WOMEN AND THE ENVIROMENT:

NEW CHALLENGES

BEIJING AT 10 :

PUTTING POLICY INTO PRACTICE

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Review and Appraisal of the Implementation of the Beijing Declaration and Platform for Action

Critical Area K. Women and the Environment

"Women have an essential role to play in the development of sustainable and ecologically sound consumption and production patterns and approaches to natural resource management…"
-Beijing Platform for Action (paragraph 246)

The last ten years, despite numerous commitments to the environment by national governments and the international community, have seen a grave deterioration in the health of the planet. Catastrophic natural disasters such as the recent tsunami in South Asia; rapidly rising sea levels due to global warming; rising levels of air pollution; decreasing access to potable water; and elevated extinction rates all contribute to making the world a less healthy place to live. Despite a substantial body national, regional and international legislation that seeks to address these crucial environmental issues, systematic global progress has yet to be realized, especially when it comes to the participation of women and gender mainstreaming. Both gender and the environment often compete for last place on the list of national and international priorities, thus combining the two becomes a mere after-thought.

In the face of these alarming global trends and the continued marginalization of both gender and environmental concerns, the struggle to ensure the participation of women and the integration gender issues has largely been carried out by women's movements and non-governmental organizations (NGOs). Along with a handful of national governments and international organizations, they have recognized that not only is it women's right to participate in environmental issues, but that women and men have significantly different relationships with their environments; including different needs, knowledge, responsibilities and control over natural resources. Moreover, because of both biological and gender-based differences, women and men are affected differently by environmental degradation and pollution. In order to conduct accurate research and develop effective programming for a healthy environment and sustainable development, gender issues must be incorporated from the very beginning.

Since 1995, new international commitments addressing various aspects of the environment have established new, often controversial, global standards. Though many of these conventions, declarations and agreements include references to women and gender issues, most do not integrate gender throughout as a cross-cutting issue. Key commitments include: Agenda 21 (comprising the Rio Declaration on Environment and Development, and the Statement of principles for the Sustainable Management of Forests);[1] the Istanbul

[1] Adopted by more than 178 Governments at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janerio, Brazil, 3 to 14 June 1992. The Conference also gave rise to the UN Commission on Sustainable Development (CSD) which monitors the implementation of Agenda 21 at the local, national, regional and international levels http://www.un.org/esa/sustdev/documents/agenda21/index.htm

Declaration on Human Settlements from the UN Conference on Human Settlements (Habitat Agenda, 1996);[2] the Kyoto Protocol to the UN Framework Convention on Climate Change (1997);[3] the Final Reports of the First, Second and Third World Water Forums (1997, 2000, 2003);[4] the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Århus Convention, 1998);[5] the Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal (1999);[6] the Cartagena Protocol on Biosafety to the Convention on Biodiversity (2000);[7] the Millennium Development Goals (2000);[8] the Stockholm Convention on Persistent Organic Pollutants (2001);[9] the International Treaty on Plant Genetic Resources for Food and Agriculture (2001);[10] the Ministerial Declaration of the International Conference on Freshwater (2001);[11] the UN Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (2001);[12] and the Plan of Implementation of the World Summit on Sustainable Development (2002).[13] In a groundbreaking move, the United Nations Environmental Programme (UNEP) organized the first Global Women's Assembly on the Environment: Women as the Voice for the Environment (WAVE) from 11 to 13 October 2004. The conference was attended by close to 150 participants from sixty-five countries; who together drafted a Manifesto, recommendations and project ideas that combined serve as a vital source of information and ideas on how to put policy into practice.[14]

While recent conferences and legislation show that action has been taken on the policy front, the demand for concrete implementation of these agreements can be heard from many different directions. With regard to women and gender issues, the base of knowledge and experience built over the last ten years remains insufficient to address the depth of current environmental crises. Regrettably, the strategic objectives of Critical Area K. remain well out of reach.

Strategic Objective K.1

"Involve women actively in environmental decision-making at all levels"

Actions to be taken by Governments, International Organizations, Private Sector Institutions and NGOs include: ensure the equal participation of women in all levels of environmental decision-making; increase women's access to information, education, skills and technologies; encourage the protection and use of the knowledge, innovations and practices of local and indigenous women, including safeguarding intellectual property rights and biodiversity; reduce the risk to women from environmental hazards and encourage institutions to address the impact of environmental degradation upon women; empower women as producers and consumers;

[2] *Istanbul Declaration on Human Settlements* http://www.unchs.org/unchs/english/hagenda/ist-dec.htm
[3] Kyoto Protocol to the United Nations Framework Convention on Climate Change http://unfccc.int/resource/docs/convkp/kpeng.pdf
[4] Third World Water Forum: Final Report http://www.world.water-forum3.com/en/finalreport/index.html
[5] Århus Convention http://www.unece.org/env/pp/welcome.html
[6] Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Hazardous Wastes and their Disposal http://www.basel.int/meetings/cop/cop5/docs/prot-e.pdf
[7] Cartagena Protocol on Biosafety http://www.biodiv.org/biosafety/default2.aspx
[8] Millennium Development Goals (2000) http://www.un.org/millenniumgoals/
[9] Stockholm Convention on Persistent Organic Pollutants http://www.pops.int/
[10] International Treaty on Plant Genetic Resources for Food and Agriculture http://www.fao.org/WAICENT/OIS/PRESS_NE/PRESSENG/2001/pren0181.htm
[11] Ministerial Declaration from the International Conference on Freshwater http://www.water-2001.de/outcome/MinistersDeclaration/Ministerial_Declaration.pdf
[12] UN Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm
[13] Plan of Implementation of the World Summit on Sustainable Development http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf
[14] *Report of the Global Women's Assembly on the Environment on the work of its first meeting*. UNEP, 2004. http://www.unep.org/DPDL/Civil_Society/PDF_docs/UNEP-WAVE_Outcome_Document_English.pdf

enhance the involvement of women and gender in the work of the Commission on Sustainable Development, the Global Environment Facility and other UN and international financial institutions.

"Advancing gender equality, through reversing the various social and economic handicaps that make women voiceless and powerless, may also be one of the best ways of saving the environment."
Amartya Sen, 1998[15]

Despite the steps taken to include women's participation and gender mainstreaming into national and international environmental policy, the actions carried out on a practical level remain insignificant in comparison. Though certain countries have succeeded in implementing institutional change and women have generally gained rather than lost ground, women remain vastly underrepresented in decision-making positions.[16] According to the Inter-Parliamentary Union, the global percentage of women in parliament has risen from 11.7 percent in January 1997 to 15.6 percent in November 2004; today there are fourteen countries in the world where women hold thirty percent or more of the parliament seats.[17] In 2003, thirty-five of the world's ministers of the environment were women, up from twenty-two in 2002. These figures have grown slightly, though they are still well below the goal of 50/50 equal representation. On the other hand, women have played a crucial role in grassroots organizing and campaigning on environmental issues. The Green Belt Movement, founded by the winner of the 2004 Nobel Peace Prize Wangari Maathai and comprising mainly poor urban women, plants trees in order to combat soil erosion and provide a sustainable source of wood for fuel.[18]

Within the United Nations system and related institutions, the involvement of women and the integration of gender have been uneven. UNEP's Governing Council has adopted decisions on gender and the environment, including decision 19/7 on "the role of women in environment and development."[19] In line with Agenda 21, women are recognized as a "Major Group" in the work of the Commission on Sustainable Development (CSD) and gender equality is listed as a cross-cutting issue in their multi-year programme of work (2004/05-2016/17).[20] Women's organizations, headed by the Women's Environment and Development Organization (WEDO), have been a marked presence at the CSD sessions, developing position papers, making statements during negotiations, and presenting amendments to various documents. However, during their statement at the twelfth session of the CSD in 2004, women emphasized the need to implement and take action on gender mainstreaming and the participation of women, among other things calling for local women experts to be included in the platform of the CSD and for a woman minister to chair the next CSD.[21]

Despite a bleak global picture regarding women's participation in environmental decision-making, actions by grassroots women's organizations and certain states demonstrate that effective and far-reaching changes are possible. Women are actively seeking to make their voices heard in decision-making forums, from female union organizers in north-eastern Brazil mobilizing women's participation and education on development, drought and environmental degradation,[22] to the global women's organizing that took place before the

[15] Sen, A. "Population and Gender Equity," *The Nation* (24/31 July 2000) 16-18.
[16] For more information on women in decision-making positions, download INSTRAW's *Progress Report on Critical Area G: Women in power and decision-making*. http://www.un-instraw.org
[17] Women in National Parliaments. Inter-Parliamentary Union. http://www.ipu.org/wmn-e/world.htm
[18] Green Belt Movement: http://www.greenbeltmovement.org/
[19] 19th session of the UNEP Governing Council, 2001. http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=96
[20] Multi-year programme of work for CSD: 2004/2005 to 2016/2017. New York: UN Department for Economic and Social Affairs (Division for Sustainable Development), 2004. http://www.un.org/esa/sustdev/csd/csd11/CSD_mulityear_prog_work.htm
[21] "Statement by Women as Major Group, CSD-12" (29 April 2004) http://www.sdissues.net/SDIN/docs/CSD12/WomenStmtApr29.aspx
[22] *Women and the Environment*. New York: WEDO and UNEP, 2004.
http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=67&ArticleID=4488&l=en

2002 UN World Summit on Sustainable Development (WSSD) and which resulted in a new Women's Action Agenda for a Peaceful and Healthy Plant 2015.[23] An increasingly long list of countries, ranging from Egypt, Indonesia and Malawi to Germany, El Salvador and Jamaica, have taken steps at both the policy and practical levels to ensure women's participation and the mainstreaming of gender issues in environmental policies and programmes. Jamaica successfully changed recruitment strategies to increase women's leadership in natural resources and environmental management; India, Uganda, Brazil, and the Philippines reserve a percentage of seats for women in their national and local decision-making bodies;[24] and El Salvador, Costa Rica, Mexico and Egypt have created gender units within their environmental ministries to monitor and enhance women's involvement and gender mainstreaming.[25]

In the specific realms of biodiversity, intellectual property rights and environmental pollution and degradation; women are adversely and often fatally affected by environmentally abusive practices. According to the World Conservation Union's (IUCN) Red List of Threatened Species, the number of species facing extinction has risen from 11,167 in 2002 to 15,589 in 2004; today one in eight birds and one in four mammals face extinction.[26] The BBC News states that many scientists believe we are in the midst of the sixth great wave of mass extinctions; and US researchers estimate that by 2002 less than five percent of the Amazon will remain unspoiled.[27] These dramatically rising figures have a direct impact on women's lives. Women predominate among plant gatherers, home-gardeners, herbalists, seed custodians and informal plant breeders, and loss of plant biodiversity impacts women's access to medicinal herbs (eighty percent of people in developing countries rely mainly on traditional medicine for primary healthcare),[28] agricultural practices, traditional knowledge and food security. Women also constitute key actors in the struggle to conserve and protect plant diversity, but because these activities are performs primarily within the domestic sphere, at the local level and on a non-profit basis, they largely ignored and undervalued in the realms of research, policy-making and programming.[29]

The global multilateral framework for addressing intellectual property rights is the Word Trade Organization's Trade-Related Intellectual Property Rights (TRIPS) agreement, which came into force in 1996. Women have made significant contributions to the performing arts, literature, science and technology, and many other fields, though these contributions are not always recognized. In particular, indigenous, nomadic and agricultural women, as the traditional guardians of traditional knowledge and folklore, including herbal and traditional medicine,[30] possess a significant body of intellectual property that is not recognized in particular by the pharmaceutical industry. TRIPS grant pharmaceutical companies a 20-year patent monopoly on life-saving medicines, which are often derived from indigenous seeds and micro-organisms. The commercialization of indigenous knowledge as well as the increased privatisation of genetic resources and agricultural knowledge takes advantage of indigenous and rural women, especially farmers, with negative impacts that include loss of

[23] *Women's Action Agenda for a Healthy and Peaceful Plant 2015*. WEDO, 2002. http://www.wedo.org/files/agenda2015_eng.pdf
[24] Sass, J. *Women, Men, and Environmental Change: The gender dimensions of environmental policies and programs*. Washington DC: Population Reference Bureau, 2001. http://www.prb.org/pdf/WomenMenEnviron_Eng.pdf
[25] Clay, R. "Speaking Up: Women's voices in environmental decision making," *Environmental Health Perspectives* 111(1), 2003.
[26] "World's largest conservation gathering opens to escalating global species extinction crisis" World Conservation Union News Release (17 November 2004). http://www.iucn.org/themes/ssc/red_list_2004/main_EN.htm
[27] Kirby, A. "Biodiversity: The sixth great wave," BBC News Report (1 October, 2004).
[28] Siles, J. *Medicinal Plants*. World Conservation Union http://www.generoyambiente.org/ES/articulos_estudios/factsheets/Medical.pdf
[29] Howard, P. "The Major Importance of 'Minor' Resources: Women and Plant Biodiversity," *Gatekeeper Series* No.112. International Institute for Environment and Development, 2003. http://www.iied.org/docs/gatekeep/GK112.pdf
[30] *Women and Intellectual Property*. World Intellectual Property Organization, 2005. http://www.wipo.int/women-and-ip/en/

access to affordable medicines, seeds, agricultural knowledge and technology, and decreasing access and control of land and water resources.[31]

In many countries, forty to fifty percent of small and medium-sized enterprises are owned and managed by women, "…who are actual or potential owners of trademarks, service marks, trade names as well as of industrial designs, patents and copyright."[32] In recent years, the UN's World Intellectual Property Organization (WIPO) has recognized the often overlooked contributions of women to the advancement of various fields, and is developing information and other resources on intellectual property targeted specifically to women. The United Nations Development Fund for Women (UNIFEM) has produced a situation analysis of Intellectual Property Rights and Women's Knowledge.[33]

In the realm of environmental hazards and degradation, the picture is less encouraging. Globally, women face increasingly dangerous levels of air and water pollution, as well as daily exposure to toxic chemicals. The World Health Organization (WHO) reports that vehicle and industrial emissions cause outdoor air pollution that kills three million people annually. In addition, close to 1.6 million people die annually as a result of indoor air pollution from the burning of solid fuel; for which rural women and children are particularly at risk.[34] Toxic chemicals, used in everything from pesticides, cosmetics and baby toys to computers have been associated with respiratory complications, cancer in women, miscarriages among women, lower sperm counts among men.[35] Manufacturers are currently introducing an estimated 1,000 new chemicals into the environment each year without sufficient research on either their health or environmental impacts. A combination of both gender roles and biological factors places women at greater risk from environmental hazards. On the one hand, women's traditional roles expose them to greater quantities of persistent organic pollutants (POPs) such as agricultural pesticides or household cleaning products. On the other hand, women carry a larger percentage of subcutaneous body fat, which retains POPs and other toxic chemical residues. As a result, women suffer higher levels of negative health impacts from environmental hazards.

Environmental degradation, ranging from deforestation, desertification and water scarcity to soil degradation, also has an increasing impact on the daily lives of women. By 2025 it is predicted that two-thirds of the world's population will be living in areas of acute water stress;[36] diseases carried by poor quality water are responsible for eighty percent of illnesses and deaths in developing countries.[37] According to UNEP, desertification threatens the health and livelihood of over one billion people in two-thirds of the world's countries.[38] Nearly forty percent of rural Latin American women are affected by the scarcity of fuel-wood, and this number jumps to eighty percent for rural African women.[39] As demonstrated by a study from Sudan, deforestation during the last decade has quadrupled the time women spend gathering firewood.[40]

The gender aspects of natural disasters are slowly being acknowledged by the international community, in which the International Labour Organisation has played a leading role. The

[31] "WTO TRIPS Agreement." *Globalisation and Gender Briefs Series* No. 2. Commonwealth Secretariat and the International Labour Organization. http://www.ilo.org/dyn/empent/docs/F1599852333/No%202%20-%20TRIPS.pdf
[32] WIPO, 2005
[33] Intellectual Property Rights and Womens Knowledge. New York: UNIFEM, 1998. http://www.unifem.org/trade/sa11.htm
[34] Kirby, A. "Pollution: A life and death issue," BBC News Report (1 October 2004).
[35] Sass, 2001.
[36] Kirby, A. "Introduction: Planet under pressure," BBC News Report (1 October 2004)
[37] WEDO and UNEP, 2004. p. 61.
[38] WEDO and UNEP, 2004. p. 49.
[39] Aguilar, A. "Energy" World Conservation Union. http://www.generoyambiente.org/ES/articulos_estudios/factsheets/Energy.pdf
[40] Sass, 2001. p. 4.

ILO working paper on Gender and Natural Disasters[41] was among the first documents to comprehensively address women's role and gender consideration in disaster preparedness, response and recovery. In addition, women's organizations around the world, including MADRE and the Sri Lankan Women's NGO Forum, are mobilizing to provide assistance and highlight the gender dimensions of the recent catastrophic tsunami in Asia. In general however, very little systematic action has been taken regarding gender and environmental degradation, hazards and natural disasters; and additional research and capacity-building are essential in order to reduce the risk to women of these phenomena and determine their specific impact of on women.

The barriers that hinder women's active involvement in environmental decision-making, the safeguarding of biodiversity and intellectual property rights, as well as protection and action regarding environmental hazards and degradation are still formidable. Lack of political will as well as a general lack of understanding and action are compounded by women's high illiteracy rates and the feminization of poverty, both of which limit women's access and opportunities. The gendered digital divide further decreases women's chances to access information for decision-making and participation. Increasing air and water pollution, lack of government and international prevention, regulation and enforcement, and fatal lapses in corporate responsibility increasingly threaten global biodiversity. Unjust applications of TRIPS, as well as the legislation itself, pose a threat to women's intellectual property rights as well as their access to seeds, land and agricultural knowledge and technology. Lack of industrial regulation, under-investment in environmentally sound technologies, adequate research and testing; as well as the eternal question of funding are major barriers to the reduction of the risk to women from environmental hazards and degradation.

Despite these barriers, many women's organizations are taking strong political and practical stances in favour of environmental protection. Indigenous women's organizations have a long history of mobilization to protect biodiversity. Policy statements such as the 2004 Manukan Declaration of the Indigenous Women's Biodiversity Network (IWBN) highlight indigenous women's roles as guardians of knowledge and environmental conservationists, the rights to health and self-determination of indigenous peoples and the threat of industrial projects to biodiversity and the survival of indigenous communities.[42] The Food and Agriculture Organization of the United Nations (FAO) has played a key role in recognizing and supporting indigenous and rural women through *LinKS: Gender, biodiversity and local knowledge systems for food security*. This project focuses on increasing the visibility of rural women and men's knowledge through research and training (of researchers, NGOs, government institutions, etc.) processes.[43]

Areas for Future Action:

- Integrate gender issues into formal and informal environmental education, and integrate environmental concerns into agricultural or water management and other projects aimed at women;
- Adjust recruitment practices and implement structural and other changes needed to ensure women's participation in decision-making processes related to the environment at the levels of government, development banks and other lending organizations, and community councils, among others;

[41] Enarson, E, *Gender and Natural Disasters*. Geneva: International Labour Organization, 2000. http://www.ilo.org/public/english/employment/recon/crisis/download/criswp1.pdf
[42] "Manukan Declaration" Indigenous Women's Biodiversity Network, 2004. http://www.tebtebba.org/tebtebba_files/gender/manukan.html
[43] "LinKS: Gender, biodiversity and local knowledge systems for food security" Food and Agriculture Organization. http://www.fao.org/sd/LINKS/default.html

- Develop and implement gendered strategies to identify, prevent and cope with environmental degradation, hazards, and natural disasters;
- Implement the recommendations and project proposals presented at the Global Women's Assembly on the Environment: Women as the Voice for the Environment (WAVE);
- Based on existing experiences, ensure the implementation of gender mainstreaming in all UN-related bodies addressing the environment and sustainable development, especially the Global Environment Facility;
- Develop and implement a gender-sensitive framework for patent and other intellectual property rights legislation;
- Support and acknowledge the efforts of women's organizations, especially indigenous and rural women, in the field of biodiversity.

Strategic Objective K.2

"Integrate gender concerns and perspectives in policies and programmes for sustainable development"

Actions to be taken by Governments, International Organizations, NGOs and Private Sector Institutions include: integrate the results of gender-sensitive research into policies to develop sustainable human settlements; promote the education of girls and women in science, technology, economics etc.; support women's equal access to housing, water, and energy; ensure that clean water is available and accessible to all by the year 2000; encourage investment in environmentally-sound industries and technologies; support organic food, recycling and product labelling.

The integration of gender concerns and perspectives into sustainable development, with a specific focus upon the environment, often looks better on paper than in practice. Clear advances have been made in the area of sustainable human settlements, however the need to mainstream gender into environmental policies and programmes remains far from fulfilled. According to the European Women's Lobby 2004 review of the European Union's implementation of Beijing: "During the past ten years no piece of legislation was adopted which deals with women and environment directly… In many cases present environmental policies can be seen to enhance gender inequalities as they simply ignore all gender related issues in their drafting and implementation."[44] In contrast, UN-Habitat restructured their gender policy, reworking the original policy adopted in 1996, and creating a Gender Policy Unit, a taskforce and a new strategic vision that embraces the empowerment of women as a primary indicator of the success of UN-Habitat's interventions.[45]

Another successful example of gender mainstreaming has been the work of the World Conservation Union (IUCN). As part of the IUCN process of adopting a gender policy statement and action plan, a regional workshop was held in Meso-America to begin drafting a "Declaration on Policies for Gender Equity." Costa Rica, El Salvador, Guatemala, Nicaragua, and Panama requested assistance from IUCN in order to mainstream gender equity policies in their environmental programming. Today each country has a gender policy, an action plan and gender units; and Honduras and Mexico are following suit.[46] In an effort to comply with Agenda 21, the government of Malawi states that they reviewed and

[44] 1995-2005: Review of the Implementation of the Beijing Platform for Action by the European Union. Brussels: European Women's Lobby, 2004. http://www.womenlobby.org/Document.asp?DocID=830&tod=184657
[45] Gender Policy Unit- UN-Habitat: http://www.unhabitat.org/programmes/genderpolicy/foreword.asp
[46] "Integrating Gender and Social Issues." World Conservation Union. http://www.iucn.org/2000/communities/content/gender.html

engendered state policies in the realms of forestry, natural resources, fisheries and the environment in 2001. The National Gender Policy includes environmental and natural resources as one of its six thematic areas. At the local level, over 5,000 natural resource management committees have been formed with 50/50 female and male representation.[47] Unfortunately, these countries remain in the minority in terms of integrating gender into their environmental policies and programming, despite the advocacy and project work of women's and environmental NGOs all over the world.

When it comes to the education of girls and women in the fields of science, technology and economics, despite certain successful examples, women and girls remain in the minority within these fields. Though in many regions of the world women are outnumbering men as university graduates, in an EU study from 2003, the percentage of women versus men enrolled in fields related to technology remained thirteen percent to eighty-seven percent.[48] These figures are echoed in the first comprehensive analysis of the top 50 US college math, science and engineering departments, where only three to fifteen percent of full professors in the engineering and science departments are women.[49] Various education and training initiatives have sought to address this gap (see Beijing Report on Education and Training). In 1996, UNESCO launched a project on scientific, technical and vocational education for girls in Africa and the Asia-Pacific region. Lauded in a speech by UN Secretary-General Kofi Annan, this six-year project produced guidelines and materials for teacher training, booklets and other materials for children, and science camps for girls along with funding two chairs on women in science and technology and supporting the creation of an annual award.[50]

Beijing's goal of ensuring the availability and accessibility of clean water to all by the year 2000 is remains sadly out of reach; one-third of the worlds' population lives in water-stressed countries.[51] During the 1990s, 900 million more people gained access to an improved water supply; however 1.1 billion people in rural areas and urban slums still rely on unsafe drinking water.[52] In many regions of the world, women are responsible for the use and management of water resources, as well as sanitation and general health. Women and girls assume the time-consuming and dangerous task of fetching water, many spending up to four to five hours a day burdened with heavy containers. As women are in regular contact with poor-quality water, they face higher exposure to water-borne diseases and pollution. For example, 70 percent of the world's blind are women with trachoma, a blinding bacterial eye infection occurring in areas with limited access to potable water.[53] According to studies conducted in Ethiopia, Ghana, Tanzania and India "with closer water comes greater self-esteem, less harassment of women and better school attendance by girls."[54] In Latin America, neo-liberal land reforms have placed land ownership firmly in the hands of men, leaving women without access to or control over water resources. The only positive examples are found in Colombia and Costa Rica, which have both instituted progressive, gender-sensitive land reform policies.[55] In 2004, the UN General Assembly declared 2005-

[47] Progress on the Beijing +10 Report. Malawi Ministry of Gender and Community Services, 2004.
[48] "eEurope + Progress Report" Brussels:European Commission, 2004.
http://europa.eu.int/information_society/eeurope/2005/all_about/benchmarking/eeurope_plus_benchmark_report/index_en.htm
[49] Nelson, D. *A National Analysis of Diversity in Science and Engineering Faculties at Research Universities*. University of Oklahoma Department of Chemistry and Biochemistry, 2005. http://cheminfo.chem.ou.edu/~djn/diversity/briefings/Diversity%20Report%20Final.pdf
[50] "Annan calls for more science education for more females." Africa Recovery 12.4 (April 1999) p. 31.
http://www.un.org/ecosocdev/geninfo/afrec/subjindx/124edu22.htm
[51] Water-stressed refers to conditions in which water is not readily available, or is on ration. For a discussion of the differences between hydrological and social water stress, see: Ohlsson, L. and B. Appelgren. Water and Social Resource Scarcity: Alternative socially based approaches to assessment and management of water scarcity, 1998. The Water Page: http://www.thewaterpage.com/SoicalResourceScarcity.htm
[52] Inheriting the World: The Atlas of Children's Health and Environment. Geneva: World Health Organization, 2004. p.14.
http://www.who.int/ceh/publications/en/04water.pdf
[53] WEDO and UNEP, 2004. p. 64.
[54] "A Gender Perspective on Water Resources and Sanitation," Background Paper Submitted to the UN Commission on Sustainable Development. Interagency Taskforce on Gender and Water, 2004. http://www.un.org/esa/sustdev/sdissues/water/backgrounder_csd13.pdf
[55] *The Gender and Water Development Report 2003: Gender Perspectives on Policies in the Water Sector*. Netherlands: Gender and Water Alliance, 2003.
http://www.genderandwateralliance.org/reports/GWA%20Annual%20Report.pdf

2015 the International Decade for Action "Water for Life," which will increase global attention and the resources devoted to addressing this urgent need.[56]

A number of recent international conventions explicitly include women when addressing water, environment and development. However, Agenda 21 as well as others, failed to capture the complexity and the relational nature of gender issues in the water sector. In the last decade there have been improvements in certain countries regarding water policies and gender mainstreaming, including Uganda and Kenya [is there an example for Kenya?]. While the 1995 Ugandan Water Statute includes no mention of women or gender, the Sector Gender Policy of the Ministry of Natural Resources did call for women's participation in community decision-making in the area of water supply and sanitation. Today, the National Water Policy has the full participation of women at all levels as one of its core principles and the Local Government Act stipulates that at least thirty percent of the representation on local councils should be women.[57] Unfortunately, gendered water policies are often poorly translated into practice. A study of 121 rural water supply projects revealed that in only seventeen percent of the projects brought concrete benefits to women.[58] On the positive side, there are an increasing number of networks and NGOs addressing the topic of gender and water, such as the Gender and Water Alliance, a network of 300 organizations and individuals offering information and knowledge-sharing activities.[59]

Energy policies and programmes remain predominantly gender-blind, resulting in the persistence of unequal access and the exclusion of women's voices from energy planning. Additionally, men are highly over-represented in this field of work. The exclusion of women from decision-making processes has resulted in the failure of foreign funding initiatives, such as providing solar cookers which do not fit with African women's cooking schedules.[60] Due to gendered divisions of labour, women are most often allocated the responsibility for household energy provision, which can occupy a quarter of rural women's time.[61] Women's health is at risk from the thick, acrid smoke of the burning of biomass (indoor air pollution), and the safety of women and girls is jeopardized by rape, beating, and murder when they are out searching for fuel-wood. In recent years, a few women's energy projects have emerged along with NGOs such as the International Network on Gender and Sustainable Energy (ENERGIA). ENERGIA, founded in 1995, focuses on capacity-building of NGOs, governments and donors regarding gender and energy issues, as well as analysis and advocacy work.[62] In addition to addressing gender issues within the field of energy, it is urgent that more efforts are made to utilize sustainable and renewable sources of energy in the face of soaring global energy demands and rapidly decreasing oil reserves.

The past ten years have seen mixed results regarding environmentally sound technologies (ESTs), organic foods, and recycling. Within the proliferation of un-sustainable, un-recyclable and high energy-consumption practices and goods, the gendered creation and distribution of ESTs has had a positive impact in a variety of cases; including the development of fuel-efficient stoves that reduce women's labour, conserve fuel, and decrease pollutants.[63] However, investment and distribution of environmentally sound

[56] United Nations GA Resolution A/Res/58/217 "International Decade for Action 'Water for Life' (2004). http://www.unesco.org/water/water_celebrations/decades/water_for_life.pdf
[57] Gender and Water Alliance, 2003.
[58] Cleaver, F. *Gender Myths and Feminist Fables: Repositioning Gender in Development Policy and Practice*. Sussex: Institute of Development Studies, 2003. http://www.siyanda.org/docs/clever_gendermyths.doc
[59] Gender and Water Alliance: http://www.genderandwateralliance.org
[60] "Gender Perspectives for Earth Summit 2002 – Energy, Transport, Information for Decision-Making" Report on the International Conference (Berlin, 10-12 January 2001) p. 17.
[61] Clancy, J. and M. Skutsch, *The Gender-Energy-Poverty Nexus: Finding the energy to address gender concerns in development.* London: UK Department for International Development. http://www.sarpn.org.za/documents/d0000378/P342_Skutsch_Batchelor.pdf
[62] International Network on Gender and Sustainable Energy (ENERGIA). http://www.energia.org
[63] Gender Advisory Board, "Gender, science and technology and the needs of society" http://gstgateway.wigsat.org/TA/NOS/energy.html

technologies remains far below what is needed. Organic agriculture has developed rapidly in the last few years; today it is practiced in close to 100 countries on more than 24 million organically managed hectares. In 2002 the global market for organics was valued at 23 billion US dollars and the demand for organics continues to rise above the current supply. Today, there are a total of thirty-nine countries with fully implemented organic regulations and twenty-three countries well on their way.[64] The EU has adopted a proactive approach to organic agriculture, and has seen a rapid growth of land under organic cultivation: from one percent in 1995 to 3.5 percent in 2002, an annual growth of nearly thirty percent.[65] However, organic products remain accessible mainly to US and European citizens and affordable only to the middle and upper classes.

Global recycling statistics are difficult to compile, but according to the Bureau of International Recycling, it is an industry with an annual turn over exceeding 160 billion US dollars. Rates of recycling vary greatly from community, to country, to region. While Switzerland and the Netherlands already recycle half their waste,[66] the recycling of US beverage cans has been declining since 1992; only 44 percent of cans sold in 2003 were recycled, the lowest rate since 1980.[67] As the US generates more waste every year, growing to 409 million tons in 2001, drops in recycling have a significant global effect. According to Hemmati,[68] there is evidence that women are more environmentally aware and more engaged in recycling, reusing and environmentally conscious shopping.[69] However, as consumption rates continue to skyrocket and efforts to identify and promote ESTs, organic growing and recycling must be intensified. If every person alive today consumed at the rate of an average US citizen, three more planets would be required to meet this demand.[70]

Areas for Future Action:

- Prioritize and integrate gender expertise and experts into environmental and sustainable development policies and programmes, as well as funding initiatives;
- Compile or develop and disseminate good practices regarding gender mainstreaming in environmental policies and programmes;
- Institutionalize measures to ensure accountability, including monitoring and evaluation as well as concrete indicators for gender mainstreaming at the local, state and international levels;
- Based on existing good practices, develop and implement improved methodologies for capacity-building regarding the participation of women in water-related decision-making processes, and the mainstreaming of gender into water policies and programming;
- Ensure that all energy-related research is gendered and conducted by gender-balanced teams.

Strategic Objective K.3

"Strengthen or establish mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women"

[64] Willer, H. and M. Yussefi. The World of Organic Agriculture: Statistics and Emerging Trends 2004. Bonn: International Federation of Organic Agriculture Movements, 2004.. p. 7,31. http://www.ifoam.org/
[65] Feffer, J. "The Organic Alternative: Slovenia, the European Union, and the Debate over Sustainable Agriculture." *Backgrounder* 10(3) 2004. http://www.foodfirst.org/pubs/backgrdrs/2004/s04v10n3.html
[66] "Waste and Recycling" Friends of the Earth, 2002. http://www.foe.co.uk/resource/briefings/waste_and_recycling_booklet.pdf
[67] "Aluminium Beverage Can Waste Passes the 'One Trillion' Mark: Recycling rate drops to lowest point in 25 years" Container Recycling Institute, 24 May, 2004.
[68] Cited in WEDO and UNEP, 2004.
[69] WEDO and UNEP, 2004.
[70] Population and its Discontents. World Watch Institute, 2004. http://www.population.org.au/pressrm/pub/WorldWatch2004.pdf

Actions to be taken by Governments, International Organizations and NGOs include: providing technical assistance to women; develop gender-sensitive databases, information and monitoring systems and participatory action-oriented research, methodologies and policy analyses; ensure full compliance with relevant international obligations including the Basel Convention; promote coordination to implement the Platform of Action and chapter 24 of Agenda 21.

The detailed databases, information and monitoring systems, research and analysis that are called for in this objective do not yet exist. However, gender and the environment is a growing field with an increasing number of case studies and research methodologies addressing the impact of development and environmental policies upon women. Despite the growth in information, the need for additional research, especially regarding the gendered effects of environmental degradation and hazards, is urgent in order justify and create effective initiatives to limit their negative effects upon women. Unfortunately, this field lags behind other areas, especially education, health and political participation, where a growing volume of information is increasingly disaggregated by sex.

Examples of progress can be seen in the cases of Germany and Brazil. The German Federal Ministry for the Environment began the process of gender mainstreaming in 2002 with the development of a Gender Impact Assessment. A pilot project, in the area of environmental law-making was launched to test the Assessment. The result was the development of a gender mainstreaming methodology that was distributed through the creation of a "Gender Mainstreaming in the Preparation of Lawmaking" compendium. Further materials were also developed to serve as aids to Federal Ministries.[71] In the case of Brazil, the conservation organization Fundaçáo Vitória Amazônica developed and implemented a stakeholder assessment process in order to identify needs, design appropriate interventions, and monitor and evaluate the effect of policies and programmes in the Jáu National Park. Their gendered methodology involved separate questionnaires for women and men along with other techniques of information gathering.[72]

According to UNEP estimates, worldwide 300-500 million tons of hazardous waste is generated each year, with industrialized countries accounting for eighty to ninety of the total.[73] A long history of blatant dumping of banned pesticides, hazardous wastes and toxic products in developing countries has left a legacy of water degradation and acute human exposure; most of the world's unwanted pesticides are housed in places with the least ability to properly store and dispose of them. This scenario plays out at the domestic as well as the international level. In the United States low-income and communities of colour, especially indigenous peoples, are disproportionately impacted by waste facilities including nuclear waste.[74] As of February 2005, there are 163 state parties to the *Basel Convention on the control of transboundary movements of hazardous wastes and their disposal* (1989), which is the international law designed to regulate and reduce hazardous waste trafficking. After intense lobbying on the part of the Basel Action Network, the Basel Ban Amendment (1995) was passed banning the export of hazardous waste from rich to poor countries. However, only fifty-five countries are party to the Ban, which requires sixty-two state parties in order to bring it into force. Strong opposition to the Amendment by various countries has further stifled any progress towards implementation. The Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of

[71] United Nations Questionnaire on the National Implementation of the Platform for Action of the Fourth World Conference on Women in Beijing: Response of the Government of the Federal Republic of Germany. German Federal Ministry for Family Affairs, Senior Citizens, Women and Youth, 2004. http://www.un.org/womenwatch/daw/Review/responses/GERMANY-English.pdf
[72] Sass, 2001. p. 5.
[73] *State of the World 2002*. World Watch Institute, 2002. http://www.worldwatch.org/pubs/sow/2002/toc/
[74] *Environment and Morality: Confronting Environmental Racism in United States*. Geneva: United Nations Institute for Research on Social Development, 2004. http://www.unrisd.org/unrisd/website/document.nsf/0/543B2B250E64745280256B6D005788F7?OpenDocument

Hazardous Wastes and their Disposal (1999) has also been passed, but has only four of the twenty state parties necessary for entry into force.[75] In general, the last ten years have shown little progress in terms of change to the global toxic trade, aside from the rapidly growing amount of hazardous waste materials and a number of catastrophic transportation accidents, such as the 2002 case of the *Prestige* off the Galician coast.

Agenda 21, the plan of action adopted at the UN Conference on Environment and Development (the Earth Summit) in 1992, was affirmed and revitalized during the 2002 UN World Summit on Sustainable Development (WSSD) in Johannesburg. The outcome document, the *Plan of Implementation of the World Summit on Sustainable Development*, reflects the global shift from the Women in Development to the Gender and Development paradigm; calling for the equal participation of men and women.[76] WEDO states its disappointment with the integration of gender considerations in the Plan of Implementation: "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."[77] In addition, no mention is made of the central role of women in the paragraphs on globalization, energy, and science and technology. Once again, increased efforts must be made to ensure the implementation of Agenda 21 as well as the WSSD Plan of Implementation, both of which reaffirm many of the actions called for in the Beijing Platform for Action.

Areas for Future Action:

- Improve the participatory construction of sex disaggregated data systems on environmental issues, especially as part of national data systems;
- Include a gender perspective in research on sustainable development;
- Integrate gender expertise and gender indicators, including women's NGOs, in research and data collection processes related to the environment, especially environmental impact assessments (EIAs);
- Implement gender budget audits for the environmental sector, as well as ensuring that national and institutional mechanisms for the advancement of women (national machineries) take environmental issues into account;
- Based on existing good practices, integrate a gender perspective into programmes and projects designed to further the implementation of Agenda 21 and the WSSD Plan.

Additional Areas of Concern

The discourse on women and gender issues, and environmental changes and hazards have developed and changed significantly during the past ten years. Rather than focusing on women and the environment, the concept of gender is increasingly being employed to look at the impact of people on the environment, and the risks they face from environmental change. In order to reach the goals of gender equity in environmental decision-making and gender-sensitive policies and programming, both women and men must be part of the change.

[75] Secretariat of the Basel Convention, "Ratifications." http://www.basel.int/ratif/frsetmain.php
[76] *Gender perspectives on the Conventions on Biodiversity, Climate Change and Desertification*. FAO Gender and Population Division, 2004. http://www.fao.org/sd/dim_pe1/pe1_041002_en.htm
[77] *Gender Analysis of the WSSD Plan of Implementation, World Summit on Sustainable Development 2002*. WEDO, 2002.

The Beijing Platform for Action does not mention the issue of global warming, which has become a growing concern over the last ten years. Increasing levels of carbon dioxide and other pollutants have meant higher average global temperatures each year since 1997; according to the Intergovernmental Panel on Climate Change (IPCC).[78] Rising temperatures have changed weather patterns, causing unpredictable weather, rising sea levels, loss of biodiversity, food and water shortages and an increase in water- and food-borne illnesses, all of which have differential impacts on women and men. The Kyoto Protocol (1997), drafted as the implementing arm of the UN Framework Convention on Climate Change (1992, ratified by 189 states) came into force on 16 February 2005 after years of debate. The Protocol legally binds industrialized nations to reduce their emissions of greenhouse gasses (such as carbon dioxide) to 5.2 percent below their 1990 levels by 2012. According to BBC News, President Bush stated that the US - the world's largest polluter – will never sign the Protocol.[79]

The international debate regarding the construction, production, labelling and tracing of genetically modified organisms (GMOs) has become central to the environmental movement and international power politics over the last ten years. The first genetically modified food, tomato puree, was exported from the US to Europe in 1996.[80] As the result of a strong international movement against GMOs that has demanded labelling and tracing of all GMOs, many countries, including Australia, Hungary and Japan have adopted GM labelling laws. The EU formally adopted a new legislative framework for GMO tracing and labelling in July 2003, which will have a global effect. However, organic advocates fear that this legislation remains too lenient (the European Commission's plan to accept a 0.3 to 0.5 percent threshold for the unintended presence of GMOs in non-genetically modified seeds is far beyond the standard 0.1 percent threshold). On the other hand, several countries continue to battle EU policies in the Word Trade Organization, charging that GMO labelling and tracing constitutes a barrier to trade. While the international struggle rages on, the global area of biotech crops continues to expand; a twenty percent increase was recorded in 2004 placing the total at 81 million hectares worldwide.[81] Women's organizations as well as women in general, or as one UK study states: "middle-aged mothers," have taken a central role in organizing against GMOs during the last ten years.[82]

The forces of globalization, privatization and the promotion of economic liberalization through structural adjustment programmes and other measures are additional areas that have come under gendered critique during the past ten years. According to UNEP and WEDO, current processes of globalization are fuelling "an explosion of consumption throughout the world."[83] This over-consumption, located primarily in higher-income countries but increasingly gradually in all countries, places an inordinately high burden on the planet. Consumption patterns are gendered as women are the largest groups of consumers/shoppers making day-to-day purchases, though paradoxically women are also poorer than men in most countries and their basic needs often remain unmet.[84] The transformation of agriculture due to "free trade" policies and the increasing privatization of resources have a heavily gendered impact, undermining women's ability to use and conserve scarce land and water resources as well as gradually eroding women's biological

[78] Kirby, A. "Climate Change: Uncharted Waters?" BBC News Report (1 October 2004). http://news.bbc.co.uk/1/hi/sci/tech/4061871.stm
[79] "The Kyoto Treaty" BBC News Report (17 November 2004). http://www.bbc.co.uk/science/hottopics/climatechange/kyototreaty.shtml
[80] Carter, C. and G. Gruere, "International Approaches to Labelling Genetically Modified Foods," *CHOICES: The Magazine of Food, Farm and Resource Issues* (2nd Quarter 2003). http://www.choicesmagazine.org/2003-2/2003-2-01.htm
[81] James, C. *Global Status of Commercialized Biotech/GM Crops: 2004 International Service for the Acquisition of Agri-Biotech Applications.* ISAAA Briefs No 32. New York: ISAAA, 2004. p. 3. http://www.isaaa.org/kc/CBTNews/press_release/briefs32/ESummary/Executive%20Summary%20(English).pdf
[82] Coghlan, A. "UK public strongly rejects GM foods," NewScientists.com News Service (24 September 2003). http://www.newscientist.com/article.ns?id=dn4191
[83] WEDO and UNEP, 2004. p. 18.
[84] Ibid.

resources and knowledge systems.[85] In the end, these trends have been shown to lead to women's further marginalization, impoverishment, food and health insecurity, and the loss of local and indigenous knowledge.

Another facet of increasing global consumerism is the recent phenomenon of "e-waste." The process of construction as well as the rapid obsolescence of computers and other electronic equipment is creating huge quantities of hazardous waste. According the World Watch Institute "the computer industry is the most chemically intense in the world, using 500-1,000 different chemicals, many of them highly toxic, including arsenic, cadmium, lead and mercury."[86] E-waste is growing faster than any other type of waste, and huge quantities of it are being exported for recycling to China, Pakistan and India, a process that is extremely harmful to human health and the environment.[87] In the face of this new environmental threat, measures need to be taken to ensure longevity and recycling of the product and safe methods of disposal.

The issue of persistent organic pollutants has also been raised in recent years. These human-made chemical substances, including pesticides, industrial chemicals and by-products such as DDT, chlordane, mirex, PCBs and dioxins, accumulate in the fatty tissue of living organisms and thus bio-accumulate up the food chain. POPs are toxic to humans and wildlife and have gendered and often fatal health consequences. The Stockholm Convention on Persistent Organic Pollutants (2001) addresses this threat by holding its ninety-four state parties to the goal of eliminating POPs. However, only twelve POPs are included in the Convention, leaving out many that continue to pose a threat. A positive development in the Philippines and the Slovak Republic is the testing of alternative non-incineration technologies in order to destroy stockpiles of POPs without creating and emitting toxic by-products. According to the Basel Action Network and the Silicon Valley Toxics Coalition, these pilot programmes can be used as models for other countries.[88]

Additional issues that are not addressed in the Beijing Platform for Action include the gender, health, and environmental impacts of increasing urbanization, and the environmental and gendered impacts of transportation systems and women's participation in decision-making on transportation; as well as environmental refugees and environmental security issues. The past ten years have seen of rapid changes and these additional areas of concern should be taken into consideration when addressing the topic of gender and the environment.

Conclusion

It is 30 years since we started this work. Activities that devastate the environment and societies continue unabated. Today we are faced with a challenge that calls for a shift in our thinking, so that humanity stops threatening its life-support system. We are called to assist the Earth to heal her wounds and in the process heal our own – indeed, to embrace the whole creation in all its diversity, beauty and wonder.
- Wangari Maathai, 2004 Nobel Peace Prize Winner[89]

[85] "Addendum No. 1: Dialogue Paper by Women" *Secretary-General's Note for the Multi-Stake Holder Dialogue Segment of the Second Preparatory Committee for the World Summit on Sustainable Development*. WEDO, 2002. http://www.earthsummit2002.org/wcaucus/2002/Dialogue%20Jan%202002.pdf
[86] MacGinn, A. *World Summit Policy Brief # 7. From Rio to Johannesburg: Reducing the Use of Toxical Chemicals Advances Health and Sustainable Development*. World Watch Institute, 2002. http://www.worldwatch.org/press/news/2002/06/25/
[87] *Exporting Harm: The High-Tech Trashing of Asia*. Basel Action Network (BAN) and Silicon Valley Toxics Coalition, 2002. http://www.svtc.org/cleancc/pubs/technotrash.pdf
[88] McGinn, 2002
[89] Wangari Maathai, "Nobel Lecture" (10 December 2004). http://nobelprize.org/peace/laureates/2004/maathai-lecture-text.html

Since 1995, a substantial body of international, regional and national policy documents on the environment have been drafted, declared and ratified. A variety of creative and effective participatory research projects, and NGO as well as state programmes have promoted gender mainstreaming and the participation of women. However, with the threats to a healthy environment growing at an alarming rate and a general tendency towards the marginalization of both gender and environmental concerns, the objectives of the Beijing Platform for Action remain sadly out of reach. Action, not lip service, must now be prioritized in order to successfully address environmental issues from a gender perspective. Through the inclusion of and respect for the voices of the marginalized members of society, successful long-term changes in worldviews and patterns of behaviour among individuals, businesses, states and international organizations can be achieved.