



Gender and Climate Change in Viet Nam

-

A Desk Review

(Final report 22.12.08 edited 230209)

Table of Contents

List of Figures and Tables.....	ii
Acknowledgements.....	ii
List of Acronyms	iii
Summary	iv
1. Introduction.....	1
1.1 Background.....	1
1.2 Objectives and methodology.....	2
1.3 Climate change in Viet Nam.....	2
What is climate change?	2
How does climate change affect Viet Nam?.....	3
1.4 Gender and climate change: a framework for analysis	3
1.5 Structure of the paper.....	4
2. Gender Impacts of Climate Change.....	6
2.1 Gender, livelihoods and climate change	6
Agriculture	6
Fisheries and aquaculture.....	8
Forestry	10
Wage labour and non-agricultural self-employment	11
2.2 Migration in the context of climate change	12
2.3 Health impacts and care givers	15
Health impacts	15
Impact on women and girls as caregivers	17
3. Adaptation and Participation of Women.....	18
3.1. Adaptation strategies and women's constraints	18
Strategies.....	18
Constraints	20
3.2 Participation of women in decision making.....	23
4. Gender and Climate Change Adaptation Policy	25
4.1 National Target Program on Climate Change.....	25
4.2 Current policy responses.....	26
4.3 Challenges.....	27
5. Conclusions and Recommendations for Future Research	29
References.....	31

List of Figures and Tables

Figure 1: Climate Change Impacts and Gender Implications	5
Figure 2: More Women in Agriculture and Self-Employment	7
Figure 3: Land Tenure Titling	21
Table 1: Gender-disaggregated responses to initiatives to reduce vulnerability to climate events	19
Table 2: Access to weather forecast information by sex	22
Table 3: Decision making at the household level	23
Table 4: Women and men in leadership and management positions	24

Acknowledgements

This Desk Review was written by Tran Thi Van Anh, with substantive advice and support in accessing literature, as well as editorial support, from Ingrid Fitzgerald, Koos Neefjes, Michael Parsons, Vu Phuong Ly, April Pham, Suzette Mitchell, Ha Thi Van Khanh, Marjo-Riitta Tervonen, and Stanford Smith.

List of Acronyms

ADB	Asian Development Bank
GDP	Gross Domestic Product
DFID	UK Department for International Development
DONRE	Department of Natural Resources and Environment
FAO	Food and Agriculture Organization
IUCN	International Union for Conservation of Nature
MARD	Ministry of Agriculture and Rural Development
MDG	Millennium Development Goal
MOLISA	Ministry of Labour, Invalid and Social Affairs
IFAD	International Fund for Agricultural Development
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MCD	Centre for Marine life Conservation and Community Development
NGO	Non-government Organization
NTP	National Target Programme on Responding to Climate Change
PCG	Gender Programme Coordination Group
PEP	Poverty and Environment Project
SIDA	Swedish International Development Agency
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nation Framework Convention on Climate Change
VASS	Viet Nam Academy of Social Sciences
VHLSS	Viet Nam Household Living Standard Survey
WB	World Bank
WEDO	Women's Environment and Development Organization
WHO	World Health Organization

Summary

Addressing gender-specific impacts of climate change in Viet Nam has been identified as a cross-sectoral issue in the UN's work with the Government of Viet Nam. This study aims to raise awareness and trigger discussion that would feed into ongoing policy work on climate change at the national and global levels, and also into programming. The study was commissioned by the UN Viet Nam Programme Coordination Group (PCG) on Gender, in the context of development of the action plans of the National Target Programme on Responding to Climate Change (NTP).

The study presents gender dimensions of climate change impacts and responses based on international and Vietnamese literature, including current policy responses, and proposes additional research. It constitutes desk-based analysis of available data on climate change, disaster risk reduction, and poverty reduction.

The study examines gender and vulnerability to climate change in terms of access to resources, diversity of income sources and the social status of women and men in communities. The analytical framework focuses on climate change and its effects on three roles of women: the productive role (especially women's livelihoods including migration); the reproductive role (especially women's health and security); and community and politics (particularly women's capacity and participation). The study analyzes the specific and interrelated implications of the impacts of climate change on specific aspects of women's roles.

The study's first part examines the impacts of climate change on women in the areas of livelihoods, migration and health. Women are concentrated in agriculture and/or are self-employed, and participate in most production activities though they have less access to, and control over the resources that they depend upon for providing food and income, compared to men. Long-term gradual climate change will affect agricultural and ecological systems. Because they are more dependent on land and natural resources for their livelihoods, women are more vulnerable to resource scarcity.

Migration is increasing because of the increased severity of the effects of natural disasters as a result of climate change. Women who migrate often earn less than men and yet remain responsible for domestic and reproductive work. Women left behind when other family members migrate will be particularly affected, as they will have to take over male responsibilities without equal access to resources such as land and credit.

In addition, more women die than men from the direct and indirect results of natural disasters. Children and pregnant women are particularly susceptible to water-borne diseases such as diarrhoea and cholera. The elderly are at the highest risk from climate

change-related health impacts like heat stress and malnutrition. With existing patterns of gender discrimination, both women and girls suffer more during, and in the aftermath of natural disasters.

The second part of the study explores adaptation strategies and women's participation in climate-related disaster management at the local level. Women, especially poor women, have a limited range of coping strategies. The main constraints to women's resilience are inadequate resources and limited access to and control over land, credit and information. Women often have less say in decision making related to natural resources and disaster management, despite their role and experiences in these areas. It is argued that using women's knowledge and experience more fully would bring benefits to communities, households and women themselves.

The third part of the study provides insights into climate change policy and gender issues. The NTP emphasizes gender equality as one of the guiding principles. However, women's involvement in the discussions and consultations in the process of the NTP's development was limited, and concrete gender targets have not been formulated.

The UN, donors and international NGOs, in collaboration with the Government, local authorities and national NGOs, work on several projects and plan analytical work on social aspects of climate change, including gender relationships. However, the challenges remain, of limited knowledge of gender and climate change, and limited analytical skills for policy formulation and actions related to equitable climate change responses.

Future research on gender and climate change is needed in five areas:

- a) gendered impacts, adaptation strategies to increase resilience, and priorities of women and men in different contexts, including rural livelihoods related to agriculture, animal husbandry, forestry and fisheries/aquaculture, as well as livelihood strategies in urban settings;
- b) impacts of climate change on gender roles and relations at the household level, including links between severe stress from natural disasters and violence against women and girls;
- c) the links between climate change, gender and migration;
- d) barriers to women's participation in decision making on responses to climate change at the household and community level; and
- e) best practices for gender-sensitive responses to climate change-related disasters in rural and urban settings, including ensuring equal access to health services.

1. Introduction

1.1 Background

Viet Nam is one of the most disaster prone countries in the world. Frequent natural disasters affecting Viet Nam include typhoons and storm surges, river floods, landslides from heavy rains, and also droughts. An average one million Vietnamese are already affected annually by natural disasters, including flooding in the Mekong Delta region. Damage due to natural disasters has increased in recent decades, and this trend may continue because typhoon and rainfall patterns alter as a result of climate change (Viner, D. and Bouwer, L. 2006). The impacts of climate change, including the more gradual climatic changes not directly linked to natural disasters, may well affect Viet Nam's capacity to achieve the MDGs, and these include potentially worsening gender inequalities, additional workload for women, and the vulnerability of women in households with fewer assets and resources (MONRE 2008).

The climate change challenge has been recognized by the Government of Viet Nam, and a National Target Program on Responding to Climate Change (NTP) was approved in December 2008. The NTP focuses on climate change impacts and also covers the formulation of measures that limit green house gas emissions¹. It also identifies the need to conduct vulnerability assessments at sectoral, regional and community levels, and identifies the poor, women and children as among the groups that are most vulnerable to the impacts of climate change. However, there are no specific targets or activities which address vulnerability, or gender issues in particular, at the household, community or higher levels. The potential contribution that women can make to planning for and coping with the impacts of climate change at the national and local levels is not addressed either. In addition, research on natural disasters shows that gender differences and the specific needs of men and women are not currently well addressed in local planning and relief efforts (Vu Minh Hai 2004).

This study was carried out under general agreement in the UN Viet Nam's Programme Coordination Group (PCG) on Gender. It was initiated in the context of the NTP, for which detailed action plans are soon to be developed. UN agencies have identified the need for a more coordinated approach to supporting the Government of Viet Nam and the national response to climate change. UNDP is the leading UN agency working on climate change in Viet Nam, with several initiatives on climate change in place, including support to the Government for climate change policy development and improvement of the climate change knowledge base. Analysis of gender-specific impacts of climate

¹ This is consistent with the Nationally Appropriate Mitigation Actions (NAPAs) that were agreed in the "Bali Action Plan" by the Parties to the UN Framework Convention on Climate Change, UNFCCC, in December 2007

change in Viet Nam has been identified as a cross-sectoral issue and will be further addressed by UN organizations in close collaboration with projects in the Ministry of Natural Resources and Environment (MONRE), Ministry of Agriculture (MARD) and Rural Development and the Ministry of Planning and Investment (MPI). It is anticipated that this study will raise awareness and trigger discussion of these issues at national and international levels, and feed into ongoing policy work on climate change, both nationally and globally.

1.2 Objectives and methodology

This study assesses:

- ♦ what the international literature tells us about the gender dimensions of climate change, including frameworks for analysis;
- ♦ what we know from Vietnamese data and literature, and where there are gaps when mapped against the international literature and analytical frameworks;
- ♦ the current policy response and issues policy makers will need to consider in light of the above; and
- ♦ recommendations for further research (i.e. the study's results should help define more detailed research, including some field research).

It also makes use of available resources, drawing from them useful insights to inform and strengthen future research and policy interventions related to gender and climate change.

The existing literature is primarily:

- ♦ international literature on gender and climate change;
- ♦ Vietnamese literature on climate change and natural disasters; and
- ♦ national policy and planning documents and frameworks.

This study includes an analysis of draft data on climate change and poverty from a UNDP project. A consultative meeting with experts in the field of climate change and gender equality provided inputs during the course of the research.

1.3 Climate change in Viet Nam

What is climate change?

Climate change is any long-term significant change in the “average weather” that a given region experiences. The United Nation Framework Convention on Climate Change (UNFCCC) states that human activities have substantially increased the atmospheric concentration of greenhouse gases. These increases enhance the natural greenhouse effect, which results in warming of the earth's surface and atmosphere and may adversely affect natural ecosystems and humankind.

Climate change is already an imminent threat and the projected changes in the earth's climate are an environmental concern with severe social and economic implications. Climate change represents a serious challenge to sustainable development, social justice, equity and respect for human rights, especially the rights of future generations. Poor people are more vulnerable to climate change due to their limited adaptive capacities to a changing environment. The rural poor, elderly, and rural women and girls are amongst the most vulnerable to specific effects of climate change (WEDO 2008).

How does climate change affect Viet Nam?

A study of eighty-four countries reveals that Viet Nam is among the countries with the most adverse impacts of global climate change and especially sea level rise, affecting land, population, GDP, urban areas, agriculture, and wetlands (Dasgupta et al. 2007).

74 percent of the population of Viet Nam is concentrated along the coastal plains and river deltas which would be most affected by sea level rise (ICEM 2008). A one metre sea level rise, which is likely to be reached some time in the next century, would directly affect almost 10 percent of the current population.

Climate change and sea level rise could increase flooded areas, obstruct water drainage, intensify coast line erosion and enhance salt water intrusion, cause difficulties for agricultural production and domestic water use, and create risks to coastal infrastructure, urban areas and coastal communities. Rises in the sea level and sea water temperature will have adverse effects on coral reefs and mangrove forests, which are vital to coastal aquaculture and fishery (MONRE/PEP/UNDP 2008).

1.4 Gender and climate change: a framework for analysis

The impact of climate change is different for different population groups. To examine the gender dimensions of climate change the following questions may be asked:

- a) Do women and men face climate change in similar conditions?
- b) Do they have the same abilities and resources to deal with it?
- c) Do the consequences of climate change affect everyone in the same ways?

It is useful to employ a social vulnerability framework which is based on present day risk rather than scenarios of future risks, when undertaking a climate risk assessment. According to Adger (1999), social vulnerability includes individual and collective vulnerability and it is determined by access to resources, diversity of income sources and by social status of individuals or households in a community. The vulnerability for an individual or group can change over time, is differentiated between and within groups through their institutional and economic positions, and is affected by environmental changes. Existing policies and practices in natural resource management and inequitable access to productive resources can have perverse effects on increasing vulnerability.

Using the social vulnerability framework, the gender aspects of vulnerability can be assessed in terms of: (1) access to resources; (2) diversity of income sources; and (3) the social status of women and men in a community.

Climate change has specific gender characteristics because²:

- ♦ women, due to social roles, discrimination and poverty, are affected in different ways by the effects of climate change and by extreme climate events that often translate into disasters;
- ♦ women are not sufficiently represented in decision making processes on climate change, or in adaptation and mitigation strategies; and
- ♦ women must be included in these processes and strategies because of their rights, because they are "more vulnerable", and because they have different perspectives and experiences with which they can contribute, e.g. to implement adaptation measures.

While this study focuses on gender equality, it emphasizes the effects of climate change on women, who are often the most disadvantaged and neglected group in society.

Gender analysis provides an understanding of how the identities of women and men determine different vulnerabilities and capacities to deal with climate change impacts, and also shows how to address its causes, i.e. green house gas production. Gender analysis is helpful in designing and implementing policies, programmes and projects that lead to greater equality. In particular, it may contribute to building more capacity to adapt to and mitigate climate change (UNDP 2008a).

Figure 1 presents a framework for analysis of climate change impacts and gender implications. The framework shows aspects of women's productive gender roles (livelihood and migration), reproductive roles (health and security) and their roles in the community and politics (capacity and participation) that will be affected by climate change. It details how climate change has different effects on these respective roles with specific and interrelated gender implications.

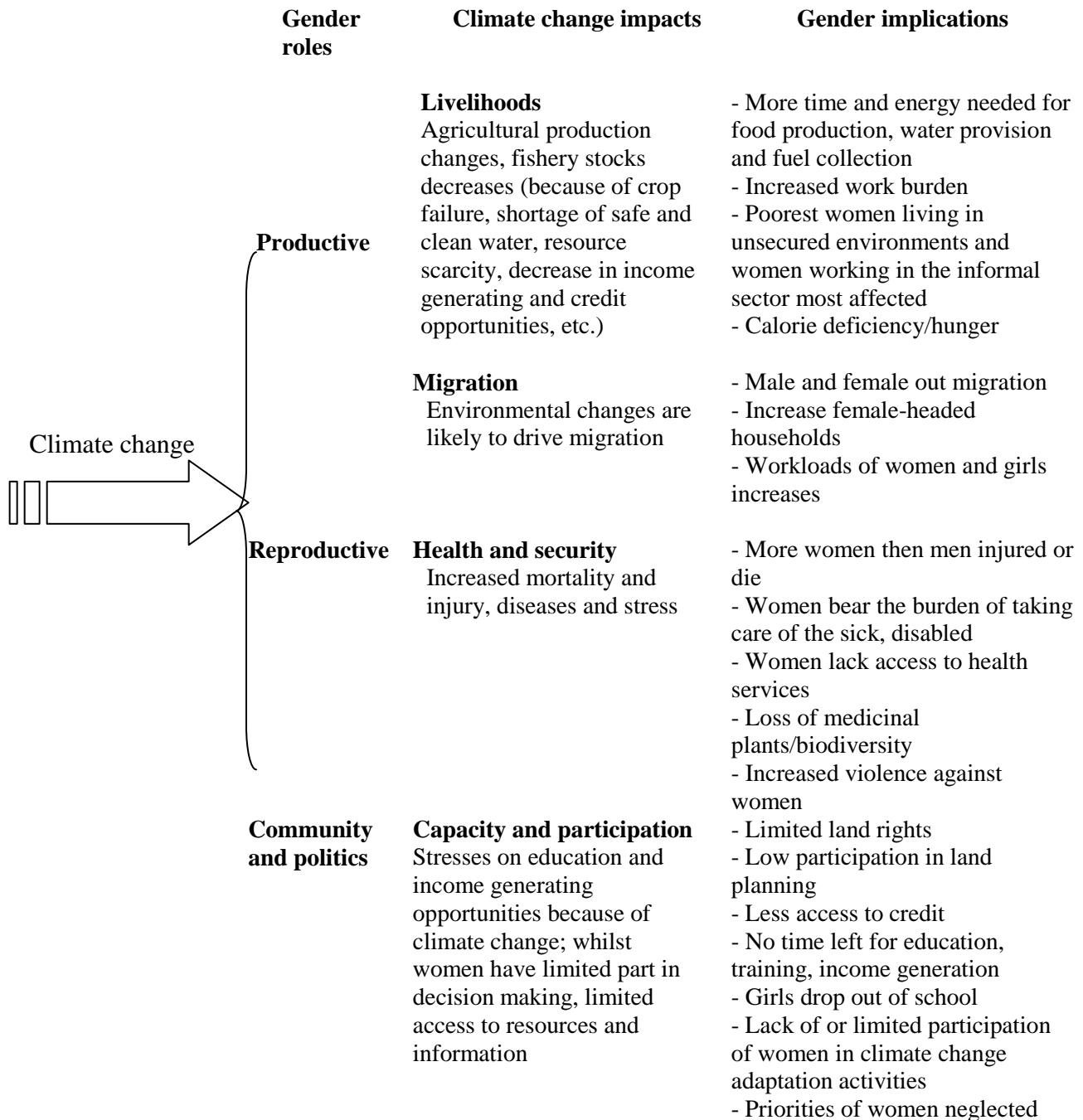
1.5 Structure of the paper

Chapter 2 examines some of the different impacts of climate change on women and men by looking at livelihoods, migration, health and security issues. Chapter 3 explores adaptation strategies and women's participation in climate related-disaster management at the local level. Chapter 4 provides some insights into climate change policy and gender

² As pointed out by the Women's Major Group at the 14th Meeting of the United Nations Commission on Sustainable Development (CSD, 2006).

issues, emphasizing the need to include women in developing and implementing climate change policy and strategies. In each section, international findings are summarised followed by Viet Nam specific information where available. General conclusions are provided in Chapter 5.

Figure 1: Climate Change Impacts and Gender Implications



Source: Adapted from WEDO 2008:8

2. Gender Impacts of Climate Change

This chapter describes the impacts of climate change on women and men. It examines gender aspects of natural disasters and women's vulnerability to the negative aspects of climate change. The first section focuses on the impacts on livelihoods the second section examines the issues of migration in the context of environmental degradation and the final section deals with climate change impacts on health, nutrition and capacity to provide care.

2.1 Gender, livelihoods and climate change

This section examines the gendered impacts of climate change on agriculture, fisheries and aquaculture, forestry and on wage labour.

Agriculture

Studies in Viet Nam show that the nation's agricultural lands, located in river basins and dependent on irrigation, are highly vulnerable to fluctuations in water levels, which may increase with climate change. This could result in lower crop yields and growth rates, the weakening or extinction of particular crop species, increased activity by pests and viruses, and a loss of soil fertility. As the sea level rises, salt water intrusion is made worse, which affects the availability and quality of water resources vital for irrigation and local drinking water supplies. All of these impacts are a stress on Viet Nam's agricultural livelihoods (Raksakulthai 2002).

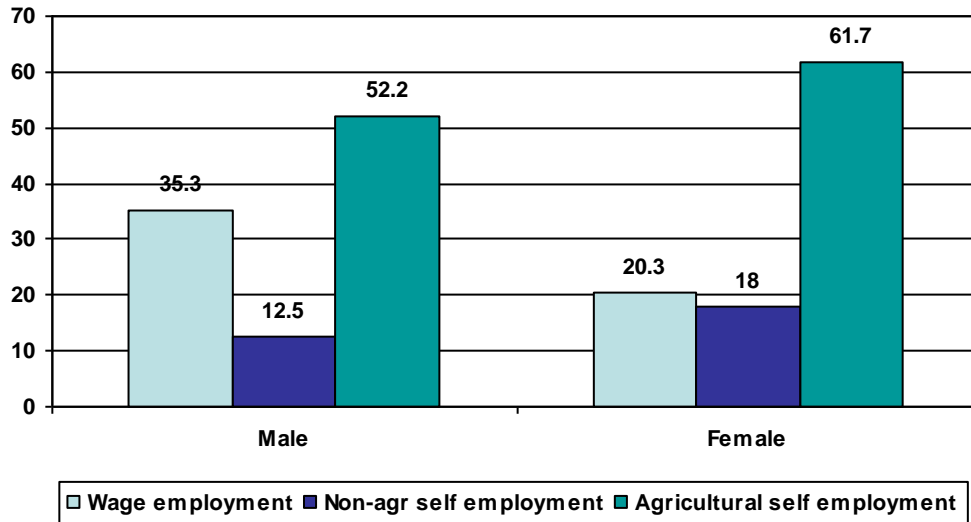
The most fertile agricultural lands, as well as 50 percent of the population, are located in the Red River and the Mekong deltas. Sea level rise will cause the loss of valuable land, increased vulnerability to flooding and storm events, accelerated erosion along the coasts and in river mouths, and increased salinisation unless structural, protective measures are taken (MHC et al., 1996 cited Raksakulthai 2002). As a result of climate change and its impacts, most of the food crops will be more difficult to cultivate.

Rural women and men play complementary roles in agriculture, but women tend to play a greater role in natural resource management and ensuring nutrition. Worldwide, women often grow, process, manage and market food and other garden products and collect fuel and water. Men, by contrast, are generally responsible for cash crops and larger livestock (FAO 2003 cited BRIDGE 2008).

High dependency on land and natural resources for livelihood generation makes women more vulnerable. Viet Nam has more than 12 million women farmers. Almost all of the new participants in the agriculture sector are women (ADB, 2005). One half of men and two thirds of women in rural areas still have their main job in agriculture (Figure 2). This

may indicate that compared to men, women are more vulnerable in the context of resource scarcity and weather extremes.

Figure 2: More Women Self-Employed and Working in Agriculture (%)



Source: WB 2006

A recent study (MCD 2008) in Giao Xuan, Nam Dinh Province shows that there is high dependence on agriculture for sustaining livelihoods. Though agricultural productivity is low, for many households agriculture provides stable income, e.g. growing rice is for food security and raising livestock and poultry provide subsidiary income. Women’s role in agriculture is vital. While men concentrate more on land preparation, transportation and pesticide spraying, women tend to do weeding, transplanting, fertilising and watering, and selling products. They share the work of harvesting and storing agricultural goods. In families, husbands tend to go out for paid employment or to work in aquaculture, while women do most of the agricultural work alone.

A study on coastal resource management in the Red River Delta shows that cropping changes from environmental stresses affect the gender division of labour and possibly income. Women and girls have been the most adversely affected and they have become primary victims of environmental degradation because they have fewer opportunities and less access to resources than men (Hue Le Thi Van 2008).

In terms of animal husbandry, including production of pigs, chickens and ducks, women tend to be responsible for almost all aspects of the process. A review of the gender

division of labour in agricultural production showed that the jobs done by women are time consuming. However, more value was put on men's jobs which are viewed as more labour intensive (MCD 2008).

In short, long-term gradual climate change will affect agricultural and ecological systems. And because they are more dependent on land and natural resources for livelihood generation, women are more vulnerable in the context of resource scarcity.

Areas for future research

Research is needed into vulnerability, capacities and adaptation strategies of women and men in the face of climate change impacts on agriculture and animal husbandry. How are these vulnerability and adaptation strategies manifested in different contexts, including severe droughts and floods? How do they increase the resilience of livelihoods? How will cropping changes and livestock production changes impact the gender division of labour and possibly the incomes of women and men?

Fisheries and aquaculture

According to the FAO, in 2007 about 3.5 billion people worldwide were directly engaged in fishing and aquaculture. In the Pacific region alone, it is estimated that women catch about a quarter of all seafood harvested. In Viet Nam and other countries of Southeast Asia, there are communities where women play a greater part in aquaculture production and harvesting of littoral organisms than men (Aguilar 2008). Changes in fishing communities can have a severe impact on women in those countries.

Aquaculture resources in coastal areas provide an important base for socio-economic development. Sea level rise and other effects of climate change would affect the physical, biological, and chemical composition of coastal zones. Shrimp and crab farms may need to be relocated and coastal fisheries might disappear. With increasing temperatures and rainfall, some species may move northwards or to greater ocean depths. The tropical fish population with a low commercial value would increase, while the subtropical fish population with a high commercial value would decrease or migrate (Raksakulthai 2002). This phenomenon could result in the loss of many marine resources essential to women's livelihoods, particularly their fishing and trading activities.

Fishing activities in Viet Nam are gendered. Men go out to the sea while women and children are responsible for negotiation, sale, storage, processing and marketing of fish. To a different extent, several groups of women rely on selling fish as an income generating activity. Results of studies in the Mekong Delta show that for farming households in fresh water areas, wild fish contribute 10-15 percent of total income from aquaculture, increasing to 20-35 percent in coastal areas (Sinh 2004 cited Tran Thanh Be

et al. 2007). So a decline in aquatic resources most severely affects poor households, and particularly poor women.

A recent study in Khanh Hoa, a coastal province, shows that aquaculture, a main industry in the study site, is characterized by very segregated gender roles. Women harvest near-shore shell fish and generally engage in shore-based tasks such as fish food preparation, net sewing and repair, and post harvest care. They are also responsible for marketing and selling the products. Men have the principal control of and access to resources. Men install aquaculture cages, cultivate lobster and tiger shrimp, and collect assorted fish and crabs for feed. Women have access to supplementary coastal resources, such as shellfish, which are used for fish bait and shrimp feed (MCD 2008).

Women participate in most production activities including exploring the mud flats, raising marine products and trading marine products, both in local markets and at home. Women, especially those in poor or middle ranking households, work at the clam or shrimp ponds together with their men. Nevertheless, women's and men's roles in aquaculture are different; men are decision makers and owners while women are implementers or hired labour. In other words, they are different actors (Ibid).

A study in Giao Xuan (Nam Dinh Province) shows that all owners of fish ponds and fish rearing areas are men while most of the hired workers are women. The issuing of use rights to shrimp and clam aquaculture owners in the coastal mud flat areas, where local people historically had open access for catching, has meant that the livelihoods of many poor families were taken away. This has led to the situation where many young girls and poor women became domestic workers for richer families (MCD 2007).

In his study in Xuan Thuy, Adger (1999) also showed that women, boys and girls often collected a wide range of materials from mudflats and from mangrove areas for domestic consumption. With limited or no access to the coastal mud flat areas, the diversity of livelihood strategies of the poor, while still being dependent essentially on a single ecosystem, were negatively affected, especially for poor women.

In coastal zones of the Mekong Delta, major land use system changes were found in intensification of rice and shrimp farming. The area for shrimp cultivation increased rapidly, while the rice growing area decreased significantly. As shrimp yields for each season dropped, farmers became bankrupt and lost essential assets such as land. The natural catch of shrimp and fish decreased as a result of environmental changes that led to a decline in income from fisheries for poor households. The intensification of rice farming and shrimp farming, however, generated opportunities for hired labour,

especially for the poor and landless farmers (Hossain et al. 2006 cited Tran Thanh Be et al. 2007).

In short, women participate in most production activities in coastal communities but they have less access to and control over resources which they depend on for food and income. This situation may be further worsened by climate change impacts and lead to loss of income for poorer women and increases in their workload and hardship.

Areas for future research

More research is needed into vulnerability, capacity and adaptation strategies among women and men with regards to existing climate change impacts on fisheries and aquaculture. How are these vulnerabilities and adaptation strategies manifested in coastal communities in different regions? How will changes in fishing communities and aquaculture production affect the gender division of labour and incomes of women and men, boys and girls? What is the level of knowledge among women and men of climate change adaptation? How will women and men increase the resilience of their fisheries and aquaculture-based livelihoods?

Forestry

Changes in temperature, rainfall, and sea level rise will affect the amount and type of forest cover throughout Viet Nam. Many existing stresses on forests will be exacerbated by the changes in climate over the next several decades. The natural forests have been exploited and destroyed, leading to a decrease in diversity and area, although with new plantation the total forest cover in Viet Nam has gradually increased over the past few decades (Raksakulthai 2002). Extended droughts and increased risks of forest fires due to climate change stand out as challenges, whilst the need for upland forests to help retain water during periods of higher than normal rainfall in shorter rainy seasons is becoming greater than ever.

Observations also indicate that increased salt water intrusion is causing a gradual change in species distribution in mangrove forests. The more the mangrove area is reduced, the greater the impact from typhoons and sea and river bank erosion on previously buffered neighbouring lands. Vulnerability to storm-induced flooding is also increased in these areas. Some of the benefits lost from these forests include resources such as timber for local construction and fuel, fish, and honey (Ibid).

Women are often highly dependent on biomass and forest resources for household livelihood and energy, and climate change could reduce their ability to obtain necessary environmental resources. A study in the Northern Mountainous region shows that declining forest cover and diversity require women to spend more time foraging at greater distances or to plant gardens to produce substitutes for forest products. Loss of

forests may contribute to the seasonal drying up of streams, which will negatively affect the double cropping capacity of current paddies, requiring women to produce more of their food in swiddens or to purchase it (Ireson-Doolittle and Ireson 1999:129).

Loss of forest has already taken a toll on animal species available for hunting and trapping by men. This loss may be mitigated by the increasing role of animal husbandry in the villages. An increasing animal population requires more labour by women, boys and girls since women and children are often responsible the feeding of animals, even though men are ultimately responsible for the use and sale of larger animals (Ibid).

In short, due to a gender division of labour, women are differently and disproportionately harmed by deforestation. In the face of the changing climate, this would further increase women's vulnerability and workload in ensuring household food.

Areas for future research

There is a need to invest in research on women's and men's vulnerability and their adaptation strategies in relation to expected climate change impacts on forestry. For example, in what ways are women and men in the Northern Mountainous region and the Central Highlands vulnerable to climate change? How will changes in forest cover and biodiversity affect the gender division of labour, and possibly the incomes and cultural practices of women and men? What are the knowledge and skills of women and men that are vital for their coping and adaptation strategies? How will women and men increase the resilience of their forestry-based livelihoods?

Wage labour and non-agricultural self-employment

More women than men work in households and in micro and small enterprises. They are often worst hit and least able to recover as a result of climate change-related disasters and other shocks (IUCN/WEDO 2003 cited BRIDGE 2008). In Viet Nam, outside agriculture, women are likely to be self-employed (26 percent of working women are self-employed versus 19 percent for working men), while men are more likely to have salary or wage work, (41 percent of working men have wage work as opposed to 24 percent of working women) (WB 2006). In urban areas, 16.4 percent of non-agricultural self-employed women are concentrated in sales and services, while the figure is only eight percent for men (WB 2008a).

Gender gaps in earnings persist among almost all employment categories, including wage labour and self-employment. Data from 2004 shows that more than 62 percent of those who earn a minimum wage are women. A large share of minimum wage earners corresponds to household businesses and small enterprises (Joint Donor Group 2007:43).

Natural disasters cause women to lose jobs and work longer, and their conditions of work and earning often deteriorate. This further exacerbates women's already unequal access to resources and diminishes their capacities to cope with unexpected events/disasters or adapt to change (BRIDGE 2008).

Anecdotal evidence in Ha Noi showed how the serious floods in November 2008 affected self-employment. As much of the farmland around Ha Noi was flooded under a meter of water, flower farmers in Tay Tuu commune completely lost their crops. And as the price of food at some Ha Noi markets rose as much as 500 percent, owners of small restaurants were hit hard and some had to close their businesses.

In short, self-employed women and women concentrated in micro/small enterprises often have lower wages than men. Women's existing vulnerability will increase further due to natural hazards and climate-related disasters.

Areas for future research

There is a need to research women's and men's vulnerability and adaptation strategies in urban areas in the context of climate change and climate-related disaster impacts. How will women and men increase the resilience of their urban livelihoods?

2.2 Migration in the context of climate change

Migration is increasing with climate change, including among traditionally static populations who have needed to move because their environment has been adversely affected by climate change. There is a potential reverse causation between migration and the severity of the effects of natural disasters (Attzs M. 2008). It is projected that one billion people will be displaced by 2050 and that climate change is likely to exacerbate existing challenges around migration, particularly forced migration (Christian Aid 2007 cited BRIDGE 2008).

On the other hand, remittances from migrant labour may mean that households are able to rely less on agricultural activities for income, enabling them to meet their food security needs in an environment of declining land productivity, and also reducing the pressure on natural resources on dry land (FAO 2003 cited BRIGRE 2008).

In Viet Nam both women and men migrate for work. It is estimated that every year one million people move to urban areas. One survey showed that there were 76 male migrants for every one hundred female migrants, and that women were especially dominant among younger migrants (GSO 2005 cited WB 2006). Migration is caused by a mixture of push and pull factors. These include a lack of assets, livelihood opportunities and access to services in the sending area, as well as better opportunities in the receiving area, such as access to services. In rural areas, migration is seen as a consequence of a shortage of

arable land, lack of employment, low incomes from rural non-farming jobs and rural poverty (Lan Anh Hoang 2005). Migration is also an essential component of rural livelihoods and provides cash injections into local economies (Dang Nguyen Anh et al. 2004).

A study conducted in forty-two villages in four provinces in both the North and the South (Truong Thi Ngoc Chi et al. 2008) showed that labour out-migration of people living in rain fed ecosystems was higher than among people living in irrigated rice farming ecosystems (24 percent of households migrated, compared to 20 percent in the irrigated ecosystem). Short-term migration was more prevalent than long-term migration in both ecosystems. Labour out-migration from rural areas was due to low rice productivity, the small size of landholdings, lack of regular employment and a lack of alternative sources of income. Men laboured as construction workers and masons in the cities. They also engaged in sea fishing, shrimp or squid catching or worked as hired fishermen. Women worked in small trading as hired labourers on farms, or as domestic helpers and factory workers.

A recent study (UNU-EHS 2008) shows that environmental degradation is a contributing stressor in migration patterns in the Mekong Delta of Viet Nam. Migration is driven primarily by economic and social forces - often linked to environment changes - with the majority of migrants moving internally and from rural to urban areas. While recognizing that economic and social factors are the clear drivers of migration in Viet Nam, this study raised an interesting question, which is the point at which flooding becomes an underlying trigger for migration or displacement.

The study found the following linkages between flooding and migration:

- ◆ during the flood season, people undertake seasonal labour migration and movement towards urban centres to bolster livelihoods;
- ◆ for those directly dependent on agriculture for their livelihood (usually rice farmers), successive flooding events leading to destruction of crops on more than one occasion can drive people to migrate elsewhere in search of an alternative livelihood;
- ◆ as an extreme coping mechanism, anecdotal indicators point to human trafficking into neighbouring areas as one strategy adopted by families who have suffered water-related stresses; and
- ◆ the Government, as part of a flood management and environmental sanitation strategy, is currently undertaking planned resettlement of people living in vulnerable zones along river banks.

The programme of building 1,043 residential clusters for 200,000 households in heavy flooding areas in seven provinces in the Mekong Delta since 2002 has resulted in thousands of households moved to new residential clusters in order to be safer from river floods. However, the programme is contested. A study in An Giang, Dong Thap and Long An provinces shows that despite many efforts, basic needs were not adequately met, including a minimum standard of living, provision of clean water, electricity, semi-septic toilets, and drainage ditches. Essential public facilities were not provided such as schools, child care centres and health centres (Care International Viet Nam 2003).

In the Red River Delta, according to Adger's (1999) survey in Xuan Thuy villages, seasonal migration to Ha Noi and the provincial capital of Nam Dinh, and the remittances they contribute to resident households, is increasing in coastal communities where migration was traditionally low. Part of the explanation for migration has to do with declining access to coastal resources. Dang Nguyen Anh emphasized that the rate of out-migration, especially in the form of seasonal temporary movements, are likely to remain high in the study villages of the Red River Delta. Among the key contributing factors is the low level of income from farming, which is linked to limited availability of agricultural land and risks such as drought and livestock diseases (Dang Nguyen Anh et al. 2004).

Migration potentially reduces vulnerability by increasing household livelihood sources, and by increasing the proportion of non 'climate dependent' income (Adger 1999). However, migrating men may contribute little to family incomes, increasing the workload of those left behind, often women, who must take on men's farming roles in addition to their existing agricultural and domestic responsibilities. This may lead to changes in gender roles as women have more opportunities for decision making and greater control over household resources (Jolly, 2003:7 cited Lan Anh Hoang 2005).

At the same time, it may be difficult for women, in her husband's absence, to retain control over land and access to credit as wives often have no titling in land use certificates. This heightens women's vulnerability at exactly the point at which their responsibilities increase (BRIGDE 2008).

When women migrate, their husbands who remain behind take up domestic work, though this is partly relieved by wives' frequent home visits. Women migrants often earn less than men and have less access to basic services.

However, in the studies reviewed women and men did not challenge reproductive work as being normatively defined as women's work. The study on female migration in the Red River Delta shows that both women and men actively reproduce the notion of gender and

work, while negotiating their contingent arrangements of work, mobility and survival (Resurreccion and Ha Thi Van Khanh 2007).

In short, migration may be expected to continue to increase. Women left behind will be particularly affected by taking over male responsibilities, without access to the same resources, including land and credit. Women who migrate will still be considered responsible for domestic and reproductive work.

Areas for future research

Research is needed on the relationship between climate change and migration, particularly gendered migration patterns, intra-household decisions and impacts of migration on women and men, especially poor women. This includes exploring gender roles and responsibilities related to natural resources and ways to cope with resource scarcity in both leaving and receiving communities. How does and can different forms of migration increase the resilience of the livelihoods of women and men?

2.3 Health impacts and care givers

This section focuses on health and nutrition impacts in areas affected by natural disasters, and impacts on women and girls as caregivers.

Health impacts

The World Health Organization (WHO) has declared that most of the health consequences of climate change will be adverse. It is estimated that in 2000 alone, climate change was responsible for 2.4 percent of diarrhoea cases worldwide and 6 percent of malaria cases. In general terms, climate change will have three types of health repercussions: (1) direct effects of extreme climate events; (2) health consequences caused by environmental disorders due to climate change; and (3) other consequences on health (i.e. trauma, infections, psychological diseases and negative effects on food security, among others) caused by populations being displaced due to economic problems, environmental degradation or conflicts arising because of climate change (WHO 2003, cited UNDP 2008b).

Studies worldwide show that more women than men die from the direct and indirect results of natural disasters. This effect is strongest in countries where women have very low social and economic rights. In countries where women in their everyday lives have almost equal rights as men, natural disasters kill men and women about equally. Physical differences between men and women are unlikely to explain the different results. Social norms can provide some explanation (Neumayer and Plümper 2006).

Floods frequently claim far more female victims because their mobility is restricted and they have not been taught to swim (UNDP 2008a). A study in Viet Nam shows that women may become injured more easily than men, and suffer more than men psychologically as they often worry more about the lives of their family members and their property. Many women do not know how to swim, and there are more cases of women drowning than men (Vu Minh Hai 2004).

In Viet Nam, hot and humid environments present favourable conditions for the development of bacteria, insects, and other disease carriers such as flies and rats. Some diseases, such as measles, dengue fever and Japanese B encephalitis, occur and develop in close relation with the development of mosquitoes and other insects. This type of climate is also associated with digestive diseases such as diarrhoea and dysentery (Raksakulthai 2002).

Women and children face high health risks as a result of increased vectors of disease such as those for dengue fever. Water shortages during droughts and polluted water during floods lead to hygiene-related problems caused by a lack of adequate sanitation and drinking water.

An assessment in areas affected by drought in central Viet Nam shows that unhygienic conditions and drought are closely related. Water shortage means that many women either do not bathe or bathe sparingly, which leads to hygiene-related health problems. The proportion of women affected by gynaecological diseases increased three to four percentage points in just two years in a study of affected areas (Oxfam 2005 cited Oxfam in Viet Nam et al. 2006).

Children and pregnant women are particularly susceptible to water borne diseases such as diarrhoea and cholera. The number of cases of diarrhoea in children reported in 2004 in Ninh Thuan increased 4.9 percent compared with normal levels. This increase was attributed to water scarcity and unhygienic conditions. In urbanising areas there may be serious problems with stagnant water, mosquitoes, and thus a high risk of dengue fever. Boiling water is not a common practice, either because it was never perceived to be necessary before, or due to a scarcity of firewood. Poor access to health care aggravates the situation (Ibid).

The elderly are at highest risk from climate change-related health impacts like heat stress and malnutrition. However, elderly women in particular are the least likely to be able to access health services, either because they cannot afford to pay for clinic visits and drugs or because their mobility may be restricted. Older men, by contrast, may be particularly

vulnerable as they are less tied into social networks compared to women (BRIDGE 2008).

The Family Survey in 2006 in Viet Nam shows that elderly women have a lower health status than men: 52.6 percent of women versus 39.8 percent of men had poor health at the time of the survey. However, while 33 percent of elderly men live on state allowances and retirement pensions, the rate among women is 19 percent. More elderly women than men have insufficient incomes - 37 percent for women versus 31.3 percent among men. Older women also face more difficulties in paying for medical care (Ministry of Culture, Sport and Tourism et al. 2008).

Climate shocks such as droughts and floods can cause grave setbacks in nutritional status as food availability declines, prices rise and employment opportunities shrink. Research shows that women's and girls' nutrition suffers most during periods of low consumption and rising food prices, and that rainfall shortages are more strongly associated with death among girls than boys (UNDP 2008b:86).

Impact on women and girls as caregivers

Women face more difficulties in feeding and caring for others when resources are scarce. More time and effort is spent on collecting fuel wood and water and caring for sick and injured family members. Because of their role in relation to household water supply and domestic work, women are particularly at risk.

A study on drought management in Ninh Thuan (Oxfam in Viet Nam et al 2006) showed that 64 percent of respondents agreed that recurring disasters have differential impacts on women and men and 74 percent of respondents believed that women were more severely affected by drought than men due to differing needs for water. Women collect water from water sources which are farther away as each drought takes its toll. With fewer water sources nearby, women have to walk long distances to fetch drinking water. They also cook and clean, rear children, and collect firewood, so they have to cope with an enormous physical burden on a daily basis.

Women's workload, which is already formidable, increases after floods, requiring long hours of cleaning up and reconstructing houses. Women likely will be expected to contribute much of the labour to managing climate risks, such as in soil and water conservation, and the building of anti-flood embankments.

Women's role in looking after children, the elderly and their homes can hamper their own rescue efforts in almost all types of natural disasters. Women's increased domestic care responsibilities could significantly reduce their opportunities to engage in income generating activities (Lambrou and Piana 2006).

There is evidence that women and girls are more likely to become victims of domestic and sexual violence after a disaster, particularly when families have been displaced and are living in overcrowded areas where they lack privacy and security. This stress and trauma during and after a disaster may contribute to an increased level of violence against women, and such violence may be exacerbated by longer-term unemployment or threatened livelihoods (BRIGDE 2008).

In short, women and girls are more vulnerable to the fatal impacts of natural disasters because of their roles and status. With existing patterns of gender discrimination, both women and girls suffer more during and in the aftermath of disasters.

Areas for future research

Research is required into the health impacts of natural disasters and climate change on women and men in different contexts and situations. How has health been affected by climate change and what may be preventing women and men's access to health facilities? What are the health impacts of climate change on children and how could Viet Nam respond? How is women's role as caregiver affected? Gender sensitive qualitative research is also needed on the links between climate change and violence against women, especially in the context of the additional stresses on households and gender relations resulting from intensified natural disasters.

3. Adaptation and Participation of Women

This chapter first discusses adaptation strategies at the community level and the constraints women face in finding coping strategies. The second part focuses on participation of women in decision making in the household and community in relation to disaster management activities.

3.1. Adaptation strategies and women's constraints

Strategies

There is a limited body of work on climate change adaptation strategies, particularly on gender and adaptation strategies. However, many women are already adapting to the changing climate and are clear about their needs and priorities.

A survey on drought management for climate change adaptation in Ninh Thuan (Oxfam in Viet Nam et al. 2006) shows that while communities in both coastal and mountainous areas prefer financial support rather than other options to reduce their vulnerabilities to climate events, more women believe in income diversification rather than direct financial support (see Table 1). According to the authors, this is because income generating

opportunities are poorly developed in the mountainous regions. However, this study has not provided answers for the difference in women’s and men’s preferred options.

Table 1: Gender-disaggregated responses to initiatives to reduce vulnerability to climate events (top ranked options by respondents)

	Coastal Region	Mountainous Region
Female	Better financial support	Income diversification
Male	Better financial support	Better financial support

(Source: Oxfam in Viet Nam et al. 2006)

Adaptation to climate change by poor communities is at an early stage, but there are positive examples of farmers already changing their crop cycles or planting different crops as shown in a recent study in Ben Tre and Quang Tri provinces (Oxfam 2008).

A study based on discussions with communities in Ninh Thuan has identified currently prevailing autonomous adaptation strategies in agriculture, animal husbandry, water resources, food, and economic security. Growing new crop varieties and formulation of seasonal calendars were major autonomous adaptation strategies designed to deal with the impact of drought on agriculture (Oxfam et al. 2006).

There are examples in the country of taking climate change into consideration through using improved crop varieties that are drought and heat-tolerant; extending crop rotations; and adjusting cropping calendars (when to plant), cropping patterns (where to plant) and crop varieties (what to plant). For instance, adjusting the calendar for short duration crops such as rice, maize, sweet potato, soya beans, groundnuts and other crops may allow more crops per year, due to an extension of the growing season (IFAD).

In animal husbandry, introducing alternative livestock breeds and finding new feed and fodder sources were the most important adaptation practices in the mountainous regions, while growing fodder crops had become an important strategy in the coastal region. Communities in coastal regions adopted a wider number of animal-husbandry strategies than in the mountainous regions (Oxfam in Viet Nam et al. 2006).

Given the primary role and knowledge of women in agriculture and animal husbandry, it is expected that there may be different aspects of adaptation strategies initiated or adopted by women and men. However, these studies so far have not shown any gender aspects of adaptation strategies.

In a community-based ecotourism development project in Xuan Thuy National Park, it was noted that most households involved in providing ecotourism services are those with agriculture as the main source of livelihood and no investment in aquaculture. The members of these households also work as hired labourers for others involved in aquaculture. Ecotourism is seen as a new livelihood benefiting women. The project is an example of a good integrated model of livelihood development, environmental conservation and women's empowerment (MCD 2008).

In the context of a flood or other disaster, daytime child care centres were important to improve infant safety and enable poor parents to earn a living. Child care centres depend strongly on women volunteers. Women's roles and prestige increased as a result, and Women's Union cadres took on a bigger role (Neefjes 2002).

Constraints

At the household level, the ability to adapt to changes in the climate depends on control over land, money, credit and tools, good health and personal mobility, among other things. As such, women are often less able to adapt to climate change than men since they represent the majority of low-income earners. Women generally have less education than men and are thus less likely to be reached by extension agents. And they are often denied the rights to property and land, which makes it difficult for them to access credit and agricultural extension services (Gurung et al. 2006 cited BRIGGE 2008:11).

An Oxfam study (2008) entitled *Climate Change, Adaptation and Poor People in Ben Tre and Quang Tri Provinces* shows that in many villages women have fewer assets to turn to for alternative livelihoods when crops are destroyed, and have fewer employment opportunities away from the home. The problems women may face when having to adapt to climate change are a lack of land rights, lack of other assets and resources, limited access to material and financial resources, lack of relevant skills and knowledge and cultural barriers limiting women's access to services (Mitchel et al., 2007 cited WEDO 2008).

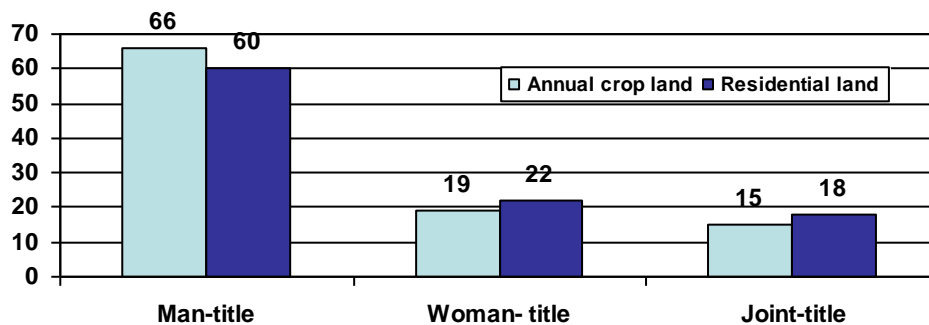
Actual land rights limit women's access to credit for diversifying income sources and for recovery from losses. Though the Land Law in Viet Nam has been changed to protect and guarantee the rights of women, there is still inequity between women and men in practice, and women do not have as much access to and control over land and credit as men. Women hold title to 19 percent of Land Tenure Certificates (LTCs) compared to 66 percent by men (see Figure 3).

Many women are thus left without assets in their name which would not only give them better access to capital, but would also increase their security if they became widowed

due to climate-related disasters, divorce or death of a spouse – all of which are important to ensuring women’s rights to land in old age (WB 2008b).

A recent study shows that all fish ponds in Giao Xuan, Nam Dinh Province are registered under men’s names, regardless the legal or illegal status of ownership. This is due to the practice favouring men as the head of the household, giving them control over land and properties (MCD 2008). New families established after land distribution in 1995 did not get a share of land. As a result, it is common that men get land through inheritance from their parents and that land bears their name as landowner (MCD 2008).

Figure 3: Land Tenure Titling (%)



Source: WB 2006 based on VHLSS 2004

Access to capital resources could help women to diversify their livelihood options and thus enable them to find more effective coping and adaptive strategies in response to extreme climate events. However, a survey in Viet Nam revealed that for the twenty percent of women surveyed that were denied financing, it was due to a lack of collateral (MPDF cited WB 2006).

A recent study also shows that men have always been the representatives of families to be given access to credit. Only a few women were reported to borrow money from financial institutions. Because men are considered as the representative of the family they have access to credit. Women are treated as inheritors (MCD 2008).

Limited access to early warning information, lack of preparedness and limited access to markets and communication are some of the factors that exacerbate women's difficulties in dealing with climate disasters (WEDO 2008: 57).

A study in Nam Dinh shows that if there is a workshop on aquaculture, it is men who attend (MCD 2008). Training events or meetings related to disaster management are usually targeted to men. A study on gender relations in disaster management in Tien Giang and Da Nang shows that men received more opportunities to attend training courses and workshops. In Dien Bien, the first Community Based Disaster Management training event involved mostly male participants (Vu Minh Hai 2004).

A survey on gender equality (VASS 2008) involving 4,176 individuals, of which 46.5 percent were female, confirms that although more women than men work in farming, women have less access to extension and technical training than men. For example, while 51.5 percent of women (compared to 44.3 percent of men) listed farming as their main occupation, 29.8 percent of women had never participated in extension and training activities, compared to 35.6 percent of men (VASS 2008:131).

An analysis of data from a recent survey on climate change and poverty in Viet Nam (MONRE/PEP/UNDP 2008) shows that among those who have heard weather forecast information, women and men³ have similar sources of information: 37 percent of both women and men received weather forecast information from television, 18 percent from local sources, three percent from radio and 42 percent from multiple sources. However, women have less access to information, as 60 percent of women 'have not heard' weather forecast information compared to 35.3 percent of men. Women also do not understand the information as well as men: 26.2 percent of women 'heard but don't understand' the information, compared to 35.6 percent among men, and 13.8 percent of women 'heard and understand' the information, compared to 29.1 percent of men (Table 2).

Table 2: Access to weather forecast information by sex

	Women		Men	
	N	%	N	%
Heard, understand	9	13.8	104	29.1
Heard, don't understand	17	26.2	127	35.6
Have not heard	39	60	126	35.3
Total	65	100	357	100

Source: Calculated based on UNDP Survey on Climate Change and Poverty (2008)

³ 65 female and 357 male respondents. Note that the relatively small number of women compared to men makes the comparisons less reliable.

Among villagers, poor migrants often have less local knowledge, support and networks, as well as experience with floods and storms compared to existing residents. Adaptation will be more difficult for them (Carew-Reid J. 2008:24).

In short, women, especially poor women, have a limited range of coping strategies available to them. Inadequate resources and limited access to and control over land, credit and information are the main constraints to women’s efforts to manage the impacts of climate change. They are the ones who will be particularly vulnerable as the number of extreme weather events increases in intensity and frequency.

Areas for future research

Participatory research is required on adaptation strategies of women and men in different contexts and situations. For example, what are the current risk prevention and management strategies of poor households and of women? Are these strategies sufficiently contributing to adaptation to climate change? What are the factors responsible for success or failure of these strategies?

3.2 Participation of women in decision making

At the household level in Viet Nam, despite some significant progress, there are clear gender-based differences in decision-making processes. Whilst discussion is increasingly common among couples, decision making in households still reflects a common gender stereotype: men make decisions on big purchases and other important issues while women make them for small items and spending (Table 3). Men have the final say in cases of disagreement (MCD 2008).

Table 3: Decision making at the household level in Viet Nam

Men make final decision on	Women make final decision on
Big investment in production	Food expenditures
Investment in clam, fish and shrimp raising	Clothes
Investment in buying clam ponds	School fees
Land and large amounts of money/credit	Small purchases
High priced purchases (TV, motorbikes, furniture, etc.)	Selling poultry (chicken, ducks)
	Selling fish and shrimp (low value)

(Source: MCD 2008).

The same social pattern applies to disaster management. Important household decisions regarding disaster preparedness, evacuation and recovery are discussed between women

and men, but in many cases the final decisions are made by the male heads of households. Compared to rural women, women in urban communities participate more in household decisions, and also in community decision making processes (Vu Minh Hai 2004).

At the community level, under-representation of women in the local authority machinery means women’s participation in decision making on social, political and economic issues of the community, including environment or natural resource management, is less than that of men (MCD 2008). Although women actively participate in many activities, most of the leaders of communes and local organisations are men (see Table 4).

Table 4: Women and men in leadership and management positions

Local Machinery and organisations	No of men	No of women
Leaders of Commune’s People Committee	3	0
Members of Party’s Committee	13	2
Members of Commune’s People Council	24	3
Head of mass organizations	4	1 (Women Union)
Number of Commune’s Officers	17	2

Source: MCD 2008

Very few women are involved in local Committees for Flood and Storm Control and their opinions are usually not included in disaster management plans. The different organisations involved in disaster management, and their staff, do not believe in the benefits of considering the needs and capacities of women and men separately. Many men (husbands) do not really believe in the capacities of women. Many disaster management activities are considered a ‘hard job’ or ‘men’s work’, and these activities are generally considered the most important ones (Vu Minh Hai 2004).

None of the organisations involved, including the mass organisations and local government departments, have gendered local strategies. Gender differences and the specific needs of men and women are not currently well addressed in local planning and relief efforts (Ibid).

Research on gender relations in disaster management in Viet Nam indicates that women’s involvement would bring many benefits to communities, households and to women themselves. These benefits would include: (1) more effective community disaster management activities due to greater contributions by women (and the practical needs of women would more likely be addressed appropriately); reduced economic losses in the

household and community as women's knowledge and experience in protection of possessions, crops, and products would be more fully utilized; (3) improvement in the lives of other family members through strengthening women's roles and contributions; and (4) an increase in the general status of women in society, if their capacities in disaster management were used to their full potential. This would enable women to participate more in meetings, increase social equality and help challenge gender stereotypes about the limitations of women (Vu Minh Hai 2004).

In short, women have less say in decision making at the household and community levels, including on natural resource and disaster management. Gendered needs have not been addressed in planning and relief efforts. Women's knowledge and experience, if used more fully in disaster management, would bring benefits to communities, households and to women themselves.

Areas for future research

More research is needed on the constraints women are facing in decision making processes related to climate change adaptation and natural resource and disaster management.

4. Gender and Climate Change Adaptation Policy

This chapter analyses the national target program on climate change from a gender perspective and outlines current policy responses.

4.1 National Target Program on Climate Change

Viet Nam ratified the United Nation Framework Convention on Climate Change (UNFCCC) in 1994 and the Kyoto Protocol in 2002. The Ministry of Natural Resources and Environment (MONRE) is the lead government agency responsible for implementing the UNFCCC and Kyoto Protocol.

The National Target Program to Respond to Climate Change (NTP) was developed and approved in 2008. The NTP is the main framework for the management and coordination of climate change activities to achieve sustainable development objectives.

The preparation of the NTP was an inclusive process with that included wide consultation with stakeholders at different levels. Gender equality is emphasized as one of the guiding principles of the NTP, along with sustainable development, a cross sectoral approach, and poverty reduction. The NTP identifies the need to conduct vulnerability assessments at sectoral, regional and community levels, and identifies the poor, women and children as among the groups most vulnerable to the impacts of climate change. Potential impacts on

women are identified within the context of the impact of climate change on Viet Nam's capacity to achieve the MDGs. Potential impacts on women include potentially worsening gender inequality, additional workload, and vulnerability of women in households with relatively fewer assets and resources (MONRE 2008).

However, women's involvement in the discussions and consultations during the process of NTP development was limited and the potential contribution that women could make to planning for, and coping with, the impacts of climate change at the national and local level has so far not been explored. The number of women officials in the Ministry Environment and Natural Resources and the provincial Departments of Natural Resources and Environment is limited. There are very few female hydro-meteorologists, whilst these professionals were especially involved in the NTP formulation, and only small numbers of individuals from other sectors. In fact, the overall system of governance is not well equipped for consultation with women and men at different levels in a policy formulation process such as this⁴.

There are no specific targets or activities which address women's vulnerability, or gender issues in particular at the community level. None of the projects identified as priorities in NTP relate to gender issues. The Women Union's action plan is focused on gender issues in adaptation activities, without mentioning the involvement of other agencies. The action plans of other sectors/agencies do not address gender issues.

4.2 Current policy responses

The UN Gender Coordination Group initiated this study on gender and climate change to provide background information, suggest directions for future research, and identify actions to be taken to integrate gender into the NTP and its implementation.

A representative of MONRE took part in the Third Global Congress of Women in Politics and Governance on Climate Change in October 2008 in Manila, the Philippines⁵. The Congress issued the Manila Declaration for Global Action on Gender, Climate Change and Disaster Risk Reduction, which states that Governments should:

- promote, facilitate, develop and implement public awareness campaigns, education and training programs on climate change and disaster risk reduction, targeting women and men, and boys and girls alike;
- facilitate access to information on climate change and disaster risk reduction policies and results of actions, which are needed by women and men to understand, address

⁴ Personal Communication with UNDP-VN Climate Change expert

⁵ A presentation on women's vulnerability and the policy framework for climate change in Viet Nam was given: Le Cong Thanh (2008)

and respond to climate change and disaster risk, taking into account local and national circumstances such as quality of internet access, literacy and language issues; and

- systematically document and make accessible best practices on gender responsive climate change and disaster risk reduction initiatives, facilitating replication of such practices.

Other projects and analytical work financed and/or implemented by donors and NGOs, often in collaboration with government agencies, that have a focus on social aspects of climate change are listed below⁶.

- Institutions and Gender Differentiated Vulnerability to Floods in Central Viet Nam, financed by SIDA.
- Evidence Based Natural Disaster Risk Management, An Empirical Application from Viet Nam, financed by the World Bank, and implemented by MARD (2008-2009). The objectives are to develop and test a series of user-friendly tools to enlarge the information base for the development and implementation of national natural disaster risk management strategies.
- Climate Change and Human Development in Viet Nam, a desk research paper by UNDP-VN and Oxfam Great Britain (2007), commissioned by the Human Development Report Office of UNDP.
- Scoping research on climate change and the poor in Viet Nam, financed by UNDP/DFID and implemented by MONRE (PEP Project, started in 2005). This is a technical study with eleven case studies on the linkages between environment and poverty. The case studies are: 1) understanding voices of the poor; 2) environmental health of poor people; 3) water and sanitation for poor communities; 4) poverty in environmental policies and legislation; 5) environmental impact assessments and the poor; 6) income sources for poor people derived from the natural environment; 7) enhancement of environmental conditions for the poor; 8) renewable energy for poor communities; 9) gender in poverty-environment linkages; 10) impacts of migration and transmigration on the environment; and 11) climate change adaptation and the poor.
- Socio-Economic and Physical Approaches to Analyzing Climate Change Impacts in Viet Nam, financed by the UK Economic and Social Research Council (1996-1998). This initiative concentrates in the socio-economic vulnerability of the coastal zone of the Red River Delta of Viet Nam to climate change impacts.

4.3 Challenges

There is a general lack of information and knowledge on gender impacts in Viet Nam. Most studies on climate change and climate disasters have not addressed gender issues. Statistics on natural disasters victims (mortalities, injuries, lack of food) have not been

⁶ See at <http://www.ngocentre.org.vn/node/7910>

sex-disaggregated. Factors that exacerbate women's difficulties in coping with climate disasters and climate change have not been analysed well in many studies. Those factors are, for example, limited access to early warning information, lack of access to critical services (like health care), lack of access to financial security, limited access to decision making at different levels, increased responsibility to the household, and social expectations of "appropriateness" of women's actions.

There is also a lack of gender awareness in policy formulation and in actions related to climate change adaptation. Gender awareness among sectoral officials at different levels is limited. This is reflected by the fact that gender issues in policy and planning documents are either completely absent, or mentioned mostly in general terms.

Gender analysis has not been included in preparation of climate change adaptation programmes and mechanisms for implementation at the central as well as local levels. It would seem that ministries/agencies are lacking the gender analysis skills necessary to integrate gender issues into their respective sectoral plans and policies.

There is limited participation of women in decision making process at different levels on disaster management and climate change adaptation. Climate change adaptation is seen as a technical and male competence. Knowledge and experience of women in coping with the impacts of climate change as well as different women group's needs and priorities seem to have not been taken into account in developing policies and action plans on disaster management and climate change adaptation.

To overcome these challenges and to mainstream gender perspectives into national policies, action plans and other measures on sustainable development and climate change, a number of actions should be encouraged:

- establishment of gender-sensitive indicators and development of practical tools to support increased attention to gender perspectives;
- systematic gender analysis, and collecting and utilizing sex-disaggregated data; and
- consultation with women, and encouragement of women's participation in climate change initiatives to ensure that the role of women's groups and networks is strengthened.

5. Conclusions and Recommendations for Future Research

Women and children are often the most vulnerable to the impacts of weather extremes and are also likely to be amongst the most vulnerable to different impacts of climate change. Women should be at the centre of programmes and plans to reduce climate change-related risks and adaptation to climate change. Their vulnerability as well as their capacities to adapt should be priorities for research and analysis. This will help in the formulation of policies on how their needs and interests and those of their families and communities can be met.

The following is a list of prioritised research recommendations.

Identify the gendered impacts, adaptation strategies and priorities of women and men in different contexts - including men and women with rural livelihoods linked to agriculture, animal husbandry, forestry and fisheries/aquaculture, as well as livelihood strategies for men and women in urban settings

Research on gender and climate change is needed to examine the impacts of climate change in different settings and regions, including rural, urban, coastal, lowland, and upland. Research should look at gender inequality, differentiated adaptation strategies to increase resilience, and the priorities of women and men in specific contexts. This is important as policy and practice should respond appropriately to people's needs, and policymakers should be informed by women's and men's knowledge of adapting to the effects of climate change.

Identify impacts of climate change on gender relations at the household level, including links between severe stress from natural disasters and violence against women and girls

It is important to analyse the impacts of climate change on gender relations at the household level and especially to explore the links between climate change and violence against women and girls, particularly in the context of severe stress on households as a result of natural disasters. Research should determine where women's and men's priorities conflict and where there is consensus. Recommendations are needed on how policy and programmes on climate change can best respond to the differing conditions, needs and priorities of women and men.

Identify the links between climate change, gender and migration

Research is needed to explore the patterns, scope, trends, and impacts of climate change-induced (or enhanced) migration on women and men, girls and boys. Research should look at gender roles and access and control over natural resources and on how the scarcity of resources links to gender and migration, changes in domestic burdens for women and girls, as well as employment opportunities and conditions.

Identify barriers to women’s participation in decision making on responses to climate change at the household and community level

Research is needed to explore the current levels of women’s participation in decision-making on climate change responses at the household, community, and national level. Research should focus on the barriers to participation, and on how to promote women's participation in decision making, including the quality of their participation.

Identify best practices for gender-sensitive responses to climate change-related disasters in rural and urban settings, including equal access to health services

Research should highlight best practices for communities in disaster prone areas. This could include, for example, provision of gender-sensitive training and involving women and men equally in disaster risk reduction and management activities. Environmental hygiene, access to water, and (women’s) access to health services are also critically important during and in the aftermath of natural disasters.

Identify best practices and appropriate case studies of how to involve women in development of national climate change policies and action plans.

Research should include practical tools to support increased attention to gender perspectives and development of gender-sensitive indicators for use in climate change policy development. Systematic gender analysis, and collecting and utilizing sex-disaggregated data should be integrated into national policy, as well as ways to ensure consultation with women, and encouragement of women’s participation in climate change initiatives.

References

- Adger W. Neil (1999). Social Vulnerability to the climate change and extremes in coastal Viet Nam. *World Development* Vol 27, No 2 p 249-269
- Attz Marlene (2008). Natural disasters and remittances: Exploring the linkages between poverty, gender and disaster vulnerability in Caribbean SIDS. Research paper No. 2008/61. UNU-WIDER
- BRIGDE (Development - Gender) (2008). Gender and climate change: mapping the linkages. A scoping study on knowledge and gaps. http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/DFID_gender_Climate_Change.pdf
- Carew-Reid Jeremy (2008). Rapid Assessment of the extent and impact of sea level rise in Viet Nam. ICEM.
- Care International Viet Nam (2003). Residential Clusters in the Mekong Delta, Viet Nam, at www.adpc.net/PDR-SEA/pdrsea2-news2.pdf
- Dasgupta S., Laplante B., Meisner C., Wheeler D., and Jianping I. *The impacts of sea level rise on developing countries: a comparative analysis*. Policy Research Working Paper No 4136. Washington DC. WB 2007.
- Dang Nguyen Anh, Cecilia Tacoli, Hoang Xuan Thanh (2004). *Stay on the farm, weave in the village, leave the home*. Thegioi Publishers. Ha Noi
- Donner, S.D. at al. (2007). "Mode-based assessment of the role of human-induced climate change in the 2005 Caribbean coral bleaching event" proceeding of the National Academy of Sciences 104 (13).
- IFAD (no date) Country Strategic Opportunities Paper (COSOP) for Viet Nam. Appendix IX: MITIGATING THE IMPACT OF CLIMATE CHANGE AND LAND DEGRADATION
- Ireson-Doolittle Carol and Ireson Randal (1999). "Cultivating the forest: gendered land use among the Tay in Northern Viet Nam" in Tinker I. and Summerfield G. *Women's rights to house and land China, Laos, Viet Nam*. Lynne Rienner Publisher, Boulder, Colorado.
- Joint Donor Group (2007). Viet Nam Development Report 2008: *Social protection*. Ha Noi
- Lambrou and Piana (2006). Gender: the missing component of the response to climate change FAO: Rome
- MCD (2008). Gender issues and livelihood development in a coastal wetland community of Xuan Thuy National Park. Case study report. Ha Noi, August 2008.
- MCD (2007). "Xuan Thuy National Park Socio-Economics"
- Ministry of Culture, Sport and Tourism, General Statistical Office, Institute for family and Gender Studies and UNICEF (2008). Result of Nation-wide Survey in the Family in Viet Nam 2006. Ha Noi, June 2008
- MONRE/PEP/UNDP (2008). Climate change adaptation and the poor. A study of four coastal communities in Ha Tinh and Ninh Thuan provinces of Viet Nam.
- MONRE (2008) National Target Program to Respond to Climate Change (Unofficial translation of Vietnamese draft version of 13/5/2008), Ha Noi, May 2008
- Nampinga R. (2008). Paper presented in Emerging Issues Panel of the Fifty-second session of Commission on the Status of Women. March 2008.

- Neefjes Koos (2002). Lessons from the floods, voices from the people, local authority and disaster management agencies from the Mekong Delta in Viet Nam
http://www.vietnamdisasterprevention.org/links_documents.htm
- Neumayer Eric and Plümper Thomas (2006). The Gendered Nature of Natural Disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981-2002
- Oxfam (2008). Viet Nam: Climate Change, Adaptation and Poor People
 Oxfam in Viet Nam and Graduate School of global Environmental studies of Kyoto University, Japan (2006). Drought management consideration for climate change adaptations: focus on the Mekong Region.
- Red Cross and Red Crescent (2001) "Post-flood recovery in Viet Nam" in IFRC World Disaster Report 2001
- Tran Thanh Be, Bach Tan Sinh and Fiona Miller 2007. "Literature analysis. Challenges to sustainable development in the Mekong Delta: Regional and national policy issues and research needs". Bangkok. Thailand
- Truong Thi Ngoc Chi, Thelma Paris and Joyce Luis (2008) "Di cư lao động và ảnh hưởng của nó đến đời sống nông hộ trồng lúa ở Việt Nam" (Labour migration and its impacts on rice farming households in Viet Nam). *Family and Gender Studies Journal*, Vol 18, No 5, 2008
- UNDP (2008a). Resource Guide on Gender and Climate Change. UNDP in Mexico
- UNDP (2008b). Human development report 2007/2008.
- United Nation University, Institute for Environment and human Security (UNU-EHS) (2008). Human Security, climate change and environmentally induced migration.
- Vivian Raksakulthai (2002). Climate Change Impacts and Adaptation Options in Viet Nam (Prepared for the Netherlands Red Cross as part of an assessment to develop a project on climate change and disaster preparedness in Viet Nam).
- VASS (2008). Bình đẳng giới ở Viet Nam (Gender equality in Viet Nam). Social Science Publisher. Ha Noi
- Viner, D. and Bouwer, L.. (2006) Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction: Viet Nam Country Study, Vulnerability and Adaptation Resource Group (VARG)
- Vu Minh Hai (2004) A study of gender relations in disaster management in three disaster prone areas of Viet Nam. VNRC and IFRC
- World Bank (2008a). Gender Analysis of the 2006 Viet Nam Household Living Standard Survey
- World Bank (2008b). Analysis of impact of land tenure certificate titling husband and wife in Viet Nam. Ha Noi
- World Bank (2006). Gender analysis of Viet Nam Household Living Standard Survey 2004. Unpublished report. Washington
- World Bank, ADB, DIFD, CIDA (2006). Viet Nam Gender Assessment. Ha Noi
- WB, UNDP (2005). Preparing for the future: forward-looking strategies to promote gender equity in Viet Nam. Ha Noi.
- WEDO (2003). Common ground, Women's Access to Natural Resources and the United Nation Millennium Development Goals. New York: WEDO
- WEDO (2008). Gender, climate change and human security lessons from Bangladesh, Ghana and Senegal.