

Climate Change: A Gender Perspective on Human and State Security Approaches to Global Security

Concept Paper for the International Women Leaders' Global Security Summit

Úrsula Oswald Spring¹

1. Introduction

In many parts of the world climate change is increasingly perceived as a major challenge for the security and survival of humankind in the 21st century. This new threat does not discriminate against nations and social classes. Extreme weather events, storms, droughts, floods, landslides, oscillating extreme temperatures and forest fires (IPCC Report 2007) have already increased significantly and are projected to intensify even further in numbers and impact. Each year between 2002 and 2006 there were 348 recorded hazards. No army, protective shield, or purely national initiative can save us from these new threats, nor can a war be declared to fight them.

During cyclone season 2005, Hurricanes Wilma, Stan, Rita, Emily, Dennis and Katrina caused 2,280 deaths in the Atlantic and recorded damages over 128 billion USD. In the U.S. following Katrina, nearly as many people died or went missing than as a result of 9/11 attacks. In Bangladesh more than one million people died of extreme weather events between 1950 and 2000 (BMU 2002). The poorest survivors have repeatedly lost all their belongings since they cannot afford insurance.

According to assessments by Munich Re Insurance Group, between 1950 and 2005, grouping the 267 major natural hazards, some 1.75 million people died; 45% from climate related extreme weather events with an economic damage of 966 billion USD. Only one fourth of this sum was insured, primarily in the North. According to estimates by CRED, in the thirty years between 1974 and 2003, close to 2.1 million people died, 1.5 million due to weather and climate related natural hazards, mostly in poor countries. These events affected a total of 5.1 billion people and 97% were climate related hazards, 2% earthquakes and less than 1% volcanic eruptions.

This incidence of human-induced climate change, irrespective of natural variations in climate, as results of drought, epidemics and human, animal and plant pests have resulted in the decay and disappearance of advanced civilizations in the past, for example the Mayas in Mesoamerica, old Egypt, Central Asia, India and the territory of modern Turkey. Bad harvests and famine contributed to the emergence of turmoil and revolutionary situations in 1789 and 1848 in Europe. The long-term impact of past and present climate events has affected security and survival of people, states and civilizations, where poor people are often forced to migrate. Migration is caused by conflicts as a result of scarce resources and it creates new conflict sources.

Climate change poses manifold threats, challenges vulnerabilities and risks to nation states and the environment, especially affecting poor women, children and elders in developing countries. While efforts until today address climate change as a state

¹ CRIM/UNAM, research professor, Cuernavaca, Mexico; UNU-EHS, first MRF Chair on Social Vulnerability; Former Minister of Environment, Morelos, Mexico, 1994-1998; President of the International Peace Research Association (IPRA), 1998-2000; and Secretary General of the Latin American Council on Peace Research (CLAIP), 2002-2006.

security issue for states and international organizations, natural and social scientists have started to address climate change as a new challenge for human, gender and environmental security.

2. The Background Information of the Impact of Climate Change for the World and its Regions: Threats, Disasters and Social Vulnerability

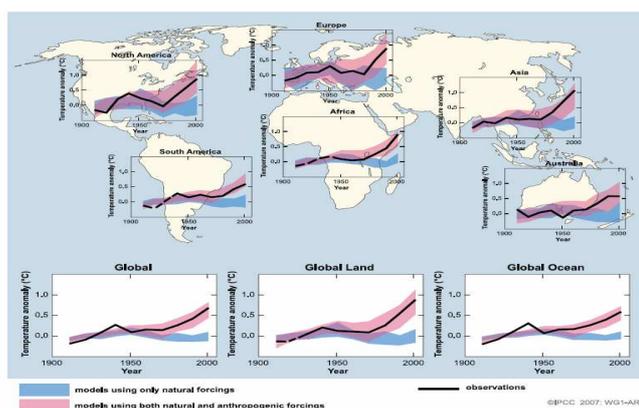
2.1 Scientific Bases: IPCC Report of 2007

According to the Intergovernmental Panel on Climate Change (IPCC 2007), the direct outcomes of climate change are temperature increase, sea level rise, more disasters related to climate with higher intensity and destruction, desertification, and heat and cold waves. Data indicate that “atmospheric concentration of carbon dioxide has increased from pre-industrial values of about 280 ppm to 379 ppm in 2005...and exceeds by far the natural range over the last 650,000 years (190 to 300 ppm)” with an annual growth of 1.9 ppm per year. “The linear warming trend over the past 50 years (0.13°C) is nearly twice that for the last 100 years.” The increase from 1850-1899 to 2001-2005 is 0.76°C, with a projected increase of 1.8 to 3.6 °C in this century or 0.2°C per decade (see figure 1).

Between 1961 and 2003 the sea level rose an average 1.8 mm per year. Between 1993 and 2003 it rose 3.1 mm per year, with a global rise of 0.17m during the past century. This is an effect of melting ice in glaciers, seas and poles, particularly the Greenland ice shield, which during the last interglacial period (125,000 years ago), resulted in a sea level rise of between 4 to 6 m. The outcomes will depend on control of the human emitted greenhouse gases today, especially carbon dioxide and methane.

Temperature changes will fluctuate in different regions (see figure 1), seriously affecting the North Pole and poor countries. Another 75 million to 250 million more people in Africa will be exposed to water shortages; rain-dependent agricultural yields could fall by 50 percent by 2020. The cost of adapting to changes brought about by global warming could be as much as 10 percent of world economic output. Observations during the last century based on two models (of natural and human induced changes) indicate that human forces are mostly responsible for temperature increases (Figure 1).

Figure 1: Measured Temperature Increases (1900-2005) by Regions (IPCC 2007).

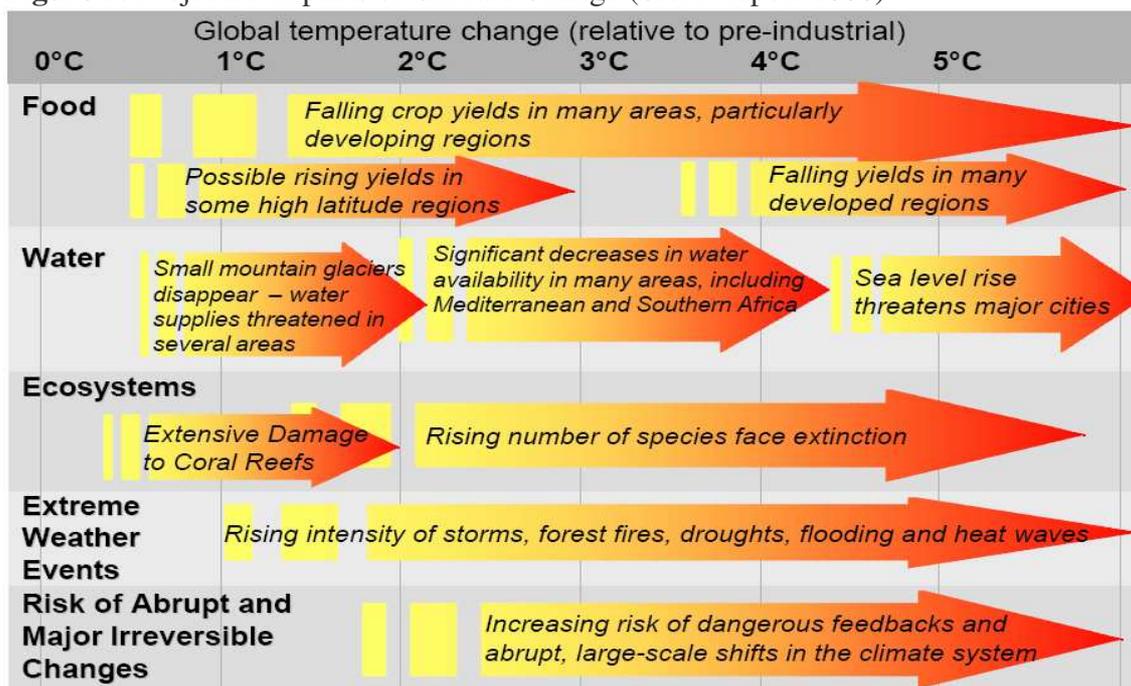


The different increases in the regions will have severe effects on livelihood, food production and life quality, affecting more poor countries. UNDP (2006) noted that nations with a low human development index –measuring life expectancy, education and standard of living– account for 53% of recorded disaster deaths. Furthermore, when hazard strikes socially vulnerable populations, especially women are disproportionately affected by disasters, due to social and cultural roles, education, economic situation and age.

2.2 Economic Impacts: Stern Report of 2006

Besides human losses and social vulnerability², global and local economies will also be seriously altered. Although it was criticized, the Stern Report (2006) has nevertheless created a consciousness on possible outcomes of climate change and economic costs (figure 2). The different scenarios exposed depend on the capability of humankind as a whole, above all countries with high emissions, to reduce their greenhouse gases. Possible effects are on food and water availability, ecosystems, extreme weather events and abrupt and irreversible changes related to higher temperatures. This implies not only human losses, but also mounting costs if no action is undertaken. There are no doubts that highly vulnerable groups will suffer more, but as a global process, the whole world and its major cities will be seriously affected.

Figure 2: Projected Impacts of Climate Change (Stern Report 2006)



The Vienna Climate Conference of UNFCCC (27-31 August 2007), reconfirmed the economic impacts of climate change and forecasts that the additional amount of investment and financial flows in 2030 will amount to between 1.1 and 1.7 per cent of global investment. Another key finding is that 200 to 210 billion USD worth of

² Social vulnerability is a historical and accumulative result of poverty and unequal access to material and cultural consumption. It increases susceptibility of a community or a person confronted with hazard impacts, but it can also empower the affected and prepare them for dealing better. Women who are heads of single households are at greater vulnerability.

additional investment and financial flows will be necessary to reduce greenhouse gas emissions to current levels.

2.3. Climate Change and Desertification (UNCCD)

Climate change is closely related to desertification, which is affecting large semiarid and arid regions, mostly in poor countries. One third of the world is threatened by desertification. More than 250 million people are directly affected and 24 million tons of cultivable soils disappear each year. Also, 11% of disasters related to water are caused by desertification. The *UN Convention to Combat Desertification* of 17 June 1994 (Art. 1b) defines its aims as: “(i) prevention and/or reduction of land degradation; (ii) rehabilitation of partly degraded land; and (iii) reclamation of desertified land”. Scientists speak of drought as “naturally occurring phenomenon that exist when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems.” Mitigation of drought effects requires a better prediction and adaptation strategy “to reduce the vulnerability of society and natural systems to drought” (Art. 1d).

Desertified regions also lose their biodiversity and threaten food supply of wider regions. “The current extinction rate is up to one thousand times higher than the fossil one. The projected extinction rate is more than ten times higher than the current rate” (Millennium Ecosystem Assessment 2006). Different scenarios exposed by projected impacts of climate change depend on the capability of humanity as a whole to reduce greenhouse gases.

2.4 Political Agenda-Setting: UN Security Council on Climate Change

UK Foreign Secretary Margaret Beckett insisted at the Security Council on April 17th 2007 that climate change could spawn a new era of conflicts over scarce resources unless greenhouse gas emissions were curbed. “The greatest security threat we face as a global community won’t be met by guns and tanks”. Consequences of flooding, drought, diseases and crop-failure are creating massive migrations. The river Nile in Egypt could lose 80% of its flow, threatening the country by rising sea levels with possible displacement of about two million people. “The threat to our climate security comes not from outside but from within: we are all our own enemies.” The discussion at UNSC was still oriented towards hard security issues.

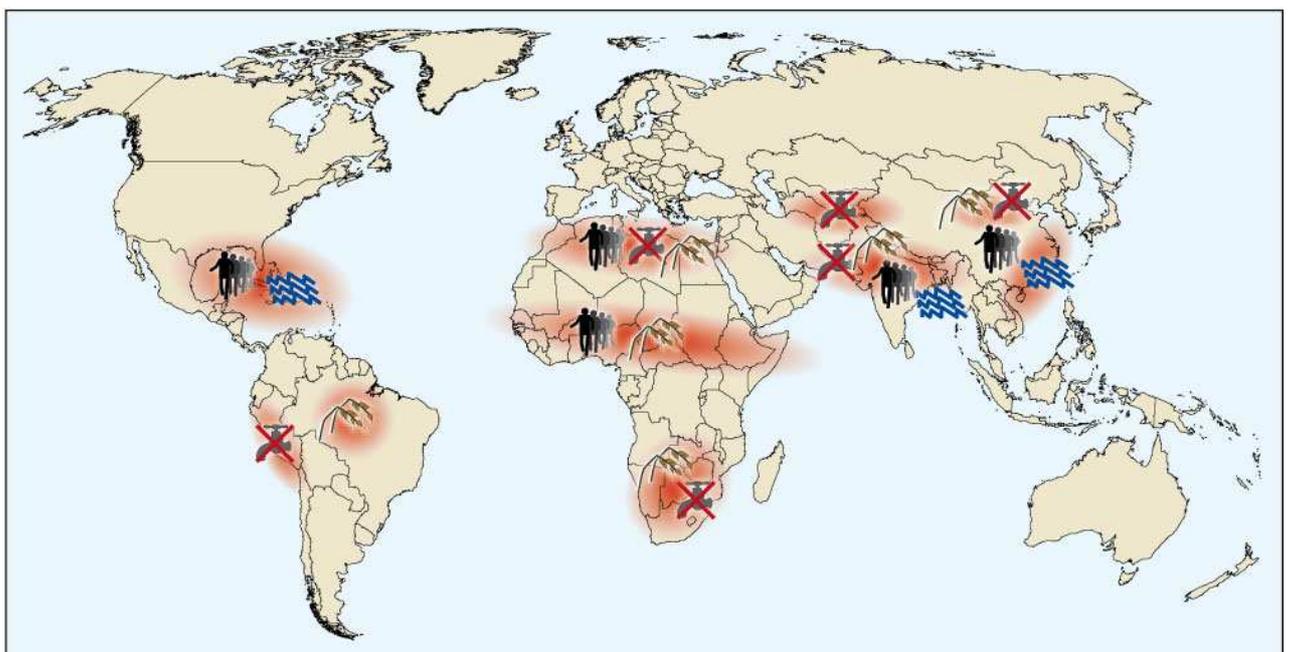
2.5 G-8 Summit in Heiligendamm 2007: Modest Policy Response

German Chancellor Angela Merkel fought inside her country for concrete climate goals. As President of the European Union she convinced member countries to accept a reduction of greenhouse gases by 30% by 2020. During the summit she was able to overcome the resistance of some G-8 participants and a post-2012 was agreed within the United Nations’ framework, where greenhouse gases should be reduced by 50% before 2050. Thus, she was able to establish climate agreements negotiation at national, regional and international level, putting on the agenda the well-being of humankind, and paying special attention to highly vulnerable and marginalized countries and social groups.

3. Climate Change: a Global Security Risk for State Security

Climate change could exacerbate existing environmental crises (drought, water scarcity, land-tenure conflicts, floods) and may trigger massive migrations, which affects weak states and creates hotspot conflict zones (see figure 3). Sea-level rise, storms and floods threaten megacities, above all in the Third World. Large-scale changes could disturb the Earth system (shrinking of the Amazon, loss of the Asian monsoon, the collapse of the Gulf Stream) thus intensifying problems that are already critical (state failure, raising violence, social unrest), leading to a destabilization processes and diffuse conflict structures in wider regions.

Figure 3: Conflict Constellation in Selected Hotspots due to Climate Related Developments (WBGU 2007; **Source:** http://www.wbgu.de/wbgu_jg2007_kurz_engl.html)



Conflict constellations in selected hotspots



Climate-induced degradation of freshwater resources



Climate-induced decline in food production



Hotspot



Climate-induced increase in storm and flood disasters



Environmentally-induced migration

Coping with new threats and vulnerabilities requires non-military strategies. In 2004, the U.S. emitted 19.7 metric tons of carbon dioxide from fossil energy per person, compared with 3.7 metric tons in China. Leford Anderson, the US climate negotiator, publicly acknowledged the low greenhouse gas emissions' rate in developing nations, contributing to climate stability. Climate change can only be mitigated by reducing greenhouse gas emissions worldwide. This implies a shift from fossil energy consumption to renewable energy sources (wind, solar, biogas, biofuel).

Further, since the Industrial Revolution (1750) there exists a historical accumulation of green house gases in developed countries that have often contributed to a higher environmental vulnerability, affecting poorer Southern countries through disasters. The IPCC Report of 2007 reinforces the fact that climate change will hit poor countries hardest, especially in Asia, Africa, Latin America and small islands. Weather-related hazards will intensify also in coastal areas and slums in megacities (see figure 1). Nations with greater emissions have an ethical responsibility to mitigate their negative outcomes, especially supporting poorer countries and vulnerable groups. More frequent events are avoiding rapid recovery among poor people and poor women are particularly affected in their life and their economy. Aid organizations are still struggling with rising disaster tolls, while a few insurance companies are promoting micro-insurance strategies (MunichRe 2006) to prevent total losses of assets by the poorest and most vulnerable segments. Thus, bottom-up learning processes from former disasters reinforce resilience capacities³ of affected persons and communities, giving them the possibility to prevent disasters.

4. Climate Change as a HUGE Global Challenge for Human, Gender and Environmental Security

Climate change and a process of globalization with poverty, missing opportunities in education, health and employment, accompanied by corrupt governments and unequal wealth distribution have increased the marginalization of almost three billion people. Crippled with disasters, desertification and rising sea levels, narrow national security thinking is gradually being transformed. Since the 1990's the focus has shifted from military protection by states to protection of communities whose well-being and security is affected by multiple threats.

In 1994, the Human Development Report introduced the concept of *human security* developed in seven broad categories (economic, food, health, environmental, personal, community and political security). Inspired by peace as “freedom from fear and from threat”, human security called for “safety from such chronic threats as hunger, disease and repression and protection from sudden and hurtful disruptions in the patterns of daily lives, whether in homes, jobs or communities” (UNDP 1994: 23).

4.1 Climate Change as a Challenge for Human Security

The human concept launched many national human security reports to diagnose specific human threats in divergent countries (Jolly/Ray 2006). The development policies and institutions that deal with HS, have been referred to as ‘human-centered perspective’ (Annan 2005); an encompassing concept for combating structural, physical, environmental, cultural and gender violence. According to GECHS, one of several science programs of the International Human Dimension Program: “Human security is achieved when and where individuals and communities: a) have the options necessary to end, mitigate, or adapt to threats to their human, environmental, and social rights; b) actively participate in attaining these options; and c) have the capacity and freedom to exercise these options.”

³ Resilience refers to the capacity of a community or person to recover positively after a difficult situation and using the learning process to empower.

Policy relates these non-military security concerns to climate change, resource scarcity, pollution, population growth and social vulnerability. Combining top-down institution consolidation, laws, norms and sustainable development policies with bottom-up resilience-building for exposed groups, human security is able to reduce their fragility by creating coping strategies and disaster risk reduction practices.

The first *Human Security Report* (2005) has focused on a narrow definition of human security as freedom from fear, addressing political and criminal violence. Ogata and Sen developed a people-centred approach as “freedom from want”, encompassing poverty eradication, local, national and international justice, governance and systems of rule. From a scientific perspective, GECHS (2002) and UNU-EHS (2005) have addressed the environmental dimension of human security.

4.2 Climate Change as a Challenge for Environmental Security

The concept of environmental security (ES) was first addressed in the Brundtland Report (1987), as a political concept promoted in *Global Governance* (1995), and taken up by NATO (1999), World Bank, GEF, UNEP, UNDP, OSCE and UNU. In the South, fears that the principle of sovereignty could be undermined (Saad 1995) emphasized poverty and underdevelopment (Fuentes/Rojas 2005). Only later relations were established to gender.

Climate change as a security danger poses multiple threats and challenges for international and US national and human security (UNESCO 2002). It was taken up by the UK government and the Stern Report, and was discussed at the Security Council. Climate change and frequent disasters can be triggered by internal conflicts obliging the socially vulnerable with a “survival dilemma” (Brauch 2008): to stay at home and die of thirst, hunger and violence for the access to the scarce resources, or to migrate to, urban centers or industrialized nations or by internal conflicts to refugee camps. This is affecting the highly social vulnerable, such as women and children. UNESCO proposed “improving human security by better management of the environment and social change.” Environmental change starts with people and includes backward circumstances of social, cultural and ecological threats, challenges, vulnerabilities and risks that may contribute to conflicts or lead to cooperation.

Whereas initially the key referent of human and environmental security was the nation-state, recent studies link global environmental degradation with peace-building and hydro-diplomacy (Oswald 2007). Above all, this might translate into a political realignment when disasters strike conflict zones. An interdisciplinary and multi-causal understanding of the links between nature and society should also reinforce bottom-up resilience-building, where affected people are enabled to develop their own coping strategies.

4.2 Climate Change as a Challenge for Gender Security

During the Indian Ocean tsunami (2004) in the Aceh Besar district, the rate of male survival outnumbered female survival in a 3:1 ratio (Oxfam, 2005). In a case study from Sri Lanka, 65.3% of human losses were women (Birkman/Fernando/Hettige 2006). The 2005 earthquake in Pakistan killed more women, children and elders (Ariyabandu/Fonseca 2008). Men were outside, while women worked inside their homes. Different

explanations were made: women often could not swim, wore saris, had long hair, and worked mostly inside their homes. Furthermore, during hazards women's identity as career induced them to save children, elderly and even animals at the cost of their own life. In chaotic post-disaster situations, children and women are frequently separated from their families; temporary camps often lack social accountability resulting in discrimination, neglect, sexual harassment, abuse and overexploitation of women.

These cases refer to a new gender security posed by climate change and hazards. Why are women, children and the elderly highly vulnerable? What are the possible policies and measures to improve their resilience and reduce their risks? A wide concept of Gender Security targets women, children, elders, indigenous groups and other marginalized people (see Box 2 in annex). It understands gender identity as "a social construct regarding culture-bound conventions, roles and behaviors for, as well as relationships between and among, women and men and boys and girls" (Krieger 2001: 693-700). It explains how a person is socially identified, and how society perceives him or her as a man or a woman, based on roles and behaviors (hair, clothes, norms, roles, social status).

The social status of women gives them a privileged perspective for acting with responsibility and solidarity. In quotidian life, women in the south produce more than half of the food; in disaster situations they stabilize emotionally affected people and collaborate in diverse rescue activities, reducing and preventing further risks. So far in the social sciences, discussions based on 'a narrow gender perspective' – which refers to the relationship between women and men (e.g. in conflicts and wars as well as in peacekeeping and peace-building efforts)- has prevailed. However, a systematic scientific assessment of the impacts of climate change on gender security in analyzing climate change and desertification issues is lacking.

4.3 Human, Gender and Environmental Security: A HUGE Approach to Global Security

An integral human, gender and environmental (HUGE) security approach (Oswald 2001, 2007a) widens the scope of security studies and puts the victims, their social situation and damaged environments, on both the scientific and political agenda of security. It relies on a broad understanding of gender including other vulnerable groups besides women (children, elders, indigenous groups, minorities) with a human-centered focus on environmental security challenges as well as on peace-building and gender equity. 'Security of whom' (table 1) goes beyond states and includes humanity, nature, and gender relations, and the values at risk ('security of what?') shift from sovereignty and national unity to survival, sustainability, equality, solidarity, resilience, social representations and equity. New sources of threats ('security from whom and for what?') focuses on disasters, climate change, regressive globalization and violence. In gender security the origins of threats come primarily from the patriarchal system, characterized by totalitarian institutions such as authoritarian governments, churches and elites, and secondly, from the established and developed social relations and self-assumed identity processes. They penetrate in the most intimate spaces of life of an individual, couple and family, affecting labor relations, political and social contracts and interactions in community life. These threats exacerbate through vertical power exercises, where a system of discrimination and stigma dominates, menacing equity, equality and gender or minority groups' identities.

Table 1: Human, Gender and Environmental Security (HUGE). **Source:** Møller 2003: 279; Oswald Spring 2001, 2007a

| Denomination (security of what?) | References object (security of whom?) | Value at risk (security of what?) | Sources of threat (security from whom and for what?) |
|----------------------------------|---|--|---|
| National Security | The State (political, police, military) | Sovereignty, territorial integrity | Other states, terrorists, sub-state actors, guerrilla |
| Human Security | Individuals, humankind | Survival, lively-hood, quality of life, human rights | State, globalization, elites, terrorism |
| Environmental Security | Ecosystem, Humankind | Sustainability Anthropocene | Nature, global change, GEC, climate change, humankind |
| Gender Security | Gender relations, indigenous, children, elders, handicapped, other minorities | Equity, equality, identity, solidarity, resilience, social representations | Patriarchy, totalitarian institutions (governments, religions, elites), dominant culture, discrimination, intolerance, violence |

The complexity of survival for whole communities and regions depends on social networks, often developed by solidarity that widens the narrow male-female relationship. Thanks to bottom-up resilience processes and empowerment it reorients human security to counter discrimination through specific governmental policies, institution-building, legal reinforcement, but also by empowerment and sociopolitical participation of women, youth, elderly and minorities. In the South, the past decades of impoverishment, environmental deterioration, migration, depopulation of rural areas given desertification, disasters, wars, failed agricultural policies and low prices for primary commodities, have pushed “survival strategies” (Oswald 1991) for coping with the impacts of climate change and natural hazards increasingly into the hands of women. Traditionally educated men were threatened by the complexity of the new situations when they lost their traditional role as breadwinners. They often abandoned their families and women struggled alone to rise children. In Mexico after 1982 and during the last 25 years of economic crises, women headed households have more than doubled, but also violence and especially feminicides have increased (see Juárez).

This HUGE approach to security widens the scope of analysis to the perspective and impact of human beings as victims of institutions, processes (climate change) and relations (patriarchy). Efforts for coping with social vulnerability have offered neither “freedom from want” nor “freedom from fear,” completely lacking “freedom to live in dignity,” partly because a gender dimension was lacking. The most vulnerable people in the South are exposed to risks in multiple ways from hazard impacts, due to their precarious shelter conditions located in areas of high risk (flood-prone river basin, landslide-prone ravines), their daily struggle to get enough food for subsistence and even intra-familial violence. Further, fleeing from both hazards and internal conflicts or complex emergencies, as refugees women are often exposed to rape, human trafficking, forced prostitution and pregnancy.

5. Policy Actions to Meet a HUGE Global Security Challenge Posed by Climate Change

How can a policy-focused HUGE approach contribute to sensitize policy programs and initiatives to address and cope with new security threats, challenges, vulnerabilities and risks posed by climate change, climate related natural hazards and desertification, migration, survival strategies and survival dilemma?

5.1 Climate Change and International and National Security

Conflicts and environment establish a complex and dual relation. On one side, war is a cause of environmental damage (Vietnam and Gulf wars), but climate change is simultaneously also a cause of crises and conflicts, often triggered by hydro-meteorological hazards (herders against peasants in Kenya, hunger riots in Morocco 1981). Nevertheless, disasters can induce different outcomes of existing conflict situations: in Aceh a peace agreement was possible after the 2004 tsunami, while in Sri Lanka contentious aid-distribution, top-down imposition of resettlements and undemocratic behavior in post-disaster management aggravated the armed conflict (Renner/Chafe 2007).

Climate change can contribute to a decline and degradation of water resources, and a reduction of agricultural production. It may lead to an increase in hydro-meteorological hazards. All these effects taken together may trigger environmentally-induced migration that may pose domestic and international security issues in the host communities or countries. These climate triggered international security impacts (see Box 1) have been addressed by Security Council 2007 and several mentioned studies. Therefore, multilateral bodies and specifically UNESCO (2002) have addressed “the need to prevent conflicts at their source and the needs of the most vulnerable populations, especially women, at regional and sub-regional levels through its global network of peace research and training institutions, thereby reinforcing human security and contributing to the implementation of the Decade for a Culture of Peace and Non-Violence for the Children of the World.”

The best long term proactive security policy in countering these security impacts of climate change is **to reduce the greenhouse gas emissions by at least 50% by 2050**, but even more important is to move from policy declarations to **a full policy implementation**, improving the record since the adoption of the Kyoto Protocol, and especially making the world population culturally aware of environmental degradation, partners in environmental and human security. This requires much bolded initiatives and legally binding and implemented commitments in the in the Post-2012-Climate Change Regime.

5.2 Prevention for Climate Change increases Human Security

Temperature increase, rising sea levels, drought and famine are likely to provoke mass migrations that may also lead to epidemics and violence. To prevent further negative outcomes of climate change, UNFCCC (2007) argued that by 2030 funds of 67 billion USD annually “may represent the lower bound of the amount actually required” to help

people in developing countries to adapt to climate change. This estimate may expand to up to 100 billion USD per year. Money is needed to ensure access to food supplies, healthcare and infrastructure. The Stern Report insisted that “**doing nothing**” will create by 2050 mostly **unplayable human and material losses** due to epidemics, disasters and migration that will affect the whole world. UNESCO estimated that 5% invested in **prevention** would reduce the final costs of hazards by between 20 to 50%.

Ethical business leaders are challenged to go far beyond the immediate profit motive. Peoples’ issues ranging from health and safety to labor, employee morale and engagement, as well as entrenched poverty require a more sustainable world. Focusing on sustainability-related values, principles, strategies and practices, climate change related disasters and social inequality can be simultaneously mitigated or their impact reduced with a progressive decline in social vulnerability. Thus, together with the work of research institutes, must create productive processes with lower green house gases emissions and employ renewable energy systems.

The **Clean Development Mechanism**, besides emissions trading and joint implementation of one of the three Kyoto mechanisms, has become a useful instrument to reduce green house gases emissions; in 2006 it generated investments amounting to USD 25 billion. It encourages industrialized countries to invest in sustainable projects in poor countries obtaining tradable emission credits. In addition, clean and renewable energy can moderate climate change reducing negative effects on economies and creating more than half a million jobs globally.

Besides, a combination of resource conservation, recycling, restoration of deteriorated ecosystems through reforestation, river basin management, actions against land erosion and desertification with traditional and modern methods will reduce negative impacts of hazards and reduce extreme outcomes, also creating economic benefits. Disaster risk reduction and risk management combined with participative governance, effective early warning mechanisms, empowerment of women and resilience-building requires **education and training that in many countries is in the hand of women**. All these activities can cope with the root causes that often lead to survival threats. After hurricane Mitch in 1998, Centro American governments have developed local early warning systems. Women and young scholars were trained in managing a local radio and watching the level of the rivers. The local radio frequency was integrated in a national preventive disaster system. The systems in hands of women and scholars are still functioning today, giving people early advise, when a threat is occurring, thus avoiding disaster (Villagrán 2007).

Gender-related issues in disaster response and reduction efforts have so far often been neglected and women have too long played only a marginal role in formal activities. With the HUGE approach to climate change **women get to the centre** of the scientific and policy agenda.

Complex social networks sustain human life in normal times. Human vulnerabilities and in particular, gender vulnerability during hazards, disasters or conflicts resulting from climate change are usually a matter of disruption or failure of these networks. A central challenge for research and practical policies is not to include a gender dimension in preventive tools and disaster management. A **gender mainstreaming of the statistics** on the impact of natural hazards by Munich Re, CRED, the World Bank and the IFRC/RCS may convey a more realistic gender understanding. **Training will facilitate**

supporting networks that underlie a resilient society, where women educate, care and reproduce the historical memory and cultural background, increasingly generating also the material family income. **Active female participation in education on disasters risk reduction, planning of disaster preparedness** and response schemes opens the possibility to reduce gender related social vulnerability, improve hazard resilience, and increase the survival of entire communities affected by disasters. Through an **empowerment of women, gender violence and insecurity prior, during, and after disasters can be reduced**. Therefore, women should be actively involved in disaster risk reduction policy and play a crucial role in disaster situations, aid and relief groups, focusing on long-term sustainable development processes without putting their lives at stake for its accomplishment.

6. Role of Women Leaders in Meeting this HUGE Challenge of Climate Change for International Security

6.1 Women's Leadership in Government and Social Organizations Addressing the HUGE Security Issues of Climate Change

Confronted with the complexity of climate change security challenges, ambitious action goals must be undertaken in the Post-2012 period for energy efficiency, reducing emissions and creating sustainable energy fountains. Women world leaders, environment ministers in Africa, Asia, Europe and Latin America, as well as in civil society, social movements and non-governmental organizations have pushed climate change as a threat, but also as an opportunity for future generations and of their children and grandchildren.

As Prime Minister of Norway, *Gro Harlem Brundtland* championed in 1987 the principle of 'sustainable development'. *Angela Merkel* convinced the heads of state at the G-8 meeting in Heiligendamm (2007) to accept major greenhouse-gases reduction and to cooperate in the Post-2012 process. *Mary Robinson* worked for a sustainable peace between Ireland and the UK. *Tarja Halonen*, President of Finland, promoted human rights and democracy by strengthening civil society, social justice, the promotion of equality, peace-building and conflict resolution. Ellen Johnson-Sireleaf, President of Liberia and Michelle Bachelet, President of Chile, passed for the defense of their democratic convictions in jail and exile.

Francisca Rodríguez and Alicia Muñoz, two landless rural workers from Chile, and Etelvina Masioli from the Brazilian Landless Movement put food sovereignty and sustainable livelihood in the centre of their social struggle. Wangari Maathai from Kenya, Rigoberta Menchú from Guatemala, Aung San Su from Myanmar, and Shrinin Ebadi from Iran were awarded with Nobel prizes for their engagement with human security, environment, gender equity and nonviolent conflict resolution.

The multitude of actors responding to natural hazards and cooperating in climate change prevention should aim to better coordinate their manifold initiatives and activities that promote human, environmental and gender security. Conceptually, the HUGE approach tries to promote a more holistic perspective in scientific research and to encourage more effective policies and measures that go beyond lofty and well-intended policy declarations. Major initiatives are needed to transform knowledge into action.

The *International Women Leaders Global Security Summit*, by bringing together women's leading in state and international institutions with those in social movements and academia, can foster an integration of diverse security concerns into a **HUGE** policy perspective that tries to gain strength at all levels of governments, in disaster relief agencies, environmental organizations, in women, peace-building and conflict-resolution groups, as well as with concerned citizens in academia and business. The challenges are so extensive that only a multitude of coordinated stakeholders will be able to mitigate and control negative outcomes and social failures.

The global security challenges posed by climate change are urgent and the 'Spiral of Disaster Risk Reduction' summarizes the most important variables of the complex political arena, where women play a key role in adaptation, mitigation and resilience-building. The time for action in this 21st century is advancing, only when women and men, politicians and civil society, businesses and academia join efforts, a 'HUGE' sustainable livelihood for all can be developed. Honest women in decision making processes succeeded to struggle against institutional racism and profit motives. Through creative and cooperative institution-building, they are able to involve men promoting a new masculinity and together they can overcome discrimination, neglect and social vulnerability.

Climate change involves multiple stakeholders and transdisciplinary approaches where technological solutions are combined with land planning, environmental management, poverty alleviation, efficient energy use and renewable energy resources. There is no simple solution and biofuel should not create a new threat on food sovereignty for poor people, but should be produced from waste. Integral climate change mitigation includes a sustainable use of water with reuse, reduction and recycling of this scarce and heavily polluted resource. Forests not only protect biodiversity and are habitat of wild fauna, but they also offer clean development mechanisms for the mitigation of greenhouse gases. Corral reefs, mangroves and wetlands are natural barriers during disasters and habitat of a great biodiversity. The complexity of factors intervening in climate change and required for adaptation necessitates different social agreements and a new ethic for productive processes. Different demands ask for new educational tools inducing social changes able to improve the capacity to deal with change, but also to create the demanded changes contributing for enhancing human security. Necessities in cities, rural areas, the North and the South are very diverse. All will have to struggle against the negative outcomes of climate change.

Climate change is posing new threats, able to affect world society as a whole. The future is becoming more complex and also highly uncertain. A simple cornucopian answer, searching for new technology, is insufficient. Technology itself is becoming a factor for risk (Beck 2007). As a global problem with local and regional effects it is important to foster world solidarity, aware of the poorest and most vulnerable groups. By enabling women, indigenous groups, youth, elders and other minorities, society will get additional support for resilience-building and creative adaptation strategies to overcome causes and negative outcomes of climate change. Leaders, women and the world society as a whole shall have to learn to live with new risks, uncertainties and complex threats, where openness, diversity and solidarity will be the most important parameters for the survival of humanity and Earth.

Annexes:

Box 1:

State security for nation states and international organizations:

- In 2002, a study for the German Federal Ministry on Environment, Nature Protection and Nuclear Safety addressed: *Climate Change and Conflicts* (BMU 2002).
- In 2004, a leaked study for the U.S. Department of Defense analyzed the impact of an abrupt climate change on U.S. national security (Schwartz/Randall 2003, 2004).
- In December 2004, the *High Level Panel on Threats, Challenges and Change* of the UN Secretary General highlighted environmental degradation in threat clusters without noting climate change (UN 2004).
- In January 2004, David King, the UK Government's chief scientific adviser claimed that climate change is a far greater threat to the world than international terrorism.
- In February 2004, John Reid MP, then British Secretary of State for Defense and later Home Secretary, argued that climate change may spark conflict between nations.
- On April 17th 2007, former Foreign Secretary Margaret Beckett, put climate change on the agenda of the United Nations Security Council for the first time.
- In spring 2007, reports by Gilman, Randall, and Schwartz (2007) and by the US Centre of Naval Analysis (CNA 2007) discussed impacts of climate change on US national security.
- In June 2007, prior to the G-8 meeting in Heiligendamm (Germany), a German Advisory Council (WBGU 2007/2008) published a report on "*Climate Change as a Security Risk*."
- In July-August 2007, the General Assembly discussed climate change.
- In September 2007, the UN Secretary General Ban, held a high-level meeting on climate change.

Human Security Challenges

- In 2005, the international science project on *Global Environmental Change and Human Security* (GECHS) held a workshop in Norway on climate change and human security.
- On April 15th 2007, a group of scientists published a 'Policy Memorandum' on '*Climate Change and Human Security*' (Wisner et al. 2007).
- Climate Change and Human Security has become the focus of the Greek Presidency of the *Human Security Network* (2007-2008).

Conclusions of policy memorandum addressed to the Security Council in April 2007

Whether one is assessing the impact of climate change from the viewpoint of intrastate stability and interstate relations, or with an eye to the Millennium Development Goals and the well-being, dignity and aspirations of the poor and marginalized members of humanity, challenges are clear. It is also clear that ... we are "all in the same boat". Thus not only must rich countries and wealthy people cut back on consumption, they must help, support, promote –and not impede– the adaptation to a rapidly changing global system by more economically backward nations. A timely and adequately funded combination of adaptation and effect mitigation needs to be encouraged. Adaptation strategies should take account of impacts to all stakeholders, consciously including women, indigenous groups, and ethnic minorities while also drawing from local knowledge and past experiences of coping with climate variability and extreme events. ... Climate change offers humanity an opportunity for a quantum leap in sustainable development and in peace making. If international cooperation ... is strengthened ... international stability, governance, and development also benefit. This thought recalls the quotation from UNDP regarding MDG 8: "*Climate change, a global phenomenon, calls for a collective response in the form of global partnerships.*" ... Advances in meeting the Millennium Development Goals and in dealing creatively with unplanned urban growth, land degradation, inefficient use of water and energy will not only have immediate and short term benefits, but also make livelihoods and nations more resilient in the face of the impacts of climate change. Greater resilience will, in turn, act as insurance against loss of development investments due to extreme natural events.

Box 2: Four Aspects of Gender Security

1. The constitution of 'gender identity' is a complex process that includes socialization since birth, learning during the first infancy and later social role's acquisition. This process creates social representations that develop into "systems of value, ideas and practices". Simultaneously, they "establish an order that permits an individual to get familiarized and to arrange its material and social world" (Moscovici 1976: xiii). It permits communication through a common code and controls all elements involved in a socio-historic context of a society. Symbolic fundaments of identity maintain historic attributes of man and women, poverty and wealth, which consolidated

over thousands of years, where power structures of dominant men have produced violence (Reardon 1985), social inequality (Sen 1995) and submission of women (Greer 1993).

2. 'Gift economy' deconstructs women's free labor at home and for child rearing. This free gift to society is related to maternal thinking or mothering, able to liberate "everyone – women, children and men – from patriarchy without destroying the human beings who are its carriers and the planet where they live" (Vaughan 1997:23). This intentionality of giving, caretaking is more important than the objectivity of an account. Social communicative needs are reinterpreted without competitiveness⁴, transforming *homo sapiens* into *homo donans*. This creative process based on equal exchanges is not only self-reflecting, but also self-validated through reciprocity, linking HS to GS.
3. 'Diverse social movements' struggled against regressive globalization (poverty, public insecurity, environmental deterioration, failed risk management). The confluence of social movements started after the explosion of the atomic bomb and during the Cold War when feminists coalesced with pacifists. After 1970 indigenous groups struggled for alternatives of local self-reliance and 'economy of solidarity' with micro-credits and small businesses. They created resilience, reduced famine and promoted participative governments and popular budgets. As a peaceful, culturally and biologically diverse process, these movements integrated GS, HS and ES.
4. 'Ecofeminism' (D'Eaubonne 1974), emerged as a fusion of feminism and environmentalism, asserting that patriarchy simultaneously submits nature and women. Colonization, plantation, industries and monocultures not only destroy the environment and society, but also the mystical connection with Mother Earth (Shiva 1988). Through cultural and biological diversity the Cartesian split between subject and object is overcome.

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⁴ Just before hurricane Katrina entered into land, six female telephone dispatchers in Plaquemines Parish, New Orleans used their personal knowledge of the local area to devise phone trees and evacuation plans and thus probably saved hundreds of lives (IFRC 2006: 141). Field research after the tsunami in the Indian Ocean showed that numerous women died trying to save their children, elderly and even domestic animals at the cost of their own life.

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