



**Gender and Climate Change
Overview Report**

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BRIDGE was set up in 1992 as a specialised gender and development research and information service within the Institute of Development Studies (IDS), UK. BRIDGE supports the gender advocacy and mainstreaming efforts of policymakers and practitioners by bridging the gaps between theory, policy and practice with accessible and diverse gender information. It is one of a family of knowledge services based at IDS (<http://www.ids.ac.uk/go/knowledge-services>). Other recent publications in the *Cutting Edge Pack* series:

Gender and Governance, 2009
Gender and Care, 2009
Gender and Indicators, 2007
Gender and Sexuality, 2007
Gender and Trade, 2006
Gender and Migration, 2005
Gender and ICTs, 2004

Gender and Citizenship, 2004
Gender and Armed Conflict, 2003
Gender and Budgets, 2003
Gender and HIV/AIDS, 2002
Gender and Cultural Change, 2002
Gender and Participation, 2001.

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ACRONYMS

CDM	Clean Development Mechanism
CIDA	Canada International Development Agency
CIFs	Climate Investment Funds
COP	Conference of Parties
CSO	Civil society organisation
DFID	Department for International Development
FAO	Food and Agriculture Organisation
GEF	Global Environmental Facility
GGCA	Global Climate Change Alliance
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IDS	Institute of Development Studies
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
ITUC	International Trade Union Confederation
IUCN	International Union for the Conservation of Nature
MDG	Millennium Development Goal
NAPA	National Adaptation Plan of Action
NAMA	Nationally Appropriate Mitigation Actions
NGO	Non-governmental organisation
ODA	Official development assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
REDD	Reducing Emissions from Deforestation Forest Degradation
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNISDR	United Nations International Strategy for Disaster Reduction
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation
WEDO	Women's Environment and Development Organization
WHO	World Health Organization

EXECUTIVE SUMMARY

'The absence of women, particularly those from the global South, from national and international discussions and decision-making on climate change and development must change. The battle to protect the environment is not solely about technological innovation – it is also about empowering women and their communities to hold their governments accountable for results.'

Mary Robinson and Wangari Maathai (Huffington Post 2010)

Why focus on gender² and climate change?

Climate change is increasingly being recognised as a global crisis, but responses to it have so far been overly focused on scientific and economic solutions, rather than on the significant human and gender dimensions. This report highlights the need to put people at the centre of climate change responses, paying particular attention to the challenges and opportunities that climate change presents in the struggle for gender equality.

It advocates for an approach in which women and men have an equal voice in decision-making on climate change and broader governance processes and are given equal access to the resources necessary to respond to the negative effects of climate change; where both women's and men's needs and knowledge are taken into account and climate change policymaking institutions and processes at all levels are not biased towards men or women; and where the broad social constraints that limit women's access to strategic and practical³ resources no longer exist.

The report shows that there is much to learn from innovative, gender-aware approaches to climate change that are already happening at the local level, led by non-governmental organisations, communities and individuals, which are leading to transformations in gender and social inequalities in some cases. National, regional and international initiatives are also playing a key role in promoting the need to integrate gender dimensions into all climate change policy and practice.

What is climate change and why is it a development issue?

Climate change refers to the increasingly erratic weather patterns, rising sea levels and extreme events that may be attributed to human activity and the greenhouse gas (GHG)⁴ emissions that have created global warming. It is often viewed as a purely scientific and technical phenomenon, and yet climate change is also a social, economic and political phenomenon with profound implications for social justice and gender equality.

² Gender refers to the range of 'socially constructed' roles, behaviours, attributes, aptitudes and relative power associated with being female or male in a given society at a particular point in time (Esplen 2009:2). 'Socially constructed' means that these are not 'givens' or 'natural' but are constructed or produced by society and as such can be modified or changed.

³ Practical resources include land, credit and water – that can be used directly for production. Strategic resources are related to longer-term change and include information, legal rights and education.

⁴ Naturally occurring and human-made gases that absorb infrared radiation as it is reflected from the earth's surface, trapping heat and keeping the earth warm (UNFCCC website).

As weather patterns become increasingly unpredictable, and extreme events such as floods, heat waves or natural disasters become more common, the poorest women and men in the global South who have contributed the least to the problem find their livelihoods most threatened, yet have the weakest voice and least influence on climate policy. Not only are there questions of injustice around the causes and consequences of climate change, but there are also questions of social justice in terms of who has the power and resources to influence and benefit from the policies to mitigate⁵ against further climate change and adapt⁶ to existing impacts of climate change.

What are the gender dimensions of climate change?

Women and men do not experience climate change equally. In many developing countries economic constraints and cultural norms that restrict women's access to paid employment mean that their livelihoods are particularly dependent on climate-sensitive sectors, such as subsistence agriculture or water collection. Yet gender inequalities in the distribution of assets and opportunities mean their choices are severely constrained in the face of climate change. For example, restrictions around land ownership for rural women mean they may not have access to productive land to farm, and lack of financial capital means they cannot easily diversify their livelihoods.

The fact that women and girls are often responsible for most of the unpaid care tasks around the household also means their lives are directly affected by the changes brought about by climate change. They often have to walk further to find increasingly scarce food, fuel and water, as well as caring for family members who are susceptible to the health risks linked to climate change. As a result, women and girls find themselves with less time for education, income-generating activities or participation in community decision-making processes, further entrenching unequal gender relations.

Men are also negatively affected by climate change, particularly when they are poor. For example, men may experience deep anxiety and stress when their rural livelihoods are undermined as a result of climate change and they are no longer able to fulfil their socially expected roles as providers. Research also indicates that men may feel pressured into taking 'heroic' actions, which places them at a higher risk than women and children. For example, after Hurricane Mitch hit Central America in October 2000, a higher proportion of men than women were killed due to risk-taking behaviour.

Why do gender dimensions need to be at the centre of climate change policy?

'Adding' gender dimensions to policies is not enough

The international climate change architecture is complex and constantly shifting as new agreements come into being or existing ones are amended. The United Nations Framework Convention on Climate Change (UNFCCC) is the overarching international framework for addressing climate change, and was the first to acknowledge the role of human interference in the climate system and the need to address carbon emissions. Despite referring to human activity the UNFCCC makes no reference to gender at any point.

⁵ Mitigation refers to human interventions to reduce the sources or enhance activities that remove GHGs (which trap heat and keep the earth warm).

⁶ Adaptation refers to actions taken to help communities and ecosystems cope with changing climate conditions.

However, persistent lobbying by gender and climate change advocates such as the global network GenderCC and other civil society organisations has led to recent positive shifts in the climate change architecture. The Bali Action Plan, created at the UNFCCC Conference of the Parties (COP)⁷ 13 in 2007, provides entry points for taking gender issues into account, and in 2008 the UNFCCC Secretariat was persuaded of the need to include gender-specific recommendations in conference documents.

These are positive steps, but there is still a long way to go. Many climate change policies and processes are still largely, or completely, gender blind, overlooking the gender dimensions of climate change or considering them irrelevant. Where gender issues are considered they are too often an 'add-on' to existing policies.

Market-based policies remain gender blind

It is market-based policies around mitigation and low carbon development⁸, providing economic incentives for the cutting of emissions or preservation of forests, that are most gender blind. For example REDD (Reducing Emissions from Deforestation and Forest Degradation) enables industrialised countries to 'offset' their carbon emissions by paying governments for the conservation of forests, often in the developing South, to promote climate mitigation by preserving carbon stored in trees. This commercialisation of previously free natural resources has been shown to lead to the further exclusion of poor and landless people, often women, who depend on products from the forests for their livelihoods but rarely benefit from the economic incentives.

International lobbying groups such as the Global Forest Coalition, and local organisations such as FUNDAEXPRESIÓN in Colombia, are promoting alternatives to these policies. FUNDAEXPRESIÓN is part of a network that raises awareness of these global policies and their gender implications, empowering women and men to challenge them and engage in sustainable, locally relevant climate adaptation and mitigation approaches. Organisations such as these are also calling for stronger links to be made at the policy level between mitigation and adaptation, and for greater involvement of poor women and men in mitigation policies and interventions.

Women are not seen as part of the solution

Climate adaptation policies too often treat women only as vulnerable beneficiaries rather than as rights-holding citizens who need to be recognised for the agency, skills and experience they can contribute. In cases where women are already playing a crucial role in developing sustainable climate adaptation solutions as part of local, national and international initiatives, their contributions are often not being recognised.

⁷ The UNFCCC was agreed in 1992, since when the parties have been meeting annually in Conferences of the Parties to assess progress in dealing with climate change.

⁸ Low carbon development is a long-term plan of action that integrates national mitigation and development objectives. It includes actions that make a contribution towards stabilising GHGs in the atmosphere.

There is a large gender gap in climate change decision-making

It is the gender disparity in decision-making around climate change which is perhaps the most significant factor in the persistent gender blindness of climate change policies. At the most recent UNFCCC COP in 2010 (COP 16), for example, women accounted for as few as 30 per cent of all delegation parties and under 15 per cent of all heads of delegations. Not only does this gender imbalance result in unrepresentative policies, but it denies women the right to participate and have a political voice.

What needs to change?

Climate change policies and processes will be neither effective nor fair unless they become more *gender aware*. This means recognising that development actors are women as well as men, that they are constrained in different and often unequal ways, and that they may consequently have differing – and sometimes conflicting – needs and priorities. Greater gender awareness also means recognising that women have the *right* to be included in climate change-related decisions and to benefit from them equally.

However, simply being aware of gender inequalities is not enough. Climate change responses have the potential to challenge existing gender power imbalances and, by doing so, can contribute to the realisation of greater gender equality and women's rights – they can play a *transformative* role. There are unique opportunities for the newly emerging climate change-focused institutions and processes to take a gender-aware approach that contributes to gender and social transformation.

Much can be learned from initiatives that are emerging at all levels. In addition to the vital lobbying work of national, regional and global organisations and networks at the policy level, many local organisations are already responding to women's and men's actual needs and promoting gender-aware, transformative approaches. It is now imperative to create stronger links between global policy and these local level realities and innovations to ensure that policies are informed by the voices of the women and men who deal with the consequences of climate change every day.

Key recommendations of the report are:

1. Change the way climate change and its responses are framed:

- **Move climate change responses beyond purely technical analyses** to a focus on the social and gender dimensions.
- **Ensure all climate change interventions and processes are gender aware from the outset**, whether related to policy, research, grassroots programmes or advocacy.
- **Move beyond simple assumptions about women's vulnerability** to highlight women's agency in adapting to and mitigating climate change. This will involve integrating women's valuable knowledge and practical experience into policymaking processes.
- **Promote a more holistic approach to climate change** that acknowledges the linkages between mitigation and adaptation.

2. Create gender-aware policies and institutions:

- **Support climate change institutions to critically examine their own structures, processes and policies**, identifying and addressing ways in which they may create or reproduce gender inequalities, by using institutional audits and other mechanisms.
- **Enable the equal participation of women in climate change processes** at local, national and international levels and ensure they are involved in decision-making on both mitigation and adaptation.
- **Learn from people-focused, gender-aware approaches** at the local level and apply these lessons to national and international policy.
- **Promote a rights-based approach to climate change** and ensure that all future climate change policies and processes draw on human rights frameworks such as the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW).
- **Find alternatives to market-based approaches** where possible, but when they are used to address climate change mitigation, measures are needed to ensure they equally benefit women and do not exclude or further disadvantage them.
- **Address the underlying causes of gender inequality**, by tackling issues such as unequal land rights through legislative reforms and awareness-raising, as well as through the implementation of CEDAW and other relevant frameworks.

3. Create an enabling environment for gender-aware, people-centred climate change responses that contribute to social and gender transformation

- **Continue to build the evidence base** by gathering and analysing information around the social and gender dimensions of climate change, and by developing adequate methodologies for measuring the gender impacts of climate change at local, national and international levels.
- **Fund civil society institutions at international, national and local level** to hold climate change policymakers to account on their political commitment to gender equality.

1. INTRODUCTION

'Climate change affects us all, but it does not affect us all equally. The poorest and most vulnerable – those who have done the least to contribute to global warming – are bearing the brunt of the impact today.' (UN Secretary General Ban Ki-Moon) ⁹

Climate change refers to any long-term change in the statistical distribution of weather patterns, whether in terms of changes in average conditions (more/less rainfall, higher/lower temperatures), or in the distribution of events around the average (extreme weather events such as floods or droughts). Generally, the term is used for any change in climate over time, regardless of cause, but the UN definition is more specific in using the term to denote changes that are attributable, whether directly or indirectly, to human activity.

(IPCC 2007)

1.1 Why focus on gender and climate change?

'Climate change' has become a well-known term across the globe, encompassing a range of phenomena from melting polar ice caps to erratic weather conditions and disasters, and prompting a series of international talks and agreements. Many are arguing for the need to take climate change seriously and act now before we encounter escalating problems that could result in mass migration from flooded areas, food shortages and disease – among other impacts. The international response has reflected this sense of urgency to a large extent, with multilateral organisations such as the United Nations and the World Bank coordinating responses, mobilising funds and setting targets for carbon emissions. The issue of climate change and its potential responses has also sparked tensions for developed countries such as the United States of America (USA) and for rapidly developing countries such as India and China, where economic development is leading to an accelerating rise in per capita carbon emissions.

Yet amidst the debates about impacts on the natural world and reducing carbon emissions a simple fact has become buried – the fact that climate change is primarily a human phenomenon. Those who are being most affected by climate change are also often the poorest, with far fewer resources to deal with challenges that range from flooded crops to major disasters. And of those affected by climate change who fall below the poverty lines, women account for the majority. This is due to a range of factors that will be explored in this report, but it is primarily because women – on the whole – are disadvantaged compared to men in terms of the opportunities available to them, the social and legal status they enjoy and the resources they are able to access.

As this report shows, poor women and men are far from powerless in the face of climate change – in many cases they are responding in innovative ways that draw on their local knowledge or on their capacity to adapt to difficult and unstable circumstances. However the voices of these people are

⁹ Korea Herald 2009.

rarely heard in national or international fora, leaving little opportunity to reflect their needs and concerns or to learn from their experiences.

And when they are involved in planning and implementing climate change responses, whether through invited 'formal' spaces, through local interventions such as training in adaptive farming techniques, or through civil society campaigns, women are usually in the minority. This is not only true for developing countries; although things are changing slowly, relatively few women have been involved in international climate change negotiations.

This report makes two connected, central points. The first is that any understanding of climate change needs to start with the human dimensions and that any solutions need to recognise ordinary people as participants and contributors. The second is that climate change is a gender issue. There is an increasing recognition of the need to look at climate change through a gender lens, but too often gender concerns are added into policies or processes as an afterthought and only focus on issues considered relevant to women. For example, recent years have seen a growing number of initiatives to address women's needs through targeted programmes such as the introduction of energy-efficient cooking stoves.

While these types of interventions are relevant, our argument is that they only scratch the surface of a far more complex issue. We argue that climate change runs the risk of deepening poverty and creating further discrimination and injustices without efforts to understand and address its multiple gender dimensions and be truly 'gender aware'. This means taking into account the underlying power differentials between women and men at international, national and local levels and between international players such as governments and multilateral organisations. It means examining how these differentials may have contributed to the current climate crisis, how women and men are differently affected by climate change, how relations between men and women are being affected by the impacts of climate change, and how these gender relations will be affected by the type of climate change responses that are developed. It also means looking at the effects of climate change on poor women and men in a broader context that takes account of the underlying causes and intensifiers of inequalities, including poverty, gender power imbalances, HIV/AIDS, food insecurity and conflict.

Many of the issues we discuss in this paper are not new. In many ways climate change acts as a magnifying glass which exposes and risks exacerbating pre-existing gender inequalities in women's access to and control of resources and decision-making power, making poor women in particular more vulnerable to its effects and preventing them from participating equally in its solutions. For example, women often have limited access to resources such as land, credit, information and technology compared to men – leaving them with limited choices when their typically more climate-sensitive livelihoods are threatened by climate change. Without taking into account and addressing these different impacts and inequalities, climate change responses will be superficial and ineffective – and in some cases may even intensify existing inequalities.

Yet taking a gender-aware approach to climate change is not only about policy effectiveness. Understanding the gender dimensions of climate change is also fundamental as a matter of justice: women have the right to be included in decisions related to climate change and to benefit from them

equally. Above all, it is vital that women's rights and gender equality are promoted, rather than undermined, through all climate change policies and interventions.

We also argue that, as well as presenting a challenge, climate change offers an opportunity to transform existing gender power imbalances. There is enormous potential for newly emerging institutions and processes to work in innovative, gender-aware ways that tackle the root causes of inequality and, by doing so, contribute to the realisation of greater gender equality, women's rights and social change. As Millennium Development Goal (MDG) 3 on gender equality and women's empowerment, the Beijing Platform for Action and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) all state, gender equality is an important development goal in itself as well as being a fundamental condition for the achievement of sustainable development. This 'transformative approach' is further explained later in this chapter and also in Chapter 2 of the report.

Key gender terms

Gender: refers to the social attributes and opportunities associated with being male and female and the relationships between women and men and girls and boys, as well as the relations between women and those between men. These attributes, opportunities and relationships are socially constructed (UN Women website).¹⁰ This means that they are constructed or produced by society and as such can be modified or changed.

Gender equality: refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognising the diversity of different groups of women and men. Gender equality is not a women's issue but should concern and fully engage men as well as women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centred development.

(UN Women website)

1.2 What is climate change and why should we be concerned about it?

An increasing body of scientific evidence confirms the existence of human-induced global warming, leading to rising sea levels, more intense storms, heat waves and droughts, which leaves global society facing one of the greatest challenges in history. The Intergovernmental Panel on Climate Change (IPCC) has asserted that 'warming of the climate system is unequivocal' and that it is 'very likely' that this has resulted from 'anthropogenic greenhouse gas concentrations', otherwise known as human activity, particularly the burning of fossil fuels (IPCC 2007). This has resulted in a thicker 'blanket of greenhouse gases around the earth', which is causing global temperatures to increase, affecting the complex ecosystems – such as cloud cover, rainfall, wind patterns, ocean currents, and the distribution of plant and animal species – that are vital for life to thrive on earth (UNFCCC 2010).

¹⁰ <http://www.un.org/womenwatch/osagi/conceptsanddefinitions.htm>

The full effects of this are still unknown, but there is already evidence that extreme weather events such as droughts, heavy precipitation (rain), heat waves and the intensity of tropical cyclones are on the rise.

1.2.1 How are people talking about climate change?

The field of climate change is a highly specialised one, with many terms that can make discussions of the issue seem impenetrable. We are careful not to overburden the readers with climate-specific jargon in this report, but a few of the often-used core terms and phrases are included below.

Climate change terms defined

Greenhouse gases (GHGs): Naturally occurring and human-made gases that absorb infrared radiation as it is reflected from the earth's surface, trapping heat and keeping the earth warm. The six main GHGs whose emissions are caused by humans are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆) (UNFCCC website).¹¹

Mitigation: refers to human interventions to reduce the sources or enhance the sinks of GHGs.¹² Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other 'sinks' to remove greater amounts of CO₂ from the atmosphere (UNFCCC website).

Adaptation: Actions taken to help communities and ecosystems cope with changing climate conditions, such as the construction of flood walls to protect property from stronger storms and heavier precipitation, or the planting of agricultural crops and trees more suited to warmer temperatures and drier soil conditions (UNFCCC website).

Impacts: The consequences of climate change on natural and human systems. These can be distinguished between 'potential' or 'residual' impacts. Potential impacts: All impacts that may occur given a projected change in climate, without considering adaptation. Residual impacts: The impacts of climate change that would occur after adaptation.¹³

Low carbon development: A long-term plan of action that integrates national mitigation and development objectives. It includes actions that make a contribution towards stabilising GHGs in the atmosphere both by cutting emissions and by promoting energy efficiency and renewable energy (IDS 2009).

1.2.2 Why do we need to take action in the face of climate change?

Despite the vast amount of existing research, there is still no clear consensus on the extent of the problem or how serious the implications could be. However, evidence indicates that without major action to curb the emission of greenhouse gases (GHGs), there is more than a 75 per cent chance of global temperatures rising between 2 and 3 degrees Celsius over the next 50 years, leading to

¹¹ http://unfccc.int/essential_background/glossary/items/3666.php

¹² A sink is any process, activity or mechanism which removes a GHG from the atmosphere. Forests and other vegetation are considered sinks because they remove CO₂ through photosynthesis.

¹³ Definition from the Earth System Science Partnership at <http://www.essp.org/index>.

devastating environmental, economic and humanitarian impacts, particularly for the millions of men and women in the developing world (Stern 2006). The uncertainty and disagreement that surrounds climate change is resulting in inaction or lack of commitment on the part of many governments and private institutions to act decisively. Yet many researchers, policymakers and activists are arguing that properly resourced action is needed, not only because of the profound effects that are already becoming evident for our physical environments, but also because of the deep social implications that climate change has as a 'cultural and political phenomenon', particularly for disadvantaged women and men in developing countries (Hulme 2009). These 'gender impacts' are considered throughout the report, with particular attention in Chapter 3.

1.2.3 How do global politics affect climate change impacts and responses?

One of the major challenges in addressing climate change is the fact that it takes place in a global context that is characterised by high levels of inequality and asymmetrical distribution of burdens and benefits. There are issues of inequality, not only with regard to who is responsible for emissions which have caused the problem, but also in terms of which countries are now suffering the harshest consequences, and which countries will be expected to bear the burden of mitigation and the cost of addressing the problems that have been created. It is the industrialised countries of the North which have benefited from a carbon-intensive development path that has enabled them to attain high levels of economic growth and prosperity. However the developing countries of the South, which have the lowest emissions per capita and often the highest levels of poverty, are now facing the consequences of climate change in terms of increased floods, droughts and unpredictable weather patterns.¹⁴ For example, in Africa's largest catchment basins of Niger, Lake Chad and Senegal, total available water has already decreased by 40 to 60 per cent over the last century (Simms and Reid 2006).

It is these developing countries that are now faced with a double burden of such environmental challenges, trying to attain economic growth and reduce poverty while under pressure to maintain low carbon emissions. All this is playing out in the context of a global environment in which resources, agency and power are heavily skewed in favour of powerful industrialised countries that are least vulnerable to the effects of climate change. In this context, climate change is too often perceived as an 'additional' issue rather than being integrated into all areas of policy, including economic, trade, agriculture, energy, transport and development policy. Not only is awareness of climate change often absent from these policies, but too often there is little coherence between policy areas, resulting in decisions that potentially exacerbate climate change. Many industrialised countries which are on the one hand apparently committed to cutting emissions and supporting climate change mitigation are at the same time continuing to invest in 'dirty energy' generated from fossil fuels such as coal, oil and gas and often failing to acknowledge the impact of their own public policies on the developing world.¹⁵

This situation has been referred to one of 'triple inequality' that is 'characterised by tremendous inequality in vulnerability, responsibility and mitigation [in which climate change] cannot be viewed,

¹⁴ In this report, we refer to the world in terms of 'North' and 'South' to denote those countries which are already industrialised or 'developed' and those which are considered to be less developed or 'developing', although obviously it is not as simple or clear-cut as these terms imply. While countries in the 'North' may include southern hemisphere nations such as Australia or New Zealand, it is also difficult to categorise emerging nations such as Brazil, China or South Africa and others which are developing rapidly and whose carbon emissions per capita are rising faster than many countries of the 'North'.

¹⁵ OECD Ministerial Declaration on Policy Coherence for development (C/MIN(2008)2/Final)

analysed or responded to in isolation from the larger crisis of global inequality' (Timmons Roberts and Parks 2006). Yet the policy environment to deal with these challenges is characterised by so much inequality itself that so far it has been unable to tackle these issues. Thus, climate change and the negotiations around it take place on an extremely uneven playing field. Not only are developing countries limited in their ability to ensure that their specific needs and concerns are integrated into effective, fair and sustainable solutions but poor people, especially women, are often kept at the margins of climate change responses.

1.2.4 Why is climate change a development issue?

Ever since the term 'climate change' was first adopted by meteorologists back in 1975, the problem was seen as a predominantly scientific and environmental one, requiring technical and technological solutions to prevent the release of further emissions that could lead to global warming. Until very recently little attention has been paid to the social dimensions of climate change in formal climate change debates, and the fact that exposure and vulnerability to climate risks are mediated by a huge range of social factors has been overlooked. Yet increasing evidence has shown that vulnerability to climate change is closely related to other deprivations, as the poorest people in developing countries, of which women constitute the majority, suffer disproportionately from its harmful effects (Masika 2002). This has led to the emergence of climate change as an urgent development issue as much as an environmental one.

There is evidence that climate change may create a vicious circle of poverty, as poor people's lack of adaptive capacity makes them more exposed to climate-related hazards, exacerbating the already disadvantaged status of many of the world's poorest and most vulnerable groups of people. These predictions have fuelled a growing recognition among policymakers that climate change may compound existing development challenges unless the environmental and social implications are addressed in a coherent and synergistic way. However, there is less understanding of the underlying power relations and gender inequalities which create vulnerability both to poverty and climate hazards (Ayers and Huq 2008). Chapters 2 and 3 provide a detailed discussion of the ways in which these gender inequalities intersect with climate change.

1.3 What is a transformative approach to gender and climate change?

This report aims to show that gender equality is not a 'residual' issue that can be left to consider at a later point but rather lies at the very heart of the problem and of solutions to climate change. Our approach calls for more than a simple integration of gender dimensions into existing policies but rather for significant changes, both in the ways climate change responses are developed and implemented, and in the outcomes they enable. Our view is that climate change and its responses offer an opportunity to reframe current development challenges through a new lens that examines global inequalities and the unequal power relations between men and women. This means looking at the causes and impacts of climate change with new eyes, putting the people who experience these impacts on a daily basis at the centre of all responses to climate change as participants and beneficiaries.

As already noted, climate change responses also offer an opportunity to transform these inequalities. We argue that gender transformation is both an important *condition* and a potential *end goal* of effective climate change responses and poverty reduction. By gender transformation we mean a world where: women are not disproportionately affected by climate change; both women and men have an equal voice in decision-making on climate change and broader governance processes; climate change policymaking institutions and processes at all levels are not biased towards men or women; both women's and men's needs and knowledge are taken into account in all policy and practice; and the broad social constraints that limit women's access to strategic and practical resources no longer exist.

We also take the view that understandings of gender and climate change cannot be reduced to individual components, such as women's vulnerability. They need to take into account the multiple dimensions of gender inequality, women's and men's experiences of climate change on the ground, and the gender dimensions of the global and national structures and processes that currently exist to respond to climate change. Understanding of these various dimensions is necessary to build a coherent, comprehensive picture of the problem and address the issues through appropriate strategies.

The report aims to offer concrete pathways through these multiple dimensions in order to inform clearer thinking and more informed policy and practice. It:

- Synthesises the growing body of research, evidence and examples of good practice at local and national levels on gender and climate change, and highlight gaps;
- Provides conceptual lenses to enable a sharper focus on the different but connected dimensions of gender inequality and gender difference in the context of climate change, and to provide clear points of entry for developing gender-aware, transformative policies and processes (Chapter 2);
- Examines the differential impacts of climate change and climate change responses on men and women and on gender roles and relations (Chapter 3);
- Outlines the current global responses, institutions and policies that have been proposed to address the problem, including the current market-based approach, asking how far they are meeting the needs and reflecting the voices of the poor women and men who are experiencing and tackling the impacts of climate change daily (Chapter 4);
- Points out gender-aware, people-led responses that are already emerging at community, national and regional level, drawing on existing good practices and examples that could be scaled up and replicated to enable more effective, relevant, equitable and empowering climate change policy and practice (Chapter 5); and
- Identifies ways forward, new strategies, tools and methodologies that could bring us closer to the goal of transformation (Chapters 3, 4 and 5).

1.4 Who is this report for?

The report is aimed at policymakers, practitioners and researchers working in the fields of development, gender equality or climate change. It assumes some basic understanding of the science behind climate change and focuses instead on the debates around why and how gender equality

matters, in order to provide practical analysis and tools for applying a more gender-aware, people-centred approach. The *Supporting Resources Collection* that forms part of the BRIDGE *Cutting Edge Pack* on Gender and Climate Change (2011) provides an annotated bibliography of further reading on climate change and related issues. *In Brief*, also part of the *Pack*, includes an overview of this report and two case studies that were developed collaboratively with grassroots organisations: FUNDAEXPRESIÓN in Santander, Colombia, and the Community Awareness Centre (CAC) in the Indian Himalayas. These organisations work in inspiring, innovative ways with local communities affected by climate change, with FUNDAEXPRESIÓN playing a key role in promoting strong local networks, and CAC engaging women and men in developing relevant, participatory solutions. Both organisations have a core commitment to gender equality and women's empowerment.

1.5 What processes led to this Overview Report?

This *Overview Report* (OR) – and the *Cutting Edge Pack* it is part of – is the result of a collaborative programme over two years that involved global contributors from a range of non-governmental, multilateral and bilateral organisations in shaping its content and key messages from the outset. In addition to engaging a core group of expert advisors from Africa, Latin America and Europe throughout the process, a global 'Community of Practice' engaged in online and face-to-face discussions around key debates highlighted in the *Cutting Edge Pack*. The OR and *In Brief* also benefit greatly from primary information that was co-generated through participatory processes with FUNDAEXPRESIÓN in Colombia and the Community Awareness Centre (CAC) in India, which has enabled us to capture not only the dynamic impacts of climate change at the local level but the innovative, gender-transformative responses that are being led by women and men in these regions.

2. A TRANSFORMATIVE APPROACH TO GENDER AND CLIMATE CHANGE

At last, 'gender' is slowly starting to be recognised as an important aspect of the way we understand climate change and the way we develop effective, sustainable responses at local, national and international levels. For example, the Ad Hoc Working Group on Long-term Cooperation under the UNFCCC's COP 16 in 2010 noted that 'the effects of climate change will be felt most acutely by those segments of the population that are already vulnerable owing to geography, gender, age, indigenous or minority status and disability' and that 'gender equality and the effective participation of women and indigenous peoples are important for effective action on all aspects of climate change.' It affirms that adaptation action should 'follow a country-driven, gender-sensitive, participatory and fully transparent approach' (UNFCCC 2010: 1–3).¹⁶

These shifts are very welcome, but in many ways the term 'gender' has become a 'catch all' term in the context of climate change, used to describe a range of issues in a rather un-nuanced, apolitical way. Most notably, 'gender' is often understood as being only about women's needs, rather than about the unequal social relationships between women and men that are imbued with power. This results in less effective climate change policies, institutions and processes and means that the potential of these to contribute to social change is missed.

The following section begins to map out a 'transformative' approach to gender and climate change that is explored in more detail in each of the subsequent sections. As noted in the introduction, we are arguing for a reframing of climate change and its responses that is focused on people and that is gender aware, capturing the complex, multiple gender dimensions of climate change rather than 'adding' gender concerns as an afterthought. Our view is that an understanding of these various dimensions is necessary to build a coherent, comprehensive picture of the problem and provide clear entry points for addressing the issues through appropriate strategies.

Only by transforming the way we see and respond to climate change – taking into account the often different needs of women and men, understanding the particular social norms and inequalities that constrain or enable them and giving them an equal role in decision-making – will the issue be effectively addressed. Yet climate change and its responses also present an *opportunity* to not only acknowledge global inequalities and the unequal power relations between men and women but to *challenge* these inequalities and, by doing so, contribute to social and gender transformation as an end goal.

This section starts by providing conceptual clarity around what we mean by gender and climate change, stressing that a gender-aware approach is not only about women but should be grounded in an understanding of gender *relations*. The section then sets out some of the multiple ways in which socially embedded gender norms, roles and expectations affect experiences of climate change and levels of participation in its responses. It begins to identify what gender-aware, transformative responses to climate change would look like and outlines some of the available frameworks for addressing gender in the context of climate change, which may be used on their own or in

¹⁶ http://unfccc.int/files/meetings/cop_16/application/pdf/cop16_lca.pdf

combination to address the various gender dimensions of climate change. Subsequent sections of this report apply this approach through more detailed discussion of climate change impacts, policies and initiatives.

2.1 What do we mean by ‘gender and climate change’?

Too often the need to consider gender issues as part of climate change policy and practice is interpreted purely as the need to better understand women’s needs and vulnerabilities and to include them in decision-making. While we recognise that identifying women’s specific needs and rights in the context of climate change is paramount, we also feel strongly that responses to climate change need to be grounded in an understanding of the relationships *between* men and women at the household level and at the wider community level – and of how these relationships are affected by, and influence, responses to climate change. It is about understanding the ‘socially constructed roles and opportunities associated with being a man or a woman and the interactions and social relations between men and women’ (UNDP 2009: 24). In short, while gender is about women and women’s rights, it is also about social justice.

A gender analysis focusing on these relationships needs to examine and challenge entrenched ‘gender norms’ and power imbalances that influence the extent to which people are affected by climate change and their ability to build greater resilience (CARE 2010). In Vietnam, for example, research by GIZ and AusAid found that climate change was exacerbating existing gendered vulnerabilities due to men and women’s different livelihood roles. Women’s workload tended to increase with the need to transplant rice as a result of late rainfall, and women also found it more difficult to rear livestock because of the reduced availability of natural resources and fresh water (GIZ 2010a: 29).

Men are also affected in specific ways because of their social roles as providers or because of expectations that they should be ‘brave’ in times of disaster or sickness. For example, climate change may reduce opportunities for men to take up paid work, resulting in unemployment and low self-esteem for the man as well as increased poverty for the family. Research has also shown that men are more likely to put their lives at risk in climate-related events such as floods or hurricanes (see section 3.3.)

A focus on gender relations needs to engage with issues of power, examining ways in which differential social positioning often leaves women disadvantaged compared to men, exacerbating existing forms of disadvantage and creating new ones (see, for example, Kabeer 1999; Jackson 1998; Agarwal 1997). While recognising these power relations, however, it is also important to remember that male and female roles do not always fall into universal ‘normal’ patterns and that climate change interventions need to meet a diverse range of needs and situations, such as female-headed households. In addition, while there may be universal similarities between gender roles, responsibilities and relations, the ways in which they are shaped and realised varies considerably between regions, countries and localities. An understanding of these particular contexts is vital for climate change interventions to be relevant and meaningful.

2.2 Why take the gender dimensions of climate change into account?

2.2.1 Unequal gender power relations affect the way men and women experience climate change

Socially embedded inequalities influence the degree to which women are affected by climate change – for example, women’s lack of property rights and land tenure means that they are often forced to work on less productive land and are excluded from access to agricultural training services or inputs that might enable them to diversify their livelihoods or increase their resilience to climate-related shocks such as flooding or drought (FAO 2011). Higher rates of illiteracy and lack of access to information about climate change-induced disaster may increase their exposure to risk, while lack of training in potentially life-saving skills such as swimming may compound that risk (Brody, Demetriades et al. 2008). When climate change leads to shortages of food or water, cultural norms may lead to greater malnutrition among girls and women. In parts of Asia, for example, women are expected to eat only once they have fed their families, which affects the share of food they receive (Ramachandran 2006).

There are also indirect impacts affecting women’s well-being. There is a risk that the water, energy and food shortages resulting from climate change may intensify time-consuming domestic roles that are often the domain of women, limiting their time to engage in decision-making, income-generating or community activities and therefore restricting their opportunities for empowerment or strategic change. Additionally, increased health risks arising from climate change may exacerbate time taken for caring roles, another gendered domain in which women tend to play the principal role.¹⁷

2.2.2 Climate change risks exacerbating gender inequalities

Climate change acts as a magnifying glass which exposes and can deepen existing underlying gender inequalities. Deeply ingrained inequalities in status and rights often translate into constraints for women around access to productive resources such as land, credit or property – and strategic assets such as education and active participation in decision-making. Cultural or social norms may compound these constraints by restricting women’s freedom of movement and voice.

Therefore, where women are often disproportionately affected by climate change in relation to men, particularly in poor communities, is in the choices they can make in adapting to change and their level of contribution to the decision-making necessary to adapt at household, community, national and international levels. Case studies in rural communities of southern Africa have shown how it is the men who migrate in times of difficulty and the women who are left to labour on increasingly unproductive land, while being responsible for household and family welfare (Petrie 2008). Gender inequalities in land ownership are often a major factor in determining the types of adaptation strategies women can choose. For example, a woman living in a rural area might have been allowed to farm surplus land and use or sell its produce, even though she did not have legal ownership. In cases where land becomes scarce because of climate change-induced drought or flood, she may lose these unofficial rights, however, because customary or statutory law does not permit her to own land. Losing land not only means a loss of income and food insecurity, but also a loss of autonomy and a sense of disempowerment.

¹⁷ For more information, see Esplen (2009).

These unequal power relations are further intensified by other forms of stratification such as poverty levels, race, caste, class, age or disability. A woman from a low caste, an older woman without family to support her or a woman who has reduced physical mobility are all likely to be even more susceptible to the immediate and longer-term impacts of climate change. It is important to realise that these social hierarchies can leave men as vulnerable as women in some cases, although in cases of extreme poverty it is almost always women who are most disadvantaged.

2.2.3 Women and men have different impacts on the environment

Gender roles, responsibilities and expectations have a significant effect on consumption patterns, carbon footprints, energy use, and transport. For example, evidence indicates that women are often responsible for the collection and management of energy sources in developing countries and yet also represent a large proportion of the estimated 1.4 billion people in the world who do not have access to modern energy infrastructure.¹⁸

Research has also shown that men and women's different consumption patterns and lifestyles mean that women have a smaller carbon footprint than men, regardless of whether they are rich or poor (OECD 2008). Therefore, a greater understanding of how gendered identity affects men and women's roles, activities and subsequent contributions to carbon emissions and resource-use is essential if mitigation policies are to achieve their desired effect and target the right groups. The box below describes the findings of research conducted in Europe on differences in carbon emissions for women and men.

Gendered consumption patterns and ecological footprints

A Swedish study that analyses differences in male and female consumption patterns in the global North and South concludes that women account for lower carbon emissions than men due to different needs and inequalities in access to resources. It shows that men's ecological footprint tends to exceed women's due to their higher energy use, particularly through emission-intensive modes of transport (higher levels of air travel, car usage and lower usage of public transport) (Johnsson-Latham 2007). Another study of energy use in four European countries found significant differences between men and women's total energy use, particularly in Greece and Sweden, with the largest differences for travel and consumption patterns (Raety and Carlsson-Kanyama 2010).

2.3 Why is it vital for climate change policies and processes to be gender aware?

2.3.1 Many climate change responses and institutions are gender blind

Gender equality has long been recognised as a core component of sustainable development and the achievement of the Millennium Development Goals (MDGs), and yet, so far, climate change policies have been notably *gender blind*. This means that they have rarely taken into account the differences in men and women's needs and capabilities and, consequently, often have an implicit male bias that privileges male needs, interests and priorities in the distribution of opportunities and resources. This is evident in the current lack of attention, or even mention, of gender in many of the key documents or

¹⁸ Figures for 2010 from the International Energy Agency's (IEA) *World Energy Outlook* (<http://www.iea.org/weo/>).

mechanisms relating to climate change such as the original UNFCCC and in the design of carbon markets and trading systems (see Chapter 4).

Often this is because the institutions that produce them are intrinsically patriarchal – not only are positions of decision-making power often dominated by men, but the institutions themselves have been shaped by men.¹⁹ As a result, the current approach to climate change has not integrated gender dimensions in a systematic or informed way. For example, in Nigeria, the Climate Change Commission Bill is currently awaiting presidential assent to be passed into law, yet it lacks any reference to gender inequality. The Bill not only fails to acknowledge the gender dimensions of climate change, it also does not specify gender expertise in the criteria for membership of the commission, thus missing an opportunity for social transformation and risking that the dominant perception of climate change as a scientific and technical issue will be further reinforced.²⁰

This gender blindness is problematic in that it leads to ineffective policies that fail to address the needs of half of the population and misses the opportunity for transformation, failing to challenge rigid gender norms that prevent households, communities or countries from strengthening their overall resilience to climate change. There is also a serious risk that by failing to take into account underlying gender inequalities, the very policies that aim to address the problem may magnify these inequalities. This has already been demonstrated in the case of extension activities, such as agricultural training or technology transfer programmes, which inadvertently exclude women because of poor understanding of their needs or false assumptions around their fixed roles.

2.3.2 Gender stereotypes are being reproduced through climate change responses

Women and men may be socialised into different roles and responsibilities, but they are also complex individuals who do not always comply with these normative ideas of how they should behave. Nor do men and women act or experience life in one-dimensional ways – rather their responses, experiences and actions are diverse and even contradictory at times. So both men and women can experience vulnerability in some dimensions of their lives and agency – having the capacity to change their situation and others’.

Much of the available information on gender and climate change does not recognise these complexities, often resulting in unhelpful stereotypes that perpetuate one-dimensional ideas of women as poor, vulnerable, virtuous and with a natural propensity to care for the environment, while men are portrayed as being violent, oppressive, polluting and irresponsible (Jolly 2004). The ubiquitous image of an African woman with a baby on her back collecting wood or water that is so often found on gender and climate change publications is an example of the way in which these generalised ideas become embedded in discussions of the issues (Okali 2011). These stereotypes overshadow women’s agency in their daily lives and in adapting to the effects of climate change. They also create barriers around the potential inclusion of men in addressing gender inequality.

As a result of this reliance on stereotypes, women’s poverty may actually be deepened through well-intentioned climate change interventions. For example, misinformed ‘gender-sensitive’ policies that attempt to integrate women often have an unintended effect of placing additional burdens on their

¹⁹ See Brody (2009) for further discussion.

²⁰ Personal communication with Titi Ngozi Akosa, Centre for 21st Century Issues, Nigeria.

already strained time by relying on their presumed closeness to nature and willingness to engage in unpaid labour to promote and lead environmentally friendly practices. While such development programmes may meet women's practical needs, they often neglect to provide the inputs for real strategic change or empowerment by changing access to land rights, credit or decision-making power, for example.

2.3.3 Human and women's rights are not part of climate change discussions

International frameworks of universal human rights already recognise and promote women's rights and entitlements, yet so far these have not been adequately integrated into climate policy, with little discussion around the legal frameworks that form a backdrop to climate change (see Section 2.4.5 and Chapter 4). The need for a more gender-aware response to climate change is too often framed in terms of women's potential role in enabling more effective interventions and in protecting natural resources such as forests, while the more 'political' issue of women's rights is sidelined or ignored. Nor has much attention been given to the way that climate change may violate the fundamental human rights of millions of the world's poorest people, whether their right to live, the right to security (through the risk of climate-related death, disease and injury), the right to food (through increasing food insecurity), the right to subsistence (through the climate-related threats to water, natural resources, property and shelter), the right to health (through rising malnutrition, water-related and infectious diseases) (Raworth 2008) or the right to be free from gender discrimination.

2.3.4 Representation of women in climate change negotiations is still very low

The participation of women in climate change negotiations, whether at national or international level, remains very low. At the UNFCCC COP 16 in 2010, women accounted for as few as 30 per cent of all delegation parties and between 12 and 15 per cent of all heads of delegations to the UNFCCC.²¹ Although the total number of female delegates has been slowly rising, women's leadership in climate change has remained stagnant, with little progress in the proportion of female heads of delegations over the last 14 years.

2.4. Identifying gender-aware ways forward

As already noted, there is a risk that climate change policies and processes will be neither effective nor fair unless they become more *gender aware*. This means recognising that development actors are women as well as men, that they are constrained in different and often unequal ways and that they may consequently have differing – and sometimes conflicting – needs and priorities (Kabeer and Subrahmanian 1996). It ensures that the contributions of both women and men are harnessed into successful adaptation and mitigation programmes. Through examples of interventions and innovative responses at the grassroots and policy levels of climate change, this report identifies inspirational gender-aware pathways for climate change policy and practice. Five key messages underlying these pathways are outlined below.

²¹ Data from www.gendercc.net.

2.4.1 Technological and market-based responses alone cannot address the gendered social implications of climate change

The complex and all-encompassing nature of climate change means that it cannot be addressed solely through technological and market-based responses but requires a much more holistic and multidisciplinary approach. It is essential to acknowledge that science is not the only framework for examining climate change and that there are a multiplicity of other possible framings of the problem, whether as an issue of global injustice, over-consumption, market failures, technological hazards or even as a natural phenomenon (Hulme 2009). A gender-aware perspective that acknowledges the influences of social relations, cultures, beliefs, values and attitudes on our understanding, experience and perceptions of the risks of climate change could contribute to a more balanced, nuanced approach to the problem that can take on board these multiple understandings.

Furthermore, to understand the wider global environment in which climate change is taking place, it must be considered within the context of other, interconnected international crises facing the global community, which include the global economic crisis, international terrorism, chronic food shortages and the spread of HIV/AIDS. All of these crises point at a need for a more holistic approach that takes account of the wider political and economic global context and the power dynamics that underlie the problems.

2.4.2 It is vital to move gender issues beyond adaptation responses

While attention to issues of gender and climate change has been gradually increasing, the focus has tended to remain on issues of women's vulnerability and, consequently, on the area of adaptation, usually at a very local level. While this is obviously important, it is critical that gender analysis is not limited to adaptation and to domestic issues traditionally associated with women such as cooking or other household tasks as it has tended to be. Rather, a gender perspective needs to be an integral part of all areas of climate change thinking and policy. This includes considering the relevance of gender issues for mitigation strategies and the implications of gender inequalities and power imbalances for the current market-based responses that are proposed to address climate change. It is also vital to ensure that mitigation and adaptation approaches are considered together rather than being treated as separate concerns.

2.4.3 Women's knowledge and experience is vital for climate change solutions

While there are strong indications that women are more vulnerable than men in the face of climate change, women are more than just victims: they are also key agents in adapting to and mitigating climate change, with valuable knowledge gained from practical experience (Mitchell, Tanner et al. 2007). Men and women have different but equally valuable and relevant responses and contributions, so need not only to be equally represented in policy and programme planning at household, local, and national levels but also need to be present in high-level decision-making processes at the international level.

There are positive examples of progress towards this goal. Since 2009 the Women's Environment and Development Organization (WEDO) has been running a project, the Women Delegates' Fund (WDF), to support women delegates from the global South to join their national negotiating teams, enhancing the scope and visibility of women's leadership at this level of decision-making (Burns 2011).

However, women's meaningful participation in decision-making around climate change requires more than the presence of more women in climate change institutions and processes. It also requires attention to the deep-rooted social and cultural inequalities that can act as constraints to women's real inclusion and prevent them from participating equally in these processes. These constraints include: economic dependency and lack of adequate financial resources; illiteracy and limited access to education; lack of information; lack of the same work opportunities as men; discriminatory cultural and social attitudes and negative stereotypes perpetuated in the family and in public life; the burden of domestic responsibilities; and intimidation, harassment and violence (see Brody 2009). All of these issues need to be addressed if the barriers to women's inclusion are to be overcome.

2.4.4 Climate change responses need to promote social and gender justice

Social justice refers to the creation of societies and institutions that are based on equality and human rights, and that recognise and respect diversity. Social justice is not only a desired outcome of a transformative approach to climate change but also needs to underpin efforts to develop equitable processes. The notion of putting social justice at the heart of equitable solutions to climate change has been encapsulated in the term 'climate justice', which, according to the Mary Robinson Foundation, 'links human rights and development to achieve a human-centred approach, safeguarding the rights of the most vulnerable and sharing the burdens and benefits of climate change and its resolution equitably and fairly' (Mary Robinson Foundation website 2011).

Many climate change and environmental activists have been campaigning under the banner of climate justice, including groups such as Via Campesina – an international movement which brings together millions of peasants, small and medium-size farmers, landless people, women farmers, indigenous people, migrants and agricultural workers from around the world, which organised its own parallel forum during COP 16.²² However, while climate justice is a useful concept, it should not be assumed that it encompasses the needs and voices of both men and women. To be effective and representative, climate justice arguments need to be grounded in an understanding of gender justice.

'Gender justice' refers to equitable treatment of men and women, women's rights, the granting of full citizenship rights to women and the acknowledgement that equality between men and women requires a process of social transformation. It is particularly helpful in the context of understanding climate change because it leads us to consider the inherent inequalities present in the current system, and suggests a complete transformation rather than 'adding gender' to the existing climate change structures. It is useful in that it highlights the importance of rights, entitlements, responsibilities and accountability of key political, economic and social institutions that have relevance for climate change.

2.4.5 Human and women's rights need to inform responses to and understandings of climate change

'Human rights law is relevant because climate change causes human rights violations. But a human rights lens can also be helpful in approaching and managing climate change' – Mary Robinson (International Council on Human Rights Policy 2008).

²² See <http://www.viacampesina.org/> for more information.

Human rights are bound up with the concept of both climate and gender justice. They are defined as:

‘...freedoms to which all individuals are entitled, including the right to life and liberty, freedom of thought and expression, or equality before the law, and are proclaimed under international law to protect all individuals regardless of their race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.’

(Article 2, Universal Declaration of Human Rights)²³

Human rights are relevant to climate change because climate change risks violating fundamental human rights. A rights-based approach highlights the state’s role and responsibilities in providing basic entitlements – such as women’s access to clean water and sanitation – that might be threatened in the context of climate change and in building climate change resilience. It presents an alternative to a needs-based approach of targeting the poorest people as beneficiaries of good will, focusing instead on empowering women and men to assert their rights to existing resources and to participate in decision-making as a matter of legal obligation. This brings an ethical and moral dimension that has often been lacking in climate policy (Nyamu-Musembi and Cornwall 2004).

Despite the absence of any clear reference to human rights in existing global climate agreements, existing international human and women’s rights frameworks, particularly CEDAW, are powerful tools through which the importance of gender equality and women’s rights in climate change can and should be promoted on local, national and international levels (see the box below). Applying a human rights-based approach to climate change could improve both the sustainability and effectiveness of climate change policies, strengthening communities’ and nations’ responses to climate change by facilitating greater transparency, participation, information and accountability at all levels (McKiernan and Loftus-Farren 2011).

²³ <http://www.un.org/en/documents/udhr/>

How are international human rights frameworks relevant to climate change?

1948 Universal Declaration of Human Rights represents the first global expression of rights to which all human beings are inherently entitled, including the right to life.

The **International Covenant on Civil and Political Rights (ICCPR)** protects rights to life, liberty, property, freedom of expression and assembly, political participation, a fair trial, privacy and home life, and protection from torture. These rights are fundamental for the empowerment of women to be able to participate equally in the responses to climate change and are generally guaranteed through judicial mechanisms, including at international level.

The **International Covenant on Economic, Social and Cultural Rights (ICESCR)** includes rights to work, education, social security, to 'enjoyment of the highest attainable standard of physical and mental health', to 'adequate food, clothing and housing, and to the continuous improvement of living conditions'. These rights are directly related to the impacts of climate change yet are rarely protected by international mechanisms and tend to depend upon domestic welfare mechanisms (ICHRP 2008).

The **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)**, adopted by the UN General Assembly in 1979, defines gender equality and sets out principles for achieving it. It establishes an international bill of rights for women as well as an agenda for action to guarantee the implementation of those rights. This Convention has direct implications in the context of climate change, as it obliges states to eliminate discrimination against women in rural areas to ensure that they participate in and benefit from rural development and are involved in all levels of development planning (UNFPA and WEDO 2009).

Summary

This chapter has introduced a 'transformative' approach to gender and climate change. It calls for far greater social and gender awareness in the way climate change is understood and addressed, arguing for a multidimensional understanding of gender issues whose starting point is gender power relations. This means considering ways in which different social positioning and gender inequalities shape how women and men are affected by, and can respond to, climate change. It means both responding to these inequalities as part of effective, gender-aware responses and challenging them through appropriate climate change interventions grounded in principles of justice and rights, and through broader social measures.

The next chapter applies a 'people-focused' lens to climate change to highlight its impacts on women and men, as well as the way that climate change alters the relations between men and women and their respective roles.

3. UNDERSTANDING THE HUMAN AND GENDER IMPACTS OF CLIMATE CHANGE

‘Climate change is one of the most complex, multifaceted and serious threats the world faces. The response to this threat is fundamentally linked to pressing concerns of sustainable development and global fairness; of economy, poverty reduction and society; and of the world we want to hand down to our children.’

(Ban Ki-Moon 2007: 1)

This chapter aims to present a new approach to our understanding of climate change by examining the human impacts of climate change through a gender lens. It draws on existing research, case studies and evidence to show the human face of climate change and its impacts on gender relations and inequalities.

Although large amounts of resources and time have been spent investigating the environmental and economic impacts of climate change, less effort has been invested in identifying and addressing the social and human dimensions of the problem. As awareness about gender issues and concerns has grown, and civil society and international organisations working on gender issues have joined forces, there is an increasing amount of evidence on the human and gender impacts of environmental degradation and natural disasters on ‘climate-sensitive’ sectors such as food security, agriculture, water, energy and forestry, as well as the broader implications of climate change for social sectors such as health and education (Otzelberger 2011). There is also growing evidence of the implications of climate change on the realisation of the MDGs, with the differential impacts that climate change has on men and women, boys and girls affecting all MDGs, including food security, girls’ education, women and girls’ access to health care, economic empowerment and overall issues of gender equality (UNDP 2007, UNDP 2009).

Yet, despite this acknowledgement of the disproportionate impacts of climate change on the poorest and most vulnerable groups in society, so far there is minimal information on specific impacts of climate change on men and women and the unequal relationships and power dynamics that compound them. Where gender-specific research exists, it has tended to highlight women’s vulnerability to climate change, in terms of the impacts of droughts, floods, heat waves and energy shortages on women’s livelihoods in developing countries. But less attention has been given to the social, economic and cultural contexts that shape this vulnerability or the ways in which unequal gender relations are reinforced or created by climate change. Having this more contextualised information is a vital part of developing more effective forms of intervention that respond to realities on the ground, and to the different needs of women and men in real situations.

In many cases it is not necessary to start from the beginning, ‘reinventing the wheel’. In fact, there is already significant available evidence outlining the gender dimensions of access to resources such as land, water, basic services and knowledge that can form the basis for further research on the gender impacts of climate change.

3.1 Climate change-induced resource shortages

One of the most challenging impacts of climate change upon human populations is the strain that new environmental conditions puts on the availability of natural resources. Although there is still too much uncertainty to be able to predict the exact causal effects of climate change, it is already evident that water, energy and food sources are becoming scarcer as climate variability becomes more severe (Simms et al. 2005; Simms and Reid 2006; Reid et al. 2007). This will have huge implications for women and for gender relations. The practical increase in workload experienced by many women may also lead to them having less time to engage in decision-making, income-generating or community activities (Terry 2009).

3.1.1 Food production

‘There is progress on climate change. But out there is another major problem. It is very hard to imagine how we can see a world growing enough crops to produce renewable energy and at the same time meet the enormous increase in the demand for food which is quite properly going to happen as we alleviate poverty.’

(John Beddington, Chief Scientific Adviser to the UK Government)²⁴

One of the major concerns around climate change is the impact that it is already having on food productivity, particularly in those parts of the world where rainfall is becoming less predictable and crop failure may become more common. As land productivity decreases and the global population rises, from a current 6.2 billion in 2010 to a predicted 9.5 billion in 2050, there are major questions around how enough food will be produced to feed this growing number of people at a time when both land and water availability are decreasing (GO-Science 2011). It is estimated that by 2050 the world will need 40 per cent more food, 30 per cent more water and 50 per cent more energy, yet how this will be achieved at a time when climate change is threatening all of these areas remains a serious challenge and will have major implications for gender equality, given that scarce resources are rarely equally distributed. As climate change creates rising temperatures and unpredictable rainfall, it is estimated that food production may decrease by as much as 50 per cent by 2050 in some African countries (IPCC 2007).

There are various gender implications to the rising threat of food shortages, with both the production and consumption of food being highly gendered (see Section 3.1.2). With women making up a large proportion of the farmers in the South and by some estimates accounting for up to 70 per cent of the agricultural workforce in Africa, there are clear gender-specific impacts of climate change on agriculture (IAASTD 2009). As rainfall becomes less predictable, making agricultural work more labour-intensive, in many cases women will increasingly carry the burden of the additional work and have least access to necessary inputs. In addition, as climate change increases the likelihood of crop failure, women often face the most negative economic implications, as they have fewer assets on which to rely and limited access to alternative sources of income or livelihood (Blackden and Wodon 2006).

²⁴ Speech to the GovNet Sustainable Development UK Conference, March 2008.

As land productivity falls and the use of technology or chemical fertilisers becomes more necessary to sustain crop outputs, there is also a risk that gender inequalities may be exacerbated due to women's reduced access to both technology and fertilisers. In addition, the time pressures on women in rural areas to collect water or fuel often means they have fewer hours to spend on productive income-generating activities than men (Quisumbing and Pandolfelli 2009).

3.1.2 Food security

'Breaking the cycle of hunger and poverty at its roots begins with women. Hunger breeds insecurity and often exacerbates circumstances that lead to conflict and crisis, and creates situations where women and girls are often victims of abuse, rape and violence. In situations of desperate poverty, access to food is power.'

(Josette Sheeran, World Food Programme Executive Director (WFP 2009: 2)

Women's lack of entitlement to productive resources, including land, livestock, agricultural implements and credit make them more vulnerable to food shortages. Research shows how social and cultural norms can translate into different gender-specific vulnerabilities, with girls tending to be more seriously affected by food shortages than boys, and rainfall shortages that reduce food availability being more strongly correlated with death among girls than boys (Stern 2007).

Malnutrition and under-nutrition already cause up to 3.5 million deaths each year, but this may increase as land productivity falls further as a result of climate change. There are gender dimensions to malnutrition, with women and children making up the larger proportion of malnourished people in the world, due to social and cultural norms regarding who is prioritised within the household. Evidence shows that pregnant women are particularly vulnerable to malnutrition and that this can affect maternal health and lead to low birth weight and higher risk of child mortality. Research has shown that, without adequate adaptation, by 2050 there could be an additional 25 million malnourished children as crop yields fall and prices rise.²⁵

Yet understanding vulnerability to malnutrition requires more than an analysis of environmental changes and their impacts on crop outputs. It is also vital to understand the social factors and underlying power dynamics that influence who has access to food, whether at national, community or household level, with clear evidence that women and girls' lower status in society has a direct impact on their nutritional levels and decisions regarding food allocation at the household level. This is particularly evident in South Asia, where underlying gender discrimination, and unequal power relations within the household and society, mean that women and girls frequently suffer from food and nutrition insecurity, even in times when food is not scarce (Ramachandran 2006).

In addition, there are security issues linked to the scarcity of food and water, to which women and girls are particularly vulnerable. As water sources dry up and fuel becomes increasingly scarce, women and girls may be obliged to walk longer distances to fetch water and fuel, which exposes them to the risk of harassment or sexual assault. This is particularly acute in areas of conflict, with many accounts

²⁵ International Food Policy Research Institute (IFPRI) – www.ifpri.org.

of women and girls from refugee camps around Darfur being attacked when searching for water and kindling (Brody, Demetriades et al. 2008).

3.1.3 Energy poverty

Currently 1.6 billion people – or 25 per cent of the global population – especially in South Asia and sub-Saharan Africa lack access to modern energy infrastructure, with an estimated 2.4 billion people still relying on biomass – wood, agricultural residues and dung – for cooking and heating, a figure which is set to increase to 2.6 billion by 2030 (IEA 2010).

There are clear gender dimensions of energy poverty, with the gendered division of household tasks and reproductive activities around cooking and food production meaning that women are often the primary users of household energy. They are, therefore, the most adversely affected by lack of electricity, particularly in terms of time spent gathering fuel or the health impacts of relying on traditional wood-burning stoves. In rural India, for example, research shows that women spend anything between two and seven hours a day collecting fuel for cooking, while in rural sub-Saharan Africa, many women carry 20kg of fuel wood an average of 5km each day (IEA WEO 2002).

As climate change affects the availability of traditional fuel sources and energy becomes more commoditised, scarce and expensive, it is essential that gender dimensions are taken into account in policymaking on energy provision to avoid the feminisation of poverty and further exacerbation of gender inequalities (UNDP and Energia 2004). It is also vital to meet electricity needs through clean, renewable processes such as solar or wind power. Yet, as increased public and private investment is put into these new renewable forms of energy, there is a risk that the increased costs may be passed on to the consumers. This also has strong gender-specific impacts, with user fees or increased charges for electricity having a disproportionate effect on the poorest, and households with the lowest incomes, including female-headed households, tending to spend a much larger proportion of their income on energy (Rodenberg 2009).

3.1.4 Water scarcity

The impacts that climate change will have on water are now clearly recognised and acknowledged by the scientific community, with the IPCC stating that there is a high probability of increasing variability and intensity of rainfall, as well as the likelihood of both floods and droughts (Bates, Kundzewicz et al. 2008). With changing rainfall patterns and an increasing risk of water-related disasters, not only will crop production and food security be affected, but there will also be less availability of clean water to meet people's basic needs. There are currently 900 million people worldwide without access to clean water and over 2.6 billion who lack access to basic sanitation, a large proportion of which are women and girls.²⁶ Research in sub-Saharan Africa, for example, has shown that women and girls spend a total of 40 billion hours per year collecting water, which is equivalent to a year's worth of labour by the entire workforce of France (UNDP 2009).

The example below is from CAC in India – an organisation that introduces gender-aware, sustainable approaches to climate change in participatory ways. The example shows the impact that water scarcity can have on exacerbating existing social inequalities within communities.

²⁶ DFID data – www.dfid.gov.uk.

Water scarcity in Nainital, India

In the Nainital district of India, women noticed the rain was coming less frequently and water shortage was becoming an issue. They have tried to overcome this problem in several ways. Some families have their own water tanks, and other families have joined forces to build pipelines, which can extend over 2km.

Less wealthy families rely on the traditional underground water holes called *noalas*, which have seen a resurgence in recent years. These sources, which had previously fallen into disrepair from lack of usage, have since been cleaned and covered in concrete to protect them. Yet, while the *noalas* have assisted many women in water collection, they cannot support all the families in the area, and often wealthier families have privileged use of the water source, forcing poorer women to travel further to collect water or limit their use.

(Based on information generated through participatory processes conducted by BRIDGE with CAC in 2011)

There are clear, well-documented gender dimensions to the issue of access to water (Sever 2005). This is because many poor women access water from 'common property' such as rivers or lakes but the freedom to use these sources is being restricted as water becomes a scarce and, therefore, marketable commodity. The supply of water is being increasingly contracted out to private providers in developing countries, with user fees being charged and only those households which can afford it being able to connect to water mains. This has huge gender-specific implications, with women often unable to meet the charges or forced to borrow money to do so, since their activities may not generate an income (Bell 2001).

As a result, they may be forced to walk longer distances for a supply that is free. The example overleaf from Nigeria is just one case study of the way that water scarcity may affect women's well-being and opportunities.

The privatisation of water is also a human rights issue, which affects women in particular (see example below).

Privatisation of water as a gender issue

In 2000 the water services in the Bolivian town of Cochabamba were privatised, leading to an increase of up to 300 per cent in the cost of water for the local community. Women and those responsible for household water and reproductive tasks were particularly hard hit by this price increase. They were faced with unmanageable costs and found that neighbourhood and communal water systems that had been built through their own work and contributions were now the property of the private companies. In the protests and social conflicts that followed, women played a key role in defending their right to water, the right of the community to water, and recognition of their roles and responsibilities for water collection.

(Peredo Beltran 2004: VIII)

Climate-induced water shortages disproportionately affect women

Research in the coastal communities of Lagos state in Nigeria have shown how rising sea levels and the salinisation of freshwater sources is creating additional pressures on women's livelihoods, as land becomes unfit for agricultural purposes and the challenges of obtaining fresh water for family use takes longer and longer. As one woman stated: 'getting water for household use is now a day's job', taking time and additional cost, as families are forced to buy fresh water from vendors, often using up as much as 50 per cent of their average monthly income.

Whereas men from these communities tend to leave to explore other opportunities, it is the women who are responsible for maintaining the household and its water needs and who must develop adaptive strategies to cope with climate change. Their lack of mobility and limited time (due to the demands of water collection) mean that they are forced to engage in low-paid activities such as petty trading, labour at construction sites and other informal jobs which do not require frequent movement out of the community, and leave them with enough time to collect water. Women have also been finding ways of treating water to respond to the crisis, collecting rainwater and boiling contaminated water, yet the lack of climate change awareness and information makes it difficult for them to make informed and sustainable adaptation choices – for example, around which crops may survive in the new conditions.

(Ngozi Akosa and Oluyide 2010)

There are also gender issues in the design and management of water programmes and the extent to which women and men are consulted and represented. Too often women are only considered as beneficiaries of development-led water programmes, with little consideration of their roles as farmers, food providers and managers of water resources. Gender inequalities in land rights and ownership mean that women rarely have access to water rights, since these are often closely tied to land tenure arrangements and are transferred with land. Although women may provide the majority of the labour force for working on the land, they often have no rights to participate in organisations that take part in decisions regarding water and land use and are often excluded from management or decision-making around water (WWC 2010).

3.2 Health impacts of climate change through a gender lens

The World Health Organization (WHO) has highlighted how climate change affects the fundamental requirements for good health and estimates that as many as 140,000 additional deaths are caused each year by the effects of global warming (WHO 2010). Uncertain scenarios and lack of data, particularly gender-disaggregated data, make it difficult to outline clear causal relationships between climate change and health impacts. Yet it seems evident that as resources become scarcer, temperatures become more variable, and climate change-related natural phenomena such as heat waves, droughts, floods or earthquakes become more common, there will be a rise in climate-related disease as well as increased risk of starvation.

Of particular concern are water-borne diseases. As the frequency and intensity of floods increases, more freshwater supplies will be contaminated and the incidence of water-borne diseases may rise, as mosquitoes and other insects find more breeding grounds (WHO 2010). Research by the WHO shows that as much as 80 per cent of all illness is due to unsafe water supplies, through diseases such as cholera, diarrhoea, malnutrition, malaria and dengue, all of which are highly climate-sensitive and are expected to worsen as the climate changes (UNDP 2009).

Gender inequalities and related differentials in access to education, information and healthcare resources mean that women and girls may be more exposed to disease and have less access to medical services when they are ill, lacking the economic resources to pay for healthcare as well as facing social and cultural constraints that may limit their mobility (Brody, Demetriades et al. 2008). Women may also be more vulnerable to disease due to physiological differences from men – for example if they are pregnant or lactating. Furthermore, as households become ill, it is women who often carry the burden of increased sickness in the household and community because of the caring responsibilities they are expected to take on (Nelson, Meadows et al. 2002).

3.3 Gender impacts of climate-related disasters

Research shows that the frequency and intensity of natural phenomena such as floods, earthquakes and hurricanes may increase in the context of climate change, with the number of reported weather-related natural phenomena having tripled since the 1960s, and over 60,000 deaths happening each year, mainly in developing countries (see, for example, IPCC 2007). Since 1975, disasters have claimed the lives of more than 2.2 million people, with climate-related storms, floods, droughts, heat waves and other weather-related phenomena responsible for two-thirds of the fatalities and economic losses from disasters (UNISDR 2009).

As much research has already shown, there is nothing ‘natural’ about the consequences of natural disasters, with the real causes of the disaster often being the underlying vulnerabilities caused by absent or inadequate infrastructure, overcrowded housing and weak institutions responsible for lack of preparedness (World Bank 2010a). As explained in Section 3.8.1, poverty plays a major role in creating vulnerability, with lack of information and access to resources making it difficult for disadvantaged groups to build resilience or coping strategies for when crises occur.

Underlying gender discrimination and women’s higher levels of deprivation make them particularly vulnerable when disasters strike. Research indicates that women and children are up to 14 times more likely to die in natural disasters than men. In the 1991 cyclone and floods in Bangladesh, for example, the death rate among women aged 20–44 was 71 per 1000, compared to only 15 per 1000 for men (Aguilar 2006). This was largely due to unequal access to information, which tended to be directed at men, as well as social and cultural norms that limited women’s physical mobility – such as the fact that women and girls are rarely taught swim in some cultures (Cannon 2002).

Too often, women’s vulnerability is seen as an issue of their physical weakness, yet research that takes a social vulnerability perspective has shown that the principal reason why women experience more vulnerability is their weaker asset base and the consequent lack of resilience they have to

external shocks created by climate change (Moser and Satterthwaite 2010).²⁷ Evidence has also shown that women’s vulnerability in natural disasters is directly related to their economic and social rights, with a comparison of gender differences in deaths from natural disasters in 141 countries revealing that in countries with greater gender equality, the differential in vulnerability disappears (Neumayer and Plumper 2007) .

There is evidence that gender roles are also affecting the ways men are being affected by natural disasters. Research indicates that men may feel pressured into taking ‘heroic’ actions, which places them at a higher risk than women and children. For example, after Hurricane Mitch hit Central America in October 2000, a higher proportion of men than women were killed due to risk-taking behaviour (UNDP 2009: 57). Men also may have a harder time coping with the aftermath of crises and are more likely to turn to gambling, alcoholism and violence due to the undermining of their traditional role as providers and the undermining of their male identities (World Bank 2001; Hemmati 2009).

3.4 Gender impacts of climate change-induced migration

As climate change makes certain livelihoods less sustainable, particularly in rural areas where crop production is falling or coastal areas where rising sea levels threaten human security and vulnerability to natural disasters, migration is becoming increasingly common. There are estimated to be around 20–25 million such ‘environmental refugees’, with the Stern Review on the economic consequences of climate change warning that by 2050, ‘200 million more people may become permanently displaced due to rising sea levels, heavier floods, and more intense droughts’ (Stern 2006: 65).

Migration is often used as a strategy of last resort, when all other coping mechanisms fail and people are forced to sell land or assets and migrate to new areas to seek new livelihoods. It, therefore, has considerable gender implications. There are gender differentials in the very causes of migration as well as who migrates, where they migrate to, for what reason and for how long, as well as the secondary impacts their migration has on other family and household members, and their communities. The example below looks at how gender differences have affected decisions to migrate in Namibia.

Gendered opportunities in the face of climate change

In the face of climate change in rural Namibia, when agricultural activities could no longer support their livelihoods, men and women developed different coping strategies that influenced the extent to which they were obliged to migrate or not. Women tended to be more flexible in adapting and engaging in a range of informal activities from basketry, nut processing or rearing of chickens and other small animals. The fact that women lacked the technical skills to participate in formal employment led them to diversify into small local activities, whilst men tended to search for work further afield, often in small-scale mining. Consequently men and women’s income-generating capacities differed, with men tending to have greater socio-economic security and therefore being better placed to deal with climate shocks.

(Angula 2010)

²⁷ Asset base includes people’s ‘stock of financial, human, natural or social resources that can be acquired, developed, improved and transferred across generations’ (Ford Foundation 2004: 9). It includes tangible and intangible assets.

While migration obviously brings disadvantages for both women and men, particularly where women are left to manage in men's absence, research has shown how in some cases it can have positive outcomes in terms of challenging gender inequalities. For example, the rise in the number of female-headed households while men are away working can have empowering impacts in terms of increasing women's control of household resources and decision-making power, as well as improving their economic status through the receipt of remittances (Chant 1998). On the other hand, the absence of working male family members can increase women's burden of agricultural labour and oblige them to assume yet more responsibilities but without equal access to the financial, technical and social resources that men may have. This is particularly the case when women lack land and property rights and, therefore, find themselves with responsibility for agricultural productivity yet without the rights that would enable them to access the services and resources they may require to make this sustainable (Lambrou and Piana 2006a).

3.5 Gender dimensions of conflict over resources

As resources become increasingly scarce and climate change undermines the provision of food, clean air and adequate water supplies, not only human development but also human security may be threatened, leading to an increased risk of conflict and insecurity (Dankelman 2010). The UN Security Council now recognises climate change as a human security challenge due to the risk of conflict between countries as resources become scarcer and suitable land both for food and fuel production as well as for human settlements becomes harder to find.

As climate change increases the risks of flooding, disease and famine, it may create new sources of conflict not just within but between countries. Research has shown how decreasing seasonal rains, which create drought and economic difficulties, can increase the likelihood of civil war by as much as 50 per cent (Edward, Satyanath et al. 2004). Little is known at this point about the gender dimensions of climate-induced conflict, although much research highlights the negative effects of conflict on gender relations, and the way that it can exacerbate existing inequalities and create new vulnerabilities as well as leading to increased gender-based violence (El Jack 2003).

It is not only conflict arising from resource shortages that raises problems for gender relations, however. There is also the risk of conflict resulting from inequitable and non-inclusive interventions around mitigation, particularly in the case of market-based policies that tend to commodify and privatise public goods (as discussed in Chapter 4) and deprive local communities of their rights to natural resources upon which they depend (Roehr 2008). Research in Indonesia has highlighted the possible conflicts that may arise from market-based forest conservation policies promoted as Reducing Emissions from Deforestation and Forest Degradation (REDD) in the case where legal land rights are not clearly defined and disputes arise around how to share revenues equitably among different stakeholders.²⁸ There are also concerns that the lucrative nature of REDD, combined with legal loopholes in regulatory systems, could breed corruption in such a way that the indigenous

²⁸ REDD is a framework that is part of the Bali Action Plan. It works on the principle of rewarding owners of forests in the South with 'payments for their environmental services' to discourage them from cutting down forests and thereby preventing the release of carbon stored by forests. See Chapter 4 for a more detailed explanation.

communities that play such a central role in conserving the forest may not benefit from the income generated, leading to frustration and possible violent conflict (see Chapters 4 and 5).²⁹

3.6 'Indirect' gender impacts of climate change

As well as the direct effects of climate change on the obviously climate-sensitive sectors such as water, agriculture or food security, there are also many 'indirect' impacts on social sectors such as education and employment, in which existing gender inequalities may be exacerbated. In cases where women already face discrimination and limited access to resources or services, as in the example from Ethiopia given below, climate change may reinforce inequalities still further.

There is still relatively little understanding of the indirect human effects of climate change in those areas where gender dimensions appear less obvious, particularly in the wider domain of mitigation. This includes areas such as technology, infrastructure, transport, energy access, employment and housing. As the pressure increases on countries in the developing South to contribute to international targets on emissions cuts, however, and the demands to implement low carbon development become more urgent, these issues will become increasingly important, with repercussions for women and gender equality more generally. As the gender dimensions of these areas are already well known and documented in many countries, there is no need to start from scratch, but it is important to reflect this evidence within climate change-related processes and to consider its implications for mitigation.

Climate change affects girls' education

Research in Ethiopia has drawn attention to the gender-differentiated impacts of climate change on girls and boys, with many girls being obliged to work for cash during difficult periods of droughts to obtain an income for their families, thereby sacrificing their education and long-term prospects. In the Lalibela region, for example, following periods of drought many school girls – some as young as 11 or 12 years old – have ended up working as domestic labourers in the local town, where they are more likely to be exposed to abuse and exploitation.

A common practice for girls during drought periods is to sell firewood in the local markets as an alternative income-generating activity. This creates the burden of having to spend several hours looking for a substantial supply of firewood and then carrying this on foot to local markets in nearby towns. Tigist, a 16-year-old girl from Lasta District, reported that she made beer and sold it at the market when her family faced difficult times during droughts. She reported that this is inevitably having an impact on her education: 'I've had to miss school at least once or twice a week to make beer. That also made me get low exam results this year.'

(Swarup et al. 2011)

²⁹ Project Groundswell: <http://projectgroundswell.com/2009/11/20/will-redd-be-a-cause-of-conflict/>

3.7 Gender impacts of climate change policies

As well as the direct impacts of climate change on people's livelihoods and gender relations, there is also a need to consider the secondary impacts resulting from policies, programmes or actions taken by governments, NGOs or the private sector in response to climate change. Many examples already exist of how misinformed 'gender-neutral' policies that target 'vulnerable communities' without taking into account gender dynamics can exacerbate inequalities (Nelson, Meadows et al. 2002).

The experience of GIZ and AusAID in Vietnam, for example, shows how adaptation and mitigation policies were designed from a technical, often male-biased perspective that did not consider the possible negative consequences of policies on women or the way they might exacerbate existing inequalities. For instance, forest protection measures that aimed to lead to the conservation of natural resources in fact contributed to the further exclusion of poor and landless women who were dependent on various natural resources from the forests and river banks for their livelihoods (GIZ 2010a).

3.8 Poverty, social vulnerability and climate change

This section addresses the way in which climate change is inherently tied up with wider issues of access to resources, poverty and vulnerability. It examines the overlaps between poverty and vulnerability to climate change but also discusses the role of political, social and economic factors in limiting people's ability to cope with climate change.

3.8.1 The gender dimensions of poverty and vulnerability

There is a clear relationship between poverty and vulnerability to climate change (IPCC 2007). However, the intersection between gender, poverty and vulnerability is more complex, raising questions of how far women's vulnerability to climate change is due to their poverty and how much to non-economic factors and cultural norms (Terry 2009). As research has shown, although poor people – particularly women – are undeniably more vulnerable to climate change than the non-poor, marginalisation and deprivation are not the same as vulnerability. It is vital to consider other factors beyond material deprivation – as measured in poverty indices – by taking a social vulnerability approach that examines root causes of vulnerability grounded in social realities. This approach calls for greater attention to the wider structural causes of vulnerability.

What is social vulnerability?

Social vulnerability can be defined as the characteristics of a person or group that influence their capacity to anticipate, cope with and recover from the impact of a natural hazard (Wisner, Blaikie et al. 2003). This approach recognises that vulnerability is a function of the wider political and economic environment and is often determined by social, cultural or political factors and processes quite distinct from the physical hazard itself. It, therefore, takes account of the wider context in which climate shocks take place, including issues such as people's social status, their gender, their livelihoods, the infrastructure to which they have access and the institutions which influence their access to and control of resources (Adger 1999). Thus targeting women is not enough but needs to be complemented by institutional change and removal of the social, cultural and economic barriers that prevent women from participating equally in society.

While it is important that the debate on gender and climate change acknowledges women's agency, voice and participation, a focus on social vulnerability is one possible lens to draw attention to the underlying social, cultural and economic factors which create inequalities that may disadvantage women.

3.8.2 Affluence and climate change

Although the linkages between poverty and climate change are now widely recognised, less attention has been paid to the relationship between affluence and climate change. While environmentalists strive to raise awareness about the way in which current models of production and consumption may be driving climate change, there has been a reluctance among policymakers to address issues of affluence or inequality in access to energy and resources or to acknowledge the responsibility of those in the North to alter their lifestyles and consumption patterns in order not to create worsening conditions for those in the South. There are obviously strong gender implications to the rising levels of affluence in both developing and developed countries, with high earning potential and wealth often tending to be concentrated in the hands of men and evidence that even in rich countries of the North, women rarely earn equal wages to men (ITUC 2009).³⁰

3.9 How do we improve understandings of and responses to gender impacts of climate change?

3.9.1 Generating more gender-specific information on climate change

Although there is a growing body of evidence pointing to the social impacts of climate change and the different, unequal ways in which men and women experience climate change, the picture is far from complete. Far more analysis is needed of the social, political and economic conditions which are responsible for men and women's different exposure and vulnerability to climate change as well as the factors affecting their different levels of participation in responses to climate change, whether related to adaptation or mitigation.

Just as important is an understanding of the ways in which climate change policies and interventions are affecting women and men, so that they do not have the unintended effect of deepening gender inequality, thereby exacerbating poverty. Investment in research on climate change and gender is vital for generating this evidence. As noted above, it is also vital to draw on the large body of existing gender-specific evidence that has been generated over many years on areas that include the environment, conflict, trade, disasters and agriculture, since this has so much relevance for understanding the gender impacts of climate change (see the box below).

At a minimum, resources should be allocated to collecting gender-disaggregated data on climate change. Significant work has been done to show the fundamental importance of gathering data that distinguishes between men and women, as well as other social factors such as age, ethnicity, socio-economic status, and disability. Yet there is still inadequate gender-disaggregated data to show the differential impacts of climate change on men and women, or the gender impacts of different policy instruments on gender relations. Often survey data is gathered at household level with little attention

³⁰ A report by the ITUC showed the global pay gap between men and women to be as high as 22 per cent, while in the UK it remains at 15.5 per cent.

to how resources are allocated within the household and an assumption that all household members share resources equally. There is currently a ‘chicken and egg’ conundrum, in which the absence of such data makes it difficult to convince policymakers of the importance of gender-aware policies, and yet until such policies and programmes are implemented, the collection of gender-specific data may not be a priority.

However, collecting gender-disaggregated data at the country or regional level can only provide broad indications of social impacts. Effective solutions can only be developed when qualitative, context-specific, locally relevant evidence is provided – through participatory processes where possible – and when the insights from these are used as the basis for project design, as has been done in innovative approaches used by NGOs. For example, Action Aid worked with Nepalese women in poor remote communities, teaching them to use video cameras as a means of communicating their climate change concerns and experience to policymakers at local and national levels (Mitchell et al. 2007). This example is discussed in more detail in Chapter 5.

Using existing statistics to understand gender impacts

A United Nations Environment Programme (UNEP) analysis of vulnerability to climate change in Algiers showed how existing gender-disaggregated data could be integrated into climate models to illustrate how underlying social, political and economic factors affect women and men’s differential exposure to climate change impacts and levels of vulnerability. The study found that there was only sufficient gender-disaggregated data in certain categories (adult literacy, primary school enrolment, income differences, economic activity and decision-making). These factors were, therefore, incorporated into exposure models, showing that, far from being equally exposed, as disaggregated population data indicated, women were over five times more vulnerable to changes in climate conditions due to their lower education and literacy rates, weaker influence on decision-making and lower income (Singh, Svensson et al. 2010). This case study illustrates the importance of gender-disaggregated data in challenging the assumption that climate change is gender neutral by highlighting how vulnerability is affected by underlying inequalities.

(Singh, Svensson et al. 2010)

3.9.2 Developing effective gender and climate change indicators

The first step is to understand the impacts of climate change through existing and newly generated qualitative and quantitative information, but it is also vital to ensure that women and men are benefiting equally from climate-related interventions that are based on this information. Clear and appropriate gender-aware indicators should therefore be developed which can be used to demonstrate the success of climate change programmes in meeting women and men’s different needs and in promoting gender equality – for example by assessing levels of women’s involvement (see Moser 2007). Gender indicators already exist for agriculture, environment, energy and social programmes and could be adapted for use in the context of climate change mitigation or adaptation in order to show the differential impacts they may have on women and men. The very process of developing gender indicators can also be a valuable one when it is done in a participatory way that involves key stakeholders and raises awareness about core issues (see Moser 2007).

3.9.3 Developing policies and programmes that take gender impacts of climate change into account

Once information is gathered on the specific gender impacts of climate change in different regions it is vital for policy-makers and donors to integrate the findings into their policy planning and implementation. There are a few good examples of where this is beginning to happen, particularly where bilateral donors are concerned (see Otzelberger 2011). For example, GIZ has produced a training manual for gender-responsive water management. This provides several clear steps for integrating gender dimensions into water policy, including: analysing national policies and institutional frameworks, using gender-aware indicators to assess the socio-economic factors affecting quality, use and access to water sources, developing a gender-aware water management strategy, and putting gender-responsive monitoring and evaluation processes in place.

The UK Department for International Development (DFID) and the Swiss Agency for Development and Cooperation are working in partnership with the Chinese National Development and Reform Commission to implement the newly launched Adapting to Climate Change in China (ACCC) programme. The programme includes assessments to identify women and men's different vulnerabilities to climate change impacts (Otzelberger 2011: 13).

Summary

This chapter has considered the human and particularly the gender dimensions of climate change. It has argued that far more gender-specific data is needed to understand the gender impacts of climate change. It stresses that any research needs to take into account the social, economic and cultural contexts that shape inequalities that contribute to poverty and vulnerability. Drawing on available recent evidence, the chapter maps the gender impacts of climate change on basic resources such as water, food and energy, noting the social constraints that compound women's access to them. It also points to indirect impacts of climate change on women such as the increased burden on their time as they are expected to care for those with climate-related illnesses. The next chapter considers ways in which responses to climate change and to these human impacts are being framed at national and international levels.

4. GLOBAL AND NATIONAL RESPONSES TO CLIMATE CHANGE

This chapter takes a critical look at the global framework and international architecture around climate change from a gender perspective that considers how current approaches may risk magnifying underlying social and economic inequalities by failing to take into account their differential impacts on diverse sectors of society.

The chapter aims to provide an understanding of what is already being done at international level to curb emissions (mitigation) and to deal with the inevitable impacts of climate change (adaptation) and the way in which current responses may affect gender relations. It analyses the current institutional structures and governance processes within the UNFCCC and the mechanisms it proposes to address mitigation and adaptation, particularly the 'flexible' market-based mechanisms included under the Kyoto Protocol. It points out that mitigation and adaptation are interlinked issues which need to be treated in tandem, rather than separately. Finally, it considers the question of climate finance and the way in which the creation of carbon markets and distribution of funds for mitigation and adaptation may reinforce existing gender inequalities.

It considers how the current global framework could be strengthened by building on the different international declarations and conventions that provide a foundation for addressing gender and climate change, by strengthening institutional capacity on gender issues, by ensuring women have an equal voice in high-level decision-making, and by seeking alternatives to current, gender inequitable approaches.

4.1 Global policy context

4.1.1 International agreements and conventions

There is no single convention that encompasses all dimensions of either climate change or gender equality, and certainly no framework that adequately addresses both issues. It is often assumed that all issues related to gender are covered by the 1979 CEDAW and that all issues related to climate change are covered by the 1992 UNFCCC, and yet each of these is just one of a wide number of conventions and agreements relevant to the environment and gender. Given the complexity of the international policy context, there is a need for a much more holistic approach that considers the contributions of each of these different pieces of legislation and puts rights rather than economics at the heart of any policy or international agreement on climate change. The table below is based on an audit of the existing frameworks, outlining their level of usefulness in addressing both gender and climate change concerns.

Table 1: International agreements relevant to gender and climate change

Year	International Agreement	Environmental Relevance	Gender Relevance
1948	UN Universal Declaration of Human Rights (UNDHR)	No specific mention of environment but acknowledges fundamental human rights that are linked to and dependent upon a healthy environment	Establishes core human rights but with a limited gender perspective
1979	Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	Calls for governments to ensure that women participate at all levels of decision-making concerned with environmental sustainability, and that women's interests and perspectives are adequately reflected in all policies and approaches adopted	The first international treaty to recognise women's human rights
1992	Agenda 21 and the Rio Declaration on the Environment and Development	This provided the first international precedent for including the gender perspective in promoting sustainable development. It adopted a gender perspective in all development and environment policies and programmes, leading to the promotion of women's effective participation in the proper use of natural resources	
1992	UN Convention on Biological Diversity (UNCBD)	The first global agreement focused on conservation and sustainable use of biodiversity	Explicitly addresses women's participation and ' <i>recognises the vital role that women play in conservation and sustainable use of biological diversity, emphasizing the need for the full participation of women at all levels of policymaking and implementation for biological diversity conservation</i> ' (Para 13)
1992	UN Framework Convention on Climate Change (UNFCCC)	Acknowledges human interference with the climate and aims to stabilise concentration of GHGs in the atmosphere	Absence of any mention of gender
1994	UN Convention to Combat Desertification (UNCCD)	The only legally binding international agreement dealing with land degradation	Promotes the equal participation of men and women and recognises ' <i>the important role played by women in regions affected by desertification and/or drought, particularly in rural areas of developing countries, and the importance of ensuring the full participation of both men and women at all levels in programmes to combat desertification and mitigate the effects of drought</i> '
1995	Beijing Declaration and Platform for Action	This makes the link between gender, the environment and sustainable development. Chapter K draws attention to women's poverty and the need for women to participate in decision-making about the environment at all levels, as well as the integration of gender in all sustainable development policies and programmes.	
2000	Millennium Declaration and MDGs	Includes goal on environmental sustainability (but with no linkage to gender)	Promotes gender equality but without making linkages with environment
2005	Hyogo Framework for Action	The first internationally accepted framework on disaster risk reduction (DRR), setting out objectives and priorities for policies and at national level over the next decade.	Recognises that a gender perspective should be integrated into all DRR policies, plans and decision-making processes, including those associated with existing climate variability and future climate change
2007	UN Declaration on the Rights of Indigenous Peoples (UN DECRIPS)	Acknowledges rights to forests and community lands.	Establishes rights of minorities but with limited gender perspective

(Drawn from Raczek et. al. 2010)

4.1.2 The UNFCCC

This is the overarching international framework for addressing climate change, agreed at the Rio Summit in 1992 and acknowledging, for the first time, the role of human interference in the climate system and the need to address carbon emissions. Despite referring to human activity, the UNFCCC stands out from other environmental conventions in making absolutely no reference to gender at any point. It has been suggested that the absence of any mention of gender in the UNFCCC could be attributed to a 'perceived need to focus on universal issues and not divert attention towards gender aspects, given the limited human resources for negotiation, and the crisis in which the whole debate on the Kyoto Protocol found itself at that time' (Skutsch 2002: 1).

The Kyoto Protocol, agreed in 1997, was no better in acknowledging gender, making no explicit reference to either gender or women at any point in the text, and stipulating a range of market-based mechanisms for dealing with climate change that risk deepening existing gender inequalities. The overwhelming technological and economic focus of the mechanisms created under the Kyoto Protocol left little room for consideration of issues of social justice, equality or sustainability.

It was with the creation of the **Bali Action Plan** at COP 13 in 2007 that entry points finally emerged for gender issues as concerns grew about the cross-cutting impacts of climate change and the relevance of social inequalities, including gender inequalities, in creating vulnerabilities. Since this point, there have been more opportunities for women's civil society organisations (CSOs) to be involved in the UNFCCC process, a greater focus by governments on gender equity, increased women's participation and leadership at the UN climate change conferences and COPs and concerted efforts by governments to include gender language in the negotiating texts for the post-2012 climate change agreement when the Kyoto Protocol expires.³¹

The gender blindness of the UNFCCC has been the subject of much debate, lobbying and advocacy. At UNFCCC COP 1, which took place in Berlin in 1995, the International Women's Forum 'Solidarity in the Greenhouse' attracted 250 participants from around the world. Sadly, this promising start was followed by several years of silence as discussions became increasingly technocratic and focused on 'the market', while social aspects were progressively marginalised. Neither women's organisations nor gender departments of UN agencies participated in the annual conferences, with the language of COPs becoming so abstract that only insiders and full-time climate experts could access the negotiations.

At COP 14 in Poznan in 2008, the UNFCCC Secretariat finally acknowledged the importance of gender issues and initiated a new gender unit to bring gender dimensions into the UNFCCC programme areas. Since then gender advocates have been working with the new gender unit to support the inclusion of gender-specific language in conference texts, by looking for entry points and making recommendations on how to make the documents more gender aware. This advocacy work has gradually made progress, with eight references to gender being included in the final text of the Cancun Agreement in 2010, yet not one of these was in the mitigation or in the finance section of the document, with both of these remaining highly gender-blind areas (see the box below).

³¹ Observations made by Women's Environment and Development Organization (WEDO) at <http://www.endpoverty2015.org/>.

The struggle to engender the UNFCCC continues, and the urgency to integrate gender considerations into mitigation and climate finance is growing as more funds become available and pilot projects that will establish the rules for design, implementation and monitoring in the future are now being rolled out.

Mainstreaming gender into the UNFCCC: a success story?

At COP 9 in Milan (2003), three women's organisations (LIFE, ENERGIA and WECF) joined forces and kicked off a process which resulted in a slowly but steadily growing GenderCC network and increased participation of women's organisations in the UNFCCC meetings. Their strategy included:

1. Closing knowledge gaps relating to gender aspects of climate change (research and gender-disaggregated data).
2. Including more women and gender experts in climate policy decision-making at all levels.
3. Integrating gender-related knowledge into policymaking, implementation, monitoring and communication strategies and materials.

GenderCC used a number of methods: information booths at the climate conferences, training, workshops and daily meetings for women and gender experts to discuss strategies, development of position papers and submissions, and continuous lobbying of governments and delegates. The visibility of women's and gender issues has gradually advanced from conference to conference since COP 9 in Milan in 2003, and in 2009 GenderCC applied for 'Women and Gender Nongovernmental Organisations' to become a 'constituency', which was approved by the end of 2009 and drastically improved their opportunities of influence and their visibility.

(Roehr 2009)

4.2 Mitigation or adaptation

The challenge of responding to climate change is an immense one that could be likened to trying to bail out the water from a leaking ship, whilst also trying to divert it out of the storm. The debate is which should take precedence: the mending of the boat – adaptation – or the avoiding of the storm – mitigation. In fact, both need to happen simultaneously and synergistically and in gender-aware ways if the crisis is to be averted and the existing impacts dealt with before things get any worse (Ayers and Huq 2008). The box below provides detailed definitions of the two terms, with Sections 4.3 and 4.4 providing more in-depth discussions of mitigation and adaptation approaches.

What do mitigation and adaptation involve in practice?

Mitigation can involve the more efficient use of fossil fuels, a switch to renewable forms of energy, a reduction in the rate of deforestation and land degradation, the use of more sustainable agricultural practices and, finally, (but often ignored by policymakers) the transformation of behavioural patterns and reduction of consumption of resources, particularly by industrialised countries.

Adaptation involves any activities aimed at coping with the effects of climate change and building resilience for the future. It can cover a huge range of activities, from big infrastructure projects, such as seawalls, dams and irrigation systems, to behavioural changes and changes in agricultural practices, such as alternating crops or finding more drought-resistant varieties, provision of insurance or finding livelihoods which are less dependent on the natural environment.

(Terry 2009)

The linkages between mitigation and adaptation seem not to have been fully recognised in either policy or funding arrangements, with the two issues often addressed in different policy and institutional contexts (Tol 2005). Too often mitigation and adaptation are seen as competing priorities for policymakers, with different interest groups unable to agree over the appropriate adaptation–mitigation mix (Cohen, Demeritt et al. 1998). Climate sceptics, reluctant to acknowledge that carbon emissions have anything to do with the changing weather patterns, advocate a focus on adaptation to make countries more resilient to these patterns (Lomborg 2001), while economic studies such as the Stern Review put a strong emphasis on the need to invest in mitigation immediately in order to avoid worsening impacts and increasing costs in the future (Stern 2006).

Other, more development-orientated research that focuses on women's needs in the face of climate change has highlighted the urgency of adaptation if there is to be any progress in social and economic development, including achieving the MDGs, in the most vulnerable countries (Mitchell, Tanner et al. 2007). It draws attention to the IPCC's findings that 'even the most stringent mitigation efforts cannot avoid further impacts of climate change in the next few decades, which makes adaptation essential' (IPCC 2007: 7).

Yet there is an obvious overlap between mitigation and adaptation, particularly in the case of poor communities in the developing South that rely on natural resources for both their energy and development needs and for whom building resilience to climate change goes hand in hand with access to sustainable energy.

4.3 Mitigation

Mitigation is possibly the most controversial element of climate change policy. Much debate exists around responsibility for emissions and the trade-off between cutting emissions and maintaining economic growth. In all the discussions of mitigation, however, there has been little mention of the gender dimensions, and few attempts to take women's and men's specific experiences or needs into account in the development of mitigation policies.

All mitigation strategies have implications for gender relations as well as having different impacts on men and women. Research shows that men's and women's perceptions of climate change and desired responses differ, with women tending to hold different risk perceptions and tending to be more flexible and willing to make behavioural changes (Roehr and Hemmati 2008). For example, there is evidence that men and women do not emit equal levels of GHGs and that women and men are not equally affected by policies which aim to reduce emissions (see Section 2.1.3). Yet, in many cases women are not integrated or involved in mitigation projects and, worse still, are actively excluded or disempowered through some projects. Research with the Adivasi indigenous communities illustrates this.

Gender-blind mitigation initiatives undermine Adivasi women's rights

Adivasi indigenous communities in Madhya Pradesh, India, have direct linkages with mitigation initiatives through initiatives such as forestry projects or the development of alternative energy sources, yet they are rarely included in consultation or implementation of the projects. Women and sometimes children from Adivasi communities have been employed on a seasonal basis to plant seeds in the forest without even being informed of their role in a larger carbon storage project. There are also concerns that some mitigation projects such as securing forests for carbon sinks or renewable energy projects have been established on indigenous peoples' lands without their free, prior and informed consent, particularly that of women, as with the wind farms in Maharashtra.

(Kelkar 2009)

Various mitigation strategies and frameworks have been introduced at both international and national levels. Here we apply a gender lens to the most significant of these to date: carbon markets, the Kyoto Protocol's flexible mechanisms – particularly the Clean Development Mechanism, Nationally Appropriate Mitigation Actions (NAMAs), REDD and other solutions –specifically biofuels and population control.

4.3.1 Carbon markets

'This new carbon economy... has difficulties in incorporating local ecological and social realities, particularly in terms of losers and winners at the local scale. This is partly because carbon markets do not spontaneously emerge; they are created by global and national institutions. Their creation may involve changing property rights, often overturning long-established traditional management and property rights regimes...The ability of the 'new carbon economy' to provide real benefits for sustainable development may ultimately be constrained by the nature of the market itself.'

(Brown and Corbera 2003: 2)

The dominant response to mitigation has been the pricing, trading and creation of a market for carbon emissions. This has arisen as a result of the prevailing understanding of climate change as an economic question, or what has been called 'the greatest market failure the world has seen' (Stern 2006). Using a cost-benefit analysis the market-based response puts a cost on carbon emissions,

giving them a monetary value in order to find the most efficient and cost-effective ways of reducing them and then allowing countries and firms to buy and sell them as if they were real commodities. Rather than promoting any real change or consideration of the possible underlying causes of climate change, this approach relies on the market to solve the problem by finding the most cost-effective and 'efficient' means of reducing emissions, and providing economic incentives for countries and firms to do so.

The reliance on the capitalist market system to get us out of a situation that has been created by the very same system is seen by many as short-sighted and ineffective. As Einstein pointed out: 'We can't solve problems by using the same kind of thinking we used when we created them,' yet relying on the market to solve a problem caused by the market may be just what we are doing (Roehr et al. 2008). Not only does a market-based response fail to address the underlying assumptions of the economic system that created climate change, it also gives yet more power to the institutions which already tend to dominate access and control of resources (Lohmann 2006).

The creation of a carbon market has been criticised from an ethical point of view in that it enables industrialised countries to continue on the same emissions path by buying credits from poor countries. For many, carbon markets are seen as a means of maintaining the current power structures, as the wealthier industrialised countries are allocated rights that enable them to pursue their high carbon development path, while poorer countries continue to be excluded from development and global inequalities grow yet wider – with poor women often losing out the most in these negotiations (Roehr 2007b).

There are also fundamental questions about who has the power to allocate rights to 'common resources' such as clean air and water (see also Chapter 3) and what the underlying factors are that prevent certain countries, groups or people from having equal access to these rights. In practice, rights to access natural resources seem to be acquired by those groups or individuals with the most power to appropriate them as well as with the greatest financial interest in doing so (Hepburn 2007).

The gender costs of carbon markets

Little consideration has been given to the underlying power structures that give certain institutions, countries or groups of people control over resources, while others, particularly women, are excluded from the benefits. Women rarely benefit equally from market mechanisms for the same reasons that exclude them from equal participation in societies. Their lack of access to capital, their unrecognised labour and unpaid care contributions, their lack of property rights, as well as the structural barriers, social and cultural norms that prevent their equal participation in education, decision-making and politics all mean they are less likely to benefit from these market mechanisms³² (see, for example, Elson and Pearson 1981; Espen 2007; Folbre 2000; Lourdes 2003; Kabeer 2008). The example below illustrates how these inequalities play out in different national contexts.

³² More information about the gendered aspects of market-based approaches can be found on GenderCC's website at <http://www.gendercc.net/policy/topics/flexible-mechanisms.html>.

Unequal property rights affect men and women's participation in market mechanisms

Research has highlighted how in most countries of the South there are significant gender gaps, particularly in land ownership. In Cameroon, for example, although women undertake more than 75 per cent of agricultural work, they own less than 10 per cent of the land. In Brazil, women own 11 per cent of land, while, in Peru, it is 13 per cent. Similar disparities have been identified in Tanzania, Kenya, Nigeria and other countries in sub-Saharan Africa. This inequality is not only relevant to agricultural activities but affects women's access to shelter, food production and socio-economic activities, given that land is a prerequisite for participating in many income-generating activities and accessing financial services or credit. All of these inequalities have a profound impact on women's abilities to participate or benefit equally from market mechanisms such as those under the Kyoto Protocol.

(Rossi and Lambrou 2008)

4.3.2 The Kyoto Protocol's flexible mechanisms

The Kyoto Protocol established a number of flexible mechanisms which enshrined different forms of emissions trading, whether between participating industrialised countries, through partnerships between donors and 'host countries' or between developed and developing countries. These include the trading of carbon emissions, the joint implementation of projects and the Clean Development Mechanism.

The Clean Development Mechanism (CDM)

The principle behind the CDM is that industrialised countries of the North can meet their emissions targets more cheaply by investing in 'clean' technologies in developing countries. In theory this should be a win-win situation, reducing global emissions while funds are channelled to sustainable development projects in developing countries. In practice, the track record has not always been so positive, and there is little evidence that it has done much to either reduce emissions or contribute to sustainable development (Holm Olsen 2007: 61). The very concept of the CDM, in enabling countries of the North to continue polluting while 'paying off' countries of the South, has also been questioned on the basis of fairness and environmental integrity.

While the type of CDM projects that would contribute to poverty reduction objectives and empowerment of women are generally smaller-scale projects such as those in micro hydro and biomass energy, community reforestation or agro-forestry, the burdensome procedures to apply for and obtain approval mean that these small-scale initiatives are rarely viable (Lambrou and Piana 2006b). There are various reasons for this oversight. One problem has been the geographical bias of the CDM. While the aim of the CDM was to subsidise clean energy projects in the South, the reality is that most of the finance goes to a few of the more developed countries, which hold the capacity to construct and manage large-scale infrastructure projects. Only very little reaches those countries with the greatest need or finances projects supporting community-based initiatives in which women may benefit equally. An analysis of the almost 6,000 CDM projects that had been approved by early 2011 showed that approximately 80 per cent of all funded projects were in Brazil, Mexico, China and India,

while as few as 2.5 per cent were in Africa (a meagre 154 projects in total), thereby offering little support to the poorest communities where women may be suffering the harshest impacts of climate change.³³

There is also evidence that CDM projects may exacerbate poverty and gender inequalities because of the burden they put on those without rights or land tenure in cases where restrictions are put on traditional community activities such as fishing, grazing or hunting (Ravels 2008). There are some examples, however, of more gender-responsive CDM projects that have sought ways to address both men and women's needs and taken a more holistic approach to adaptation and mitigation by supporting projects that have real impacts on women's ability to reduce their carbon emissions, while also giving them more control of their time and thereby strengthening their adaptive capacities and resilience to climate change. One CDM project in rural India has acted as an example of how well-designed, gender-aware projects can both empower women and provide clean energy for rural communities (see the box below).

CDM and energy for women in India

The Bagepalli CDM Biogas project involved the construction of 'biogas digesters' in rural households that could use animal manure to provide clean cooking fuel. Providing microfinance support from the CDM to enable the purchase of low-cost clean energy, the project enabled women to reduce the time spent collecting fuel wood as well as addressing health issues related to indoor pollution from traditional cooking stoves.³⁴

4.3.3 Nationally Appropriate Mitigation Actions

While the Kyoto Protocol sets the international framework for addressing GHG emissions and encouraging countries to reduce emissions, mitigation efforts are framed at national level within plans called Nationally Appropriate Mitigation Actions (NAMAs).

Nationally Appropriate Mitigation Actions

Included as part of the Copenhagen Accord in 2009, NAMAs were initially developed as part of the mitigation pillar of the Bali Action Plan. The NAMA refers to a set of policies and actions to reduce GHG emissions, with each country taking 'nationally appropriate action' on the basis of equity according to their responsibility for emissions and respective capabilities.

(UNFPA and WEDO 2009)

NAMAs are also a means for developing countries to gain assistance and support in the form of finance, technology and capacity-building to assist them to reduce emissions and, therefore, mark a move away from a purely market-driven approach. This emphasises the responsibility of industrialised countries to assist developing countries to shift on to low carbon development paths. As with other climate finance initiatives, there is much ambiguity around the institutional structure needed to support

³³ www.climatefundsupdate.org

³⁴ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1131002343.1/view>

NAMAs, how to measure, report and verify actions and how they relate to other carbon cutting projects, such as those funded through carbon market mechanisms. As yet there are no clear guidelines or gender indicators for NAMAs, yet it has been suggested that they should be directed at more strategic, long-term, transformational measures, providing opportunities for the integration of more gender-aware indicators (UNFPA and WEDO 2009).

4.3.4 Reducing Emissions from Deforestation and Forest Degradation (REDD)

'The new emphasis on market-based forest policies marks a shift away from public policies for forest conservation. Instead of an integrated community forest management approach, the new approach is a payment for environmental services and the creation of a market for these services. Whereas community projects took account of gender and women's rights, new market-orientated approaches are more commercial and tend to disadvantage women who have less money, less land and less power in the market.'

(Simone Lovera, personal communication 2010)

The REDD framework was initially agreed at COP 13 in 1997 as part of the Bali Action Plan. It comprises a set of mechanisms that aim to reduce deforestation through financial incentives by giving forests a monetary value based on their capacity to store carbon and thus reduce GHGs. The second phase of the framework, REDD+, includes sequestration, which involves the storage or removal of carbon from the atmosphere by conserving forests or planting new ones. REDD allows governments or firms from the North to purchase 'carbon offsets' (the right to pollute) by paying countries from the South not to destroy their forests. The principle is to reward owners of forests in the South with payments for their environmental services, to discourage them from cutting these forests down and thereby preventing the release of carbon stored by forests. The payment for this could either come from public funds or from carbon markets.

Concerns have been raised that countries and projects where deforestation is already taking place may be prioritised, rather than rewarding communities which have been working to conserve and restore their forests (Hall and Lovera 2009). The very process of treating a forest as a commodity rather than a community resource is also viewed by many as being inherently inequitable. Gender dimensions have been largely overlooked in many of the policies promoted by REDD. There are also serious concerns that forest projects financed through REDD may have detrimental impacts on biodiversity, indigenous people and local communities, particularly women, especially if forests are included in carbon markets (Roehr 2007). For example, many women living in or near forests may have previously depended on the free access to forest resources to support their livelihoods and those of their families, yet they are now being discouraged from using forests in this way because of increased state control over these resources. Yet they cannot afford to purchase alternative products such as animal fodder, fuel, medicinal plants or food sources (Lovera 2008).

4.3.5 Other approaches

As well as the mainstream approaches described above, a multitude of other 'quick fixes' to climate change have been proposed, such as using geo-engineering and new technology, whether to alter the

composition of the oceans to absorb CO₂ from the atmosphere or to send plumes of sulphurous fluids into the stratosphere to prevent sunlight from warming the world up further.³⁵ For many critics, these proposals are merely ‘false solutions’ that draw attention away from the urgent challenge of reducing emissions and may lead to a false sense of security that reduces the pressure to act now. There is also the risk that by being highly scientific by nature and failing to take account of the wider social environment in which climate change takes place, such ‘false solutions’ may actually have detrimental effects on gender equality as is seen in the two examples below – of biofuels and population control policy.

Biofuels

There is convincing evidence that one of the main causes of the global food crisis could be biofuel policies. These fuels, derived from biomass, and often portrayed as an eco-friendly alternative to fossil fuels, have been shown to have a far more detrimental impact on the environment than expected, with heavy use of fertilisers and pesticides. The biggest concern around biofuels, however, is the ‘land-grabbing’ and deforestation that has resulted, as government subsidies provide incentives for large corporate bodies to create mono-plantations of biofuels (Rossi and Lambrou 2008). Not only do these take over prime agricultural land, they often force local people off their land, depriving them of their main form of income-generation and undermining their fundamental human rights to food.

There are also clear gender issues around the process of land-grabbing, with women’s lack of land rights tending to make them particularly vulnerable to displacement. According to Simone Lovera, Coordinator of the Global Forest Coalition:

‘As corporate interests continue to create hunger and poverty, there seems to be a reluctance of policymakers to acknowledge that biofuels are not the solution to climate change, and that what is really needed is a reduction in fuel consumption and an effort to seek alternative solutions such as investment in public transport and fuel-efficient rail networks instead of land-grabbing from the poor.’

(Simone Lovera, personal communication 2010)

Population control policies

Often linked to the debate around the agricultural challenges of feeding a growing population are arguments for stronger population control policies as a means of mitigating carbon emissions in the future. Population is seen as a crucial factor in influencing the human impact on the environment, with the argument that overpopulation, particularly in the South where fertility rates remain high, is incompatible with targets for lowering global emissions. As a result, in some cases population control has been recommended as a strategy for limiting emissions in the future as well as easing the pressures of adaptation, by avoiding overpopulation in areas where there are already issues arising from scarcity of fresh water, crop land and food resources.³⁶

While it is clear that overpopulation has negative environmental impacts, particularly in developing countries where natural resources are already under strain, it is important that any population policies

³⁵ Geo-engineering is the term used to describe deliberate human efforts to alter the planet’s climate in order to counteract the effects of global warming from GHGs.

³⁶ See recommendations by the Optimum Population Trust at <http://populationmatters.org/>.

are placed within a wider context of women's empowerment and overall socio-economic development, rather than coercing women as population control targets. For example, it is vital that these policy discussions do not overshadow the need for more comprehensive reproductive health services in developing countries (Hartmann 1995).

4.4 Adaptation

Adaptation, or the activities required to cope with climate change, is often regarded as synonymous with good sustainable development. For many countries in the South, effective adaptation and sustainable development are strongly intertwined, with a recognition of the need to ensure that climate change concerns are integrated into national planning processes and development assistance (Stern 2006). As with mitigation, there are globally recognised frameworks for addressing adaptation, with the most well-known being the National Adaptation Programmes of Action (NAPAs). However, despite the obvious direct relevance of adaptation for women and men, they rarely reflect their needs or knowledge. It is also often assumed that adaptation policies are gender neutral, and yet women's limited access to resources, land rights, information, mobility, technology and decision-making power in the household or community reduce their ability to influence, participate in or benefit from adaptation programmes or policies.

4.4.1 National Adaptation Programmes of Action

The principal framework for addressing adaptation at this time is through NAPAs. These were agreed at COP 7 in Morocco in 2001 in recognition that countries in the South needed some assistance and financial support to develop plans to address the negative impacts of climate change.

National Adaptation Programmes of Action (NAPAs)

NAPAs provide a means for Least Developed Countries (LDCs) to rank their priority adaptation activities, focusing on the most urgent and immediate needs, which could lead to further vulnerability or increased costs if not addressed.³⁷ They are intended to act as a strategic framework for government, civil society and donors to work together to reduce vulnerability in climate-sensitive sectors and sub-regions by prioritising activities for climate resilient and low carbon developments.

(UNFCCC website)³⁸

Adaptation offers the possibility to address the negative impacts of climate change and to increase women's coping capacities in the present and future, and yet inappropriate adaptation policies also risk worsening gender inequalities. The fact that NAPAs tend to focus on national-level priorities means that community-based issues and vulnerabilities risk being overlooked. Research has shown that in the case where national initiatives do not take account of local needs, priorities and practices,

³⁷ By September 2009, 43 of the 49 LDCs had submitted NAPAs to the UNFCCC Secretariat.

³⁸ http://unfccc.int/national_reports/napa/items/2719.php

NAPAs may actually harm local or indigenous groups by prioritising national needs over community-level ones, for example (Vincent, Wanjiru et al. 2010).

Chapter 5 considers what more progressive adaptation policies might look like, by drawing on examples of innovative good practice that are already emerging at local level, from which lessons might be learned and scaled up to create a more gender-aware and transformative approach to climate change at national and international level.

4.5 Climate finance and gender

‘There can be no fair and equitable climate agreement without a comprehensive global climate financing understanding. And this understanding can only be fair, equitable and comprehensive when it incorporates gender awareness and strives toward gender equitable climate financing solutions.’

(Schalatek 2009: 8)

Key to any fair global agreement on climate change is the question of who should finance the costs of climate change as well as how funds should be allocated. These questions have dominated recent climate negotiations. There has been a proliferation of funds to address climate change in recent years, whether national or bilateral funds or multilateral funds managed by the UN, World Bank or multilateral development banks (MDBs). There are currently as many as 24 different funds established to provide finance for the various aspects of climate change, whether mitigation, technology, adaptation or reforestation, some of which are managed by the UN, others by the World Bank and some by multilateral and bilateral donors.

Yet there has been little consideration of gender inequality in the creation or management of these financing mechanisms. Little attention has been paid to the fact that the impacts of climate change are gender differentiated and, therefore, the funds that respond to these must also take these differentials into account in their design, implementation and monitoring. The Bali Action Plan established a set of normative principles which stated that climate finance should be ‘adequate, sustainable, predictable, and additional’, but the multitude of funds that have emerged in recent years have not always taken these principles into account (Schalatek and Bird 2010).

The focus of most climate change finance is on large-scale, technology-focused and market-based climate change mitigation initiatives aimed at low carbon growth, with little effort to address gender inequalities. Neither do they seek to include more women and local people in decisions around what would be appropriate for their situations, such as smaller-scale projects in biomass energy or community reforestation that would address both poverty alleviation and GHG abatement simultaneously (Lambrou and Piana 2006b). In addition, these new funds have often failed to be gender responsive due to the overwhelming focus on mitigation rather than adaptation. According to recent evidence, in 2011 as little as 13 per cent of all climate finance was spent on adaptation, with

the majority going to large-scale mitigation programmes in which gender considerations do not even feature.³⁹

4.5.1 The main sources of climate financing

UN funds

There are four main climate funds within the UN, three of which are implemented through the Global Environmental Facility (GEF) and one, the Adaptation Fund, which is directly under the Kyoto Protocol. There has been a problem with donors delaying on meeting their pledged commitments because of an alleged lack of adequate and accountable mechanisms in developing countries for receiving and disbursing money. There have also been questions about the effectiveness of GEF finance and about the lack of gender awareness or gender-specific targeting (Schalatek 2009).

A review of 36 climate-related projects supported by the GEF between 2003 and 2006 showed that only *four* included any kind of gender mainstreaming actions, and only *one* any gender analysis and gender-sensitive monitoring and evaluation. Those projects which did include some gender mainstreaming tended to be focused on domestic issues around biomass energy and cooking stoves, although one project on off-grid rural electrification in Nicaragua included business development services for rural women entrepreneur groups, and another in Mali focused on universal energy access, taking a more comprehensive approach to gender, as illustrated below.

An example of a GEF-funded gender-sensitive programme

The Mali Household Energy and Universal Rural Access programme aimed to increase access of low-income households to basic energy services, addressing poverty alleviation while simultaneously addressing climate change mitigation by focusing on renewable energy. Recognising that women were the major actors in fuel wood production and the main beneficiaries of rural electrification, it used social assessments, including gender analyses, and consultation with women and men in the preparation of the project. Although the predominant focus was on women as beneficiaries, it also included a focus on women's initiatives linked to electrification, such as the processing of agricultural produce, in collaboration with microfinance institutions.

(GEF 2008)

World Bank funds

The Climate Investment Funds (CIFs) offer a means of financing low carbon and climate-resilient development through a mixture of grants and, more controversially, loans. Funded through contributions from bilateral donors and intended to be closely coordinated with existing bilateral and multilateral efforts, particularly the GEF and the Adaptation Fund, the CIFs are meant to be additional to existing official development assistance (ODA), although there is some concern about bilateral donors diverting existing development funds through these new channels (Schalatek 2009).

³⁹ www.climatefundsupdate.org

Concerns have been raised about the top-down donor-driven structure of the CIFs, where countries of the South, civil society, grassroots organisations and local communities are given limited voice. They have also been critiqued for their lack of transparency in decision-making and the absence of any awareness about gender issues (Rooke 2008). Typically, women have had very little input in their design, and partly as a result of this CIFs have failed to target women in either adaptation or mitigation projects, despite evidence that women are often at the frontline of climate change impacts (Mitchell, Tanner et al. 2007; Peralta 2008).

The Green Climate Fund

‘A new global climate fund needs to have fair and equitable governance. It needs to be transparent. And it needs to give communities, who are affected by climate change, decision-making power.’ (Oxfam 2011: 1)

A new ‘Green Climate Fund’ was agreed at COP 16 in 2010, which will have a board of equal representation from developed and developing countries, with the objective of acting as a catalyst to motivate further public and private financing for climate change. It is proposed that an additional \$30 billion should be provided within the period from 2010 to 2012, rising to as much as \$100 billion per year from 2020. The formation of a single Green Climate Fund marks a positive step in simplifying the current climate finance architecture, but efforts are still needed to make sure the fund is gender responsive.

4.6 How do we move forward to create more gender-aware national and global processes?

The previous section discussed the current international and national architecture for addressing climate change, pointing to the disconnect between current ‘top-down’ solutions that favour wealthy countries and individuals through a focus on the market and other financial incentives, and the people who are most affected by climate change. It highlights the gender blindness of the national and international policies, frameworks and institutions that have dominated the global climate change arena. This section offers concrete recommendations for enabling more gender-aware climate change architecture. In some cases we call for a radical re-think of current strategies such as the reliance on carbon markets. In others we outline changes that need to happen within existing institutions, processes and policies.

4.6.1 Exposing gender-blind climate change policies and processes

As we have noted, global institutions focused on climate change are beginning to talk about gender, but it is too often as an ‘add-on’ to existing processes and decisions. Given the relatively recent emergence of climate change as a development issue, there is a unique opportunity now to make sure climate change discussions and responses are gender aware and put people at their centre from the very outset as new institutions, financing mechanisms and policies are designed and implemented.

To achieve gender-aware policies and processes, it is important to acknowledge where there may be structures, processes and assumptions that tend to privilege men and/or developed ‘northern’

countries. One way of revealing these is to use social and gender audits to assess levels of gender blindness in climate change institutions and architecture, including climate change financing. For example, a gender audit can assess whether resources are equally accessible to all stakeholders, male and female, and whether they meet the needs of and benefit both women and men equally.

Examples of audits already exist, such as those conducted by Energia (see the box below), where gender auditing has been used for monitoring low carbon development policies, measuring the level of gender sensitivity at macro level and their effects on women and men at the micro level (Parikh and Sangeeta 2009).

Gender auditing of energy policies

The international network on gender and sustainable energy, Energia, has been carrying out gender audits in Botswana, Kenya, Senegal and India which could provide a template for gender auditing of other low carbon development, mitigation or adaptation policies. Unlike gender audits of organisations, audits of policies involve an analysis of how gender is integrated into the content and strategy of policies (in this case in the energy sector) and the impact these have on gender relations, in terms of addressing women's practical and strategic needs within a framework of gender, energy and poverty linkages.

The audits use an innovative methodology that combines macro-economic analysis of energy policy to assess how far investment and imports at national level take gender and women's needs into account, meso-level analysis of how investment is spent and a micro-level participatory analysis of how beneficiaries and stakeholders are affected (see Chapter 5 for more information on participatory approaches). These provide an in-depth analysis of energy planning and budgets. They also help to strengthen the institutional capacity of ministries to implement gender-mainstreaming strategies and make more visible the links between gender, energy and national objectives for poverty reduction (Mbuti, Odongo et al. 2007; Parikh and Sangeeta 2009).⁴⁰

4.6.2 Transforming climate change institutions

For transformation to take place, political commitment to gender equality is needed from the highest levels of the international institutions such as the UNFCCC, the World Bank and the multilateral and bilateral funds that currently dominate the global climate finance architecture, right down to the community-level organisations involved in the implementation of local interventions. For this to happen, it is essential that awareness and understanding of gender in climate change is improved, through more robust and clearer evidence and data on why gender matters, systematic gender training within all relevant institutions, the introduction of clear gender indicators in monitoring and evaluation of all adaptation and mitigation policies, and by conducting GRB (gender-responsive budgeting). GRB is:

⁴⁰ More information about Energia's gender audits can be found at <http://www.energia.org/knowledge-centre/gender-audit-reports/>.

‘Planning, programming and budgeting that contributes to the advancement of gender equality and the fulfilment of women’s rights. It entails identifying and reflecting needed interventions to address gender gaps in sector and local government policies, plans and budgets. GRB also aims to analyze [sic] the gender-differentiated impact of revenue-raising policies and the allocation of domestic resources and Official Development Assistance.’

(UN Women web-page on GRB⁴¹; see also Balmori 2003)

It is also imperative to ensure that all institutions and processes take a human rights-based approach. Although none of the international human rights instruments outlined in Chapter 2 (including CEDAW and the Universal Declaration on Human Rights) explicitly protect the rights of women in the context of climate change, many of them recognise and promote the pivotal role of women in sustainable development. They can, therefore, provide a normative framework for integrating gender into the international architecture and governance processes of climate change, particularly those related to the key convention of the UNFCCC (see Section 4.1.2). Taking a more rights-based approach that acknowledges the already established intersections between gender and the environment could be a positive step in integrating key principles that empower women in the face of climate change (UNDP 2009; Raczek et al. 2010).

4.6.3 Finding alternatives to market-based policies

Section 4.3.1 outlined the dominant market-based approach to controlling climate change, identifying ways in which these processes marginalise developing countries and are gender blind in their design and implementation.

The big question of whether this is the right approach requires serious debate. Relying on the market and market-based mechanisms such as carbon trading to resolve a problem that many would argue has been created by markets and global capitalism is highly contentious as well as having severe implications for gender equality, given the clear evidence that markets rarely benefit women and men equally (Roehr et al. 2008). Our view is that a more holistic and pragmatic approach is needed that is framed around issues of human dignity, improving access to clean and renewable energy for all, including the very poor, strengthening resilience against extreme weather events and enabling societies to manage climate risks better (Prins, Galiana et al. 2010). Chapter 5 includes examples of more environmentally sustainable mitigation practices that respect local culture and gender norms, and – in some cases – challenge gender inequalities.

If market-based approaches continue to be the prevailing mitigation strategy, it is vital that measures are taken to ensure they equally benefit women and do not exclude or further disadvantage them.

⁴¹ www.gender-budgets.org

4.6.4 Changing behaviour and consumption

‘Success hinges on changing behaviour and shifting public opinion. Individuals, as citizens and consumers, will determine the planet’s future. Although an increasing number of people know about climate change and believe action is needed, too few make it a priority, and too many fail to act when they have the opportunity. So the greatest challenge lies with changing behaviours and institutions, particularly in high-income countries. Public policy changes – local, regional, national, and international – are necessary to make private and civic action easier and more attractive.’

(World Bank 2010b: xxi)

The *World Development Report* identifies behavioural change as one of the greatest challenges in addressing climate change but does not seem to acknowledge the gender dimensions of this or the importance of taking into account gender differentials in consumption or behavioural patterns (World Bank 2010b).

Transport is an obvious area where a gender-aware approach that draws on women’s active involvement and participation can lead to more successful long-term change (Spitzner 2007; OECD 2008). Research shows that economic, social and cultural factors restrict women’s mobility, and they are also more likely to use public transport or, in case of many rural poor in countries of the South, to walk (Dankelman 2010). Yet so far there have only been limited efforts to integrate gender dimensions into national policy responses around transport.

Not only would more gender-aware approaches that consider different forms of transport usage and involve both women and men in decision-making around transport policy lead to more sustainable, accessible transport systems, but they could also lower long-term emissions (Johnsson-Latham 2010). An example from Indonesia of how a gender-aware approach to transport policy can lead to more effective results is given below.

Gender equality in transport systems – an example from Indonesia

A gender-sensitive approach was taken in a project supported by the German Development Bank KfW to promote regional transport around Jakarta. It set out to expose the way that urban transport policies may reinforce gender inequalities and sought to find ways that transport policies could promote positive change for women. Using a gender impact assessment it found that urban development was far from gender neutral and that modernisation policies were frequently based on male perspectives and interests.

The study found a strong bias towards motorised private transport, from which women are often excluded due to their lower economic status, and a neglect of local and regional public transport architecture that would benefit women and men more equally. Consequently, women were wasting hours travelling between the suburbs and city centre on inadequate, environmentally unfriendly and often dangerous public transport, struggling to combine their double responsibilities of earning a living and caring for the family. Investment in the urban light rail network had positive gender and climate impacts in that it connected peripheral housing and housework locations with the city centre, making it easier for both women and men in Greater Jakarta to increase their mobility in ways that did not increase carbon emissions.

(Spitzner 2007)

4.6.5 Developing gender-aware adaptation policies

As noted above, adaptation policies need to be far better at reflecting and addressing the specific interests of women and men, especially those whose livelihoods are being directly affected by climate change. They need to both recognise the ways that the inequitable distribution of rights, resources and power constrain many women's ability to take action on climate change, and challenge gender norms and power imbalances to increase people's resilience. As yet, few adaptation strategies have been successful in all three of these aspects, but CARE International is working to develop a methodology on how this might be achieved.

Transformative approaches to adaptation – CARE International

Eight key recommendations:

1. Basing adaptation policy on a comprehensive, participatory and gender-sensitive analysis of vulnerability to climate change
2. Recognising differential vulnerability within countries, communities and households in order to target adaptation strategies accordingly
3. Building on existing knowledge and capacities of men, women, girls and boys
4. Empowering vulnerable women and girls to build their own adaptive capacity
5. Planning and implementing adaptation strategies with the participation of both women and men, including the most vulnerable within the community
6. Promoting policies and programmes at local, national and international level that meet the specific needs of poor women and men
7. Supporting women and men to access the resources, rights and opportunities they need to adapt
8. Promoting gender equality as a long-term goal.

(CARE International 2010)

4.6.6 Making the connection between mitigation and adaptation

While it is paramount to recognise and respond to the particular gender dimensions of mitigation and adaptation, there is an urgent need to recognise and strengthen the overlaps between the two strategies. More synchronised policies around mitigation and adaptation are needed that reflect the needs of poor women and men in the South for energy sources and for adaptive capacity to climate change. More harmonisation between mitigation and adaptation is also fundamental to ensuring that efforts to mitigate and reduce carbon emissions are compatible with efforts to achieve gender justice and enable other gains, such as women's economic empowerment (Rossi and Lambrou 2008; GIZ 2010b).⁴²

⁴² Available at <http://www.gtz.de/de/dokumente/gtz2010-en-climate-change-and-gender.pdf>.

4.6.7 Making women equal partners in decision-making on climate change responses

‘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: 1)

To a large extent the gender blindness of institutions and processes is linked to the lack of gender parity in decision-making or to women’s lack of capacity to be fully involved due to unpaid care responsibilities or to male biases within existing decision-making groups (see Brody 2009). For climate change policies to be equitable and effective, it is, therefore, essential to promote the meaningful participation of women in decision-making at all levels – from the local to the global. Only by involving women on an equal footing with men will responses be able to reflect local realities, respond to women’s particular needs and draw on their particular knowledge, skills and capacities. Although there is no guarantee that women will automatically represent the concerns of the poorest and most excluded, including women, achieving a better gender balance in negotiations at all levels would be a good starting point (Brody et al. 2008).

For this to happen, however, and for women to be able to participate in a meaningful and effective way at all levels of decision-making, it is necessary to invest in women’s capacity through advocacy and leadership training to build their skills and confidence to make their voice heard (Dennison 2003). This involves simple steps such as improving information to women on climate change and making them aware of their rights as well as the laws, policies, institutions and structures that govern their lives. It also involves creating a more enabling environment for women to engage in decision-making processes through political, legal, economic and cultural changes that give them greater control over resources and decision-making power, in order to strengthen their ability to stand up and ensure their voices are heard in developing responses to climate change (CARE 2010). The example below shows how women’s leadership is being developed in the context of climate change in Senegal.

Involving women as leaders in Senegal’s national climate change decision-making

In Senegal, a National Committee on Climate Change (COMNAC) was set up by the Direction de l’Environnement (Department of the Environment) and employs women in leadership positions. It plays an important role in helping to mainstream gender into national climate change policy, providing a positive example of a women-led team that can promote the empowerment, inclusion and capacity-building of women across the country to adapt to climate change. In preparing the country’s NAPA, women participated in public consultations organised in every region to collect information on adaptation solutions at the local level because it was recognised that indigenous knowledge is important to the search for sustainable results.

(Otzelberger 2011: 24)

It is also important to support the leadership of women parliamentarians and decision-makers around the world to bring a gender perspective to the shaping of climate change policies. This process is being championed by Mary Robinson, who – as noted in Chapter 2 – has recently established a new foundation for climate justice.⁴³ At a side event at COP 16 in Cancun in 2010, she emphasised the importance of women acting as powerful advocates and working together for climate justice and gender in key topics including climate change finance, mitigation, technology-transfer, capacity-building, national planning and REDD. She drew attention to the importance of engaging more women in the monitoring, reporting and verification of climate-related policies and programmes in order to ensure transparency and accountability with a gender dimension to protect the poorest and most vulnerable.

Finally, ensuring more equitable participation and decision-making requires a twin-track approach, not only opening up spaces within government and international institutions for more balanced participation of women and men, but also empowering women at grassroots level to ensure that their voices are heard in negotiations on local, national and international responses to climate change.

Summary

This chapter has taken a critical look at current national and international responses to climate change. The chapter looks at global and national climate change frameworks and architecture through a gender lens. It considers ways in which they are currently gender blind as well as identifying entry points for making institutions, policies and processes more gender aware and potentially transformative. The chapter argues for less reliance on the market-based mechanisms such as carbon trading in favour of a more people-centred, rights-based approach that benefits those who are poor and does not intensify gender inequalities. The next chapter examines how more participatory approaches that reflect local realities and give equal voice to women and men could contribute to more effective and just climate change solutions.

⁴³ Mary Robinson, former President of Ireland, established the Mary Robinson Foundation for Climate Justice as a centre to promote global justice for those victims of climate change across the world, using a rights-based, human-centred approach (see <http://www.mrfcj.org/>).

5. LEARNING FROM LOCAL INNOVATIONS AND EXPERIENCES

'To reframe the climate issue around matters of human dignity is not just noble or necessary. It is also likely to be more effective than the approach of framing around human sinfulness – which has failed and will continue to fail.'

(Prins, Galiana et al. 2010: 5)

The very nature of the current global response to climate change, with its overarching scientific focus, top-down structure and significant under-representation of women in decision-making positions, is hardly an environment that breeds social transformation. While it is the international institutions that have set the global agenda for policies on climate change and created a framework focused on long-term emissions reductions for the future, it is at the local level that the impacts of climate change are already being felt, and autonomous responses are already emerging that need to be recognised and integrated into any global framework. For gender concerns to be a central element of international processes, much better linkages are, therefore, required from local realities to global policy and vice versa.

New approaches are being proposed that respond to this disconnect between local impacts and national and global policy. For example, one group of academics is calling for a reframing of the climate change issue around matters of human dignity, suggesting a more bottom-up, holistic approach to mitigation and adaptation that is focused on 'decarbonising' the global economy, providing clean access for all and building resilience to shocks at the most local level (Prins, Galiana et al. 2010).⁴⁴ According to this approach, action needs to be taken at multiple levels, with climate change policies designed and implemented at the lowest feasible level 'from the bottom up', whether at community, local, city, regional or national level.

A bottom-up approach 'does not mean that everything should be done at the local community level, but that where something can be done at the local level, the cities level or the regional level, then it makes sound sense to focus policy attention there, without the need to fit into some kind of global charter for action' (Rayner 2010: 6). At the same time it is vital for national and international climate change frameworks and policy processes to be opened up so that they become more inclusive and participatory, giving the women and men dealing with climate change on a daily basis a more equal voice and reflecting their realities.

This chapter is intended to provide inspiration by examining some of the innovative, gender-aware approaches that are already emerging at community, national and regional level and that are rooted in women and men's lived experiences of climate change. It outlines more bottom-up approaches to both adaptation and mitigation that could be replicated elsewhere or drawn on to develop more gender aware, people-focused climate change policies at the global and national levels. It also examines ways in which mitigation and adaptation can work in synergy for more effective outcomes that address issues of resilience and access to clean energy.

The chapter starts by outlining effective local and national responses to adaptation that take into account a range of factors including culture, social norms and gender relations, drawing on the concerns and knowledge of women and men. It goes on to consider what lessons can be learned from mitigation approaches that take into account local culture and conditions, and empower women in a number of ways. Approaches such as these could be applied in a national and global context as possible alternatives to market-based mechanisms. Finally it sets out some more general principles and approaches for enabling more locally relevant, gender-aware responses.

5.1 Gender-aware local responses to adaptation

'Top-down approaches to adaptation will founder if they fail to connect with the felt priorities of those most vulnerable to climate change' (Robin Mearns, World Bank).⁴⁵

As already noted, while adaptation is the one aspect of climate change policy in which a gender perspective is sometimes integrated, too often the emphasis is on women's vulnerability, with women portrayed as victims or beneficiaries. Not enough attention is paid to women's capacities and agency, nor the critical role they can play as leaders and innovators of adaptation, if only they are given the resources and capacity-building they need (Mitchell, Tanner et al. 2007). Women's experience in managing natural resources, their involvement in climate-sensitive activities such as agriculture, fishing and forestry and the strong social networks in which they may engage mean that they often hold knowledge, skills and experience that are fundamental for successful adaptation programmes.

In Malawi, for example, research shows how women smallholders in several communities have already developed strategies to overcome acute food shortages by using ecological cropping techniques that enable them to take advantage of changing rainfall periods to produce a second maize crop, as well as challenging gender roles by taking on income-generating roles previously reserved for men. Women have also played a key role in reforestation, strengthening both community resilience to climate change and mitigation of emissions, as has been seen through the work of the Greenbelt movement in Kenya.⁴⁶ Yet the challenge remains in scaling up these activities and recognising them in policies at national and international level (Rodenberg 2009). The following section outlines locally-focused innovations centring on adaptation, including those driven by communities themselves and those mediated by local organisations and networks.

5.1.1 Gender-aware participatory approaches

Alternative approaches to climate change adaptation have tried to overcome the stereotype of women as a homogenous group of 'victims' of climate change and to consider wider issues of gender inequalities, particularly the underlying power dynamics that contribute to women's vulnerability and prevent their full participation as agents of change in the responses to climate change (Terry 2009). For example, participatory research by IDS/Action Aid highlighted the ways that women in poor areas are already adapting to a changing climate and can clearly articulate what they need to secure and sustain their livelihoods more effectively (Mitchell, Tanner et al. 2007).

⁴⁵ <http://blogs.worldbank.org/climatechange/scaling-community-based-adaptation>

⁴⁶ www.greenbeltmovement.org

Gender-focused participatory approaches have been applied in various innovative programmes that use participatory research tools or innovative methods, such as training women with video cameras, to enable them to make their voices heard (see the example from Nepal below) and highlight the key issues affecting their communities and on which policy and support should be focused (Mitchell et al. 2007; UNISDR 2008). Participatory approaches acknowledge that much relevant expertise and knowledge is held at the local level and that creating appropriate, sustainable and effective adaptation and mitigation strategies requires the involvement and engagement of local stakeholders, both in contributing to the definition of the problem and in seeking the solution (Akerkar 2010). This has been largely missing in climate policy, particularly at the higher level of negotiations.

It is important, however, to remember that participatory approaches are not intrinsically gender aware and inclusive. If not sensitively designed, they can exclude or marginalise women by allowing louder, male voices to dominate or by failing to take into account the additional burden they may place on women, whose time is often already stretched to the limit. However, there are some examples of projects that have successfully involved local women and men in local adaptation strategies. Such examples offer the potential to be scaled up, as the example from the Philippines below demonstrates.

Participatory engagement in the Philippines

In the Philippines women farmers have been showing initiative by setting up community seed banks to promote sustainable agriculture in rural areas at a time when climate change and the global food crisis are affecting food availability and hunger incidence. Traditionally, it is women who have acted as the seed-keepers on farms, and the National Coalition of Rural Women (NCRW) has now set aside 16 hectares for organic rice production to support this role, empowering women as seed-keepers to give them more control over food production, and showing how the promotion of gender equity and food security can complement one another. Taking seed production out of the hands of commercial corporations and returning it to the hands of female farmers is a way of creating greater resilience and self-reliance among rural communities. While the NCRW has established this first pilot example, it is hoped that government support will now enable the project to be scaled up for use by other farmers and that agricultural officials will now provide technical, policy and financial assistance to set up and maintain more community seed banks.

(Xinhua 2011)⁴⁷

There is a common misconception that participatory processes are too locally specific and on too small a scale to be useful in a broader policy setting. In fact, technologies such as video, smart phones and the internet make it increasingly possible to connect these local-level initiatives with national and international policy processes and enable them to be directly informed by local voices. An Action Aid project in Nepal has recognised this potential and has been providing women at the grassroots with opportunities to speak directly to policymakers who may be developing national

⁴⁷ http://www.centrosaka.org/rural_women/nrwc/nrwc_main.html

adaptation plans. This is very significant given that little research has been carried out into the gender dimensions of broader adaptation programmes at national or regional level, whether related to infrastructure, technology, changes in land use or wider issues of behaviour change.

Bringing the voices of women to the climate change debate in Nepal

The Action Aid project found that, although women had significant knowledge and skills in adapting to climate change, they did not participate in decision-making on climate change and were often excluded and overlooked in policies. The aim of the project was to bring women's voices to the debate by empowering them to capture their experiences and concerns about climate change on video and channelling these to policymakers. This empowered them to become advocates for change. As well as providing evidence for policymakers to make climate-related policies more responsive to local realities, the project provide an opportunity for women to reflect on their situations, articulate their concerns and identify the actions that they believed would translate into a positive change in their condition. As one participant, Muna Mukeri, from Matehiya said: 'If we do not change our attitudes and practices, it is difficult to survive in the changing conditions. We are adapting 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.'

(Mitchell, Tanner et al. 2007: 13)

5.1.2 Community-based adaptation (CBA)

CBA is a bottom-up means of adaptation which identifies and engages with the communities most vulnerable to climate change, whether due to poverty, dependency on natural resources or exposure to environmental shocks, enabling them to develop their own relevant solutions. The focus on local realities means that CBA should be able to promote gender-aware policies that acknowledge the different roles that men and women play within their communities and to build on local knowledge, experience and participation (Huq and Reid 2007). Although many CBA approaches do not currently integrate gender dimensions in a systematic way, progress is nonetheless being made. An increasing number of projects are CBA involving both women and men in the design and implementation of projects and drawing on their participation and different capacities to achieve more effective and sustainable policies. Below is an example of where this has happened in Morocco.

A gender-aware approach to community-based adaptation

In southern Morocco, where traditional society is organised around clearly defined roles according to gender and class, most men are farmers charged with physical and technical tasks as well as commerce, while women play an important role in (unpaid) farming and natural resource management. Allocated roles and market access mean that it is the men who tend to have access to cash or migrate for work, while women play a more active role in the household and local community.

Gender-aware programming for a UNDP-GEF adaptation project led to consultation of the women, particularly their expertise of indigenous plants and experience managing natural resources. It supported them to participate and make their voices heard in decision-making processes in the community in order to become key players in local adaptation projects. Other examples of UNDP CBA programmes found that women made indispensable partners in the implementation of adaptation projects, bringing particular skills around confidence-building and people management that complemented men's technical skills.

(Vincent, Wanjiru et al. 2010)

5.1.3 Consultative approaches to infrastructure and technologies

'Technological interventions...are more than technical issues. They re-engineer social relationships, and create new patterns of authority. All of these changes have far-reaching implications for gender relations.'

(Wong 2009: 96)

Improved infrastructure and technology are key interventions in addressing climate change in terms of making livelihoods more resilient in face of increasingly unpredictable and extreme weather events. In many cases, infrastructure is considered to be gender neutral, in that it serves both men and women and does not require any consultation with different groups or tailoring to their needs. Evidence has shown that men and women need and use infrastructure in different ways, however, and that it is essential to take these different uses into account for interventions to be effective and sustainable. Examples such as roads, bridges or irrigation systems, few of which involve the consultation of women or any gender analysis in their design, have profound gender differentials in terms of the way that women and men use or depend on them for their livelihoods. The example below shows the importance of integrating a locally informed gender perspective into policy around infrastructure.

Infrastructure and gender in Liberia

Liberia, one of the few African countries with a female head of state, has put particular emphasis on promoting gender equality in infrastructure. President Ellen Johnson-Sirleaf highlighted the infrastructure-related challenges faced by women, particularly in the face of climate change when food security is threatened and there is a greater need to store grains and prevent food wastage: 'Our market women spend a lot of time travelling under poor transport conditions at high costs, to be able to bring goods to the market to feed the population. The lack of storage facilities means that their perishable goods suffer spoilage, thereby reducing the little profit margin they were able to get.'

Investment in better transport systems between rural and urban areas, as well as provision of community grain stores has been crucial in building rural women's resilience and protecting their income-generating potential. Johnson-Sirleaf also highlighted the far-reaching societal consequences of the lack of infrastructure, including an increase in HIV/AIDS infection rates linked to gender-based violence, which may rise in contexts of climate change where girls are taken out of school or have to travel long distances in search of water or fuel.

(World Bank 2008)

5.1.4 Gender-responsive adaptation training and capacity-building

While a large proportion of adaptation funding tends to be devoted to highly 'visible' interventions such as infrastructure, equally important but less visible are those interventions that address issues around information, education, capacity-building at community level and participation in local programmes. These interventions, often aimed at behaviour change and, therefore, more likely to take gender concerns into account, tend to receive less attention or funding from policymakers, who tend to prefer scientific and technological measures that are more tangible and easy to measure (Lambrou and Piana 2006b).

Capacity-building offers great potential to address gender inequalities if it responds to women's needs and priorities. It is essential that women's capacity is built not only in traditionally 'female' domains such as in the area of household energy but also in the skills needed to access better jobs, financial services, information, training or technology. These programmes should be designed in a gender-responsive way that draws on the needs and priorities of women and local communities. Not only does this contribute to greater gender equality, but it also leads to more effective and sustainable programmes.

In Honduras, for example, a capacity-building programme which put women in charge of an early-warning system meant that their community was the only one with no reported fatalities during Hurricane Mitch in 1998.⁴⁸ The example below from the Mekong basin in South-East Asia shows how capacity-building of women has led to more successful resource management, thus having the double benefit of empowering women and leading to transformative social change while also addressing the challenges of climate change.

⁴⁸ 'How Natural Disasters Affect Women' – www.iucn.org.

Women as trainers

The Mekong basin in South-East Asia is a densely populated area that is highly vulnerable to increased flooding as well as droughts and water shortages in the face of worsening climate change. Traditionally, watershed management issues have excluded women and failed to take account of issues of sustainable livelihoods and equality. GIZ, the German bilateral aid agency, implemented a project to address this by systematically involving women as trainers, participants and target groups in watershed management. It found that using a quota system to ensure the involvement of women in the watershed management committees led to a significant improvement in the quality of the committees' work, as well as an improvement in the local population taking greater responsibility, increasing the likelihood of the sustainable application of resource-friendly approaches for society as a whole.

(GIZ 2011)

5.2 Alternative, locally relevant approaches to mitigation

Only by addressing the underlying causes of gender inequality and women's lack of economic empowerment can low carbon development pathways be effective for men and women (Karlsson, Owren et al. 2010). Below we consider four main pathways for mitigating climate change in ways that draw on local knowledge and are gender aware, both as a more effective way of cutting emissions and as a means to enable social and gender transformation by empowering and involving women. These four pathways include (i) making the shift away from fossil fuels to renewable energy (Section 5.2.1); (ii) adopting more sustainable agricultural practices (5.2.2); (iii) slowing the rates of deforestation (5.2.3); and (iv) transforming consumption patterns, including those around transport, particularly in industrialised countries (5.2.4.) (Terry 2009).

5.2.1 Making energy use more sustainable

Effective and equitable policies around energy use need to take account of who uses energy and how. A more locally relevant approach to energy policy would take account of men and women's differential access to and use of energy (see Chapters 3 and 4). Taking such an approach could transform gender relations while also reducing GHGs by providing women with better access to clean energy in such a way that they have both more time and more power to improve their livelihoods (Karlsson et al. 2010).

There are already examples of these types of approaches in the context of innovative programmes around solar-powered energy in Bangladesh and biogas fuel stoves in Nepal (see the example below). They illustrate how energy programmes can simultaneously address mitigation and adaptation, and how women have been involved not just as beneficiaries but as actors who play a significant role in the development of new solutions. In the example below, a socially transformative approach to energy policy has been taken by Grameen Shakti by training women in traditionally male-dominated areas, such as energy production. This is helping to challenge gender stereotypes and address women's

practical needs – in terms of access to energy – and their strategic needs – in terms of social and economic empowerment.

Women as agents of change in the creation of renewable energy

Grameen Shakti is an NGO in Bangladesh that is addressing the role of women in generating renewable energy through solar power, training and employing them as engineers to install solar panels in their local communities. While these projects are on a relatively small, local scale, the organisation has successfully brought together enough small projects to 'bundle' them together to access CDM finance. Grameen Shakti has now established 45 technical training centres, run only by female engineers and specialising in the training of rural women to give them technical skills as well as making them financially independent. They are trained to maintain, repair and assemble electronic parts of the solar panels, thereby ensuring that women benefit from the new economic opportunities arising from renewable energy and low carbon development pathways in Bangladesh.

(Kamal 2010)⁴⁹

5.2.2. Changes in agricultural practices

'Women in low-income countries play a critical role in agriculture, and agriculture plays a critical role in women's livelihoods. Purposively empowering women and focusing on their unique challenges will bring much wider gains in terms of poverty and productivity.'

(GO-Science 2011: 26)

Agriculture has significant effects on carbon emissions through the production and release of a range of GHGs as well as by altering the earth's land cover and its ability to absorb or reflect heat and light. Changing agricultural practices is, therefore, a fundamental part of reducing emissions, yet too often the role that women play in agriculture and the huge potential they hold to change agricultural practices is overlooked, as are many local initiatives. An innovative alternative approach to changing agricultural practices would, therefore, be one that recognised women's engagement in small-scale agricultural activities and addressed their lack of representation or voice in influencing national agricultural policies or practices (GO-Science 2011).

Below is an example of an initiative led by CAC in India which encouraged women to lead a shift back to more environmentally sustainable farming practices.

⁴⁹ More information is available on the Grameen Shakti website at <http://www.gshakti.org>.

Women leading adaptive approaches to agriculture in India

In 2000, the Uttarahand Government in India encouraged villages to switch livelihood approaches from growing traditional crops which supported self-sufficiency to focusing on a few selected cash crops which included potato, cauliflower and peas. The government programmes, however, did not consult women, even though they are the primary farmers in the region. CAC, a small local NGO, sought to provide agricultural information and improve gender relations. It set up an experimental farm to test the different methods of farming and inform farmers of their findings. These showed that the traditional crops were more resilient than cash crops in the unpredictable and extreme climate and also provided farmers with a more diverse livelihood system. CAC also ran women's empowerment programmes, so the women felt confident about talking to their families and decision-making around their livelihoods.

(Based on information generated through participatory processes conducted by BRIDGE with CAC in 2011)

It is also vital to ensure that women have equal access to climate-friendly agricultural technologies and are involved in their design and implementation. The example below describes where this is happening in Brazil.

Gender-aware agricultural technology in Brazil

The Pintadas Solar programme in Brazil⁵⁰ was set up by a group of partners, including a national women's NGO, Redeh, in the state of Bahia in northeast Brazil to address the prolonged droughts increasing due to climate change. The project, which was based on the sharing of experiences and mutual learning among farmers, promoted the use of sustainable technologies for irrigation and agriculture as well as food security and income generation. It took a clear gender perspective by ensuring equal access for women to new technologies and credit and increased cohesion within the community, thereby enhancing agricultural output, raising employment levels and improving technical skills. By working with family units it also addressed gender relations by ensuring that men and women worked as equal partners in achieving the goals of the project and that women were empowered as 'knowledge holders' rather than simply beneficiaries and could make active contributions to the development of alternative agricultural production methods.

(UNISDR 2008)

5.2.3 Bottom-up approaches to reducing deforestation

The question of deforestation also needs to be considered from a gender perspective, given the different way that women and men's livelihoods depend on forests. Alternative approaches are, therefore, needed that take gender identities into account, acknowledge the different ways that men

⁵⁰ <http://pintadas-solar.org>

and women rely on forest resources in different contexts and ensure that both men and women are equally involved, albeit in different ways, in sustainable forest management. An interesting example of sustainable forest management is that promoted by the Global Forest Coalition (GFC), founded in 2005, which supports and coordinates campaigns for socially just and effective forest policy and the rights of Indigenous and other forest peoples.

Global Forest Coalition: Questioning market-based forest policies

The GFC puts a human face to conservation work across the world, drawing attention to the rights of the people who depend on forests for their livelihoods, particularly women. Forests not only provide women with fuel, water and food products, but are also a source of traditional medicine.

The GFC is fully in support of reducing deforestation but in a way that involves communities and the female perspective of 'caring' for the forest because it is seen as being good for the community, for the family, for everything, rather than a technical male perspective that says 'I have a right to cut it all down, and if you don't want me to do that you need to pay me.' When that approach is taken to country level, and entire countries believe they have the right to cut down forests if they're not paid, the concept of caring is totally lost. We would like to see public policies with a political will to save the forest that draw on the knowledge and caring capacity of communities and strengthen their initiatives to conserve their forests. We call it 'caring for mother earth'. The earth is your mother, and it is not a monetary concept. How can you pay your mother for caring for you?

(Personal communication from Simone Lovera, Director, GFC at 2nd Bridge Round Table on Gender and Climate Change, Cancun, December 2010)

In cases where women's involvement has been actively promoted there have been clear benefits, not only for the environment but also for women's social and economic status. Gender-aware interventions around forest conservation can strengthen women's adaptive capacity by providing them with training and capacity-building that not only enhance their income-generating potential but also have long-term environmental benefits. The example below discusses an initiative in Nicaragua to empower women in ways that contribute to mitigation.

Drawing on women's skills to support reforestation and mitigation

In Central America, projects run by the Equilibrium Fund in Guatemala, Nicaragua, El Salvador, Mexico and Honduras have been working with local women to harness their knowledge in forest conservation and channel this into programmes that can be supported as part of mitigation efforts in their countries. Providing training and capacity-building for over 10,000 women in the processing and commercialisation of the maya nut, it has supported the planting of over 800,000 nut trees. This not only provides a source of food and means of earning a sustainable income from the harvesting of the nuts but also has long-term environmental benefits by incentivising women to conserve the rainforest and plant more trees for future harvests.

(Cited in Schalatek 2009)

5.3 Further useful principles and approaches

This section sets out some more general 'good practice' principles for applying in climate change policy, programmes and advocacy.

5.3.1 Ensure monitoring and evaluation is gender responsive

As well as integrating gender into the design and implementation of policy, it is essential that monitoring and evaluation techniques are also gender responsive. Gender audits are one way of doing this, but another is through the use of community-based methods for monitoring the impact of different interventions. The example from Mali below shows how involving local communities in monitoring processes can highlight key gender issues that may have been overlooked in policy design.

Monitoring the impacts of climate change at local level

A case study from Mali shows how a community-based risk screening tool (CRiSTAL) can be used to measure local vulnerability and to check ongoing coping strategies to climate-related hazards. It provides a user-friendly process to understand the links between climate-related risks, people's livelihoods and possible adaptation interventions. In the case of the Malian Sahel, CRiSTAL showed that, although rural communities had developed coping strategies for extreme climate events such as droughts, no coping strategies had yet been developed to address the increased risks of heavy rainfall, in line with climate change predictions.

The tool also provided a gender-specific vulnerability analysis for different parts of the population, highlighting specific coping strategies of women, and resulting in clear pointers for how gender-specific measures will need to be incorporated into projects. It showed how a clear gender-specific division of livelihoods activities existed, with women holding responsibilities for certain agricultural and domestic activities. It also highlighted the reality that women were excluded from land ownership and, therefore, had no rights regarding the management of natural resources, despite forming the majority of agricultural labour. The power of male landowners over natural resources meant that the poorest groups, particularly women, were doubly excluded from both the land and its resources and, therefore, suffered higher levels of vulnerability to climate-related events. Using this analysis, it was shown how greater equality in the land rights of men and women could reduce exposure to climate risks, with gender inequity having negative impacts on households' overall vulnerability.

(UNISDR 2008)

5.3.2 Build local women's leadership capacity

'I brought a sense of responsibility that wasn't held by the men who were running the forest before and wanted everyone to take responsibility for the forest. My leadership isn't about just enforcing regulations but changing people's perception of the forest as an important resource through education and understanding.'

(Parvati, Forest *Panchayat* head, Nainital, India)

Another way that bottom-up approaches can lead to more effective agricultural policies is through building capacity at the local level and taking steps to actively promote women's status – for example, by putting in place quotas for representation in decision-making bodies or by providing leadership training. Below are two examples of how organisations have been promoting women's participation in agricultural and natural resource management at community and institutional levels.

Increasing women's participation by changing institutions and building capacity

Women Organising for Change in Agriculture and Natural Resource Management (WOCAN) is a global network of professionals and farmers across 83 countries, dedicated to increasing women's access to and control of resources and addressing the challenges of gender mainstreaming in agricultural policies. It works not just at the community level but also on changing institutions to remove the barriers which prevent women's equal participation, running courses on women's leadership for both women and men, raising awareness among men about how dominant rules and power systems exclude women and empowering men to become advocates of gender equality too. It also works to make national policies, programmes and institutions more responsive to the needs and potential of rural women and to integrate them more effectively into the design, implementation and monitoring of policies.

(WOCAN)⁵¹

Promoting leadership through participatory approaches in India

In the Nainital district of India, CAC ran mixed workshops as well as workshops for only men and women to help communities think through pressing issues and find solutions. In one of the women-only workshops, participants conducting a ranking and scoring matrix exercise regarding the forests became aware that, while they had all of the responsibility of looking after the forest, they had no decision-making remit. This single exercise motivated women to find ways to take more control, leading one participant to successfully run for head of the Forest *Panchayat*. Due to the election of this woman as head of the *Panchayat*, more women now play an active role in local forestry meetings and demand accountability from the decision-makers.

(Based on information generated through participatory processes conducted by BRIDGE with CAC, 2011)

5.3.3 Recognise the potential of local networks for enabling effective local responses

Local networks can act as powerful means of organising women and men to develop more effective and sustainable responses to climate change. Networks can play a role in the gathering and sharing of climate-related information as well as in the organising and coordination of responses. The following example from Colombia illustrates the crucial role that local networks can play following extreme weather events as well as supporting communities to strengthen resilience to climate change.

⁵¹ www.wocan.org

The role of networks in gender-aware climate change responses in Colombia

In Santander, Colombia, women's agricultural organisations and associated networks are an essential mechanism for assisting communities to respond to climate change and environmental challenges, which include unpredictable rainfall leading to flooding, landslides and deforestation. Women's associations, FUNDAEXPRESIÓN, *Collectivas Reservas* and the agro-ecological school facilitate training to teach alternative ways of living including agro-forestry and organic farming.

After heavy rains in December 2010, the organisations worked together to build shelters for stranded women and their families after their husbands had migrated to find work. They also organised a *minga* (community day) to construct safe, environmentally friendly sanitation units. They supported them in livelihood diversification strategies and advised the women where and how their new accommodation should be built to reduce the chance of further destruction, should the rains come again. On a national level these organisations worked with trade unions to challenge the government on water privatisation policies.

(Based on information generated through participatory processes conducted by BRIDGE with FUNDAEXPRESIÓN, Colombia, 2011)

5.3.4 Link global advocacy with local realities

Research has shown the importance of advocacy, particularly in developing countries, where the strengthening of women's ability to exercise their political voice is a key step in creating the conditions for sustainable and effective adaptation (Rivero Reyes 2002). A wide range of CSOs and advocacy groups already exist to promote awareness of and participation around issues of gender in climate change, from organisations working at the micro level up to high-level international advocacy groups.

The challenge is how to scale up successful local advocacy initiatives that have involved women in key decision-making positions and implementation of climate-related projects, as well as how to promote accountability of governments, global institutions and non-state actors on their global agreements on gender equality. The power of linking local groups with regional and global initiatives is increasingly being recognised as a means to ensure local voices, needs and conditions are represented at the international level and that global policy is effectively communicated to the micro level. Below are two examples of local–global alliances that have been successful in influencing climate change policy and are building the capacity of CSOs to lobby for gender justice in climate change interventions.

Global Gender and Climate Alliance

The Global Gender and Climate Alliance (GGCA) was launched in 2007 and brings together over 30 UN agencies and CSOs to ensure that climate change decision-making, policies and programmes at all levels are gender responsive. It provides information, advocacy, training and capacity-building.⁵²

GenderCC

Women for Climate Justice was formed in 2008 as a global network of women, gender activists and experts from around the globe working to integrate gender justice into climate change policy at local, national and international level. It works through focal points in Asia, Africa, the Pacific, Latin America and North America. GenderCC is also the current focal point of the Women and Gender Constituency, a registered observer organisation at the UNFCCC.⁵³

⁵² www.gender-climate.org

⁵³ www.gendercc.net

5.4 Ways forward

This chapter has illustrated the potential for climate change solutions to take local realities into account in ways that are inclusive and – in many cases – transformative in their efforts to empower women and challenge perceptions of gender roles. These initiatives should not just inform policy; they can provide a basis for new policy approaches that are both more effective and contribute to gender equality. Yet there is still a glaring lack of available resources for such initiatives, despite the existence of large global funds for climate change adaptation and mitigation.

It is vital to ensure that funding is flexible and accessible to NGOs, community groups and local networks. This means modifying existing funds, simplifying application processes, making smaller amounts of money available so they can be absorbed by local organisations, and ensuring effective communication about the funds. It also means developing new sources of climate financing, such as the Green Finance Fund, that are designed with local communities in mind, rather than prioritising big business. Investing in existing and potential grassroots strategies is a clear way to ensure that appropriate, gender-aware responses are put in place and have scope to evolve as conditions change. Funding should also be available for international and national organisations that are working with these communities to raise awareness of climate change and help them think through relevant solutions as well as bringing their voices into the global climate change arena.

Lessons can also be learned at the micro level. Using participatory methods or engaging people in a consultative way does not automatically result in inclusive processes. Even when women are involved in equal numbers, they may feel less confident to speak out, or their opinions may not be taken into account. It is, therefore, imperative to pay careful attention to the design of participatory initiatives and to monitor them on a regular basis to identify areas of potential concern and ensure they do not inadvertently exacerbate gender inequalities.

Summary

This chapter has focused on innovative, local-level strategies for responding to climate change in a range of countries – whether mitigating or adapting to its effects. It calls for a more bottom-up approach that takes into account local needs, knowledge, insights and skills in adapting to and mitigating climate change. It outlines women's role in enabling many of these processes as well as the capacity of such initiatives to empower women and help transform women's and communities' perceptions of gender roles and capacities. As well as providing inspiration for those working on climate change at the local level, the chapter highlights the need for far greater coherence between these ground-level responses and global policy towards more effective, gender-aware processes that contribute to equality.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

'Climate change' has become a central issue and concern for national and international political agendas. Finally, the environmental and human implications of our increasingly carbon-intensive lifestyles are being taken seriously, and global measures are being put in place to mitigate further negative effects and adapt to changes that are already taking place. This has entailed mobilising significant financial resources and investing time and money in numerous conferences, international negotiations and scientific research. Yet, among this growing recognition of the need to do something about climate change, the people who are most affected by radical shifts in weather patterns and increases in climate-related disasters are being side-lined. The disproportionate emphasis on technological solutions has meant that the knowledge and experiences of those who are facing climate change on a daily basis, often in developing countries, are being discounted or ignored. This is compounded by power imbalances at the international level, where developing countries' voices and interests are being overshadowed by developed countries of the North and rapidly industrialising countries such as China and India.

As a result, climate change continues to be a key factor in exacerbating poverty in diverse ways, while policies such as water privatisation and REDD capitalise on the increased scarcity of resources in ways that further disempower the poorest people. Both women and men experience climate-related poverty, but gender inequalities in resource allocation, rights, opportunities and social status, coupled with the burden of unpaid care work and other gendered responsibilities, mean that women tend to be the most affected. There are multiple impacts on women, which are exacerbated by these existing inequalities and further entrench them. Overall well-being is seriously undermined, with daily responsibilities such as water collection becoming ever stressful and time-consuming. Livelihoods are threatened, as farming becomes more challenging and women are often unable to access credit, land or technologies that could enable them to find alternatives. Health is threatened as women and girls suffer disproportionately from malnutrition and other diseases linked to lack of food and clean water supplies. And women and girls' vulnerability is increased in the face of climate-related disasters and conflict – not because they are intrinsically more vulnerable, but because they often have less access to the knowledge and skills that could empower them in such situations.

Women may experience increased vulnerability in the face of climate change, but this does not mean they are powerless victims. As we have demonstrated in this report, women are responding to the challenge of climate change in innovative ways, using their knowledge of local conditions to adapt to difficult and unstable circumstances and to develop mitigation strategies. Their capacity to engage in these ways and to identify specific climate-related problems and solutions is being strengthened by civil society initiatives. Yet women's voices and insights are largely excluded from national and international climate change negotiations and community and household-level decision-making. This leaves them little opportunity to articulate their specific needs and concerns, which results in short-sighted, gender-blind policies that will be less effective in mitigating and alleviating the impacts of climate change because they fail to take local realities into account and may even intensify gender

inequalities. Yet enabling greater gender equity in decision-making around climate change is not only about effectiveness: women also have the right to be included in processes at all levels that will affect their lives and livelihoods.

Frameworks such as the UNFCCC are gradually becoming more gender aware but too often simply 'add gender' to existing policies and agreements that are fundamentally gender blind. Furthermore, 'gender issues' have tended to be conflated with 'women's issues'. It is vital to develop policies that respond to women's specific needs, but this is not the same as taking a gender-aware approach. As we have argued in this report, unless attention is paid to the multiple ways in which gender inequality and climate change are linked, climate change policies will continue to fall short, superficially taking the needs of all into account but in fact privileging a male perspective.

Most revealing in terms of this lack of focus on gender dimensions are mitigation policies, with market-based solutions that not only intrinsically exclude women but often add to their disadvantage by placing a monetary value on previously 'free' resources that are instrumental for their livelihoods. A growing body of research has highlighted how such mechanisms may exacerbate existing gender inequalities and threaten social justice, with women's access to both markets and investment capital limited by social, cultural and economic factors that mean they rarely benefit from market-based financing instruments in the same way as men (Alber 2011). These inequalities are replicated at the global level, with developing countries being expected to take on the bulk of the responsibility for mitigation while rich countries buy the right to continue their unsustainable practices. Furthermore, the inflexibility and criteria of climate funds makes them largely inaccessible for developing countries, with small-scale, grassroots initiatives even less likely to access them.

In response, this report calls for a people-centred approach to climate change that puts women and men and their relationships with one another at the heart of our understanding of and solutions to climate change. It stresses that climate policies and interventions must reflect the different perspectives and needs of the women and men who experience and respond to the effects of climate change on a daily basis. It argues for an approach that links international targets around carbon emissions with needs at the grassroots and that learns from and supports community-driven solutions to adapting and mitigating climate change that involve women and men as equal partners.

The report makes the important point that gender-aware climate change policy means integrating gender dimensions into all four areas of the Bali Action Plan – adaptation, mitigation, technology and financing, not by 'adding women' to pre-determined agreements and frameworks but grounding them in an understanding of gender power relations from the outset.

The report argues that gender equality is both a fundamental condition for sustainable and effective adaptation and mitigation and a potential end goal. It stresses that policies around climate change should promote women's empowerment by building their capacity to recognise and respond to the effects of climate change, and by ensuring they are equally involved in informing climate change policy and programmes at all levels. It also stresses that climate change and its responses provide a unique opportunity for enabling social and gender transformation, by challenging the underlying causes of inequality and injustice as an integral part of people-centred approaches. The report provides examples of initiatives in various countries that are addressing climate change in locally relevant,

gender-transformative ways, which should provide inspiration for those involved in developing climate change policies and programmes.

6.2 Recommendations

Climate change policymakers at national and international levels

- **Push for stronger political commitment to gender equality:** For transformation to take place, political commitment to gender equality is needed from the highest levels of the international institutions such as the UNFCCC, the World Bank, the multilateral and bilateral funds that currently dominate the global climate finance architecture, the governments promoting national strategies such as NAPAs and NAMAs, right down to the community-level organisations involved in the implementation of local interventions. It is also essential that political commitment to gender equality is improved at national level, in countries of the North and South.
- **Advocate for stronger participation of women in climate change institutions and processes:** In addition to pushing for stronger political commitment to the principles of gender equality, it is essential to advocate for greater presence of women at the negotiating tables, whether at international meetings such as the COPs or at national and regional dialogues on climate change. Donors also need to set an example by ensuring adequate consultation with stakeholders, both female and male, and ensuring that all their programmes draw on the participation and contributions of women and men.
- **Conduct institutional gender audits to identify gender-blind structures and processes:** Social and gender audits help to assess levels of gender blindness in climate change institutions and architecture. For example, a gender audit can assess whether resources are equally accessible to all stakeholders, male and female, and whether they meet the needs of and benefit both women and men equally.
- **Conduct gender-responsive budgeting** to ensure that planning, programming and budgeting contribute to the realisation of gender equality and women's rights.
- **Ensure all policies are grounded in human rights principles:** A rights-based approach would enable a shift in perspective towards a more people-centred and equitable framing of the challenge of climate change. Human rights, including women's rights, can inform both our understanding and our responses to climate change. The current international framework for addressing climate change would be enhanced and strengthened by drawing on existing human rights instruments such as CEDAW and the international human rights conventions to integrate stronger principles for empowering women and promoting gender equality.
- **Learn from people-focused, gender-aware approaches** at the local level and apply these lessons to national and international policy. Innovations are taking place in many countries, initiated by local communities, individuals and CSOs. Rather than viewing them as too specific to be applicable at a national or international level, it is vital to take from these initiatives the message that responses will only be effective, sustainable and gender equitable if they take into account the local environmental and socio-cultural context.
- **Link mitigation and adaptation approaches:** There is an urgent need to recognise and strengthen the overlaps between mitigation and adaptation strategies. More synchronised policies

around mitigation and adaptation are needed that reflect the needs of poor women and men in the South for energy sources and for adaptive capacity to climate change. Increased harmonisation between mitigation and adaptation is also fundamental to ensuring that efforts to mitigate and reduce carbon emissions are compatible with efforts to achieve gender justice and enable other gains such as women's economic empowerment

- **Promote alternatives to market-based responses:** Where possible, alternative approaches to mitigation and climate financing should be sought that do not exclude women or exacerbate gender inequalities, replicate or rely on inequalities between developed and developing countries. If market-based approaches are used to address climate change mitigation, measures are needed to ensure they do not exclude or further disadvantage women, and that women and men benefit equally from them.
- **Move beyond generalisations** that place women and men in two polarised groups. These stereotypes are not helpful in understanding complex realities where both women and men are both vulnerable to the effects of climate change and – in many cases – also actors in managing its responses. While it is true that climate change has increased many women's vulnerability and deepened their existing levels of poverty in many cases, it is important to see this in social terms – caused by the intersection of social, economic and political processes which prevent women from exercising their full rights – rather than as an inherent element of being female. A social vulnerability approach can be useful for contextualising the issues in this way.
- **Address the enabling environment:** Any shifts in global processes on climate change need to be underpinned by political and legislative reforms at the national and local levels that address gender inequalities such as women's lack of property rights and unequal access to resources such as land.

Donors

- **Promote national capacity on gender and climate change:** Donors need to build on their experience of working in partnership with governments in the South to promote political dialogue around gender equality as well as to strengthen country-level systems for generating and analysing gender-disaggregated data and building the capacity of these governments to integrate a more gender-aware, rights-based approach into climate change policy at national and local levels.
- **Invest in research and evidence around gender equality:** Donors need to acknowledge the value of gender-responsive climate change data and evidence. They need to recognise the importance of understanding the different impacts of climate change on women and men as well as the gender impacts of climate policies. This means allocating sufficient resources to the collection of robust and clear qualitative and quantitative data as well as investing in systematic gender training and capacity-building of relevant institutions in the North and South. It is also vital to support the development of clear gender indicators in the monitoring and evaluation of all adaptation and mitigation policies.
- **Push for more gender-aware finance mechanisms:** Integrating a gender perspective into climate finance is a matter of urgency, given that new funds are emerging and finance mechanisms are constantly evolving. Donors need to ensure that gender equality and social

equity priorities are included as key drivers of climate change financing. It is essential to establish clear mechanisms for integrating gender dimensions from the very outset to ensure effective, gender-aware operating procedures and to include clear gender indicators for the design, implementation and monitoring of all climate funds, whether addressing mitigation or adaptation.

- **Draw on lessons and existing tools for gender mainstreaming:** Donors could draw on lessons from gender mainstreaming in sustainable development programmes to find key entry points for integrating gender concerns into new climate policies and financing mechanisms. A number of tools already exist for mainstreaming gender into development plans, whether through gender budgeting, gender finance quotas, gender analyses of project and programme designs, gender accountability frameworks or gender-responsive indicators for monitoring and evaluation.
- **Foster innovation and pilot new initiatives:** Donors need to identify opportunities for innovation and new initiatives that may enable the successful integration of gender into climate change policies. For example, they need to promote innovative new work in areas such as Adaptive Social Protection, which draws on the lessons of social protection, disaster risk reduction and adaptation and offers the opportunity to address the structural root causes of vulnerability to climate change and to channel resources to the most vulnerable groups to enable them to build more resilient livelihoods. They also need to channel more resources to organisations working at the local level to raise awareness of and resilience to climate change, and to encourage greater gender awareness in such initiatives.
- **Push for stronger policy coherence:** Donors need to ensure more coherence within aid programmes as well as between policies aimed at mitigation and adaptation to ensure a more integrated, gender-aware approach to climate change. It is also vital that there is coherence with other policy areas such as trade, finance and transport, to ensure policy decisions in these areas do not have the effect of cancelling out progress made on global and national climate change responses.
- **Ensure adequate funding for climate change activities:** It is important that investment in adaptation and mitigation be seen as additional to sustainable development and funded from new sources beyond existing ODA commitments. Otherwise there is a risk that diversion of funds from ODA to climate change may lead to decreased funding for work on women's rights or empowerment (Ayers and Huq 2008).

CSOs and NGOs

- **Strengthen women's capacity, especially at the local level:** A stronger focus is needed on empowering women – particularly at the local level – to participate in dialogue and policymaking at community, national, regional and international levels. Many CSOs and NGOs are already contributing to this goal by sharing information on climate change and ensuring women and men have access to the resources and knowledge necessary to develop effective responses, participate in programmes to address climate change and make their voice heard at national and international levels. Donors should provide financial support to such initiatives where possible.
- **Raise awareness about climate change impacts and foster good practices in adaptation and mitigation:** Information needs to be shared and circulated about innovation and good practices in the fields of adaptation and mitigation at local levels and the way in which the two

areas can complement one another. This may be through more integrated programmes around renewable energy provision for excluded communities, for example. It is important to ensure that the participatory principles at grassroots level are integrated into policymaking at national and international levels.

- **Strengthen the linkages between women and men at grassroots level and funding mechanisms:** NGOs and CSOs have a key role to play in bridging the enormous divide between the international climate funds and the poor communities which have the greatest needs but least capacity to access these funds. This has been achieved by organisations such as Grameen Shakti in Bangladesh, for example, which empowered women's groups to form cooperatives to access climate funds to support gender-sensitive low carbon development programmes around renewable energy.
- **Share good practice on participatory processes:** NGOs and CSOs have many lessons to share with governments and donor agencies on the role of participatory processes in the creation and implementation of more effective climate change policies and interventions. A stronger focus is now needed on how greater participation can enhance the collection of data around climate change as well as the monitoring and evaluation of its impacts and the effects of climate-related policies.
- **Ensure participatory processes include women and men equally:** Careful design is needed to avoid replicating gender inequalities in processes that are intended to be inclusive. It is vital to be aware of potential constraints on women's ability to be involved, including child care responsibilities and cultural restrictions, and to enable their involvement – for example, by allowing women to bring their children to meetings or holding them at convenient times. Be aware of the gender dynamics in participatory workshops and consultative processes – for example, male community members may be more used to expressing their opinions and feel their views are more valid – and find appropriate ways to address these issues.

Researchers

- **Play a key role in building the evidence base on why gender equality matters for climate change:** This involves strengthening the collection of gender-disaggregated data, carrying out more thorough gender and social analyses and ensuring that the findings from these inform climate change policies and interventions. Further research is needed into women's and men's different access to resources and decision-making, to inform policymakers and ensure that programmes are both more efficient and relevant. More research is also needed to expose the ways in which existing systems and processes are gender blind.
- **Recognise the value of qualitative data and improve their collection:** Quantitative data are useful in terms of understanding how climate change is affecting women and men at national, regional and international levels, but they say little about the causes behind certain trends, such as increased female malnutrition in climate change-affected areas. To gain a clearer understanding of the social, economic and cultural reasons behind particular impacts and to identify solutions that will benefit women and men experiencing these impacts, far more detailed qualitative work is needed – particularly in Asia and Latin America, where there are large gaps in information.

- **Develop research around mitigation and gender:** Much of the research on climate change and gender has focused on adaptation, with very little information on either the gender risks or opportunities of mitigation interventions. More research is now needed of the gender dimensions of mitigation measures such as low carbon development, and of the ways in which policies or market-based mechanisms may affect gender relations.
- **Undertake more nuanced analysis of gender and climate change:** Future research on gender and climate change should go beyond questions of women's vulnerability to examine women's agency, as well as the wider institutional environment, discriminatory laws and cultural barriers that exclude them from equal land ownership, education, food and water security or financial services.

7. BIBLIOGRAPHY

- Adger, W. N.** (1999) 'Social vulnerability to climate change and extremes in coastal Vietnam', *World Development* 27(2): 249–269, Amsterdam: Elsevier.
- Agarwal, B.** (1997) "Bargaining" and gender relations within and beyond the household', *Feminist Economics*, Vol. 3. No. 1, London: Routledge.
- Aguilar, L.** (2006) *Climate Change and Disaster Mitigation: Gender Makes a Difference*, Gland: International Union for Conservation of Nature (IUCN).
- Akerkar, S.** (2010) *BRIDGE Gender and Participation Overview Report*, Brighton: IDS
- Alber, G.** (2011) 'Gender, Cities and Climate Change', *Cities and Climate Change Global Report on Human Settlements 2011*, Kenya: UN Habitat.
- Angula, M.** (2010) *Gender and Climate Change: Namibia Case Study*, Cape Town: Heinrich Böll Stiftung Southern Africa.
- Ayers, J. and Huq, S.** (2008) 'Supporting Adaptation to Climate Change: What role for Official Development Assistance?', paper presented at DSA Annual Conference, London, 2008.
- Balmori, H.** (2003) *Gender and Budgets Overview Report*, Brighton: BRIDGE/IDS
- Bates, B., Kundzewicz, Z. et al.** (2008) *Climate Change and Water. Technical Paper of the IPCC*, IPCC Technical Papers, Geneva: IPCC Secretariat.
- Bell, E.** (2001) *Water for Production: an overview of the main issues and collection of supporting resources*, Brighton: BRIDGE, IDS.
- Blackden, M. E. and Wodon, Q.** (2006) *Gender, Time Use, and Poverty in Sub-Saharan Africa*, World Bank Working Papers, Washington DC: World Bank.
- Blaikie, P., Cannon, T., Davis, I. and Wisner, B.** (2003) *At Risk: Natural Hazards, People's Vulnerability and Disasters*, London: Routledge.
- Brody, A., Demetriades, J. and Esplen, E.** (2008) *Gender and Climate Change: Mapping the Linkages – A Scoping Study on Knowledge and Gaps*, Brighton: BRIDGE, IDS.
- Brown, K. and Corbera, E.** (2003) *A Multi-Criteria Assessment Framework for Carbon-Mitigation Projects: Putting 'development' in the centre of decision-making*, Tyndall Centre Working Papers, Norwich: University of East Anglia.
- Burns, B.** (2011) 'Cancun Climate Negotiations: Taking Great Strides for Women's Rights and Gender Equality', *Outreach*, Cancun: Stakeholder Forum.
- Cannon, T.** (2002) 'Gender and climate hazards in Bangladesh', *Gender and Development Journal* 10(2) 45–50, London: Routledge.
- CARE International** (2010) *Adaptation, gender and women's empowerment*, CARE International Climate Change Briefs, London: CARE International.
- Chant, S.** (1998) 'Households, gender and rural–urban migration: reflection on linkages and considerations for policy', *Environment and Urbanization* 10(1): 5–21, London: Sage.
- Dankelman, I.** (2010) *Gender and Climate Change: An Introduction*, London: Earthscan.
- Davies, M., Leavy, J., Mitchell, T. and Tanner, T.** (2008) *Social Protection and Climate Change Adaptation*, Stockholm: Commission on Climate Change and Development.
- Dennison, C.** (2003) 'From Beijing to Kyoto: Gendering the International Climate Change Negotiation Process', 53rd Pugwash Conference on Science and World Affairs, Halifax.
- El Jack, A.** (2003) *BRIDGE Gender and Armed Conflict Overview Report*, Brighton: BRIDGE, IDS.
- Elson, D. and Pearson, R.** (1981) "Nimble fingers make cheap workers": an analysis of women workers in third world export manufacturing', *Feminist Review*, Vol. 7, London: Palgrave Macmillan.
- Esplen, E.** (2009) *BRIDGE Gender and Care Overview Report*, Brighton: BRIDGE, IDS.
- Esplen, E.** (with A. Brody) (2007) 'Putting gender back into the picture: rethinking women's economic empowerment', *BRIDGE Overview and Annotated Bibliography* no. 19, Brighton: BRIDGE, IDS
- FAO** (2011) 'The State of Food and Agriculture 2010–2011: Women in Agriculture'. *Closing the Gender Gap for Development*, Rome: Food and Agriculture Organization.

- Folbre, N.** (2000) *The invisible heart – economics and family values*, New York: The New Press.
- GEF** (2008) *Mainstreaming Gender at the GEF*, Washington DC: Global Environment Facility.
- GIZ** (2011). *Gender & Climate Change: Gender Experiences from Climate-Related GIZ Projects*, Factsheet 4, Eschborn: GIZ.
- GIZ** (2010a) *Gender Analysis in Climate Change and Coastal Ecosystems in Vietnam*, UEA International Development Papers, Norwich: University of East Anglia, GIZ.
- GIZ** (2010b) *Climate change and gender: economic empowerment of women through climate mitigation and adaptation*, Eschborn: GIZ.
- GO-Science** (2011) *Foresight – The Future of Food and Farming: Executive Summary*, London: Government Office for Science.
- Hall, R. and Lovera, S.** (2009) *REDD Realities: How strategies to reduce emissions from deforestation and forest degradation could impact on biodiversity and Indigenous Peoples in developing countries*, Asuncion: Global Forest Coalition.
- Hartmann, B.** (1995) *Reproductive rights and wrongs: the global politics of population control*, Boston: South End Press.
- Hemmati, M. and Roehr, U.** (2009) 'Engendering the climate-change negotiations: experiences, challenges and steps forward', *Gender and Development* 17(1), London: Routledge.
- Hepburn, C.** (2007) 'Carbon Trading: A Review of the Kyoto Mechanisms', *Annual Review of Environment and Resources* 32: 375–393, California: Annual Reviews.
- Hulme, M.** (2009) *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*, Cambridge: Cambridge University Press.
- Huq, S. and Reid, H.** (2007) *Community-based adaptation: An IIED briefing*, London: IIED.
- IAASTD** (2009) *Synthesis Report of the Global and Sub-Global IAASTD Reports*, Washington DC: International Assessment of Agricultural Knowledge, Science and Technology for Development.
- ICHRP** (2008) *Climate Change and Human Rights: A Rough Guide*, Geneva: International Council on Human Rights Policy.
- IDS** (2009) 'After 2015: Pro-Poor Low Carbon Development', *IDS In Focus Policy Briefing*, Brighton: IDS.
- IEA** (2010) *World Energy Outlook*, Paris: International Energy Agency.
- IPCC** (2007) *Climate Change 2007: Synthesis Report of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Geneva: IPCC
- ITUC** (2009) *Gender (in)equality in the labour market: an overview of global trends and developments*, Brussels: The International Trade Union Confederation.
- Jackson, C.** (1998) 'Women and poverty or gender and well-being?', *Journal of International Affairs*, Vol. 52, Issue 1, New York: Columbia University.
- Johnsson-Latham, G.** (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*, Stockholm: Environment Advisory Council.
- Johnsson-Latham, G.** (2010) 'Why More Attention to Gender and Class Can Help Combat Climate Change and Poverty' in I. Dankelman (ed.) *Gender and Climate Change: An Introduction*, London: Earthscan.
- Jolly, S.** (2004) 'Gender Myths', *BRIDGE In Brief*, Brighton: BRIDGE, IDS.
- Jones, L., Jaspars, S., Pavenello, S. et al.** (2010) *Responding to a changing climate. Exploring how disaster risk reduction, social protection and livelihoods approaches promote features of adaptive capacity*, ODI Working Papers, London: ODI.
- Kabeer, N.** (1999), 'Resources, Agency, Achievements: Reflections on Measurements of Women's Empowerment', *Development and Social Change*, Vol. 30, Issue 3.
- Kabeer, N.** (2008) *Paid work, women's empowerment and gender justice: critical pathways of change*, Pathways Working Paper 3, Brighton: IDS.
- Kabeer, N. and Subrahmanian, R.** (1996) *Institutions, Relations and Outcomes: Framework and Tools for Gender-Aware Planning*, IDS Discussion Papers, Brighton: IDS.
- Karlsson, G., Owren, C., Rojas, A. and Harris, R.** (2010) *Gender, Energy Technology and Climate Change*, New York: WEDO and Energia.

- Kelkar, G.** (2009) *Adivasi Women – Engaging with Climate Change*. Rome: International Fund for Agricultural Development, New York: UNIFEM, The Christensen Fund.
- Lambrou, Y. and Piana, G.** (2006a) *Energy and Gender Issues in Rural Sustainable Development*, Rome: FAO.
- Lambrou, Y. and Piana, G.** (2006b) *Gender: The missing component of the response to climate change*, Rome: FAO.
- Lohmann, L.** (2006) 'Carbon trading: a critical conversation on climate change, privatisation and power', *Development Dialogue* 48(32), New York: Dag Hammarskjold Foundation.
- Lomborg, B.** (2001) *The Skeptical Environmentalist: Measuring the Real State of the World*, Cambridge: Cambridge University Press.
- Lourdes, B.** (2003) *Gender, development and globalisation: economics as if all people mattered*, London: Routledge.
- Lovera, S.** (2008) *Life as Commerce: The impact of market-based conservation mechanisms on women*, Amsterdam: Global Forest Coalition.
- Magrath, J. and Simms, A.** (2006) *Africa: Up in Smoke?: Second Report from the Working Group on Climate Change and Development*, London: NEF, IIED.
- Mary Robinson Foundation** website: <http://www.mrfcj.org>.
- Masika, R.** (2002) *Gender, development, and climate change*, Oxford: Oxfam.
- Mbuthi, P., Odongo, F. et al.** (2007) *Gender Audit of Energy Policy and Programmes in Kenya*. Energia Gender Audits, Nairobi: Energia, Kenyan Ministry of Energy and Practical Action.
- McKiernan, C. and Loftus-Farren, Z.** (2011) 'The Human Rights Impacts of Climate Policy', Submission to the UNFCCC, Berkeley: International Human Rights Law Clinic, Berkeley Law.
- Metwalli, A. A. M., de Jongh, H. H. J., van Boekel, M. A. J. S., Cohen, S., Demeritt, D., Robinson, J. and Rothman, D.** (1998) 'Climate change and sustainable development: towards dialogue', *Global Environmental Change* 8(4): 341–371, Amsterdam: Elsevier.
- Miguel, E., Satyanath, S. and Sergenti, E.** (2004) 'Economic shocks and civil conflict: An instrumental variables approach', *Journal of Political Economy* 112(4): 725–753, Chicago: University of Chicago Press.
- Mitchell, T., Tanner, T. et al.** (2007) *'We Know What We Need' South Asian Women Speak Out on Climate Change Adaptation*, London: Action Aid, IDS.
- Moon, B. K.** (2007) 'The future in our hands: addressing the leadership challenge of climate change', High-level event on climate change, New York: UN.
- Moser, A.** (2007) *BRIDGE Gender and Indicators Overview Report*, Brighton: BRIDGE, IDS.
- Moser, C. and Satterthwaite, D.** (2010) 'Toward Pro-Poor Adaptation to Climate Change in the Urban Centers of Low and Middle Income Countries', in R. Mearns and A. Norton (eds) *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*, Washington DC: World Bank.
- Nelson, V., Meadows, K., Cannon, T. and Morton, J.** (2002) 'Uncertain Predictions, invisible impacts, and the need to mainstream gender in climate change adaptations', *Gender and Development* 10(2), London: Routledge.
- Neumayer, E. and Plumper, T.** (2007) 'The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002', *Annals of the Association of American Geographers* 97(3), Washington DC: Association of American Geographers.
- Ngozi Akosa, T. and Oluyide, A.** (2010) *Gender and Climate Change – Case Study of Oko Agbon Odooyi Community*, Case Study Series, Lagos, Nigeria: Centre for 21st Century Issues.
- Nyamu-Musembi, C. and Cornwall, A.** (2004) *What is the Rights-Based Approach all about? Perspectives from International Development Agencies*, IDS Working Paper, Brighton: IDS.
- OECD** (2008) *Gender and Sustainable Development, maximising the economic, social and environmental role of women*, Paris: Organisation for Economic Co-operation and Development.
- Okali, C.** (2011) *Integrating Social Difference, Gender and Social Analysis into Agricultural Development*, Future Agricultures Policy Briefs, Brighton: Future Agricultures Consortium, IDS.
- Otselberger, A.** (2011) *Gender-responsive strategies on climate change: recent progress and ways forward for donors*, Brighton: BRIDGE, IDS.
- Oxfam** (2011) *Climate change investment through the Pilot Programme for Climate Resilience in Tajikistan*, Oxford: Oxfam GB.

- Parikh, J. and Sangeeta, K.** (2009) *Gender Analysis of Renewable Energy in India: Present Status, Issues, Approaches and New Initiatives*, Energia Gender Audits, New Delhi: Energia, Integrated Research and Action for Development (IRADe).
- Peralta, A.** (2008) *Gender and Climate Change Finance: A Case Study from The Philippines*, New York: WEDO.
- Peredo Beltran, E.** (2004) *Water, Privatisation and Conflict: Women from the Cochabamba Valley*, Global Issues Paper, Washington DC: Heinrich Böll Foundation.
- Petrie, B.** (2008) *Gender and Climate Change: Regional Report*, Cape Town: Heinrich Böll Foundation.
- Prins, G., Galiana, I. et al.** (2010) *The Hartwell Paper: a new direction for climate policy after the crash of 2009*, London: London School of Economics.
- Quisumbing, A. and Pandolfelli, L.** (2009) *Promising Approaches to Address the Needs of Poor Female Farmers: Resources, Constraints, and Interventions*, IFPRI Discussion Paper, Washington DC: International Food Policy Research Institute.
- Raczek, T., Blomstrom, E. and Owren, K.** (2010) 'Climate Change and Gender: Policies in Place', in I. Dankelman (ed.) *Gender and Climate Change: An Introduction*, London: Earthscan.
- Raety, R. and Carlsson-Kanyama, A.** (2010) 'Energy consumption by gender in some European countries', *Energy Policy* 38(1), Amsterdam: Elsevier.
- Ramachandran, N.** (2006) *Women and Food Security in South Asia*, London: Palgrave Macmillan/UNU-WIDER.
- Ravels, S.** (2008) *REDD myths: a critical view of proposed mechanisms to reduce emissions from deforestation and degradation in developing countries*, Amsterdam: Friends of the Earth.
- Raworth, K.** (2008) *Climate Wrongs and Human Rights: Putting people at the heart of climate-change policy*, Oxford: Oxfam GB.
- Rayner, S.** (2010) *How to eat an elephant: a bottom-up approach to climate policy*, Oxford: University of Oxford.
- Reid, H., Simms, A. and Johnson, V.** (2007) *Up in Smoke? Asia and Pacific: A report from the Working Group on Climate Change and Development*, London: New Economics Foundation.
- Rivero Reyes, R.** (2002) 'Gendering responses to El Niño in rural Peru', *Gender and Development* 10(2), London: Routledge.
- Rodenberg, B.** (2009) *Climate Change Adaptation from a Gender Perspective*, Bonn: Deutsches Institut für Entwicklungspolitik.
- Roehr, U.** (2007) *Protecting Tropical Forests and Gender Justice: Position Paper for UNFCCC COP 13*, Bali: GenderCC.
- Roehr, U.** (2008) 'Gender aspects of climate induced conflicts', *Environment and Conflict Special Edition Newsletter on Gender, Environment, Conflict*, Germany: Adelphi Research.
- Roehr, U.** (2009) 'A view from the side? Gendering the United Nations Climate Change Negotiations', *Gendering Climate Change. Women Gender and Research*, Copenhagen: University of Copenhagen Press.
- Roehr, U. and Hemmati, M.** (2008) 'Solidarity in the Greenhouse: Gender Equality and Climate Change', in V. Grovers (ed.) *Global Warming and Climate Change: Ten Years after Kyoto and Still Counting*, Enfield NH: Science Publishers.
- Roehr, U., Spitzner, M., Stiefel, E. and Winterfeld, U.** (2008) *Gender Justice as the Basis for Sustainable Climate Policies: A Feminist Background Paper*, Bonn: German NGO Forum for Environment and Development.
- Rooke, A.** (2008) *Gender, International Finance and Climate Change Link*, GenderActionLinks, Washington DC: Gender Action.
- Rossi, A. and Lambrou, Y.** (2008) *Gender and Equity Issues in Liquid Biofuels Production*, Rome: Food and Agriculture Organization.
- Schalatek, L.** (2009) *Gender and Climate Finance: Double Mainstreaming for Sustainable Development*, Berlin: Heinrich Böll Foundation.
- Schalatek, L. and Bird, N.** (2010) *Climate Finance Fundamentals*, Berlin: Heinrich Böll Stiftung, ODI.
- Sever, C.** (2005) *Gender and Water: Mainstreaming gender equality in water, hygiene and sanitation interventions*. Bern: SDC.

- Simms, A. and Reid, H.** (2006) *Up in smoke? Latin America and the Caribbean: Third Report from the Working Group on Climate Change and Development*, London: NEF, IIED.
- Singh, A., Svensson, J. et al.** (2010) 'Gender-disaggregated data for assessing the impact of climate change', in I. Dankelman (ed.) *Gender and Climate Change: An Introduction*, London: Earthscan.
- Skutsch, M.** (2002) 'Protocols, treaties and action. The "climate change process" viewed through gender spectacles', *Gender and Development* 10(2), London: Routledge.
- Spitzner, M.** (2007) *Urban mobility and gender: Promoting the regional public transport system in greater Jakarta area*, KfW Entwicklungsbank Position Paper, Germany: KfW.
- Stern, N.** (2006) *Stern Review on the Economics of Climate Change*, London: HM Treasury.
- Swarup, A., Dankelman, I., Ahluwalia, K. and Hawrylyshyn, K.** (2011) *Weathering the Storm: Girls and Climate Change*, London: Plan International.
- Terry, G.** (2009) *Climate Change and Gender Justice*, Rugby: Practical Action Publishing Ltd.
- Timmons Roberts, J. and Parks, B.** (2006) *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy*, Boston: MIT Press.
- Tol, R. S. J.** (2005) 'Adaptation and mitigation: trade-offs in substance and methods', *Environmental Science and Policy* 8(6), Amsterdam: Elsevier.
- UNDP** (2007) *Human Development Report 2007–2008: Fighting climate change: Human solidarity in a divided world*, New York: UNDP.
- UNDP** (2009) *Resource Guide on Gender and Climate Change*, New York: UNDP.
- UNDP and Energia** (2004) *Gender and Energy for Sustainable Development: A Toolkit and Resource Guide*, New York: UNDP, Energia.
- UNFPA and WEDO** (2009) *Climate Change Connections: A resource kit on climate, population and gender*, New York: UNFPA, WEDO.
- UNFCCC** website: http://unfccc.int/essential_background/glossary/items/3666.php.
- UNISDR** (2008) *Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation*, Geneva: United Nations International Strategy for Disaster Reduction (UNISDR).
- UNISDR** (2009) *Global Assessment Report*, Geneva: UNISDR.
- UN Women** website: <http://www.un.org/womenwatch/osagi/conceptsanddefinitions.htm>.
- Vargas Hill, R. and Vigneri, M.** (2009) *Mainstreaming Gender Sensitivity in Cash Crop Market Supply Chains*, ODI Background Papers, London: ODI.
- Vincent, K., Wanjiru, L. et al.** (2010) *Gender, Climate Change and Community Based Adaptation*, New York: UNDP.
- World Food Programme** (2009) *World Food Programme Gender Policy and Strategy: Promoting Gender Equality and the Empowerment of Women in Addressing Food and Nutrition Challenges*, Rome: World Food Programme.
- WHO** (2010a) 'Gender, Climate Change and Health', Draft Discussion Paper, Geneva: World Health Organization.
- WHO** (2010b) *Climate Change and Health*, Factsheet number 266, Geneva: World Health Organization: <http://www.who.int/mediacentre/factsheets/fs266/en/index.html>.
- World Bank** (2008) *Gender Equality in Infrastructure: A Key to Development in Africa*, Washington DC: World Bank.
- World Bank** (2001) 'Hurricane Mitch - the gender effects of coping and crises', PREM notes, Washington DC: World Bank.
- World Bank** (2010a) *Natural Hazards, Unnatural Disasters: The economics of effective prevention*, Washington DC: World Bank, UN.
- World Bank** (2010b) *World Development Report 2010: Development and Climate Change*, Washington DC: World Bank.
- World Water Council** (2010) *World Water Vision: Making Water Everybody's Business*, Marseilles: World Water Council.
- Xinhua** (2011) *Community Seed Banks to Empower Rural Women*, Manila, Philippines: Philstar.