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Gender Equality, Environmental Management, and Natural Disaster Mitigation

Report from the On-Line Conference conducted by the
Division for the Advancement of Women

Prepared by
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I. Introduction

Natural disasters and environmental management were on the international agenda throughout the International Decade for Natural Disaster Reduction (1990-2000). In 1994, the Yokohama Conference considered a gender approach to the subject, recognizing the need to empower women and foster community involvement in all stages of disaster mitigation to increase women's resilience to extreme environmental events. Additionally, the Beijing Platform for Action (1995), its review and appraisal in 2000, and the twenty-third special session of the General Assembly (2000) identified natural disasters and epidemics as issues deserving greater attention and a gender perspective as integral to natural disaster mitigation.

In support of these goals, the topic of "Environmental management and the mitigation of natural disasters: a gender perspective" was selected by the Commission on the Status of Women as a priority theme for the 2002 work session and is intended to contribute to the upcoming World Summit on Sustainable Development (South Africa, 2002). Toward this end, a six-week on-line conference on "Gender equality, environmental management and natural disaster mitigation" was conducted by the Division for the Advancement of Women (DAW) between September 24 and November 2, 2001.

Invitations to participate were widely circulated among governmental policy-makers, field workers, professional emergency practitioners, activists, researchers and others engaged internationally in disaster and development work. The on-line discussion was open for participation by any person who registered. The views of those with a gender perspective were actively encouraged, for example through the such contacts as the Gender and Disaster network (http://www.anglia.ac.uk/geography/gdn).

Two hundred and twenty-four individuals registered participants represented nations from every region, women and men, practitioners and researchers, and government and non-governmental actors. Participants could read and post messages on the web page and also received email copies of messages to increase access in areas with low internet connections. Over one hundred substantive messages were posted on the website, with some persons responding to particular topics and others contributing their views throughout the conference.

By these measures alone, the conference succeeded in fostering international dialogue on the interconnecting issues raised by gender equality, environmental management, and natural disaster mitigation.

This report analyzes and summarizes respondents' ideas with respect to these five themes. It is offered as a platform for discussion and for the consideration of strategic recommendations arising from the forthcoming Expert Working Group meeting on "Environmental management and the mitigation of natural disasters: a gender perspective" in Ankara, Turkey (November 6-9, 2001).

The report follows the structure of the thematic on-line discussion. Facilitating messages which were posted weekly to introduce new topics are not included but may be viewed on-line at the conference website (esaconf.un.org:80/~gas1) where respondents' original postings may also be found in their entirety.

Each weekly summary synthesized and analyzed postings on the topic, with special attention to implications for policy change. Conclusions offered in the final section are drawn directly from these summaries.

II. Conference Themes

The discussion was organized to address "women as part of the solution," focusing on positive conditions, experiences and characteristics reducing women's disaster vulnerability and promoting sustainable management of natural resources. The five general themes and related topics below provided the analytic framework of the dialogue:

Week 1: Victims? Heroines? Gender myths and realities in disasters
- Strong images of weeping women and strong-armed men in disasters abound, but how have you seen women and men act?
- What everyday living conditions (social, political, economic, cultural, biological) create problems for women and girls before, during, and after disasters?
- How have you seen them act to resolve these problems?

Week 2: How do women manage and use environmental resources in their daily lives?
- How do they act to reduce the risk of environmental disasters? How can these efforts be supported?
- How can women become more involved in reducing environmental hazards at the technical and professional levels?
- What organizational models have you seen which empower women to reduce risk of environmental hazards and disasters?

Week 3: How do women and men cope with the immediate and long-term challenges of natural disasters?
- How have you observed women preparing for and responding to disasters?
- What gender issues arise during preparedness and relief phases? During recovery and reconstruction?
- Are women's human rights an issue in disasters? What specific measures are needed to further the enjoyment of these rights in disaster contexts?

Week 4: How can the "window of opportunity" for social change following natural disasters be exploited?
- How have you seen gender relations challenged or changed in disasters? What specific practices need to be changed or to be supported?

- How can post-disaster reconstruction policies empower women as environmental actors and reduce their social vulnerability to disasters?
- What specific resources are needed to help women exploit these opportunities?

Week 5: How can gender equality be integrated holistically into both disaster prevention and sustainable development initiatives?
- Have you seen examples of hazard mitigation, disaster relief, or postdisaster reconstruction that promote both gender equality and sustainable development?
- How can these be supported and expanded? What new initiatives are needed?

III. Victims? Heroines? Gender Myths and Realities in Disasters

Gender myths were seen to undermine the recognition of women and men's interdependence, women's distinct disaster experiences, and the need for women and men to work together to reduce risk in hazardous environments. Agreeing that gender myths (e.g. women as passive victims) are not only cross-cultural and deeply embedded in social life but have very real effects, some cautioned against constructing an equally false notion of women as "heroines" or a blindly "celebratory approach":

> My research on Hurricane Mitch in Nicaragua suggests that while many women have developed sophisticated survival strategies which enable them to cope within a situation of disadvantage, I also have evidence of a lack of solidarity amongst reconstruction project beneficiaries and of aid dependency which will not readily be replaced by self-reliance. [Julie Cupples, Department of Geography, University of Canterbury, Christchurch, New Zealand]

Contributors urge a more nuanced use of language (including the terms "women" and "gender"), and specifically reject the term "victim" as it implies "helplessness, and this is what needs to be fought against." They emphasize the complexity and diversity of both women and men, noting that constructing all women as "victims" fosters gender-biased policies and approaches that reproduce, rather than challenge, women's vulnerability. This also falsely dichotomizes women ("victim" or "heroine"?) and women and men as social groups. It was suggested also that constructing all women as real or potential mothers distorts the real situation of many and also fosters neglect of those hazards posing specific threats to men's reproductive health.

Paradoxically, in accounts from contributors in countries as diverse as Bangladesh and the United States, women's everyday realities were understood both to reinforce the image of women as dependent, passive victim and to challenge it. Language barriers leading to social isolation were noted, as were cultural barriers in highly sex-segregated societies restricting women's ability to evacuate to safety or otherwise move about freely. Rather than acting on the basis of stereotypes, commentators pointed out the need to analyze gender power and the root causes of vulnerability:

> Women are made victims as a result of obvious gender discrimination. Their being victims extend to disaster situation for the very same reason of the gender discrimination that they face in all spheres of life and from birth. They are invisible heroines as their potential [is] not perceived by the society, including women themselves. . . We all must on one hand, try to understand the meaning of victims first and its root causes, [and] on the other hand, we must work towards building the confidence of women (including ourselves). [Mahjabeen Chowdhury, Intermediate Technology Group, Bangladesh]

> Women are key to maintaining the family unit, keeping ties with community structures, obtaining access to assistance and entitlements, and meeting basic family needs. However, women frequently find themselves stateless and dependent on others. In many societies, women do not have the same socio-economic standing as men. They have considerable less decision-making power and control over their own or their children's lives. Women are very often poor, vulnerable and lacking in political influence due to inequality, marginalization and disempowerment.[Angus Graham, International Consultant, Republic of South Africa]

Simply solving the problems of the day equips women around the world with vitally needed coping skills and social networks.

> The same conditions that may put women at risk in their everyday lives---lower pay for equal work, lower incomes, less political power and fewer positions of authority, less access to information about environmental risks or hazards, limited access to resources for post-disaster recovery and pre-disaster mitigation----have helped build coping mechanisms and adaptive strategies into their lives, as well. Women who earn less may learn to carefully budget resources, especially if they have families. We all can think of women who lost husbands through death and divorce, and successfully raised children and become financially independent. I know women who have suffered from severe and terminal diseases, who maintained a positive attitude, fought the disease longer than doctors thought possible, held their families together and strengthened their loved ones at the same time. All of these everyday acts of heroism are the types of actions and skills necessary in coping with and reducing impacts from disasters. [Cheryl L. Anderson, Social Science Research Institute, University of Hawaii, USA]

Many noted that women tend to be forward-looking, oriented to long-lasting recovery. Their domestic responsibilities situate them to act proactively to reduce risks and protect the most vulnerable. Especially in female-headed households, where men may have migrated to find waged work or be absent for other reasons, women increasingly step naturally from these family-based roles into emergency preparedness and response activities. In addition to caring for their families, observers see women acting proactively throughout the disaster cycle, as these accounts from Nicaragua and Ukraine suggest:

> After the storm subsided, international aid began entering the area near her village. She saw that the village leader, a man who lost his farm, was more concerned about his own than other village members. . .So she traveled to the mayor's office, where she had never been before. She visited the Peace Corps volunteer in town, whom she did not know. Through her dedication, persistence, and patience, she had seven houses built and legally put in the wife/mother's name. She insisted that latrines be built for all families. She rallied 10,000 trees to be planted on the deforested hills that surrounded her village. She learned about water diversion tactics, and found an engineer to teach her village to build gavion-walled channels. [Sarah Henshaw, World Food Program, Nicaragua]

> Women are neither victims nor heroines [any] more than men are. I have seen women in the situation of environmental disaster who continued to do their job and were responsible for other people. Ukrainian women medical workers [worked] in India during the earthquake. Last autumn, during the ice storm in Odessa region, women directors of orphans' houses contrived ways to protect children from cold. So, it depends on [the] situation, position, personal attitude and level of responsibility, [being] active or passive during disaster. [Oksana Kisselyova, Liberal Society Institute, Ukraine]

Taken as a whole, those who joined this week's discussion identified a great range of factors sustaining gender myths and suggested many strategies for debunking these images and promoting gender equality:

First, the command-and-control approach to disasters assumes a "victim" in need of rescue. It must be modified or replaced with a more flexible approach:

> Is heroism characteristic of a disaster situation? People cope in their everyday lives, fight with difficulties, make progress and improve. . . It seems to me that heroism in disaster situations is somehow connected with seeing people as victims. Therefore, any effort of people to cope with disaster is easily presented as extraordinary, therefore as heroic. This is also not [unrelated to the fact that most] emergency response policy [is] based on a military model ("command, control, communication"). According to this model, external well-structured forces save the victims of disaster. No need to say that if response is based on this model, women very rarely participate as emergency managers. Yet, there is enough evidence now that this is not the most efficient response model and we need to explore more flexible ways of response. Gender issues should be introduced not only in respect to people suffering from the disaster, but also in respect to emergency response policies. [Miranda Dandoulaki, European Centre on Prevention and Forecasting of Earthquakes, Greece]

Second, occupational segregation concentrates men around the world in socially visible emergency planning and response roles which incorporate short-term perspectives:

> From 1981-1999, Athens suffered two major earthquakes. The panic was obvious. [Becoming a] hero for men was easier because firemen, policemen looking for the dead and saving human lives [made] them heroes. Women's behavior was different. Perhaps not heroic but more systematic and. . . long-range. . . Women in disasters offer feelings, and also see the next day. They undertake programs, their behavior [expresses] compassion, and at the same time they are thinking about the future. [Nicolis Kallirroi, Social Aid of Hellas, Greece]

In contrast, contributors agreed that women's efforts to mitigate hazards and cope with disasters generally takes place behind the scenes. An educator suggests that the new generation of women studying emergency management and moving into disaster agencies "will transform emergency management, including gender myths." This implies the need to support the entry of more women into nontraditional roles in order to, among other results, challenge images of women as passive victims.

Third, the values, practices, and knowledge base of journalists and other communicators were seen to convey distorted images of women and men in disasters, suggesting the great need for educational work with media and alternative approaches. Though few specific strategies emerged, many suggested that the powerful role of the media in propagating gender myths warrants more attention.

Fourth, the programmatic responses of agencies, governments, and NGOs also very often reflect, and tend to reinforce, myths rather than realities. Women become "victims" when gender myths, not accurate knowledge about local living conditions and culturally-specific gender relations, guide the policies and programs of disaster organizations. Several contributors spoke to the need for "organizational frameworks" for working equitably with women at the grassroots and community levels, and targeting women as key risk reducers. This both increases safety and challenges victimization mythology.

Writing from Armenia, one respondent described an educational program targeting women as household and community educators about how to reduce seismic risk. Working with media representatives and utilizing print, radio and television, they sought to increase women's knowledge and also project a new image of women—"not only silently carrying the heavy results of the disaster, but also. . . ready to provide her knowledge and ability for disaster mitigation."

An American emergency manager writes that programs need to build on women's skills as family planners and organizers and, speaking of cultural diversity in the US, be culturally inclusive:

> The challenge is in providing opportunities for those with language barriers to celebrate their culture and also embrace their own communities. Preparedness programs will take on a new light when we reach the citizens in a community that are otherwise isolated. We can make a difference in people's lives when we empower women of other cultures with the knowledge to mitigate, respond and recover from a disaster.[Cathy Diehl, Emergency Management Coordinator, Ogden, Utah]

Fifth, lack of knowledge about how women experience disasters allows stereotypes to flourish. As one contributor observed, if women's "creativities and strengths are not often discussed and learned because [they are] embedded in their daily lives," there is a need to "learn from them" about how both vulnerability and capacity are grounded in daily life. A new approach is needed in disaster research to help challenge gender myths:

> So, it seems to me that we are now faced with the task of understanding the factors influencing the choice of coping. . . To start we have to ask women. . . be with them and share their phenomenological world. . . So, as stressed by others, we definitely need to develop an insider's perspective rather than relying on our and others' observations and interpretations. The challenge is to find ways to empower women based on their own views. [Nuray Karanci, Professor of Clinical Psychology, Middle East Technical University, Ankara, Turkey]

Similarly, incorporating women's daily lives and points of view holistically into vulnerability analysis can help challenge myths about women as passive victims of their environment:

> [A] systematic review of functions, relations and processes between men and women should be part of risk assessments and policies, including considerations for lack of access to decision making, wealth and safer environments. My personal experience in the field is in development projects at community level in Central America—with programmes of low-cost housing, fresh water, development of local building materials, alternative fuel to wood, etc. based on development goals. I have always seen women in the forefront in terms of interest, capacities and by taking responsibilities in these areas. [Helena Molin Valdés, Policy Issues, UN Secretariat for ISDR, Geneva]

Moving beyond gender myths is critical for all these reasons. Further understanding of what women actually do in the face of hazards and disasters can only help. As ever, "the question is how"—that is, how to construct and utilize accurate and useful knowledge that can help mitigate hazards and increase the resilience of both women and men in disasters.

IV. How do Women Manage and Use Environmental Resources?

Noting that the gendered division of labor situates women and men differently as environmental consumers and managers, contributors pointed out the disparate impact of degraded resources on women's time, energy, health, and well-being. They urged attention to how these broad patterns vary culturally and how women's extensive agricultural activities in particular contribute to food security.

Women's efforts to earn income and meet the needs of family members were seen by many to draw them toward "need based" use and conservation of vital resources, as the examples below illustrate. Refugees and women displaced into "temporary" encampments are especially dependent on limited environmental resources.

> [P]rojects combining rain-water harvesting, micro-credit schemes for women, and environmental restoration are giving entire communities (mostly of women whose spouses have had to become migrant workers)a new lease on life. The level of commitment, energy and dedication that I witnessed there has been paralleled only by a project in Northern Kenya where women involved in a revolving loan scheme had gone beyond survival by taking charge of their lives. [Fainula Rodriguez, International Institute for Disaster Risk Management, Manila, Philippines]

> [C]onservation did not require any 'special' effort but was part and parcel of the way they used resources. . . Women both as consumers and managers of natural resources could maintain a required balance between the two. . .How medicinal herbs and plants were utilised is an example. Indigenous medicinal plants growing naturally in the forest areas were an important source for taking care of health concerns. Early days saw very rational ways of use, taking out only the part of the plant required (leaf, flower, root, stem, etc.), letting the plant survive and continue to grow. This way there was enough 'supply' for all in need. [Madhavi Ariyabandu, Programme Manager - Disaster Mitigation, ITDG, South Asia]

> The most important message that needs to be understood here is that women in refugee settings are the de-facto environmental managers by virtue of their day-to-day responsibilities whether it be in the context of emergency situations where they will be preoccupied with survival needs - food, water, shelter, etc. or in the context of their return where in some situations, they will have to live with a threat of land mines to survive. [Nemia Temporal, UNHCR, Geneva].

This connection (variously attributed to the gender division of labor, women's "intrinsic" values, and women's reproductive interests) helped commentators explain the very extensive involvement of women in environmental protection campaigns around the world. Examples were forwarded of the models and legacies created by women environmental leaders, known and unknown:

> The tree hugging need [of the Chipko movement] has since eroded. One can still visit the area and see numerous nurseries and protected vegetation areas being organized by these local residents. They have fodder patches, and *van panchayats* (village forest governments). Men give full support to the initiatives, but these are primarily women driven. Most, if not all, members of the *van panchayats* are usually women, perhaps because the issue of collecting fuel wood and fodder concerns them more. [Anshu Sharma, SEEDS, India]

> [T]he community of East Maui (rural community with a concentration of native Hawaiian populations, and, by economic measures, generally poor) frequently becomes isolated by landslides and flooding. They recognized the potential problems, especially in major disasters, and formed a team to identify their risks, and use GIS to map available community resources. Without really knowing anything about disaster management, the team developed hazard response and evacuation plans and mitigation strategies, drawing in expertise and advice from every agency that would meet with them. Although the teams consist of men and women, if asked specifically about this project, I would only be able to refer you to four or five women. [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

> I participated in an effort to preserve a 500-year floodplain—and we did it by building a neighborhood-based grassroots coalition that helped raise $550,000 through contributions and grant-writing. . . The problem was that we only saved the one floodplain. Efforts to preserve all the floodplains in a development code were thwarted by a pro-business change of government. Sadly, it will be the low income families (many headed by women) who will have to live in flood-prone areas. [Brenda Phillips, Department of Sociology, Jacksonville State University, Georgia, US]

While women are especially likely to organize at local levels, it was argued that where women hold political office or have technical expertise they can and do shape resource policies. Others pointed out how rarely even professional women hold management positions in environmental agencies and government bureaus.

Significantly, the easy assumption that women always conserve and nurture natural resources was firmly rejected. Instead, a wide range of factors were seen to undermine women's ability to practice and promote sustainable environmental practices, including: lack of awareness or technical knowledge about disasters and hazards; lack of information about specific threats to environmental resources and mitigation strategies; the sheer desperation of women living in extreme poverty; the dependency of those trapped in refugee camps; limited political and organizational power; the displacement of local resources by outside relief assistance; consumerism, and market-driven economic development.

> My personal experience of natural disasters is linked to the droughts in Mali and small floods in the internal delta of the Niger, as well as the earthquake in the Naples area. . . [T]he ways women use environmental resources differ according to their geographical location and stage of life. For example, their use of water and wood, as well as the use of the actual land is not always eco-friendly. An excellent example of this I witnessed in a refugee camp for 1,300,000 people in Goma (RDC), where for one and a half years, the women consistently cut down trees in the surrounding rainforest to obtain wood for a wide variety of primary needs. Once the camp was abandoned, it was found that huge areas of the rainforest had been plundered, giving rise to a geo-environmental disaster. Also, in modern societies. . . women use more water to clean the home. As they are constantly bombarded by advertisements to use more detergents, this results in pollution to underground water courses. [Augusta Angelucci, UNDP, Italy]

> Women's roles in conserving natural resources are well understood since hundreds of years in the Arab culture. Women in the region. . . [were] accustomed to prepare for the flash floods and droughts. . .. It is the modernization of their culture that made them imitate the consumerism of European and wealthy societies where consumption is the name of the economic development game. They forgot their grandma's conserving behaviour. [Samia Galal Saad, Advisor to the Minister of State for Environmental Affairs, Cairo, Egypt]

The market-focused thinking and structures have forced people to think 'commercially' to sell things for survival. Thus, medicinal plants are now uprooted for sale by community members, and many are becoming extinct as a result. Similarly drought and dry periods are now regular features, and forests are cut indiscriminately for development purposes, for new settlements for selling, for more construction. Control is taken by 'outsiders,' water resources are drying up, there is less rain and change in weather patterns. Survival has become a struggle with increased risk levels. For women there is hardly any space to perform their management role. The circumstances are forcing them to put more emphasis on 'consumer' aspect of resources for sheer survival. [Madhavi Ariyabandu, Programme Manager - Disaster Mitigation, ITDG, South Asia]

Contributors built on these observations to argue for a comprehensive, community-based and gender-aware approach to risk management. Their comments suggest this will entail new ways of thinking about risk management and what constitutes a disaster, local leadership, new training and research initiatives, and a more complex understanding of how women's environmental activities relate to hazards and disasters.

Even today, solving the drought crisis is more critical for many rural communities than rebuilding their homes shattered by the quake in Gujarat. . . The women in remote hill villages in the Himalayas spend hours every day just to fetch water, fuel wood and fodder. There is no drought. . . We definitely need to talk about the shocks (large disasters), but it is equally, perhaps more, important to talk about daily stresses. [Anshu Sharma, SEEDS, India]

If some decision-making is shifted to local levels (communities and aggregate of communities), then women will have an opportunity. . . One good example of how women are now holding parity (half) in local councils has occurred in villages in Thailand. . . [W]omen naturally came to the foreground because they tend to volunteer their energies to improve their communities. Within 5-6 years. . . they reached parity and were learning to be community managers within the official framework, not only informally. In this case, issues of environment, disasters and development were the main topics. [Jeanne-Marie Col, United Nations]

[T]hose concerned need to be involved in the diagnosis of the problem and in the development of mitigation plans. Identification of gender issues that prevent efficient and sustainable use of the natural resource base, or that prevent women and men from participating fully in the search for solutions to environmental problems is essential for any intervention designed to improve specific situations. . . [E]nvironmental emergencies are not always catastrophic and unpredictable. They are often built. If we can identify issues and impacts early, we may avoid the emergencies. If we identify gender-differentiated issues and impacts, we have a better chance of developing equitable and sustainable solutions. [Patricia Thomas, Gender and Social Issues Consultant, US]

Women's work in agriculture. . . is often seen as an extension of her domestic responsibilities, rather than a separate economic activity. Distinguishing women's agricultural work from her other types of labour puts her in an economic category, which means that her participation in agriculture can be recognized in national labour statistics. Legitimating women's labour in this way makes it easier to advocate for training and education programs for women agricultural workers. These programs are essential if women are to become environmentally sound farmers. [Hillary Anderson, Women, Health and Development Program, Pan-American Health Organization]

New relations were called for between local communities and outside experts, and new practical and intellectual tools, including gender analysis. Responders recognized the need for:

- increasing women's awareness about environmental resources and the risk of disasters
- building on vulnerability analysis to link poverty, gender inequality and environmental mitigation
- sex-disaggregated data and qualitative data
- new technical interventions such as GIS to increase knowledge among decision- makers about the social and economic impacts of disasters
- more transparent and accessible data, e.g. vulnerability maps freely available through public libraries

- rebuilding after disasters with "local champions" rather than depending on outside scientists
- culturally-specific interventions building on the specific capacities of women in varying environmental and social contexts

The discussion made clear that the challenge of building more disaster-resistant communities is not simply administrative or technical but political, as both women and men must be empowered to act in ways that protect and sustain vital environmental resources.

V. How do women and men cope with the immediate and long-term challenges of natural disasters?

Broad agreement was expressed that gender inequality is a root cause of social vulnerability to disasters. Interacting with a host of other social structures and shaped by cultural and physical environments, gender relations structure people's ability to anticipate, prepare for, survive, cope with, and recover from disasters, whether the insidious losses of drought or cataclysmic earth movements.

Gendered vulnerability to the impacts of disasters begins with sheer survival, it was noted, especially among the very old and women with extensive caregiving responsibilities. Family and work roles are key issues:

> [T]he vulnerability of women is much greater because of their subordinate position in the family arising out of patriarchy and traditionally embedded cultural values. This is reflected in unequal work burden due to productive as well as reproductive responsibility, lack of control over the means of production, restricted mobility, limited facilities for education and lack of employment, inequalities in food intake relative to men, etc.[Madhavi Ariyabandu, Programme Manager-Disaster Mitigation, ITDG, South Asia]

> Sliding lands at the edges of mountains and hills because of the increasing rates of urbanization which is not properly planned by the governments [leads] to more women and men homeless. Men usually leave behind the mother-headed family to seek a job in the flourishing areas and leave the mother to carry the burden of the family alone, especially [in] those critical areas usually occupied by poor families. [Samia Galal Saad, Advisor to the Minister of State for Environmental Affairs, Cairo, Egypt]

Just as women vary in the extent and nature of their vulnerability to disaster impacts, they have "many different interests and therefore also many different coping strategies," as one participant stated. Women around the world are "de facto crisis managers" whose local coping strategies are important for emergency practitioners to understand and support. Gender analysis is needed, particularly with respect to the gendered division of labor and to psychosocial patterns, which in some contexts may limit women's responses to disaster.

> In the smallest islands of Micronesia, virtually inaccessible except by cargo ship, society functions with very clear gender roles. Men are generally responsible for things related to the ocean and women are responsible for land-based (and nearshore reef-based) activities. These everyday responsibilities translate easily into response activities of an oncoming hazard, such as a typhoon, where the men secure the structures, canoes, and objects needed for fishing, etc. and the women gather plant cuttings, prop banana trees, and gather food & water & families in a designated shelter where everyone awaits the storm. Afterwards, men rebuild structures and women and children gather the salvageable palms and food, women weave thatch, and replant the gardens. [Cheryl Anderson, Social Science Research Institute, University of Hawaii, US]

> My personal experience of natural disasters is linked to the droughts in Mali and small floods in the internal delta of the Niger, as well as the earthquake in the Naples area. . . I witnessed each time that women immediately set about satisfying primordial needs such as eating and drinking, finding proper clothing and gathering together lost children, etc. Self-help and solidarity among women were particularly common phenomena. Re-creating the next best thing to a "normal" life, i.e. organising an eating and sleeping space as

well as somewhere to accommodate children and the most vulnerable groups, was found to facilitate emotional recovery from post-crisis trauma. [Augusta Angelucci, UNDP, Italy]

Another difference between women and men is their characteristic coping strategies when faced with disasters. We (and others in the literature) have found that women tend to use helplessness coping more than men, and men use problem-solving coping more than women. . . We have also found that women believe less in the possibility of mitigation. This is probably related to their limited access to knowledge. [Nuray Karanci, Professor of Clinical Psychology, Middle East Technical University, Ankara, Turkey]

Indirect and long-term gender differences and inequalities, as well as the heterogeneity of women and men as social groups, are all too easily missed in the absence of a gender perspective. Manifestly "heroic" men may also be "extremely vulnerable following a disaster when their loss of livelihood becomes a reality," while women "often need psycho-social support later on," a respondent observed of Hurricane Mitch, the internal war in Colombia and the earthquake in El Salvador.

Women are challenged both by the immediate changes wrought by disaster and by long-term and indirect changes in gender relations. For example, a respondent wrote from South Africa, women may experience increased single parenthood, loss of land and livelihood, displacement to urban settings, and higher exposure to such hazards as urban sex work, urban environmental pollutants, and contagious diseases such as tuberculosis HIV/AIDS.

"Girls during difficult times become mature women. Their childish innocence is a luxury," a respondent from Greece remarked. Others agreed that the most significant economic and social impacts may be indirect and vary over the life course, as is clear in South Asia:

The housewives and young mothers affected from floods and displaced. . . found it more difficult to find wage labour and other income-earning opportunities. The women who had lost all their meager belongings and their life-long savings have not been able to compensate their losses even after decades. This situation has threatened their security within the family relationship. . .Children (both girls and boys) dropped out from schooling. And young girls whose families lost their savings and jewelry during the floods, which was to provide [their] dowry in marriage, either lost the opportunity, or had to delay getting married, which has serious implications for their social status, psychology and survival. . . With regard to the old, in re-settling the extended families have been broken up in many instances leaving the old more vulnerable without the family support. [Madhavi Ariyabandu, Programme Manager-Disaster Mitigation, ITDG, South Asia]

Women's work and family lives affect not only vulnerability but capacity in the face of disaster. Commenting on how women's coping skills might be developed and supported, respondents noted how often emergency management systems fail women already disempowered in male-dominated households, organizations, and communities.

In this vein, there were several responses to a query about early warning systems. It was noted that early warning systems must take into account the constraints faced by women in securing and using information. Bearing in mind the significance of local knowledge for environmental mitigation and women's extensive social networks, it is also essential to design systems taking advantage of local informal systems for exchanging knowledge and information.

[Unlike the male fishermen in Peru], the women in the village did not receive any warnings about the upcoming conditions, because the climate forecasters issued warnings to those who would be directly impacted. The result of the ENSO [El Niño]warm event was increased poverty, unemployment, and harsh economic conditions. The women in the village manage the household budgets. Had they known about the onset of ENSO, they would have saved more household funds and budgeted expenses differently to prepare for the event. For some reason (socio-cultural), the men never discussed the warnings with their wives and continued to 'blow their money in bars' without regard to their future situation. . . One of the problems with [male-dominated networks of information] is that women are primarily responsible for gardening/agriculture,

securing land-based food resources, and budgeting water resources for household consumption and gardening in these places. Without access to information, they cannot minimize risks associated with their regular activities. [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

We're finding that women farmers (particularly those who are not the head of the household) prefer seasonal climate forecast information to be made available through the extension officer or school, rather than the radio (preferred by male interviewees). The farmers state that in attempting to balance farming, child care and other domestic responsibilities, they are less able to schedule a fixed time to listen to the radio. They also prefer information to be provided on site, in an environment where queries can be handled immediately, and discussion can take place. . .This confirms a growing sense in the climate impacts and applications community that women are a crucially under-served clientele. [Emma Archer, IRI/PSU/NOAA, USA/South Africa]

[By] studying 'warning systems', be they formal and/or informal, female and/or male, sectorised by class, age and race. . .practitioners can [learn a lot] from those who are de facto crisis managers, from those who are forced to elaborate coping strategies ad hoc or in line with old traditions. Of course, 'ancient knowledge' can be 'lost' due to 'modernisation processes,' but also new knowledge is produced. . . In flood-prone areas in Argentina. . . local NGOs (the church is important) and local municipalities cooperate when water levels in the rivers are rising due to heavy rains, in order to organise evacuations. . . Victims as actors? [Susann Ullberg, Crisis Management Research and Training, Stockholm, Sweden/Merlo, Argentina]

Supporting women's efforts to act upon warnings and preparedness information is as essential as implementing more inclusive and gender-sensitive early warning systems:

Radios and TVs are not always found in the homes of some families. In some countries (Bangladesh, among others), women who are confined to the house or family plot have no access [through] radio, TV or otherwise to warning information. This may seem self-evident, but there are many examples of how this is not considered—most warning programs being designed as one-model-fits all. . . Therefore, not only is there a need to develop gender/culture/economic. . . sensitive warning systems, but also [to] ensure that the other key elements are in place, in particular focused information, education and public awareness programs and the necessary support for women and children to act on the warning. [P]reparing to leave an area about to be hit by a cyclone can mean taking with you some very cumbersome assets which are basic to survival in 'normal' times. [Fainula Rodriquez, International Institute for Disaster Risk Management, Manila, Philippines]

What responding agencies actually do before, during, and after disasters matters to women, and to men who may be hurt by gender-blind programming, for example with respect to reconstruction resources such as cash, information or health services.

In Masvingo, Zimbabwe during March 2000, I observed that women who lost their granaries to the effects of Cyclone Eline expressed difficulty at the fact that essential components of granary (kitchen) construction are attributed to men, for cash payment. The women involved did not have sufficient cash, tools, time, know how, skills or energy to complete the constructions by themselves. [Angus Graham, International Consultant, South Africa]

The main issue is really science/risk communication. A targeted awareness-raising should be promoted amongst women. There is a need to help the public help themselves. As women are generally the "household managers" (although I am aware that there are men who are also good at managing the household), it is important that they be given targeted information that can be useful for them, e.g. not to use the phone during a thunderstorm, or during a flood, go to higher ground, and if in a car do not try to drive. [Ana Lisa Vetere Arellano, European Commission – DG, Joint Research Centre Institute for the Protection and Security of the Citizen - IPSC Natural Risk Sector]

[Following hurricane Mitch in Nicaragua], a group of US male doctors arrived to give free medical attention to people affected by the floodwaters. As they spoke little to no Spanish, and I was a native English speaker with more than a year in country, I was called upon to translate.We set up a little camp around the pick-up . . . I began each session with an introduction of the doctor and myself, explaining that I was neither a doctor nor a nurse and was there merely to translate. But, inevitably the woman would start to ask my opinion on a problem or ask me not to tell the doctor the problem because "he is a man." If I had been a man, I wonder what would've happened to all of the women we worked with that day. [Sarah Henshaw, World Food Program, Nicaragua]

Threaded throughout the discussion was a sense of the need for urgent change and disagreement about the best ways forward. Disaster planning and response agencies with women in key places can "instill a vision" and effect change indirectly, an emergency manager from the US suggested, citing a bi-lingual emergency preparedness guidebook she developed to reach across cultural and linguistic barriers to all households in her state. Writing from South Africa, another professional cautioned that "The notion that women decision-makers, even at ministerial level will assist in the strengthening of women's capacity in general has been proven false in this region." Nonetheless, many would agree with the recommendation that "women in governmental structures at all levels should be increased, in particular in Ministry of Emergencies, where men dominate greatly."

Changes were advocated as well through women's community organizing, from small groups emerging in the wake of specific events to broad initiatives bringing international agreements to bear in disaster contexts. Commentators urged that women's associations be "actively encouraged to become involved in the assistance projects, thus improving their impact." An example was provided in an island community facing climate changes, where a community education campaign both targeted women as emergency communicators and benefited from local women's involvement:

> During the 1997-98 [El Niño]event, there were three locations out of seven in our study that had a few women who participated on the ENSO task forces to mitigate drought. These women were responsible for developing truly wonderful public education and awareness programs. Information was carried village-to-village. Public service announcements appeared on radios and television. The drought impacts were severe, but would have been much worse without the penetration of information that resulted in conservation programs and public health programs. The campaign to treat water before drinking (where rivers had dried considerably and ground-water was limited and/or suspect) actually reduced the recorded incidence of reported diarrheal disease significantly. From this example, it seems that targeting women with forecasts and warning may have some direct bearing on reducing the impacts of hazards. [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

Among many examples of women organizing locally in the aftermath of natural disasters, the NGO Women and Development in Armenia is remarkable for its scope and longevity. Described as a "tool for long-term challenges of natural disasters," its founders report it was born in the wake of devastating earthquakes over a decade ago. The group of nine women and four men is still in place, working with municipal workers to promote emergency planning, increasing gender awareness among the media, and fostering emergency preparedness among school children and their teachers.

> The absence of solutions and the depression after the seemed endless. We had to do something to save ourselves and to survive. We had to survive in order to find a way out for other women too, who were in the same situation. It was painful for us to be watching 80 percent of Gyumri women spending half of their time standing in lines [for] humanitarian aid, and the other half finding out where to get more of it. . . It was necessary to create, to rebuild the city and life, to come up with the initiative to increase the social participation of women. Why women? Because they were the more vulnerable part of the population. . . The condition of the city pressed us, inspired to something new. [Armine Mikayelyan and Gohar Markosyan. Women for Development. Gyumri, Armenia]

Addressing the question of women's human rights in disasters, a member of CEDAW (Convention on the Elimination of all Forms of Discrimination Against Women) noted the potential for abrogation of these rights and proposed an approach holding governments accountable if they have ratified the UN Convention on the Elimination of All Forms of Discrimination Against Women, a human rights treaty body. Institutionalizing a human rights approach would provide tools, for instance, for monitoring potential violations of women's human rights in disasters through existing CEDAW procedures:

Mainstreaming of a rights-based approaches and emphasis on women's human rights need to be prioritized at all levels of policy making and implementation in disasters. Instruments, efforts and strategies incorporating women's human rights into policy and practice at all levels can be expected to yield positive results. In this context, for instance, the inclusion of women's human rights training in disaster preparedness efforts would no doubt help lay the groundwork to this end. [Feride Acar, Middle East Technical University, Ankara, Turkey]

Finally, contributors once again argued for more community-based, inclusive, non-bureaucratic approaches to disaster management, informed by a nuanced gender perspective, respect for local issues, solutions, and leadership, and links with development theory and practice.

The strengths, knowledge and skills possessed by men and women in preparing, managing and re-building are different and valuable in their own way. Often the skills and capabilities, resourcefulness of women are ignored in the organised institutional set up of disaster response, since women are put under the category of 'helpless victims' It is vital to remove this bias and to take into consideration the specific and different capabilities men and women deploy in living with, and in managing disasters. . . It is imperative to identify and formulate locally acceptable ways of addressing the issues highlighted. [Madhavi Ariyabandu, Programme Manager-Disaster Mitigation, ITDG, South Asia}

Development organizations can take practical steps by ensuring that their policies and practices do not perpetuate these stereotypes, by involving both women and men in disaster relief work and ensuring that disaster response are sensitive to gender, age and ethnicity (such a disaggregated analysis is still not commonplace among aid and relief organizations). There is also a need for practical gender analysis tools that help demystify these stereotypes and provide practical strategies so that the potential of both women and men are realized. [Francoise Coupal, Mosaic.net International, Ottawa, Canada]

Perhaps, in addition to looking at women as managers and organizers, and thinking of ways in which we could increase their participation in the policy/research/programmatic processes, we could increase the parameters of the problem under discussion to reflect on culture, society, world view, philosophy, history, and religion too. . ..both in terms of the possibilities they offer which could be harnessed to support our efforts, but also in terms of the impact of their erosion in a "connected" world on the task of coping with all life-threatening events. [Fainula Rodriguez, International Institute for Disaster Risk Management, Manila, Philippines]

Even at their best, familiar bureaucratic approaches "engender narrow, technical solutions [which] promote a passive recipient/beneficiary view of those in the community about whom we are concerned." Perhaps the alternative models and more holistic approach recommended by many respondents can help answer a question from Canada about why so many mothers and caregivers die needlessly in disasters: " From where we should start? Or, what is stopping us from helping women?"

VI. How can the "window of opportunity" for social change following natural disasters be exploited?

Participants this week were guardedly optimistic about the potential for significantly disrupting and transforming gender relations following natural disasters

The possibilities for change were not in question, but neither were the substantial barriers to the challenge—no less than "changing the society" so that women and men "walk together in every aspect of life." Most would certainly agree with the observation from Turkey that "as physical and social space collapse" during disasters, "there is an opportunity for transforming gender roles and maintaining them in the post-disaster period." Indeed, several instances were offered of positive change. From Armenia, the NGO Women and Development targeted rural women for grassroots health education, capitalizing on the period after a major earthquake to provide more knowledge, skills, and resources to women as family health providers. Perhaps more significantly, the post-disaster period helped break women's traditional silence around health

issues related to male migration, such as sexually-transmitted diseases. Because rural women were explicitly targeted for training, they were not only more able to keep families healthy but "became surer and saw themselves as part of their problem's solution." Indian women, too, reportedly gained self-confidence following a cyclone, and some alleviation of their extensive domestic responsibilities when water management systems changed:

> Disasters can be great liberators!! While witnessing a very vocal meeting of rural women in village Srirampur, Orissa, about a year and a half after the cyclone of 1999, I was informed by the NGO there (Church's Auxiliary for Social Action) that before the cyclone, women would rarely come out and interact on social issues, let alone interact with outsiders. This changed after the cyclone, because relief packages of most NGOs, and even the government, were targeted at, or through, women. That phase really empowered them, made them amenable to interacting on social issues, and also increased their self-esteem and their status within their families and society! [Anshu Sharma, SEEDS, India]

> [In] facing disasters there are shifts in [the] division of labour and responsibilities. As reported in the case study in Sri Lanka on drought. . . during the non-drought periods, women secure [the] water requirements of the household mainly. . . through a common well in the village, which tended to dry up. . . With the onset of drought, households depended on water through bowsers provided by the local government authority, or on men ferrying [five gallon] plastic containers on push bicycles or tractors. The responsibility to ensure a regular supply of water to the household shifts from women to men during the drought season in this case. [Madhavi Ariyabandu, Programme Manager-Disaster Mitigation, ITDG, South Asia}

But many cautioned against a leap of faith. Though it was observed that, in the aftermath of the 1999 Marmara earthquake in Turkey, "women's local networks and friendships were empowering" while men more often seemed "lonely and lost," neither male nor female domains were significantly broadened or challenged. Writing after Hurricane Mitch in Nicaragua, a field worker posed the key question:

> Natural hazards present a time of change for impacted communities and individuals. Women, if allowed both culturally and personally, can make great changes in themselves and their communities. The question is, how? [Sarah Henshaw, World Food Program, Nicaragua]

What factors were seen to limit more egalitarian relationships in the post-disaster period? Respondents pointed to two major dilemmas: first, the power of unintended consequences and secondly, the lack of sustained support for gender equality.

On the first point, several respondents observed that women's status was undermined even by well-intentioned and gender-sensitive disaster response initiatives. Without informed appreciation of culturally-specific gender relations, the unintended effect of donor agencies operating in Micronesia was to undermine traditional matrilineal power over land and their contribution to the subsistence economy:

> [W]ith food assistance delivered in quantities and types inappropriate to the cultural system. . . preferences change. [W]omen do not quickly repair gardens, expectations for food assistance lead people to not gather planting materials in the next disaster, and some family members migrate to the capital to earn cash for purchasing these preferred imported food products. The government's power grows as it is seen as more important than the value of the traditional lifestyle. More men are employed in the limited cash economy than women. . . The value of subsistence work erodes---as does the socio-cultural structure that values the roles of women. Sometimes the social impacts from this can be devastating---alcoholism, domestic abuse, etc. [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

Inattention to the immediate needs and long-term interests of both men and women also produced unintended consequences in the wake of hurricane Mitch. Targeting women for food distribution and titling reconstructed homes in the names of women inadvertently increased tensions and may have contributed to violence against women:

> [M]any men worked on rehabilitation and received food aid in exchange for their work. Yet, in many cases, women went to pick up the family rations from distribution points and cooked the family meals. Many men spoke of their "payment" being given to women and couldn't understand why. . . Women's names were going to appear on the titles, and they were going to be considered the owners of the houses. . . Yet, once the titles were handed over and signed, men started permanently disappearing (not sending money home) and two women showed signs of violence. . . [T]he impact of focusing aid on women is equally damaging for the community as focusing aid on men was 15 year ago. [Sarah Henshaw, World Food Program, Nicaragua]

On the second point, respondents pointed to the need to make steps toward increased equality more sustainable. Especially for people and places "trapped in a disaster cycle," it was noted, the key issue is "to maintain the change over time, as rare events tend to become lost in memory and our institutional decision-making tends to value short-term goals (until the next election)."A short-term perspective and protection of local economic interests were observed in an example from India. While women's self-help efforts included new income-generating initiatives after the Orissa cyclone (e.g., seed banks, rice ponding, rope making), this brought them into conflict and competition with "existing players in an already saturated market." More "innovative programming" was needed to avoid setting women up for failure and undermining steps toward gender equality following disasters.

A second example of apparently progressive changes not being sustained was offered by a Greek respondent who noted that, while disasters encourage the utilization of "all available human resources (men and women)," women are only temporarily drawn into the more acclaimed public sphere in nontraditional ways:

> [T]here is a stronger involvement of women in public, social and political matters during the emergency phase than in normal periods, and also a more active participation in the efforts of the community to deal with the situation. Nevertheless, in most cases women are involved in "secondary" support operations (such as food preparation and distribution, information dissemination, child care, health and psychological support, shelter) and not in the well-publicized and media-attracting operations, such as search and rescue. Also, the involvement of women in most cases lasts until things "go back to normal." A crucial topic is how to intervene at the transaction phase to support women keeping the role they gained during the extreme emergency phase. [Miranda Dandoulaki, European Centre on Prevention and Forecasting of Earthquakes, Greece]

Case studies and commentary from respondents on the "window of opportunity" for progress toward gender equality identified a range of factors contributing both to unsustained change and to unanticipated consequences. These included:

- outside actors misinterpreting local power structures and social dynamics
- reinforcing local cultures that may in turn "promote and reinforce a disempowering role for women"
- inattention to how gender-targeted services are likely to impact men and women, respectively, over time
- short-term, self-interested perspectives on relief and recovery
- unintended program effects which undermine women's capacities
- lack of empirical knowledge (research) about short- and long-term prospects for change
- backlash against challenges to gender power
- the "paternalistic disposition of aid agencies and governments"
- insufficient control over recovery and reconstruction resources by women
- gender inequalities embedded in "normalcy" and hence fostered by the push to return to "normal" after disasters

But respondents also spoke directly and indirectly to success. To foster sustained gender equality in the wake of natural disasters, they suggested:
1) new ways of thinking about disasters;
2) gender analysis addressing men's as well as women's interests in the reconstruction period;
3) community-based planning and response; and
4) gender-equitable control over key disaster relief and recovery resources.

On the first point, respondents again affirmed the need for gender-sensitive vulnerability analysis and research grounded in women's everyday lives, perhaps based on a new and broader theoretical approach to gender and disasters. Lessons from gender and armed conflict contexts may be applicable here.

> [V]ulnerability analysis. . . is still the best approximation as far as a methodology for examining the differential vulnerability of women and men, in various cultural and socio-economic contexts. I believe that the essential, when undertaking such vulnerability analyses, is to be clear about one's assumptions on the one hand, and use multiple methods- ethnographic approaches being among the most important in my opinion. [Fainula Rodriguez, International Institute for Disaster Risk Management, Philippines]

> [R]esearchers are always saying we need to do more research but this is truly the case here. . . What factors [make social changes following disaster] empowering and liberatory…? What are the factors which lead to women's empowerment that is sustainable and gender equitable? [Maureen Fordham, Anglia Polytechnic University, Cambridge, UK]

> We should go beyond and develop new social science frameworks. It was same with women/gender studies, where several new social science frameworks emerged. It is same with the study of change, where to study current changes in the world, several globalization frameworks, world system frameworks and so on emerged. In studying disasters, gender and change we need a new post disciplinary framework. [Bahattin Aksit, Department of Sociology, Middle East Technical University, Turkey]

> [A] gender focus is indispensable in order to tap into women's unique resources. Post-conflict [and post-disaster?] situations tend to lead to a process of renegotiating gender relations, which could continue a liberalization trend, but often leads to a reversal of norms, with women losing new-gained freedom. Worse, insensitive aid agencies may strip women from their traditional reproductive rights, allowing men to rule all aspects of life. A gender focus in response development can avoid this dilemma.[Susanne Schmeidl, Swiss Peace Foundation]

On the second point, examining impacts on women alone was found not only insufficient but counter-productive. Targeting women for services without analysis of likely effects on gender relations more broadly is no solution and may lead to dangerous backlash against women:

> [G]iving to the women theoretically empowered women and ensured that the family as a unit could partake in the assistance. I had not analyzed the potential impact on the community as a whole, even though I thought I understood the individual gender roles. I learned that understanding gender roles means looking at the roles of both men and women, and the impact a potential project can have on the community as a whole. [Sarah Henshaw, World Food Program, Nicaragua]

On the third point, community-driven planning and implementation of relief and reconstruction measures was seen as essential to avoid reinforcing or strengthening social inequalities:

> [P]eople and communities that will be affected during disasters [must] have a role in designing their own programs. [In Micronesia], some of the local men designed structures using local materials (thatched roofs, wood bases, fishing nets to secure roofs, sometimes modified with reinforced concrete bases) that withheld a typhoon far better than those constructed from imported materials. Nursery programs were developed to store seeds and clippings that can be distributed for faster garden recovery. Programs were designed to distribute local foods, such as taro and root crops from neighboring islands. Program consequences should be evaluated

and the approach to planning should be *participatory.* [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

On the fourth point, respondents focusing on the long-term pointed to the need not only to increase women's access to relief and recovery resources but also their decision-making power and hence their control over these key assets. The broader political climate within which people respond to disaster plays an important role, both at the level of government policies (e.g. legislation mandating electoral gender parity) and with respect to grassroots social mobilization:

> What are the factors which lead to women's empowerment that is sustainable and gender equitable? . . . The one that clearly stands out to me is control over *resources*. The Orissa example is one where the fact that women received the family relief kits, house building grants, loans and. . . memberships, and passed on the benefits to the families made all the difference. Extending the logic, I would like to add the factor of greater participation in domestic and social-decision making. This is what seems to be at work now, when the relief phase is long over. [Anshu Sharma, SEEDS, India]

> [S]ocial mobilization during a natural or a provoked disaster should be exploited to reorient the visions [of people after disasters]. In plain times, the individualistic behaviors and attitudes tinted of selfishness don't encourage any open-minded person for a possible change. [Madeleine Memb, Journalist, Cameroon]

> [Self-help income-generating measures following South Asian cyclones] started a new social system, wherein the position of women is higher than it ever was. This appears to have been well accepted by everyone. Also important here is the role of an Indian Constitutional Amendment reserving one-third of seats in elected local governments (rural and urban) for women. Though there have been teething problems in the process, there is promise of a very positive impact. [Anshu Sharma, SEEDS, India]

From their measured discussion of relative successes and apparent failures, commentators suggested practical first steps and long-range strategies toward sustained gender equality after disasters. Using the brief "window of opportunity" to empower women, and hence reduce community vulnerability to future disasters, is a difficult undertaking but not "mission impossible."

VII. How can gender equality be integrated holistically into both disaster prevention and sustainable development initiatives?

Respondents consistently pointed out that development and disasters are deeply intertwined and cross-cut by gender concerns—as is well documented empirically, from specific disasters in particular places, if not yet incorporated into theory and practice.

Postings from development workers, government officials, researchers and others demonstrated how vital a gender perspective is in developing an integrated approach to disasters and development. This approach, like sustainable development itself, is not a panacea or an end state, but a "dynamic change, a public awareness, an environment where the role of women will be preponderant and full of meaning, with many windows of opportunity."

It was very clear to respondents, first, that the root causes of disasters cannot be divorced from development processes; secondly, that planning and action in both sectors must be integrated; and third, that gender relations significantly shape the social context of development and disasters alike.

On the first point, the "base life issues" or daily living conditions of disaster-vulnerable people were clearly traced to underlying social processes resulting in poverty, marginalization, and disempowerment. Hence, "Natural disasters need to be seen in a much wider socio-economic

context as [they] simply make more visible underlying and already existent vulnerabilities and inequities." This link was articulated in general terms and specific accounts:

> The same things that make Nicaragua vulnerable to the effects of natural hazards (poor health care, poorly constructed infrastructure, government committees/ministries that do not have the capacity, both in terms of resources and experience, to respond, etc.) are all part of structural poverty. [Sarah Henshaw, World Food Program, Nicaragua]

> [T]he poverty of the poor living in a country like Bangladesh or Somalia would be difficult to break-down into those who are poor as a result of the socio-economic conditions in their countries (most of which are also linked to the international economy, thus making a compartmentalized analysis difficult), and those who are poor because of chronic drought/flooding, slow-onset disasters or rapid-onset disasters. . . Minor shocks/stresses are chronic in many places, and greatly diminish the capacity of people to deal with life routine challenges, let alone extraordinary events. [Fainula Rodriguez, International Institute for Disaster Risk Management, Manila, Philippines]

Indeed, fundamental conditions of inequality and unsustainable development constitute a daily disaster for millions around the globe. It was suggested, for example, that apartheid was in effect an extended "disaster" for the vast majority of South Africans. As is so often the case after disasters, it too left survivors at increased risk of subsequent disasters. Lack of attention to sustainable development in planning decisions was also reported from Egypt, where development pressures also put new urban migrants at increased risk of disasters.

> Women and men who leave their traditional ways of life (often considered poor or marginal) for many reasons (e.g. politics, environmental degradation, diminishing feasibility, raised expectations of what they should be getting from life) often leave behind them their access to and control of natural resources. When they move to urban places they become more dependent on a salaried or entrepreneurial lifestyle, potentially poorer and more vulnerable without a back-up agrarian way of life. The demand for non-municipal environmental resources such as fuel wood and water certainly increases proportionally. . . resulting in over-harvesting and contamination in the immediate environments. . . [and] potential effects on ground water and waste disposal. . . Very often, the result is that families are fractured as the need for migrant work to some other place increases. [Angus Graham, Independent Consultant, South Africa]

> As a result, lots of their urban and rural planning for development is creating a real threat which can lead to a natural disasters. Supplying water with no wastewater management can create a natural disaster, especially in hilly calcareous areas as. . . acids from organic matter in the wastewater can create [over] time serious fractures, leading to land sliding—which happened in one of the suburbs of Cairo. . . Adopting the concept of sustainable development is a must if we are really serious about reducing natural disasters and minimizing their horrible economic and socio-economic implications on both men and women. [Samia Galal Saad, Advisor to the Minister of State for Environmental Affairs, Egypt]

On the second point, while development work and disaster management work are generally distinct at the organizational level, the effects of their initiatives in hazardous environments are highly intertwined. Indeed, the same errors are made by both. Whether delivered by development or relief agencies, short-term emergency relief fails to address either the root causes of poverty and inequality or the root causes of vulnerability to disasters—and must therefore fail to address interlocking vulnerabilities and capacities.

> In many situations, there is a need to implement quick relief projects, focusing on the delivery of goods for 'basic need' (i.e. food, water, shelter, health, etc.). But, in the same situations the effects of the natural hazard on the communities is a factor of chronic poverty. Therefore, short-term food aid or house building does little to address the root causes of such massive destruction. [Sarah Henshaw, World Food Program, Nicaragua]

Short-sighted relief or recovery programs, whether delivered through development projects, relief agencies or government offices, easily increase dependency and undermine local people's personal, organizational, and cultural capacities. As aid agencies often turn to women to distribute food aid, for instance, working the aid system becomes "part of women's survival strategies." In

Nicaragua following hurricane Mitch, it was reported that this created new divisions among women forced into competition over outside relief.

On the third point, it was observed that gender fundamentally shapes the conditions of daily life in which national development and particular environmental events unfold. In households and families, for example, gender hierarchy and the gendered division of labor profoundly influence how people interact with their immediate environment, as was discussed earlier in this conference. There can be no arbitrary division of gender, economics, and the environment:

> According to the Western Ukrainian experience, where floods were the results of human activity [forest cuttings], I am sure that poverty is one of the main reasons of unsustainable environmental management. Women constitute the most part of the poor in the world. Being more responsible for families' well-being, they very often use environmental resources to provide pure survival, without thinking about far future. So, the most urgent action should be taken to decrease women's poverty. [Oksana Kisselyova, Liberal Society Institute, Ukraine]

A respondent from Ethiopia noted how critical it is to understand gender equality not as a "women's affair" but as a positive "development gain" in a more equitable, sustainable and safer world. From this perspective, promoting gender equality is an integral part of promoting vulnerability reduction and more sustainable and equitable ways of living within and between the nations of the world.

> We often tend to discuss sustainable development and disaster prevention as two separate 'components'. However, fundamentally in both aims are similar. Sustainable development is not reachable and complete unless disaster prevention is an essential element in it, and disaster prevention is not something which can be discussed removed from development. Gender as an issue is in-built, and cuts across, therefore. . . in reaching gender equality, the methods of analysis and tools of application can be the same. [Madhavi Ariyabandu, Programme Manager- Disaster Mitigation, ITDG South Asia]

Discussants clearly supported the need for a gendered approach to sustainable development and disaster prevention. They called further for approaches supporting women's empowerment. The strategic recommendations made addressed the need for change in three, interconnected sectors: governments (at all levels); organizational practices (in disaster and/or development agencies or groups); and broader social changes. The need for education was the unifying theme of the discussion.

Regarding governments, respondents called for increased representation of women in government ministries dealing with environmental issues; integration of environmental planning concerns into vulnerability reduction; forms of local and national governance which accord representation and active roles to all stakeholders; policy-making more informed by linkages between gender, development and disasters; cross-national and cross-agency initiatives fostering dialogue and networking; and involving ministries of justice, environment, and women's affairs on high-level bodies recommending disaster management legislation. In the examples below, more innovative partnerships were urged between governments, civil society, and business.

> A recent good practice seen towards developing innovative avenues for earthquake affected artisans in Gujarat was one where the National Institute of Fashion Technology of India worked with the artisans to create new, market-friendly products using existing skills. Rustic ironsmiths are now producing fancy designer knives instead of only spades that they used to make earlier. Rehab is not the work of NGOs and social workers alone, but entities from other sectors need to do their bit. [Anshu Sharma, SEEDS, India]

> The island government [El Niño task forces] that included more local agencies with the broadest conception of potential impacts from increased potential for storms and drought were the most effective. And the Task Forces that included a good gender mix reached further into the public and communities than those that only

consisted of men. . . [T]he State Hazard Mitigation Forum, [with] representatives from 16 state agencies, four county governments, four or five federal agencies, three private sector programs (for now), and some general public members advises the State Civil Defense, our disaster agency,
attached to military. . . The Forum meets quarterly and shares information. . . which leads to reduced redundancy among programs and the ability to capitalize more broadly on knowledge and resources. This includes environmental and health programs which have been absent from formal disaster management considerations in the past. It seems that structures such as this in a defined "local" place could be matched by international organizations (like the ProVention Consortium coordinated by the World Bank Disaster Management Facility?) where we begin to develop holistic frameworks (at the global and local levels) that are participatory in nature, and we can begin to leverage the resources and influence to promote gender equality. [Cheryl Anderson, Social Science Research Institute, University of Hawaii]

Regarding development and disaster agencies, the views of commentators echoed the slogan "Development that is not engendered is endangered." The week's discussion suggested a number of strategies for engendering disaster and development initiatives. First, as they have throughout this conference, contributors strongly urged more community-based and participatory approaches. Lessons learned about gender in armed conflict may be applicable in many, though not all, respects. Certainly, participatory approaches are more gender equitable ways to reconstruct social life in the aftermath of natural disasters and after war, and can help articulate new visions of the future:

This bottom-up approach has the added advantage of being close to vulnerable populations which most top-heavy. . . efforts never even come close to. In addition, it increases the likelihood to involve women. . . A gender-sensitive focus can change this "invisibility" of women and allow a utilization of previously un- (or under-) tapped potential of women's resources in preventive efforts. This should also increase the likelihood of obtaining gender-sensitive information that can make responses more appropriate to groups at risk. . . It also opens up the opportunity for inviting a different set of views when deciding upon what response options might be most adequate. [Susanne Schmeidl, Swiss Peace Foundation]

Back to the future? To the degree that local initiatives are likely to be sensitive to cultural contexts and to indigenous skills and abilities, women's expertise and knowledge are more likely to be visible and valued. Non-bureaucratic programming grounded in local communities seems to engage women and men more equitably, whether the issues are environmental management, sustainable development, or disasters. Community-based approaches to managing environmental risk and disaster can be a tool for empowerment in a globalizing world. But respondents caution that basic values will have to change:

Disaster risk reduction has a direct link with environmental resource management at the community level. Can we not take lessons from the 'earlier model' where women had more control over resource management and try to recreate the same in today's context? This will include shifting the management role back to communities, particularly to women [where] they were playing a central role in the earlier model. . . and bringing back the community concepts into life in ways suitable to today's context. [Madhavi Ariyabandu, Programme Manager- Disaster Mitigation, ITDG South Asia]

An old but still relevant issue in development work in general is the participatory approach - could this not be a policy goal also when it comes to catastrophe issues? The grassroots perspective and including these issues at local levels of development planning would necessarily have to consider the cultural, economic and political divisions of gender categories. [Susann Ullberg, CRISMART Crisis Management Research and Training. Stockholm, Sweden / Merlo, Argentina]

These projects [in Gujarat, India and Northern Kenya] demonstrate that an integrated approach, based in a real assessment (qualitative rather than quantitative) of the needs and challenges faced by the community can go a long way in achieving gains where policies have failed. Empowering people, in this case, was not to give them a vote but to provide them with the tools by which they could help themselves, which in the world of globalization in which we live, is the best thing we can do. [Fainula Rodriguez, International Institute for Disaster Risk Management, Manila, Philippines]

> Without a basic change of attitudes and behaviours that value listening, participation and diversity of opinion, it will be very difficult to move to more democratic structures of decision-making that value teamwork and horizontal modes of communication that are less hierarchical and vertical. As we enter the 21st century, are command and control styles the only effective means to responding to crises and disasters effectively? If not, what changes need to take place within disaster organizations and programmes and Governments to make them more horizontal, team-based and inclusive of various voices? [Francoise Coupal, Mosaic.net International, Ottawa, Canada]

Secondly, mainstreaming gender analysis was urged as a way to avoid reinforcing inequalities and stereotypes. If only "seen as a matter of 'compliance' to ensure eligibility for funding," gender analysis is nonetheless an educational strategy which potentially fosters a more holistic approach to development and disasters. Training is needed but so are additional resources in order to encourage "buy in and commitment" from senior managers. Gender analysis tools can be used to promote gender-fair design, implementation, and evaluation of projects, to the benefit of men and women alike:

> It is time for disaster prevention initiatives and programs, starting from the policy and institutionalized mechanisms to review for their gender sensitivity, if they analyze, present and have indicators considering men's and women's need, interests and opportunities/challenges separately rather than talking about the people. [Haddas Wolde Giorgis, Centre for Human Environment, Ethiopia]

> [C]apacity building offered by disaster organizations should integrate a gender perspective in their training and develop strategies to ensure equal access to training opportunities by both women and men. . . [There is] a need to educate both *men* and women on the relevance of a gender perspective to disaster preparedness and response. [Francoise Coupal, Mosaic.net International, Ottawa, Canada]

Third, the organized efforts of people across these sectors must not only advocate but demonstrate gender equality. Increasing women's presence in emergency management may be a necessary but not sufficient step when stubborn organizational constraints limit change:

> We [may] assume that the increased number of women in a field moves us closer to gender equality and we may also assume that women add something different to managing disasters, therefore improving disaster management and risk reduction. But some counterarguments might be some studies that looked at the field of science--as increased numbers of women entered scientific professions, the science did not change because women had to adapt to the requirements of their fields to be successful. Increased numbers of women becoming part of a disaster system or structure that is rigid or inflexible may not ultimately produce social change and gender equality. . . I would dearly love to have a list of "indicators" that could convince [skeptics] of the value of promoting equality in disaster management and some methods for program evaluation that proves that a risk reduction policy is "successful" because we used a gender perspective and the disaster programs have engaged in gender mainstreaming. [Cheryl Anderson, University of Hawaii Social Science Research Institute, Hawaii, USA]

Simply increasing women's increased presence at local levels can also be illusory. While "more women are selected for development or disaster committees," a South African respondent noted, the adoption by organizations of a Western 'volunteer' mind set' often leads to the exploitation of women, whose time and skills are not fairly compensated. Others affirmed the cultural and practical constraints limiting women's access to training and involvement in community work, but urged that disaster relief teams do their utmost to ensure that both women and men are equitably involved and supported. Working toward gender equality in grassroots development and disaster work must become not simply an institutional requirement or stated goal but an everyday expectation to which all are held accountable:

> Development of participatory value structures and a constitution which insures that both genders and all members of the team are involved in the management, development and decision-making processes. . . Know what is wanted in advance, be prepared to pay for it and demand the results offered by training organisations. [Develop] community and family education programmes to. . . develop value structures and respect for the opposite gender. [Brian and Arthie Moore, Mthimkhulu Training, Durban, South Africa]

Our experience shows that equal opportunity or legal equality does not guarantee the equal benefits of women for an equitable impact of the programme. . .Conflicts between villagers, and disregard for the significance of women's participation keeps the level of women's participation [low]. . As soon as project personnel are enriched with the gender concept, community motivation and its status will be improved gradually. . . [C]ultural constraints [sometimes] prevent women from undertaking training that takes them out of the household. If training consumes time and removes women from daily life activities, then the family will be less interested to have [women participate] as it keeps them away from the family for a longer period. . . To achieve sustainability of the programme, activities. . . need to be monitored in different perspective. [Sabina Roshen, Programme Officer, Community Based Disaster Preparedness Program, Red Crescent Society, Bangladesh]

In thinking about how gender equality goals relate to sustainable development and disaster prevention, commentators returned again and again to education. Education and women's empowerment were seen as joined—not simplistically or universally, but integrally joined.

Diverse educational goals and strategies were promoted. Participants urged more careful and gender-sensitive vulnerability assessments and other ways of improving the knowledge base of "decision-makers in developing countries—and in developed countries, for that matter, since much advice seems to come from there!"

Gendered-targeted education geared to women was advised, whether through practical action tips or "hybrid knowledge" built on formal and informal expertise:

I would recommend that engineering and science education, especially in geology, chemistry, and biology, be promoted for women in disaster-prone areas. In the wake of disaster, communities want to understand the science of what has happened, and it is empowering for ordinary people to have these tools at their disposal. Hybrid knowledge, combining formal science with local knowledge of plant and wildlife populations can create a broader, more effective understanding of the impacts of disasters such as hurricanes. [Ann Larabee, Michigan State University, US]

How to involve women in reducing environmental disaster? First of all, to educate them through educational programmes at all levels (beginning from kindergartens and ending the special trainings for environmental managers), to provide awareness rising campaign in communities through mass media, NGOs etc. We have very good NGO practice (Hot Line Eco-Telephone), which provides the population with environmental information. The [majority] of calls [come from] women. [Oksana Kisselyova, Liberal Society Institute, Ukraine]

It was noted that educational exchanges can and should include women. "Local women's groups can play an important role in gender training of government agencies" and peer-exchanges between women's community groups have proven very useful:

They were used as an organizing and peer-leaning tool by Swayam Shikshan Prayog in India (Maharashtra and Gujarat earthquakes) and by the Foundation for the Support of Women's Work in Turkey (Marmara earthquake). In fact, as members of the GROOTS International network, the two NGOs were also involved in peer-exchanges, and supported and gave each other ideas after the Marmara and Gujarat earthquakes. SSP sent its staff for exchanges in Turkey to share their experiences with local women's groups, which encouraged the women to take more active roles around their housing related concerns.[Ayse Yonder, Prat Institute, Graduate Program in City and Regional Planning, New York]

In a different vein, more holistic, "humanized" forms of education were urged in order to foster more equitable relations between all people and their environment:

Sensitive Education. Education, particularly higher education, be taken out of its totally career-oriented mode and appropriately humanized to inculcate respect for living environment and fellow beings. . . The issue here is not just integrating gender equality goals in development and disaster management, but to make

the processes sensitive and humane. That would ensure integration of gender equality and much more. [Anshu Sharma, SEEDS, India]

Cultural learning from "gender respecting" communities can provide guideposts to more gender-equitable and disaster-resilient communities. It was noted that in many South African Hindu families, "both women and men are highly accepted in their roles as organisers of development and large players in disaster relief [and] leaders are found amongst both genders." As gender equality must not remain an abstract goal but be realized concretely in the organization and practices of development and disaster groups, it is important to document and share successful models and initiatives. Research-supported education about local disaster management practices is also needed.

> In order for holistic development to take place the facilitators of gender equality need to live gender equality, be gender equal and be able to teach the values that allow genders within extended families to be equal from the cradle to the grave. A study of the Hindu South African families and communities that succeed in gender equality could fast track the development of women in development/ disaster relief. This is linked to the roles played in households where men cook, serve food at functions and hold their partners in great esteem. This extends to children where an older child, irrespective of gender can care for a baby. . [Brian and Arthie Moore, Mthimkhulu Training, Durban, South Africa]

> Research into environmental disaster management strategies and techniques [is] particularly important, given that in many countries currently, any disaster management assistance comes from distant cities at best, and distant countries at the worst. . . Research into local disaster management requirements would assist both communities and governments to ensure that capacities and resources are accessible within reasonable distances and times. [Hesphina Rukato, Minerals and Energy Policy Centre, Johannesburg, South Africa]

Still others focused on education to increase women's sense of efficacy and promote social critique and social change. Socialization to prevailing inequalities disempowers new generations from charting new ways forward. Conversely, simple literacy and "basic usable education" fosters "economic independence, gender respect, [and] ability to take control of opportunity and [manage] disaster relief." Revision of schoolbooks and other materials which convey demeaning racial and gender images is needed, as are "specific and intensive information" campaigns targeting rural and illiterate women, educating them about their human rights.

> This "disaster" [of apartheid]will be perpetuated until programmes based in the cultures/beliefs of the people are introduced to grow group and individual self esteem. Until these base issues are resolved, the challenges to gender equality in major projects, disaster or developmental relief, will not be effectively integrated. . [Brian and Arthie Moore, Mthimkhulu Training, Durban, South Africa]

> The first handicap for [women's] emancipation and full integration to the society. . . remains illiteracy, aggravated today by. . . insufficient information. . . [From] my point of view, *obligatory education* of the girl child should be at the base of any strategy. Governments and NGOs all talk and pretend to work for it, but here in Africa, we still find girls who can't afford school. [Madeleine Memb, Journalist, Cameroon]

> [E]ducating and informing women about social change—what? why? who gains/losses? how to bargain for success and win?—becomes very important. Addressing the social issues in natural disaster, including women as participants and decision-makers having a voice. . . is very important. [Haddas Wolde Giorgis, Centre for Human Environment, Ethiopia]

Whether addressing the need for change in government or nongovernmental sectors, program-targeted training or consciousness-raising education, respondents see education as an indispensable step toward the social construction of safer, more equitable, and disaster-resilient communities. The possibilities are enormous:

> When women acquire positions and experience in planning and decision-making the first step to reducing vulnerability has begun. With this knowledge, I believe we instill the fact that women are one of our greatest assets. Women in leadership positions need to encourage others to be an active part of what is going on in

their communities. They have to instill a vision that is understood and supported by women and men alike. When we empower women, we provide an avenue to connect them with others who feel the same as they do. Working together the process can begin to facilitate positive changes. Like the ripples of a pebble in a pond, the effects can be far reaching. [Cathy Diehl, Emergency Management Coordinator, Utah, US]

VIII. Additional Concerns

In the final week of the conference, respondents were asked to raise new questions, further develop earlier concerns, or recommend actions. The following were among the many ideas forwarded:

- the need to specifically address the situation of refugees and displaced persons seeking to survive hazardous environments at home and during their displacement

- increased attention to women's often weak or unenforceable property rights as this relates to environmental degradation and disaster prevention

- ethical considerations in researching gendered vulnerability and capacity in risky environments, particularly when outside researchers utilize an ethnographic perspective

- the need to guard against cultural bias, e.g. assumptions of superiority about particular family forms and other traditions "outside the Western 'individualistic' paradigm"

- concern that men be "actively engaged in debates, recommendations, and follow-up action" in these areas

- study historical disaster occurrences and work closely with women's groups and schools to share this knowledge, as it "empowers[residents] with knowledge, from which they can take action"

- interact with the ISDR and other intersectoral institutions to promote gender perspectives across areas of action identified by governments, UN agencies, regional bodies, civil society, researchers, and communities

- develop specific measures (e.g. participatory postdisaster rapid assessments) "seeking out the voices of those most affected by disasters"

- develop specific mechanisms for mainstreaming gender perspectives, e.g. practical planning tools such as "concrete indicators of impacts of disasters and emergencies on men and women," indicators for measuring the effectiveness of gender analysis when it is utilized, indicators of achieving gender equality goals in project design and implementation

- the need for "specific incentives to support decisions and measures promoting gender equality"and the need for monitoring steps toward an integrated gender perspective

- clearer articulation of what is meant by "integration" or "mainstreaming" of a gender perspective and the need to document successful models: what does a gender-sensitive approach to risk reduction look like?

- link gender mainstreaming to organizational change projects, providing specific incentives, resources, and information to organizational leaders

- specific, actionable steps toward mainstreaming gender concerns coupled with recognition that this involves "change, power, challenges to the status quo" and hence the "need to nurture supportive political constituencies and seek out alliances— to remember that this is a long-term process."

IX. Conclusions and Recommendations

Three significant gaps were identified in this discussion of gender equality, environmental management and natural disaster reduction, each suggesting recommendations for change in governmental and nongovernmental approaches to hazards and disasters.

1. The everyday realities of women's and men's lives respectively are not well reflected in environmental management and disaster prevention initiatives. To address this issue, risk management practices should:

- combat gender myths that reinforce stereotypic heroic and victim images
- reflect women's central roles as natural resource managers, users, consumers, and workers
- address the root causes of women's poverty and other constraints limiting their ability to be stewards of natural resources
- take into account gendered impacts of environmental disasters, e.g. loss of life due to caregiving roles, impacts on livelihoods, expansion of domestic labor, increased violence, psychosocial stress, etc.
- incorporate knowledge of gendered barriers limiting women's access to key survival and recovery resources
- support women's organized efforts to mitigate environmental hazards and respond to natural disasters when they occur
- build upon and strengthen capacities, strengths, and resources arising from women's traditional life experiences
- incorporate knowledge about how interaction between women and men may affect the effectiveness of gender-targeted initiatives
- avoid short-term emergency assistance undermining women's economic and social status
- anticipate and address differing needs and potential conflicts among women in disaster contexts and between women and men
- respect culturally-specific practices and values affecting environmental management and disaster response

2. The knowledge needed to build more disaster-resilient and equitable communities is not in place. To address this gap, risk management should be guided by sufficient information about:

- the root causes of gendered vulnerability to environmental risks and global development processes
- how gender interacts with caste, class, race, ethnicity and other power relations to shape people's ability to mitigate risk and survive disasters

- culturally-specific patterns of response to hazard and disaster in specific places and times
- 'best practices' illustrating gender-fair and community-based approaches to the management of environmental risks
- the role of gender equality in sustainable development and natural disaster reduction
- how post-disaster opportunities can be exploited to sustain increased social equality and reduce vulnerability to future disasters
- how to work collaboratively with knowledgeable local residents using traditional as well as modern approaches to risk management
- how social science researchers, particularly qualitative researchers taking an ethnographic approach, can contribute to disaster planning and practice
- gender-differentiated patterns of vulnerability, impact, and response to extreme environmental events
- how women are affected by traditional command-and-control frameworks
- emergent interdisciplinary and interagency approaches

3. The dominant approach to hazards and disasters fails to promote more egalitarian, sustainable, and disaster-resilient communities. To address this lost opportunity, future approaches to risk management should:

- incorporate emergent programmatic approaches to sustainable development, social equality, and risk reduction which are integrated and holistic
- avoid bureaucratic "command and control" approaches disempowering those most knowledgeable about environmental risks and disasters
- foster participatory, community-driven approaches guided by a gender analysis
- engage women's community groups and other partners "outside the box" to increase dialogue and networking across sectoral boundaries
- promote the exchange of knowledge and information with local residents, including traditional or indigenous knowledge as well as scientific and technical expertise
- build on local knowledge of environmental resources to reduce risk
- integrate sustainable development objectives into all phases of risk management
- integrate risk reduction as an objective in all dimensions of development work
- integrate gender equality goals throughout the disaster process and in all sustainable development and risk reduction projects
- reflect the assumption that local residents are full and equal partners in the development of safer communities
- engage women as full and equal partners in all aspects of hazard mitigation and throughout the disaster process
- reflect culturally-specific conditions, history, and social relations impacting people's vulnerability and response to disasters
- incorporate local skills and capacities, particularly of women and others outside dominant institutional systems
- address social inequalities at risk of being reinforced during disaster response and reconstruction

Taken together, these three fault lines describe a dominant approach to environmental management and risk reduction which does not protect women and men equally or promote sustainable and safer ways of living.

At least three actionable goals follow from this analysis:

1. Increase and utilize knowledge about gender, development, and disaster in all sectors of risk reduction and disaster management:

- increase resources in support of qualitative and quantitative research with a gender perspective
- consistently collect gender-disaggregated data
- integrate gender holistically and integrally into vulnerability and capacity analysis
- develop practical tools, indicators, measurements, and incentives for incorporating gender perspectives broadly into all aspects of organizational planning and practice
- provide gender, development and disaster training and resources to emergency authorities, emergency practitioners, governmental ministries, development workers, women's groups, environmental science professionals, businesses, health workers, planners and others
- increase resources supporting the mainstreaming of a gender perspective throughout development, implementation, and evaluation
- explicitly incorporate analysis of gender issues impacting men in risky environments into training and project work
- integrate the education of girls and women about hazards and risks into development projects
- increase women's access to risk management information, e.g. through gender-targeted early warning systems
- educate and train women in environmental science, business, government, community work, and household roles about sustainable environmental resource management and disaster prevention
- utilize the experience and knowledge of women disaster survivors and women's community groups active in environmental management and disaster response

2. Promote women's empowerment in every aspect of risk reduction and disaster management:

- monitor the degree to which women's full enjoyment of their human rights is realized throughout the disaster process
- identify and address unsustainable development practices placing women at increased risk of environmental hazards and disasters
- use vulnerability and capacity analysis to identify and involve women at especially high risk in all aspects of disaster and development planning
- prioritize women's long-term strategic gender interests over short-term emergency relief measures
- identify and mitigate backlash and unintended consequences arising from gender-targeted programming
- build monitoring and accountability measures into disaster and development agencies (governmental/nongovernmental) to ensure the realization of gender equality objectives
- develop incentives to increase women's full and equal participation in disaster and development, at the grassroots level, in technical and scientific positions, and as policy-makers in governmental and nongovernmental agencies
- materially support emergent grassroots women's groups actively responding to hazards and disasters

- involve women professionals, women's bureaus, women's services, and women's community groups in collaborative, cross-sectoral initiatives to reduce risk
- document the participation of women in all aspects of development and disaster agency efforts, as managers, specialists, relief workers, recipients, and members of the community
- monitor women's access to information and other resources at the local level, with special attention to barriers at the household and community levels

3. Support gender-sensitive approaches to risk reduction and disaster management:

- increase training resources to mainstream gender analysis in all aspects of project work in development and disaster agencies
- evaluate programs for their effects on local capacities and resources, with special attention to women
- encourage the integration of risk reduction activities into community organizations, with special attention to women's community-based organizations
- initiate new partnerships involving governments, business, and civil society in disaster prevention and sustainable development
- capitalize on the expert knowledge of disaster survivors and responders, with particular attention to women's proactive efforts throughout the disaster process
- initiate cross-hazard, cross-sectoral, and community-based collaboratives involving women and other community members who are most at risk as subjects rather than the objects of risk reduction measures

These general conclusions offer a platform from which more specific and targeted action recommendations can be generated, with respect to disaster mitigation and relief agencies, development groups, emergency practitioners in the public and private sectors, governmental actors, researchers and educators, community organizers, and individuals. It is anticipated that the report of the Expert Working Group will include comprehensive action recommendations reflecting this framework.