



**United Nations Division for the Advancement of Women (DAW)  
Inter-Agency Secretariat of the International Strategy for  
Disaster Reduction (UN/ISDR)**

# **Environmental Management and the Mitigation of Natural Disasters: a Gender Perspective**

**Report of the Expert Group Meeting  
Ankara, Turkey, 6 – 9 November 2001**

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## I. INTRODUCTION

The incidence of natural, as well as related environmental disasters, has increased in the 1990s. In 1999 alone, there were more than 700 disasters with widespread economic and social damage leading to the death of approximately 100,000 people. When disasters strike, the poor and socially disadvantaged suffer the most, and are least equipped to cope with the impact. There is a direct link between environmental management and risk reduction, disaster preparedness, mitigation and recovery, as natural disasters have a long-lasting adverse impact on the environment.

Little work has been undertaken so far to explore the gender dimensions of natural disasters. It is known that due to women's proactive behaviour in the protection of well-being of their households, their involvement in community activities, neighborhood and school education, and disaster preparedness programmes, they are key actors in environmental management and natural disaster mitigation. However, they are still not fully involved in planning and decision-making processes in these areas.

The Beijing Platform for Action, adopted at the Fourth World Conference on Women (1995) recognized that the impact of environmental disasters on women and their disaster responses needed to be further investigated. Five years later, the review and appraisal of the implementation of the Beijing Platform for Action (2000) identified natural disasters and epidemics as emerging issues which deserved greater attention. It was noted that the social and economic impact of natural disasters and epidemics remained relatively invisible as a policy issue. Their impact on the status of women, gender relations and the achievement of gender equality has been almost completely neglected.

In response to the findings in the review and appraisal, the twenty-third special session of the General Assembly entitled "Women 2000: gender equality, development and peace for the twenty-first century" acknowledged an increase in casualties and damage caused by natural disasters. It raised awareness of the inefficiencies and inadequacies of existing approaches and intervention methods in responding to such emergency situations from a gender perspective. The special session suggested that a gender perspective be incorporated into disaster prevention, mitigation and recovery strategies. It also recommended that the United Nations system and international and regional organizations should assist governments in developing gender-sensitive strategies for the delivery of assistance and responses to humanitarian crises resulting from natural disasters.

The Yokohama World Conference on Natural Disaster Reduction (1994), a mid-term review of the International Decade for Natural Disaster Reduction, placed greater emphasis on the role of social sciences in research, policy development and implementation and emphasized the links between disaster reduction and sustainable development. It also recognized the need to stimulate community involvement and empowerment of women at all stages of disaster management programmes as an integral part of reducing community vulnerability to natural disasters. However, gender differences in disaster mitigation have been addressed mainly in the context of vulnerability or community involvement. Women's abilities to mitigate hazards and prevent disasters, and to cope with and recover from the effects of disasters which do occur have not sufficiently been taken into account nor developed. A ten-year review of the plan of action adopted in Yokohama will be initiated next year as part of the International Strategy for Disaster Reduction, providing a valuable opportunity to address these needs comprehensively.

The Commission on the Status of Women decided to consider the topic "Environmental management and mitigation of natural disasters: a gender perspective" as a priority theme at its forty-sixth session in 2002, and as a possible contribution to the World Summit on Sustainable Development (Johannesburg, South Africa) in September 2002. The Division for the Advancement of Women, in collaboration with Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR), and in consultation with the Division for Sustainable Development, Department of Economic and Social Affairs (DSD/DESA) organized an Expert Group Meeting on "Environmental management and the mitigation of natural disasters: a gender perspective", which took place in Ankara (Turkey) from 6 to 9 November 2001.

The expert group meeting discussed the links among gender, environmental management, natural disaster reduction and risk management and the role of different actors. It adopted a number of recommendations on policies, legislation, participation, information and capacity building, research and the role of the international community.

## **II. ORGANIZATION OF WORK**

### **A. Attendance**

The Expert Group Meeting on "Environmental management and the mitigation of natural disasters: a gender perspective " was held in Ankara (Turkey), from 6 to 9 November 2001. It was organized by the United Nations Division for the Advancement of Women, Department of Economic and Social Affairs (DAW/DESA) in collaboration with the Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR). The Government of Turkey hosted the meeting which was attended by two consultants, 11 experts from different regions, and 29 observers: seven from the United Nations system, nine from the Government of Turkey, nine from civil society and four from academia.

### **B. Documentation**

The documentation of the meeting comprised:

- two background papers prepared by consultants;
- eleven papers prepared by experts;
- five papers prepared by observers;
- and other documents (see annex II).

This report and all documentation relating to the meeting are available on-line at the DAW website ([http://www.un.org/womenwatch/daw/csw/env\\_manage/](http://www.un.org/womenwatch/daw/csw/env_manage/)).

### **C. Programme of work**

At its opening session on 6 November 2001, the meeting adopted the following programme of work (see annex III):

Opening

Election of officers and adoption of the programme of work

Introduction to the meeting

Presentation and discussion of experts' papers

Working groups on:

Gender-sensitive strategies for environmental management and risk reduction

Transforming knowledge about gender relations in environmental management and risk reduction

Enabling women's full and equal participation in environmental management and risk reduction

Introduction of draft recommendations and report in plenary

Adoption of final report and recommendations

Closing session

#### **D. Election of officers**

At its opening session, the meeting elected the following officers:

Chairperson:	Madhavi Malalgoda Ariyabandu (Sri Lanka)
Vice-chairpersons:	Samia Galal Saad (Egypt), Sengül Akçar (Turkey)
Rapporteur:	Maureen Helen Fordham (United Kingdom)

#### **E. Opening statements**

The meeting was opened by Ms. Dorota Gierycz, Chief, Gender Analysis Section, Division for the Advancement of Women, who delivered a message sent by Ms. Angela E.V. King, Assistant Secretary-General, Special Adviser on Gender Issues and Advancement of Women. In her message, Ms. King expressed her gratitude to the Government of Turkey for hosting the Expert Group Meeting on “Environmental management and the mitigation of natural disasters: a gender perspective”. She highlighted the different impact natural disasters have on women and men. Natural disasters, as she pointed out, were exacerbated by environmental degradation and environmental mismanagement resulting from the lack of community involvement, including lack of women in decision-making positions. It was particularly the least developed countries which were most affected by natural disasters as they lacked the capacity to prevent and prepare for disasters. The need to have more women as scientists, in public administration and planning, in relief efforts and reconstruction and in policy-making was particularly important. The purpose of the meeting was to explore the different impact natural disasters have on women and men and how policies should take them into account. She informed the meeting that the Division for the Advancement of Women had organized a six-week on-line discussion on “gender equality, environmental management and natural disasters” in preparation for the meeting, in which participants from many diverse backgrounds and places shared experiences and opinions. In concluding, Ms. King emphasized that experts, through their recommendations, could provide an input to the preparatory process to the World Summit on Sustainable Development (Johannesburg 2002), and that the Commission on the Status of Women would consider the topic of gender, environment and disasters in March 2002 and would make its recommendations available to the Summit.

In her statement, Ms. Helena Molin Valdes, Senior Officer for Policy Issues, Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR), stressed the need to mainstream a gender perspective into disaster risk reduction (relating to disaster prevention, mitigation and preparedness activities, as part of vulnerability reduction efforts) by including women as actors and agents of change and progress. She also pointed out the need to include a gender perspective in risk assessments and policies, addressing the roles and responsibilities of both women and men, and incorporating more women at decision-making levels. A culture of prevention needed to be based on partnership, networking, reduction of vulnerabilities, sustainable development and the application of science and technology. The speaker also emphasized that the aims of ISDR were to reduce risk and vulnerability by building partnerships for implementation with Governments, United Nations system, regional bodies, civil society, including researchers, and communities. Therefore commitment from public authorities, public awareness, and the stimulation of interdisciplinary and inter-sectoral partnerships were needed to foster better understanding and knowledge of the causes of natural disasters.

Professor Dr. Ahmet Mete Isikara, Director of the Kandili Observatory and Earthquake Research Institute at the Bosphorus University (Turkey), delivered a statement on women’s important

role in disaster preparedness, underlining that women were key holders of collective memory and social transmitters of lessons learned through generations. Dr. Isikara acknowledged the importance of women's social relations and the necessity of having their voices heard. He cited many examples of how to prepare for earthquakes and proposed that families should prepare a disaster plan based on practical steps to be taken before, during and after an earthquake.

Ms. Nevin Senol, General Director at the Directorate General on the Status and Problems of Women, Prime Ministry, delivered the statement of Mr. Hasan Gemici, Minister of State of the Republic of Turkey which welcomed all participants, and organizers from UN/DAW and UN/ISDR. In his statement, the Minister acknowledged the increasing number of natural disasters and the importance of taking vulnerabilities into account to reduce the impact of such disasters. The statement highlighted the link between vulnerability, the level of consciousness and the conditions of habitats and infrastructures. The existence of sufficient political will was also pointed out as a crucial factor in reducing vulnerabilities. The Minister's statement recalled the leading role of the United Nations in this respect, and the importance of the International Decade for Natural Disaster Reduction (IDNDR) and the Yokohama Strategy that had established the bases for a new approach to minimize the impact of natural disasters.

The importance of the Beijing Platform for Action and Beijing +5 in incorporating a gender perspective into prevention and mitigation of natural disasters was further highlighted. In his message, the Minister pointed out that after the earthquake in 1999 important projects such as the Social Assistance and Solidarity Encouragement Fund had been created. Their objective was to help women and children to return to normal life, including through the provision of legal and psychological counselling services. The speaker highlighted the fact that the full and equal participation of women in disaster relief and reconstruction efforts should be encouraged and strengthened. Some concrete achievements were noted such as the wide dissemination of the Beijing Declaration and Platform for Action and the signing of the Optional Protocol to CEDAW by the Government of Turkey that provided the background to some changes in the Turkish legal system, including in the Constitution. The Minister had also proposed the establishment of a Gender Equality Follow-up Committee in the Parliament and of Units for the Status of Women in fourteen provinces of Turkey.

### III. SUMMARY OF THE DEBATE

#### A. Background

*We tend to discuss sustainable development and disaster prevention as two separate 'components.' However, fundamentally the aims in both 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 both. Therefore, in reaching gender equality, the methods of analysis and tools of application can be the same. [Madhavi Ariyabandu, 2001]*

During the twentieth century the world has experienced unprecedented growth in population and standards of living. Many of these developments have increased stresses on the environment, and made populations more vulnerable to natural disasters. Climate change, spread of arid lands and desertification, pollution of marine and freshwaters and destruction of forests all contribute to changes in ecology of natural resources on which people depend for survival, and make them more vulnerable to weather and other geophysical risks. Global warming is increasing the intensity of major disasters.

Vulnerability reduction and disaster risk reduction are key issues. Social vulnerability to disasters is a function of human action and behaviour. It describes the degree to which a socio-economic system or physical assets are either susceptible or resilient to the impact of natural hazards and environmental changes. It is determined by the interplay of a combination of several factors, including hazard awareness, the condition of human settlements and infrastructure, public policy and administration, the wealth of a given society and organized abilities in all fields of disaster and risk management. The specific dimensions of social, economic and political vulnerability are also related to inequalities, often related to gender relations, economic patterns, and ethnic or racial divisions. Vulnerability to disasters is largely dependent on development practices that do not take into account susceptibility to natural hazards. The level of risk in relation to natural disasters in a society is determined by the levels of vulnerability, combined with the level of probability of the occurrence of a natural hazard (flood, drought, landslide, earthquake, volcanic eruptions, storm, cyclone) as well as the level and intensity of such a hazard. Risk reduction (or disaster risk reduction) therefore refers to activities taken to reduce both vulnerable conditions and, when possible, the source of the hazard, especially addressing land-degradation, drought, floods and landslides.

In combination with natural resource degradation, natural hazards are leading to an increased frequency of small- or medium-impact disasters produced by recurrent floods or minor landslides, for example, as well as slow on-set disasters such as land degradation and drought. The accumulated losses from these disasters are often responsible for even more aggregate suffering than major disasters. They do not figure in databases evaluating disaster impacts although their combined costs are considerable; some suggest that they may approximate or even exceed those associated with large, but relatively infrequent, disasters. The succession of small- or medium-scale events can accentuate the vulnerability that culminates in major disasters. Despite considerable efforts and the resources expended on disaster response, these small- and medium-scale disasters are increasing in frequency in many parts of the world. However, they have not received adequate external recognition.

More recently, there has been a growing body of evidence relating environmental degradation and competition for natural resources to many of the internal, and even transboundary, conflict

situations that contribute to many complex emergencies. Natural resource scarcity, including as a result of deforestation or drought, can create negative social effects and cause internal migration from rural areas or marginal lands or urban areas. Severe environmental stress, if aggravated by underlying social or ethnic conflict, poverty and weak governance, can contribute to outbursts of violent conflict and complex emergencies.

Strains on natural systems and local communities are increasing particularly for local and indigenous communities in the new world economy which places higher demands on fragile economic systems and institutional structures in low income countries. Economic policies and institutional changes pursuant to globalization have complex effects, and may exacerbate social inequalities and environmentally unsustainable patterns of development. In some instances, they have further increased the worldwide propensity for technological disaster. In other instances, they have provided new opportunities through exchange and opening of markets, in particular through information and communication technologies.

The urgency of taking fresh approaches to reducing disaster risk and associated social vulnerabilities is underlined by the increasing costs of disasters. Accounting only for easily quantifiable losses, the costs of disasters to development goals are extensive, diffuse, and long-lasting. Recurrent or small-scale disasters, as well as the dramatic catastrophes that capture the public imagination caused enormous and increasing loss at all levels around the globe at the end of the 20<sup>th</sup> century.

Disasters, general instability and conflicts are the most visible evidence of the result of unsustainable development practices which increase risk and make disasters more likely and deflect scarce resources from critical development needs. Sustainable development requires correction of such discordant policies, and harmonizing of environmental protection and development. Gender inequalities, if persisting in legal, social and economic institutions, can increase the hardships, discrimination, and inefficiencies, associated with disasters.

Sustainable development also requires that the natural resource base be protected and enhanced, and institutions be established to promote equitable growth, both factors which are essential for reducing disaster hazard risk and vulnerability. The components of vulnerability have been variously identified, and include elements of livelihood security and assets, personal health and access to basic needs such as food, water and shelter, and extent of social organization, preparedness and availability of safety nets. Those with access to various forms of capital (financial, physical, social, or human) are able to manage risk better. Poor people may not only face greater exposure to hazards due to factors such as poor quality construction material, location and access to information, but also have a lower capacity to cope.

Disaster response and humanitarian assistance have absorbed significant amounts of resources. If this trend were to persist, coping capacities of societies in both the developed and developing countries, are likely to be overwhelmed. In the circumstances, a practical alternative is to promote and broadly support local, national and regional programmes and initiatives under the framework of the ISDR to enable societies to become resilient to the negative impact of natural hazards, and related environmental and technological disasters.

## **B. Integrating a gender perspective into environmental management and risk reduction**

It is critical to understand the gender dimension in the development-disaster process in order to address root causes, and take risk reduction measures that are equitable and efficient. At the most fundamental level, gender is a central organizing principle in the specific cultures and societies in which risk is constructed and disasters unfold. Gender patterns also shape development patterns and social vulnerability to natural disasters, and are influenced in turn by both. First-person narratives, case studies, and accounts from the field all suggest that gender is a highly significant factor, both in the construction of social vulnerability to risk, and in people's organized responses to hazards and disasters.

Gender-based inequalities interact with social class, race and ethnicity, and age, which put some women and girls at especially high risk. Gender inequalities with respect to enjoyment of human rights, political and economic status, land ownership, housing conditions, exposure to violence, education and health, in particular reproductive and sexual health, make women more vulnerable before, during and after disasters. There are many casualties among women in disasters, in particular, if women do not receive timely warnings or other information about hazards and risks or if their mobility is restricted or otherwise affected due to cultural and social constraints. Gender-biased attitudes and stereotypes can complicate and extend women's recovery, for example if women do not seek or do not receive timely care for physical and mental trauma experienced in disasters. Women's relative longevity compared to men's and their reproductive roles can create mobility and health constraints. It is older women, in particular the very old, women with disabilities and pregnant and nursing women, and those with small children who are often most at risk, left behind or left out, or the last to leave in cases of emergency because they lack knowledge, mobility and resources. Clearly, high rates of female poverty are an important factor increasing women's risk in disasters.

Women's human rights are not comprehensively enjoyed throughout the disaster process. The economic and social rights are violated in disaster processes if mitigation, relief, and reconstruction policies do not benefit women and men equally. The right to adequate health care is violated when relief efforts do not meet the needs of specific physical and mental health needs of women throughout the life cycle, in particular when trauma has occurred. The right to security of persons is violated when women and girls are victims of sexual and other forms of violence while in relief camps or temporary housing. Civil and political rights are denied if women cannot act autonomously and participate fully at all decision-making levels in matters regarding mitigation and recovery.

Case studies indicate that women are very often highly affected by hazardous conditions and resulting disasters, for example, due to increased family and community work, loss of working space and tools, intensified care-giving responsibilities, and heightened risk of domestic and sexual violence. Women's work expands greatly during disasters, as caregiving roles expand, and their access to resources for recovery is constrained.

When women and men confront routine or catastrophic disasters, their responses tend to mirror their status, role and position in society. Most studies, for example, show that responsibilities follow traditional gender lines, with women's work carrying over from traditional tasks in the home and household, and men taking leadership positions. Although the precise actions taken by individuals may vary, men in general take on the "public" and visible sphere in crisis situations created by environmental disasters, while women manage the "private" sphere of activities where they often remain invisible to outsiders. However, many women are proactive at local levels in efforts to mitigate

hazards and strengthen the disaster resilience of households and communities. It is local people, often women, who regularly cope with all kinds of 'daily' disasters and who develop local strategies for reducing risk and responding to natural disasters.

What emerges is a picture of disaster response in which women are active in communities and households, but often marginalized by agencies and organizations responding to local needs. Their lower status and limited access to external resources available to affected communities during the response period mirrors the lower access by women to other forms of capital, from land or credit to education.

Non-governmental organizations play a leading role in disaster reduction and risk management, although many fail in terms of participation of women and the incorporation of gender issues. Other NGOs have created an enabling and facilitating environment to provide women with the support, skills, information and contacts needed to build social, economic and community assets. There is evidence that local people themselves carry out 95 per cent of disaster rescues before emergency responders from outside arrive. Examples from around the globe demonstrate how non-governmental and grassroots organizations seek to strengthen the capacities of local people and thus enhance their response.

- An approach adopted in Canada demonstrates the value of supporting women's initiatives to work collectively in neighbourhood groups. The model adopted is one of listening not telling, providing women with the skills and tools they need to meet their goals. Building such neighbourhood groups leads to resilience on a daily basis, not just in disasters.
- In Turkey, the Foundation for the Support of Women's Work (FSWW) is fulfilling an enabling and facilitating role, working through the community centres they had established before the devastating earthquake in 1999, to provide women with the support, skills, training, information and contacts needed to rebuild.
- In Armenia, disaster risk education is promoted in schools and through the mass media by a women's development group. This group emphasizes disaster mitigation and focuses on mothers and teachers fostering seismic protection skills among to children.
- In Egypt, an innovative partnership has been created in Alexandria between women's health and environmental management and will soon integrate emergency management, leading to the training of trainers. Girls are trained as 'environmental promoters', and thus empowered in the unconventional area of environmental health.
- In Nepal, the Participatory Disaster Management Programme begins by convening separate gender groups to discuss the different needs and priorities of women and men, before a joint executive committee meets to refine and endorse their input. In many groups, women are active in greater numbers than men and thus women's participation in risk reduction has increased. Furthermore, women are leading mixed-sex groups, thus demonstrating their empowerment through the programme.

While gender differences and inequalities with respect to development and disasters frequently emerge in accounts from the field and from disaster survivors, only recently have these begun to be documented scientifically. How gender matters in environmental and disaster risk management is not yet well understood, although there are clearly gender-based differences in vulnerability and in livelihood impacts, and gender-specific needs and interests during disasters.

### **C. The ‘window of opportunity’ in recovery**

Neither effective management of natural resources, nor effective policies to reduce risks or respond to natural disasters are possible if programming is not grounded in an understanding of how specific gender relations impact on, or affect, women and men in disaster contexts. This can lead to the unwitting reconstruction of gender inequalities and other dimensions of social vulnerability in the provision of emergency relief and process of long-term reconstruction. For example, failure to recognize women’s economically productive work in the informal sector may reduce their access to much needed economic recovery assistance and undermine perceptions of women as full contributors to the recovery process. Failure to recognize men’s socio-economic and emotional needs may delay men’s long-term recovery.

Generally, it is important to utilize development opportunities arising through post-disaster reconstruction for a transformation towards gender equality and empowerment. These opportunities may be missed or compromised due to an excessive focus on relief assistance. Emergency relief may be diverted from funding available for development purposes and used inappropriately in ways that discourage independence and undermine local coping strategies. ‘Donor fatigue’ following repeated humanitarian crises, resulting in reduced levels of outside relief assistance, may reduce already limited funds available for mitigating known hazards and preparing for disasters. The result, too often, is the reconstruction of vulnerability rather than the promotion of more equitable and sustainable conditions during the post-disaster “window of opportunity” for social change.

In order to utilize the disaster-related experience, at least two opportunities need to be exploited. First, disasters can highlight particular areas of vulnerability, including gender-based vulnerability, that need to be reduced through more sustainable environmental, economic and human development. Second, immediately following a disaster, the political climate may be conducive to much needed legal, economic and social change which can begin to reduce structural vulnerabilities, for example in such areas as governance, land reform, skills development, employment, housing and social solidarity. There can be long-term benefits from post-disaster economic changes. For example, small island economies previously dependent upon a single crop may leverage outside assistance to expand their economic base, thus increasing job opportunities for women and men.

With respect to gender, it is often the case that disaster recovery efforts do not recognize women’s capabilities, and can in fact reinforce or exacerbate existing gender and other social inequalities. Yet many opportunities arise in the post-disaster period to build women’s capacities and challenge gender stereotypes, for example of women as passive victims and men as invulnerable heroes. Women often take on added responsibilities in the household and community following disasters, through which they may acquire or develop new skills and overcome internalized barriers to achievement. Men’s traditional roles may also expand to include them more directly in the care of dependants or management of water resources. Increased housing security, non-traditional skills training, political mobilization and other positive changes for women may follow in the wake of even the most destructive disasters if structural changes are envisioned and supported.

#### **D. Steps to promote disaster reduction and environmental management from a gender perspective**

Reducing disaster risks involves the introduction of measures to avoid (prevention) or limit (mitigation and preparedness) the adverse impact of natural hazards and related environmental and technological disasters. Preparedness involves measures taken in advance to ensure an effective response to the impact of disasters. Integrating gender concerns into risk reduction and environmental management is a new direction for which there is as yet little documentation. This is particularly relevant for the important area of preparedness and warning where much of what is known is anecdotal. Integrating these areas means challenging a number of existing boundaries between ways of thinking and working, and between distinct institutional responsibilities related to disaster risks reduction. However, the need for such connections is clear and urgent when seen in the context of sustainable development.

There are major gaps in research on the linkage between gender, environmental management and disaster risk reduction at all levels, from climate change to local, small emergencies. There is insufficient targeted research regarding the relationship between climate, natural hazards and related environmental vulnerability as well as the coordinated application of the results generated by research programmes at the national and international level. This includes, in particular, international cooperation to reduce the impact of climate variables, such as El Niño and La Niña, as well as desertification and drought.

The dearth of research on how gender relations affect risk accumulation processes is accompanied by the fact that the existing literature on gender and disasters focuses almost exclusively on impact and response. The few existing case studies which clearly demonstrate and provide evidence of the important role that gender plays in the configuration of risk have not been systematically compiled and analyzed from a comparative perspective. Future research needs to highlight comparative levels of risk in women and men, and trends in disaster risk accumulation, identifying the contribution of different factors to its configuration. The scarcity of data disaggregated by sex on disaster and environmental management is particularly daunting.

Moreover, the sparse research that does exist is not disseminated widely. There is a lack of effective dissemination strategies to ensure that research results are accessible to policy makers and planners at every level, not only to international organizations but also to national and local government agencies, non-governmental organizations and at the grassroots level.

Too few efforts have been made to develop, test and validate tools, methodologies and other instruments for factoring gender analysis into local level environmental risk management. Such efforts could include participatory diagnosis, training methods, the use Geographical Information Systems (GIS) and others. Where such instruments have been validated it would be critical to train those involved in programme design and implementation in their importance, relevance and application. For example, GIS have been proposed and utilized for mapping elements of hazard and vulnerability and have the potential to improve the effectiveness of risk management at the local and national levels. However, the inclusion of social variables, including gender, is still at an early developmental stage.

In the same vein, a number of analytical frameworks have been developed to assist in gender-sensitive planning or project design and gender mainstreaming. These include the Capacities and Vulnerabilities Analysis (CVA) which acknowledges people's strengths and abilities and not just their

susceptibility and exposure to hazard and disaster. Another framework is the Social and Gender Analysis (SAGA) or Socio-Economic and Gender Analysis (SEAGA) which attempts to re-insert women and disadvantaged social groups into development processes as agents of transformative change, rather than merely as beneficiaries.

Disaster recovery and mitigation initiatives offer clear opportunities to transform gender relations which limit the ability of both women and men to anticipate, survive, cope with, and recover from the effects of disasters. To capture these possibilities, it is vital to envision and support creative strategies for reducing backlash and promoting sustained change. It is within this broad context that the need for a holistic and gender-sensitive approach to sustainable development and natural disaster reduction and the implications of this framework need to be addressed.

## **IV. RECOMMENDATIONS**

Sustainable development as a result of sound environmental management is the starting point for disaster risk reduction and the two cannot be separated. Disaster risk management should be embedded in the overall development process using a gender-sensitive and cross- sectoral approach.

### **A. Policies and programmes**

Governments at all levels, international organizations, including the UN system, donors, with the assistance of non-governmental organizations and other actors in civil society and the private sector, as appropriate, should:

1. Make sound environmental management, risk management and gender equality an integral part of sustainable development and vice-versa;
2. Create and implement, with the involvement of community groups and women's groups, comprehensive rural and urban development strategies, and land use plans, which provide opportunities to mitigate damages caused by hazards;
3. Include gender-based hazard mapping and social and environmental risk assessment at the appraisal stage of all development projects, involving women and men equally at all levels of the assessment;
4. Systematically include hazard proneness and gender-based vulnerabilities in environmental impact assessments and formulate disaster reduction measures where appropriate, with particular regard to the protection of lifeline infrastructure and critical facilities;
5. In rural development programmes for disaster-prone areas, promote agricultural technologies and give specific regard to addressing from a gender perspective environmental degradation hazards which threaten food-security;
6. Recognize the occurrence of frequent and on-going small and medium scale environmental emergencies, and adapt gender sensitive disaster management policies and programmes accordingly;
7. At the highest levels of government and international organizations, signal the importance of a gender-sensitive approach to all disaster management actions to inspire institutional change and make gender mainstreaming a reality, including through the use of leadership and vision statements, reward systems, and celebration of good examples and successes. The United Nations should develop an initiative to highlight the role of management in operationalizing gender mainstreaming in these areas;
8. Encourage institutions to use formal guidelines to promote gender-sensitive environmental policies and programmes and apply gender mainstreaming tools where they exist;
9. Integrate gender-sensitive and cross-sectoral approaches into contingency planning, using an inclusive process that strengthens relationships and partnerships between all actors;
10. Promote the inclusion of gender-sensitive environmental management and disaster risk reduction into the Agenda of the World Summit on Sustainable Development and the draft Johannesburg Plan of Action.

## **B. Budgeting and finance**

Governments at all levels, international organizations, including the UN system, donors, with the assistance of non-governmental organizations and other actors in civil society and the private sector, as appropriate, should:

1. Apply gender budgeting methods to environmental management and disaster risk reduction activities and explicitly support the socioeconomic and gender components of projects;
2. Establish innovative gender-sensitive financing mechanisms and other resources to support local authority and community initiatives for environmental management and risk reduction to reduce the frequency and occurrence of disasters;
3. Develop codes of conduct for private sector enterprises such as insurance companies, to hold them accountable to both women and men on equal terms with respect to post-disaster compensation for human and property losses;
4. Promote interventions that would expand women's livelihood opportunities and reduce their vulnerabilities to disasters;
5. Encourage enterprises and business councils to envision and operationalize environmental management and risk reduction in a gender-sensitive manner;
6. Encourage the private sector to provide local employment and stimulate sustainable socio-economic development to improve the quality of life for women and disadvantaged groups;
7. Increase resources in support of qualitative and quantitative research with a gender perspective;
8. Support the establishment of an extra-budgetary research fund on environmental management and disaster risk reduction, under the authority and responsibility of the United Nations. The access to such a fund should be contingent upon the acceptability of comprehensive proposals which take into account the socio-economic and gender foundations that underlie disaster risk.

## **C. Legislation and human rights**

Governments at all levels, international organizations, including the UN system, non-governmental organizations and other actors in civil society, as appropriate, should:

1. Strengthen administrative and legal measures to support gender-sensitive environmental management and disaster risk reduction;
2. Monitor the full enjoyment by women of their human rights throughout the disaster cycle and revise, where appropriate, national legislation and policies with a view to ensuring their consistency with existing international norms and standards;

3. Introduce and/or implement legislation, assign responsibility and accountability to all actors who create disaster risks;
4. Establish mechanisms for addressing women and men's grievances in disaster contexts;
5. Protect, promote and ensure women's equal right to land, and raise awareness of the importance of women's land ownership for reducing disaster vulnerability, and facilitating recovery from disasters;
6. Adopt legislation that recognizes both women and men as heads of households for post disaster entitlements such as land, housing and all types of financial and in-kind compensation;
7. Invite the Committee on the Elimination of Discrimination against Women to request statistics and other kind of information from States parties to the Convention on the Elimination of All Forms of Discrimination against Women, on how they ensure the full enjoyment by women of human rights in disaster circumstances and on women's participation at all levels of environmental management and disaster risk reduction;
8. Encourage the Committee on the Elimination of Discrimination against Women to draft a General Recommendation on women and environmental management and disaster risk reduction which would provide a comprehensive analysis of the relationship between women's human rights and the circumstances, problems and opportunities women encounter with respect to their human rights in all phases of disaster;
9. Provide information on the complaint and inquiry mechanism under the optional protocol to the Convention on the Elimination of All Forms of Discrimination against Women.

#### **D. Participation, partnership and community involvement**

Governments at all levels, humanitarian and international organizations, including the UN system, the private sector, non-governmental organizations, including community-based organizations, as appropriate, should:

1. Enhance women's participation in decision-making in public administration and in governmental structures at all levels, so women can play a key role in defining building standards, land and property markets, land and housing taxation, planning processes and infrastructure construction and management in order to prevent disaster emanating from risky land use and environmental stress;
2. Hold local governments accountable for achieving gender balance in decision-making on natural resources management, environmental management and disaster risk reduction;
3. Involve more women in risk reduction activities; expand opportunities for women to participate in decision-making and assume leadership roles in organizations working in sustainable development and disaster risk reduction (through exchange of visits, provision of meeting space, field office visits, networking);

4. Foster community-driven, instead of individual beneficiary, approaches to environmental management and disaster risk reduction by centrally involving local stakeholders (local governments, community based organizations) and forging public-private partnerships, strengthening existing social safety nets and security schemes;
5. Make local residents full and equal partners in the development of safer communities and incorporate indigenous knowledge, skills and capacities, particularly of poor women and other disadvantaged groups, into environmental management and disaster risk reduction;
6. Initiate cross-hazard, cross-sectoral and community-based collaboration involving women and other community members who are most at risk as subjects rather than objects of risk reduction measures;
7. Involve women professionals, women's bureaux, women's services, and women's community groups in collaborative, cross-sectoral initiatives to reduce risk; specific efforts should be made to empower women and identify their potential for transformation towards sustainable development and gender equality;
8. Recognize the expertise of disaster survivors and empower them in the management of social and environmental hazards and prevention of disasters;
9. Target disadvantaged groups and households and raise their awareness of women's human rights and the critical role women play in coping with natural disasters.

#### **E. Media**

Governments at all levels, international organizations, including the UN system, mass media, the private sector and civil society should:

1. Develop public awareness programmes and campaigns on the relationship between sustainable development, natural hazards, disaster vulnerabilities and gender relations to enhance disaster reduction measures;
2. Develop media campaigns on a gender perspective in environmental and disaster matters through providing appropriate information and language for media use;
3. Make efforts to combat gender stereotypes and biases and the lack of gender perspective in government programmes, non-governmental organizations' activities and in the media; eliminate gender myths that reinforce stereotyped representations of women as either heroines or victims in disasters.

## **F. Information and dissemination**

Governments at all levels, international organizations, including the UN system, the private sector, academia, non-governmental organizations and community-based organizations, as appropriate, should:

1. Adopt gender-sensitive strategies to generate an on-going two-way information flow between central government and the local level to create dialogue and feedback mechanisms relevant to disaster risk management;
2. Recognize the right to freedom of information and take into account gender differences in the understanding of women and men about their respective capacities and vulnerabilities in disaster contexts;
3. Commission and deliver warning and environmental management information adjusted to the needs of users, rather than what the generators of the information want or feel the users should have;
4. Increase women's access to risk management information through gender-sensitive early warning systems and target specific social groups for warning information to ensure that gender-specific needs and circumstances are recognized;
5. Collaborate in the creation of networks that promote community access to gender-sensitive information and communication technologies supporting information exchange on environmental management and disaster risk reduction;
6. Establish appropriate channels and mechanisms for information flow and dialogue that can be accessed by women and men in disaster affected areas;
7. Collect, preserve, utilize and disseminate cultural memory and beneficial traditional skills and knowledge (e.g. oral histories, posters, admonitions, legends), ensuring the protection of women's and men's intellectual property rights;
8. Establish and enact freely accessible data resources and search engines for all available gender-based information on environmental management and disaster risk reduction;
9. Create and adapt effective methods of information dissemination to a wide range of audiences (e.g. international organizations, ministries and government bureaux, grass-roots organizations) with a view to promote appropriate language and illustrations and with effective outreach to the media;
10. Create mechanisms for information exchange, including through use of survivors as experts and resource persons, exchange of visits and sharing of experiences among actors at various levels, e.g. governmental institutions, non-governmental organizations and grass roots organizations.

## **G. Education, training and capacity building**

Governments at all levels, international organizations, including the UN system, the private sector, academia, non-governmental organizations and community-based organizations, as appropriate, should:

1. Develop a programme of holistic and gender-sensitive training incorporating scientific and socio-cultural dimensions through the creation of manuals that link scientific and socio-cultural data and the preparation of curricula in both environmental management and risk mitigation;
2. Support capacity building at local levels including through identifying women's and men's needs and opportunities, elaborating and selecting appropriate training materials and methodologies, establishing collaborative partnerships with training institutions, facilitating workshops, monitoring results, and using the results of systematization and knowledge networking;
3. Incorporate gender equality goals into every aspect of capacity-building and strengthening of institutional arrangements to address disaster risk reduction as an ongoing function, including through the adoption of legislation related to reducing risk, covering land-use regulation, building codes and re-enforced links to environmental protection;
4. Provide gender, development and disaster management training and resources to emergency authorities and practitioners, ministries, sustainable development workers, women's groups, environmental science professionals, businesses, health workers, planners and others;
5. Establish, in support of the Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR) and its goal of increasing public awareness and participation, a practical education initiative/platform supporting an integrated and gender-sensitive approach to environmental management and disaster reduction;
6. Increase public awareness on how to reduce vulnerability to hazards in the formal and non-formal education and through public information campaigns, education and multi-disciplinary professional training.
7. Promote, through ministries of education and international organizations, the integration of gender and disaster risk management perspectives into all formal and informal educational interventions in the areas of development and disaster;
8. Promote the education and training of women in environmental and natural sciences and enhance women's participation as specialists in spheres where men dominate (e.g. in hazard and disaster assessments, occupational health and safety, science and technology, emergency service, civil protection), across all levels of government and in emergency services and professions.

## **H. Research**

Governments at all levels, international organizations, including the UN system, academia, non-governmental organizations and the private sector, as appropriate, should:

1. Introduce a gender perspective into ongoing research on the relationship between climate, natural hazards, disaster and related environmental vulnerability, and foster the coordinated application of these results;
2. Encourage the utilization of gender-sensitive indices and indicators as important tools for assessing environmental vulnerability and risks, to provide women and men in communities exposed to disaster risk with accurate information about impending hazards as early as possible, and to support women to act upon warnings in a timely and appropriate manner to reduce the probability of suffering, personal damage, death and property losses;
3. Support research and analysis, from a comparative perspective, on how gender contributes to the configuration of disaster risks;
4. Undertake a comparative analysis of gender, across cultures, as a factor in the social construction of vulnerabilities and disasters at varying scale, and throughout the disaster process;
5. Ensure that particular attention be given in research to continuously occurring small- and medium-scale disasters which represent a particular challenge for communities at risk; identify and analyze gender differences in coping strategies including different experiences of local level risk management;
6. Undertake a comparative study of national machineries for disaster preparedness, response and mitigation, focussing on the role of women and other affected groups of actors and communities;
7. Support studies of gender-sensitive environmental management and disaster risk reduction, and make their outcomes available and accessible to the community to promote concrete actions; the reward system within academic institutions should be changed to encourage such approaches;
8. Disseminate comparative international research results to policy-makers and planners in all agencies involved in disaster risk management, particularly at the local level;
9. Document lessons learned and best practices from effective community-based strategies where women have been involved in planning and decision-making; compile them in such a way as to provide guidance for policy makers and programme planners;
10. Support community-based social and economic assessment from a gender perspective in order to establish baselines enabling the systematic measurement of the impact of disasters of any scale on livelihoods at the community level.

## **I. Methodologies and data collection**

Governments, international organizations, including the UN system, academia and civil society, as appropriate, should:

1. Make efforts to develop, test and validate tools, methodologies, indicators and other instruments for including gender analysis in disaster risk management at local level. This may include participatory action research and diagnosis, training methods, the use of Geographical Information Systems (GIS) and others for mapping elements of hazard and vulnerability, with potential to improve the effectiveness of disaster risk management at the local and national levels;
2. Address the needs of women and men in any given situation in vulnerability assessments, including through demographic, socio-economic and environmental information, disaggregated by sex and age, as well as information on ethnic and cultural differences that are a necessity for risk mapping;
3. Collect data disaggregated by sex and information related to environmental and disaster risk management, including gender aspects of climate change, biodiversity and other major international environmental concerns;
4. Collect demographic and socio-economic data disaggregated by sex on disaster occurrence and associated loss including data on the impacts of natural disaster on the employment of women and men in the formal and informal sector.

## **J. Action at the international level**

Governments at all levels, international organizations, including the UN system, and financial institutions, as appropriate, should:

1. Report to existing and future international monitoring bodies, including human rights treaty bodies on cross-sectoral and gender-sensitive environmental management and disaster risk reduction strategies and activities, in particular within the International Strategy for Disaster Reduction and the ten-year review process to the Yokohama Disaster Reduction Action Plan for a Safer World;
2. Establish financing facilities and provide access to other financial and human resources to local governments, non-governmental organizations and community based organizations in order to implement gender-sensitive environmental management and disaster risk reduction strategies and activities;
3. Apply a gender analysis to environmental management and disaster risk reduction and include a gender perspective in the negotiation positions on international agreements (on global trade, environment and biodiversity, climate change, etc.);
4. Include technological and conflict-induced disasters in all disaster risk reduction activities and consider their gender dimension.

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## ANNEX II

### LIST OF DOCUMENTS

[http://www.un.org/womenwatch/daw/csw/env\\_manage/](http://www.un.org/womenwatch/daw/csw/env_manage/)

#### A. PAPERS BY EXPERTS

- EGM/NATDIS/2001/EP.1 *Gender mainstreaming guidelines for disaster management programmes*  
Prepared by Angus Graham (South Africa)
- EGM/NATDIS/2001/EP.2 *Tools for change: emergency management for women*  
Prepared by Lynn Orstad (Canada)
- EGM/NATDIS/2001/EP.3 *Environmental management and natural disasters mitigation: Middle Eastern gender perspective*  
Prepared by Samia Galal Saad (Egypt)
- EGM/NATDIS/2001/EP.4 *Women's human rights in disaster contexts: How can CEDAW help?*  
Prepared by Feride Acar (CEDAW Member) and Gamze Ege (Turkey)
- EGM/NATDIS/2001/EP.5 *Challenging boundaries: A gender perspective on early warning in disaster and environmental management*  
Prepared by Maureen Fordham (UK)
- EGM/NATDIS/2001/EP.6 *Women's technological innovations and adaptations for disaster mitigation: A case study of Charlands in Bangladesh*  
Prepared by Mahjabeen Chowdhury (Bangladesh)
- EGM/NATDIS/2001/EP.7 *Risk management: An alternative perspective in gender analysis*  
Prepared by Nora Sequeira Munoz (Costa Rica)
- EGM/NATDIS/2001/EP.8 *Earthquake mitigation from a gender perspective in Armenia*  
Prepared by Armine Mikayelyan (Armenia)
- EGM/NATDIS/2001/EP.9 *The relevance of considering a gender perspective in damage assessment and recovery strategies: A case study in El Salvador, Central America.*  
Prepared by Angeles Arenas Ferriz (Cuba/Spain)
- EGM/NATDIS/2001/EP.10 *Integration of public administration and the science of disasters*  
Prepared by Corazon Alma de Leon (Philippines)

EGM/NATDIS/2001/EP.11

*Grassroots Women's Collectives – Roles in post – disaster effort: potential for sustainable partnership and good governance (Lessons learned from the Marmara Earthquake in Turkey)*  
Prepared by Sengül Akçar (Turkey)

## **B. PAPERS BY OBSERVERS**

EGM/NATDIS/2001/OP.1

*The regenesis of traditional gender patterns in the wake of disaster*  
Prepared by Susanna M. Hoffman

EGM/NATDIS/2001/OP.2

*Gender and environment: lessons to learn*  
Prepared by Irene Dankelman

EGM/NATDIS/2001/OP.3

*Responding to earthquakes: people's participation in reconstruction and rehabilitation*  
Prepared by Prema Gopalan

EGM/NATDIS/2001/OP.4

*The ILO response to natural disasters*  
Prepared by Jayasankar Krishnamurty

EGM/NATDIS/2001/OP.5

*Participatory Disaster Management Programme*  
Prepared by Man B. Thapa

## **C. BACKGROUND PAPERS**

EGM/NATDIS/2001/BP.1

*Environmental management and disaster risk reduction: a gender perspective*  
Prepared by Shubh Kumar-Range

EGM/NATDIS/2001/BP.2

*Gender equality, environmental management, and natural disasters reduction. Results of the on-line discussion on gender equality, environmental management and natural disaster mitigation*  
Prepared by Elaine Enarson

### ANNEX III PROGRAMME OF WORK

Monday, 5 November 2001

7:00 p.m. Registration of participants

Tuesday, 6 November 2001

8:30 – 9:30 a.m. Registration of participants

9:30 – 10:30 a.m. Official opening ceremony

Message from Ms. Angela E.V. King, Assistant Secretary-General,  
Special Adviser on Gender Issues and Advancement of Women,  
United Nations

Message from the United Nations Secretariat for the International Strategy for Disaster  
Reduction (ISDR)

Statement by Prof. Dr. Ahmet Mete Isikara, Director of Kandilli Observatory and  
Earthquake Research Institute, Bosphorus University

*Message from the Honorable Mr. Hasan Gemici, Minister of State of the Republic of  
Turkey*

10:30 – 11:00 a.m. Break

11:00 a.m. – 11:30 p.m. Election of officers and adoption of the programme of work  
Introduction to the meeting

11:30 – 12:15 p.m. Shubh Kumar Range (India): *“Environmental management and disaster risk reduction  
and mitigation: a gender perspective”*

12:15 – 1:00 p.m. Elaine Enarson (USA): *“Results of the on-line discussion on gender equality,  
environmental management and natural disaster mitigation”*

1:00 – 2:30 p.m. Lunch

2:30 – 4:00 p.m. Panel I: *“The link between environmental management and natural disaster reduction:  
a gender perspective”* - Presentations by experts:

Samia Galal Abdel Hamid Saad (Egypt): *“Neglect of environmental dimensions and  
gender equality in urban and rural planning and its impact on natural disasters”*

Maureen Helen Fordham (United Kingdom): *“Challenging boundaries: A gender  
perspective on early warning in disaster and environmental management”*

Mahjabeen Chowdhury (Bangladesh): *“Women’s technological innovations and adaptations for disaster mitigation: a case study of Charland in Bangladesh”*

4:00 – 4:15 p.m. Break

4:15 – 5:30 p.m. *Presentation by observers followed by general debate*

### **Wednesday, 7 November 2001**

9:30 a.m. – 11:00 a.m. Panel II: *“Disaster reduction and risk management from a gender perspective”*-  
Presentations by experts:

Nora Sequeira Munoz (Costa Rica): *“Risk Management: An alternative perspective in gender analysis”*

Angus Graham (South Africa): *“Gender mainstreaming guidelines for disaster management programmes –A principled socio-economic and gender analysis approach”*

Lynn Orstad (Canada): *“Tools for change: emergency management for women”*

Armine Mikayelyan (Armenia): *“Earthquake mitigation from a gender perspective in Armenia”*

11:00 a.m. – 11:15 p.m. Break

11:15 a.m. – 1:00 p.m. Presentation by observers followed by general debate

1:00 – 2:30 p.m. Lunch

2:30 – 4:00 p.m. Panel III: *“The role of different actors in disaster reduction and risk management”* –  
Presentations by experts:

Angeles Arenas Ferriz (Cuba/Spain): *“A gender perspective in damage assessment and recovery strategies“*

Sengül Akçar (Turkey): *“Grassroots women's collectives - roles in post-disaster efforts: Potential for sustainable partnership and good governance”*

Madhavi Malalgoda Ariyanbandu (Sri Lanka): *“Gender concerns within the alternative perspective to disasters: the case of south Asian countries”*

Feride Acar (CEDAW): *“Women’s human rights in disaster context: How can CEDAW help?”*

4:00 – 4:15 p.m. Break

4:15 –5:30 p.m. General debate, establishment of working groups

## Thursday, 8 November 2001

9:30 – 11:00 a.m.	Working groups on <ol style="list-style-type: none"><li>1. Gender sensitive strategies for environmental management and risk reduction</li><li>2. Transforming knowledge about gender relations in environmental management and risk reduction</li><li>3. Enabling women's full and equal participation in environmental management and risk reduction</li></ol>
11:00 – 11:15 a.m.	Break
11:15 – 1:00 p.m.	Working groups continue
1:00 – 2:30 p.m.	Lunch
2:30 – 4:00 p.m.	Working groups continue
4:00 – 4:15 p.m.	Break
4:15 – 5:30 p.m.	Reports from working groups to plenary

## Friday, 9 November 2001

9:30 – 11:00 a.m.	Introduction of draft recommendations in plenary
11:00 – 11:15 a.m.	Break
11:15 a.m.–1:00 p.m.	Completion of recommendations and report by the drafting committee
1:00 – 2:30 p.m.	Lunch
2:30 – 3:45 p.m.	Completion of recommendations and report by the drafting committee
3:45 – 4:00 p.m.	Break
4:00 – 6:00 p.m.	Adoption of final report and recommendations, followed by closing session.