difference and gender bias also occur in the discourses surrounding climate change and environmental degradation. An example of this is use of the prefix "man-made" to describe events (e.g. "man-made" climate change, disaster), environmental harms (e.g. "man-made" greenhouse effect, environmental degradation), and substances (e.g. "man-made" chemicals). Inherent in this language is an implication that men are responsible for all of these scenarios. Yet, women have been passive and active partners in the world's factories, fields, and farms. Alongside men, they have applied pesticides and insecticides to fields, orchards and farms with the residue being released to rivers and streams; disposed of chemically-laden products including plastics, household cleaning products, personal care products and thousands of tonnes of disposable nappies, ultimately contributing to bulging landfills, greenhouse gas emissions and long-term climate change.

As Brody et al. (2008, p. 2) note "a gendered approach to climate change should not simply be about women and girls; men and boys are also vulnerable to the impacts of climate change, but often in different ways. Furthermore, women and girls are involved in relationships with men and boys and it is at the level of these gender relations and the social expectations influencing them that research needs to be conducted and change needs to happen". Greater clarity is needed to better understand specifically how gender roles change in response to different types of events. In this context, it is the notions of *change* and *conflict* that emerge as connecting threads. For example, "Gender norms are challenged when women take on tasks traditionally ascribed to men, gaining new skills and changing prevalent views as to women's capabilities. This occurred after Hurricane Mitch when women were observed building shelters and wells" (PAHO 2001, p. 2 cited in Nelson et al. 2002, p. 56).

In the aftermath of a disaster, everything changes. Disaster forces people who may have been taking such necessities as food, water and shelter for granted, abruptly down Maslow's hierarchy of needs, to a search for these basics of human life (Olson and Gawronski 2010). In many societies throughout the world, these are the very things that are seen as the responsibility of women (with the possible exception of shelter), and the burden of this also often falls to women.

After a natural disaster, with issues such as grief for loved ones who died and loss of housing, possessions and income, stress levels and tensions increase. This in turn increases the risk to both women and children of abuse. With domestic violence being blind to race, ethnicity and socio-economic status, this increased risk occurs worldwide. While statistics on domestic violence are notoriously difficult to obtain at the best of times, the aftermath of a disaster adds another layer of complexity to the issue. But from the evidence available, reports of increases in domestic violence, coming from those who work in shelters and support services, as well

as from victims themselves, are found throughout the world (Houghton 2009; Saroor 2009; Action Aid Nepal 2007; Thornton and Voigt 2007). For example, in the USA, following a hurricane, rates of inflicted head injury to children under 2 years of age increased fivefold (Bartlett 2008).

Impacts on men and women will differ during the relief and reconstruction phases. Cultures and societies that only recognise male-headed households leave women and children who find themselves suddenly the head of their household as a result of the disaster in a position of discrimination. They may have restricted or no access to compensation and disaster relief money from Governments, or to aid which is distributed through the head of the household. There is a need for aid agencies to be able to officially recognise children (as well as women) as the head of a household (Delaney 2006). This recognition also needs to extend to male youth-headed households.

Where people are displaced as a result of natural disaster, there can be flow-on effects for communities outside the immediate area. A community in North Queensland, in Australia, where flooding is an annual occurrence, reported tensions arising between the community evacuated and the "host" community that finds itself with a large group of people camped on the local sporting oval for weeks at a time. The host community blamed the evacuees for any negative event, and the evacuees found their usual capacity for resilience impeded by being away from home (Cottrell 2008). These tensions sow the seeds of conflict between the communities. Sometimes the effects of a disaster can manifest themselves in a more subtle way. A study of communities affected by Hurricane Katrina in the USA found that there was an increased level of bullying among children after the disaster (Terranova et al. 2009).

Victimisation and the Social Impact of Disasters

The majority of case studies on the impacts of disasters use the "mega-disasters" as their focus, and thus many come from the 2005 Hurricane Katrina in the USA, the 2004 Indian Ocean tsunami in Sri Lanka, Thailand and Indonesia and the 2005 earthquake in the Kashmir region.

Hurricane Katrina

Natural disasters create a sudden high demand for labour for the reconstruction efforts. Typically this labour is low wage, hard physical labour—precisely the circumstances in which people trafficking is most likely to occur. There have been nine human trafficking cases identified in the Gulf Coast region, involving 1,383 victims from India, Thailand, Peru, Bolivia, Dominican Republic, Brazil, Mexico, Honduras, Philippines and Panama, starting as soon as 2 months after Hurricane Katrina (Hepburn and Simon 2010). Victims have reported being forced to live in hurricane

damaged buildings full of mould and debris, with no electricity or running water. Cooking was done with the available contaminated water, and traps were set for pigeons so there was some food to cook (Hepburn and Simon 2010).

The immediate aftermath of Katrina saw police called off search and rescue missions to control looting and fires (for a critique of the police response, see Chap. 10). In the midst of this societal breakdown were brutal gang rapes (Thornton and Voigt 2007). These events occurred in a variety of settings, some even before the hurricane actually hit. A woman trying to hitch-hike to get out of New Orleans in a hurry during the warning phase was picked up by two men who raped and abandoned her. After the event, a woman was looking in a convenience store for medicine for her sick mother, and food and water for her own children. She was gang raped in the store by a group of young men, frustrated at being unable to break into the bank cash machine (ATM) located there. Several reports were made of men sexually assaulting women they were offering "assistance" to. They were not necessarily strangers—a woman living in her car after being left homeless by the hurricane was offered a place to stay by a co-worker who then raped her (Thornton and Voigt 2007).

Kobe Earthquake

There were reports of sexual assaults and domestic violence following the Kobe earthquake in Japan. Broken street lights created dark corners, and collapsed buildings were the venue for some rapes and sexual assaults on women. Shelters were also considered unsafe, but with women reluctant to report because they felt they had nowhere else to go. Domestic violence was also reported, including by women who took their stress out on their children (Masai et al. 2009).

Whakatane Floods

In one example from a lesser known disaster of a smaller scale in the Western World, in July 2004, the town of Whakatane in New Zealand flooded, leaving it cut off for 2 days, and with 300 homes evacuated. The New Zealand police reported an increase in domestic violence call outs from July through until September, and a women's refuge reported a tripling of its workload. At one point, the safe houses were so overcrowded that each worker had three families staying with them as well (Houghton 2009).

Pakistan Earthquake

Following the 2005 earthquake in Pakistan, examples arose of fear or actual abuse in tent camps. A woman living in a tent tied her 4 year old to the bed because she did not want him to play in the mud which would then require her to wash and dry

the clothes in the frigid weather. There was a reported general sense of fear about the possible abduction of women and children, which was severe enough for some men to be unwilling to leave their tents to go to work. A woman living in a tent with her four children stitched the tent flap closed each night because she feared for their safety if people realised they did not have a male "protector" (Sayeed 2009).

Indian Ocean Tsunami

Having the responsibility for caring for children during a natural disaster can bring unique challenges and loss. A Sri Lankan mother reported of the 2004 tsunami:

> When the wave came, I grabbed both by children in my arms and tried to run, but the wave caught me, and I was forced to choose between my six-year-old and my baby or else we all would have perished. I can still see the look in his eyes when I let go of him (Chew and Ramdas 2005, cover page)

Interviews with staff members of non-government organisations, UN agencies and government representatives in Sri Lanka 5 months after the tsunami confirmed incidences of violence including domestic violence, and sexual exploitation that continued in camps and temporary shelters for a period of months. There were reports of sexual assaults in poorly lit toilets; men offering impoverished victims money or goods for sex; women with learning disabilities being attacked as they went from the camp to their damaged houses to look for belongings; sexual harassment of women while they were bathing, including by humanitarian workers; and incidents of rape, physical abuse, sexual harassment and exploitation committed by police and security at the camps (Fisher 2010).

Haiti Earthquake

On 12 January 2010, an earthquake struck Haiti, killing over 220,000 people, and displacing over 1.3 million more. In a country where over 40% of the population are children, it was a time of highly increased vulnerability for those children. One 10-year-old girl whose father was killed in the earthquake was living in an Internally Displaced Persons (IDP) camp with her mother and three younger siblings. This girl reported having been raped twice—once on the way to the communal bathroom in the camp, and once in her tent when her mother was out looking for work (Todres 2011).

Social Context and Physical Location

The available evidence shows that impacts differ depending on the type of event, and where it occurs. In countries that are highly gendered, women and men have distinct roles and responsibilities in daily life. This to a certain extent dictates where

they are likely to be when an event occurs, how much warning they may receive, and what their available options are for survival both during and afterwards. Before an event, where there is some warning, it must be communicated throughout the area likely to be affected. Access to these messages will be different, especially in some cultures, for men and for women, for adults, for teenagers, for children, and for the elderly. Inequalities may exist from the outset in who has the knowledge about a coming risk.

Having the information though is not the whole story—people then have to be able to make decisions based on that information, and act on those decisions. Worldwide, young children will need assistance to do both, and elderly adults may not be physically able to act on their decisions without help. In some societies, women also will require assistance with either or both, where cultural norms dictate for example that decisions are made by the males in the household, or that women must be accompanied in public by men. In some areas of Bangladesh, the observance of the socio-cultural norm of purdah (the practice of preventing men from seeing women) is considered more important than disaster risk (Ariyabandu 2009). A cyclone in 1991 in Bangladesh claimed the lives of many women forced by cultural norms to wait at home for their husbands or a male family member to direct them to safety (Saito 2009). This restricted mobility and autonomous decision making puts not only the women but their dependent children at increased risk, a fact recognised in the Kashmir earthquakes in 2005 (Mehta 2009).

Sometimes the differential victimisation of men and women is less obvious to those outside the situation. A group of women in the North West Frontier Province of Pakistan reported being blamed for the 2005 earthquake that was seen by some in the region as not being a natural disaster, but brought on by the "sins of women".

> People blame us for the tragedy. If our moral practices had been better this would not have happened…It is terrible enough to have survived the earthquake, to face the huge loss of family and friends, and possessions; on top of that to feel guilty for all that is being said about our "sins" drives us to despair (Sayeed 2009, p. 145)

While violence and abuse of women and children may be a worldwide phenomenon, after a natural disaster, as at anytime, there are different manifestations of this according to where the event has occurred. Most reports from Western countries identify incidents of domestic violence and sexual assault of women. In developing countries though, more reports also include the sexual exploitation of both women and children. This exploitation and violence takes different forms for boys than for girls. Girls are likely to experience gender based violence aligned with their comparatively powerless position in society, whereas for boys, especially in conflict situations, the victimisation is more likely to be about intimidation (Delaney 2006).

Children are especially vulnerable when they are without an adult. This may be because they have become separated from their parents or caregivers during the event, because they have become orphaned by the event, or because the lone adult in their household is obliged to leave them alone in order to earn an income. Experience from Sri Lanka, Indonesia and Thailand following the 2004 tsunami found that children were vulnerable to sexual abuse and exploitation at all stages of

the disaster. In the immediate aftermath there were abductions, sexual assaults and trafficking of children. During the relief and recovery stage the desperation for survival left children vulnerable to prostitution, and in the reconstruction phase, child sex tourism became a significant risk as people searched for long term means of generating income (Delaney 2006).

The situation is made worse when there are no processes in place for responding to reports of abuse and violence. An earthquake generated tsunami in April 2007 in the Pacific nation of the Solomon Islands left about 4,000 families homeless. Between April and October 2007, there were at least 14 officially reported cases of gender-based violence, including rape. However, there were no effective systems in place for referral and response to these reports (OHCHR 2011).

An examination of recommendations made by those who have conducted qualitative research after disasters, according to the location of that disaster, provides an indication of the difference in issues around the world. A study which looked at caring for children after Hurricane Katrina included in their recommendations to provide quality and affordable childcare for evacuees (Peek and Fothergill 2009). As outlined in previous examples, the issues for developing countries are much more likely to be about keeping children safe and recognised.

Another impact on children which seems to be largely dependent upon location is the degree of interruption to their education. Anywhere in the world, school buildings can be damaged or destroyed by winds, flooding, earthquakes or fire. The difference is in what happens next. An event with little impact on children in high-income countries and communities may have vastly more serious implications for children living in poverty (Bartlett 2008). A recurrent theme in the literature on the impacts of natural disasters on children in developing countries is the extended disruption to education, especially for girls. Children in an area of Bangladesh that floods annually in the monsoons nominated the loss of educational opportunities as one of their main concerns (Martin 2010). Schools may be swept away, or become difficult or dangerous to access, or the fees may be out of reach financially until the family is able to return to generating income. Girls are sometimes taken out of school to meet those financial obligations, while boys in their family continue to attend.

Responding to the Issues

The variety of issues outlined above which contribute to increased vulnerability of women and children to climate change impacts such as an increase in natural disasters, demands similar variety in responses. There is no one easy solution. Indeed some of the issues arising from cultural norms may especially difficult to tackle. However, there are a number of recommendations and innovative solutions, many of which use principles of crime prevention—looking at factors related to situational and opportunistic crimes.

The Gender Disaster Network provides six general principles for including gender issues in relief and reconstruction:

1. *Think big*—gender equality and risk reduction principles should guide all aspects of disaster mitigation, response and reconstruction; and utilise the small window of opportunity for change in the immediate aftermath of an event.
2. *Get the facts*—gender analysis is not optional but imperative to direct aid and plan for a full and equitable recovery.
3. *Work with grass roots women*—women's community organisations have insight, information, experience, networks and resources vital to increasing disaster resilience.
4. *Resist stereotypes*—base all initiatives on knowledge of difference and specific cultural, economic, political and sexual context, not generalisations.
5. *Take a human rights approach*—democratic and participatory initiatives serve women and girls best, and both males and females need to be assured of conditions of life needed to enjoy their fundamental human rights, as well as simply survive.
6. *Respect and develop capacities of women*—avoid overburdening women whose workloads will already increase after a disaster, identify and support women's contributions to informal early warning systems, school and home preparedness, community solidarity, socio-economic recovery and extended family care (Gender and Disasters Network 2005).

These general principles must then be translated into concrete actions if they are to make a difference. Given the number of reports of harassment, abuse and violence in IDP camps and shelters, clearly some closer attention must be paid to their design and operation. Recommendations on this have come from a variety of sources, and include avoiding crowded sleeping conditions, lack of privacy and partitions, lack of separate toilet and washing facilities for men and women, basic facilities being in secluded areas far from the main camp, and poor lighting especially near water, toilet and washing facilities (Delaney 2006). These ideas are not unfamiliar as concepts of "crime prevention by design".

A study looking at the sexual exploitation of women and children displaced by conflict situations has made recommendations and observations which will be equally applicable to disaster response given that the lived experiences are often similar (Ferris and Petz 2011). This study included interviews with victims, non-government organisations, UN agencies and governments in Southern Sudan, Ivory Coast and Haiti during 2007. Under-reporting because of fear or feelings of powerlessness, and ineffective responses by the agencies were found to be significant issues. The complex relationships and interactions between local and international agencies, combined with existing high levels of discrimination against women were found to be major contributing factors (Csáky 2008).

Increasing the involvement of women can be particularly difficult in the very communities where it is needed most—those in which cultural norms rigidly designate roles for men and for women. However, it makes sense that the people who use a particular resource should be directly involved in sustainability initiatives around

that resource, since they are the ones who best know their requirements. The Hamirpur district in the North Western Indian state of Himachal Pradesh is a very conservative region where women are traditionally not allowed to speak to non-kin males, and where the collection of water is one of the duties traditionally performed by women. A non-profit public research and development organisation worked there for over 3 years to increase capacity building and get women involved in the maintenance of the resources like wells, that they need to use on a daily basis (Mehta 2009).

Children require special consideration following disasters and this will be equally applicable to situations arising from other climate change impacts such as increases in heat waves and rising sea levels. These special considerations concern not only the children themselves, but their caregivers, since the presence of a child in the household is a risk factor for adults' distress during disasters, and the most prominent risk factor for a child's distress is their parent/adult's distress (Ronan and Johnston 2005). Thus, looking after the well-being of families will be a head start in looking after the well-being of children. Adequate support of the mental health of parents and caregivers will act to reduce the risk of child abuse. The provision of somewhere to conduct schooling and safe places for children to play will not only facilitate the continuation of education, but decrease the risk of sexual exploitation and abuse of children as they spend less time unsupervised.

There are some innovative solutions that provide some positive news. In Bangladesh where large parts of the country are flooded annually in the monsoons, schooling for children is usually disrupted at that time of year. In response to this, some areas have school boats, equipped with libraries, computers and lights, all running on solar energy (Martin 2010).

As the predicted impacts of climate change take shape, and the need for an understanding of the social implications becomes clear, issues of gender and age must be firmly embedded. Disaster statistics disaggregated by gender and age group should be a minimum, and yet these are scarcely available. Better design and operation of camps and shelters for displaced persons, and a clearer recognition of the needs of men, women, youth, boys and girls is essential. Clearly location and culture are important factors in natural disaster responses, and there is limited knowledge of how climate change impacts will affect local areas and regions. We do not have control over all of the ingredients for the tragic outcomes touched upon in this chapter, and the ones related to climate change and variability are not going away in the foreseeable future. However, we do have control over many of the social factors and vulnerabilities that turn extreme weather events into disaster situations. There is much work to be done, and in some places, the need is urgent.

Men and Boys

The literature overwhelmingly represents women and girls as victims and amongst the poorest of the poor, and as disempowered by gender inequalities in their communities. During extreme events, women and girls are said to have less equitable

access to resources, more likely to be subjugated by food hierarchies and less able to move around due to cultural norms that privilege men over women and boys over girls. Women are more likely to be primary carers and to be over-burdened with work due to the division of labour, especially following disaster. Simultaneously, they are nonetheless seen as primary agents of change in the event of catastrophe or crisis. There is widespread agreement in the literature that women and girls are at greater risk of dying (particularly drowning) in the immediacy of disaster; at greater risk of physical and sexual abuse in transitional accommodation such as camps, tent cities and evacuation centres, that domestic violence against women is likely to increase post-disaster and that children in certain regions are highly vulnerable to trafficking and sexual abuse during and post-disaster.

Aside from positive representations of men as protectors (of family, kin and community) and providers (still primary providers in many communities around the world), adult men and male youth are portrayed as predators and perpetrators of physical and sexual violence during and post-disaster. Adult men are also seen as agents of obstruction to women's empowerment and overall as part of the problem for women and girls rather than partners in solution. Male youth are portrayed as troublemakers and in certain contexts, as prone to form gangs and engage in gang-related violence. This tendency to "criminalise" men and boys, particularly in disaster situations, relies on generalisations. We know less about males in these same communities whose behaviour is the antithesis to this, which leaves a gap in our knowledge about the positive contributions different groups of men (e.g. elderly men, adult men, male youth and boys) are making, in the context of different types of events.

Rarely are adult males or male youth represented as victims. Boys, on the other hand, are almost invisible, except for a mention as sometimes victims of trafficking and sexual abuse, but almost always as secondary to girls. This is despite the fact that it is now widely acknowledged that boys are just as likely to be the targets of paedophiles as girls, but less likely to report sexual assault and that non-reporting is exacerbated in certain cultural contexts. Where the term "children" (read here girls *and* boys) is used, the literature invariably resorts to a discussion about the vulnerabilities and needs of girls. If boys are mentioned, it is an adjunct to girls or for comparative purposes. For instance, in specific cultural and religious contexts, boys are represented as especially privileged over girls (e.g. brothers are "saved" over sisters in disasters, receive food before their sisters, are more likely to escape floods because of tree climbing skills, or are able to move about more freely than their sisters). Like women and girls, men and boys are treated as a homogeneous undifferentiated group. This means that different groups of men are overlooked in the literature including elderly men, poor men, male youth-headed households, widowers, and "men with marginalised sexual identities who may be subject to violence or isolation, especially during periods of social crisis" (Enarson 2009).

The overarching consensus seems to be that women and girls are most disadvantaged by climate change and disaster because of pre-existing socio-economic and socio-cultural inequalities (see Brody et al. 2008, p. 2). However, "…there is a heavy reliance on generalisations, which cannot hold true for all people in

all places", so "the default response has been to talk about women and *their* vulnerabilities" (Demetriades and Esplin 2008, p. 25), thus privileging the voices of women and girls in the developing world and to a lesser extent the developed world, over the voices of men and boys everywhere. The authors also note that "experiences of powerlessness can leave men and boys like women and girls vulnerable to climate change and disaster, albeit often in different ways" (Esplin with Brody 2008, p. 2, cited in Demetriades and Esplin 2008, p. 25) and caution against approaches that focus on women in isolation:

> Women live in communities, they live in families, they live *with men.* Abstracting women from their social realities eclipses the relational nature of gendered power and the interdependency of women and men, and paints a distorted picture of women's vulnerabilities, choices and possibilities. This is exacerbated by a tendency to treat women as a homogeneous undifferentiated group

The disaster literature in particular reveals much about the victimisation of women and girls by adult men and male youth, but less about the victimisation of adult men, male youth and boys in the same circumstances.

"Although both men and women are vulnerable to climate change, the causes of their vulnerability and their experiences of it are different, along with their capacity to cope and adapt" (ICIMOD 2009, p. 1). While gender relations typically empower men as decision-makers with greater control than women over key resources (Enarson 2009, p. 1), gender identities and norms also increase their risks. This "gendered vulnerability does not derive from a single factor such as household headship or poverty, but reflects historically and culturally specific patterns of relations in social institutions, culture, and personal lives" (Enarson 1998). "Gender shapes vulnerability and therefore one's capacity to adapt to change, whether it be to catastrophe or incremental change" (Alston 2011, p. 64).

Notions of masculinity place males at risk in different ways. For instance, the following gender roles create risk for men:

- Gender roles that promote risk-taking.
- Gender roles that promote invincibility.
- Gender norms related to men's reduced risk perception and increased tolerance of risk [risk-taking] can endanger men and their families.
- When preparedness and evacuation are choices, men may delay and underprepare or be injured in the clean-up period (see Enarson 2009).

Men's "invincibility" also means they are less likely to seek help or assistance, whether that be economic, social, psychological or health-related. Men and boys are also among some of society's most high-risk groups, including the homeless, refugees, poor and low income, the mentally ill, drug and alcohol-addicted and socially isolated.

Issues and social circumstances that can lead to increased vulnerability for males during and post an event include:

- Emotional stress and anxiety.
- Rising indebtedness.

- Social isolation (social ties to family and kin promote resilience but may be tenuous for some men, including widowers (Enarson 2009)).
- Displacement—male economic migrants displaced to risky living conditions (Enarson 2009).
- Out-migration—involuntary separation from intimate partners, family and kin (e.g. working away from "home" for extended periods of time). In these situations men are distanced both geographically and emotionally from their traditional support networks and therefore more prone to loneliness, anxiety and depression.
- Exploitation—men and male youth may be exploited for their labour (long hours, poor wages, hard labour).
- Emasculating experiences for men such as being unable to protect family members during extreme events, or to save strangers.
- Male youth and boys separated from their fathers at critical stages of their development.

In relation to men's poor health-seeking behaviour, Alston (2011) makes an interesting observation that women have taken on the role of guardians of men's health. In one instance, for example, gender socialisation had a profound impact on a group of young Sudanese men in a Western Ethiopian refugee camp, "who continued to starve, despite receiving food aid, because the food they were given needed to be cooked and they never learned to cook" (WHO 2002, p. 2).

It is evident that the degree and pace of change in gender roles and relations (e.g. radical, evolving) is in part determined by the type of event (flood, tsunami, drought) and pace of the event (rapid onset; slow onset) as well as intersecting variables such as poverty, age, class, caste, ethnicity, race, and so forth. Capacity to cope in the immediacy of an event and to adapt over time is also influenced by external factors such as how rapidly practical help arrives, the level of empathy or indifference from local and international aid communities, where the event occurs geographically and pre-existing stressors such as social or military conflict, racial discrimination, economic uncertainty, political instability and religious or cultural constraints that limit people's ability to make the necessary changes or whose circumstances deny them the resources, choices and autonomy to take control of their destiny.

Men's coping strategies take different forms but are typically driven by the provider stereotype (e.g. out-migration for work; getting back to work as quickly as possible), and the protector stereotype (e.g. first responder; search and rescue; protector of home and family; protector of strangers and community; doing the dirty work of cleaning up and rebuilding). These strategies place men at risk by exposing them to significant trauma, environmental toxins, and involuntary separation from social and emotional support networks. In such circumstances they are vulnerable to death, injury and wounding, physical and psychological trauma, immediate and long-term health repercussions, loneliness, depression, anxiety, and at the extreme end, suicide. In seeking to provide for their families, men who out-migrate may be subject to labour exploitation (long hours, low wages) and in

the immediacy and aftermath of disasters, threats of violence from other men. Some studies suggest that "seasonal migration with longer travel distances may put men more at risk to contracting infectious diseases, notably HIV and sexually transmitted diseases" (Leduc 2009, p. 3). This statement contains an inherent value judgement (and generalisation) about men's behaviour; however, if this conversation is to be had, then it needs to be had in relation to women who migrate out too.

The literature indicates that men's perceptions and tolerance of risk differs from women's (e.g. men are risk-takers, women are risk-averse). As an illustration of gendered differences in risk perception, Delaney and Schrader (2000, p. 27) note men's and women's differing perspectives on the worst and least important impacts of the El Chile disaster in Nicaragua:

> For men the worst impact was "decreased coffee production" and the least important impact "lack of water". For women the worst impact was "fear" the least important impact "less income" "more work"

The way in which men perceive risk may result in them underestimating impending danger and this may play out in a reluctance to evacuate in a timely way, in driving or wading through rising flood water, or attempting to rescue someone else in fast-flowing water.

The impact of gender role socialisation on men and boys places them at greater risk in certain circumstances. The two predominant roles are protector and provider.

Men as Protectors

The gender division of labour also often places men at high risk in the emergency relief phase of disasters (Enarson 2009, p. 1). As first responders and protectors of the community, men are often exposed to toxic emissions, especially in the advent of natural and technological disasters. Here the men of 9/11, the men of Chernobyl and the men (predominantly) of Fukushima come to mind. This expectation places a greater responsibility on them for risk-taking during and after disasters, both within their households and as first responders or rescue workers (WHO 2002, p. 2). This can have serious consequences for men's long-term physical, mental and emotional wellbeing as well as their capacity to fulfil their role as husbands, partners, fathers and community protectors. In their role as first responders, men also face the dilemma of protector of family/community, an issue that is compounded where both men and women in a household are first-responders (see Enarson 2009)

Although it is gender stereotypes that expose men to dangerous environmental toxins, it is biology (sex) that determines how those toxins will affect their bodies in the short and long term. Impacts can include reproductive disorders, and chronic and incurable diseases. There are also wider social repercussions as a result of the stressors involved.

> During rehabilitation, whilst women maintained the household and social networks, men were involved in dangerous reconstruction efforts; some men were also taking part in increased gambling, increased consumption of alcohol, and some were displaying greater aggression (Delaney and Shrader 2000, cited in Nelson et al. 2002, p. 56)

We need to know much more about which groups of men are involved in reconstruction work and how separation from their normal emotional support networks (intimate partners, families, peers and friends contributes (or not) to the types of behaviour described above?

The negative side of the protector role is that men can feel emasculated by disempowering experiences such as failing to "save" loved ones and strangers in times of disaster. This can lead to self-blaming behaviour, feelings of inadequacy, low self-esteem, depression, and in worst-case scenarios suicide. Instances of suicide have also been recorded among male farmers in rural Australia in response to prolonged drought (see Alston 2011). Similarly, if men cannot provide adequately for their families they are likely to suffer the consequences in a way that undermines their masculinity and sense of identity.

Men as Providers

In many parts of the world, men are still the primary bread-winners for their families. A typical coping mechanism for men following disaster is to return to work as quickly as possible. They are more likely to migrate out for economic reasons to secure primary or supplementary income. If men lose their livelihoods, are unable to earn the level of income they are accustomed to or cannot carry out this role in a customary way, the consequences are likely to be far-reaching. A study by the World Health Organisation (WHO 2002, p. 2), noted that: "in the aftermath of Hurricane Andrew in the United States, men who had traditionally been the family providers (and protectors) struggled with feelings of inadequacy and failure".

Malin Jennings (cited in Parbring 2009) observes a similar effect on the lives of men in small Inuit communities in Greenland, where a warmer climate has impacted on hunting (typically a male role). Here the ice freezes later and is thinner and also melts earlier than before, making it more difficult for men to provide for their families, resulting in self-esteem problems and social conflict:

> Climate change robs Arctic men of their self-esteem. They can't feed their families by hunting. They're no longer proud of themselves.
>
> For many men, self-esteem is bound up with being the strongest and best hunter.
>
> When that knowledge is no longer in demand, they lose their sense of pride. In Greenland, men are now living off benefits instead, but they have nothing to do—so they congregate in bars—which leads to alcoholism.
>
> Hunters used to be the pinnacle of society but this is no longer the case. Their skills and experience have been rendered useless, and this is creating social problems (see Parbring 2009)

Men's poor help-seeking behaviour (reluctance to seek all kinds of help) also creates situations of humiliation for them. In the following case it was economic assistance

> …in 2001 the flood destroyed her and her husband's wet season rice crop. He asked [his wife] to borrow money from the private money lender so that he could buy some new seed stock and fertiliser. Her husband would not go because he felt embarrassed to talk to the money lender (Flood impact on women & girls in Prey Veng Province, Cambodia, CARE International 2002, cited in UNDP 2010, p. 2).

Vulnerabilities and the Social Impact of Disasters

The following examples intentionally privilege the perspectives and experiences of different groups of men, youth and boys as providers, protectors, carers, victims and agents of change.

The Widowers of Lamteungoh, Indonesia

The literature reveals that a disproportionate number of women and children die in disaster, but less is known about the men they leave behind. Enarson (2009) provides a rare example from the *Washington Post Foreign Service.*

> In the Indonesian coastal town of Lamteungoh there are 105 widowers and only 19 widows. This is because many were fishermen who survived at sea or farmers in the hills about the high waterline. "Their wives and children were killed at home not far from the beach when the driving waves turned the village into ruins on December 26, 2005. These rugged men are now grappling with unfamiliar roles, dependent on one another and uncertain about what comes next. With their families gone, some say their lives have lost purpose. They are caring for children in communal style and tending to the injured. They are struggling to move through their grief and reclaim their future" (Nakashima (2005) cited in Enarson 2009, p. 1).
>
> "Life today has no meaning at all for me". "Now suppose I find a job and make money. To whom can I distribute it?" (Baharuddin, age 49).
>
> Source: Ellen Nakashima, Washington Post Foreign Service, 25.1.05, p. A01 (cited in Enarson 2009, p. 1)

As noted by Delaney and Schrader (2000), "relations between natural disasters and gender do vary—more men died than women in Hurricane Mitch" (cited in Nelson et al. 2002, p. 55). More men die in severe-weather events in the United States (see Fothergill 1998), more men than women (100 vs. 73) died in the Black Saturday fires in Victoria (see Parkinson 2011), Australia and "in Paris, France in 2003, the heatwave-related risk increased for unmarried men, but not unmarried women" (see WHO 2010, p. 10).

The Incarcerated Male Youth of Katrina

"Treated like trash" is how a 15 year old boy described his experience of incarceration as Hurricane Katrina made landfall in New Orleans. During their evacuation these incarcerated children (some as young as 10 years old) experienced prolonged hunger and dehydration (3–5 days). En route to their new destination they were shackled together with plastic handcuffs, forced to walk through rising flood water and threatened with violence from those charged with protecting them. They witnessed the beating and maceing of others, and one child witnessed the death of a man and the disposal of his body. They were exposed to bacterial infections from rising water in cells contaminated with faeces from backed-up toilets and some were forced to drink it because they were so thirsty. Two boys were inappropriately placed in a dormitory with adult inmates.

These narratives of abuse by the incarcerated children of Katrina serve as a precautionary tale for policy makers in the event of sudden onset event. Many of these children were not convicted, awaiting processing through the criminal justice system.

> C.M., a 16-year-old boy, stated, "A few hours after the storm hit, the water started rising. That night the water started coming out of the toilet and the drains. It smelled like straight swamp water. I was crying and thinking about my people because right before the power went out we saw what was happening on the news and saw the Ninth Ward flooding. Kids were really upset because most of them were from the Lower Ninth" (JJPL Undated, p. 16)

> C.S., a 15-year-old boy, "We had human faeces floating around us in the water … we was forced to survive in for 3 days. I still have little sores on my skin. I can't seem to get that smell out of my skin. … [M]aybe it's all in my head but that smell will be with me, and be in my head for a very long time" (JJPL Undated, p. 17)

Many children said the passage through the waters was one of the most difficult parts of the experience.

> O.S., a 14-year-old boy, stated once they arrived at the Broad Street Bridge, the children were threatened by armed, uniformed officers whom O.S. believed were from the New Orleans Police Department. "They had big guns. … They told us that the mayor said 'We can shoot to kill.' There was military there, too, but it was mostly NOPD. NOPD beat up an adult prisoner. They busted open his head. … You could see the meat" (JJPL Undated, p. 19)

Sexual Violence Against Boys

Gender-based violence is typically framed in terms of violence against women and girls. Sexual violence against men and boys is largely unconsidered in the literature. It is also harder to assess the scope of sexual violence against men and boys because many are reluctant to report it due to fear of stigmatisation. Sexual violence against men and boys often goes unrecognised and unreported—in conflict situations sexual violence against men is typically an intimidation strategy, whereas young boys (like girls) are more typically abused by unscrupulous men (and women) among them the aid workers they are relying upon to help them. "The sex industry often becomes

part of the interaction between the refugee or displaced population and the local community. Men and boys may also be at risk of sexual abuse in such circumstances" (WHO 2002, p. 2).

Research by the Save the Children Fund in the United Kingdom (see Csáky 2008) illustrates that "significant levels of abuse of boys and girls continues in emergencies, with much of it going unreported" [and that] "victims include orphans, children separated from their parents and families and children in families dependent on humanitarian assistance". Perpetrators of sexual and gender-based violence are sometimes the very people survivors depend upon to assist and protect them' (United Nations High Commissioner for Refugees 2003, p. 14), and include both male and female perpetrators.

> There's a man who works for [an international organisation] who gave 400 Haitian gourds to a 13 year old and he took his bottom with his two hands and then he went away with him and raped him (Young boy, Haiti quoted in Csáky 2008, p. 7)

> One day two boys who ran errands for the [international organisation] saw a woman go into the bush and give a boy of 13 a blow-job (Young boy, Cote d'Ivoire, quoted in Csáky 2008, p. 7)

Boys told researchers they were fearful of reporting the abuse for a number of reasons including "people don't report it because they are worried that the agency will stop working here and we need them" (Teenage boy, Southern Sudan quoted in Csáky 2008, p. 13); "some children are scared they might be killed by the perpetrator" (Young boy, Haiti, quoted in Csáky 2008, p. 13); "Who could we tell? We wouldn't tell the police because they are afraid of the peacekeepers and they can't do anything…anyway, I've heard that the police do this kind of abuse too' (Young boy, Haiti, quoted in Csáky 2008, p. 14). A teenage boy said, "the biggest encouragement would be to make people feel safe to report" (Csáky 2008, p. 20).

Responding to the Issues

The approaches of gender sensitivity, situational crime prevention, and change and conflict management all have something to bring to the table in terms of precautionary approaches to preventing harm to people, places and the environment. Gender-sensitivity could be the lens through which the issues are examined. Part of this entails learning more about the gendered nature of living through disaster situations (see Table 9.1). Enarson (2009, p. 4) notes how gender-sensitivity training for soldiers in East Timor was instrumental in reducing violent incidents against women. The flip side to this is how similar outcomes might be achieved to reduce male on male violence, as well as female on male violence. This requires closer attention to how gender roles are socially constructed and re-constructed in particular cultures and circumstances.

A precautionary approach might anticipate the unexpected; predict the triggers for gender conflict; initiate advance training of workplace and school alert teams in

Table 9.1 Gender experiences in disaster situations

Circumstance	Men (examples)	Women (examples)
Vulnerability	Search and rescue	Forced to stay at home
	First responder role	Risk lives for children
Risk perception	Ignore emergency warnings	Forced to evacuate
	Last to evacuate	Fear of rogue men
Coping strategies	Temporary migration	Resettlement camp
	Less assistance	Greater family responsibility
Needs and priorities	Return to work as soon as possible	Fear for loved ones
	Dealing with indebtedness	Food and shelter
Social composition	Men seen as mobile	Female-headed households
	Living alone	Enforced communal living
Creation of new vulnerabilities	Sexual/physical violence	Sexual/physical violence
	Drug/alcohol abuse	Anxiety over relationships
New gender roles	Domestic duties	Engage in traditional male work roles
	Widowed men	Head of household
Gender relationships	Reliance on outside aid	Women's programs/male exclusion
	Men seen as perpetrators	Focus on women's empowerment

Source: Drawing and modelled on Delaney and Shrader (2000, p. 14)

first aid and evacuation; consider gender-balanced evacuation and health teams; raise awareness about the reproduction of stereotypical images and narratives in the mass media, promote the formation of gender-balanced policing teams to take reports of sexual assault; or urge Environmental Protection Agencies to work with industry to storm-proof industrial precincts and mine sites (subject to inundation during extreme flooding).

A situational and community crime prevention approach is inherently precautionary, in that it seeks to alter the built environment to prevent crimes of opportunity (e.g. anticipate the types of crimes likely to occur during different phases of an event). In this context, precautionary approaches might include community "policing" of water and fuel-wood routes; lighting and "policing" of public toilets in evacuation centres; portable privacy screens in evacuation centres and transitional communal shelters; improved planning and layout of "tent cities"—e.g. in "streets", interspersed with larger "community" tents to accommodate law enforcement, health-care, and other social services as well as providing separate space for communities to gather or the formation of gender-balanced 'neighbourhood watch groups' in tent cities and evacuation centres could provide a deterrent to crime and criminality.

A horizon scanning approach (see White and Heckenberg 2011) could be applied to examine different types of events (e.g. climate change, extreme-weather, disaster) and the pace of those events (e.g. slow onset, rapid onset); to forecast changes in gender roles and relations, to anticipate potential conflict and to formulate a range of strategies for conflict resolution In terms of events, horizon scanning might be used as a tool to imagine the unimaginable (Fukushima being an example of an event previously unimagined), as well as to forecast how different types of events might disrupt or change gender roles and relations and the wider implications of those

changes for gender relations including intimate partners, families, communities, regions and nations, within specific contexts. In this regard Haq et al. (2008, p. 2) make a distinction between current and future climate change, pointing to "the need to reduce and adapt to risk on both timescales—the mitigation of future changes in climate is a long-term task, both intergenerational and international in its nature".

Conclusion

It is important to avoid assumptions about how people will adapt to environmental change, including climate change, and the consequences of this for gender relations (Nelson et al. 2002, p. 57). Australia, for instance, has a diverse ecological landscape and a multicultural population; however, it is given that the nation will pull together in a crisis, with men and women working alongside one another in the clean-up (e.g. the 2010 Brisbane floods). However, it is much more difficult to navigate the diverse social and environmental landscape of a place like the Himalayas for instance, where people are separated not only by different gender roles, expectations and practices but also by language, culture and religion. There is a need to better understand the often complex terrain upon which these life-changing events play out and to tailor interventions to take account of the diversity of geographical, economic, political, social, cultural, religious and gender landscapes across different regions of the developed and developing world (see Leduc 2009).

Although climate change is a global phenomenon its effects are experienced most acutely at the local level, as are the impacts of extreme-weather events and disaster. Therefore the solutions must respond to the everyday lives of people, in the context of their relationships with one another, and the economic, political, social, religious and cultural realities of the places in which they live, work, learn and play. Gender *is* relational—we live in families and communities. It is only with the full and equal participation of women and men, male and female youth, and boys and girls that we will build safer, more just and resilient communities. We need a repository of gender knowledge that is context-specific to location and type of event as well as respectful of the diverse gender landscapes of different communities of people.

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