Gender and climate change: mapping the linkages

A scoping study on knowledge and gaps

March 2008

Prepared for the UK Department for International Development by Alyson Brody, Justina Demetriades and Emily Esplen, BRIDGE, Institute of Development Studies (IDS), UK.

BRIDGE (development - gender)
Institute of Development Studies
University of Sussex
Brighton BN1 9RE, UK
Tel: +44 (0) 1273 606261
Fax: +44 (0) 1273 621202/691647
Email: bridge@ids.ac.uk
Website: http://www.bridge.ids.ac.uk/

Contents

Introduction

> "Climate change presents the most serious threat to development and could potentially reverse many of the gains that have been made."
>
> (DFID 2007: 32)

Rationale

The issue of climate change is not new, but its take-up as a key development concern and its integration into pro-poor planning is a fairly recent departure. Even more recent is the integration of a gender-sensitive perspective in climate change research and responses. For this reason, there is little existing research considering the linkages between climate change and gender. Similarly, while there is a wealth of literature on gender and the environment, gender and energy, gender and water, gender and conflict and gender and disasters, there are few references to climate change specifically.

This paper, prepared for the UK Department for International Development's (DFID) Equity and Rights Team, seeks to make the most of the available resources, pulling from them useful insights that could inform and strengthen future research on and interventions into gender and climate change. Drawing on existing publicly available literature and personal communications with experts in the field of gender and climate change[1], the paper outlines key linkages between climate change and gender inequality – focusing particularly on adaptation and mitigation policies and practices. It seeks to identify gaps in the existing body of work on gender and the environment, which has focused primarily on women's agricultural livelihoods, access to natural resources, or disaster risk reduction. Where possible, given the scarcity of existing examples, it reviews best practice on adaptation and mitigation, with an emphasis on research, policy and practice. The paper ends with recommendations regarding priority areas for future research and highlights some practical steps required to achieve more equitable, appropriate climate change policies and programmes.

What constitutes a gender-sensitive response to climate change?

Climate change is a global phenomenon, with impacts that are already being experienced on a human level. It is recognised that it is those who are already the most vulnerable and marginalised who experience the greatest impacts (see IPCC 2007), and are in the greatest need of adaptation strategies in the face of shifts in weather patterns and resulting environmental phenomena. At the same time, it is the vulnerable and marginalised who have the least capacity or opportunity to prepare for the impacts of a changing climate or to participate in negotiations on mitigation. As women constitute the largest percentage of the world's poorest people, they are most affected by these changes. Children and youth – especially girls – and elderly women, are often the most vulnerable.

Even where there is a lack of hard evidence, it is commonly recognised that climate change exacerbates existing inequalities in the key dimensions that are not only the building blocks of livelihoods, but are also crucial for coping with change, including for example: wealth; access to and understanding of technologies; education; access to information; and access to resources

[1] Experts consulted include: Thomas Mitchell (IDS), Thomas Tanner (IDS), Ulrike Röhr, Yianna Lambrou (FAO) and Rachel Masika

(Masika 2002). It follows that DFID's response to climate change should be gender-sensitive, applying the principles of the Gender Equality Action Plan and the UK government's commitments to international human rights conventions such as the United Nations Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). But what does this mean in practice?

A gender-sensitive response requires more than a set of disaggregated data showing that climate change has differential impacts on women and men. It requires an understanding of existing inequalities between women and men, and of the ways in which climate change can exacerbate these inequalities. Conversely, it also requires an understanding of the ways in which these inequalities can exacerbate the impacts of climate change on women and men. For example, girls and women may have less access to vital information on mitigation or adaptation strategies because of time constraints due to their caring and other domestic responsibilities. This lack of information and lack of opportunity to feed their knowledge into community or national-level adaptation and mitigation strategies could jeopardise larger processes of reducing climate change and its impacts.

Gender sensitivity in consultation and decision-making is also essential for effective mitigation and adaptation responses to climate change. More than simply thinking about how these responses can be tailored to the specific needs of poor and vulnerable men and women, these processes need to recognise the capacity of women and men, girls and boys, to contribute important knowledge and insights. Not only can they contribute to effective adaptation strategies but, with more participative processes, these strategies and interventions can truly identify and meet the needs of those they aim to assist. In this way, processes can be forged that respond to local realities while feeding into a broader vision of climate change deceleration. Yet women are more likely than men to be absent from decision-making processes, whether in the household or at community, national or international levels – either because their contribution is not valued or because they do not have the time, confidence or resources to contribute. Recent research by the Institute of Development Studies and Plan International has also pointed to the marginalisation of children's voices in household, community and national decision-making relating to climate change – particularly in disaster risk reduction (Mitchell et al forthcoming 2008). It is critical that more is done to promote women's and children's meaningful participation in decision-making processes on climate change responses, to ensure that climate change policy and grassroots interventions respond to their specific needs and draw on their knowledge and experience. In addition, promoting women's and girl's meaningful participation in decision-making processes can begin to address gender inequalities by raising the profile and status of women and girls in the community and challenging traditional assumptions about their capabilities.

Finally, it is important to note that a gendered approach to climate change should not simply be focused on women. Men and boys are also vulnerable to the impacts of climate change but often in different ways, and these need to be identified and communicated. Furthermore, women and girls are involved in relationships with men and boys and it is at the level of these gender relations and the social expectations influencing them that research needs to be conducted and change needs to happen.

Structure of the paper

This paper is divided into three parts. The first part examines some of the differential impacts of climate change on men and women, as well as highlighting implications for gender in/equality. The second part takes a gendered approach to climate change adaptation, drawing particularly on a recent study from ActionAid and the Institute of Development Studies (IDS) which centres around poor, rural women's own experiences of, and responses to, climate change. The final section provides insights into the complexities of climate change mitigation. It emphasises the need to include women in developing and implementing mitigation strategies, both to ensure their

full participation in these processes and to ensure that such strategies are effective in addressing the 'bigger picture' of climate change and its human impacts.

Mapping the gender impacts of climate change and the implications for gender equality

"The impacts of climate change are not evenly distributed – the poorest countries and people will suffer earliest and most" Stern Review

What do we mean by gender inequality in the context of climate change?

Women's and men's differential access to social and physical goods or resources is one of the key dimensions of gender inequality. Women's social positioning in many situations means that the roles they are expected to take on are often supportive and reproductive, centred around the home and local community rather than the public sphere. This does not mean that women do not play crucial roles in agricultural production or other activities crucial to sustainable livelihoods and national economies. But the roles they play are generally less visible and attract less public recognition than the work men engage in.

Typically, women – particularly those in poor, rural locations – are expected to assume primary responsibility for their families' subsistence. Yet because they often do not earn a wage, women are frequently excluded from decisions about spending or about their children's education. The expectation that girls will help their mothers with household tasks and with caring for younger siblings means that they are more likely to be excluded from opportunities to gain an education than boys, although these gaps are gradually closing. Women earning a wage typically earn less than men, leaving them more vulnerable to changes in their working environment caused by external phenomena, including climate change. This section considers some of the ways in which these inequalities are exacerbated by climate change, and explores how gender inequality prevents the effective mitigation of these impacts.

Gender, health and climate change

It has been widely recognised that the rising water levels associated with climate change will lead to an increase in water borne diseases. Other likely health consequences of climate change include higher rates of malnutrition due to food shortages, increases in heat-related mortality and morbidity, and increased respiratory disease where air pollution worsens. Children under five are the main victims of sanitation-related illnesses, and – along with the elderly – are most affected by heat stress (Bartlett 2008). Gender discrimination in the allocation of resources, including those relating to nutrition and medicines, may put girls at greater risk than boys. More research into the gender-specific health impacts of climate change on children and adolescents would help to illuminate the extent to which this is the case, and would in turn enable a more targeted response.

Women and girls are generally expected to care for the sick, particularly in times of disaster and environmental stress (IUCN/WEDO 2007). This limits the time they have available for income generation, which, when coupled with the rising medical costs associated with family illness, heightens levels of poverty. It also means they are less able to contribute to community-level decision-making processes on climate change or disaster risk reduction. In addition, being faced with the burden of caring for dependents while being obliged to travel further for water or firewood makes women and girls prone to stress-related illnesses and exhaustion (Voluntary Services Overseas 2006; CIDA 2002). Women and girls also face barriers to accessing healthcare services due to a lack of economic assets to pay for healthcare, as well as cultural restrictions on their mobility which may prohibit them from travelling to seek healthcare.

Elderly women are likely to be particularly vulnerable, particularly in developing countries where resources are scant and social safety nets limited or non-existent. Despite this, while there has been some recognition of the health impacts of climate change on children, albeit largely un-gendered, there has been little focus on the specific vulnerabilities of elderly women and men. The elderly are at highest risk from climate change-related health impacts like heat stress and malnutrition. But despite being most vulnerable, the elderly, women in particular, lack of access to and knowledge of how to use public, community and private sector services, including health services; they often have heavy family and caring responsibilities which are undertaken without adequate support causing stress and fatigue while also preventing wider social and economic participation; and they may suffer from a lack of social, political and financial capital and income. As such, elderly women are least likely to be able to access health services because they cannot afford to pay even nominal amounts for clinic visits and drugs or because their mobility may be restricted. Access is further restricted for older women living in rural areas, who are often unable to travel the long distances to the nearest health facility. Older men, by contrast, may be particularly vulnerable on account of being less tied into social networks than women (WHO 2000).

A decline in food security and livelihood opportunities can cause considerable stress for men and boys more broadly, given the socially ascribed expectation that they will provide economically for the household. This can lead to mental ill health in some cases. It has been recognised that men and boys are less likely to seek help for stress and mental health issues than women and girls (Masika 2002), meaning that preparation for, and responses to, climate change need to be sensitive to gender differentials in healthcare (including mental) seeking behaviour. Stress is likely to be heightened after disasters, particularly where families are displaced and have to live in emergency or transitional housing. Overcrowding, lack of privacy and the collapse of regular routines and livelihood patterns can contribute to anger, frustration and violence, with children (especially girls) and women most vulnerable (Bartlett 2008).

Areas for future research and action

Qualitative scoping studies are required into the gender-specific use of health facilities - how has people's health been affected by climate change and what may be preventing their access to facilities? What are the gender-specific health impacts of climate change on children and adolescents and how could programmes respond to this?

In terms of practical steps, programmes are needed to improve access to health care, particularly for women and the elderly, including introducing cash transfers, free health checks and mobile health units. Programmes to offset the demands of care work on women and girls are also critical. Considerable knowledge exists regarding appropriate support and interventions to alleviate women's care burden in the context of HIV (see in particular VSO 2006). These insights should be drawn upon to inform climate change policy and programming.

Gender, agriculture and climate change

Although rural women and men play complementary roles in guaranteeing food security, women tend to play a greater role in natural resource management and ensuring nutrition (FAO 2003). Women often grow, process, manage and market food and other natural resources, and are responsible for raising small livestock, managing vegetable gardens and collecting fuel and water (FAO 2003). Men, by contrast, are generally responsible for cash cropping and larger livestock. Women's involvement in an agricultural capacity is most common in regions likely to be most

adversely affected by the impacts of climate change, particularly Sub-Saharan Africa and Asia. In these contexts, responsibility for adaptation is likely to fall on their shoulders – including finding alternative ways to feed their family (CIDA, 2002).[2] However, statutory and/or customary laws often restrict women's property and land rights and make it difficult for them to access credit and agricultural extension services, while also reducing their incentive to engage in environmentally sustainable farming practices and make long-term investments in land rehabilitation and soil quality. Despite these obstacles, recent evidence demonstrates that women who are already experiencing the effects of weather-related hazards – such as erratic monsoon patterns, flooding, and extended periods of drought – are developing effective coping strategies, which include adapting their farming practices (see Mitchell et.al. 2007). The importance of women's role in adaptation will be taken up later in this paper.

Areas for future research and action

More research is needed into the adaptation strategies of women in the face of existing climate change impacts on agricultural productivity and food security, including how these are manifested in different contexts. What are the barriers to women's access to new technologies, extension services and credit facilities? What aspects of their own agricultural knowledge have been overlooked and could contribute to effective adaptation? What are women already doing and what do they identify as their needs and priorities?

Future adaptation and/or agriculture policies should explicitly draw on these insights and seek to better support these existing strategies. (See the later section on adaptation for more detailed discussion).

Gender, water and climate change

The gendered dimensions of water use and management are fairly well-documented. It has long been noted in the gender and environment literature, for example, that women and girls generally assume primary responsibility for collecting water for drinking, cooking, washing, hygiene and raising small livestock, while men use water for irrigation or livestock farming, and for industries (Fisher 2006; Khosla and Pearl 2003). These distinct roles mean that women and men often have different needs and priorities in terms of water use.

But while this knowledge isn't 'new', it does take on a new and pressing significance in the context of climate change. It is estimated that by 2025, almost two thirds of the world's population are likely to experience some kind of water stress, and for one billion of them the shortage will be severe and socially disruptive (WEDO 2003: 61). Climate change may also lead to increasing frequency and intensity of floods and deteriorating water quality. This is likely to have a particularly harsh affect on women and girls because of their distinct roles in relation to water use and their specific vulnerabilities in the context of disasters (see the section on disasters). In drought-prone areas affected by desertification, for example, the time absorbed by water collection will increase as women and children (mostly girls) will have to travel greater distances to find water. The heavy rainfalls and more frequent floods predicted to result from climate change will also increase women's workloads, as they will have to devote more time to collecting water, and to cleaning and maintaining their houses after flooding. This is time that could be spent in school, earning an income or participating in public life. Walking long distances to fetch water and fuel can expose women and girls to harassment or sexual assault, especially in areas of conflict – there are many accounts of women and girls being attacked when searching for

[2] For example, in Southeast Asia, women provide up to 90 percent of labour for rice cultivation. In Sub-Saharan African women produce up to 80 percent of basic food; however, a survey of credit

water and kindling in refugee camps around Darfur (MSF 2005). In urban areas, water collection is also an issue as women and girls may spend hours queuing for intermittent water supplies (WEDO 2003).

In the context of climate change, it is imperative that policies and programmes draw on the existing body of knowledge on gender and water to inform interventions – and scale these up fast. There is evidence that simple strategies work. For example, providing local water sources frees up time for women to engage in income-generation by reducing the time required to fetch water and making domestic tasks faster to complete. It also has a positive impact on school attendance: in Morocco, a World Bank Rural Water Supply and Sanitation Project succeeded in increasing girls' school attendance by 20 percent over four years, in part by reducing the traditional burden on them to fetch water (Fisher 2006). It is evident that further participatory research with local communities on the benefits that the provision of local water sources could bring would provide enough convincing evidence to justify the infrastructural costs involved. Equally, efforts are urgently needed to better highlight actual and potential risks of attack for women and girls who are obliged to walk long distances, and produce strategies to offset these dangers, such as community policing of water routes.

Areas for future research and action

Most of the existing literature on gender and water focuses on the challenges faced by women in rural areas. Research on the challenges specific to water use and management in urban contexts is needed to address this gap.

Existing evidence points towards effective strategies for ensuring water supply and quality, and reducing the burden on women caused by water collection. Now what is needed is the political will and resources to scale up these interventions and put research into action.

Gendered impacts of climate change on wage labour

As noted above, women's access to economic resources in terms of income and property ownership – including land – is already often unequal, particularly in developing countries. A gender gap in earnings persists across almost all employment categories, including informal wage employment and self-employment (ILO 2007). Women comprise the majority of those working in the informal employment sector which is often worst hit by climate change-related disasters and other shocks (IUCN/WEDO, n.d.), further exacerbating women's already unequal access to resources and diminishing their capabilities to cope with unexpected events/disasters or adapt to change. There is a clear need for studies that can accurately map these impacts across global regions and sectors in order to trace patterns. Such evidence could provide the basis for policy on labour rights at national and international levels but there is also a role for labour unions and local non-governmental organisations (NGOs) in raising awareness of rights among groups of women workers and in reporting back on employers' unjust practices.

Areas for future research and action

Policies are needed that safeguard the rights of women to equal pay, access to a union and secure contracts, especially in times of insecurity caused by climate change.

Gendered impacts of climate change-related disasters

Gender inequality is a major factor contributing to the increased vulnerability of women and girls in disaster situations – such as Hurricanes Mitch and Katrina and flooding in South and East Asia – that are being increasing linked to climate change. According to a recent report from the World Conservation Union/ Women's Environment and Development Organization (IUCN/WEDO), women and children are 14 times more likely to die than men during disasters (IUCN/WEDO 2007). Gender and age differentials in mortality rates were strikingly apparent in the aftermath of the Asian Tsunami where the largest numbers of fatalities were women and those under the age

of 15 (Synthesis Report of the Tsunami Evaluation Coalition, in Mitchell et al 2008). While the tsunami was not directly related to climate change, it does provide important lessons about the impacts of a large scale disaster and the effectiveness of responses.

Women and girls' particular vulnerability is due to a combination of factors, including differences in socialisation where girls are not equipped with the same skills as their brothers, such as swimming and tree climbing. For example, it has been documented that women in Bangladesh did not leave their houses during floods due to cultural constraints on female mobility and those who did were unable to swim in the flood waters (see the box below).

The differential impact of a natural hazard on women and men

Following the cyclone and flood of 1991 in Bangladesh the death rate was almost five times as high for women as for men. Warning information was transmitted by men to men in public spaces, but rarely communicated to the rest of the family and, as many women are not allowed to leave the house without a male relative, they perished waiting for their relatives to return home and take them to a safe place. Moreover, as in many other Asian countries, most Bengali women have never learned to swim, which significantly reduces their survival chances in the case of flooding. Another clear illustration of the different vulnerabilities women and men face is offered by the fact that more men died than women during Hurricane Mitch. It has been suggested that this was due to existing gender norms in which ideas about masculinity encouraged risky, 'heroic' action in a disaster.

(Röhr, accessed November 2007
http://www.tiempocyberclimate.org/newswatch/comment050711.htm

Boys and men also experience particular gendered vulnerabilities in disasters. Hurricane Mitch, which hit Honduras in 1998, has been cited as encouraging 'heroic' actions from boys and men, putting themselves at risk. More research of this type is needed in order to identify the extent to which social constraints or expectations have led to greater risk, and to map out possible areas for interventions to mitigate the impacts of future disasters.

Research is also needed to highlight the effective mitigation strategies that are already in place, which can provide models of best practice for communities in disaster-prone areas. For example, in La Masica, Honduras, there were no reported fatalities after Hurricane Mitch because a disaster agency had provided gender-sensitive training and involved women and men equally in hazard management activities, and women took over control of the early warning system. This led to a quick evacuation when the hurricane struck (IUCN, n.d.). The above example demonstrates how a gender-sensitive strategy was the key to an effective response that saved the lives of both men and women.

Gender impacts in the aftermath of disasters

Research shows that gender inequalities can also be exacerbated in the aftermath of disasters. The household workload may increase substantially, forcing many girls to drop out of school to help with chores (Davis et al 2005). There is also evidence that women and girls are more likely to become victims of domestic and sexual violence after a disaster, particularly when families have been displaced and are living in overcrowded emergency or transitional housing where they lack privacy. The increase in violence is often partly attributed to stress caused by men's loss of control in the period following a disaster, which can be exacerbated by longer term unemployment or threatened livelihoods.

Adolescent girls report especially high levels of sexual harassment and abuse in the aftermath of disasters, and complain of the lack of privacy around sleep, washing and dressing that they face in emergency shelters (Bartlett 2008). In Sri Lanka after the tsunami, according to local field workers on the ground, lack of privacy was responsible for most of the harassment and abuses experienced: "*There were repeated references to the difficulties associated with many families living together in one open space, with no privacy for dressing or bathing – or even for families crowded together in a tent. Many were reluctant to acknowledge the extent of the problems, and said that given the situation, people had managed well. But staff from both Save [the Children] and partner organizations, along with some of the more vocal women, made it clear that the situation resulted in many abuses*" (Save the Children Sweden, in Bartlett 2008, 36).

Helpful responses, especially for older girls and women, may involve working with girls on ways to ensure that they feel safe from harassment or abuse (Bartlett 2008). This could involve lighting the way to the toilets, or finding people who are willing to monitor the route or accompany children, adolescent girls and women. It can also mean finding ways to ensure their privacy while they are bathing or dressing (ibid).

While there is some excellent work that traces the links between climate change/disasters and violence against women[3], there is a clear need for more in-depth research in this area to shape effective policy and practical interventions. As with research into other impacts of climate change, poor women's voices and experiences need to be at the core of this work.

Areas for future research and action

Research is needed to highlight existing models of best practice for communities in disaster prone areas – such as the provision of gender-sensitive training and involving women and men equally in hazard management activities. Sensitive qualitative research is also needed to explore the links between climate change and violence against women. *The particular concerns and needs of girls and adolescents should be central to this.*

Gender and migration in the context of climate change

Climate change and displacement

The number of internally displaced persons (IDPs) is expected to rise dramatically in the coming decades. And those already displaced look likely to be joined by at least equal numbers of people forced from their homes because of climate change. The impact of climate change is the great, and frightening, unknown in this equation. Existing estimates of its potential to displace people are more than a decade old and are widely disputed. Only now is serious academic attention being devoted to calculating the scale of this new human tide.

Christian Aid 2007, p2 http://www.christianaid.org.uk/Images/human_tide3__tcm15-23335.pdf

Although voluntary migration in response to seasonal changes is a long practiced strategic response by many communities, migration is increasing with climate change and includes traditionally static populations who have needed to move because their environment has been adversely affected by climate change. A 2007 Christian Aid report projects that one billion people

[3] For more information see the work of the work of the Gender and Disaster Network www.gdnonline.org

will be displaced by 2050 and that climate change is likely to exacerbate existing challenges around migration, particularly forced migration (Christian Aid 2007).

Remittances from migrant labour may mean that households are able to rely less on agricultural activities for income – enabling them to meet their food security needs in an environment of declining land productivity while also reducing the pressure on natural resources in dryland areas (FAO 2003). In other cases, migrating men may contribute little to family incomes, increasing the workload of those left behind, often women, who become de facto heads of households and must take on men's farming roles in addition to their existing agricultural and domestic responsibilities. This may lead to changes in gender roles as women have more opportunities for decision-making and exercise greater control over household resources (FAO 2003). At the same time, it may be difficult for a household that is treated as female-headed in a husband's absence to retain control over land and other productive assets because of restrictions on women's property and land rights. This heightens women's vulnerability at exactly the point at which their responsibilities increase.

With migration set to increase in response to the adverse impacts of climate change, increasing conflicts over land and resources in receiving areas are also likely (Reuveny 2007, 657) – see the section below.

Areas for future research and action

Securing women's land and property rights is a priority: more support should be given, financial and otherwise, to existing advocacy initiatives working towards this goal.

Climate change, gender and conflict

It is well-recognised that climate change will – and is already – resulting in a growing scarcity of natural resources such as water and arable land in some parts of the world. With heightened competition over diminishing and unequally distributed resources, conflict over resources is set to increase (Hemmati, 2005; Rohr, 2008). Furthermore, conflicts resulting from non-inclusive processes around climate change mitigation strategies may be imminent as large scale Clean Development Mechanisms (CDM) projects in the south (which share environmentally sound technologies developed in industrialised countries with developing countries) rarely involve consultation with local stakeholders (Rohr, 2008). Although there is currently little research explicitly linking climate change with both conflict *and* gender, there is a considerable body of work that exists on gender and conflict, from which lessons can and should be drawn.

So what do we already know? Innovative work has been carried out on engendering conflict early warning systems to better ensure that previously overlooked signs of instability are taken into account. These approaches could be usefully drawn on to help recognise when conflict over resources is imminent, and to potentially prevent the conflict from occurring. For example, the United Nations Development Fund for Women (UNIFEM) has developed a set of gender-sensitive early warning indicators which include: increasing gender-based violence, increased unemployment among male youths, reduced trust between ethnic groups, and a reduction in women's involvement over land disputes (Moser 2007). Many of these indicators reflect the projected effects of climate change on communities – particularly around depleting resources.

In cases where conflict over resources does occur, the gender and conflict literature again presents useful insights which should be used to inform appropriate, gender-sensitive responses. For example, existing work on gender and conflict points to women and men's 'traditionally' differing *roles* in conflict – with men and boys expected to be combatants while women and girls are expected to maintain the home and community in men's absence. This points to the need for

policies and programmes that respond to the different roles that women and men play in conflicts, including those over natural resources – for example, interventions that provide women with safe routes to collect water and firewood.

The differential *impacts* of conflict on men and women are also well documented, and include gender and sexual based violence targeted particularly at women and girls; women's reduced access to resources to cope with household responsibilities; the increased time women and girls are required to spend caring for the injured and sick; as well as the obvious risk of death and disability faced by men engaged in armed conflict. The effects of natural resource conflicts on women and men can be clearly seen in existing conflicts. Take for example the case of Sudan. Both the conflicts between the north and the natural resource rich south, and the conflict in Darfur between nomadic and sedentary tribes, are partly a result of quarrels over natural resources. The horrific levels of sexual violence in Darfur, particularly against women and girls, which occurs in villages when men and boys are away fighting, in and around refugee and IDP camps, and outside the camps when collecting scarce fuel and water, provides a stark example of the gendered effects of climate-change related conflicts.

It has also been well documented that gender equity is key to effective post-conflict disarmament, demobilisation and reintegration. For climate change adaptation and mitigation, one of the most relevant aspects of this is ensuring that women and girls ex-combatants are equally integrated into political processes and decision-making following conflict. In turn, this will enhance their ability to participate more systematically in decision-making around climate change mitigation and response.

Opportunities for enhancing gender equality in climate change-related conflict

UN [Security Council] Resolution 1325 on peace-building calls for women's greater participation in such processes. Although implementation still leaves much to be desired, a resolution ensuring the participation of women in all processes for preventing climate change, adapting to changing environments and dealing with increased natural disasters will go a long way towards effective and socially just climate policy and the prevention of related conflicts.

(Röhr 2008)

Implications for policy and practice

Drawing from what is already known in the literature about the need for gender-sensitive interventions in cases of conflict, it follows that interventions to reduce the likelihood of conflict over natural resources, and interventions responding to conflict over resources where it occurs, must be gender-sensitive. One strategy is to design and implement gender-sensitive environmental management systems – intended to decrease the likelihood of resource conflict. Ensuring these systems are gender-sensitive involves taking into account the differing needs of women and men, as well as the differing needs of groups who, for example, may need water for farming and those who require water primarily for domestic use. Such programmes must take into account conflicting groups within communities, potential conflicts between in-migrants and receiving communities, and the possibility of conflicting household members quarrelling over resource provision.

Research recommendations

Urgent research is required on how to manage environmental migration in a gender-sensitive way. This includes recognising and responding to gender roles and responsibilities around natural resources, and may include ensuring that scarce resources are available for receiving communities, and that water is provided for in-migrants.

Research is further needed to establish how best to respond to violent conflict over natural resources in a gender-sensitive way, taking in to account the needs of women and girls, boys and men.

Finally, it is essential that research is undertaken into the impacts of natural resource depletion and limited access on intra-household conflict. This is in order to establish policies and practices which lessen the likelihood of arguments over scarce natural resources which may result in GBV.

Adaptation in the face of climate change: a gendered perspective

"If we do not change our attitudes and practices, it is difficult to survive in the changing conditions. We are adopting systems like the ones used by migrant hill societies. We are strengthening our social institutions to cope with flood and drought by providing support to each other, like food and shelter for our flood-affected neighbours"
Muna Mukeri, 55, from Malehiya, Nepal, in Mitchell et al 2007:13

Why a focus on women?

"Even in a society effective in catalysing adaptation, actions that address gender and other forms of differential vulnerability are essential" – Mary Thompson, DFID, powerpoint presentation at the Social Development Advisors retreat in Arundel, November 2007

It is now widely acknowledged that "the impacts [of climate change] will be felt more acutely by those with least adaptive capacity: poor countries and the poor in developing countries" (GTZ, in Lambrou and Piana 2006: 5). It is also recognised that "the vulnerability or susceptibility of a population group to the effects of climate change depends on the resilience of the surrounding natural landscape unit and society's capacity to adapt" (ibid).

At the household level, the ability to adapt to changes in the climate depends on control over land, money, credit and tools; low dependency ratios; good health and personal mobility; household entitlements and food security; secure housing in safe locations; and freedom from violence (Lambrou and Piana 2006). As such, women are often less able to adapt to climate change than men since they represent the majority of low-income earners, they generally have less education than men and are thus less likely to be reached by extension agents, and they are often denied rights to property and land which makes it difficult for them to access credit and agricultural extension services. Moreover, gender biases in institutions often reproduce assumptions that it is men who are the farmers (Gurung et al 2006). As a result, new agricultural technologies – including the replacement of plant types and animal breeds with new varieties intended for higher drought or heat tolerance – are rarely available to women farmers (Lambrou and Piana 2006).

Adaptation strategies

Women therefore face particular constraints in their capacity to adapt to existing and predicted impacts of climate change. Yet many women are already adapting to the changing climate and are clear about their needs and priorities. A recent participatory research project by ActionAid and IDS, mentioned above, clearly shows that women in rural communities in the Ganga river basin in Bangladesh, India and Nepal are adapting their practices in order to secure their livelihoods in the face of changes in the frequency, intensity and duration of floods (Mitchell et al 2007). The women who took part in the research described various adaptation strategies such as changing cultivation to flood and drought resistant crops, or to crops that can be harvested before the flood season, or varieties of rice that will grow high enough to remain above the water when the floods come (ibid).

"As we never know when the rain will come, we had to change. I started to change the way I prepare the seedbed so that we don't lose all our crops. I am also using different crops depending on the situation" (Mitchell et al 2007: 6)

Adaptation needs and priorities

The women were also clear about what they need in order to adapt better to the floods: crop diversification and agricultural practices, but also skills and knowledge training to learn about flood and drought-resistant crops and the proper use of manure, pesticides and irrigation, and so on. The box below captures some of the specific priorities articulated by the women during the research.

Poor Women's Climate Change Adaptation Needs and Priorities

The poor women of the Ganges River basin, in adapting to climate change want:

- A safe place to live:
    - Relocation of communities to safer areas
    - Solid houses built with a high plinth level to reduce inundation
    - Shelters required for people, animals and agricultural inputs/ products
- Better access:
    - To climate change information and related knowledge and skills
    - To services, such as doctors and veterinaries
    - To safe, reasonable and fair credit and insurance
    - To communications, through safer roads and access to boats
- Other livelihood options:
    - Through knowledge and resources for crop diversification and adaptive agricultural practices
    - Through access to irrigation
    - Through locally available training.

(Adapted from, Mitchell, T. et al 2007: 16)

Clearly, these women have a great deal of knowledge and experience of coping with the impacts of climate change and understand their own needs and the types of interventions required for ensuring more sustainable agricultural processes in the face of these changes. This re-affirms the point made repeatedly in the literature on gender and the environment that women and men have distinct and valuable knowledge about how to adapt to the adverse impacts of environmental degradation (FAO 2003; Gurung et al 2006; WEDO 2003). It is critical that this local innovation and context-specific knowledge and experience be captured through further participatory

research into women's existing coping strategies and adaptation priorities. As noted by the ActionAid/IDS report, "They [the women who took part in the research] might not be aware of all the possible adaptation strategies, of all the ways to overcome constraints to the ones they are using, but they certainly know their present situation best and have an urgent list of priorities to secure a livelihood in the face of the new challenges" (Mitchell et al 2007: 14). It is vital that these priorities are made visible and are used to inform policy decisions and programmes on adaptation.

Research gaps and recommendations

The research project outlined above is an innovative and valuable initiative which could be usefully replicated, especially in Sub-Saharan Africa, where to our knowledge there has been no documented research that has specifically set out to ask women *what they want*. Information on the specific challenges and strategies adopted by women in urban contexts is also sparse: participatory research in diverse urban contexts should be a priority.

Moreover, concerted efforts are needed to link research findings to policy and implementation so that they don't evaporate. This requires investment in building the capacity of women to have the skills and confidence to engage with climate change debates at the local, national, regional and international levels, for example though advocacy training (see also the next section on mitigation). Additional obstacles to women's participation also need to be addressed, such as poor infrastructure and limited time. Further consideration should be given to how to best support NGO involvement in developing capacity-building processes.

Moreover, whilst the importance of engaging with women's concerns and priorities cannot be over-estimated it is also important to finance and undertake participatory research that engages with men and boys to make visible the constraints they experience in their gendered roles. The equal involvement of men and women in adaptation planning is important both to ensure that the measures developed are beneficial for all those who are supposed to implement them, but also to ensure that all relevant knowledge is integrated into policy and projects (Rohr 2006: 5).

The new research by IDS and Plan International, discussed above, also shows that children and youth are clearly able to identify the main risks to their local environments and the actions needed to manage these risks, pointing to children's potential role as both sources and recipients of risk information (Mitchell et al 2008). These findings are consistent with the perspective adopted in the Convention on the Rights of the Child (CRC), which explicitly recognises that children have agency and a voice to be listened to. Investing in further participatory research with children and youth to elicit their *adaptation* needs and priorities, similar to the IDS/ActionAid research discussed in this section, could produce valuable insights to inform adaptation policies and programmes. It would be important than any such research is sensitive to the potentially divergent needs and priorities perceived by girls and boys, so as to shape more appropriate responses.

Areas for future research and action

Existing research on gender and climate change – such as the ActionAid/IDS research on adaptation strategies – is focused mainly on South Asia. The ActionAid/IDS research provides a best practice model: there is a need for these research questions and methodologies to be replicated and applied in other global contexts and situations, since impacts are often socially and culturally specific. Carrying out similar gender-sensitive participatory research with communities in urban areas is also needed.

Climate change mitigation and gender inequality

Work on gender and climate change has largely focused on impact and adaptation. This may be due to the widespread acceptance that climate change will hit the poorest the hardest, with women making up a large proportion of 'the poor'. What receives less attention is women's willingness and potential to significantly contribute to climate change *mitigation* strategy design and implementation. For this potential to be realised, however, women need opportunities for meaningful involvement in these decision-making processes (Skutsch 2002, in Dennison 2003).

Scoping initiatives on gender and climate change mitigation and adaptation

Due to the reasons outlined above, there is currently little published work on good practices around gender-sensitive mitigation. It is worth noting, however, that there are several initiatives calling for good practice case studies. For example, the UN/International Strategy for Disaster Reduction (UN/ISDR) secretariat, in collaboration with IUCN/WEDO, has issued a global call for good practices and lessons learned that link disaster risk reduction as a key tool for reducing the impact of climate change, with a gender analysis. The resulting publication will prove valuable for addressing gender gaps in disaster risk reduction (Ana Cristine Thorlund, UN, gendercc e-list email, 02/08).

What do we understand by 'mitigation'?

While adaptation has been described as changes in "*processes or structures to moderate or offset potential dangers or to take advantage of opportunities associated with changes in climate*" (Lambrou and Piana 2006: 8), mitigation is about preventing or limiting the occurrence of climate change. As such, mitigation focuses on tackling the causes of climate change: the increase of greenhouse gases (GHGs) (Lambrou and Piana 2006). To date there has been little gender-focused work that specifically looks at climate change mitigation. This may be due to the seemingly 'technical' or 'scientific' nature of mitigation as being about reducing GHGs. However, as it is now generally accepted that human behaviour is driving climate change, analysis and future work around mitigation must also be gender-sensitive. The first part of this section will discuss mitigation as defined above – with a focus on decision-making. Part two will look at ensuring gender equitable access to technologies in mitigation strategies, while the third part will focus on gendering transport and climate change mitigation work.

Towards gender equitable participation in international negotiations and decision-making

"The international climate change process will be unable to achieve truly global legitimacy or relevance until it adopts the principles of gender equity at all stages of the process, from scientific research, through analysis, agenda formation, negotiation and decision-making, regime implementation, and finally in further development and evaluation."
(Dennison 2003, http://www.pugwash.org/reports/pac/53/dennison.htm)

Gender-sensitive priorities and processes need to be mainstreamed at all levels of negotiations and decision-making around climate change mitigation and adaptation. It is in the remit of all governments who are part of international negotiations on climate change to ensure that gender concerns are reflected in policies and related programming. All policies and programmes also need to be coherent with existing commitments – such as to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). Furthermore, the 1995 UN Beijing Platform for Action states that a gender perspective needs to be mainstreamed throughout all UN activities and negotiations (Dennison 2003). As contributions to the recent international United Nations Framework Convention on Climate Change (UNFCCC COP 13) argue, women need to be involved in these negotiations and consulted on their priorities (see for example the Women's

Position Paper to Bali section on international negotiations). Ultimately, neglecting to incorporate a gender-sensitive approach to international climate change negotiations (processes and mitigation strategies) means that the decisions and actions taken cannot reflect the needs, capabilities, priorities and concerns of all stakeholders and cannot therefore be effective in either reducing greenhouse emissions (efficiency), or uphold principles of equitable sustainable development (equality) (Dennison, 2003). As the box below illustrates, women may in some cases be more likely than men to support or accept progressive and significant climate change mitigation and adaptation policies – so there is also a very strategic rationale for their greater involvement in policy and decision-making processes.

Women's risk perception and policy formulation – a northern perspective

Women and men perceive risks differently, including in relation to climate change. Women are more sensitive to risks and less likely to perceive governmental policies and measures taken to deal with climate change as sufficient. Women also seem more prepared for behavioural changes than men, as "fewer women than men believe that science and technology will solve environmental problems without our having to change our lifestyles. They also rate more highly the influence that each individual has on climate protection" (LIFE & WECF leaflet). This points to a higher likelihood that women would support more drastic policies and measures on climate change – in other words, they would be the most "natural allies" of those promoting progressive and significant climate change mitigation and adaptation policies.

Hemmati, M., 2005, Gender and Climate Change in the North: Issues, Entry Points and Strategies for the Post-2012 Process and Beyond, p5

As noted above, recent research by the Institute of Development Studies and Plan International has also pointed to the marginalisation of children's voices in household, community and national decision-making relating to climate change – particularly in disaster risk reduction (DRR) (Mitchell etc al. forthcoming 2008). Children are assumed to have no role to play in reducing the risk of disasters. Yet research carried out in El Salvador and New Orleans revealed numerous cases where children and youth have taken actions to prevent future disasters within their communities, including by promoting changes in local government policies (see the box below) (Mitchell etc al. forthcoming 2008). This kind of participatory research is hugely valuable in terms of challenging stereotypes (children as passive victims, for example) and developing a more nuanced picture of children's own perceptions of risk, and of the actions needed to reduce these risks. Replicating this kind of participatory research with groups of women would be illuminating, since, as noted above, women's perceptions, strategies and priorities are often given little visibility in decision-making (see the recommendations section below).

Children in El Salvador organising to take charge of their risk environment

A children's group in Petapa in El Carrizal Municipality [of El Salvaodr] identified the unregulated quarrying of stone and sand from the river as a major risk, leading to increased erosion and vulnerability to flooding of houses near the river. Together and initially without adult support, and despite many adults objecting, they devised a campaign of direct action and lobbying their parents and the local government authorities. They blockaded roads to the river, pleaded with lorry drivers, erected signs warning of the dangers, pressured their parents to stand up against quarrying and persuaded the local authority to enforce regulations that would stop illegal extraction. Quarrying along vulnerable stretches of river bank has now stopped.

Source: Mitchell, Tom, Katharine Haynes, Nick Hall, Wei Choong, and Katie Oven (2008). "The Role of Children and Youth in Communicating Disaster Risk." *Children, Youth and Environments* 18(2))

Strategies for making climate change mitigation negotiations more inclusive

At the 2007 Thirteenth Session of the Conference of the Parties (COP13) in Bali, the share of women in the delegations of the parties (countries only) was 28 percent; of the heads of delegations of the parties women comprised only 12 percent[4] (Ulrike Rohr, personal communication, 22/02/08). Although it cannot be assumed that women will automatically know or represent poor women's concerns (those who are projected to be most affected by climate change), gender balance in participation in climate change negotiations and representation at decision-making tables are good starting points (Villagrasa 2002, 41 in Dennison, 2003).

Policies to promote gender-balance can draw from current knowledge and strategies around promoting women's political participation at the national level and local levels, such as the use of quotas. To enable genuine involvement in decision-making at all levels, donors need to invest in people's capacity, particularly women and youths, to participate meaningfully in policy-making process through supporting advocacy and leadership training to build skills and confidence. A mentoring system for women and men previously not involved should also be developed (Villagrasa, 2002, 43 in Dennison, 2003). This would build competencies, enable a wider cross-section of stakeholders to be involved, ensure continuity of the process, and ultimately improve efficiency in implementation and enforcement of strategies developed (Dennison, 2003). Two examples of efforts by donor agencies to strengthen women's ability to participate meaningfully in decision-making processes around natural resource management and climate change policies and programmes are presented in the boxes below.

Building women's leadership capacity through DFID-funded Renewable Natural Resources Research Strategy (RNRRS) projects (1995-2006)

Building women's leadership capacity was a common theme in many DFID-funded Renewable Natural Resources Research Strategy (RNRRS) projects, which aimed to draw women into the management process by equipping them with skills (e.g. literacy, information and leadership) and providing them with opportunities. The Natural Resources Systems Programme (NRSP) project 'Strengthening Social Capital for Improving Policies and Decision-making in Natural Resource Management' (R7856) had an implicit objective of encouraging more women to take part in management processes. This was achieved by establishing forums and committees in which women participated and by providing all members of the community with leadership skills training. There were challenges, however. Although women were encouraged to attend project meetings, men often prevented them from attending. Likewise, men often treated women's meetings about non-traditionally female topics (e.g. resource management) with suspicion. This points to the need to also engage men in discussions about the benefits of women's involvement in management processes – for the women but also for the community as a whole.

Adapted from Turrall, S, *Learning from the Renewable Natural Resources Research Strategy,* DFID, adapted from Bennett, E 2005 *Gender and the DFID RNRRS: A Synthesis*

[4] For gender disaggregated data from previous COPs, see, www.genanet.de/unfccc.html

Empowering women to participate equally in the development and implementation of climate-change-related policies and programmes in China

A goal of the Canada-China Cooperation in Climate Change (C5) Project, funded through the Canada Climate Change Development Fund (CCCDF) and administered by the Canadian International Development Agency (CIDA), is to increase the contribution of women to decision-making on climate change by empowering them to participate equally in the development and implementation of climate-change-related policies and programmes, particularly within Chinese government agencies and research institutions. Specific objectives include:

- Increase awareness of gender inequalities and support for women's full participation in decision-making and technical activities associated with climate change;
- Increase the capacity to analyse gender equality issues relevant to the project and incorporate the results of the analysis into project activities;
- Develop and implement appropriate targets for male/female participation in project activities, based on sex-disaggregated baseline research; the minimum expectation is 30 percent participation by women; and
- Increase the awareness, abilities, self-confidence and motivation of women working to address the issue of climate change.

Adapted from CIDA 2002: 3

The following table offers a useful summary of some of the enabling factors and constraints for women's participation in decision-making, some of which have been discussed above.

Enabling factors and constraints for women's participation in decision-making

Enabling factors for women's participation in public life and decision-making include:

- an awareness of their rights and how to claim them
- access to information about laws, policies and the institutions and structures which govern their lives
- confidence, self-esteem and the skills to challenge and confront existing power structures
- support networks and positive role models
- an enabling environment, meaning a political, legal, economic and cultural climate that allows women to engage in decision-making processes in a sustainable and effective way

Constraining factors include:

- economic dependency and a lack of adequate financial resources
- illiteracy and limited access to education and the same work opportunities as men
- discriminatory cultural and social attitudes and negative stereotypes perpetuated in the family and in public life
- burden of responsibilities in the home
- intimidation, harassment and violence
- lack of access to information

WOMANKIND strategies include:

- In Albania - support training for existing and potential women leaders in local and national elections. Work with a range of actors, including journalists and politicians, to change negative attitudes and to create an enabling environment for women's participation.
- In Afghanistan - provide training in basic health and literacy skills and human rights education to give women the practical skills they need to take part in development. Support the lobbying of decision-makers to increase women's representation at all levels of government.
- In India - support education and training for women from the poorest and most marginalized dalit and tribal communities in Tamil Nadu state to give them the confidence and skills to speak out about the issues that concern them, such as electricity and water for their communities. Some of the women have gone on to stand for local council elections - with 50 percent then elected.

(Adapted from WOMANKIND, webpage accessed February, 2008, http://www.womankind.org.uk/womens-civil-and-political-participation.html)

Areas for future research and action

In order to design gender-sensitive mitigation strategies, we need to know more about gender differences in the impacts of climate change, and locate and hear existing knowledge on climate change, including local practices and indigenous knowledge. Sex disaggregated data and in-depth qualitative studies into impacts – based on gender-sensitive participatory approaches to data collection, are essential to furthering the mitigation agenda and ensuring it is both efficient and equitable.

Critical research questions include: To what extent have programmes aimed at mitigating environmental impacts or at improving resource management included women? What are the current levels of female participation in decision-making on climate change at local, regional, national and international levels – both in terms of the numbers of women participating as well as the quality of that participation? What are the barriers to participation, or, for those present, the barriers to being heard and taken seriously? What can be learnt from existing literature on promoting women's and youth's participation in decision-making?

Equally important is for current and future research and interventions designed to promote children's participation in disaster risk reduction to be gender-sensitive. Particular attention should be given to promoting girls' participation, since girls may be doubly excluded from decision-making processes and fora on account of being both a child/youth and female (making them less likely to be literate than boys, for example). As such, child-centred climate change interventions could be strengthened by a greater awareness of the gendered constraints that mitigate against girls' capacity to act as 'resources' or 'receivers' of disaster management information – such as limitations on girls' mobility, lower levels of education and a higher risk of violence. In many contexts, boys rather than girls are expected to be knowledgeable and make the decisions: what are the implications of this in terms of girls' ability to affect DRR policies and processes? Do participatory research programmes and child-centred interventions have the potential to challenge assumptions about gendered roles and capacities? Do gender differences affect children's perceptions of the hazards facing their communities, and if so what are the implications of this?

Perhaps most importantly, researchers and practitioners working to enhance the participation of women, girls and boys in decision-making on climate change must work together – sharing learning and strategies, while being sensitive to both gender and age as critical, cross-cutting variables in people's vulnerability to, and capacity to manage and respond to risk.

In terms of practical action, it is critical that governments and donors invest in people's capacity, particularly women and youths, to participate meaningfully in policy-making process through supporting advocacy and leadership training to build skills and confidence. This should be done in partnership with NGOs and CBOs that already have considerable expertise in this area.

Ensuring gender equitable access to technologies in mitigation strategies

"The official policy makers are the national representatives at the meetings of the UNFCCC. As far as CDMs are concerned, they are aiming at carbon reduction (industrialized countries) and sustainable development (developing countries). Exactly what sustainable development means is unclear, in fact it is open to almost any interpretation, but improving the quality of life of poor women might certainly be among the objectives. To what extent this kind of objective is pushed, will depend on the mandate of the national representatives, since it is only one of very many interests to be pursued and represents only one of the many pressure groups to be responded to" (Skutsch, 2004, P8, *CDM and LULUCF[5]: what's in it for women? A note for the Gender and Climate Change Network, July 2004, http://www.gencc.interconnection.org/skutsch2004.pdf*)

Gender-sensitive approaches to *existing* mechanisms for climate change mitigation are also important. This could include the Clean Development Mechanism[6] (CDM) (from the Kyoto Protocol's flexible mechanisms) for example, which is expected to result in sharing environmentally sound technologies developed in industrialised countries with developing countries, with a view to achieving sustainable development objectives (Lambrou and Piana, 2006, 8). However, poor women's priorities regarding energy and technology have not been systematically fielded. As a result, new technologies may be poorly suited to their needs. Moreover, because access to progressive technologies is typically restricted to men, and since it is men who tend to exercise decision-making power over the purchase of technology, women often do not have the opportunities to benefit directly from these types of innovation. In Zimbabwe, for example, men are reported to have rejected the use of solar cookers by their wives because technology is seen as traditionally belonging to the male domain (Nyoni, in Clancy and Skutsch 2003). Women's lower levels of education in many developing contexts may also reduce their awareness of mitigation options such as the use of energy-efficient devices (Lambrou and Piana, 2006).

[5] Land Use, Land-Use Change and Forestry (LULUCF)

[6] "The CDM mechanism is designed to reduce atmospheric carbon dioxide by reducing emission through renewable energy or conservation measures to reduce consumption, or by increasing sequestration (Carbon sequestration means collecting or trapping carbon from the atmosphere) rates, at sites in developing countries, mainly through finance from industrialised countries which have reduction quotas to meet" (Skutsch, 2004, p6, 'CDM and LULUCF: what's in it for women? A note for the Gender and Climate Change Network, July 2004, http://www.gencc.interconnection.org/skutsch2004.pdf)

The Canada-China Cooperation Project in Cleaner Production

In China, CIDA funded the Canada-China Cooperation Project in Cleaner Production, which took aim at emissions in the pulp and paper, fertilizer, plastics, and brewing industries. The project contained a specific component to increase the participation of women as workers, technicians, and managers. Women received training in process improvement, auditing practices, monitoring of equipment, computers, and other technical aspects of their work. At the same time, gender equality awareness sessions began to transform the attitudes of both men and women. Women not only applied the new clean-production techniques at work, they started taking initiatives on their own to help clean up the environment.

(Adapted from CIDA 2002: 3)

Areas for future research and action

More research is needed to document the different energy consumption patterns of men and women to inform targeted mitigation and technological adaptation strategies. Further research is also required into how involving women in using environmentally sound technologies could improve mitigation and adaptation at the community level.

Gendering research on transport and climate change mitigation

[I]n the case of mobility, undoubtedly an important sector for mitigation strategies, substantial work has already been done to analyse the gender dimension of policies and measures. It became obvious that existing transport systems had been defined by the special perspective on middle-aged full-time working men, neglecting women's higher dependency of public transport means, and their specific needs due to gender-related division of labour. If these aspects were fully taken into consideration, both more user-friendly and climate-friendly transport systems would be the possible.
*(Skutsch, 2004, p3, '*Mainstreaming Gender into the Climate Change Regime', 14 December 2004 COP10 Buenos Aires *http://www.gencc.interconnection.org/Gender&CCCOP10.pdf)*

To date, little attention has been paid to the ways in which gender has an affect on people's consumption and lifestyles and the impact this has on climate change. Noting this gap, a recent Swedish study examined the extent to which women generally live in a more sustainable way and leave a smaller ecological footprint than most men (Johnsson-Latham 2007). The study argued that men account for the bulk of energy use, carbon-dioxide emissions, air pollution and climate change – both among the rich and the poor. It particularly emphasised gender differentiations in transport use. For example, evidence suggests that women in industrialised countries use much less emissions-intensive modes of transport than men, their level of car-ownership is lower, and their share of public transport use is higher (Johnsson-Latham 2007; Lambrou and Piana 2006; Hamilton et al 2005). In Sweden, for instance, men number 75.9 percent of car owners (Swedish National Road Administration, in Johnsson-Latham 2007), partly because they commute more widely than women. They also fly more than women. In contrast, women use public transport – bus and rail travel – to a greater extent (ibid). Evidence from the UK's Equal Opportunities Commission supports this, showing that women and men travel for different purposes. Men are more likely to do so for commuting and business reasons, whereas women are more likely to use transport for shopping or taking children to school (Hamilton et al 2005).

The relevance of research into attribution of carbon footprints to women and men, boys and girls is for the purposes of targeted mitigation strategies which are aimed at behaviour change – rather than attributing 'blame'. This is important, since language that leaves men feeling blamed is likely to lead to alienation, discouraging them from engaging in climate-friendly practices. Tom Mitchell and Ulrike Rohr point to the need for research into behaviours that lead to GHG emissions of men

and women in industrialised countries – with a view to developing campaigns for behaviour change which speak to these differences.

One strategy that has been proposed to promote sustainable and gender-equitable transport is to boost women's participation in decision-making on community planning, traffic systems and transportation (Johnsson-Latham 2007). There is also a need to invest more resources in improving women's mobility through better provision of public transport like trains and buses, which cause less environmental damage and which create real options for non-car drivers (ibid). However, recognition of the links between gender and transport has only recently begun to emerge in the gender and climate change literature, and there is little evidence of research into the gender dimensions of transport use in newly industrialising countries such as India and China. With transport experts in Asia predicting that thousands of cities will soon have to make major new investments in modern transport systems (ibid), this research is urgently needed, alongside practical efforts to increase women's participation in decision-making on future transport systems.

Areas for future research and action

As noted in the section on technology above, more research is required to explore how gender affects people's consumption and lifestyles: both in industrialised countries, but also in newly industrialising countries, and among both the rich and poor. This is important in order to better inform the design of mitigation policies and programmes that are appropriate and effective, such as awareness raising campaigns for the purposes of behaviour change.

Meanwhile, practical steps are needed to increase women's participation in decision-making relating to transport. This will help to ensure that existing and future transport systems are better suited to the particular needs of women as well as men. Age is another critical dimension that needs to be considered, especially given the pressing challenge posed by growing aging populations in middle and high income countries. Greater investment in appropriate public transport is needed, to enhance women's mobility and that of elderly people, while also being more environmentally sustainable.

Key conclusions and recommendations for future research

It is by now widely accepted that failure to include women in decision-making processes around climate change mitigation and adaptation at local, national, regional and international levels not only exacerbates gender inequalities, but also undermines the effectiveness of climate change responses. There is thus an urgent need to clearly identify obstacles to women's participation in decision-making, and find ways to address these constraints through supporting grassroots awareness-raising, confidence-building and advocacy and leadership training programmes. Particular attention needs to be given to promoting girls' participation, since girls may to be doubly excluded from decision-making processes and fora on account of being both a child/youth and female. This is perhaps the single most important step towards achieving more equitable, appropriate climate change policies and programmes.

Suggested areas for future research

Identifying and overcoming barriers to participation in decision-making

To what extent have programmes aimed at mitigating environmental impacts or at improving resource management included women? What are the current levels of female participation in decision-making on climate change at local, national, regional and international levels – both in terms of the numbers of women participating as well as the quality of that participation? What are the barriers to participation, or, for those involved in consultations, the barriers to being heard and

taken seriously? What can be learnt from existing literature on promoting women's and youth's participation in decision-making?

Identifying the gendered impacts, coping strategies and adaptation priorities of women and men in contexts where this has currently been under-researched
Women and men, girls and boys, should be involved in a participatory capacity to inform climate change responses at a local level. This will enable the specific experiences and voices of people most affected by climate change to inform understandings of climate change impacts, adaptation and mitigation. This is critical if policy and practice is to respond appropriately to people's needs in specific contexts, and be informed by their everyday knowledge of coping with these phenomena**.**

As the paper shows, existing research on gender and climate change – such as the excellent ActionAid/IDS research on adaptation strategies – is focused mainly on South Asia. The ActionAid/IDS research provides a best practice model: there is a need for these research questions and methodologies to be replicated and applied in other global contexts and situations, since impacts are often socially and culturally specific.

Identifying the gendered impacts, coping strategies and adaptation priorities of women and men in urban contexts
Notably, much of the existing research on gender and climate change focuses on rural communities. More participatory research is needed into the impacts of climate change in urban settings, particularly in terms of gender in/equality, and the coping strategies and priorities of women and men in urban contexts.

Identifying the impacts of climate change on gender roles and relations at the household level
Little research has currently been done into the impacts of climate change on gender relations at the household and community levels. Research is needed to determine where women's and men's priorities conflict and where there is consensus, and how policies and programmatic responses to climate change can best respond to the differing vulnerabilities, needs and priorities of women and men.

Identifying how gender affects people's consumption and lifestyles
More research is needed to document the different energy consumption patterns of men and women to inform targeted mitigation and technological adaptation strategies, such as awareness raising campaigns for the purposes of behaviour change. Further research is also required into how involving women in using environmentally sound technologies could improve mitigation and adaptation at the community level.

Identifying best practices for gender-sensitive responses to climate-change related disasters, conflict and displacement
Research is needed to highlight existing models of best practice for communities in disaster prone areas – such as the provision of gender-sensitive training and involving women and men equally in hazard management activities. Sensitive qualitative research is also needed to explore the links between climate change and violence against women. The particular concerns and needs of girls and adolescents should be central to this.

Urgent research is also required on how to manage environmental migration in a gender-sensitive way. This includes recognising and responding to gender roles and responsibilities around natural resources, and may include ensuring that scarce resources are available for receiving communities, and that water is provided for in-migrants.

Research is further needed to establish how best to respond to violent conflict over natural resources in a gender-sensitive way, taking in to account the needs of women and girls, boys and men.

Finally, it is essential that research is undertaken into the impacts of natural resource depletion and limited access on intra-household conflict. This is in order to establish policies and practices which lessen the likelihood of arguments over scarce natural resources which may result in violence.

Identifying the gender implications of long-term drought and starvation in Sub-Saharan Africa

Research on the gender implications of disasters and related policy also needs to be more responsive to the long-term disaster of drought and starvation in Sub-Saharan Africa, which is less prominent in the media than recent events such as the Asian Tsunami, but whose impacts are equally if not more damaging to the lives and livelihoods of women and men. For example, what are the gender implications of drought and starvation in Sub-Saharan Africa? How should the development industry respond to these challenges at all levels?

References

Aguilar, L., (2006), *Climate Change and Disaster Mitigation: Gender Makes the Difference*, World Conservation Union (IUCN)

Araujo, A. and Quesada-Aguilar, A., (2007), Gender Equality and Adaptation, Women's Environment and Development Organisation (WEDO)/IUCN http://www.genderandenvironment.org/admin/admin_biblioteca/documentos/Factsheet%20Adaptation.pdf

Barry, J. (2005), *Rising up in Response: Women's Rights Activism in Conflict*, U.K: Urgent Action Fund for Women's Rights http://www.urgentactionfund.org/new_site/assets/files/RUiR/Rising-Up-In-Response.pdf

Bartlett, S (2008) *Climate Change and Urban Children: Impacts and Implications for Adaptation in Low and Middle Income Countries,* IIED Human Settlements Discussion Paper – Climate Change 2, available from mid 2008 at www.iied.org

Canadian International Development Association (CIDA), (undated), *Gender Equality and Climate Change: Why consider gender equality when taking action on climate change?* http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUImages/Climate%20change3/$file/Gender-2.pdf

Christian Aid, (May, 2007), *Human Tide: The Real Migration Crisis*, Christian Aid http://www.christianaid.org.uk/Images/human_tide3__tcm15-23335.pdf

Clancy, J. and Skutsch, M. (2003), *The Gender - Energy - Poverty Nexus*, DFID, http://www.sparknet.info/goto.php/view/21/file.htm

Davis, I. *et al.* (2005), *Tsunami, Gender, and Recovery - Special Issue for International Day for Disaster Risk Reduction*, South Asia Disasters. http://www.gdnonline.org/resources/tsunami%20-genderandrecovery.pdf

Dennison, C., 2003, 'From Beijing to Kyoto: Gendering the International Climate Change Negotiation Process', 53rd Pugwash Conference on Science and World Affairs - Advancing Human Security: The Role of Technology and Politics, http://www.pugwash.org/reports/pac/53/dennison.htm

Department for International Development (DFID), (2007), Gender Equality Action Plan, 2007-2009, UK: DFID, http://users.ox.ac.uk/~qehwemc/documents/DFID-Gender-equality-plan-2007.pdf

DFID (2007), Gender Equality – At the Heart of Development, UK:DFID, http://www.dfid.gov.uk/pubs/files/gender-equality.pdf

Fisher, J. (2006), *For Her It's the Big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene*, Water Supply and Sanitation Collaborative Council http://wash-cc.org/pdf/publication/FOR_HER_ITs_THE_BIG_ISSUE_Evidence_Report-en.pdf

Fleischli, S., (2008) "Women Protesters Carrying Empty Pots" – the Role of Gender in Environmental Conflict in Environment and Conflict Cooperation Special Issue Newsletter, 'Civilian Crisis Prevention – Environment and Natural Resources: 'Gender, Environment, Conflict', http://www.ecc-platform.org/images/stories/newsletter/eccgender07.pdf

GenderCC Network – Women for Climate Justice, (2007), 'Gender and Climate Change Network – Women for Climate Justice Position Paper', presented at *UNFCCC COP 13*, Bali, Indonesia, December 2007

Gurung, J. D., Mwanundu, S. et. al. (2006), *Gender and Desertification: Expanding Roles for Women to Restore Drylands*, International Fund for Agricultural Development (IFAD) http://www.ifad.org/pub/gender/desert/gender_desert.pdf

Hamilton, K., Jenkins, L., Hodgson, F. Turner, J., (2005), 'Promoting gender equality in transport UK Equal Opportunities Commission', *Working Paper Series, No. 34*, U.K Equal Opportunities Commission

Hemmati, M., (2005), *Gender & Climate Change in the North: Issues, Entry Points and Strategies for the Post-2012 Process and Beyond*, Genanet / Focal Point Gender Justice and Sustainability, Berlin

Intergovernmental Panel on Climate Change (IPCC), (2007), 'Climate Change: Impacts, Adaptation and Vulnerability', *IPCC Working Group II Report, Chapter 19*, IPCC, http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter19.pdf

Jolly, S., with Reeves, H., (2005), *Gender and Migration Overview Report*, BRIDGE Cutting Edge Pack, UK: Institute of Development Studies (IDS) http://www.bridge.ids.ac.uk/reports/CEP-Mig-OR.pdf

Khosla, P. and Pearl, R., (2003), *Untapped Connections: Gender, Water and Poverty, New York:* WEDO, New York, http://www.wedo.org/library.aspx?ResourceID=1

Lambrou, Y. and Piana, G. (2006), *Gender: The Missing Component of the Response to Climate Change*, USA: Food and Agriculture Organisation (FAO) http://www.fao.org/sd/dim_pe1/docs/pe1_051001d1_en.pdf

Masika, R., (2002) Editorial, in, 'Gender, Development and Climate Change', Masika, R. Ed., *Oxfam Gender and Development Journal*, Volume 10 Issue 2 2002, Oxfam http://www.oxfam.org.uk/resources/downloads/FOG_Climate_15.pdf

Mitchell, T., Haynes, K., Hall, N., Choong, W. and Oven, K (2008) 'The role of children and youth in communicating disaster risk', *Children, Youth and Environments 18(2), 2008*

Mitchell, T., Tanner, T. and Lussier, K., (2007), *"We know what we need!" South Asian women speak out on climate change adaptation*, Action Aid International, London and the Institute of Development Studies (IDS)

United Nations, (2006), 'Empowerment of Women: Access to Assets', *Write up of Session 4, International Forum on the Eradication of Poverty*, *15 - 16 November 2006, United Nations, New York,* Nee York: UN http://www.un.org/esa/socdev/poverty/PovertyForum/Documents/bg_4.html

Reuveny, R., (2007), 'Climate Change-induced Migration and Violent Conflict', in *Political Geography,* Vol. 26, p656-673, Elsevier

Rohr, U. 2008, 'Gender aspects of Climate Induced Conflicts' in Environment and Conflict Cooperation Special Issue Newsletter, 'Civilian Crisis Prevention – Environment and Natural

Resources: ‘Gender, Environment, Conflict’, http://www.ecc-platform.org/images/stories/newsletter/eccgender07.pdf

Röhr, U., (2006), ‘Gender and Climate Change’, In *Tiempo, Issue 59*, University of East Anglia (UEA), Stockholm Environment Institute (SEI) and International Institute for environment and Development (IIED), http://www.tiempocyberclimate.org/portal/archive/pdf/tiempo59high.pdf

Röhr, U., (2005), ‘Gender and Climate Change - a Forgotten Issue?’, *Tiempo: Climate Change Newsletter*, UEA, SEI and IIED
http://www.tiempocyberclimate.org/newswatch/comment050711.htm

Voluntary Services Overseas (VSO), (2006), ‘Reducing the Burden of HIV and AIDS Care on Women and Girls’, Voluntary Services Overseas (VSO) Policy Brief, UK: VSO
http://www.vso.org.uk/Images/RBHACWG_tcm8-8415.pdf

WEDO, (2003), *Common Ground, Women’s Access to Natural Resources and the United Nations Millennium Development Goals*, New York: WEDO
http://www.wedo.org/files/common_ground.pdf

WEDO, (2002), Women’s Action Agenda for a Healthy and Peaceful Planet 2015, p3,
http://www.wedo.org/files/agenda2015_eng.pdf

WOMANKIND, ‘Woman’s Participation’, WOMANKIND, webpage, accessed February, 2008,
http://www.womankind.org.uk/womens-civil-and-political-participation.html

Experts who responded to calls for information:

Tom Mitchell – Institute of Development Studies, Climate Change and Disasters Group

Thomas Tanner – Institute of Development Studies Climate change and Disasters Group

Rachel Masika – Birkbeck College London, Gender and Development lecturer and independent consultant

Ulrike Roer – Gender and Climate Change Network

Yianna Lambrou – Food and Agriculture Organization of the United Nations (FAO)

Redwood Mary – co-founder of the Women's Global Green Network

Angie Daze and Charles Ehrhart – CARE

Gender and Climate Change: an annotated bibliography

See particularly the new www.gendercc.net webspace. It will act as an information and resource platform on gender and climate change, providing a database of literature, case studies from around the world, research activities, upcoming events, and campaigns on gender and climate change. The website will be launched in the beginning/mid of March.

Aguilar, L., (2004), *Gender Indicators (in English and Spanish),* The World Conservation Union (IUCN)

Gender equity indicators measure conditions or situations that affect men and women differently, signal changes in power relations between women and men over time, determine access, use and control of resources and distribution of costs and benefits and point out changes in living conditions and in the roles of women and men over time. This short fact-sheet provides examples of indicators in the areas of:
• Agriculture and biodiversity e.g. changes in women's and men's ownership of agricultural lands;
• Climate change e.g. numbers of women and female-headed households receiving training and assistance related to disasters, such as the number of women who know how to swim;
• Energy e.g. number/percentage of women and men involved in energy policy dialogue;
• Forestry e.g. female ownership or co-ownership of equipment and tools for production, processing, commercialisation and other services associated with natural resources;
• Urban, e.g. numbers of households headed by men, women, or couples connected to sewer systems and potable water systems;
• Fisheries and Aquaculture in Coastal Zones e.g. number and type of formal tourism sector jobs held by women
http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Gender%20Indicators.pdf

Aguilar, L., (2004), *Climate Change and Disaster Mitigation: Gender Makes the Difference*, The World Conservation Union (IUCN)

Gender is absent from the climate change discussions and initiatives which have largely focused on mitigation (e.g. reduction of greenhouse gases) rather than on the adaptation strategies which poor women and men need for their security. This two-page fact sheet provides bullet-point evidence of how women bear the brunt of climate change and shows how drawing on the skills of women can greatly enhance the likely success of an initiative. For example, the community of La Masica in Honduras reported no deaths after Hurricane Mitch in 1998. Six months earlier a gender-sensitive community education initiative on early warning systems and hazard management had led to the women taking over the abandoned task of monitoring the early warning systems. There are four major opportunities for addressing gender inequalities in climate change mitigation and adaptation programmes and policies:
- recognising that women are already more vulnerable to poverty than men and have gender-specific needs in climate change driven scenarios
- addressing gender-specific resource use patterns that can degrade the environment
- using women's particular skills in managing household livelihoods and natural resources
- strengthening the quantity and quality of women's participation in decision-making at all levels.

http://www.povertyenvironment.net/?q=climate_change_and_disaster_mitigation_gender_makes_the_difference

This document is also available in Spanish at:
http://www.radiofeminista.net/nov04/notas/indicadores.htm

Boyd, E., (2002), 'The Noel Kempff Project in Bolivia: Gender, Power and Decision-making in Climate Mitigation', In *Gender and Development, Volume 10, Number 2, pp 70-77*, UK: Routledge

Since the United Nations Kyoto Protocol was agreed in 1997 and set legally-binding targets for signatories to limit or reduce greenhouse gas emissions; forest cultivation has been promoted as an important means to reduce carbon dioxide levels in the atmosphere. There has, however, been limited success. This article argues that this is due in part to gender inequalities which underpin the sustainable development and climate-change policy agendas, having been largely driven by the 'masculine' interests in forestry, accounting, agriculture and policy making. This theory is explored through examination of the different outcomes of a climate mitigation project in Bolivia, for men and women. It found that the project in part met women's immediate practical needs by supplying a temporary doctor, but did not address longer term interests, like empowerment, through neglecting to tackle issues such as the gendered division of labour. Furthermore, it makes links between global decision-making processes and local impacts.

This article is available to Gender and Development subscribers through Taylor and Francis:
http://www.informaworld.com/smpp/title~content=t713422432~db=all

Canadian International Development Agency (CIDA), (2002), *Gender Equality and Climate Change: Why Consider Gender Equality when Taking Action on Climate Change*?, Canada: Canadian International Development Agency (CIDA)

Why is it important to consider gender equality when taking action on climate change? This paper outlines gender-specific vulnerabilities and responses to climate change - for example male out-migration may occur due to resource shortages, thereby generating increased work for women. Similarly, women's informal rights to resources could decrease or disappear as access to land and natural resources dwindle. Interventions should therefore create greater awareness and understanding of the complex links between gender equality and the environment, so as to help build the capacity of the poor - especially poor women - to adapt to the impacts of climate change. Recommendations for policy and programming include the need to promote cleaner burning and more efficient fuel for household use to reduce air pollution and cut costs. Also useful is the provision of tools, including vulnerability assessments that build on local and indigenous knowledge held by women and men of measures to adapt to the impacts of climate change.
http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUImages/Climate%20change3/$file/Gender-2.pdf

Climate Alliance, (2005), *Climate for Change Toolkit*, Germany: Federal Ministry for Family, Seniors, Women and Youth of Germany and the European Commission

Understanding and integrating gender issues into debates, policy making and policy implementation is central to a more comprehensive approach to climate protection. As part of a European Commission project, ten cities in Finland, Sweden, Germany and Italy worked together to identify tools, processes and procedures that can contribute to promoting and supporting

women in decision-making positions relevant to climate protection. Their aim is to offer ideas and suggestions to individual persons, departments and whole municipalities. The toolkit consists of four sections: Data-Facts-Arguments, which includes findings and results of the 'Climate for Change' project and background information from all over Europe; Tools for Promoting Women in Management and Executive Positions, consisting of implementation guidelines, instructions and suggestions as well as a variety of examples; a Gender Checklist helping individuals to look at their department from a gender perspective; and some leaflets and posters that can be distributed or displayed to promote awareness of the issue. The publication is available in English, German and Italian from:
http://www.climateforchange.net/54.html#165
The Tools and Instruments section and the Gender Checklist are also available in Finnish and Swedish on the same site.

Dankelman, I., (2002), 'Climate Change: Learning from Gender Analysis and Women's Experiences of Organising for Sustainable Development', *Gender and Development*, *Vol 10, No 2, pp21-29*, UK: Routledge

Is climate change gender neutral? This article argues that it is not. Gender roles and relations interact with the causes and impacts of climate change in five key areas:
- gender-specific resource-use and management patterns that can degrade the environment such as men's higher car and fuel purchasing from male-dominated industries
- gender-specific effects of climate change such as the extra time women need to spend collecting water during droughts
- gendered aspects of climate change mitigation and adaptation such as women's valuable indigenous knowledge and practice of environment management
- gender and decision-making on climate change such as the limited role women are playing as producers in the energy sector and in energy policymaking
- human capacity inequalities such as women's lower access to education, training and technology

While there is a tendency to talk about gender aspects of climate change as if women are only victims, this article redresses this balance by highlighting the range of successful women-initiated actions. It concludes that it is essential for women to also be involved in official processes such as the multi-stakeholder dialogues in the World Summit on Sustainable Development (WSSD), and that cooperation between women in official delegations can be very helpful.

http://www.genderanddevelopment.org/search.asp

Denton, F., (2004), 'Gender and Climate Change: Giving the "Latecomer" a Head Start,' in *Institute of Development Studies* (IDS) *Bulletin 35* IDS bulletin, Institute of Development Studies at the University of Sussex 35,no.3, pp. 42-49

Gender issues have made a slow entry into the climate change debate. This is partly due to the fact that climate change has generally been perceived as a global phenomenon, with little attention being paid to differentiating between the potential impacts that women and men might face. For example, women tend to have less access to valuable resources such as land and credit, which reduces their capacity to adapt to the negative impacts of climate change. This paper focuses on three climate sensitive areas - agriculture, water and energy - and considers how adaptation strategies could be designed to help women and men in these sectors to mitigate the effects of climate change. Suggestions include the need for forest management projects that offer new skills to help improve crop species, soil quality and water conservation. Local community projects could also be a source of funds for women wishing to embark on specific activities such as sustainable harvesting of forestry products.

The IDS Bulletin is available on subscription from http://www.ids.ac.uk/ids/bookshop/index.html.

Duddy, J., (2002), Is Climate Change a Gender Issue?, Association for Women's Rights in Development (AWID)

Many would say that global warming is the most serious environmental issue of the twenty first century. As a result of climate change, women have seen their workload increase in many activities which have traditionally been women's responsibilities. For instance, fishing has been made more difficult by the intrusion of salted water in fresh water systems. Fetching clean water and fuel has also become more difficult. In times of climate disasters, like hurricanes, floods and landslides, a lot of pressure is put on women whose responsibility is still that of keeping families together and feeding them. Up until now, a gender perspective has been mainly lacking from the international debate on climate change. But the different ways in which women and men treat the environment and are affected by its changes must be taken into account in order for effective and sustainable climate change programmes to be designed and implemented. The author presents the case of the Inuit people of Canada, and describes how women and men are differently affected by the devastation of global warming. The document is available in English, French and Spanish.

http://www.awid.org/go.php?stid=862

Genanet, (2005), *Gender and Climate Change Research Workshop Report: What Do We Know? What Do We Need To Find Out?'*, Women in Europe for our Common Future (WECF)

In 2005, 23 participants gathered to discuss gender and climate change related research, and its role and use in women's/ gender related advocacy in the United Nations Framework Convention on Climate Change (UNFCCC) process. Three questions were addressed:

1. What do we need to know about gender and climate change to influence UNFCCC negotiations? This included the need for gender specific data and knowledge in various forms on the causes and impacts of climate change - such as energy consumption and affects on health.
2. What do we know already? Discussions included awareness that women are and will be affected more severely than men by climate change due to its linkages with poverty (e.g. less resilience against reduced land productivity) and reproduction (such as water collection).
3. Which questions need to be addressed by future research? A strategic research agenda was formulated and included assessing the impacts of climate change on poverty reduction, food and water security, housing, disaster management and conflict.

http://www.genanet.de/fileadmin/downloads/themen/G_CC_research_workshop_report.pdf

Hemmati, M., (2005), *Gender and Climate Change in the North: Issues, Entry Points and Strategies for the Post-2012 Process*, Germany: Genanet

So far women's organisations in Northern countries have hardly participated in the climate change debate. This document aims to stimulate women's organisations in Europe and the wider United Nations Economic Commission for Europe (UN ECE) region to work on strategies to

ensure that gender issues are understood and integrated in the negotiations of a post-2012 global climate regime. The paper identifies gender aspects of climate change in the North around health, the economy, social issues and gender roles and attitudes. For instance, it explains that since women enjoy less financial security than men, the economic consequences of climate change and response measures must be analysed from a gender sensitive perspective to counter disadvantages for women in areas like energy and transport prices. A description of ongoing and upcoming policy-making processes and organisations is also featured, together with some women's organisations and networks that could potentially work in partnerships. Recommendations include: carry out further research on the gendered aspects of climate change; produce more gender disaggregated data; integrate a gender perspective into climate protection negotiations and policy-making at national and international levels; strengthen the presence of women in decisions and negotiations around climate protection; and create and disseminate gender sensitive information on climate change. The author also recommends closely monitoring the actual integration of gender issues in research, policy-making and implementation. This document is only available in a shorter version.

http://www.genanet.de/fileadmin/downloads/themen/Themen_en/Gender_Post-Kyoto_en_abstract.pdf

Johnsson-Latham, G., (June 2007) *A Study on Gender Equality as a Prerequisite for Sustainable Development: What we Know about the Extent to which Women Globally Live in a More Sustainable Way than Men, Leave a Smaller Ecological Footprint and Cause Less Climate Change,* The Environment Advisory Council Ministry of the Environment, Sweden

How can a gender perspective facilitate more sustainable economic growth and well-being for all? This paper, which was presented at the 15th meeting of the United Nations Commission for Sustainable Development in May 2007, grapples with this question. It offers new pointers for work on sustainable development by identifying gender-specific differences in terms of male and female consumption patterns, lifestyles, and access to resources, and explains how these differences are crucially important for achieving sustainable development. It focuses on issues of mobility and access to transport - since transportation of people and goods represents one of the largest and fastest growing sources of greenhouse gas emissions, which in turn substantially affect the earth's climate. The case is made for promoting sustainable and gender-equitable transport, for example by boosting women's participation in decision-making on community planning, traffic systems and transportation. The need to pay more attention to strengthening the social dimensions of sustainability is also stressed - for example through developing gender-equitable welfare models which focus less on goods and more on services that reduce the ill-health, stress and time poverty experienced disproportionately by women.

http://www.genderandenvironment.org/admin/admin_biblioteca/documentos/rapport_engelska.pdf

Lambrou, Y. and Piana, G., (2006), *Gender: The Missing Component of the Response to Climate Change*, Food and Agriculture Organisation of the United States (FAO)

The gender aspects of climate change have generally been neglected in international climate policy. This report, produced by the Food and Agriculture Organisation of the United Nations (FAO), argues that gender, like poverty, is a cross cutting issue in climate change and needs to be recognised as such. Particularly in developing countries, women generally have lower incomes than men, they often have limited control of resources, and they have less access to information and decision making authority. Their ability to mitigate and adapt to the impacts of climate change is thus lower than that of men. Focusing solely on women's vulnerability may be

misleading however, since women often have particular skills, coping strategies and knowledge that can be used to minimise the impacts of environmental change. Any environmental policy should therefore recognise women as key players, particularly given their role as natural resource managers. At the Eleventh Conference of the Parties to the UN Framework Convention on Climate Change (COP 11), held in Montreal in December 2005, representatives of women's groups presented a short petition with some gender-specific recommendations to women environment ministers. This report concludes that it is crucial for women to continue to lobby national negotiators in the next stage of climate change negotiations, to press for the full integration of gender issues into the climate change agenda.

http://www.fao.org/sd/dim_pe1/docs/pe1_051001d1_en.pdf

Lambrou, Y. and Laub, R., (October 2004), 'Gender Perspectives on the Conventions on Biodiversity, Climate Change and Desertification', *SD Dimensions*, United Nations FAO

Who pays the price of loss of biodiversity, climate change and desertification? According to the 'Rio Conventions' - the United Nations (UN) Convention on Biodiversity, the UN Framework Convention on Climate Change (UNFCCC), and the UN Convention to Combat Desertification (UNCCD) - it is rural populations in poor countries. In fact, gender-related patterns of vulnerability mean that the impact of climate change is different on women compared to men. Through an examination of each convention, this paper asserts that it is essential for a gender perspective to be applied to these conventions for two key reasons. Firstly, the successful implementation of each convention requires a solid understanding of the different ways in which women and men use and respond to environmental resources (such as water and land), as well as an understanding of the gender-specific impacts of environmental degradation. For example the majority of women farmers do not have secure land rights and their productive assets are generally of a lesser value than men's. Both of these factors limit women's potential to adapt their activities in the face of shocks such as sudden shortages in food supplies, drops in income, crop failure and natural disasters. Secondly the successful implementation of each convention will depend on the participation of affected populations, both women and men - equal participation of women cannot be taken for granted. The paper reviews gender mainstreaming in international agreements on sustainable development before ending with reflections on the policy challenges in convention implementation. Enhancing the gender-responsiveness of the Rio conventions depends ultimately on political will - both in governments and institutions.

http://www.fao.org/sd/dim_pe1/pe1_041002_en.htm

Summaries are also available in French, Spanish and Arabic at
http://www.fao.org/sd/dim_pe1/pe1_041002_en.htm

Laudazi, M., (2003), *Gender and Sustainable Development in Drylands: an Analysis of Field Experiences*, United Nations FAO

The drylands of the world cover approximately 40 percent of the earth's land surface and are a direct source of livelihood for about a billion people, especially in developing countries. However, nearly all drylands are at risk of land degradation as a result of climate change, population growth, land over-use and poverty. Agricultural and environmental policies and programmes often fail to recognise women's particular needs and crucial contribution to the use and management of dryland resources. By incorporating a gender perspective, innovative ways of combating dryland degradation and food insecurity can be promoted, notably through a better understanding of men's and women's roles and their respective concerns and needs. This document looks at the relationship between gender and dryland management, based on an analysis of relevant field experiences in Africa and Asia. It outlines the roles of relevant United Nations conventions related

to gender and dryland management and summarises the key findings of the field experiences. Recommendations for improving gender-responsive dryland management include the need to collect reliable socioeconomic sex disaggregated data on dryland management activities, and the need for actions which challenge the cultural, socio-economic and gender-based barriers which prevent men and women from investing in the rehabilitation of agricultural land.

http://www.fao.org/docrep/005/j0086e/j0086e00.htm

Masika, R., (2002), 'Gender and Climate Change: Editorial', in Oxfam *Gender and Development,* Volume 10, Number 2, pp2-9, UK: Routledge

Gender issues are rarely addressed in climate change debates and initiatives. The international response to climate change has largely focused on scientific and technological measures to tackle climate change, with less attention being given to the social implications of climate change for poor men and women. While scientific approaches remain crucial, this collection of articles argues that political and socio-economic issues must be taken into consideration. A key issue is the extent to which poverty or gender should be the entry point for vulnerability reduction measures. Skutsch's paper suggests, for example, that poverty is the main variable, and that the issue of women's vulnerability to climate change is best tackled through gender-responsive poverty reduction measures. Other contributions highlight the central role that gender inequalities play in women's sensitivity to climate shocks. For example, Dankelman's review demonstrates the significant role that gender relations - through their role in influencing which resources women or men can access - play in determining sensitivity to climate change, and their capacity to cope with the outcomes. Minimising vulnerability to climate change will require sustainable development interventions in multiple sectors (agriculture, health, employment, education, and so on). Further research is required into the gender-differentiated impacts of climate threats. Policies need to shift to accommodate the equity and sustainability implications of climate change.

Individual articles from this journal issue are available from:
http://www.journalsonline.tandf.co.uk/link.asp?id=k1n45xx088lx

Mitchell, T., Tanner, T. and Lussier, K., (2007), *"We know what we need!" South Asian women speak out on climate change adaptation*, UK: Action Aid International and IDS

Poor women in Bangladesh, India and Nepal are struggling to protect their lives, homes, assets and livelihoods from weather-related hazards caused by climate change. Nevertheless, women are not passive victims of climate change. This report presents field research conducted in the Ganga river basin in Bangladesh, India, and Nepal, with poor women in rural areas. Participatory research tools were used to explore the impact of changing monsoon and flooding patterns on their livelihoods; existing coping strategies; constraints to adaptation; and adaptation priorities (i.e. what the women themselves feel they need order to better adapt to the floods). Despite limited resources, information and support, evidence from this research proves that women in poor areas are already adapting to a changing climate and can clearly articulate what they need in order to secure and sustain their livelihoods more effectively. Their priorities include a safe place to live and store their harvest and livestock during the monsoon season; better access to services such as agricultural extension; training and information about adaptation strategies and livelihood alternatives; and access to resources to implement effective strategies and overcome constraints. This paper also makes recommendations for adaptation fund processes to proactively prioritise the needs of poor women. These include monitoring how women are targeted by, and benefit from, adaptation funds; and ensuring states provide an enabling

environment for women's participation through legislation and institutional practices that guarantee women's rights are fulfilled.

http://www.ids.ac.uk/UserFiles/File/poverty_team/ActionAid_IDS_Report_We_know_what_we_need_South_Asian_women_speak_out_on_climate_change_adaptation.pdf

Röhr, U., (2006), Gender Issues and Climate Change, In *Tiempo, Bulletin on Climate Change, Issue 59*, University of East Anglia, International Institute for Environment and Development (IIED), Stockholm Environment Institute (SEI)

How important is it to integrate a gender perspective into the climate change debate, both in the North and the South? Gender issues have not played a major role in climate protection discussions until very recently, but in the last couple of years there has been more of a conscious effort to address questions of gender. In the South, changes in the climate often impact on areas for which women have been traditionally responsible, such as nutrition, energy and water supplies. This could have long-term implications for gender relations, as women may end up spending more time on traditional reproductive tasks thus reinforcing traditional gender roles. In the North, a study in Europe revealed that women are more prepared than men to change their behaviour to prevent climate change as they place a higher importance on the risk that it may have on their lives. In some areas, they have adjusted their behaviour by reducing their energy consumption, using more public transport and changing their nutrition and shopping habits. Recommendations on how to integrate gender into the climate change debate include: invest more in research and the production of gender disaggregated data, integrate gender into climate protection negotiations and policy making, and encourage women's participation in decision making and negotiations.

http://www.tiempocyberclimate.org/portal/archive/pdf/tiempo59high.pdf

Röhr, U., (2004), *Gender Relations in International Climate Change Negotiations*, genanet
Up until very recently gender issues have been absent from international climate change negotiations. This paper gives an historical overview of the participation of women and women's organisations in international conferences on climate protection. It explores how women's presence in these forums has enhanced the integration of gender issues into the climate change debate and policy-making processes. The paper observes that although men continue to dominate the debate, women have made a valuable contribution thanks to their networking and interpersonal skills, and to their ability to think and plan for the long term. Despite such progress, gender issues are still considered minor in climate change negotiations. Some entry points to advocate for the integration of a gender perspective in the debate include: produce gender analysis of adaptation to climate change and vulnerability to its impacts for more sustainable mechanisms of risk management; carry out gender analysis of climate protection instruments; and apply gender budgeting to climate change funds. The author also suggests that international institutions pay more attention to changing individual behaviour to protect the climate and mitigate CO2 emissions rather than merely concentrating on emissions reduction/trading.

http://www.genanet.de/fileadmin/downloads/themen/Themen_en/Gender_climate_policy_en_updated.pdf

Skutsch, M., (2004), 'Mainstreaming Gender into the Climate Change Regime', *Buenos Aires, COP10 paper*

The United Nations (UN) is formally committed to gender mainstreaming within all UN policies and programmes. Many people, however, find it difficult to understand why gender might be a factor in climate change or how it should be addressed. This paper summarises these issues as discussed at two gender focused side events during the 2004 tenth session of the Conference of the Parties to the U.N Framework Convention on Climate Change (COP-10). The first side event focused specifically on the issue of gender and adaptation to climate change, concluding that the current problem is not a lack of willingness to incorporate a gender perspective but a lack of knowledge or toolkits to do so. The second event looked more broadly at the need to incorporate gender into the full range of climate policy worldwide. Specific recommendations were made on the basis of these discussions, including:

- undertake a gender analysis of all budget lines and financial instruments regarding climate change;
- develop gender-sensitive indicators which could be incorporated into the U.N. Framework Convention on Climate Change (UN FCCC) and the Kyoto Protocol mechanisms and instruments;
- carry out global and national studies on the gender-differentiated impacts of global climate change.

http://www.gencc.interconnection.org/Gender&CCCOP10.pdf

UK Department for International Development, (June 1999), *Environment: Gender and Energy*, UK: DFID

Energy is a key factor in the pursuit of sustainable development due to its linkages with poverty and environmental degradation. Rural livelihoods are crucially affected by the availability of energy sources. Women use energy for cooking, heating water, lighting, ironing and heating, and the availability of cheap and accessible energy could enable them to devote more of their energy to productive activities. However, women's decisions about energy usage may be constrained by other demands on their time, preventing them from taking advantage of e.g. electricity off-peak rates or solar power sources. Furthermore, the appropriation of new energy technologies by men may mean that women perceive batteries or electricity as not applicable for them to use. Thus, the specific needs and constraints of women need to be addressed in national energy supply policies. These and numerous other gender-energy issues are raised in four sub- sections: Gender, Energy and Environmental degradation; Energy Needs and the Gender Division of Labour; Gender and Energy-Related Decisions; and Energy Efficiency. Lessons learnt and recommendations for best practice pertaining to each of these areas are provided.

http://www.siyanda.org/docs_gem/index_sectors/natural/energy_coretext.htm

UK Department for International Development, (June 1999), *Environment: Checklist for Policy Approvers and Decision-Makers*, UK: DFID

Why are gender issues relevant for the environment? This section answers this question, highlighting the necessity for environmental policy and programmes to ensure that: interventions enhance and promote gender equality; women are fully involved in environmental decision-making processes; and the specific impacts of environmental degradation on women are tackled. In addition to explaining the relevance of gender to environmental policy and practice, the emergence of gender in mainstream environmental/development debates is detailed. Subsequently, a Gender, Environment and Development (GED) approach is discussed and its implications for policy and practice explored. Ten case studies illustrating the links between gender and the environment are provided, (e.g. from India, Pakistan, the Dominican Republic, Mali, Burkina Faso, and Ecuador), as are links to other environment-related core texts (Gender and Energy, Gender, Trade and the Environment, and Gender and Environmental Management in Urban Areas), and relevant websites. The pivotal message is that it is imperative that the

development community cultivates a better understanding of the linkages between gender and the environment if planning processes are to achieve both gender equality and environmental sustainability. http://www.siyanda.org/docs_gem/index_sectors/natural/env_coretext.htm