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**Environmental Management and Disaster Risk Reduction:
A Gender Perspective**

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Abstract

This paper explores the gender dimensions of the complex relationships within the development paradigm that contribute to environmental mismanagement and vulnerability to disasters. While the link between natural disasters and environmental degradation is well established, now there is growing evidence that many conflicts – so far mainly intrastate ones, are the result of environmental resource mismanagement. How does gender play out in this web of relationships? The paper makes the case that Gender is at the core of our social and economic institutions, and therefore crucial in producing the results we observe. Understanding gender roles and how they interface with developments is essential to forwarding our global values and agendas – whether they relate to gender equality, environmental protection, social justice or human rights. The paper suggests that it is important not to miss the opportunity of post-disaster reconstruction and recovery to promote institutional change – which can make way in the future for achieving the goals of environmental management, gender equality and social justice – all of which are required for reducing disaster risk and vulnerability.

1. Introduction

During the twentieth century the world has experienced unprecedented growth in population and standards of living. That both these forces exert strains on natural surroundings is not a revelation, but something that most of us have personally experienced or witnessed during the course of past decades. Many of these increasing stresses on the environment have been shown to make populations more vulnerable to natural disasters. Climate change, spread of arid lands and desertification, pollution of marine and freshwaters and destruction of forests all contribute to changes in ecology of natural resources on which people depend for survival, and make them more vulnerable to weather and other geophysical risk factors (IFRC 1999). More recently, there is also a growing body of evidence relating environmental stresses and competition for natural resources to many of the national and transboundary conflict situations that we are experiencing (McNeely 2000; Homer-Dixon 1994).

How men and women are impacted by, and respond to disasters is directly related to existing gender roles, and relative socio-economic status in predisaster situations. Poor, marginalized and underprivileged segments of societies are always found to be more vulnerable. When a gender perspective is added to this general conclusion, women's combination of productive, reproductive and household maintenance responsibilities places them at significantly different risks and stresses as compared to men's. Unfortunately, these differences are seldom recognized, except by a handful of gender oriented scholars, and only occasionally by disaster policies, programs for mitigation, response or recovery (Enarson and Morrow 1998).

Though environmental stress has been part of human history, with evidence of its contribution to the collapse of early civilizations such as Mesopotamia, Mohenjadar, and Mayan, the present environmental dangers are unprecedented and presents enormous challenges for local, regional and global social and economic systems (Benedick, 2000). Strains on natural systems and local communities are also increasing with the needs that the globalized, liberalized world economy places on the fragile economic systems and

institutional structures in low income countries. These global and national policies reward efficiency and encourage export-oriented investment, and have in many cases lead to aggregate improvements in personal incomes. However the distribution of these benefits is skewed, subject to increasing insecurity, and marginalizing vast numbers of people who are not well connected to international markets.

Careful analysis of these economic policies and associated institutional changes has shown that in many countries structural adjustment programs that accompany entry into the globalized economy, have worsened existing biases and inefficiencies. Even the World Bank's own data and analysis shows that in most countries for which information was available, more resources were allocated to services that benefit the non-poor (World Bank 1995). The institutions and social structures through which adjustment programs are implemented were the same inefficient ones as before, and so the results were to reinforce inequities. As a result potential positive effects for poverty and environment are seldom achieved (Reed 1996). Gender is a social construct, and gender inequalities are generally a reflection of wider social and economic inequalities in systems. Societies that provide relatively more equality to all citizens, also mirror this in opportunities for women and men alike. It is therefore useful to view all institutions that create and perpetuate inequalities as contributing to the distortions and economic inefficiencies, that impede development.

Scholarship on the interface of development and environment issues has grown exponentially in recent years, and disparate fields, including women's studies has contributed to growing body of work linking the two. Much of the early environment literature that interfaced with development issues produced observations that led to a simplified views and generalizations such as: women were more eco-friendly than men, and the poor degrade the environment. There is a much greater awareness of the complexities of, and variations from one context to the next. Replacing the earlier simplifications are new and more nuanced ones, that will doubtless also be refined further. They stem in large measure from the experiences of the recent structural reforms of the 1990s in national and world economies. The new awareness places much greater emphasis on the role of inclusive governance systems, that emphasize institutional reforms for equitable access to natural resource wealth to poor and marginalized people and communities that have traditionally used and managed them. It is important for the success of such measures, that the prevalent gender-driven institutional biases, which are also the source of economic inefficiencies, are kept under scrutiny.

2. *Status of Gender issues in natural disasters work and literature*

2.1 Vulnerability to disasters

Vulnerability, people's capacities to avoid or cope with and recover from disaster, results from a complex interplay of political, economic, social, and ideological practices present at a given locale and varies by a given hazard and by specific household characteristics

(Blakie et al 1994). Individuals and social groups carry different "vulnerability bundles" and households and communities vary significantly in terms of disaster impacts and access to private and public resources for responding to and recovering from crisis (Cannon, 1994; Wiest et al. 1994).

The components of vulnerability have been variously identified, and include elements of livelihood security and assets, personal health and access to basic needs such as food, water and shelter, and extent of social organization, preparedness and safety nets. In other words, those with access to various forms of capital – financial, physical, social, or human capital are better able to weather hazards. Poor people face may not only face greater exposure to hazards due to factors such as construction material, location and access to information, but also have a lower capacity to cope. (Box 1 – Peru's earthquake)

Gender is a pervasive factor affecting various facets of vulnerability in societies. It shapes division of social and economic resources in a way that women generally have lower access to all forms of capital, and are therefore more vulnerable to disasters than men. So while it can be seen that poor households are likely to suffer most in disasters in rich and poor countries alike, these disadvantages are even more acute for women and for households supported by women alone. (Box 2 – Miami's hurricane Andrew)

During the disaster itself, gender variation in mortality and morbidity varies by location and type of disaster. In some disasters, the probability of being outdoors increases the risk of death and injury, and in these cases men are more likely to be affected. In others, such as famines, men may have higher mortality rates, in situations where they normally have better life expectancy eg. In Bangladesh (Langsten 1982). However, in many developing countries, and in most natural disasters, women are more likely to die as a result of discriminatory practices, women's location in a disaster and child care responsibilities (Fothergill 1998). It has been shown in widely diverse populations that women are most at risk when disaster unfolds, whether it is drought in Malawi (Vaughan 1987) or cyclone in Bangladesh (Ikeda, 1995), hurricane in the United States (Enarson and Morrow 1997), or earthquake in Mexico (Dufka 1988). The economic costs of this are in terms of increasing income inequality, longer recovery time, and loss of future economic potential when children in poverty are exposed to ill health and malnutrition.

How households are organized also affects their economic resilience. In responding to, and recovering from disasters, it is the household together with its social and kin network that determines available strategies. The predominant domestic group form throughout the world today is the nuclear or conjugal family household, which currently account for 75% of households in Mexico, 65% in Argentina and 54% in Venezuela. The form and impact of extended and nuclear family fragmentation is variable, and depends in part on gender roles, gender based entitlements and the nature of the labor market and women's participation in it. A common source of family fragmentation is the search for scarce income sources; which typically removes economically productive men who leave home in search of employment.

Whether it a result of out-migration or abandonment, or death of the spouse, households with single heads are much more vulnerable to poverty and poor health. Since the vast majority of single parent households are headed by women, this disadvantage gets accentuated the more male dominated the society is. Cultural and social subordination in a male-dominated power structure leaves women more vulnerable to exploitation in exchange for food or shelter for themselves and their children.

A sociological study on gender dimensions of floods in Northern Bangladesh shows that while women's lives were primarily restricted to homesteads, they were engaged in economic activities such as tending home gardens and livestock. During floods, many animals drowned and home gardens washed away. Women, unlike men could not seek outside work. They also had to meet their responsibilities for acquiring fuelwood and water, which became nearly impossible for them. Cultural restrictions, also prevented women from participating in distribution of relief supplies or economic assistance (Khondker, 1994). Thus while in Bangladesh, where women have limited mobility and value, it is reported that they may fear leaving the homestead and risk drowning, and in other instances they spontaneously mobilize to help affected relatives and neighbors escape from flood waters. In Central America, the Caribbean and other regions where female headship is high and women are actively engaged in economic activities, it is common for women to step into leadership roles in situations requiring organizational and administrative capacities, impartial judgment, and social commitment, for instance, in food distribution (Toscani, 1998).

2.2 Post disaster vulnerability

In post disaster situations, women are universally found to be more vulnerable than men. Their caregiving roles expand dramatically after a disaster, and their access to resources for recovery is constrained. The cumulative effect of these circumstances puts women and children at great risk. What emerges from the literature is a picture of disaster response in which women are active in communities and households, but marginalized by agencies and organizations responding to local needs. This was clearly documented in the 1990 survey on the "Role of Women in Disaster Management" in the Caribbean (Noel 1998). "Male dominated response organizations act on a view of society in which vulnerable women must be superceded or managed by men or left to carry out traditional female roles - roles that in fact add to their vulnerability (Scanlon 1998:49). In the Caribbean survey noted above, of 22 countries surveyed, only two had women as National directors of Emergency Management (Noel 1998). At the public policy level disaster practice is largely conducted by men whose experiences and attitudes reflect cultural norms of gender, class and racial privilege (Enarson and Morrow 1998b:4).

Many researchers find that women suffer more psychological health problems from disasters. Generally, natural disasters are not expected to be as likely to lead to Post Traumatic Stress Disorder (PTSD) as conflict situations taht are acompained by armed conflict or turture, and where people live under threat for extended periods of time (Wiest et. al. 1994). However, case studies in the United States find high levels of PTSD. Following floods in Iowa, 71 percent of respondents in a study population exhibited signs

of PTSD (Ollenburger and Tobin 1998). For women, the sources of stress include the increased burdens of caregiving accompanied with an increase in powerlessness. Intense human suffering due to sustained poverty and economic marginalization may condition the onset of disaster stress, and if not effectively managed, can lead to psychosocial incapacitation, either short-term or long-term. Impacts on women of prolonged stress can have particularly large adverse effects on the health and growth of their children.¹

Every time a disaster strikes, the moral economy binding the family together is challenged. Even though in the immediate aftermath, families and even distant kin and community come together, once the crisis subsides the economic pressures take over. Marital discord is reported to increase in post-disaster situations. Examining the number of injunctions filed in domestic violence cases over the period from 1990 to 1995, Morrow (1997) found a decline right after August 1992 when Hurricane Andrew devastated the southern portion of Dade County Florida, and was followed by a sharp rise through the early months of 1993. Also a random survey of 1,400 homes undertaken by a state agency two months after the hurricane, 35% reported that someone in their home had recently been stressed to the point of losing verbal or physical control (Delica 1998).

There is an increasing tendency for poorer men to walk away from marriages and the normative obligation to dependent wives and children. Natural disasters can trigger the abandonment of women, as has been shown in northeastern Brazil, where women household heads are known as "widows of the drought" (Branco 1995). Abandonment by the man usually comes "when the wife's entitlements have collapsed completely while those of the husband are weakened but not entirely gone" (Agarwal 1990:391). This "flight" of men has increased from the poorest regions of Bangladesh recently, but has been documented extensively in other areas over a period of time, for example in the Caribbean societies (Wiest 1998).

2.3 Gender in disaster mitigation, response and recovery

Gender scholars have been instrumental in our present state of understanding about the social dimensions of disaster vulnerability and response at community and by external agents. This work shows how gender constructs in societies, ie. cultural perceptions of worth, entitlement and contribution of women are important in shaping both community, and especially responses by external agents. These perceptions are often quite independent of reality, but nonetheless are important in shaping why women's participation and issues are likely to remain invisible, and marginalized in most disaster mitigation, relief and recovery, as in development programs. (Box 3 – Malawi famine) Even people and community centered approaches that have been developed, did not explicitly consider gender as a dimension to be addressed (Maskrey, 1989). This is

¹ Even under normal circumstances, it has been seen that women's satisfaction in their family life is a factor in psychosocial care of children (Engle, Menon and Haddad 1997), and was shown to determine child caring practices, and child nutrition outcomes (Kumar-Range et al. 1997).

however, now changing thanks to the important scholarship that has become available since the mid 1990s².

Responses by men and women before, during and after disasters can also be seen as a function of their status, roles and position in society. Fothergill (1998) finds that most studies show that women's and men's responses to a disaster follow traditional gender lines. Tasks are determined by the process of "role carryover", whereby women are responsible for childcare, managing the household and supportive tasks, while men take leadership positions. The precise actions taken by individuals vary, but in general, men take on the "public" and visible sphere while women manage the "private sphere of activities where they often remain invisible to outsiders (Fothergill 1998:20). The protection-exclusion dilemma in disaster response for women is similar to that found elsewhere. That women's work is devalued for being informal and economically invisible, and social space generally proscribed to domestic and caregiving, while men deal with the physically demanding, eg. firefighting. The latter role inevitably becomes more valued. "Thus women are excluded from participation in the forefront of crisis in which social credit attends visibility, although their cooperation and participation is required at a less prestigious level" (Poiner 1990, p. 172). Gender discrimination is mystified through selective attention to biological differences, domestic division of labor, labor force segmentation and perceived market force preferences (Collins 1995).

Alice Fothergill's review of the literature on "The Neglect of Gender in Disaster Work" finds that women are more likely to volunteer for programs in their communities for works related to emergency management, and women also tend to outnumber men in grassroots organizations on community disaster issues. However, the pattern is reversed in more formal, emergency planning organizations. This leads to the exclusion of women from participation in key planning and preparedness decisions. Such exclusion is noted in both developed and developing countries. Women become active in community groups dealing with disasters, possibly because they are more directly impacted. In addition, the social capital of women often tends to be limited to other women, and focussed at the local community levels. Their membership such community groups is often viewed as an extension of their domestic responsibilities. "The female dominant groups, however are not always seen as legitimate; outside officials often perceive the women as "hysterical housewives" and trivialize their disaster work. (Fothergill 1998:16).

Women tend to seek out support primarily from other women and from their kinship networks in dealing with disasters, rather than from established administrative or assistance officials. Case studies in areas as diverse as Scotland and Wales (Fordham and Ketteridge 1998), Philippines (Delica 1998), and Australia (Cox 1998), show evidence of this behavior. These studies also suggest that many of these disaster survivors, though stressed by poverty and discriminatory behavior following the disaster, survived and became stronger and more confident from their experiences.

² "The Gendered Terrain of Disaster: Through Women's Eyes" edited by Enarson and Morrow (1998) is a seminal collection on the topic, and a must reading.

3. The link between environment, disasters, and sustainable development from a gender perspective

3.1 Environmental mismanagement and degradation -- its consequences for disasters.

It is well accepted by now that human actions are responsible for disasters, and that impacts are compounded for population groups with increased risk and vulnerability to hazards. As a result, disaster causality and mitigation are best addressed by understanding factors contributing to increased risk and vulnerability by segments of the population. Disasters can be broadly grouped in to those precipitated by natural hazards and those related to conflicts. The latter are frequently referred to as complex emergencies since conflict is frequently associated by a combination of violence against people as well as livelihood failures resembling those brought on by natural hazards. For example, famine has in the past been a frequent aftermath of wars and conflict. The most visible, extreme cases of conflict are just the tip of the iceberg of environment related social conflicts. According to some estimates, there are 25 million environmental refugees, who have been dislocated due to environmental degradation or localized conflicts (Tickell 2001).

There is reliable evidence that risk of natural hazards is growing with global climatic changes that are taking place. Severity of the last El Nino events were, for example, the most severe ever recorded. There is widespread acceptance that the severity, if not frequency of extreme weather events is likely to grow, leading to an increase in the recurrence of major hazards (NOAA 2001, International Federation of Red Cross and Red Crescent Societies, 1999). There is also empirical data to indicate that less dramatic events such as flooding, landslides, and drought have increased in recent decades for some regions of the world, particularly those experiencing high rates of environmental degradation, deforestation and soil erosion, such as in Central America (Cannon 1994). Often, it is a succession of these minor events that accentuates the vulnerability that culminates in major disaster.

The combination of growing environmental problems -- global warming, deforestation, soil erosion and desertification along with growing social problems -- increasing poverty, larger shanty towns, combine to produce a much higher magnitude of catastrophe than seen before. Households that are poor or those that live in marginal lands already are in a precarious position. For them, weathering even minor events such as drought, puts them in distress for survival through seasonal fluctuations in agriculture until the next harvest, and can cut into their production capacity. In Zambia, after one year of poor rainfall, farmers reduced cropped area as a result of seed, food and labor constraints for planting the next crop (Kumar 1988). If the second year was also a below normal year, there would be a severe food shortage, similar to that occurring after a severe drought. As a result, a higher frequency of smaller hazards, in combination with existing economic and environmental stresses could greatly increase the frequency of disasters.

Though environmental degradation is often said to be the great equalizer in that it felt by rich and poor alike, there are gender and socioeconomic dimensions that make its impacts

greater for poor households and for women. (Box 4 – Bangladesh char lands) To start with, poor households are more likely to be living in degraded environments. In a recent analysis of the distribution of the poor living in either favored or marginal³ lands in developing countries, showed that in all regions of the world the proportion of poor on marginal lands is greater than that on favored lands. Overall there were an estimated 325 million poor on favored lands, and 630 million on marginal lands (Nelson 1996). These areas are much more disaster prone than favored lands, and are subject to recurrent droughts in some areas, and landslides with excessive rainfall in others. Unfortunately researchers have been more interested in locating poor rather than on explaining the relative importance of environmental conditions or environmental degradation over time on poverty. The lack of professional attention to this link is now sadly reflected even in research on disaster mitigation. However, based on casual observations by professionals in the region, it was reported that in areas where farmers in Nicaragua and Honduras were properly managing the land before Hurricane Mitch, the damage is less severe and rehabilitation easier. In Ethiopia, local officials and workers were much more concerned about environmental degradation and its contribution to drought than were professionals working on studying disaster vulnerability. (Constance 1999, Malik 1998).

Women are directly impacted by environmental degradation both via their production and household maintenance responsibilities. When women are engaged in crop production, they are more likely to be farming the poorer, eroded lands, as in Nepal, where upland maize and finger millet are managed by women (Kumar and Hotchkiss 1988). Low productivity is further eroded when men have to migrate to seek paid work, and leave women to manage agriculture alone (Paolisso and Gammage 1996). Household maintenance activities, such as collection of fuel, water and fodder tend to be mainly women's responsibilities – and all these become more time intensive with environmental degradation. Given the already heavy workloads, when such labor demands on women increases, their ability to engage in productive income activities is reduced. Though households make adjustments in their practices, eg., plant more fuel and fodder trees, use inferior qualities of fuel -- these measures do not fully compensate for productivity losses. The results also help to keep households in poverty indirectly by placing higher work demands on children – thereby leading to higher demand for large families, and by keeping children, particularly girls, away from school.

Even though populations are known to utilize conservation measures when environmental stresses mount, these are effective only when accompanied by stronger community-based institutions, and local responsibility for natural resource protection (Scherr 1999). Thus, even as areas experiencing environmental degradation are becoming more and more disaster-prone, their capacity to protect themselves against natural hazards may also be decreasing unless policies for environmental and economic regeneration are made effective.

³ Characterized by hilly slopes, poor or fragile soils, inaccessibility, and risk of degradation.

3.2 Development paradigms, globalization and environmental stresses

Structural adjustment, trade liberalization and resulting globalization of an integrated world economy were initially intended to reverse the urban bias and unfair rural-urban terms of trade for agricultural products. This was expected to stimulate rural investments and welfare to bring about improvements in overall wellbeing. It was also expected that “given the improving efficiency of production and consumption activities... and presence of adequate environmental policies, the environmental efficiency of this new economic activity should also increase” (Jones, 2000).

The assumption of “adequate environmental policies” is seldom met in liberalizing economies. Indonesia is a good example of the direct contributions of policies in contributing to environmental disasters. Here, while traditional agricultural methods burn dry fuel and give off little smoke or haze, burning of debris from destruction of rainforest areas for commercial plantations contributed to the creation of hazardous smoke and haze. Some of these fires were set off by local people to express frustration over land grabbing by big businesses. (Byron and Shephard 1998, Brown and Schreckenber 1998)

In adjusting to the changing economic policies, where uncertainty reigns, “gaining access to resources and opportunities often means working through as well as around the system. But the ‘system’ is far from monolithic. Individuals and agencies struggle for influence and resources within the state as well as outside, and outcomes are not fully determined by any single set of interests. Instead, rural economies and societies appear as a shifting kaleidoscope of conflicts, alliances and maneuvers...” (Berry, 1993:64). Although the original settlers are legitimate owners, often their remoteness and often conflicting layers of land rules, creates incentives for contenders to claim land to secure ownership.⁴

Governments driven by market liberalization and export oriented policies often provide incentives such as lower discount rates to investors for development of natural resources. This increases competition for land, which is accompanied by insecurity and more likely to lead to land mining practices. Due to transport costs, the more remote a plot, the lower its value in an export driven market – so the incentives often promote land degradation⁵. In this sphere, capital access becomes key, including social capital⁶ to enable local communities to control and manage local resources. However, the competition for resources in the face of uncertainty, increases the likelihood of land mining practices by both external and local agents alike.

When such competition emerges on lands that were traditionally managed (de facto or de jure) by local communities, their management systems are threatened and can be eroded

⁴ In the Brazilian Amazon, for example, Schmink and Wood (1992) list a wide range of agents that are contenders for use of natural resources, and fundamental contradictions between ownership rules of federal, state, and local government agencies.

⁵ Louis Hotte (2001) modeled competition for land in frontier regions, to suggest that it is in intermediate areas, that are remote yet offer access to markets, where competition is most intense, and is facilitated by incentives such as favorable discount rates.

⁶ See Brenda Chalfin (2000) for a description of how women traders of shea in Northern Ghana used their traditional coalitions and information channels to bolster their market structure to compete effectively in the liberalizing economy of Ghana.

in the process. Watersheds over which women had control to collect fuel, fodder and water is lost. Local researchers have noted a shift in the process from strong community institutions to a more individual oriented market orientation and a growing willingness to extract unsustainably larger amounts of non-timber forest products (NTFPs) such as medicinal plants or other high value products.⁷

According to many analysts, the structural adjustment policies have, in the process of creating greater inequalities, heightened inequities already experienced by women (Gladwin 1991, Staudt, 1995). However, though the overall pattern may hold, there are many examples in which increased opportunities have emerged for women, as workers in new industries. Though often, the conditions are poor, women may obtain more wage employment that is better than other options. When they are engaged in business, as in west Africa, they use their networks to adjust to, and work with the increased riskiness and challenges faced (Chalfin, 2000).

3.3 Growing conflicts driven by competition for natural resources

Since the 1990s there is growing evidence of conflicts are linked to environmental degradation, and competition of natural resources. (Box 5 – Haiti) as a contributor of disasters. Researchers working on conflicts note that in rural areas, environmental stress and natural resource scarcity⁸ create negative social effects, intensify group identity tensions, promote resource capture by social sub-groups, and force others to migrate onto marginal lands or to urban areas (Box 6 – Sudan). These stresses leaves people more vulnerable to natural and men made disasters, and can intensify or trigger violent conflict and social instability (Homer-Dixon 1994). Tropical forests are one of the world's last remaining frontiers. And like all frontiers, they are sites of dynamic social, ecological, political and economic changes. Many governments have contributed to conflict by nationalizing their forests, so that traditional forest inhabitants have been disenfranchised while national governments sell trees to concessionaires to earn foreign exchange. Biodiversity-rich tropical forests in Papua New Guinea, Indonesia, Indochina, Myanmar, Sri Lanka, India, Central Africa, the Amazon, Colombia, Central America, and New Caledonia have all been sites of local natural resource related conflicts (McNeely 2000, Nygren, 2000, Conklin and Graham 1995, Gadgil and Guha 1994).

The social impacts of severe environmental stress do, in fact, vary across time and space, and specifying them can be quite difficult because ecological-social relationships and phenomena such as conflict tend to be very complex. Why is it that in some instances, such scarcities promote cooperation among societies, and in others lead to conflict? There may be more instances of favorable outcomes, but the incidence of negative ones seems to be rising, with 27 armed conflicts in 1999, out of which all but two were within national boundaries (Tickell 2001). Key factors contributing to negative outcomes are

⁷ Madhavi Ariyabandu, ITDG, Sri Lanka. Personal communication.

⁸ Resource scarcity can arise from three sources: a) degradation or depletion of resources, b) increasing consumption due to population growth or rising income, market integration and economic demand, and c) uneven distribution that gives some people relatively disproportionate access and subjects the rest to scarcity.

found to be weak governance institutions that are not inclusive, open or participatory appears to be a contributing factor, in addition to poverty, and existing group identity conflicts.

Conflicts impact women and men differently depending on the roles and functions each fulfills. In direct conflict situations, women may or may not directly participate in the war, but their livelihoods as with men are reduced. In most cases, they are regularly face the prospect of rape and violence. In other cases, they deal with men leaving and take on additional activities in economic and social spheres.

As in the case of responses to natural disasters, there is a gendered dichotomy in extent of participation in formal and informal spheres of activity. Women are much more actively involved at community and local level actions in the peacebuilding process, than at UN, governmental or academic levels. It thus, remains largely invisible (Mazurana and McKay 1999:12). This is troublesome since accountability and reconciliation needs to address women's experiences and entitlements, which are often forgotten in peace. As a result is it common for women to retreat from positions and responsibilities they had assumed, either in the liberation movements such as in South Africa, Algeria or Zimbabwe, or in economic spheres. To some extent the victim-hero dichotomy exists for women as for men emerging from conflict situations, but the dynamics and specific experiences are different, and therefore both need to be accommodated. It is therefore a welcome development that the international community is calling for a stronger decision making role for women in the peace process, and has been taken up by the UN Security Council as an issue since October 2000. However, it is useful to recognize that the peace process may not only marginalize women, but also entire social groups. In South Africa, for example, there were neither women nor black Africans on local level peace committees.

3.4 Cost of these forms of 'men' made disasters for development.

Costs of natural disasters and conflicts are too often measured only in terms of immediate financial losses. Impacts also include lost investment, pressures on national budgets and more inequality. These factors alone can set back development, in addition to which, existing environmental problems are also further exacerbated. According to some reports, Hurricane Mitch has set back development in the most affected Central American countries by 50 years, destroying investments and infrastructure, and large proportion of food crops in Nicaragua and Honduras. The storm also carried away tons of topsoil, leaving plots barren, and rivers and streams that had been used for irrigation or hydroelectric generation, silted (Benson 1997, Constance 1999).

Areas and population groups that are disaster prone, begin with economic and political conditions that put them closer to poverty conditions. Flood and drought prone areas have a higher proportion of poor households. Based on figures from a CGIAR database compiled by its Technical Advisory Committee, it can be shown that for all developing regions, rural populations susceptible to floods or drought comprise over 60 percent of all rural populations. For Central and South America, the proportion of the rural population

living in such susceptible areas is nearly 90 percent. Poverty rates in these areas also tend to be much higher than in all rural areas: for all developing regions, 40 percent of people in these susceptible areas were classified as poor. For Central and South American, poverty rates in the susceptible areas are much higher at almost 60 percent⁹.

Natural disasters are much more likely to devastate the very basis of people's livelihoods in rural areas, since they depend more on the natural resource base for all aspects of life - housing, fuel and water, food and income. This makes the already precarious conditions for disaster prone areas and groups even worse. The impacts on women depend on the type of disaster and how it impacted on the communities resource base, as well as the nature of women's activities and how they were impacted. There are a few anecdotal examples in the literature, that describe how women's economic activities were affected by disaster. There is some indication that women may be more impacted because their economic activities include reliance on natural resources for household maintenance (fuel, water, fodder) as well as for income generation. Their recovery is also hindered because they tend to cultivate poorer lands or are engaged in informal sector activities, both of which receive less attention during rehabilitation. It is however, clear from the available evidence is that a breakdown of economic activity is probably the major obstacle to long term recovery from disaster.

3.5 Need to better integrate environmental protection/regeneration , and other disaster mitigation for sustainable development

Most development and aid programs emphasize poverty, but ignore the risk of natural disasters as a major influence on poverty, though there is awareness of the link. One consequence of this omission is the failure to address environmental protection measures or strengthen institutions that manage competition for resources in an inclusive manner, as an integral component of poverty reduction efforts.

In large part, this omission can be traced to the prevailing economic theory known as the 'environmental Kuznets curve'. This theory claims that deteriorating environmental quality accompanies initial stages of economic development, followed by a turning point and improvements in environmental quality at higher incomes. It is however, seldom mentioned that EKC studies generally find turning points occurring at per capita incomes between \$4,000-10,000 per year. Also they deal mainly with emissions of pollutants, and not with resource stocks such as soil quality, forests and ecosystems biodiversity. These results are drawn from experiences of industrialized countries, and given present income levels and development trajectories of developing countries today, it is fair to question if these results will be extended to them, and if any biodiversity can be preserved in the process (Rothman and de Bruyn 1998, Shafik 1994).

There are fortunately, a growing awareness of the economic value of environmental conservation, even in the short run. With the increasing scarcity of water, need for protection of watersheds for a variety of water users is becoming apparent. In the process of such environmental protection, the areas are also being protected against disasters such

⁹ These estimates are based on a CGIAR analysis of land use types prepared by TAC 1996.

as drought and flooding. Similarly protection of coral reef health in Guam by better watershed management, is helping to protect local livelihoods as well as protect against hazard risk for the islands (Cheryl Anderson, personal communication).

Enabling local communities to better manage natural resources has emerged as top priority on the combined agenda of environmental, social justice and poverty oriented development efforts. Suddenly the rhetoric of local participation is becoming a reality, often out of necessity and recognition that top-down management has failed. However, decades of centralized state control has stripped local communities of many of their traditional institutions for resource management and conflict resolution. Similarly, rights to land are poorly defined, and equitable access, use and ownership rights are being negotiated. Lessons from success stories where community based natural resource management has been effective point to the importance of women's meaningful participation in formulation and implementation of rules (Hesse and Trench 2000).

3.6 Importance of social equity, justice, local empowerment

Social networks and the social capital upon which they are built become key resources in times of hardship, particularly for those individuals and communities excluded from economic and political resource access. Studies of social vulnerability show that often deeper and historical forces are at the root causes of these processes. Ability of local communities and groups to expand their social capital promotes a healthy civil society, and has been shown to reduce grassroots vulnerability. Such changes also promote the protection of local resources from takeover by external economic interests.

Justification for takeover of local resources is made in the interest of production versus protection. In the process however, local communities lose out both in terms of their livelihood sources, and also face an erosion in traditional resource management institutions. The threat of fragmentation of communities and marginalization has increasingly become a source of mobilization and conflict, in which the local groups are nearly always the 'rebels' against state sponsored investment or other development. Growth of indigenous movements in recent years, is a testimony to the adverse conditions faced by local communities, and the needs and challenges of addressing them fairly.

3.7 Relevance of gender equality for social equity and justice

In general, societies with greater degrees of social equity and justice also have more gender equality. However, the process of gaining social equity for communities and for women does not necessarily follow in tandem. In land reform and titling programs, for example, there is still a tendency to name men as the beneficiary. In many countries in Latin America, where legislation that stipulates equality of men and women in land ownership, men still are the beneficiaries of land titling, with only implicit access to women. It is in some cases only, that joint titling of household heads has been decreed (Deere and Leon 2001). Similarly in the collective land rights movements of indigenous peoples, there is seldom an explicit recognition of gendered rights. Traditional patterns

of gender discrimination persist, and women leaders are caught in a bind, defending two spaces simultaneously – their ethnic space and gender space within it.

While laws and policies for gender balance and equity are important, they alone are not effective where traditional practices discriminate against women. In India, for example, where women are excluded from inheritance of parental property – laws to this effect have resulted in escalating dowry demands even in communities that traditionally practiced bride-price (Kumar-Range 2001 forthcoming). Rather it is in the development of markets and related institutions that have enabled women to create a larger social space and capital, and gain confidence in their abilities.

Women's labor and involvement in community level initiatives has been often noted as a factor in their success. However they are generally underrepresented in leadership, largely as a result of prevailing cultural paradigms in which women are considered inferior to men. Building women's social capital, for example with the group-based micro-credit lending programs -patterned on the Grameen Bank, has been seen as one of the primary benefits of such efforts.

4. *Gender and the interdependence between environmental degradation, disasters and development efforts: Can harmony be achieved?*

4.1 Gender issues in environmental protection and degradation

Women's participation in natural resource management is often based on the simplistic generalizations such as: women are 'natural' environmentalists, and that improvements in natural resources will automatically bring gains for women.(Agarwal 1997, Jewitt 2000). Evaluations of development policies and practice over the past two decades, clearly indicates that this win-win equation does not always hold. It is more relevant to view rural people as "situated agents", whose knowledge acquisition and articulation takes place in "cultural, economic, agroecological and socio-political contexts that are products of local and non local processes" (Bebbington 1994: 89). Environmental knowledge is conditioned by activities and land ownership, and passed on from person to person and across generations. It is often embedded in other cultural and social institutions, or limited to selected individuals or sub groups, making it often difficult to identify and document.

Environmental efforts have sought to emphasize the role of community participation in resource management, yet the rhetoric of decentralization is rarely translated into increased decision making of local communities, and least of all women resource users. Generating an expression of women's needs and interests requires navigating the social norms to identify their existing social capital and opportunities for their expansion. This usually requires extra effort by external agents, who tend to be from male driven institutions, carrying their existing perceptions into their understanding and response to local situations. This challenge to some extent parallels experiences of other non-dominant social and economic groups within communities.

4.2 Making development efficient, sustainable and equitable, requires incorporating a gender perspective and environmental protection

Women's participation for growth, equity and welfare is at the core of sustainable poverty eradication. Their involvement in both production and household maintenance, is key to the human capital investment made in children, and hence the future of economic performance. Both economic theory, and empirical evidence points to the value of raising economic productivity of women's work. The classic work of Becker (1965, 1993) makes the relationship between the economic value of women's time and the nature of investment made in children's human capital, and consequent economic development. Raising this value shifts the allocation of household resources to seeking higher investment in child quality (child health, nutrition and education) which is women's time intensive, and away from seeking higher investment in child quantity (number of children) which is less time intensive per se. Not integral to economic theory, but equally valid in shaping human responses, at the household, community, institutional and policy levels, is the *perception in society of value of women's economic contribution, in order to avoid market failures, and to facilitate the shift in resource allocation to occur.*

Empirical evidence is accumulating on women's economic contribution, and of its central role in improving children's health and nutrition (Leslie 1988, Haddad et al 1996). Capacity of children to learn essential skills, to succeed in school and in economic enterprise later in life, are all vitally connected to their nutrition in early childhood. While women's income capacity and education are directly relevant investments in children, an overall appreciation of their contributions is also necessary in ensuring support of family, community and institutions in providing an enabling environment.

When economic value of women's activities is unrecognized, marginalization of women and small producers is often accompanied with poor environmental management environmental. This is usually the result of an excessive focus on expanding the supply of food. Amartya Sen labels this "Malthusian optimism", and claims it has killed millions who are displaced in the process. Famines in Bangladesh, Sudan and Malawi have been documented as result of such processes (Sen 1993). Even when the outcome is not as severe as famine, failure of development or a gradual worsening of conditions ensues. There are many examples of these dynamics in promoting new agricultural technologies. For example in Zambia, when hybrid maize was promoted as a cash crop with advice and inputs mainly used by men, growth in production of this crop led to a progressive reduction in women's crop management and income, inefficiencies and an unsustainable system of production that was geared to supplying urban food supply (Kumar 1995). In many parts of the world, there is still a lacuna of understanding of gender roles in agriculture, and consequent invisibility of women in policy and programs. Even in regions where women are heavily involved in agriculture, such as in the Caribbean, there remains a persistent invisibility of them in agricultural research and policy (Barrow 1997). In a male oriented institutional arena, gender blind does not translate to gender neutral and therefore unlikely to lead to sustainable growth outcomes.

Since the natural resource base is so central in livelihoods of people living in disaster prone areas, rebuilding and maintenance is central from a long term mitigation and developmental sustainability perspective.

Most of these resource conservation measures are labor intensive, and often are integral to women's roles and responsibilities. Examples are increasing crop diversity for soil conservation and regeneration, soil manuring, ridging etc., which are often managed by women. Management of common resources such as forest and grass lands also involve women's collection activities, and including them in rebuilding and conservation efforts are generally an indicator of a successful program.

Community forestry programs increasingly involve women's participation. An agroforestry program in Kordofan, Sudan enlisted the help of village committees who identified species for planting and determined policies for setting up and managing village nurseries. When committees included both men and women, a more diverse set of species was identified, and included plants such as 'henna' that were part of women's social and economic activities (Anderson and Woodrow 1998:216). However, women's effective participation in agroforestry programs has generally been limited by their limited access to land ownership (Meinzen-Dick et. al 1997).

It is often observed that when a comprehensive, integrated and community centered disaster recovery programs have been designed, they are more likely to be more inclusive of gendered needs and priorities. For example, when Oxfam incorporated a gender perspective in its agricultural rehabilitation program in Eritrea, it took on additional elements such as water supply, housing and credit for setting up local trading activities. The introduction of these 'non-agricultural' activities, eventually proved more successful in reducing drought vulnerability than if the focus had been narrowly on increasing agricultural production alone (Almemom 1992).

5. Reconstruction, recovery and social change – towards sustainable development

5.1 Enabling the “window of opportunity” after disasters

Careful assessment of disaster risk can identify existing vulnerabilities and help to set changes in motion. A review of community level responses during and after disasters, shows opportunities exist in disaster recovery efforts to correct imbalances in local institutions that may otherwise exacerbate existing gender and other social inequities. Responses at this time, for example, offer opportunities for improving women's economic status that may not be available under 'normal' circumstances (Box 7 – Pakistan housing).

The gendered dimensions of daily life of women in itself bring much value to disaster preparedness and mitigation. At the grassroots, women were found to be key players in community mobilization for post-disaster housing following the Mexico City earthquake,

and have intervened for community recovery in subsequent earthquakes (Vinas 1998). In urban settlements, female headed households predominate among the poor, who live in overcrowded and vulnerable spaces. While they may be invisible to disaster practitioners, their family and community roles are likely to be especially important in preparing for effective responses to disasters.

In rural areas, women are engaged in traditional crop husbandry as food producers and natural resource managers, and are directly affected by environmental stress and disaster. Women's environmental knowledge and stewardship can be a significant asset in responding to environmental disasters (Enarson 1998). The numerous instances of their activism against exploitation of natural resources through mining and logging and other service provision issues of relevance, also points to the mobilizing capacity of poor women when their interests are at stake (Agarwal 1997). Communicating disaster warning and response mechanisms to all community members. Women are critical integrators of family, kin and neighborhoods in disaster events through their communicating skills and rapport that they build. Disaster relief workers in the Caribbean note that women's voices are more effective when the education of all community members including children, is necessary (Clark 1995)

Women's experience as community workers, informal neighborhood leaders and social activists equips them to respond to community crises. Some studies report women more willing to be trained for programs in their communities for emergency management and to volunteer for grassroots organizations on disaster issues (Neal and Phillips 1990). Possibly women's membership in these is seen as an extension of their traditional domestic role and responsibility since disasters pose a threat to home and community.

The problems faced by women, in the recovery phase, can be facilitated by building support groups that enable them to deal collectively with their issues. This often takes place spontaneously when women have organized into pressure groups around hazard-related matters. These are often friends or neighbours to "attempt to prevent, remove, minimize or recover from the disaster agent". However these existing or emergent groups tend to be ignored by the predominantly male power structure (Neal and Phillips 1990:251; Enarson and Morrow 1998c). In studying the responses to the Colima earthquake of 1995 in Mexico, Vinas (1998) noted that women were actively involved in neighbourhood organization that helped this community deal with recurrent floods and cyclones, and which now responded to the needs of the earthquake victims¹⁰. They were involved not because they had extra time on their hands, but because they are more responsible for family wellbeing. However, the authorities were not willing to deal with women, representative or not. A councilman asserted that when women demand government aid, "they do it very badly, they either scream or are afraid to speak." Consequently, all neighborhood associations have a man as their president. Thus the women who are the majority of the members do all the "invisible work" and it is the president of the association who "wins all the praises."

¹⁰ Many of these neighborhood organizations are also involved in the celebration of religious and social fiestas, and are in a real sense a form of social capital. In times of disaster, they are easily invoked to deal with the crisis.

In the Caribbean, formal and informal community groups form an extensive preexisting network, with women often being leaders and the majority members of these groups. The effectiveness of such networks places emphasis on the role of the community in general, and on the role of women in particular. Strengthening these networks has been incorporated in disaster strategy of the Caribbean Disaster Emergency Response Agency. It recognizes women both as a target group and a major resource that can contribute to the development and strengthen the community's response capabilities, and ultimately the strength of national capabilities in disaster management (Noel 1998).

As women play increasing roles in disaster response, new nontraditional skills are also acquired, and new challenges have to be faced. In order to fully utilize their abilities, ways need to be found to free them from sole responsibilities for their families in times of crises. Access to emergency child care, for example, may need to become part of emergency plans, such as in Australia after a cyclone (Scanlon 1998). Efforts to increase the involvement of women has been facilitated directly by involving them in key decisions, such as siting of water facilities, choice of technology, selection of financing system, etc. When women are well represented at the facilitator level, their grassroots representation is also more effective. Often, existing village assemblies may not be the best way of involving women, if it is difficult for them to express their independent opinion in public, or in the presence of male elders. In such conditions, it is preferable to set up informal women's organizations alongside formal institutions. Special care must be taken that women's participation does not become just a source of cheap labor, and that appropriate training and skills acquisition is facilitated.

Generally it is important to utilize development opportunities provided by disasters. These are often missed or compromised because of an excessive focus on relief assistance. Relief assistance may be diverted from development, and inappropriate methods of injection of these resources may discourage independence, self-reliance and entrepreneurship. In order to utilize the disaster experience, two aspects need to be capitalized upon. First, disasters can highlight particular areas of vulnerability that need to be addressed in development. Second, immediately following a disaster, the political environment may favor a much higher rate of economic and social change than before, in areas such as land reform, new job training, housing improvements, and restructuring the economic base. There are often long term benefits from a drastic restructuring of the economy as a result of a disaster. For example, small island economies which were previously dependent on a single crop, may expand their economic base, often with international assistance (UNDP/UNDRO 1991).

Underlying effective development led recovery efforts is the need for community involvement. Failing to involve those from the community who are most affected by disasters will cause the programs to be inadequately conceptualized and less than fully implemented. Women's groups or associations that have formed spontaneously during disasters, or have reoriented their activities to deal with disaster responses, are a resource to be fostered and used in facilitating community involvement. These have demonstrated leadership in the community, and can inspire trust. Response and recovery programs that build on this emerging leadership can be useful not only for building mitigation into recovery, but for promoting long term involvement of women in their community's

development. It is however, necessary to educate government functionaries and outsiders who prefer to deal with the prevalent male power structures in communities, so that they not overlook this resource.

During and following disasters, women take on additional responsibilities both in the household and in communities, thereby acquiring new skills. In addition, they also face and often overcome preconceived ideas about their limitations (Scanlon 1998). Disaster recovery and mitigation initiatives offer opportunities to build on this resourcefulness thereby benefitting long term development prospects.

5.2 In the normal course of events, disaster response accentuates existing vulnerabilities

Even as it is important to look for the involvement of women, it is obvious that many hurdles need to be overcome. Patterns of socio-cultural and economic discrimination against women are widespread, though may differ by location. They are also deep seated, and unless women are linked into community organizations, or other support mechanisms, they can suddenly find themselves at a loss, as shown in the dramatic re-emergence of old gender divisions in the aftermath of the Oakland Firestorm of 1991, described vividly by an anthropologist who herself was a victim of the disaster (Hoffman 1998). A sociological study in the drought prone NE region of Brazil describes how women's groups, supported by NGOs, enable them to combat destitution and desertion, by diversifying their economic base away from agriculture and dependence on unviable 'minifundias' (Branco 1994).

Since women's responses and coping strategies are conditioned by their social role and position, so should efforts to expand their involvement in disaster response. Facilitating spontaneous participation that serves the needs of women, their families and communities, as opposed to requesting voluntary assistants in responding to disasters is at the core of expanding their involvement. The distinction is a fine one, and can make the difference between building the social capital for women, versus making additional demands on their time and limited resources.

Women's caregiving role expands dramatically in disasters. At the same time the resources they depend on for providing basic necessities such as food, fuel and water can be lost. Care and survival of children is put in jeopardy. It has been shown that women in traditional relationships with men generally received more help in preparing and recovering from disaster than single women maintaining households.

Women are placed in a critical position during disasters for several reasons. First, women's paid and unpaid caregiving responsibilities are universal, and this positions them to respond to family and community needs in crisis, and also as long-term caregivers to disaster impacted family members. These caregiving needs are intensified during crises. Not only are caring needs increased, but at these times they also lose access to the limited resources they had prior to the crisis, as shown following the Mexico City earthquake (Dufka 1988). Second, they are more subject to personal and livelihood-

risk, and to loss of what power they have. This makes them more vulnerable than others, particularly when they also are less likely to gain access to external assistance. As a group, female headed households (de facto and de-jure) are economically and politically disadvantaged, and this gets accentuated during crises unless official relief programs take specific measures to support the functions they are fulfilling in homes and communities. Traditional cultural divisions that place women in the private arena and men in the public arena are shown to impede women's access to assistance even in affluent Oakland, California, in the aftermath of the 1991 firestorm (Hoffman 1998).

This complex of responsibility for caring for family, and higher needs, places women in disaster situations in great stress. It has been shown that women with responsibility for children are likely to experience higher rates of mortality in disasters, as they struggle for the survival and sustenance of their young (Rivers, 1982). For those who survive the ordeal, the experience poses a challenge to recovery (see section on Post Disaster Vulnerability). In the aftermath of Hurricane Andrew, low-income women in South Florida such as public housing residents, migrant workers and battered women were particularly hard hit and slow to recover (Enarson and Morrow 1997). Such a gendered pattern of stress is evident even in high-income countries and is likely to be greater when resources are scarce and gender divisions greater, as in low income developing country situations (Fordham 1998).

5.3 Attention to equal access to resources for disaster mitigation and recovery therefore especially important

The main components for rebuilding are: basic services such as housing, income and market opportunities, resources such as credit and training, and building community institutions. Women, especially female headed households, and low-income women often receive fewer opportunities in the recovery and reconstruction phase. In addition they also have fewer savings or insurance, and thus less likely to experience rapid recovery. In their comprehensive research on Hurricane Andrew, Morrow and Enarson (1997) report the multifaceted institutional obstacles faced by poor women. They reported that though men were more likely to collect the money following the disaster, it was women on whom the responsibility of relocating the family unit in temporary housing largely fell, and it was they who did the long term follow up work. Often men did not use the relief money to help their families. This research shows clearly that recovery programs based on the model of a nuclear family with a male head of household, did not work well.

After Hurricane Andrew in Florida, women with low paid jobs had trouble finding replacement employment, while men were able to obtain construction related work (Morrow and Enarson 1997). Two years after the Hurricane, those still struggling to get housing were the poorest of the poor, mostly minority women.

In low income countries, the situation is similar and likely to be worse for poor women, as they may face additional social and economic obstacles to compete for the limited resources available. Economic opportunities in post disaster situations, effect the extent to which women are able to care for their households. With the prevalent patterns of

gender, class and ethnic differences that are observed, it is possible that women become more dependent on men or on formal disaster assistance.

Even in communities where women are traditionally involved in food production, rehabilitation programs often overlook them and fail to involve them when providing production inputs or training. A drought rehabilitation program in Wollo, Ethiopia, simply treated women as homemakers rather than as farm managers in their training and leadership activities. Men were selected almost exclusively in leadership and training, despite the fact that women headed 20 percent of farm households, including many of the poorest, and not only have need for production training, but also have vital skills to share (Anderson and Woodrow 1998: 125). Such examples are widespread, and show how women's relative position may be worsened by misguided rehabilitation efforts.

One of the promising avenues of relevance in building livelihoods of women and marginalized groups is microfinance with social intermediation. This is a form of microcredit with an added element of developing human and social capital. Such group based micro-credit and other income generation programs for poor rural women, have shown a remarkable capacity to increase women's social capital, and their ability to respond effectively during and after disasters. For example, weekly meetings at the Grameen Bank groups helps members to form and strengthen networks outside their living quarters and kin groups. Membership allowed women to have a more complex web of exchange and visiting networks, allowing them build reputation and social capital. These findings suggest that the social implications of microcredit lending can be as powerful, or even more powerful than, the economic implications for women (Larance 1998).

5.4 Integration of gender perspective in design, implementation, monitoring and evaluation of disaster relief and recovery efforts

Integrating gender issues in project cycles that deal with disaster risk reduction and mitigation efforts is as much about gender as it is about promoting social equity and justice. It is therefore also about bringing about institutional change in organizations that deal with such issues. This is seemingly a tall order, and one that is better shelved for another day. It is also an unavoidable challenge that will need to be addressed if the problems of environmental degradation and unsustainable development that have been described in this paper, are to be addressed.

Gender inequality in societies is mirrored in the organizations that are supported by these societies. Quite irrespective of the stated objectives, the broader institutional environment shapes the gendered “substructure” or organizations, which in turn produce gender-inequitable outcomes (Rao et al 1999). The relevance of gender issues in dealing with development is only rarely apparent to practitioners. It can easily get confused with women’s issues – with the danger that the main objectives get sidetracked. It is useful to recognize that gender inequality is part of a larger set of inequalities in the societies where problems exist and persist.

Lessons from organizations that have successfully implemented gender mainstreaming point to several considerations. First, staffing and staff training are important. For this, good equal opportunity employment practices, parental leave provisions, and equal opportunities for staff training and promotion. Second, gender objectives in programming have to be accepted as a collective responsibility, rather than a top down one alone. It is common to encounter resistance at local levels of operations, and therefore training from the bottom up is necessary. Third, ongoing training and feedback is required .

5.6 Gender balance in implementation

Even when practitioners understand the gender issues involved, it is not always clear how to address these in program implementation. However there is now a considerable body of information to draw on, from different types of emergencies. Consulting women in emergencies requires flexibility, and a proactive approach.

A number of useful tools exist to translate policies of gender equality and overall equity into practice. For example Capacities and Vulnerabilities Analysis has been used in grassroots disaster –preparedness training in many countries. Social Relations Analysis is another potentially powerful tool for working on disaster preparedness and mitigation. It highlights the relations between men and women which underpin the coping strategies adopted in specific emergencies. However its use requires baseline information. The People Oriented Planning framework of UNHCR is another useful tool.

It has to be remembered that gender is not about women alone. Emergencies are a time of disempowerment and loss for both men and women, and this is important to recognize. Needs of all population segments require attention. However, the bottom line is to include women at every level and stage. New ways of thinking and working are needed to overcome the dichotomy between relief and development. It is important to not let the

“tyranny of the urgent” override longer term development concerns. Relief and rehabilitation offers an opportunity to redress social and economic inequalities, and gender analysis could provide a common frame of reference – and a common challenge for a new way of seeing and doing things, which may turn crisis into an opportunity (IDS 1996).

6. Conclusions and recommendations

How men and women are impacted by, and respond to disasters is shown to be directly founded on existing gender roles, and relative socio-economic status in predisaster situations. From a sociological perspective, both the poor and women are more likely to be underprivileged, and therefore more vulnerable. Within this, a gender perspective shows that since women shoulder a combination of productive, reproductive and household maintenance responsibilities, and have access to relatively fewer resources than men, they consequently face greater challenges and stresses during and after disasters. Though the specifics vary in each situation over the range of disaster situations, and variation in status of women, the overall outcomes are surprisingly similar in developed and developing countries alike around the globe.

An understanding of the social and gender dimensions of disaster risk, brings the interface between development and disasters into clear focus. Structural adjustment programs of the past two decades have created increased competition for natural resources, with a resultant tendency to marginalize local populations at the expense of capital inflows into rural areas. Without an adequate framework for social equity or environmental protection, the outcomes are often literally disastrous. These failures in development can clearly be seen as a source of increased disaster vulnerability, and better disaster mitigation and recovery can be seen as instruments of sustainable and equitable development. Incorporating women’s role in economic development from this perspective becomes common ground for both effective development and effective disaster mitigation.

Lessons drawn from the earlier work on gender and development are equally relevant for disaster mitigation and recovery. In particular, recognizing and supporting women’s economic contribution and empowerment has been found to be more critical to achieving development and welfare objectives rather than focusing on them relief and welfare alone.

Disasters offer opportunities by pointing out existing vulnerabilities and for setting changes in motion. They also offer opportunities for improving women’s economic status that may not be available under ‘normal’ circumstances. This is because men often migrate out of rural areas, and women are faced with a need to expand their capabilities and responsibilities. Existing experiences, though few available in detail, show that building on women’s resources and capabilities improve not only their status, but development for the entire community. Work done in the aftermath of natural disasters and conflict situations has shown that women’s knowledge of their communities and their social networks are an asset and need to be more fully utilized in community based

disaster risk reduction and recovery. Building and supporting these networks assists women in dealing with future disasters. In the few available cases, where women's input and issues are incorporated in recovery, the results are excellent and indicate sustainability and high levels of overall effectiveness. However, an extra effort is required, given the general ease with which women's involvement in program design and implementation can be overlooked.

Gendered vulnerabilities during and after disasters are mirrored in day to day inequities in different societies. As a result efforts to address them cannot be separated, one from the other. Lessons from organizations that have been successful in implementing gender mainstreaming can be usefully applied in order to make planning and implementation of such efforts to be meaningful.

Finally, protection of the natural resource base as part of promoting sustainable livelihoods is crucial both for mitigating disasters and for reducing post disaster stress for women. Rural women still rely to a great extent on natural resources for meeting household needs for fuel, water and fodder. In addition they are also more likely than men to be farming on hillsides and on poor quality soils. Community based strategies that involve women in planning and decision making, have been found to be effective. These lessons need to be better documented, and compiled in such a way as to provide guidance for program planners. Related to this, is the issue of improving land ownership by women, and its relevance for reducing disaster vulnerability, and improving ability to recover from disasters.

Challenges of incorporating gender equality in indigenous movements for improving resource access, is another area whose relevance to the disaster risk reduction and environment management goals, will need to be explored further. Improving local communities' rights to natural resources is a movement that is steadily gaining ground – and should continue to do so in order to meet the environmental and social justice goals of sustainable development. A test of getting true participation locally would be the incorporation of gendered perspectives – and an effort is needed to understand the ways in which this can be supported.

BOX 1
Social Forces in Distribution of Vulnerability to Disaster
in Peru

Following Peru's 500 year earthquake of May 1970, there was an outpouring of aid. However, it was mostly cities that were rebuilt, as survivors throughout the country struggled to rebuild their towns and villages. Roads, airports, electrical and water services were better than before the earthquake, but little aid reached the rural majority. They had to rebuild for themselves. The maldistribution of aid and inefficiency of aid agencies following the tragedy gave rise to the saying: 'first the earthquake, then the disaster'.

It can be suggested that much of the devastation and misery caused in Peru by the earthquake was a product of the historical processes set in motion that subverted the generally effective adaptations by people to many environmental hazards over a long period of time. Thus, the accentuated vulnerability which the region exhibited is a socially created phenomenon, a historical product brought into being by identifiable forces

Anthony Oliver-Smith, 1994

BOX 2
Gendered Vulnerability in aftermath of a hurricane in the USA

In the aftermath of Hurricane Andrew, low income women in South Florida were particularly hard hit and slow to recover, especially marginalized women such as public housing residents, political refugees, migrant workers, and battered women. Women's economic losses were often invisible as homeworkers, in the informal economy.

Relief and recovery assets reaching a household could not be assumed to be shared equitably among the people living together. Also women in traditional relationships with men received more help in recovering from the disaster compared to single women maintained households. In documenting women's experiences in the disaster assistance process after Hurricane Andrew, led to a call for review of gender bias in relief agency practices and policies.

Women's caregiving roles expanded dramatically at all stages of disaster response and though often invisible to disaster responders, women formal and informal networks were central to both household and community recovery.

Enarson and Morrow, 1997

BOX 3

Eroding Women's Production Base and Famine in Malawi

A recent historical study of the 1949-59 famine in Malawi illustrates the intersection of economic forces and gender relations in producing disaster. At the time of the famine, men were involved in wage labor in export crop production, while women produced crops for household consumption. As dependence on wage income increased, loss of land holdings were not perceived negatively, but it undermined food self sufficiency. When famine struck, those who depended on farm output, especially women were hardest hit.

Women lacked legal entitlement to share in husband's wages, and were often abandoned. Famine relief programs didn't recognize abandonment, and colonial government policies imposed a Eurocentric patriarchal family model on the traditional matrilineal system, extending aid only to male household heads.

M. Vaughan, 1987

BOX 4
Increase in Female Headship and Poverty in Disaster Prone
Areas of Bangladesh

Regular flooding and loss of land through riverbank erosion is endemic in Bangladesh, annually affecting more than one million people. Calamities like cyclones tear families apart through sudden death and separation; in contrast, flood erosion strikes at the family's resource base, often forcing relocation.

A substantial difference in household organization is evident between interior and erosion prone (*char*) lands. Most pronounced is a much higher rate of female headed households in the *char* lands -- nearly three times as in the non-eroded lands. Most of these are *de facto* female headed households, where men have migrated in search of wage work.

Those displaced from their land and homes may attempt to assert their rights to newly accreted land. But despite tenancy laws that provide them first claim, they seldom gain access to such land, are more likely to become captive labor, grateful for patronage ties to landlords who grant them access to a homestead in return for labor. Since men may often migrate in search of work, or simply abandon their families, this captive labor is disproportionately women and their dependent children.

Raymond Wiest, 1998

BOX 5

Poverty, Environmental Degradation and Urbanization in
Haiti

Haiti is one of the most widely cited examples of an environmentally induced political crisis. Decades of rapid population growth pushed Haiti's poor farmers into marginal lands, stripping the country of its forests and topsoil. They migrated by the thousands to the cities, where overcrowding and poverty provoked protests and riots. The instability weakened President' Aristide's government and encouraged the 1991 military coup. It has been argued that the coup would not have occurred had the rural farmers been able to earn a living off the land.

Though the risk of conflict as a result of environmental degradation and population growth is not inevitable. Preventing these will require controlling the growing inequities within countries, and between urban and rural populations.

Geoffrey Dabelko et al., Panel on 'Land, Water, People and Conflict, March 22, 2000. Woodrow Wilson International Center.

BOX 6
Environmental Refugees in Sudan

If you are a *naziheen* in Sudan, you know personally, the link between ecological disruption and political and social violence. The term was coined in the early 1980s to cover a new pattern of migration caused by environmental crisis. Before the advent of this type of migration, migrants were simply referred to as *igleemiyeen*, or rural people. The term is specific for the drought displaced people, and differentiates between migrants and refugees and also is distinct from the terms used for the refugees of the southern conflict.

Why is that these traditional producers of food are the most seriously affected by drought and famine? One explanation is that farmers in the eastern and western regions are no longer able to produce the traditional crops of millet and sorghum due to land degradation. These farmers are also being displaced by large scale mechanized farms that receive government subsidies as part of its 'bread basket' policies.

Drought is not infrequent in Sudan, yet famine occurred because the population was vulnerable, and unable to employ preventive measures to minimize effects of drought. When the rains failed, the mechanized farms cut back planting and amount of paid work. The pattern of development has proved disastrous to poor farmers and promoted environmental degradation.

The number of *naziheen* in Sudan today may be more than 3 million, about half of whom have migrated to Khartoum where they live in miserable squatter settlements. In contrast to international refugees, eg, from Eritrea, none of the *naziheen* qualify for support from UNHCR (United Nations High Commission for Refugees).

Nazih woman are particularly vulnerable. Wearing their traditional clothing, eg, from the Nuba region, immediately makes them target of abuse by both police and by men. Even in homes nazih women face greater risk of violence than in their places of origin, in the face of the greater social and economic hardships faced by these families.

Fatima Babiker Mahmoud, in Mohamed Suliman (1999) and Mark Duffield, 1990.

BOX 7

Building Capacity to Cope with Disasters in Pakistan

PATTAN, a local NGO has been working to increase the capacity of communities to cope with disasters, supporting social organization and local institutional development. They were working in flood prone areas with unrepresentative community organizations that were dominated by local power elites, usually men. PATTAN worked with the community to organize representative, democratic forums called PATTAN Dehi Tanzeems (PDTs) that could take collective decisions. According to local tradition, women were barred from joining the PDTs, so PATTAN proposed separate PDTs for them, and was able to overcome resistance to the idea of women being organized. Thus it was possible for PATTAN to use the disruptive nature of the floods to develop institutions for enabling women to make decisions that affected their lives.

The floods of 1992 completely destroyed many villages, and housing was a high priority. PATTAN initiated a project to rehabilitate houses with involvement of women's PDTs. Traditional (*kacha*) housing maintained by women, and they were now involved in the design and construction of improved (*pakka*) housing. Households received loans, but women were given responsibility for collecting money to repay loan instalments. Initially men objected to giving women this responsibility, but PATTAN developed a monitoring system that was easy to handle by women despite their illiteracy.

The concept of joint ownership of the new *pakka* housing was also introduced. It took time for the concept to be accepted. PATTAN used men's own arguments to convince them. They pointed out that if women were indeed a burden, then enhancing their capabilities would make them less of a burden! The experience of the housing project has given women confidence to take collective action in many other projects.

Farzana Bari, 1996

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