

**United Nations
Division for the Advancement of Women (DAW)
International Strategy for Disaster Reduction (ISDR)
Expert Group Meeting on
“Environmental management and the mitigation of natural disasters:
a gender perspective”
6-9 November 2001
Ankara, Turkey**

Gender and Environment: Lessons to Learn

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Acknowledgements

This article is based on experiences and studies of many people: thank you all for sharing those with us. A special word of thanks to the communities and women who enable us to understand reality of life and the consequences of our endeavours better. Jeroen Dankelman, many thanks for helping me with the drawing of the figures for this article.

1. Introduction

People live in a livelihood with all its specific environmental, human, social, economic and cultural characteristics. (Scoones, 1998) Everywhere the physical environment differs. But also the set-up of society is very differentiated: there are women and men, young and older people, people from different classes, castes, and religious and cultural backgrounds. This article focuses on the differentiated relationships between men and women and their environments. It is based on own experiences and studies - mainly in India and other countries in the world, literature and documentation.

Internationally the attention for gender and environment issues has grown significantly during the past decades. After the first UN Conference on Environment and Human Settlements in Stockholm in 1972, the Women's Decade (1975-1985) started. That found its conclusion during the UN Conference on Women in Nairobi in 1985 and the parallel NGO Forum. At both these occasions for the first time attention was asked for women's position in relation to environment and natural resources at the international level. During the process for the preparations of the UN Conference on Environment and Development (UNCED), Rio 1992, many women's organizations and individuals played a major role in putting gender issues on the agenda and finally in Agenda 21. It was underlined that environmental sustainability for life on this planet was unthinkable without considering the women who make up more than one-half of the world's population. At the World Summit for Social Development, in Copenhagen in 1995, women were able to bring worldwide attention to the fact that the majority of people living in poverty are women and that the majority of women are poor. It was highlighted there, that women must be involved in decision-making to bring about the necessary changes. (Friedlander, 1996)

The Fourth UN Women's Conference in Beijing (September 1995) resulted in the 'Platform for Action' - which was in 1998 endorsed by 70% of the world's 187 governments that adopted this agenda for action. (WEDO, 1998) A special section (K) is included in the 'Platform for Action' on Women and the Environment. It calls upon governments (at all levels), international organizations, NGOs and private sector institutions, (1) to involve women actively in environmental decision-making at all levels, (2) to integrate gender concerns and perspectives in policies and programs for sustainable development, and (3) strengthen or establish mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women. (United Nations, 1995)

Many development organizations already focus for more than three decades on specific theme-areas, such as gender, human rights and environment, in order to promote sustainable development for people, communities and countries. In each of these areas initiatives are supported and promoted; such as support to women's organizations, gender sensitization processes within organizations, sustainable land-use-activities or environment and development legislation, awareness-raising, advocacy and lobbying.

The reality in which people live, shows, however, that these issues can not be dealt with in an isolated or purely sectoral way. In life you can not separate social and physical

aspects. Therefore, it is very important and relevant to also work on these issues in an integrated way, looking at the linkages (and non-linkages) which exist. It is in a country like India, for example, that already in the 1970s - beginning 1980s several efforts took place, which made linkages between these themes more visible: the activities of the Chipko-movement in the Garhwal and neighboring regions of the Himalaya, in which many women participated in an environmental struggle, or the State of India's Environment report (CSE, 1985) which described the actual relationships between women and the Indian environment. Already in the 18th century some women under leadership of Amrita Sen had actively involved themselves in an environmental struggle for survival in Gujarat (India). In Cape Verde, which was struck by severe droughts, by the end of the 1970s it were women who were growing half a million seedlings a year. Because most of the men work away from the islands, replanting has been left to the women and children. With their work, much of the hillsides had been terraced and replanted, and many low-lying sandy areas planted out with shrubs. (FAO, 1986?) The Acao Democrática Femina Gaúcha in Brazil was originally a women's organization focusing on social and educational issues. But as from 1974 the organization put environment high on its agenda: so even that it had become the Friends of the Earth Brazil. (Dankelman & Davidson, 1988)

This article looks at gender relations in resources use and management, at the implications of environmental degradation for gender differentiation and the steps taken to cope with these. '**Gender**' is in this context defined as a sociological indication of comparative relations between (male and female) sexes. 'Gender and Development' considers the interdependent nature of women's and men's positions in society (Barrig & Wehkamp, 1994). The current Gender and Development approach is not only concerned with women, but with the social construction of gender and the assignment of specific roles,

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A peasant woman from India explained to us, development workers, policy makers and academics, some time ago in Hyderabad ¹:

“Life is a whole - it is a circle.

That which destroys the circle is threatening life.

That which restores the circle will bring life.“ (CWDS, 1991)

As many recent studies have indicated, women play a predominant role in the management and use of natural resources at the local level. As Joan Davidson describes

collect medicinal plants. In a FAO supported project they went out for walks to identify these plants. Women participating in the activity expressed their desire to record the collected information. One of them, Zer Malik, said:

“We want our daughters to be able to see how much knowledge their ‘illiterate’ mothers actually possessed. Our daughters are not so interested in traditional remedies and are turning more and more to modern allopathic medicine.” (FAO, 1997-1)

bedding material over long distances on difficult terrain, she grazes the cattle on distant grazing lands, carries animals to water sources for water, takes care of young calves, milks the animals, cleans the animal shed and executes all other activities related to animal husbandry, except ploughing, castration, purchase and sale. Especially the collection of fodder - leaves, herbs, grasses - is almost exclusively a women's task, and that of children - often girls.

But also in other agricultural activities her role is evident. Bhata and Singh (1987) showed that women in the hill agriculture of Himachal Pradesh do 37% of the work in sowing, 59% in interculture, 66% in harvesting, 59% in trenching and 69% in tending the animals. And all this apart from all the household chores, which include the collection of fuel and water. Women work also in irrigated agriculture: a Grameen Krishi Foundation project in North-West Bangladesh showed that women carry out about 50 percent of all tasks in rice production; they even contribute for 50 percent in the presumably male task of irrigation. (Jordans, 1997) Singh (1988) accounts that a pair of bullocks works for 1,604 hours, a man for 1,212 and a woman 3,485 hours in a year on a one hectare farm in the Indian Himalaya.

Women know a lot about the cultivation practices of indigenous varieties of crops, for example women rice growers in central Libena (India). During an experiment the women identified 25 indigenous rice stalks with at most two or three errors; not only describing the different varieties, but also mentioning other features, such as the ease with which the husk can be removed, the length of time required to cook and suitability to different ecological conditions. The men could hardly get two or more correct answers. In a small sample participatory study with women hill farmers in Dehra Dun, Shiva was provided with not less than 145 species of forest plants that women have knowledge of and which they utilize. (Shiva and Dankelman, 1992) The Brahui women in the Noza sub-watershed (Pakistan) identified 35 medicinal plants during field walks. (FAO, 1997-1)

In irrigated agriculture large quantities of water are used. Women's rights to water for agriculture vary enormously. In the Andes women are allowed to participate in the construction of irrigation systems and thus to establish rights to irrigation water.

water, how to draw, transport, and store it, what water sources should be used for which purposes, and how to purify drinking water. Women often make a disproportionately high contribution to the provision of water for family consumption compared with men. Male family members rarely help in the often heavy and time-consuming task of water transportation, and then only if they have bicycles or carts. They have acquired specialized knowledge in the field of local water management and use. It is a knowledge they share, especially with their daughters and with each other. Because many other tasks women perform - such as washing clothes and dishes, cleaning houses and latrines, and attending to personal hygiene, women have established specific ways of reusing waste water to conserve supplies.

Most domestic **energy** comes directly from biomass sources. Woodfuels (both firewood and charcoal) and other biofuels, such as animal and crop residues, form the only source of energy for about two billion people, while some 1.5 to 2 billion have no access to electricity. (UNDP, 1998) Although, in spite of price increases, oil consumption and electricity production (especially from hydro sources) have increased, poor households - even in the city - still depend on biomass sources for their energy supply. Although men sometimes may share the task, women have the primary responsibility for meeting household energy needs through fuel collection, preparation (e.g. chopping and drying) and use (cooking and tending the fire). Children, especially girls, take part in many of these tasks. All these tasks may take many hours per day.

Nearly 73% of women in Asia concentrate on obtaining fuelwood, food and fodder from the nearby forests: 64% in Nepal, 84% in the Philippines and 84% in Sri Lanka. (Wickramasinghe, 1994) Men in the Uttar Pradesh hills (India) are found to break the traditional division of labor only by fetching fuel and fodder when the productivity of women's labor is high, for example on irrigated land. When domestic fuel becomes more commercialized and collection is oriented towards large-scale organized sale and charcoal making, men's participation increases. But so long as technology and marketing are absent, the task of fuel gathering is regulated to women. Women can carry loads up to 35 kilograms over distances as much as ten kilometers from home. The weight largely exceeds the maximum weights of 20 kilograms permissible by law in many countries.

In many so-called traditional societies women have played and continue to play an important role in the construction and management of **human shelters** and infrastructure (Steady, 1993). Households closely reflect the conditions of the surrounding physical environment, and it is women, often assisted by female children, who bear the responsibility for protecting members of their households, especially the young, aged, and infirm, from pollution, poor sanitation, and natural disasters, and the risks inherent in poor housing conditions. Women may spend as many as twenty hours a day in the home, especially in secluded societies. In many cases, human activities in human shelters and the physical infrastructure supporting them, such as roads, water, energy, food, and sanitation systems, have come to depend on women's unpaid labor. The responsibility of maintaining a clean and safe household environment, including waste management, still falls primarily on women's shoulders.

2.3 Income generation.

Based on UNDP estimates female economic activity is 68% as compared to male rates; this is 64% in developing countries and 79% in industrial countries. However, female unpaid family workers make up 58% of the total of family workers. (UNDP, 1998) The percentage of self-employed women in the informal sector in Asia is 60 percent. Most women work out of necessity and contribute in an economically important way to the maintenance of their household.

Many of the informal income generation activities in which women are involved are directly or indirectly dependent on natural resources, such as energy sources, non-timber forest products (ntfps), crops and water. Activities are, for example, plantation work (incl. spraying of pesticides), processing and selling of food products, brick making, handicraft, pottery, spinning and weaving. Headloading for sale in urban areas and charcoal preparation and marketing are important income-generating activities for women in certain regions. But also in small and bigger industrial estates, such as leather tanning, workers, including many women, are directly exposed to the environmental conditions of, for example, water and air.

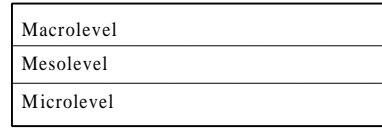
2.4 Conclusions: management and use of resources.

In all the activities described above women and children play a major role by input of their work, energy and expertise. Through these activities they contribute substantially to family's food security, health, production and income generation. All these activities depend almost directly on natural resources, the physical environmental and ecological functions (and ecosystems). The natural resources and physical environment form the basis of a sustainable livelihood system, in which basic human needs are met in the short and long run. Therefore the conclusion is right that often women's work is related to the natural environment and environmental conditions. Although men also perform several tasks in the above mentioned fields, their time and energy input is often substantially less than that of women. This is particularly the case in the growing number of part-time or permanent female-headed households. In some areas in Zimbabwe the percentage of female-headed households is already more than 60%. (NEDA, 1997-1)

One could speak of a **gender differentiation** in the use and management of natural resources and environments. It has been proved by several studies that women, because of the (traditional) division of labor, play also a major role in the sustainable use and management of forest ecosystems, of agricultural land, of water and energy resources and of the environment of human settlements. This role has often been neglected.

The position of women/children and men in natural resources management

Human
Environment/
Sociosphere



(+)

**Sustainable
development**



ecosphere, that which is provided by it, and that which is regenerated. Because of their work and responsibilities, women and children play a key role in maintaining that balance.

2.5 Conditions/critical factors:

Many factors have an influence on these environment-related tasks of women and children, and therefore have an impact on women's work-burden, physical/psychological stress and autonomy. Apart from the division of labor, tasks and responsibilities, critical factors are in this respect:

- their access to and control over (natural) resources - of good quality, such as land, trees, water;
- their access to and control over other means of production, such as income/credit, appropriate technology;
- their access to training and education;
- their active participation and involvement;
- their decision-making power and social status/power, e.g. resource management and use, production and produce;
- their freedom of organization.

These critical factors are not only essential at micro- (or household) level, but also at meso- and macro-levels.

So, not only sociological and power, economic and technological, but also environmental conditions have their influence on women's (and children's) work and lives. This is true most directly in rural situations, but also in urban environments one can observe these aspects. Particularly when it concerns people who live in poverty and/or are marginalized because they depend to a larger extent on freely available (natural) resources.

3. Women's work faces environmental problems.

All over the Southern and Northern regions of the world, many women and children face the problem of environmental degradation and deterioration. Often external developments - like commercialization, export-orientation, structural adjustment programs, external debts, international trade and pricing policies, privatization of community or common resources - result in over-exploitation and/or pollution of natural resources (such as forests, grazing ground, agricultural lands, water resources or fishing grounds). These processes were often characterized by re-direction of uses of land and other resources from community-based to private resources, extraction activities (such as logging and mining), and introduction of non-sustainable technologies (agricultural and industrial). This results in scarcity of resources, degradation of their quality and diversity, disruption of ecological functions - such as retaining water- and pollution of water, soil and air. (Goldman, 1997)

According to an FAO analysis, deforestation was concentrated in the developing world, which lost nearly 200 million hectares between 1980 and 1995. Because of reforestation and plantation efforts the net loss was assessed at some 180 million hectares, or 12 million hectares per year. In the majority of countries that FAO surveyed, deforestation rates have actually increased since 1990. (FAO, 1997)

An indication of this reality is the distance covered for forest produce by the tribals in India: over the past 20 years the difference is more than 6 kms. Because of denudation and government controls placed over remaining forests (e.g. reserves), the area available for slash-and-burn has been reduced. Land in Orissa which had a rotation system of eighteen years, is now re-cultivated every three years. This situation of scarcity and over-exploitation has eroded traditional norms that prevented the occurrence of over-exploitation.. Whereas in normal circumstances work culture is organized to ensure both immediate survival and long-term survival, when immediate survival itself is threatened, the relevance of long-term survival of the community often diminishes.

involving natural resources such as water, soil, and species are disturbed. As well, more pollution is added to the system than it can handle. In other words, its quality diminishes.

At the same time it is observed that the sociosphere becomes destabilized. Inequity among people increases, as does poverty, and the dynamic social relationships between levels (macro and micro) and among levels (within a society, family etc.) gets disturbed. Social dysfunctioning and cultural discontinuity occur. At social level such developments are also reflected in changing power relations at gender level. Women's access to and control over (natural) resources and technology gets often more limited than that of male members of household. In these situations women lose control and are being marginalized and excluded even more.

In this situation, which is often the reality of today, women and children have to put in more time, energy and effort into meeting their family's basic needs for natural resources, security and health. However, as the ecosphere cannot supply enough and the natural cycles that sustain life are disturbed, this task becomes more difficult and sometimes even impossible. Because they have to walk longer distances over rough or disturbed terrain - sometimes overnight - women's work and life become unsafe. With the forests receding 4-8 km, most village women have to walk for at least one hour and in many cases up to two hours each way in the Ganjam areas in India. (

40-50% of the families did not use boiled water due to the lack of fuelwood.
(Wickramasinghe, 1994)

A major alternative for men under such circumstances is migration. Migration itself has become a status ascribing factor for men, whereas women have to take over the economic tasks of the husband in his absence. Often resources, including food, are already scarce. In such cases she may rely on wage labor, apart from her other tasks and responsibilities. This all results in a tremendous pressure on women. In Diourbel in Senegal male-outmigration was a logical response to the modernization of agriculture and declining food security. While women are concerned about the changing environment around them, they are in a weak position to do anything about it. (David, 1995)

Research in Garhwal (India) reveals that the shift from subsistence to commercial agriculture, through the introduction of cash crops and the market economy, has led to a reduction in women's sphere of influence and an increasing dependence of women on men for extension services, purchase of seeds and handling of tools and money. The disappearance of indigenous forests has meant that women have to walk further to collect forest products. Women's crucial role in agriculture is gradually diminished by the introduction of new

local pulses to introduced soybean implies a shift from domestic to industrial food processing, displacing women from their local resources. Current agricultural research concentrates heavily on increasing the yield of only certain parts of a crop, often those which can be commercially marketed. Traditional potato and mustard varieties provide, for example, fresh leaf vegetables in mountain diets. The

estates, waste dumps or open drains/sewers, in small-scale industries, but also on agricultural land. In the slums around the aluminium company industrial area in the Dhankanal district of Orissa (India) -for example -, live entire families, which have migrated from another district of the State. Women told that they had migrated because the households owned little or no settled agricultural land, fuelwood was getting scarce as well, and life under such circumstances had become very hard. But now they live in a very polluted area. (Menon, 1991)

One of the major problems women face in human settlements is - apart from lack of access to (legal) land, waste management and sanitation problems - the fact that many settlements of poor households are situated on dangerous sites, e.g. which are vulnerable to landslides or flooding, but also in the direct surroundings of dangerous industries. The Bhopal disaster of 1985 showed the disastrous effects of such situations on people living in poverty, esp. women and children.

Increasingly, full maintenance of most homes is becoming dependent on the combined income of women and men. Because of the existing division of tasks, women also face the greatest risks of disease from handling contaminated products (including water) within the household. Furthermore, the majority of people seeking refuge from environmentally degraded homelands are often women and children. While living in squatter settlements and slums is bad for everybody and the air may be polluted for

not only promote inequality between countries and regions, but also reinforce differences and inequality within countries, whereby the rich get richer and the poor lose their access and rights to and their control over (productive) resources. many of these development processes are not culturally adjusted. (UNDP, 1998)

productive) resources.

many of

- Women organize to prevent pollution or they clean up waste sites. Examples can be found in the waste-disposal activities as those started by a collective of unemployed women, such as in Bamako (Mali) As consumers women, especially the richer and well-off women, can play a powerful role in the promotion of environmentally sound products and their production, such as in Malaysia and South east Asia.
- Women organize against environmental degradation and pollution by protesting against developments that threaten their resource base and livelihoods. In addition to protest demonstrations, they use non-violent means of opposition and blockades to stop such activities as deforestation and mining, dam-construction, industrial activities and theft of their intellectual property frights.
- Cultural expressions such as songs and poems, have been created by women to reflect their environmental concerns.

“ Embrace our trees,
 Save them from being felled,
 The property of our hills
 Save it from being looted. “ (Chipko song)

5. Other actions needed.

Again it should be underlined that it should not be exclusively the responsibility of women to change unsustainable livelihoods into sustainable ones. Women should not be seen as instruments for environmental regeneration and conservation, but as equal partners in those processes. Environmental management is far more the direct responsibility of those in power at national, international and local level and of other development actors, including donors, NGOs and the private sector.

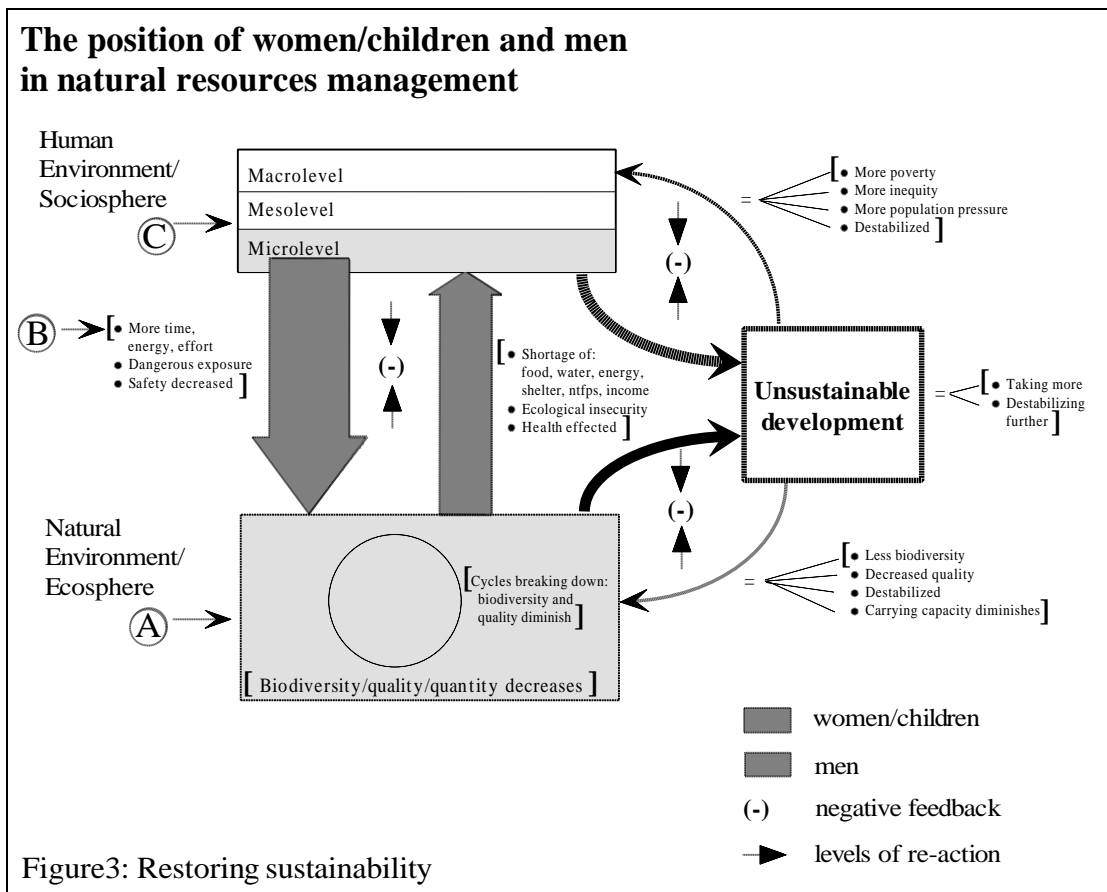


Figure 3 indicates on which levels rectifying actions are being taken to restore sustainability, equality and justice. These focus on the following levels:

(1) The natural environment or **ecosphere**, in such ways as:

- increasing the supply of natural resources, by reforestation, external inputs and nature conservation;
- re-establishing the system and ecological cycles by land rehabilitation, erosion control, water management, ecological farming, multicropping and increase of biodiversity;
- increasing the quality of the environment by waste and pollution treatment and sanitation, and the introduction of less polluting processes and products.

(2) Support to **women (and children)** by lightening their burdens and broadening their options, in such ways as:

- introducing time- and energy-saving devices;
- developing vocational and natural resources training and educational programs;
- increasing their access to and control over production factors, e.g. promoting changes in land tenure (rural and urban);
- providing alternative income possibilities.

(3) Increasing the supply of natural resources by land rehabilitation, erosion control, water management, ecological farming, multicropping and increase of biodiversity;

- introduction and use of participatory approaches and management systems (e.g. joint forest management, water committees);
- institutional and legal changes so as to improve women's decision-making power

- **Capacity-building** at organizational level on gender-environment.
- Use/adaptation of specific **approaches and tools**, e.g. gender/environment analysis, participatory methods, indicators on gender/environment, integration of these in planning, monitoring and evaluation.
- More **coordination** and **cooperation** between organizations working in the field of environment, gender and women's empowerment, and between grassroots women, NGOs, government agencies, academia, etc.
- Specific **activities/pilot projects** in the field of gender-environment, like projects on women's empowerment in sustainable land-use, promoting women's access to land and other natural resources (e.g. through joint forest management), capacity building of women's organizations on environmental advocacy and lobbying, development of livelihood alternatives for women living in seriously degraded environments.

6. Conclusion

Sustainable development asks for a focus on both environmental and social aspects and their inter-linkages. The structured relationship between men and women in society shapes the functions that the environment and natural resources have for both genders, as well as the role that both women and men play in environmental use and management. These dynamics became visible in the reality of communities lives, beginning 1980s. They led to the realization that our efforts towards sustainable development and work in the environmental field need a gender-differentiated and participatory approach. On the other hand it made clear that women's empowerment needs an understanding of the physical context in which people live.

Many different efforts at international and local levels, studies and publications on gender and environmental subjects have been developed since the past 15 years. The variety is big: from field level studies on specific subjects, to theoretical frameworks and guidelines to help integrating gender and environmental aspects. However extensive this information is, still much has to be done to bring lessons together, build basic understanding, and create bridges between the environmental and social, including gender, approaches in national and international institutions.

In the near future much more attention will be needed for the rights aspects of the women-men-environment linkages. Women's rights are recognized as human rights, but among the economic, social and cultural rights also the right to a healthy environment and natural resources base has to be recognized explicitly. Apart from quantitative also a quality focus is needed when looking at access to and control over resources. Concepts like 'ecological footprints' and sustainable livelihoods are useful approaches for a gender-specific sustainable development policy. Intellectual property rights and privatization will be high on the gender and environment action agenda in the near future. Biodiversity and cultural diversity will be valued more and more.

It is important to look more specifically to the interrelationship between age, gender and environment, thereby focusing on the specific roles and positions of girls and of older women. In all our considerations inter-generational aspects will need much more

attention. Apart from equality, it is that focus which urges us to build bridges between social, economic and environmental perspectives.

“Our land is a land of rivers....Our strength is in our being together. We are no longer alone and no longer in the background. We are no longer invisible. We decided not to keep anyone in our village illiterate and we succeeded. Now, we have also decided to take part in elections to get power and decision-making into our own hands.” Julehka Begum, a peasant woman from Gaibandha, Bangladesh (Mazumdar, 1992)

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ABBREVIATIONS

CSE	Centre for Science and Environment, India
CWDS	Centre for Women and Development Studies, India
FAO	Food and Agriculture Organisation of the United Nations
HYVs	high-yielding varieties
ILO	International Labour Organisation
NEDA	Netherlands Development Assistance
NGO	non-governmental organization
ntfps	non timber forest products
UN	