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Gender Perspectives on the Conventions on Biodiversity, Climate Change and Desertification

Yianna Lambrou and Regina Laub*
Gender and Population Division

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*With Hannah Cooper and Virginie Lafleur (consultants). Gratefully acknowledge the assistance of Gustavo Best, Wulf Killman, Dominique Lantieri, and Jeff Tschirley.

Introduction

The United Nations Convention on Biodiversity, the UN Framework Convention on Climate Change (UNFCCC), and the UN Convention to Combat Desertification (UNCCD), known as the Rio Conventions, are the three main international legally-binding agreements for sustainable development. They represent the legal outcome of the 1992 United Nations Conference on Environment and Development (UNCED).

The agreement signed by heads of state on that occasion, Agenda 21, which identifies the priority action for sustainable development, states clearly that empowerment of women and men is indispensable for sustainable development. However, throughout the convention texts and implementation mechanisms, the gender perspective of Agenda 21 seems to have been unevenly upheld. The aim of this paper is to reassert that a gender perspective is relevant in the case of these Conventions from two points of view:

- Successful implementation of each convention requires a solid understanding of gender-specific relationship to environmental resources of women and men, as well as an understanding of gender specific impacts of, and on, environmental degradation
- Successful implementation of each convention will depend on participation of affected populations, women and men. This equal participation of women, given prevailing practices worldwide, cannot be taken for granted.

This paper provides a gender-sensitive perspective on the three Rio Conventions on Biodiversity, Climate Change, and Desertification. First, the Rio conventions will be placed in their historical context and their administrative and financial framework. Secondly, the main gender issues relevant to the three conventions will be exposed. A comparative overview of the level of gender mainstreaming in each of the international instruments relating to the Rio Conventions at study here will be given. The essay will conclude with a review of a few key issues in convention implementation, in relationship with gender.

Building commitments towards sustainable development: the road to Rio, and beyond

The Rio Conventions on Biological Diversity, Climate Change, and Desertification reflect forty years of environment and development consciousness. The early 1960s marked a growing awareness of the interdependence of environment, economics, and development. Several innovative projects and academic studies triggered this new global concern.

First steps towards a Global Environmental Agenda

According to the International Institute for Sustainable Development (IISD), the world started to take conscience of the link between the environment and development with the publication in 1962, by Rachel Carson, of “Silent Spring”, a work that scientifically demonstrated the harmful effects of agricultural pesticides and shattered the assumption that the environment had an infinite capacity for pollutant absorption. From then on, environment and development have gradually become part of the international agenda for development. In 1963, the International Biological Programme’s ten-year study analysed environmental damage and the ecological mechanisms whereby this occurred. The body of data generated thereof laid the foundation for a science-based environmentalism (IISD 2002).

Nineteen sixty-eight was a key year for the transition from environmental awareness into sustainable development. The Club of Rome commissioned a study of global proportions to model and analyse the dynamic interactions between industrial production, population, environmental damage, food consumption and natural resource usage. The resulting publication, “The Limits to Growth”, articulated the main environment and development issues of the time: the limits to technological progress, the finite capacity of the planet in terms of food production, the upcoming depletion of natural resources, and the threat of overpopulation, and concluded that “the limits to growth on this planet will be reached sometime within the next one hundred years” (Meadows 1972).

The same year, the publication “The Population Bomb” by Paul Ehrlich provided the link between population, resource exploitation, and the environment, and UNESCO held the Intergovernmental Conference for Rational Use and Conservation of the Biosphere. This conference was the first global recognition of the need to examine our relationship with the environment. It provided a forum for countries to discuss ecologically sustainable development, and in particular, to operationalize the UNESCO Biosphere reserve concept, whereby a balance was sought between conserving biodiversity and promoting economic and social development.

The Founex Report, prepared in 1971 by a panel of experts in Founex, Switzerland, appealed for the integration of environment and development strategies. This report states that while concern about the environment sprang from the production and consumption patterns of the industrialised world, many global environmental problems are the result of underdevelopment and poverty (IISD 2002).

The Stockholm conference, 1972

The United Nations Conference on the Human Environment, known as the Stockholm Conference was primarily based on ‘Northern’ environmental concerns, related to consequences of rapid economic growth. It represented the first international recognition of environmental issues. The Conference developed Principle 21, which is widely considered as having become a rule of customary international law. This principle held nation-states responsible for harmful environmental actions within their sovereign borders, as well as actions that cross over and harm another state. The Conference led to the establishment of the United Nations Environment Programme (UNEP) and many national environmental protection agencies.

Following the Stockholm conference, the international conferences took place reflect growing awareness and increased focus on specific environmental issues, and important UN conventions are signed: the Convention on Wetlands (RAMSAR 1971), the UNESCO Convention for the Protection of the World Cultural and Natural Heritage (1972), the Convention on International

Trade in Endangered Species of Wild Flora and Fauna (CITES 1973), the Convention on Long-Range Transboundary Air Pollution (1979), the UN Convention on the Law of the Sea (1982), the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), and the ILO Indigenous and Tribal People Convention (1989). In 1988, the World Meteorological Organization (WMO) and UNEP established the scientific advisory body “Intergovernmental Panel on Climate Change (IPCC)” to look into climate change and its causes.

The Brundtland Report, 1987

The World Commission on Environment and Development (WCED), created in 1983, issued the Brundtland Report in 1987: “Our Common Future”, a four-year study commissioned by the UN General Assembly to “re-examine the critical environment, to develop proposals to solve them, and to ensure that human progress will be sustained through development without bankrupting the resources of future generations, develop a long-term environmental strategy for achieving sustainable development by the year 2000 and beyond”, and “define a shared perception of long-term environmental issues and appropriate efforts to deal with them effectively.”. Thus, the term “sustainable development” was coined, as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” The report highlighted three fundamental components to sustainable development: environmental protection, economic growth and social equity. The Brundtland Report advocated for redistributing resources towards poorer nations whilst encouraging their economic growth, and suggested that equity, growth and environmental maintenance are simultaneously possible and that each country is capable of achieving its full economic potential whilst at the same time enhancing its resource base. The report also recognised that achieving this equity and sustainable growth would require technological and social change. Issues of gender equity (in regard to reproductive self-determination) and intra-national equity (in terms of indigenous peoples) were briefly addressed in the Brundtland Report (WCED 1987).

The Earth Summit, 1992, and other UN conferences of the 1990s

The United Nations Conference on Environment and Development (known as the Earth Summit) was convened in 1992 in Rio de Janeiro, Brazil, and saw the gathering of over 30,000 participants, including NGOs and representatives of 178 nations. The Rio summit drew attention to the global dimensions of environmental issues and solutions, and challenged individuals and nations to rethink economic development from a sustainable point of view.

The 105 heads of state who were present demonstrated their commitment to sustainable development through adoption of several innovative instruments: Agenda 21 (a document that identifies priority actions and guidelines towards the achievement of sustainable development and that included the creation of a new UN Commission for Sustainable Development), the Rio Declaration on Environment and Development, the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the Statement of Principles on Forests. The Summit also laid the groundwork for the United Nations Convention to Combat Desertification (UNCCD), later adopted in 1994.

The 1990s were the stage of a series of UN Conferences, in the course of which member states of the United Nations took stock of progress made and signed commitments in each area, and at the same time linking all these issues together: in 1990, the UN summit for children recognized the importance of sustainable development for future generations. During the World Conference on

Human Rights, the right to development was associated to the right to a healthy environment (1993). The World Summit for Social Development (1995) clearly linked fight against poverty with environmentally sustainable development.

In their Action Programme for a Global Biodiversity Strategy, WRI, IUCN and UNEP in 1992 urged governments and international organizations to conserve the biological diversity and strengthen the role of women in the sustainable management of natural resources (GTZ, 2001).

Gender, as in the case of sustainable development, was addressed as a cross-cutting issue in the above-mentioned conferences. However, the Fourth World Conference on Women in Beijing in 1995 produced international instruments which allowed to translate commitment into policy decisions at national level. The Beijing Platform of Action identified the need to involve women actively in environmental decision-making at all levels, and to incorporate a gender perspective in all strategies for sustainable development, as one of 12 critical areas of concern requiring action by states, the international community and civil society. Under Strategic Objective K.1 in the Beijing Platform for Action (1995), governments agreed to encourage the protection, use and promotion of the knowledge, innovations and practices of women in indigenous and local communities, ensuring that they are preserved in an ecologically sustainable manner and that women's intellectual property rights are protected under national and international law (paragraph 253.c; SIDA, 1998 in FAO 2003)..

The UN conferences of the 1990s culminated in September 2000, when the member states of the United Nations unanimously adopted the Millennium Declaration, whereby they resolved to strengthen peace, development, human rights, and improve UN's ability to act on behalf of humanity's priorities. The Millennium Development Goals (MDGs) were developed as a framework for implementing the Millennium Declaration: they are a time-bound, focused commitment of the international community to an expanded vision of development. Goal 7 of the MDGs refers specifically to "Ensure Environmental Sustainability", and sets targets in the area of mainstreaming sustainable development in policies, conservation of environmental resources, access to water, and human settlements. Gender equality is addressed through one target and a limited number of indicators under Goal 3, although gender mainstreaming is understood to be a cross-cutting issue in all MDGs.

The World Summit for Sustainable Development, 2002

Ten years after the Earth summit, nations gathered in Johannesburg, South Africa, to assess progress made on sustainable development issues since the Rio Earth Summit. It was clear from the Rio+5 meeting in 1997 that implementation of Agenda 21 was suffering serious delays, and the Johannesburg summit was to propose concrete actions to remedy this, through securing political commitment for the drastic changes that would be needed.

The WSSD was the largest conference ever: 190 governments, 104 heads of states, representatives from the industrial sector, non-governmental organizations (NGOs), local governments and scientists amounted to a total of 60,000 participants. However, despite the massive participation, "a cursory glance at the UN General Assembly terms of reference for WSSD from late 2000 and then at the Summit outcomes reveals the chasm between expectations and results, even from governments – and the gulf is still wider as far as many other commentators and activists are concerned" (Bigg 2002).

The following three documents were adopted at the WSSD:

- The Political Declaration, a general document reiterating the principles of Agenda 21;

- The Johannesburg Summit Plan of Implementation, which was meant to be a consensus document on the plans for the implementation of the Agenda 21. It was regretted by many, both on the Governmental as from the Non-Governmental side, that this document had not succeeded in putting on paper the commitments needed to implement Agenda 21 and the Rio Conventions. Many key issues have remained unresolved, and the text has been noted to fall short of the initial intention to agree targets and timetables to help shape action to realise sustainable development (Bigg 2002).
- Record of Commitments/Partnership, which constitute a collection of bilateral commitments. These were taken up by governments and organizations through bilateral agreements, for cooperation on specific issues. The preponderance of this type of commitment in the Johannesburg process has been seen as “solution-oriented partnerships” (WRI 2002) to implementation obstacles. However, this shift in focus from international-level commitments to case-by-case partnerships raised concerns on the loss of inter-governmental leadership in the sustainable development agenda, framed in international agreement which should provide a basis for accountability (Bigg 2002).
- WEHAB, a focus on five key thematic areas – Water, Energy, Health, Agriculture and Biodiversity, was proposed by the UN Secretary General Kofi Annan as a contribution to The World Summit on Sustainable Development.

Evolution of civil society and NGO participation

Environmental movements have long been spearheaded by civil society and non-governmental organizations, whether local or international. They have always played an essential role in raising public awareness and mobilizing populations for both the environmental and the gender cause. The instrumental role of Civil Society and non-governmental organizations in generating the conditions for participatory sustainable development policy design and implementation has accordingly been recognized in Agenda 21.

Civil Society participation has increased in quantitative and qualitative terms, between the Earth Summit and the World Summit for Sustainable Development. Participating NGOs in Rio were mainly Northern, and focused on official discussions. In Johannesburg, parallel events were organized by CSOs and NGOs both from the south and north and critically contributed towards the positive outcomes of the Summit.

Participation of Non-Governmental Organisations (NGOs) has been built into the Rio conventions’ mechanisms for implementation and monitoring. All three conventions allow for the accreditation of NGOs (including CSOs) as observers to the COP¹, and in official delegations to the COP.

At national level, Non-Governmental Organizations play a crucial role as partners for implementation of activities, as well as reinforcing the legal commitment that the Conventions represent, through advocacy and information activities.

Gender issues in sustainable development; linkages between gender, rural poverty and sustainable development

¹ The list of NGOs accredited to the COP for the UNCCD can be consulted at <http://www.unccd.int/ngo/ngolist.pdf>; for the UNFCCC, at <http://unfccc.int/resource/country/ngo.html>

Common gender issues in sustainable livelihoods

All conventions underline the fact that livelihoods of the poor are directly threatened by loss of biodiversity, climate change and desertification. Rural populations in poor countries pay the highest price for environmental degradation, as their livelihoods depend on the goods and services ecosystems provide: generation of water, wood and non-wood forest products, fuel, cycling of nutrients, replenishment of soil fertility, prevention of erosion, breaking down of wastes and pollutants, carbon sequestration and storage, recreation, etc. (Koziell, McNeil, 2002).

Linkages between desertification, biodiversity conservation and climate change

The linkages between global and local climate, natural habitats and land degradation are many, complex and varied. At the global level, deforestation, land degradation and desertification contribute directly to increasing the concentration of carbon dioxide in the atmosphere, by reducing vegetative cover and impairing the water retention capacity of the soil, and thus the ability of vegetation to store carbon. Desertification has already caused a substantial loss of soil carbon emitted to the atmosphere. (...)

At the local level, deforestation increases soil erosion, reducing soil fertility and agricultural productivity. Since forests are habitats to a large number of species, their degradation results in direct loss of biodiversity. Land degradation is also a major cause of food insecurity.

Conversely, climate change is expected to significantly affect the resilience and productivity of many ecosystems. This will affect both land-based and marine species. Even minor changes in key environmental variables such as temperature or salinity, for example, can greatly affect the abundance, diversity and distribution of fish populations. The many interactions between biological processes and climate could therefore initiate or reinforce drought in some regions with severe consequences for the poor.

Source: OECD 2002a

For poorer countries, implementation of the Rio conventions is possible if compatible with and supportive to poverty alleviation and sustainable development strategies. Adaptive strategies such as improved management of natural, physical and human capital, should give options for the poor to reduce their vulnerability to the effects of environmental degradation, as well as build the potential to anticipate and react to further changes in climate in the future (ADB et al 2003).

Not all groups in society have the same adaptive capacity, since all do not present the same vulnerabilities. Any group lacking in the financial, social, and political means of securing alternative livelihoods less exposed to risk than others is therefore more vulnerable to environmental degradation (ADB et al 2003).

Vulnerability is determined by the type of resources on which individuals depend, the availability of these resources, and, crucially, by the entitlement of individuals and groups to mobilize these resources. Vulnerability is therefore “a socially constructed phenomenon influenced by institutional and economic dynamics”(Adger et al. 2003), and in this sense, rural women, in comparison with men, show higher levels of vulnerability, since their participation in these institutional and economic dynamics is characterized by gender-based limitations in access to resources when performing their productive, reproductive and community roles.

Rural livelihoods of women and men differ widely between regions. Furthermore, other group identities such as ethnicity, economic status, caste, and age, are interlinked with gender.

However, certain issues are relevant to understand gender-related patterns of vulnerability.

- The majority of women farmers *do not have secure land rights*. This has negative implications on their capability to adapt their agricultural activity to changing ecological

- conditions, since land can't be used as collateral for accessing credit. Furthermore, security of land tenure is a basic incentive for undertaking sustainable agriculture investments, in terms of infrastructure and know-how.
- Women's *productive assets are generally of lesser value than those of men*. This can be due to inheritance patterns, or related to the agricultural activities of women and men: women often undertaking activities which need less capital. As both a cause and effect, women's economic activities are often less economically profitable than those of men. This limits their potential for expansion and increases their vulnerability in the face of shocks such as sudden shortages in food supplies, in income, crop failure, natural disasters, etc.
 - Women in rural areas worldwide *have lower educational levels* than rural men. This hampers their access to information and know-how which could complement and optimise their own knowledge. Illiteracy, which is generally higher among women than among men, reduces their possibilities for gaining wage employment, which could be an important source of alternative income.
 - Women farmers' *participation in farmer's organizations and commercial networks*, which would allow their articulation to markets and resources such as credit, *tend to be mediated through male relations*. This can lead to their specific needs being neglected. Furthermore, agricultural extension services and technology development tend to target men, wrongly assuming that knowledge will be conveyed to women (OECD 2002a); extension programmes also tend to focus on cash crops. In regions where a distinction exists between male agricultural activities, focusing on market-oriented production, and female agricultural activities which are focused on subsistence agriculture, this means that extension services would benefit mainly male farmers.
 - The reasons given above contribute towards making *access to financial services difficult* for poor rural women. These services go beyond credit, which has not proven, in many cases, sufficient to pull them out of poverty (OECD 2002b), especially if loans are small, as in the case of collateral-free micro credit products. Credit, coupled with savings services and micro-insurance, allows spreading risk and thus reducing vulnerability.
 - Women and men *do not participate usually on an equal basis in community organizations*. The absence of gender balance in decision-making instances for management of common natural resources, such as water, forests, fallow areas, can lead to women farmers' specific rights and needs to be overseen. These Common property resources are important for groups, of which women form a large proportion, who do not own land under their name (OECD 2002a).
 - Food security and agricultural policies *are at risk of overlooking gender issues*, since women's subsistence-oriented work, often classified as "housework", tends not to be captured as "productive" in traditional measurements of labour and output of the agricultural sector.

The above suggests that degradation of rural livelihoods, resulting from the interlinked effects of climate change, loss of biodiversity, and desertification, entails different consequences for women and men in the performance of their productive, reproductive and community roles. However, the environmental issues addressed specifically by each convention also affect women and men in different ways. The gender issues relating to biodiversity, climate change and desertification are highlighted hereunder.

Biodiversity: gender-based knowledge and livelihoods

The Convention on Biological Diversity (CBD) aims at conservation and sustainable use of biological diversity, which is defined as “the combination of life forms and their interactions with each other and the rest of the environment that has made Earth a uniquely habitable place for humans” (CBD 1992). Biological resources, both habitats and species, are being critically threatened. Key habitats are being lost at a rapid rate, and species are disappearing at a rate 50 – 100 times the natural rate. 34,000 plant and 5,200 animal species face extinction, as well as 30% of the main breeds of farm animals (GTZ 2002).

The CBD also advocates the fair and equitable sharing of genetic resource benefits. Furthermore, the CBD establishes a connection between sustainable conservation and development, and the rights of indigenous peoples and local communities. For example, plant genetic resources (PGR) are of significant importance and economic value as they represent an irreplaceable, locally adapted source of characteristics such as resistance to pests and disease and suitability to specific micro-climatic, edaphic and environmental conditions. However, PGR are being lost at a rapid rate, in part due to the replacement of farmers' heterogeneous traditional varieties with a relatively small number of homogenous, modern commercial varieties. This loss of crop genetic diversity poses a grave threat to long-term food security (FAO/IPGRI 1996). In effect, biodiversity is important in rural livelihood for spreading risks, as the reliance on a variety of genetic sources allows their agricultural systems to adapt to varying conditions, and generation of income from a range of natural resources.

Local-level biodiversity is maintained through knowledge and know-how of both women and men. In effect, because of gender-based roles in rural livelihoods, women and men acquire and transmit different and complementary knowledge: they have knowledge about different things, and different knowledge about the same things; they organize knowledge in different ways, and transmit it by different means (Huisinga Norem et al 1993).

This knowledge pertains to domestic plant and animal genetic resources, which are the basis of both the productivity and adaptability of agricultural systems, and also to wild and semi-domesticated sources, which offer safety nets in case of food scarcity (Koziell, McNeil 2002). Both sources also provide important goods for traditional medicine, as well as material for the pharmaceutical industry.

Failure to target both sexes in biodiversity conservation results inevitably in a loss of knowledge of local and international relevance, as well as producing a gender bias in policies and programmes which may be detrimental to the functions that women perform. Depending on women and men's roles, their knowledge will be applied to different functions in livelihoods. It has been noted in many regions that whereas men concentrate on cash crop cultivation, women concentrate on subsistence agriculture as well as household-related tasks such as care to family members and food preparation. Thus, failure to integrate women's biodiversity knowledge in each of these functions has impact on household-level food security and nutrition.

The Biodiversity Agenda, has been criticised for focusing on conserving rare species of global value, whereas less attention has been paid to biodiversity of local value, that helps to sustain the livelihoods of the poor (Swiderska 2002). The rural poor are the first to suffer if these resources are degraded or lost (Koziell, McNeil 2002), hence their high stake in ensuring their conservation.

Climate change: gender issues in vulnerability and adaptation

The objectives of the United Nations Framework Convention on Climate Change (UNFCCC) are to stabilize the concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, perfluorocarbons and sulphur hexafluoride) in the atmosphere, as they are believed to exacerbate climate change and alter agricultural/eco zones. Some predict that by 2100, climatic zones in mid-latitude regions will shift between 150-500 Km towards the poles (UN 1997), and that due to glacial melt and thermal expansion of the sea, sea levels will rise by as much as 65 cm, threatening both coastal and low-lying areas. The frequency and intensity of extreme natural events are also expected to increase (GTZ 2002).

The UNFCCC points out that reducing greenhouse gases should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change. Furthermore, the UNFCCC aims to ensure that food production is not threatened by climate change, and to enable economic development to proceed in a sustainable manner.

The UNFCCC is supplemented by the Kyoto Protocol (1997) which contains legally binding targets, by which industrialized countries (Annex I countries), must reduce their combined emissions of six key greenhouse gases by at least 5% , in relation to 1990 levels, by the period 2008-2012, calculated as an average over those five years”(UNFCCC 1992). However, as of 2003, the Kyoto Protocol has not yet entered into force: the rules for entry into force require two thresholds to be attained, in terms of the number of ratifying parties but also volumes of greenhouse gases produced per ratifying country¹. This threshold cannot be reached without the ratification of Russian Federation or the USA (UNFCCC).

Rising of sea levels, increasing aridity, rising frequency of disasters, among other factors, erode the quality of the natural resource base. Decrease in agricultural productivity can be expected. Climate change will exacerbate existing vulnerabilities and create new ones, thus making the fight against poverty still more difficult (Adger et al 2003).

Other effects of climate change will affect women and men, sometimes in the same way, sometimes differently. An increase in temperature-related illnesses and deaths can be expected; changes in the geographic range of vector-borne diseases such as malaria and dengue fever because of changes in temperature and rainfall patterns are also likely. Anaemia – resulting among other factors from malaria – is responsible for a quarter of maternal mortality (ADB et al 2003).

Degradation of water sources is a usual consequence of drought and natural disasters. Children and pregnant women are particularly susceptible to diseases which thrive in such conditions such as diarrhoea and cholera. Furthermore, because of their roles in relation with household water supply and domestic chores, women are particularly at risk for such diseases (ADB et al 2003). A direct correlation has been observed between women’s status in society and the likelihood of their receiving health care. If climate change has been observed to “exacerbate current gender inequalities” (ADB et al 2003), due to the increase of pressure on societies, negative consequences on women’s health can be expected.

Extreme weather effects such as flooding, landslides, and storms, cause death and injury, and may affect women and men differently, depending on the means at the disposal of each to ensure their

¹ The Kyoto Protocol states that : “This Protocol shall enter into force on the ninetieth day after the date on which not less than 55 Parties to the Convention, incorporating Parties included in Annex I [countries which produce most greenhouse gases per capita] which accounted in total for at least 55 per cent of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession.”

own safety. It has been noted that in Bangladesh, cultural constraints on women's mobility hinder access to shelter and health care in the context of cyclones and floods (Rowshan 1992).

Adaptation to climate change challenges traditional coping mechanisms. Traditional risk-sharing mechanisms, based on kin and social groups, may not be adequate, since whole regions are affected. If the natural resource base is degraded to the point of being insufficient to support the livelihoods of the current population, drastic measures are implemented, such as selling off of assets and migration.

Across regions, women and/or men, and of different age groups migrate for different reasons. However, in the case of male migration, female-headed households have been identified as particularly vulnerable, since women must assume traditionally male responsibilities, without having equal or direct access to all resources, financial, technological, and social. Remittances, which can help mitigate the vulnerability of these households, depend on the economic opportunities offered to the migrant. In the context of decreased productivity that goes along with climate change, economic and social development is expected to slow down (ADB et al 2003). Furthermore, natural disasters related to climate change take their toll in terms of loss of lives, of private assets and public infrastructure, and reduced productivity. Low investment in preventive infrastructure and institutions drives up the costs of rehabilitation (ADB et al 2003).

The scientific work undertaken in response to the challenge of climate change has allowed developing tools for monitoring climate change, developing early warning systems, modelling changes in climate and forecasting consequences on rural livelihoods. However, the involvement of women and men has proven to be the key to the efficiency of solution finding decision-making and implementation process for long-term and short-term responses to disasters and climate change. A case study from Bangladesh may illustrate the gender issue on this subject: a community-based cyclone preparedness program in Bangladesh has found that sites where women were not involved in village level disaster preparedness committees, responsible for maintaining cyclone shelters and transmitting warnings, made up the highest proportion of cyclone victims. In Cox's Bazaar in east Bangladesh, where women are now fully involved in disaster preparedness and support activities (education, reproductive health, self-help groups, and small and medium enterprises), there has been a huge reduction in the numbers of women killed or affected by cyclones (IFRC-RCS 2002, in ADB et al 2003).

Gender and desertification: local solutions for global change

The United Nations Convention to Combat Desertification (UNCCD) addresses the impacts of desertification, and seeks to mitigate the effects of droughts. Under the convention, desertification refers to dry land areas vulnerable to over-exploitation and inappropriate land-use as a result of poverty, political instability, deforestation, overgrazing and bad irrigation. Currently the livelihoods of over 1.2 billion people are threatened or at risk because of drought and desertification, impacting 110 countries (GTZ 2002).

Recognizing the link between desertification and poverty, the UNCCD stresses the importance of a "bottom-up participatory approach in identifying, implementing, monitoring, and evaluating projects that combat desertification and mitigate the effects of drought". The UNCCD approach thus seeks to combine science and technology with local knowledge, to come up with effective solutions for sustainable dry land development such as early warning systems and mechanisms to assist environmentally displaced persons; drought contingency plans; the provision of food storage and marketing facilities in rural areas; the promotion of alternative livelihood projects to

provide incomes in drought-prone areas and the development of sustainable irrigation programmes for crops and livestock. As it will be developed further on, the UNCCD is the only one of the three Rio conventions to have clearly addressed the importance of targeting participation of women as well as men at all stages of the process.

Climate change and desertification share common causes, and have many points in common in terms of adaptation strategies to be deployed at individual and policy level. Whereas direct correlation has been admitted between development of industrialized countries and climate change, a mutually reinforcing relation has been equally observed between poverty and desertification in developing countries: populations are forced to encroach further on fragile ecosystems and scarce water resources to meet basic needs. Whatever the set of causes for both problems, the poor are most affected, as wealthier groups assert their rights to limited resources (OECD 2002b).

Given the intimate relationship between desertification and poverty, a local-level gender-sensitive understanding of livelihood roles is all the more relevant for devising solutions. Women, men, boys and girls perform different tasks which may have direct or indirect desertification results. Women and girls are often responsible for collecting firewood, fodder, and water. Women and/or men, girls and/or boys, depending on cultural context, are responsible for grazing of animals. Wood cutting for commercial timber activities is often the responsibility of men. Whatever the role distribution may be, the specific targeting of sex and age groups in needs assessment and solution design and implementation is an essential factor of programme success.

As in the case of climate change, tasks distributed to women on the basis of their gender roles, such as wood and water collecting, are time-and energy consuming, and as desertification causes these resources to rarefy, an ever-increasing work burden is associated to these tasks. Win-win solutions which are environmentally sustainable, time/energy-saving and socially relevant have been devised, such as improved cooking stoves and local-level agroforestry activities (FAO 2003).

Gender mainstreaming in sustainable development international agreements

Chapter 24 (Global Action for Women towards Sustainable and Equitable Development) of Agenda 21 states that equal status of women and men is vital for its successful implementation. In section 24.2(c), governments are called upon “to consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional legal, administrative, cultural, behavioural, social, and economic obstacles to women’s full participation in sustainable development and in public life”. Agenda 21 draws upon a number of international instruments supportive to gender equality, and in particular, it recommends the strengthening of elements of CEDAW (Convention on the Elimination of All Forms of Discrimination Against Women) related to environment and development. Issues of equal access to resources are highlighted (See annex 2). The CEDAW is particularly important as a legal tool, inasmuch as it is the only international legal instrument which addresses directly rural women’s rights.

In the Johannesburg Plan of Implementation, the approach is different and more consistent with the shift from the Women in Development to the Gender and Development paradigm¹, which took place in the ten years which separated Rio from Johannesburg. In effect, the contributions of women alongside men are specified in several points of the Johannesburg Plan of Implementation (See annex 3).

The text calls for equal participation of women and men in the areas of poverty eradication, protecting and managing the natural resource base, economical and social development, health and sustainable development, as well as in relation to the specific development issues for Africa. In the section devoted to the means of implementation of the plan, equality in education, in accordance with Millennium Development Goal No 3², and research on gender indicators are recommended. Gender equality is also identified as an essential component of good governance. In the section on institutional frameworks, the need for mainstreaming a gender perspective in national institutional arrangements for sustainable development is stated.

However in their gender analysis of the WSSD Plan of Implementation, the Women's Environment and Development Organization (WEDO) states its disappointment: "Many of these [references to gender] simply reaffirm commitments in existing international agreements, rather than move forward. References to gender in the Plan of Implementation provide for equal opportunity with men, but do not make gender central to sustainable development."

The same organization deplores that the gains they made in integrating references to human rights merely allowed "salvaging existing agreements made at the International Conference on Population and Development in Cairo, the Fourth World Conference on Women in Beijing, and Beijing+5". However, "one of the more significant gains was the right of women to inherit land, particularly critical to the livelihoods of African women and communities. The importance of this commitment lies in the recognition of the rights of women to access land, resources, credit, and a groundbreaking decision on the right to inherit land." (WEDO 2002).

The UNFCCC does not mention either a gender perspective or women and men as specific stakeholders in the convention. In the CBD, the only mention of women and men is in the Preamble, which states: "Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policymaking and implementation for biological diversity conservation, (...)" (CBD, 1992). The rest of the text does not mention the specific roles, responsibilities, participation of women and men. The decisions of the last (sixth) Conferences of the Parties do not refer to gender, or women and men. However, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) has emitted the Recommendation II/7³ on agricultural biological diversity, in which it is stated, on the subject of social and cultural importance of biological diversity, that "Actual and potential knowledge about local agricultural ecosystems generated by farmer communities is an important key to optimising the management of those agricultural ecosystems. Much of the agricultural practices and knowledge are performed and maintained by women in local societies in many regions of the world. The role of women for

¹ The Women in Development approach seeks to integrate women into the development process by targeting them as project participants of programming, whereas Gender and Development looks at the larger inequities of unequal relations between the rich and the poor, the advantaged and the disadvantaged and within that, the additional inequities that women face (Gender mainstreaming definitions, <http://www.undp.org/gender/>).

² MDG No3: "Promote gender equality and empower women". To this goal is associated Target 4: "Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015."

³ Second Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, Montreal, Canada, 2 - 6 September 1996.

maintaining those skills and knowledge is of fundamental importance”. The SBSTTA further on recommends that “the Conference of the Parties encourage (...) the development, maintenance and mobilization of local knowledge of farmers and of farming communities, with special reference to gender roles in food production for sustainable development”.

The UNCCD goes further in gender mainstreaming, not only in recognizing the role of women in rural livelihoods, but in explicitly encouraging the equal participation of women and men. The prologue mentions: « Stressing the important role played by women in regions affected by desertification and/or drought, particularly in rural areas of developing countries, and the importance of ensuring the full participation of both men and women at all levels in programmes to combat desertification and mitigate the effects of drought”. The General provisions, article 5, oblige affected country parties to “promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of nongovernmental organizations, in efforts to combat desertification and mitigate the effects of drought”. National Action programmes (part 3, section 1, and article 10) are required to “specify the respective roles of government, local communities and land users and the resources available and needed”. In this, they must “provide for effective participation at the local, national and regional levels of non-governmental organizations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organizations, in policy planning, decision-making, and implementation and review of national action programmes” (point f). As for capacity building (Part 3, section 3, article 19), parties are required to promote capacity building “through the full participation at all levels of local people, particularly at the local level, especially women and youth, with the cooperation of non-governmental and local organizations” (point 1). Furthermore, for understanding of causes and effect of desertification, and actions to be undertaken to meet the conventions, Public awareness and educational programmes will ensure that opportunities are extended to all “in particular for girls and women, on the identification, conservation and sustainable use and management of the natural resources of affected areas” (point 3).

The Regional implementation Annex for Africa is the only regional implementation plan for the UNCCD which mentions women and men. Article 8, Point 2, states that National Action Plans should favour, among other features, “the increase in participation of local populations and communities, including women, farmers and pastoralists, and delegation to them of more responsibility for management.”

In relation to the wide difference in levels of gender mainstreaming into the conventions, it is interesting to note that the UNFCCC and CBD developed out of primarily northern environmental concerns through governmental and UN mechanisms (Intergovernmental Panel on Climate Change (IPCC) and the UNEP ad hoc Committee of Experts on Biodiversity), whereas the UNCCD was proposed by the South, who sought a solution to desertification, which has primary impact on the world’s poorest populations (Swiderska 2002). This has been hypothesised as a cause to explain the wide differences between conventions, in their success in mainstreaming gender. The fact that each convention had been developed at different moments in the evolution of the Gender and Development paradigm has also been put forth as a possible explanation. In this case, the UNCCD, being the last to be signed, would have benefited from the higher level of maturity of the Gender and Development paradigm.

Legal and policy dimensions of Convention Implementation

The Rio Conventions each offer both a legal framework and a policy framework for addressing Biodiversity, Climate Change, and Desertification. Both frameworks suffer limitations, but have also demonstrated their potential for enhancing implementation of the Conventions.

The Rio Conventions as source of Law

All three conventions are recognized as international sources of law that bind nations, which makes legal action difficult. Legal measures between nations in relation to environmental crimes is theoretically possible, since the international court of Justice does rule on questions of international environmental law, but no such action has yet been taken. At this level, international institutions play a monitoring and informational role (Divan 2002).

However the multiplication of international instruments, sources of both “hard” law (such as the Rio conventions, the CEDAW...) and “soft” law (such as Agenda 21, the Johannesburg Plan of Implementation, the Millennium Development Goals, the Beijing Platform for Action...), make the monitoring process increasingly difficult. A harmonization of procedures and approaches between international instruments would facilitate the monitoring of these instruments from cross-sectoral perspectives, such as gender, sustainable development, and fight against poverty.

If harmonization between UN instruments is proving difficult, compatibility between UN instruments and Trade Agreements give even more space for contention, for example between the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement and the Convention on Biological Diversity. The TRIPS agreement stipulates that plant varieties must be protected by a patent. The ethical objections to patenting plant varieties have been raised by several countries (WTO 2003). Furthermore, the collective and evolving nature of the knowledge held by indigenous peoples and local communities on plant varieties make these ineligible for patenting under the Intellectual Property Rights system (FAO 2000). Therefore, it is not guaranteed, under the TRIPS Agreement, that benefits arising from use of this biodiversity knowledge will be shared with local communities, as it is stipulated in the CBD, articles 15.7 and 8(j)(12)(FAO 2000).

Article 27.3(b) of the TRIPS allows governments to exclude plants, animals and “essentially” biological processes from patenting, under certain conditions, and plant varieties may be protected through a system created specifically for the purpose (“*sui generis*”). The opportunity for countries to develop a “*sui generis*” system which would be responsive to the needs of local communities can be seen as one way out of this discrepancy between the CBD and the TRIPS agreement (FAO 2000). Furthermore, Farmer’s Rights, as a legal concept, has been fully integrated in the International Treaty on Plant Genetic Resources for Food and Agriculture, which is shortly to reach its 40th instrument of ratification which will mark its entry in force. Farmers’ Rights, as defined in the International Treaty on Plant Genetic Resources, are based on the recognition of “the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centers of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.” (ITPRG). On the basis of this, contracting parties are called upon to take measures to protect and promote Farmers’ Rights, with emphasis on traditional knowledge and participation in decision-making processes relating to conservation and sustainable use of plant genetic resources. This framework, based on local-level knowledge systems and practices, allows the taking into consideration contributions to biodiversity of both women and men. Farmer’s Rights as a legal concept has been identified as another possible key for harmonizing the CBD and the TRIPS agreement.

State-parties to both the WTO and the CBD have brought forth suggestions for conciliating both agreements using the concept of Farmers' Rights (Correa 2000).

Policy Challenges in Convention Implementation

Much has been done since the Rio Conference to develop appropriate policy frameworks for Convention implementation: most signatory countries to the UN Convention to Combat Desertification have submitted their National Action Programmes. Likewise, most parties to the UN Convention on Biodiversity have submitted National Biodiversity Strategies and Action Plans, and their first National reports. Second National Reports and Thematic Reports have been submitted in many cases. Under the UNFCCC, most countries have submitted their First National Communications, and many their Second and Third, containing emissions inventories and initial assessments of vulnerability and adaptation needs.

On the basis of these, many groundbreaking initiatives have been successfully launched, for example community-based resource management, expansion of protected areas, promotion of the commercial use of biodiversity, clean energy technology, carbon trading, community-based wildlife management and eco-tourism (Swiderska 2002).

However, implementation remains a challenge, which the WSSD has not completely solved. Lessons learnt during the ten years following UNCED point towards the fact that implementation will be successful if, among other conditions, the approach is both cross-sectoral, and participatory.

Sustainable Development Policies are inherently cross-sectoral, since the impacts and root causes of desertification, climate change and biodiversity issues cut across a wide variety of economic sectors (OECD 2002b). Likewise, the livelihood strategies of the rural poor are multi-dimensional and support to these strategies requires the attention of different ministries. Traditional sector-wise segmentation in governments and organizations has been identified as one enduring obstacle to implementation of sustainable development policies (OECD 2002b, ADB et al 2003, Swiderska 2002).

The FAO seeks to overcome this issue through an interdisciplinary approach, which includes a gender perspective. The Strategic Framework for FAO 2000-2015 states that "Interdisciplinary approaches are prerequisites to successful and sustainable rural development." Thus, in order to respond institutionally to this prerequisite, the FAO identified 16 Priority Areas for Interdisciplinary Action, in relation to the corporate strategies developed to address FAO members' needs.

Three Priority Areas for Interdisciplinary Action are specifically linked to FAO's action in support to the implementation of the Rio Conventions: Climate Change, Integrated Management of Biological Diversity for Food and Agriculture, and Strengthening Capacity for Integrated Ecosystem Management, which includes activities in support to the UNCCD. The work of these PAIAs is guided by their respective Interdepartmental Working Groups.

One cross-cutting Priority Area for Interdisciplinary Action is Gender Mainstreaming. The work of this PAIA is guided by the Gender and Development Service (SDW), which participates in the Inter-Departmental Working Groups related to each of the PAIAs. In this way, gender and environment issues, which have been overviewed above, are addressed in FAO's support to the implementation of each of the post-UNCED Conventions.

Alongside the necessity of adopting cross-sectoral approaches to policy implementation, the value-added of a participatory approach has proven to be fundamental to successful

implementation of the conventions (IIED 2002, GEF 2002b, and UN 2003). In addition to enhancing local ownership of activities relating to the implementation of the conventions, participation encourages political commitment, and creates efficient feedback mechanisms. Participation and Gender are intimately linked: Gender, as a conceptual category, intersects with other categories (rural/urban, levels of poverty, ethnicity, caste...), as well as different levels of context in which the environmental and gender issues take place (micro- and macro-economic contexts), all of which are relevant to understanding the dynamics of participation, as well as inequality or absence of participation. Understanding these dynamics is essential to the implementation of participatory approaches.

The failure of the WSSD to bring forth the international agreements which were expected, in contrast with the cost of these summits, has brought some critics to qualify the WSSD as “the last UN summit”, given that “the opportunity costs of this approach are becoming unacceptably high while the returns from WSSD are overwhelmingly seen as unacceptably low” (Bigg, 2002). We may speculate that a move away from large international conferences will favour a higher national-level appropriation of the implementation process, and consequently higher local-level participation. This emphasis on local-level participation is the cornerstone for engendering sustainable development policies, as priorities and contributions of both women and men are taken into consideration from the grassroots level upwards.

Measures to bridge the knowledge gap on gender,
environment and sustainable development issues

- Document the gender aspects and implications of global environmental change, from the standpoint of the issues related to the different environmental conventions, as well as gender-differentiated impacts of environmental insecurity
- Research such as to enhance the gender sensitivity of environmental management, whether for use of natural resources, or risk management to make better use of existing information and tools
- Govern on the basis of full and equitable participation, accountability, transparency and equality for sustainable development, as for all development issues
- Specific gender mainstreaming tools undertaken by governments or civil society organizations, such as gender-responsive budgeting exercise
- Examine gender-sensitive statistics in their relevance and efficiency for addressing gender/environment issues
- Assist institutions working on sustainable development to improve their gender mainstreaming mechanisms
- Include clear gender policies and objectives, as well as high-level commitment for gender mainstreaming
- Support to these, in conjunction with in-house thematic expertise on gender issue, availability of gender-disaggregated information, and staff accountability mechanisms for gender mainstreaming

Enhancing the gender-responsiveness of the Rio conventions depends ultimately on political will, both in governments and institutions. Political commitment from both from the North and the South and international cooperation and resolution will be needed to implement the Convention on Biodiversity, the United National Framework Convention on Climate Change, and the United Nations Convention to Combat Desertification. These efforts involve long-term social and economic adaptive processes, and yet, negative consequences of environmental degradation are felt on an immediate basis by the poorest populations. Both governments and institutions working towards sustainable development are called upon to alleviate negative effects and implement both short and long-term solutions.

Governments are held accountable for compliance with international commitments taken for sustainable development, including the gender equality dimensions of these commitments. However, gender mainstreaming should ultimately be seen as a means for increasing efficiency in convention implementation, through better governance, higher participation, and enhanced involvement of all segments of affected populations.

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Annex 1: Status of Convention Signatories

All countries have ratified all three conventions, except the following:

Country	CBD	UNFCCC	UNCCD
Andorra			X
Brunei Darussalam			X
Estonia	X	X	
Iraq			
Russian Federation	X	X	
Somalia		X	X
Taiwan			
Timor Leste			X
Turkey	X		X
United States	Signed but not ratified	X	X
Vatican City (Holy See)			

X: Ratified

Annex 2: Gender mainstreaming in Agenda 21–Extracts

Chapter 24: Global Action for Women Towards Sustainable and Equitable Development

Programme Area Basis for action

24.1. The international community has endorsed several plans of action and conventions for the full, equal and beneficial integration of women in all development activities; in particular the Nairobi Forward-looking Strategies for the Advancement of Women, 1/ which emphasize women's participation in national and international ecosystem management and control of environment degradation. Several conventions, including the Convention on the Elimination of All Forms of Discrimination against Women (General Assembly resolution 34/180, annex) and conventions of ILO and UNESCO have also been adopted to end gender-based discrimination and ensure women access to land and other resources, education and safe and equal employment. Also relevant are the 1990 World Declaration on the Survival, Protection and Development of Children and the Plan of Action for implementing the Declaration (A/45/625, annex). Effective implementation of these programmes will depend on the active involvement of women in economic and political decision-making and will be critical to the successful implementation of Agenda 21.

Objectives

24.2. The following objectives are proposed for national Governments:

- (a) To implement the Nairobi Forward-looking Strategies for the Advancement of Women, particularly with regard to women's participation in national ecosystem management and control of environment degradation;
- (b) To increase the proportion of women decision makers, planners, technical advisers, managers and extension workers in environment and development fields;
- (c) To consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional, legal, administrative, cultural, behavioural, social and economic obstacles to women's full participation in sustainable development and in public life;
- (d) To establish by the year 1995 mechanisms at the national, regional and international levels to assess the implementation and impact of development and environment policies and programmes on women and to ensure their contributions and benefits;
- (e) To assess, review, revise and implement, where appropriate, curricula and other educational material, with a view to promoting the dissemination to both men and women of gender-relevant knowledge and valuation of women's roles through formal and non-formal education, as well as through training institutions, in collaboration with non-governmental organizations;
- (f) To formulate and implement clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, particularly as it pertains to their access to resources, by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements;
- (g) To implement, as a matter of urgency, in accordance with country-specific conditions, measures to ensure that women and men have the same right to decide freely and responsibly the number and spacing of their children and have access to information, education and means, as appropriate, to enable them to exercise this right in keeping with their freedom, dignity and personally held values;
- (h) To consider adopting, strengthening and enforcing legislation prohibiting violence against women and to take all necessary administrative, social and educational measures to eliminate violence against women in all its forms.

Activities

24.3. Governments should take active steps to implement the following:

- (a) Measures to review policies and establish plans to increase the proportion of women involved as decision makers, planners, managers, scientists and technical advisers in the design, development and implementation of policies and programmes for sustainable development;
- (b) Measures to strengthen and empower women's bureaux, women's non-governmental organizations and women's groups in enhancing capacity-building for sustainable development;
- (c) Measures to eliminate illiteracy among females and to expand the enrolment of women and girls in educational institutions, to promote the goal of universal access to primary and secondary education for girl children and for women, and to increase educational and training opportunities for women and girls in sciences and technology, particularly at the post-secondary level;
- (d) Programmes to promote the reduction of the heavy workload of women and girl children at home and outside through the establishment of more and affordable nurseries and kindergartens by Governments, local authorities, employers and other relevant organizations and the sharing of household tasks by men and women on an equal basis, and to promote the provision of environmentally sound technologies which have been designed, developed and improved in consultation with women, accessible and clean water, an efficient fuel supply and adequate sanitation facilities;
- (e) Programmes to establish and strengthen preventive and curative health facilities, which include women-centred, women-managed, safe and effective reproductive health care and affordable, accessible, responsible planning of family size and services, as appropriate, in keeping with freedom, dignity and personally held values. Programmes should focus on providing comprehensive health care, including pre-natal care, education and information on health and responsible parenthood, and should provide the opportunity for all women to fully breastfeed at least during the first four months post-partum. Programmes should fully support women's productive and reproductive roles and well-being and should pay special attention to the need to provide equal and improved health care for all children and to reduce the risk of maternal and child mortality and sickness;
- (f) Programmes to support and strengthen equal employment opportunities and equitable remuneration for women in the formal and informal sectors with adequate economic, political and social support systems and services, including child care, particularly day-care facilities and parental leave, and equal access to credit, land and other natural resources;
- (g) Programmes to establish rural banking systems with a view to facilitating and increasing rural women's access to credit and to agricultural inputs and implements;
- (h) Programmes to develop consumer awareness and the active participation of women, emphasizing their crucial role in achieving changes necessary to reduce or eliminate unsustainable patterns of consumption and production, particularly in industrialized countries, in order to encourage investment in environmentally sound productive activities and induce environmentally and socially friendly industrial development;
- (i) Programmes to eliminate persistent negative images, stereotypes, attitudes and prejudices against women through changes in socialization patterns, the media, advertising, and formal and non-formal education;
- (j) Measures to review progress made in these areas, including the preparation of a review and appraisal report which includes recommendations to be submitted to the 1995 world conference on women.

24.4. Governments are urged to ratify all relevant conventions pertaining to women if they have not already done so. Those that have ratified conventions should enforce and establish legal, constitutional and administrative procedures to transform agreed rights into domestic legislation and should adopt measures to implement them in order to strengthen the legal capacity of women for full and equal participation in issues and decisions on sustainable development.

24.5. States parties to the Convention on the Elimination of All Forms of Discrimination against Women should review and suggest amendments to it by the year 2000, with a view to strengthening those elements of the Convention related to environment and development, giving special attention to the issue of access and entitlements to natural resources, technology, creative banking facilities and low-cost housing, and the control of pollution and toxicity in the home and workplace. States parties should also clarify the extent of the Convention's scope with respect to the issues of environment and development and request the Committee on the Elimination of Discrimination against Women to develop guidelines regarding the nature of reporting such issues, required under particular articles of the Convention.

A) Areas requiring urgent action

24.6. Countries should take urgent measures to avert the ongoing rapid environmental and economic degradation in developing countries that generally affects the lives of women and children in rural areas suffering drought, desertification and deforestation, armed hostilities, natural disasters, toxic waste and the aftermath of the use of unsuitable agro-chemical products.

24.7. In order to reach these goals, women should be fully involved in decision-making and in the implementation of sustainable development activities.

B) Research, data collection and dissemination of information

24.8. Countries should develop gender-sensitive databases, information systems and participatory action-oriented research and policy analyses with the collaboration of academic institutions and local women researchers on the following:

(a) Knowledge and experience on the part of women of the management and conservation of natural resources for incorporation in the databases and information systems for sustainable development;

(b) The impact of structural adjustment programmes on women. In research done on structural adjustment programmes, special attention should be given to the differential impact of those programmes on women, especially in terms of cut-backs in social services, education and health and in the removal of subsidies on food and fuel;

(c) The impact on women of environmental degradation, particularly drought, desertification, toxic chemicals and armed hostilities;

(d) Analysis of the structural linkages between gender relations, environment and development;

(e) The integration of the value of unpaid work, including work that is currently designated "domestic", in resource accounting mechanisms in order better to represent the true value of the contribution of women to the economy, using revised guidelines for the United Nations System of National Accounts, to be issued in 1993;

(f) Measures to develop and include environmental, social and gender impact analyses as an essential step in the development and monitoring of programmes and policies;

(g) Programmes to create rural and urban training, research and resource centres in developing and developed countries that will serve to disseminate environmentally sound technologies to women.

C) International and regional cooperation and coordination

24.9. The Secretary-General of the United Nations should review the adequacy of all United Nations institutions, including those with a special focus on the role of women, in meeting development and environment objectives, and make recommendations for strengthening their capacities. Institutions that require special attention in this area include the Division for the Advancement of Women (Centre for Social Development and Humanitarian Affairs, United Nations Office at Vienna), the United Nations Development Fund for Women (UNIFEM), the International Research and Training Institute for the Advancement of Women (INSTRAW) and the women's programmes of regional commissions. The review should consider how the environment and development programmes of each body of the United Nations system could be

strengthened to implement Agenda 21 and how to incorporate the role of women in programmes and decisions related to sustainable development.

24.10. Each body of the United Nations system should review the number of women in senior policy-level and decision-making posts and, where appropriate, adopt programmes to increase that number, in accordance with Economic and Social Council resolution 199/17 on the improvement of the status of women in the Secretariat.

24.11. UNIFEM should establish regular consultations with donors in collaboration with UNICEF, with a view to promoting operational programmes and projects on sustainable development that will strengthen the participation of women, especially low-income women, in sustainable development and in decision-making. UNDP should establish a women's focal point on development and environment in each of its resident representative offices to provide information and promote exchange of experience and information in these fields. Bodies of the United Nations system, governments and non-governmental organizations involved in the follow-up to the Conference and the implementation of Agenda 21 should ensure that gender considerations are fully integrated into all the policies, programmes and activities.

Means of implementation

Financing and cost evaluation

24.12. The Conference secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this chapter to be about \$40 million from the international community on grant or concessional terms. These are indicative and order-of-magnitude estimates only and have not been reviewed by Governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, inter alia, the specific strategies and programmes Governments decide upon for implementation.

Notes

1/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.85.IV.10), chap. I, sect. A.

Annex 3: Gender Mainstreaming in the Plan of Implementation of the World Summit on Sustainable Development–Extracts

I. Introduction

4. Good governance within each country and at the international level is essential for sustainable development. At the domestic level, sound environmental, social and economic policies, democratic institutions responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investment are the basis for sustainable development. As a result of globalization, external factors have become critical in determining the success or failure of developing countries in their national efforts. The gap between developed and developing countries points to the continued need for a dynamic and enabling international economic environment supportive of international cooperation, particularly in the areas of finance, technology transfer, debt and trade and full and effective participation of developing countries in global decision-making, if the momentum for global progress towards sustainable development is to be maintained and increased.

II. Poverty eradication

7. Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development, particularly for developing countries. Although each country has the primary responsibility for its own sustainable development and poverty eradication and the role of national policies and development strategies cannot be overemphasized, concerted and concrete measures are required at all levels to enable developing countries to achieve their sustainable development goals as related to the internationally agreed poverty-related targets and goals, including those contained in Agenda 21, the relevant outcomes of other United Nations conferences and the United Nations Millennium Declaration. This would include actions at all levels to:

(d) Promote women's equal access to and full participation in, on the basis of equality with men, decision-making at all levels, mainstreaming gender perspectives in all policies and strategies, eliminating all forms of violence and discrimination against women and improving the status, health and economic welfare of women and girls through full and equal access to economic opportunity, land, credit, education and health-care services;

III. Changing unsustainable patterns of consumption and production

19. Call upon Governments, as well as relevant regional and international organizations and other relevant stakeholders, to implement, taking into account national and regional specificities and circumstances, the recommendations and conclusions of the Commission on Sustainable Development concerning energy sustainable development adopted at its ninth session, including the issues and options set out below, bearing in mind that in view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. This would include actions at all levels to:

(m) Promote education to provide information for both men and women about available energy sources and technologies;

IV. Protecting and managing the natural resource base of economic and social development

25. Launch a programme of actions, with financial and technical assistance, to achieve the Millennium development goal on safe drinking water. In this respect, we agree to halve, by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water, as outlined in the Millennium Declaration, and the proportion of people without access to basic sanitation, which would include actions at all levels to:

- (a) Mobilize international and domestic financial resources at all levels, transfer technology, promote best practice and support capacity -building for water and sanitation infrastructure and services development, ensuring that such infrastructure and services meet the needs of the poor and are gender-sensitive;
 - (b) Facilitate access to public information and participation, including by women, at all levels in support of policy and decision -making related to water resources management and project implementation;
42. Mountain ecosystems support particular livelihoods and include significant watershed resources, biological diversity and unique flora and fauna. Many are particularly fragile and vulnerable to the adverse effects of climate change and need specific protection. Actions at all levels are required to:
- (a) Develop and promote programmes, policies and approaches that integrate environmental, economic and social components of sustainable mountain development and strengthen international cooperation for its positive impacts on poverty eradication programmes, especially in developing countries;
 - (b) Implement programmes to address, where appropriate, deforestation, erosion, land degradation, loss of biodiversity, disruption of water flows and retreat of glaciers;
 - (c) Develop and implement, where appropriate, gender-sensitive policies and programmes, including public and private investments that help eliminate inequities facing mountain communities;
 - (d) Implement programmes to promote diversification and traditional mountain economies, sustainable livelihoods and small-scale production systems, including specific training programmes and better access to national and international markets, communications and transport planning, taking into account the particular sensitivity of mountains;
 - (e) Promote full participation and involvement of mountain communities in decisions that affect them and integrate indigenous knowledge, heritage and values in all development initiatives;

VI. Health and sustainable development

54. Strengthen the capacity of health-care systems to deliver basic health services to all in an efficient, accessible and affordable manner aimed at preventing, controlling and treating diseases, and to reduce environmental health threats, in conformity with human rights and fundamental freedoms and consistent with national laws and cultural and religious values , and taking into account the reports of relevant United Nations conferences and summits and of special sessions of the General Assembly. This would include actions at all levels to:

- (i) Ensure equal access of women to health -care services, giving particular attention to maternal and emergency obstetric care;
- (j) Address effectively, for all individuals of appropriate age, the promotion of healthy living, including their reproductive and sexual health, consistent with the commitments and outcomes of recent United Nations conferences and summits, including the World Summit for Children, the United Nations Conference on Environment and Development, the International Conference on Population and Development, the World Summit for Social Development and the Fourth World Conference on Women, and their respective reviews and reports;
- (l) Transfer and disseminate, on mutually agreed terms, including through public-private multisector partnerships, with international financial support, technologies for safe water, sanitation and waste management for rural and urban areas in developing countries and countries with economies in transition, taking into account country -specific conditions and gender equality, including specific technology needs of women;

VIII. Sustainable development for Africa

62. Since the United Nations Conference on Environment and Development, sustainable development has remained elusive for many African countries. Poverty remains a major

challenge and most countries on the continent have not benefited fully from the opportunities of globalization, further exacerbating the continent's marginalization. Africa's efforts to achieve sustainable development have been hindered by conflicts, insufficient investment, limited market access opportunities and supply side constraints, unsustainable debt burdens, historically declining levels of official development assistance and the impact of HIV/AIDS. The World Summit on Sustainable Development should reinvigorate the commitment of the international community to address these special challenges and give effect to a new vision based on concrete actions for the implementation of Agenda 21 in Africa. The New Partnership for Africa's Development (NEPAD) is a commitment by African leaders to the people of Africa. It recognizes that partnerships among African countries themselves and between them and with the international community are key elements of a shared and common vision to eradicate poverty, and furthermore it aims to place their countries, both individually and collectively, on a path of sustained economic growth and sustainable development, while participating actively in the world economy and body politic. It provides a framework for sustainable development on the continent to be shared by all Africa's people. The international community welcomes NEPAD and pledges its support to the implementation of this vision, including through utilization of the benefits of South-South cooperation supported, inter alia, by the Tokyo International Conference on African Development. It also pledges support for other existing development frameworks that are owned and driven nationally by African countries and that embody poverty reduction strategies, including poverty reduction strategy papers.

Achieving sustainable development includes actions at all levels to:

(a) Create an enabling environment at the regional, sub regional, national and local levels in order to achieve sustained economic growth and sustainable development and support African efforts for peace, stability and security, the resolution and prevention of conflicts, democracy, good governance, respect for human rights and fundamental freedoms, including the right to development and gender equality;

67. Achieve significantly improved sustainable agricultural productivity and food security in furtherance of the agreed Millennium development goals, including those contained in the Millennium Declaration, in particular to halve by 2015 the proportion of people who suffer from hunger, including through initiatives at all levels to:

(b) Promote and support efforts and initiatives to secure equitable access to land tenure and clarify resource rights and responsibilities, through land and tenure reform processes that respect the rule of law and are enshrined in national law, and provide access to credit for all, especially women, and that enable economic and social empowerment and poverty eradication as well as efficient and ecologically sound utilization of land and that enable women producers to become decision makers and owners in the sector, including the right to inherit land;

X. Means of implementation

120. Eliminate gender disparity in primary and secondary education by 2005, as provided in the Dakar Framework for Action on Education for All, and at all levels of education no later than 2015, to meet the development goals contained in the Millennium Declaration, with action to ensure, inter alia, equal access to all levels and forms of education, training and capacity -building by gender mainstreaming, and by creating a gender-sensitive educational system.

130. Encourage further work on indicators for sustainable development by countries at the national level, including integration of gender aspects, on a voluntary basis, in line with national conditions and priorities.

138. Good governance is essential for sustainable development. Sound economic policies, solid democratic institutions responsive to the needs of the people and improved infrastructure are the basis for sustained economic growth, poverty eradication, and employment creation. Freedom, peace and security, domestic stability, respect for human rights, including the right to

development, and the rule of law, gender equality, market -oriented policies, and an overall commitment to just and democratic societies are also essential and mutually reinforcing.

XI. Institutional framework for sustainable development

D. Role of the Economic and Social Council

144. Pursuant to the relevant provisions of the Charter of the United Nations, the provisions of Agenda 21 regarding the Economic and Social Council and General Assembly resolutions 48/162 and 50/227, which reaffirmed the Council as the central mechanism for the coordination of the United Nations system and its specialized agencies and supervision of subsidiary bodies, in particular its functional commissions, and to promote the implementation of Agenda 21 by strengthening system-wide coordination, the Council should:

(g) Intensify its efforts to ensure that gender mainstreaming is an integral part of its activities concerning the coordinated implementation of Agenda 21.

H. Strengthening institutional frameworks for sustainable development at the national level

166. Support efforts by all countries, particularly developing countries, as well as countries with economies in transition, to enhance national institutional arrangements for sustainable development, including at the local level. That could include promoting cross-sectoral approaches in the formulation of strategies and plans for sustainable development, such as, where applicable, poverty reduction strategies, aid coordination, encouraging participatory approaches and enhancing policy analysis, management capacity and implementation capacity, including mainstreaming a gender perspective in all those activities.

Annex 4: Gender Mainstreaming in the United Nations Convention to Combat Desertification–Extracts

Prologue:

Stressing the important role played by women in regions affected by desertification and/or drought, particularly in rural areas of developing countries, and the importance of ensuring the full participation of both men and women at all levels in programmes to combat desertification and mitigate the effects of drought;

PART II: General Provisions

Article 5: Obligations of affected country Parties

Promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of nongovernmental organizations, in efforts to combat desertification and mitigate the effects of drought;

PART III: Action Programmes, scientific and Technical Cooperation and Supporting Measures

Section 1: Action programmes

Article 10 : National action programmes

2. National action programmes shall specify the respective roles of government, local communities and land users and the resources available and needed. They shall, inter alia: (f) provide for effective participation at the local, national and regional levels of non-governmental organizations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organizations, in policy planning, decision-making, and implementation and review of national action programmes; and

Section 3: Supporting measures

Article 19: Capacity building, education and public awareness

1. The Parties recognize the significance of capacity building – that is to say, institution building, training and development of relevant local and national capacities -- in efforts to combat desertification and mitigate the effects of drought. They shall promote, as appropriate, capacity-building:

(a) through the full participation at all levels of local people, particularly at the local level, especially women and youth, with the cooperation of non-governmental and local organizations;

3. The Parties shall cooperate with each other and through competent intergovernmental organizations, as well as with non-governmental organizations, in undertaking and supporting public awareness and educational programmes in both affected and, where relevant, unaffected country Parties to promote understanding of the causes and effects of desertification and drought and of the importance of meeting the objective of this Convention. To that end, they shall: assess educational needs in affected areas, elaborate appropriate school curricula and expand, as needed, educational and adult literacy programmes and opportunities for all, in particular for girls and women, on the identification, conservation and sustainable use and management of the natural resources of affected areas;

ANNEX I: Regional Implementation for Africa

Article 8: Content of national action programmes

2. National action programmes shall, as appropriate, include the following general features:
(...) The increase in participation of local populations and communities, including women, farmers and pastoralists, and delegation to them of more responsibility for management.

Gender impacts of climate change have been identified as an issue requiring greater attention by the Commission on the Status of Women (CSW). Gender norms, roles and relations (Box 1) are important factors in determining vulnerability and adaptive capacity to the health impacts of climate change (Box 2). Women's and men's vulnerability to the impact of extreme climate events is determined not only by biology but also by differences in their social roles and responsibilities (Easterling, 2000; Wisner et al., 2004). Although they vary, these roles and responsibilities exist in all societies. The relationship between desertification and climate change in the Mediterranean.

4 United Nations Convention to Combat Desertification (2011), "Gender and Desertification: Fact Sheet," available at: <http://www.unccd.int/knowledge/docs/Desertificationandgender.pdf>.

5 There is little detailed data on the economic costs resulting from desertification, although an unpublished World Bank study suggested that the depletion of natural resources in one Sahelian country was equivalent to 20 per cent of its annual GDP.

Other indirect economic and social costs suffered outside the affected areas, including the influx of "environmental refugees" and losses to national food production.

Gender Perspectives on the Conventions on Biodiversity, Climate Change and Desertification. Rome, FAO http://www.fao.org/sd/dim_pe1/pe1_041002_en.htm

Environment and Natural Resource Management: IFAD's Growing Commitment <http://www.ifad.org/pub/enviorn/EnvironENG.pdf>

Adivasi Women: Engaging with Climate Change (April 2009) http://www.un.org/esa/socdev/unpfii/documents/Side_events_UNPFII08_all_revised.doc

Climate change has significant impacts on fresh water sources, affecting the availability of water used for domestic and productive tasks.