



# **Mainstreaming Climate Change Adaptation: A Practitioner's Handbook**

**CARE International in Vietnam**







*'The flood is our neighbour and we must live together. When I was young the beautiful floods brought fish and life. But now I'm old and the floods are stronger and earlier, they destroy the rice, the sun is too hot and the soil becomes sour...I don't know why...life is difficult.'*

**Mr Nguyen, Dong Thap Province, Mekong Delta, Vietnam**

*'Climate Change is worsening the plight of those hundreds of millions men, women, and children who already live in extreme poverty – and it threatens to push hundreds of millions more people into similar destitution. A concerted international response to this unprecedented challenge is required if we are to avoid catastrophic human suffering.'*

**Dr. Robert Glasser, Secretary General, CARE International**



Prepared by Josie Huxtable and Nguyen Thi Yen.

©Copyright CARE International in Vietnam  
1st Edition  
October 2009

Designed by Kirsten Norton

CARE grants permission to all not-for-profit organizations to reproduce this work, in whole or in part. The following notice shall appear with any reproduction: 'Mainstreaming Climate Change Adaptation: A Practitioner's Handbook' © 2009 by CARE International in Vietnam. Used by permission'.

The Handbook can be downloaded from the NGO Climate Change Working Group website at [www.ngocentre.org.vn/?q+node/5457](http://www.ngocentre.org.vn/?q+node/5457).

The Handbook is a living document. Please send feedback and suggestions to [carevn@care.org.vn](mailto:carevn@care.org.vn). We would be particularly pleased to hear about your experiences using the Handbook and suggestions for its improvement.

The authors would like to thank the following CARE colleagues for providing helpful feedback and suggestions to make this Handbook more relevant to development actors: Angie Dazé, Charles Erhart, Fiona Percy, Peter Newsum, Heather Robinson, Vu Thai Truong, Nguyen Dang Nhat, Nguyen Viet Nghi, Nguyen Thanh Viet, Nguyen Thi Tuyet Mai; Nguyen Viet Ha, Nguyen Ngoc Thang, and Duong Van Hung, David Sandilands and Marten Mylius.

We are grateful to: Ian Wilderspin, Vivian Raksakulthai, Peter Grzic (NDMP), Tran Van Tuan (NDMP), Tran Tu Anh (Red Cross), Le Van Duong (World Vision International), Dang Thu Phuong (Challenge to Change), and Bui Viet Hien (Oxfam Great Britain) for useful suggestions.

During the field tests, invaluable contributions were made by CARE staff, partner organizations, and community members. These contributors are too numerous to mention by name, but we are hopeful that this final product reflects their views and meets their expectations.

# Table of Contents

## Introduction 7

Why a mainstreaming climate change adaptation handbook? 7

Who is the handbook for? 8

How do I use the handbook? 8

## Part One: Understanding Climate Change 11

Understanding climate change concepts 12

Climate change and poverty: What's the Link? 15

Climate change and poverty in Vietnam 16

Climate change in Vietnam: Trends and Predictions 16

Climate change in Vietnam: Impacts by Sector 17

## Part Two: Mainstreaming Climate Change Adaptation in Practice 21

What does mainstreaming climate change adaptation mean? 22

Why should we mainstream climate change adaptation? 22

Mainstreaming at the strategic level 23

Mainstreaming and the project cycle 26

Mainstreaming at the operational level 26

The CVA Pathway 29

## Part Three: Tools for Mainstreaming Climate Change Adaptation 31

**Step 1:** Assess project activities for climate risk 32

**Tool A:** Assessing climate risk 34

**Step 2:** Decide whether to follow the CVA Pathway 37

**Tool B:** Checklist: Should we follow the CVA Pathway? 38

**Step 3:** Identify adaptation options 41

**Tool C:** The Climate Vulnerability and Capacity Analysis (CVCA) handbook 42

**Tool D:** Resource table on best-practice community-based adaptation experiences 43

**Step 4:** Prioritise adaptation measures 49

**Tool E:** Priority Adaptation Matrix 50

**Step 5:** Select adaptation option (s) for implementation 53

**Tool F:** Stakeholder Workshop Methodology 54

**Step 6:** Implement adaptation options 56

**Step 7:** Evaluate adaptation and the CVA Pathway 56

**Tool G:** Checklist: Evaluating adaptation 57

## Conclusion 58

## List of Acronyms

CASI	Civil Action for Socio-economic Inclusion In Natural Resource Management Program
CBA	Community-Based Adaptation
CBO	Community-Based Organization
CCA	Climate Change Adaptation
CCWG	NGO Climate Change Working Group in Vietnam
CCFSC	Central Committee for Flood and Storm Control
CVA	Climate Vulnerability and Adaptation Pathway
CVCA	Climate Vulnerability and Capacity Analysis
DM	Disaster Management
DRR	Disaster Risk Reduction
EPP	Emergency Preparedness Plan
FG	Focus Group
HIV&AIDS	Human Immunodeficiency Virus & Acquired Immunodeficiency Syndrome
IPCC	Intergovernmental Panel on Climate Change
LRSP	Long Range Strategic Plan
M&E	Monitoring and Evaluation
MARD	Ministry of Agriculture and Rural Development
MDGs	Millennium Development Goals
MoNRE	Ministry of Natural Resources and Environment
NGO	Non-Governmental Organization
NTP	National Target Program
PWM	Participatory Watershed Management
UNFCCC	United Nations Framework Convention on Climate Change

## INTRODUCTION

Climate change is an environmental change, but given that human societies are affected directly and indirectly by the climate system – and given that human activities are driving climate change – it is fundamentally a human issue. The impacts of climate change and variability are expected to seriously and disproportionately affect the world's poor people. Poor people are especially vulnerable to climate change due to their heavy reliance on climate-sensitive sectors such as rainfed agriculture and fisheries, their tendency to be located geographically in more exposed or marginal areas such as flood plains and their limited asset base. Poverty therefore increases exposure while also limiting the ability to cope and adapt to climate change impacts.

The impacts of climate change present a new set of challenges in our efforts to reduce poverty and promote social justice. Changing temperatures, erratic rainfall, floods, cyclones and droughts all have significant consequences for the livelihoods, health, food security, educational opportunities and the survival of people living in poverty, and CARE staff around the world are seeing first-hand the effects of a changing climate on their work.

We must understand how climate change affects a community – who is vulnerable to the effects, and why, and we need to apply this information in order to design programs that will reduce people's vulnerabilities to risks. To remain effective development programs must be able to manage risks posed by both current and future climatic factors. Development programmes need to ensure that they are enhancing coping capacities of poor people as well as enabling adaptation to future shocks and stresses. Mainstreaming or 'integrating' climate change adaptation into poverty reduction programs can increase the sustainability and impact of interventions in sectors such as water, agriculture, livelihoods and health.

### WHY A MAINSTREAMING CLIMATE CHANGE ADAPTATION HANDBOOK?

How is climate change relevant to the work that I am doing? Is it relevant for the region in which I work? Why should I do it? Even if I understand the relevance of climate change, how am I supposed to respond in my work? What in practical terms do I need to do? These are questions commonly raised by practitioners engaged in development work, and these are the questions this handbook aims to address.

The goals of this handbook are:

- to present a comprehensive understanding of what mainstreaming climate change adaptation means
- to provide detailed guidance on how mainstreaming climate change adaptation can be put into practice

The handbook will assist us in analysing the implications of climate change for the lives and livelihoods of the communities we work with. The handbook provides: methodology; practical tools; case studies; guidance and relevant information on how to assess project and program vulnerability to climate variability and change; and how to design and adapt projects so that they are more resilient to a range of climate change scenarios. This handbook is designed to complement other climate change tools developed by CARE International including the Climate Vulnerability and Capacity Analysis (CVCA) and Toolkit for Integrating Climate Change Adaptation (CCA) into Projects.

### WHO IS THE HANDBOOK FOR?

This handbook is primarily designed for CARE in Vietnam programme management (programme managers, component managers, project staff and programme officers) and project partners working at the district and commune level, but may prove useful to other development NGOs. Managers and project officers may not be experts in climate change issues but are nonetheless charged with the day-to-day responsibility of mainstreaming climate change adaptation. This toolkit will guide these professionals in integrating climate change into their specific sector.

Programme and component managers will gain a better understanding of the ways in which mainstreaming climate change adaptation will affect project work plans, and can subsequently incorporate mainstreaming into their monitoring and evaluation systems, whilst also allocating adequate budget resources. Project officers will find clear and flexible tools and guidelines on how to identify and design appropriate climate change adaptation initiatives, either as new projects or to be integrated into already existing livelihoods, health, disaster risk reduction and rural development programs.

### HOW DO I USE THE HANDBOOK?

The handbook is designed to direct a process of analysis and dialogue on climate change issues, examining factors at multiple levels and using a variety of tools to gather information and inform decision-making.

The handbook is divided into two main parts:

**Part 1:** Understanding Climate Change

**Part 2:** Tools For Mainstreaming Climate Change Adaptation

**Part 3:** Tools for Mainstreaming Climate Change Adaptation

Part 1 provides a basic overview of the concepts that underpin climate change, the implications of climate change for sustainable development in Vietnam and its relevance to our work as development practitioners.

Part 2 describes the mainstreaming climate change adaptation process as divided into seven steps, in the form of the Climate Vulnerability and Adaptation (CVA) Pathway. These steps correspond with the life cycle of a project or program. Each step is described with the help of tools, checklists, and examples. This section also presents case studies in order for users to gain a clearer understanding of what mainstreaming may look in practice. Although the CVA Pathway is aligned with the project cycle, it is recommended to begin with the step that is the most appropriate entry point for the project or program in question. Whilst it is ideal to begin mainstreaming at the analysis stage of the project cycle, significant impact can still be made by integrating and addressing issues further on in the cycle for ongoing projects and programs.

Part 2 also describes the process of mainstreaming at the strategic level (within the organisational environment) to ensure climate change concerns are integrated into the development and implementation of policies and programmes. Programming must be accompanied by a strategy to ensure that the working environment is sensitive to climate change issues.



organisational environment) to ensure climate change concerns are integrated into the development and implementation of policies and programmes. Programming must be accompanied by a strategy to ensure that the working environment is sensitive to climate change issues. Part 3 provides a process and tools which will enable CARE in Vietnam to assess its progress in mainstreaming climate change adaptation within the organisation.

We hope that this can be the beginning of an evolving handbook that can be added to and improved over time. Please send your comments and suggestions for improvements and additions to the CARE in Vietnam Climate Change Coordinator ([carevn@care.org.vn](mailto:carevn@care.org.vn)). The handbook will be posted on the Vietnam NGO Climate Change Working Group (CCWG) website with the intention of it being periodically updated.





**PART 1:  
UNDERSTANDING  
CLIMATE CHANGE**

## PART 1: UNDERSTANDING CLIMATE CHANGE

Part 3 provides a process and tools which will enable CARE in Vietnam to assess its progress in mainstreaming climate change adaptation within the **UNDERSTANDING CLIMATE CHANGE CONCEPTS**

The Mainstreaming Climate Change Adaptation Handbook is designed on the following concepts of climate change, vulnerability to climate change, adaptive capacity, resilience, hazard and adaptation.

### Climate Change

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as:

*Any change in climate over time, whether due to natural variability or as a result of human activity<sup>1</sup>.*

CARE uses this definition because it encompasses both natural variability and anthropogenic changes. When we discuss climate change in this handbook we are referring to the impacts of climate change that can be classified as either:

- *Catastrophic*: effects of climate disasters or hazards such as typhoons, hailstorms, droughts and sudden floods.
- *Chronic*: new conditions such as higher temperatures, sea level rise, saline intrusions, subsiding water tables, more or less rainfall, less predictable seasons.

From the perspective of reducing people's vulnerability, it is unnecessary to separate 'climate change' caused by humans from natural 'climate variability'. The primary focus of this handbook is understanding the effects of climate hazards and changing conditions on people and reducing negative impacts.

### Vulnerability to Climate Change

In order to address climate change in development programs, we must examine the concept of vulnerability.

Vulnerability to climate change can be defined as:

*Vulnerability is a set of conditions and processes resulting from physical, social, economic, and environmental factors, which increase the likelihood that a community will negatively affected by a climate hazard or change. It is a combination of exposure to climatic conditions, how sensitive the community is to those conditions, and the capacity to adapt to those changes<sup>2</sup>.*

It is very difficult to control exposure to climate stresses, so for our purposes, the key consideration is adaptive capacity.

### Adaptive Capacity

Adaptive capacity is defined as:

*The ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences<sup>3</sup>.*

One of the most important factors shaping the adaptive capacity of individuals, households and communities is their access to and control over natural, human, social, physical, and financial resources. Examples of resources that may be important to adaptive capacity would be:

<sup>1</sup> IPCC, 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Annex I, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK

<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC) Working Group 2, 2001. Third Assessment Report, Annex B: Glossary of Terms

<sup>3</sup> Adapted from: UNISDR, 2009. *Terminology: Basic terms of disaster risk reduction and IISD et al, 2007. Community-based Risk Screening - Adaptation and Livelihoods (CRISTAL) User's Manual, Version 3.0.*

<b>Human</b>	Knowledge of climate risks, conservation agriculture skills, good health to enable labour
<b>Social</b>	Women's savings and loans groups, farmer-based organizations
<b>Physical</b>	Irrigation infrastructure, seed and grain storage facilities
<b>Natural</b>	Reliable water source, productive land
<b>Financial</b>	Micro-insurance, diversified income sources

Access to and control over the resources necessary for adaptation varies within countries, communities and even households. It is influenced by external factors such as policies, institutions and power structures. Adaptive capacity can vary over time based on changing conditions, and may differ in relation to particular hazards. In general, the world's poorest people are also the most vulnerable to climate change. This is often because they have limited access to those resources that would facilitate adaptation. For instance, women are often particularly vulnerable to the impacts of climate change due to their responsibilities in the home and their limited access to information, resources and services. Other groups such as pastoralists, persons living with HIV&AIDS and the elderly may also represent highly vulnerable populations. The CVCA facilitates identification of vulnerable groups and targeting of adaptation strategies depending on the context.

### Resilience

Resilience can be defined as:

*The ability of a community to resist, absorb, and recover from the effects of hazards in a timely and efficient manner, preserving or restoring its essential basic structures, functions and identity<sup>4</sup>.*

Resilience is a familiar concept in the context of disaster risk reduction (DRR), and is increasingly being discussed in the realm of adaptation. A resilient community is well-placed to manage hazards to minimize their effects and/or to recover quickly from any negative impacts, resulting in a similar or improved state as compared to before the hazard occurred. There are strong linkages between resilience and adaptive capacity; consequently, resilience also varies greatly for different groups within a community.

### Hazard

In the context of disaster risk reduction, a hazard is defined as:

*A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage<sup>5</sup>.*

When we discuss hazards in the context of the handbook, we are referring both to shocks, such as droughts or floods (rapid onset), and to stresses, such as changing rainfall patterns (slow onset). It is important to distinguish between the hazard - for example a flood, and the effects of the hazard - for example death of livestock. Some effects, such as food shortages, may be the result of a combination of hazards, including climate shocks and stresses, declining soil fertility, and insecure access to markets. To effectively analyse vulnerability, we must understand the dynamic nature and interactions of hazards.

<sup>4</sup> Adapted from: UNISDR, 2009. *Terminology: Basic terms of disaster risk reduction and IISD et al, 2007. Community-based Risk Screening – Adaptation and Livelihoods (CRISTAL) User's Manual, Version 3.0.*

<sup>5</sup> Adapted from: UNISDR, 2009. *Terminology: Basic terms of disaster risk reduction.*

## Adaptation

In order to reduce vulnerability to climate change, we must focus on building adaptive capacity, particularly of the most vulnerable people; and, in some cases, on reducing exposure or sensitivity to climate impacts. We must also ensure that development initiatives don't inadvertently increase vulnerability. We call this process adaptation.

Adaptation is defined as:

*Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities<sup>6</sup>.*

The adaptation of human systems is a process which requires the engagement of a wide range of stakeholders at multiple levels and in multiple sectors. It requires analysis of current exposure to climate shocks and stresses, and model-based analysis of future climate impacts. It demands an understanding of the existing vulnerability of individuals, households, and communities. With this information, adaptation strategies can be designed and implemented. Monitoring and evaluating the effectiveness of activities, as well as sharing knowledge and lessons learnt, are critical components of the process.

### How is adaptation different from coping?

The terms "adaptation" and "coping" are sometimes used interchangeably, leading to confusion about the similarities and differences between these two important concepts. The following lists of characteristics are a compilation of brainstorming sessions by groups of development practitioners in Ghana, Niger and Nepal.

Coping	Adaptation
<ul style="list-style-type: none"> <li>• Short-term and immediate</li> <li>• Oriented towards survival</li> <li>• Not continuous</li> <li>• Motivated by crisis, reactive</li> <li>• Often degrades resource base</li> <li>• Prompted by a lack of alternatives</li> </ul>	<ul style="list-style-type: none"> <li>• Oriented towards longer term livelihoods security</li> <li>• A continuous process</li> <li>• Results are sustained</li> <li>• Uses resources efficiently and sustainably</li> <li>• Involves planning</li> <li>• Combines old and new strategies and knowledge</li> <li>• Focused on finding alternatives</li> </ul>

Community-based adaptation (CBA) strategies can include:

- *Soft measures:* such as raising people's awareness about traditional ways to cope with climate variability, raising awareness about potential new health risks, or helping local authorities and communities establish disaster early warning systems.
- *Hard measures:* such as rainwater harvesting, or planting agricultural crops and trees more suited to warmer temperatures and drier soil conditions; building storm resistant houses, improving access to clean water, and providing hygiene kits and knowledge to women on how to use them.

<sup>6</sup> IPCC, 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Annex I., Cambridge University Press, Cambridge, UK

## CLIMATE CHANGE AND POVERTY: WHAT'S THE LINK?

It is widely acknowledged that climate change will have a disproportionate effect on the lives of people living in poverty in developing countries. Poverty increases people's exposure, and climate change increases risks; therefore people living in poverty and poor communities are most vulnerable.

**Livelihoods and food security:** poverty and hunger is likely to increase as the climate changes. Many people in Vietnam rely on agriculture for their livelihoods, and increasingly unpredictable seasons and extreme weather events such as typhoons and floods, may lead to crop failure. The result is that farmers and their families do not have a sustainable food supply or livelihood as they often rely exclusively on their own crops. Poor people also live in areas more prone to flooding, cyclones and droughts, leaving them exposed to environmental vulnerabilities with little capacity or funds to cope.

**Education:** As crops fail and water becomes more scarce, education will be one of the first casualties. Education often becomes a low priority following the loss of a home or the need to migrate following a flood, typhoon or drought. Children are more likely to suffer from malnutrition and may have to spend more time on household chores such as helping collect water. In the long-term lack of education means that the poor have little alternative after disasters but to remain in or return to disaster-prone areas, with diminished assets.

**Gender:** In communities that are dependent on natural resources women are likely to bear disproportionate hardship to the effects of climate change. Climate change will impact sectors that form the basis of livelihoods for which women are responsible, for example, agriculture, nutrition, water and energy supplies. Moreover, because of gender differences in property rights, access to information and social and economic roles, the effects of climate change will affect men and women differently. However it should be noted that women and men also have distinct and valuable knowledge about how to adapt to the adverse impacts of climate change. As primary managers of natural resources and key frontline implementers of development, women in Vietnam represent an immense source of potential knowledge and skills to build the adaptive capacity of their communities.

**Health:** easily preventable diseases such as diarrhoea kill around 14 000 children a year in Vietnam<sup>7</sup>. AIDS, malaria, avian flu and tuberculosis together kill thousands more, yet many of these lives could be saved by scaling up existing programmes which promote simple, low-cost solutions. Progress will be threatened by climate change as people become more vulnerable due to the spread of disease. Floods and drought will impact people's access to health services and increase outbreaks of dengue, malaria, diarrhoea and cholera.

**Water resources:** access to clean water will be threatened as the climate changes. Lack of access to safe drinking water and adequate sanitation is a major cause of ill health and life threatening disease<sup>8</sup>. In Vietnam safe water and hygienic sanitation coverage is still low, especially in rural areas. In some areas (e.g. rural communes of Lai Chau), people, especially women and girls, travel between three to four kilometers daily to fetch drinking water. More than half of their productive time is spent on water collection<sup>9</sup>.

<sup>7</sup> World Health Organisation, 2009. *Diarrhoeal Diseases Research Report*.

<sup>8</sup> Practical Action, 2009. *Make the Link*, Practical Action, United Kingdom.

<sup>9</sup> SNV, 2009. *Water, Sanitation and Health: Connecting rural poor with viable sanitation solutions*, SNV, Hanoi.

## CLIMATE CHANGE AND POVERTY IN VIETNAM

In recent years, Vietnam has made significant progress in both economic and broader development terms. The last decade has seen average growth of 7.5 percent per annum, more than tripling per capita incomes from \$170 to \$620 and reducing poverty at the national level from 58 percent to 20 percent<sup>10</sup>. Vietnam is expected to reach middle-income country status by 2010 and aims to become an industrialised country by 2020. Unlike many other countries around the world, Vietnam has already achieved a number of the Millennium Development Goals (MDGs) and most that remain are expected to be within reach. Despite these achievements there is increasing concern that climate change and its associated impacts could cause economic and human costs that slow or even reverse future growth and development in Vietnam.

A long and exposed coastline, low lying river deltas and an economy that is still very much centred on natural resource based livelihoods all make Vietnam one of the most vulnerable countries in the world to climate change. Gradual changes such as sea level rise and higher temperatures, more extreme weather such as floods and drought, and more intense typhoons are all predicted and will have a potentially devastating impact on the country's people and economy.

The Government of Vietnam is taking the issue of climate change seriously leading national efforts to mitigate disaster risks and climate change through a National Strategy for Disaster Prevention and a National Target Program for Climate Change (NTP). However, as the 2007 IPCC report stressed, it is poor people within developing countries who are most at risk from climate change. Despite the economic boom of recent years, there are still significant numbers of poor men and women living in areas of Vietnam particularly vulnerable to the effects of climate change

In 2004, 16 million people were still classified as poor and another 28 million lived just above the official poverty line<sup>11</sup>. Although the highest percentage of poor men and women is concentrated amongst ethnic minorities in the highland areas, in absolute terms the greatest numbers of poor people live in the coastal areas, including the Red River and Mekong River deltas. Many of these rely largely on agricultural activities, but are vulnerable to increasing land scarcity, low paid off-farm employment and uncertain access to basic services. Others are poor fishing communities who are becoming more at risk to the variability of the weather. The coastal poor are particularly vulnerable to weather extremes every year. The 3,000kms of Vietnam's eastern coastal seaboard is one of the most vulnerable spots in the world for typhoons<sup>12</sup>.

In summary the variability of the climate, particularly extremes resulting in climate-related disasters such as floods, droughts, and typhoons is a fundamental cause of poverty in Vietnam. Poor people, who have limited coping capacity to current climate variability, may be pushed beyond this coping range if faced with more severe variations or with future climate change impacts. Climate change is likely to worsen poverty and hinder Vietnam's efforts to achieve its development objectives.

## CLIMATE CHANGE IN VIETNAM: TRENDS AND PREDICTIONS

A preliminary assessment of the impact of climate change in Vietnam was carried out for the initial National Communication to the United Nations Framework on Climate Change (UNFCCC). Work is ongoing for the second National Communication to the UNFCCC and climate change impacts are already emerging in Vietnam with weather conditions likely to become both more extreme and unpredictable.

<sup>10</sup> VASS, 2006. *Vietnam's Poverty Update 2006: Puzzles and Policy Questions*, Vietnam Academy of Social Sciences.

<sup>11</sup> Oxfam, 2008. *Vietnam: Climate Change and Adaptation and Poor People*, Oxfam International, Hanoi, Vietnam.

<sup>12</sup> Oxfam, 2008. *Vietnam: Climate Change and Adaptation and Poor People*, Oxfam International, Hanoi, Vietnam.



The Human Development Report 2007/2008 outlines the following trends and predictions and sector impacts for Vietnam:

### Changes in Temperature and Rainfall

Summers are becoming hotter with average temperatures expected to increase in the range of 1.4-1.5 °C by 2050 and 2.5-2.8 °C by 2100<sup>13</sup> – and the highest temperature increases will be inland<sup>14</sup>. Monthly rainfall is already decreasing in most of the country in July and August and increasing in September, October and November<sup>15</sup>, and rainfall intensity is increasing considerably<sup>16</sup>. Annual total rainfall is expected to increase in the range of 2.5 percent to 4.8 percent by 2050 and by 4.7 percent to 8.8 percent by 2100. The increase will be largest in the north of Vietnam and least in the southern plains. It is expected that rainfall will be concentrated, even more than now, in the rainy season months, leading to an exacerbation of drought problems in the dry season<sup>17</sup>.

### Changes in Floods and Droughts

Even before future climate change is factored in, Vietnam is at risk from extreme weather events. In 1996, more than 2,000 km<sup>2</sup> of the country's coastal zones were estimated to be at risk from annual flooding, with the Mekong River Delta accounting for 75 percent of this total and the Red River Delta a further ten percent<sup>18</sup>. Flood damage is expected to be aggravated by an increase in daily rainfall of 12-19 percent by 2070 in some areas, affecting both flood peak discharges and the return period of floods. Drought problems will intensify through increased variation in rainfall and increased evaporation (three percent in coastal zones and eight percent in inland areas by 2070) triggered by rising temperatures<sup>19</sup>.

### Changes in Typhoon Patterns

There is considerable uncertainty about the expected frequency of typhoons in the coming century. The trajectory of typhoons appears to have moved southwards in recent years<sup>20</sup> though it is widely expected that due to a rise in temperatures, the north will become more subject to typhoon activity and the intensity of storms will increase, resulting in higher peak wind speeds and more intense precipitation<sup>21</sup>. Coastal zones will suffer from more intense typhoons, posing higher threats to people's lives, livelihoods, infrastructure and agricultural production. Upland communities will be faced with increasing risks of flash floods and landslides from heavy rainfall. An estimated eighty to ninety per cent of Vietnam's population are potentially directly affected by typhoons<sup>22</sup>.

### Sea Level Rise

Several studies have reported sea level rise in Vietnam. Predictions for the extent of sea level rise in the future differ, with national publications asserting a rise of up to 1m by 2100<sup>23</sup>. Sea level rise will overwhelmingly impact on the low-lying Mekong River Delta, which could be almost completely inundated for some periods of the year<sup>24</sup>.

## CLIMATE CHANGE IN VIETNAM: IMPACTS BY SECTOR

### Impacts on Agriculture

A rise in seawater level will worsen saline water intrusion in coastal zones compounding what is already a problem in some areas due to fresh water extraction for irrigation and drinking water and the construction of canals in the deltas and upstream dams<sup>25</sup>. The Mekong River Delta will be the most affected region with 1.77 million ha of salinised land, accounting for forty-five per cent<sup>26</sup> of the land. A sea level rise of 30 centimetres (a scenario for 2050) would increase the salinity of the main tributaries of the Mekong River as far as 10 kilometres

13 Hoang, Duc Cuong, Tran, Viet Lien, 2006. 'Developing various climate change scenarios of 21 century for regions of Viet Nam', *Scientific and Technical Hydro-Meteorological Journal*, No 541.

14 Chaudhry, P & Ruysschaert, G, 2007. *Climate Change and Human Development in Vietnam*, UNDP Occasional Paper.

15 MoNRE, 2003. *Vietnam Initial National Communication Under the United Nations Framework Convention on Climate Change*, MoNRE, Ha Noi, Vietnam.

16 Oxfam, 2008. *Vietnam: Climate Change and Adaptation and Poor People*, Oxfam International, Hanoi, Vietnam.

17 Hoang, Duc Cuong, Tran, Viet Lien, 2006. 'Developing various climate change scenarios of 21 century for regions of Viet Nam', *Scientific and Technical Hydro-Meteorological Journal*, No 541.

18 MHC, Polish Academy of Sciences, and National Institute for Coastal and Marine Management (The Netherlands), 1996. *Vietnam Coastal Vulnerability Assessment: First Steps Towards Integrated Coastal Zone Management*. Marine Hydrometeorology Centre (MHC), Hanoi, Vietnam.

19 Chaudhry, P & Ruysschaert, G, 2007. *Climate Change and Human Development in Vietnam*, UNDP Occasional Paper.

20 European Union (EU) & MWH, 2006. *Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction*. Vietnam Country Study, Government Statistical Office (GSO), Hanoi, Vietnam.

21 Central Committee for Flood and Storm Control (CCFSC), 2001. *Second National Strategy and Action Plan for Disaster Mitigation and Management in Viet Nam – 2001 to 2020*, CCFSC, Ministry of Agriculture and Rural Development, Hanoi.

22 European Union (EU) & MWH, 2006. *Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction*. Vietnam Country Study, Government Statistical Office (GSO), Hanoi, Vietnam.

23 Chaudhry, P & Ruysschaert, G, 2007. *Climate Change and Human Development in Vietnam*, UNDP Occasional Paper.

24 Hoang, Duc Cuong, Tran, Viet Lien, 2006. 'Developing various climate change scenarios of 21 century for regions of Viet Nam', *Scientific and Technical Hydro-Meteorological Journal*, No 541.

25 Hoang, Duc Cuong, Tran, Viet Lien, 2006. 'Developing various climate change scenarios of 21 century for regions of Viet Nam', *Scientific and Technical Hydro-Meteorological Journal*, No 541.

26 European Union (EU) & MWH, 2006. *Linking Climate Change Adaptation and Disaster Risk Management for Sustainable Poverty Reduction*. Vietnam Country Study, Government Statistical Office (GSO), Hanoi, Vietnam.

inland<sup>27</sup>. Inundation and the resulting loss of land, and saline water intrusion in the Mekong Delta and parts of the Red River Delta, the country's most important agricultural areas, will pose serious threats to farmers as well as to agricultural exports such as rice (of which Vietnam is the second largest exporter in the world), and possibly to national food security.

Both agriculture and natural ecosystems will suffer from increased minimum temperatures, a decreasing number of days with temperatures under 20 °C (0-50 days by 2070) and an increasing number of days with temperatures above 25 °C (0-80 days by 2070). This will affect growing periods, crop calendars, crop distribution, and increase pest and virus activity. It is predicted that yields of summer rice will decrease by between three to six per cent by 2070 compared to the 1960-1998 period. The impact on spring rice may be more serious especially in the north where yields are expected to decrease by seventeen per cent by 2070 in contrast with the south of the country where yield would decrease by eight percent. Yields of spring maize may decrease by four percent in central Vietnam and by nine percent in the south, whereas climate change would have a positive impact in the north where spring maize yields could increase by seven percent<sup>28</sup>.

### Fisheries & Aquaculture

Climate change is expected to have a considerable impact on Vietnam's fishery and aquaculture sectors. The numbers of tropical fish with a low commercial value (except for tuna) would increase and the numbers of sub-tropical fish with a higher commercial value would decrease. Coral reefs are expected to degenerate and fish living in these habitats are expected to disappear. Moreover, sharp decreases in plankton would lead to migration of fish and reductions in fish body mass. As a result, it is estimated that the economic sea production capacity of Vietnam would be reduced by at least one third. Due to a rise in seawater level, aquaculture farms will have to be relocated and saline water intrusion and reduction of the mangrove area will create loss of habitat for fresh water creatures<sup>29</sup>.

### Climate Change and Human Health

Climate change is also expected to affect people's health as increasing temperatures facilitate the growth and development of various viruses and disease carriers, resulting in higher incidence of infectious diseases such as malaria and dengue. Moreover, extreme weather and increased frequency and/or intensity of natural disasters, such as typhoons and floods, will disrupt access to health services, threaten people's lives and may lead to more fatalities<sup>30</sup>.

The table below summarises the climate change impacts on different regions, sectors and communities in Vietnam:

<sup>27</sup> Raksakulthai, V, 2002. *Climate Change Impacts and Adaptation Options in Vietnam*. Asian Disaster Preparedness Centre, Bangkok, Thailand.

<sup>28</sup> Nguyen, Mong Cuong, Ninh, Van Hiep, Ngo, Tieng Giang, 2005. *Study on Climate Change Impacts to Vietnam Agriculture and Adaptation Measures*, Technical paper prepared for the National Programme on Studying Climate Change Impacts.

<sup>29</sup> Chaudhry, P & Ruysschaert, G, 2007. *Climate Change and Human Development in Vietnam*, UNDP Occasional Paper.

<sup>30</sup> Chaudhry, P & Ruysschaert, G, 2007. *Climate Change and Human Development in Vietnam*, UNDP Occasional Paper.

Climate Change Impact	Vulnerable Region	Vulnerable Sector	Vulnerable Communities
<b>Temperature increase</b>	<ul style="list-style-type: none"> <li>Northwest, northern region</li> <li>Northern plains region</li> <li>Northern central region</li> <li>Central region</li> <li>Southern central region</li> <li>Highlands region</li> <li>Southern region</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture and food security</li> <li>Health</li> <li>Aquaculture</li> <li>Water Resources</li> <li>Energy</li> </ul>	<ul style="list-style-type: none"> <li>Poor farmers</li> <li>Ethnic minority people</li> <li>Elderly</li> <li>Children</li> <li>Women</li> </ul>
<b>Sea level rise</b>	<ul style="list-style-type: none"> <li>Coastal areas especially deltas and flooded areas (Mekong Delta, Red River Delta and coastal Central region)</li> <li>Islands</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture and food security</li> <li>Aquaculture</li> <li>Sea and coastal ecological systems</li> <li>Water resources</li> <li>Energy</li> <li>Infrastructure</li> <li>Tourism</li> </ul>	<ul style="list-style-type: none"> <li>Coastal communities especially poor farmers and fishermen</li> <li>Elderly</li> <li>Children</li> <li>Women</li> </ul>
<b>Floods, flash floods, and land-slides</b>	<ul style="list-style-type: none"> <li>Coastal areas: including Delta areas and flooded areas, Delta and coastal northern part, Mekong River Delta and Coastal central region)</li> <li>Mountainous areas: Northern West region, Northern East region, North Central region and Highlands</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture and food security</li> <li>Health</li> <li>Aquaculture</li> <li>Water resources</li> <li>Transportation</li> <li>Energy</li> <li>Tourism</li> <li>Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Coastal communities</li> <li>Mountainous communities especially ethnic minority peoples</li> <li>Elderly</li> <li>Children</li> <li>Women</li> </ul>
<b>Tropical Cyclones</b>	<ul style="list-style-type: none"> <li>Coastal areas especially coastal Central region, Red River Delta and Mekong River Islands</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture and food security</li> <li>Health</li> <li>Aquaculture</li> <li>Transportation</li> <li>Water resources</li> <li>Energy</li> <li>Offshore and coastal activities</li> <li>Infrastructure</li> <li>Tourism</li> </ul>	<ul style="list-style-type: none"> <li>Coastal communities especially poor fishermen</li> <li>Elderly</li> <li>Children</li> <li>Women</li> </ul>
<b>Droughts</b>	<ul style="list-style-type: none"> <li>Central Region especially South Central part.</li> <li>Northern Region</li> <li>Mekong Delta</li> <li>Highlands</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture and food security</li> <li>Water resources</li> <li>Energy</li> <li>Health</li> </ul>	<ul style="list-style-type: none"> <li>Poor farmers</li> <li>Elderly</li> <li>Children</li> <li>Women</li> </ul>





**PART 2:  
MAINSTREAMING  
CLIMATE CHANGE  
ADAPTATION  
IN PRACTICE**

## Part 2

# MAINSTREAMING CLIMATE CHANGE ADAPTATION IN PRACTICE

### WHAT DOES MAINSTREAMING CLIMATE CHANGE ADAPTATION MEAN?

As discussed in Part 1, adaptation cannot be separated from other poverty reduction and sustainable development efforts because climate change acts upon existing vulnerabilities.

Mainstreaming climate change adaptation describes a process of considering climate risks to development projects, and of adjusting project activities and approaches to address these risks. The assumption is that the project has a goal related to poverty reduction, livelihood security, or improved well-being for target populations, and that the sustainability and impact of the initiative can be increased by integrating climate change. This is different from a “targeted” community-based adaptation project, where the explicit goal is to build resilience to climate change. Mainstreaming climate change adaptation can therefore ensure that development programs and policies are not at odds with climate risks both now and in the future.

### WHY SHOULD WE MAINSTREAM CLIMATE CHANGE ADAPTATION?

Mainstreaming climate change adaptation can achieve two main objectives:

- reducing the risks posed by climate change to project activities, stakeholders, and results, sometimes referred to as ‘climate-proofing’
- ensuring that project or program activities maximize their contribution to adaptive capacity of target populations - and do not inadvertently increase vulnerability to climate change - through interventions designed to build resilience while achieving development goals

‘Climate-proofing’ is primarily concerned with protecting development investments and outcomes from the impacts of climate change. It increases the sustainability of projects by analysing the risks posed by climate change to project activities, stakeholders, and results, then modifying and/or adjusting project designs or implementation plans to mitigate those risks. For example, an increase in the frequency and severity of floods may require water pumps to be built above predicted flood heights in order to ensure the availability of safe water over the longer-term.

The second objective of mainstreaming adaptation recognises that development activities that seek to reduce poverty can build the adaptive capacity of target populations to climate impacts or inadvertently constrain it. By analysing vulnerability of these populations to climate change and adjusting project activities to maximise their contribution to resilience, the impact of development projects can be significantly increased. For example, the selection of technologies and crop varieties can make a major difference in the impact of an agricultural project. In a changing climate, production-oriented, high-input agriculture may actually increase vulnerability, as the varieties may not be suited to shifting rainfall patterns and the purchase of inputs may require credit, leaving farmers in a risky position in the event of crop failure. In this context, low-input techniques such as conservation agriculture, and varieties which are suited to the current and projected climate conditions, may be more appropriate.

This handbook is primarily focused on the first objective of “climate-proofing” project and program activities. However, the process can also contribute to the identification of alternative or new activities to increase the adaptive capacity of target populations. It can be used for both ongoing and new programmes

and projects for CARE in Vietnam. However, the process described here may be most appropriate for ongoing projects. When designing a new programme or project ideally a rigorous analysis of the climate change context and linkages with livelihoods and underlying causes of vulnerability would be undertaken. In this case the CARE International ‘Toolkit for Integrating Climate Change Adaptation’ provides detailed guidance on the process of integrating climate change adaptation from the analysis phase through to monitoring and evaluation.

Mainstreaming climate change adaptation can occur at the strategic level or the operational level.

Mainstreaming climate change adaptation at the **strategic level** addresses the organisational environment in which policies and programmes are developed and implemented. A strategy to integrate climate change concerns into programming must be accompanied by a strategy to ensure that the working environment is sensitive to climate change issues (e.g. consideration of climate-related issues in budgets), and sufficient technical capacity and human resources to successfully mainstream climate change adaptation must be made available.

Mainstreaming at the **operational level** involves undertaking an evaluation of risks to poverty reduction activities associated with climate variability and change, and identifying effective, efficient and equitable adaptation measures to reduce those risks and harness opportunities for building adaptive capacity.

Mainstreaming climate change adaptation is not only a question of social justice but is necessary for ensuring equitable and sustainable human development. The long-term outcome of mainstreaming climate change adaptation will be the achievement of greater and more sustainable development for all.

### MAINSTREAMING AT THE STRATEGIC LEVEL

Mainstreaming at the **strategic level** addresses the organisational environment in which policies and programmes are developed and implemented. Mainstreaming climate change adaptation successfully requires that clear policies on adaptation are developed in broad consultation with staff and supported by senior and middle management. Strategies to implement climate change policies need to be developed, and mechanisms that ensure that staff are supported and understand the implications for their everyday work, and have the competencies and resources required to implement strategies effectively must be developed.

### ESSENTIAL ELEMENTS FOR SUCCESSFUL STRATEGIC MAINSTREAMING

With any organisational change, staff ‘ownership’ is crucial to success. Knowledge, understanding, and acceptance of the importance of climate change and community-based adaptation, and the process of mainstreaming itself are essential for CARE in Vietnam to attain ‘full integration’, ensuring that the issues are fully incorporated into people’s behaviour and thinking. For that to happen, a number of essential elements need to be in place:

**Staff and financial resources:** additional work and increased responsibility will be required to incorporate climate change adaptation across all sector programs. Increased budgets may also be required to employ additional project officers.

**Leadership:** it is important that there are ‘champions’ within CARE in Vietnam to promote climate change adaptation within the organisation. Without such

persons the issues will struggle to gain profile in the short-term, and in the long-term it may be difficult to achieve coordination and monitoring of progress across the CARE in Vietnam development portfolio. Leadership of line managers will be important in facilitating the engagement and ownership of staff (and project partners). Therefore, an effective combination of institutional champions and line managers who take ownership and encourage others will be required to drive the process.

**Skills and knowledge:** project staff and partners need to understand the importance and relevance of climate change and community-based adaptation in their work. These skills and knowledge need to be built and are crucial to increasing understanding, ownership and effective implementation of adaptation measures. Capacity can be developed through: briefings; training materials; short courses for staff and partners; and regular knowledge and information exchange between staff and partners working in different sectors and in 'lessons learnt'.

**Time:** building staff ownership of climate change adaptation and subsequently achieving 'full integration' is a process, and will take time. Understanding how this change can be achieved and how to manage the change will require continued dialogue within the organisation to assess progress and approaches.

#### **ASSESSING AND SUPPORTING MAINSTREAMING AT THE STRATEGIC LEVEL**

The 'traffic lights' system can be used by CARE in Vietnam and program managers to periodically assess their progress in mainstreaming climate change adaptation. CARE in Vietnam as a whole or sectoral programs can assess which stage they have reached and identify priority issues to be addressed with definable, realistic, and measurable goals.



	Stage	Steps Needed to Progress
<b>RED</b>	<p><b>Low awareness and little progress</b></p> <p>The organisation undertakes mainstreaming climate change adaptation in an ad hoc manner and has low awareness of the relevance and importance of adopting a systematic approach to addressing climate change within its relief and development processes.</p>	<p><b>Progressing to YELLOW involves:</b></p> <ul style="list-style-type: none"> <li>• Learning about climate change and its impacts on the organisation and its activities</li> <li>• Identifying activities the organisation is already undertaking that support climate change adaptation</li> <li>• Assessing how climate change threatens the organisation's development objectives, programmes, and activities</li> <li>• Assessing how mainstreaming will ensure that development gains are sustainable</li> <li>• Identifying sources of information on climate change adaptation</li> <li>• Identifying tools and resources for mainstreaming</li> </ul>
<b>YELLOW</b>	<p><b>Increased awareness and development of solutions</b></p> <p><b>Yellow</b> is an intermediate stage in mainstreaming, where there are identifiable actions to consolidate the gains made at the red stage.</p> <p>The organisation has a growing level of awareness and understanding of the value and requirements of mainstreaming, and recognises the need for action.</p> <p>The organisation is developing plans and tools to address the requirements of integrating climate variability and change into its development processes.</p>	<p><b>Progressing to GREEN involves:</b></p> <ul style="list-style-type: none"> <li>• Systematically integrate climate change adaptation into organisation wide strategies and plans such as the Long Range Strategic Plan (LRSP) and Emergency Preparedness Plan (EPP)</li> <li>• Identifying focal points within the organisation with responsibility for mainstreaming climate change adaptation</li> <li>• Developing tools for project staff to integrate climate change adaptation into analysis, project design, implementation, and evaluation</li> <li>• Providing training for staff on mainstreaming tools and allocating the time and resources to implement those tools</li> </ul>
<b>GREEN</b>	<p><b>Full integration</b></p> <p><b>GREEN</b> is a situation where climate change risks are fully absorbed into an organisation's development agenda. The organisation places high importance on reducing climate risks in a sustainable programme of action at multiple levels and within multiple sectors, and there is a comprehensive demonstration of practice. The GREEN stage describes a situation where climate change adaptation is 'institutionalised'<sup>31</sup>.</p>	<p>Establishing processes for measuring the organisation's effectiveness in mainstreaming and supporting community-based adaptation</p> <p>The process of mainstreaming should be viewed as open-ended: while organisations should aim to achieve Stage GREEN, they should also aim to make continuous improvements to their approach.</p>

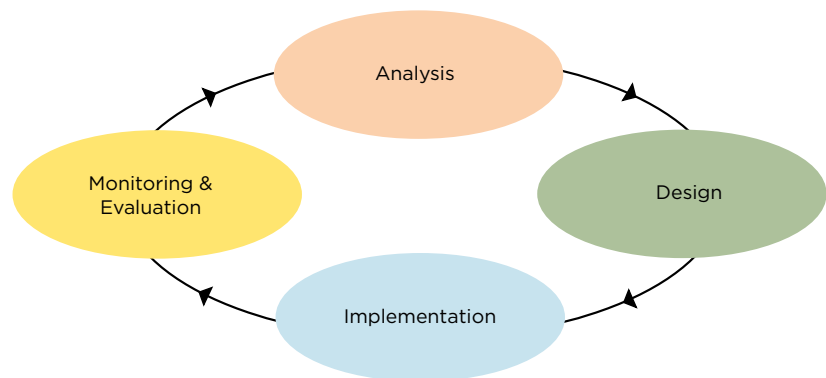
31  
Adapted from Tearfund, 2005. *Mainstreaming Disaster Risk Reduction: a tool for development organisations*, Tearfund, United Kingdom.

Whilst working towards a situation where adaptation is fully mainstreamed at the strategic level, organisations can take steps at the operational level to begin the process of integrating climate change adaptation into their work. This operational level mainstreaming can provide opportunities to test and refine mainstreaming tools, to better understand climate change adaptation issues that are relevant for strategic planning and prioritisation, and to build staff and partner capacity to integrate climate change adaptation into their work. The following sections describe a process for mainstreaming adaptation at the project level.

### MAINSTREAMING AND THE PROJECT CYCLE

The process of planning and managing projects can be drawn as a cycle. Each phase of the project leads to the next. The 'project cycle' assists NGOs to plan and implement development activities that are based on real needs, well planned, monitored and evaluated, and allow for organisational learning to improve future projects.

The project cycle is the common framework for developing projects. The project cycle is a way of illustrating the main stages in project development, the linkages between them, and their sequence. The detailed structure of the project cycle varies between organisations, but the main stages are usually very similar, although they might be named differently. In this handbook, we use the following four stages in the project cycle: situation analysis, project design, implementation, and monitoring and evaluation. The first three stages build on one another, while information and knowledge management runs throughout all of the stages.



The next section discusses how mainstreaming climate change adaptation at the operational level follows a development path parallel to the project cycle.

### MAINSTREAMING CLIMATE CHANGE ADAPTATION AT THE OPERATIONAL LEVEL

Mainstreaming climate change adaptation at the operational level aims to:

- examine the vulnerability of development programs and projects to current and future climate risks
- assess the extent to which such projects already consider and manage such risks
- evaluate potential adaptation measures to address remaining risks

The seven-step approach for mainstreaming climate change adaptation at the operational level, known as the Climate Vulnerability and Adaptation Pathway (CVA Pathway), follows a development path parallel to the project cycle. The table below illustrates the relationship between the project cycle and the CVA Pathway, and the tools available to practitioners to complete each step.

The Project  
Cycle

## Climate Vulnerability and Adaptation (CVA) Pathway

## Analysis

**STEP 1: Screen project activities for climate risk**

Using a summary of climate trends, forecasts and impacts undertake a preliminary assessment of whether climate variability and change could impact the effectiveness, longevity, and integrity of your project.

**Tools:** *Tool A:* Assess Climate Risk

**Participants:** Programme and component managers and project officers.

**Key Outcome:** A detailed table of the main climate change impacts that will affect project activities and results.

**STEP 2: Decide on the CVA Pathway**

If Step 1 indicates that climate impacts are likely to affect your project, you will need to decide whether to follow the CVA pathway, taking into account any existing risk management practices, CARE in Vietnam's human and financial resources; donor conditions and the local context for adaptation.

**Tools:** *Tool B Checklist:* Should we follow the CVA Pathway?

**Participants:** Programme and component managers and project officers.

**Key Outcome:** List of projects which will progress through the remaining steps of the CVA Pathway.

## Design

**STEP 3: Identify Adaptation Measures**

Once you have decided to follow the CVA Pathway it is expected that you will work closely with implementing partners, local decision makers and stakeholders, to identify a wide range of potential adaptation measures for tackling climate change risks and opportunities for strengthening adaptive capacity. This will involve reviewing available information and using participatory tools.

**Tools:**

- C Climate Vulnerability and Capacity Analysis (CVCA) Handbook
- D Resource Table on Best-practice Community-based Adaptation Experiences

**Participants:** Component managers, project officers, partner organisations and community members.

**Key Outcome:** A list of potential adaptation measures for reducing climate risk and strengthening adaptive capacity.

**STEP 4: Prioritise Adaptation Measures**

Prioritise potential adaptation measures to address the vulnerabilities identified in Step 1. Prioritising adaptation measures must also consider project timeframe, budget, and the technical requirements of implementing different adaptation measures.

**Tools:** E Priority Adaptation Matrix

**Participants:** Programme and component managers, partner organisations and project officers.

**Key Outcome:** List of criteria for determining benefits and feasibility of adaptation measures; and a list of adaptation measures ranked in order of priority.

THE PROJECT  
CYCLE

## CLIMATE VULNERABILITY AND ADAPTATION (CVA) PATHWAY cont.

## Implementation

**STEP 5: Select Adaptation Option(s) for Implementation**

Using the results from Step 4 work with partner organisations and community members to select which adaptation option/s will be implemented. This will involve developing local ownership of the process and decided measures.

**Tools:** F Stakeholder Workshop Methodology

**Participants:** Project officers, partner organisations and community members.

**Key Outcome:** Adaptation measures(s) selected by the community and community support and consensus.

**NOTE:** Steps 4 and 5 can be combined based on the working relationship between CARE, partner organisations and communities.

**Step 6: Implement Adaptation Measures**

This is the step when project activities are undertaken, stakeholders and partners are actively engaged, the capacity of project stakeholders is built and the project is monitored and adapted to any new conditions that may arise.

**Participants:** Project officers, partner organisations and community members.

**Key Outcome:** Community-based adaptation measures are implemented.

Monitoring &  
Evaluation**STEP 7: Evaluate Adaptation and the CVA Pathway**

Once you have implemented the adaptation measures the final step is to evaluate them. The purpose of evaluation is to determine whether the project or program 1) delivers the intended benefits and/or 2) causes any adverse outcomes. Evaluation also provides the opportunity to reflect on the overall CVA pathway and ways it might be improved. Lessons learned should be documented and shared in applied case-studies so as to inform future project design and implementation.

**Tools:** G Checklist: Evaluating Adaptation

**Participants:** Programme and component managers and project officers

**Key Outcome:** Organisational sharing and learning and applied case-studies<sup>32</sup>.

32

Adapted from USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*. USAID, Washington.

The CVA pathway can be used for designing new projects or incorporated into ongoing projects and programmes:

**New projects:** Ideally climate change will be considered from the beginning of a project and the steps of the CVA Pathway would be followed from the start. CARE in Vietnam managers and project officers would conduct a situation analysis and consider climate variability and change as part of project design. If there are climate change risks, project modification and adaptation will be identified and assessed as part of the project design.

**Ongoing projects:** The CVA Pathway also represents a process to enable CARE in Vietnam managers and project officers to assess current and future climate risks to ongoing projects and to develop adaptation measures to manage these risks where necessary. For example during the implementation of a project CARE and partners may identify an aspect of the project vulnerable to climate variability and impacts.

The CVA pathway can be used in different ways and can be incorporated at any stage of the project cycle. The complete seven-step CVA Pathway is most easily followed from the initial stage of the project cycle but is flexible enough to be applied at different stages of the project cycle. The CVA Pathway requires the active participation of managers and project officers in determining risks, in evaluating current risk management and in identifying and prioritising adaptation measures.

#### THE CVA PATHWAY

The next section describes the seven-step CVA pathway for mainstreaming climate change adaptation as illustrated in Table 1. Pilot studies were undertaken to test and demonstrate the CVA Pathway methodology during the preparation of this handbook and examples are drawn from these studies to illustrate individual steps and highlight the flexibility of the pathway.





**PART 3:  
TOOLS FOR MAINSTREAMING  
CLIMATE CHANGE ADAPTATION**

## PART THREE:

# TOOLS FOR MAINSTREAMING CLIMATE CHANGE ADAPTATION

### STEP 1: Assess project activities for climate risk

#### TOOLS Tool A Assessing the Climate Risk

Step 1 involves a preliminary screening of a current or proposed project to determine if it might be affected by climate variability or change. The screening of climate impacts determines how climate relates to the proposed program or project. This involves asking three questions:

1. Does my project take place in a climate sensitive location?
2. Are the target groups for the project particularly vulnerable to climate change?
3. Are the project activities vulnerable to climate change?

#### **Does my project take place in a climate-sensitive location?**

There are a number of different sources of information to determine if your project takes place in a sensitive location. The National Target Program for Vietnam (NTP) provides a detailed analysis of climate change predictions and impacts for the different regions of Vietnam and this handbook also provide general information on the potential impacts of climate change. You can look at one or a combination of these to make a decision for your particular project.

#### **Are the target groups for the project particularly vulnerable to climate change?**

Vulnerability to climate change varies within countries, communities and even households. Understanding who is vulnerable and why requires detailed analysis of the biophysical, socio-economic and political dimensions of vulnerability. However as this is a preliminary screening there are certain groups that can be identified as most likely to be particularly vulnerable. These include:

- people dependent on agriculture (particularly rain-fed agriculture) for their livelihoods
- women and other marginalized groups
- pastoralists
- landless people

#### **Are the project activities sensitive to climate change?**

Ideally this step would involve an extensive review of the climate context including recent climate trends, and climate change scenarios, preferably analysed at the same geographic scale as the proposed project. In reality the time and resources available to CARE staff are limited and climate data for Vietnam is only available at national and regional scales so far. Therefore CARE in Vietnam must rely on available information and use general principles in making a determination on whether a project is climate sensitive.

Two useful principles are:

**Principle 1: If a project is sensitive to climate variability then it is likely to be sensitive to climate change.**

Some development sectors are more sensitive to climate variability than others. Projects in the following areas may be particularly sensitive: agriculture, water resources, natural resources management (forestry, fisheries, landuse management), construction, health, energy, and coastal management<sup>33</sup>.

33

Adapted from USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*. USAID, Washington.



**Principle 2: Long-term climate changes can introduce other risks to projects**

Climate change involves not only changes in extreme weather and patterns of wet and dry, hot and cool periods, but also changes to average climate. That means that systems and activities that are adapted to an average climate can be affected. Crops are grown in particular locations because the range of temperatures and precipitation is right for those crops. Natural vegetation, such as forests or grasslands, exists in certain locations because the climate is favourable for particular species. Coastal development is close to high tide because land above high tide is dry, yet close enough to the ocean to allow access. Climate change is altering average climate conditions and sea levels, meaning that certain activities may have to be moved to other locations or modified in other ways<sup>34</sup>.

34

Adapted from USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*, USAID, Washington.

## Tool A

### ASSESSING CLIMATE RISK

**TIME:** 2 hours

**PURPOSE:** Using a summary of climate trends, forecasts and impacts for Vietnam undertake a preliminary assessment of whether climate change and variability could impact the effectiveness, longevity and integrity of your project.

**PARTICIPANTS:** Programme and component managers and project officers.

**MATERIALS:**

- flip chart and markers or computer and projector
- project log frame and workplans
- climate change predictions for Vietnam
- table template: Impact of Climate Change on Project Activities

**PROCESS: STEP 1:**

The identification of potential impacts and adaptation measures will be most effective if participants have a clear understanding of climate change concepts. This guidebook provides information on the expected impacts for various regions of Viet Nam and a few particular sectors. If available, facilitators may present additional information specific to the targeted areas of the project.

Characterize current climate variability including short-term events (extreme weather events) and long-term events (trends in seasonal and annual variations) in the geographical area. Sources may include historical weather records (if available), stakeholder input, and climate change projections.

**STEP 2:**

For the relevant project or program activities, determine which activities are likely to be impacted by the various types of short- or long-term climate variability events. It is important to remember that work plans are generally quite detailed and describe everyday management processes which will not be affected by climate change or disasters. It is therefore useful to group activities into a few general categories (such as problem analysis, planning, training, raising awareness, or implementing natural resource management measures) and focus on those key activities or outputs that are climate-sensitive.

**STEP 3:**

Identify any potential maladaptations (project designs that create or exacerbate a problem) in the current and planned projects that increase exposure to climate-related hazards.

**STEP 4:**

For each category or activity, discuss how climate change should be taken into account. The following sample questions can be asked:

**Project implementation period (disasters)**

- How would a flood/drought/storm affect the project implementation (e.g. transportation, timing of activities)?
- Which materials would best withstand a flood/drought/storm?

**Project results (climate change)**

- Which expected impacts of climate change should we include in our analysis?
- Will livelihood resources become more or less plentiful in the future? Which resources are more vulnerable?
- How will sea-level rise affect land use?
- If temperatures rise or seasons change, which crop varieties are most appropriate?

Complete the table below as the discussion progresses.

Activity	Impact of climate change
<b>Example: Output 1: Community analysis and vision building (<i>awareness raised on livelihood strategies and natural resource management activities, and community goals identified</i>)</b>	
Design process and facilitate participatory mapping of current land use and land allocations	Implementation progress affected by flood, storm, typhoon. Climate change may lead to decreases in water run-off and agricultural patterns.
<b>Output 2:</b>	

- KEY OUTCOMES:**
- A clear outline of the main climate change impacts that will affect project activities and results.

## CASE STUDY ONE: Screening for climate risk

The case study below shows an excerpt from discussions regarding the Participatory Watershed Management (PWM) component of the Civil Action for Socio-economic Inclusion in Natural Resource Management Programme (CASI).

Activity	Impact of climate change
<b>Output 1: Community analysis and vision building (<i>awareness raised on livelihood strategies and natural resource management activities, and community goals identified</i>)</b>	
Design process and facilitate participatory mapping of current land use and land allocations	Implementation progress affected by flood, storm, typhoon. Climate change may lead to decreases in water run-off and agricultural patterns.
Conduct a detailed participatory mapping of current livelihood strategies, natural resources management practices and their constraints and measures using for example seasonal calendars, ranking, history lines etc. in selected villages	Implementation progress affected by flood, storm, typhoon. Climate change may affect resources available for livelihood strategies and natural resource management practices.
<b>Output 4: Community watershed protection (<i>watershed management and protection plans agreed and implemented in each community</i>)</b>	
Facilitate farmer implementation of sustainable agro-forestry practices	Establishment and implementation models affected by drought, flood, temperature, rainfall and typhoon. Crop varieties, seasonal calendar, and locations may be affected by increased temperature and rainfall changes.
Explore options for eco-tourism, design, and test in one commune	Eco-tourism attractions may be affected by climate change.

## Step 2: Decide whether to follow the CVA Pathway

**TOOLS:** Tool B Checklist: Should we follow the CVA Pathway?

If Step 1 indicates that climate impacts are likely to affect your project, you now need to decide whether to continue on the CVA pathway taking into account any existing risk management practices, CARE in Vietnam's human and financial resources, donor conditions and the local and national context for adaptation.

## Tool B

### CHECKLIST: SHOULD WE FOLLOW THE CVA PATHWAY?

**TIME:** 2 hours

**PURPOSE:** If Step 1 of the CVA Pathway indicates that climate impacts are likely to affect your project, you now need to decide whether to commit to additional steps. This tool will assist you to create a list of projects for which you will complete the remaining steps of the CVA Pathway.

**PARTICIPANTS:** Programme and component managers and project officers.

**MATERIALS:**

- Large sheets of paper and markers or a computer and projector
- Project work plan
- Results from Step 1
- Checklist: Should we follow the CVA Pathway?

**PROCESS:** The decision should consider any existing risk management practices, CARE in Vietnam's human and financial resources and the local and national context for adaptation. The factors you might consider in making this decision are outlined below in a checklist, and divided into three groups of questions:

- Project Characteristics
- Planning for Adaptation
- Context for Adaptation

These questions can be answered as either Yes or No. The table template below makes suggestions for priority areas but ultimately the weighting given to questions and answers will need to be decided by program and component managers and project officers. However in general a high number of yes answers particularly in the critical questions area indicates you should complete the remaining steps of the CVA Pathway.

Priority One		Priority Two		Priority Three	
Project Characteristics	Y/N	Context for Adaptation	Y/N	Planning For Adaptation	Y/N
<b>Critical Factors</b> What is the length of the project? Is it long-term (one year or more?) Will the project perform poorly under current and predicted climate change scenarios? There may be existing risk management measures in the project design. Are there any unmanaged risks posed by climate change? Is there donor flexibility to modify the project for adaptation?		Is there support for adaptation design and implementation among decision-makers and beneficiaries? Are the human and financial resources available to implement potential adaptation measures? Does CARE have the technical expertise required to implement potential adaptation measures?		Is there experience with adaptations in the region or province? Have any preliminary adaptation policies and strategies been identified in Vietnam? Are the human and financial resources available to conduct climate vulnerability and capacity assessments?	
		Are experienced consultants available to assist CARE? Can any legal, political, institutional, or financial barriers to adaptation be overcome through reasonable means? Is there likely to be a cost to not adapting?		Are there any cost analyses available for potential adaptation measures? <sup>35</sup>	
<b>Other Factors to Consider</b> Consider the proposed or current budget of the project. Is adaptation feasible in terms of project finances?					

- KEY OUTCOMES:**
- list of projects for which you will complete the remaining steps of the CVA Pathway.

35  
 Adapted from USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*, USAID, Washington.

## CASE STUDY TWO: Following the CVA Pathway

The case study below links to the previous PWM case study which indicated that the program was likely to be significantly impacted by climate change. Using the checklist above component managers and project officers concluded that the program should follow the CVA pathway to ensure development gains are sustainable.

		Priority One	Priority Two		Priority Three		
		Project Characteristics	Y/N	Context for Adaptation	Y/N	Planning For Adaptation	Y/N
Critical Factors	What is the length of the project? Is it long-term (one year or more?)	Y	Is there support for adaptation design and implementation among decision-makers and beneficiaries?	Y	Is there experience with adaptations in the region or province?	Y	
	Will the project perform poorly under current and predicted climate change scenarios?	Y	Are the human and financial resources available to implement potential adaptation measures?	N	Have any preliminary adaptation policies and strategies been identified in Vietnam?	Y	
	There may be existing risk management measures in the project design. Are there any unmanaged risks posed by climate change?	Y	Does CARE have the technical expertise required to implement potential adaptation measures?	N	Are the human and financial resources available to conduct climate vulnerability and capacity assessments?	Y	
	Is there donor flexibility to modify the project for adaptation?	Y					
Other Factors to Consider	Consider the proposed or current budget of the project. Is adaptation feasible in terms of project finances?	N	Are experienced consultants available to assist CARE?	Y	Are there any cost analyses available for potential adaptation measures? <sup>35</sup>	N	
			Can any legal, political, institutional, or financial barriers to adaptation be overcome through reasonable means?	Y			



## Step 3: Identify Adaptation Measures

### TOOLS:

- Tool C: Climate Vulnerability and Capacity Analysis (CVCA) Handbook
- Tool D: Resource table on best-practice community-based adaptation experiences

Step 3 is to identify adaptation measures for modifying the project in response to the vulnerabilities identified in Step 1. Once you have decided to continue on the CVA Pathway it is expected that you will work closely with implementing partners, local authorities and stakeholders, to identify a wide range of potential adaptation measures to reduce the climate risks facing a project and target communities and for ensuring the project increases or at least does not decrease, community adaptive capacity and resilience. This will involve information reviews and using participatory tools.

The process for identifying adaptation measures might proceed as follows:

### Information Reviews

1. Review information on climate impacts and vulnerabilities identified in Step 1
2. Review similar previous and current programs and projects conducted by CARE and other NGOs, donors, multi-lateral and bi-lateral agencies to determine if adaptation measures were identified and whether implementation was successful
3. Review national policies that are relevant to community-based adaptation

### Participatory Tools

4. Within the project area assess community vulnerability to climate change and identify community capacity to adapt using CARE International's Climate Vulnerability and Capacity Analysis (CVCA) methodology. The CVCA can also be used to gather information as it includes methods and guidance for secondary research including policy analysis, and institutional mapping.

The CVCA methodology assists component managers and officers to analyse the implications of climate change for the lives and livelihoods of project beneficiaries.

The main objectives of the CVCA are:

- analyse vulnerability to climate change and adaptive capacity at the community level
- link community knowledge to scientific data on climate change to build an understanding of climate change impacts at the local-level
- identify practical adaptation measures to facilitate community-based adaptation to climate change

The CVCA applies a climate change perspective to livelihoods analysis and incorporates an analysis of the underlying causes of vulnerability (remembering that climate change adaptation cannot be separated from poverty reduction and sustainable development goals). Such an approach not only focuses on technological measures to address climate change but also on existing adaptive capacity and the underlying causes of vulnerability. The CVCA can be used to mainstream climate change adaptation across all relevant program sectors to ensure they are contributing to adaptive capacity.

## Tool C

### The Climate Vulnerability and Capacity Analysis (CVCA) handbook

CARE's Climate Vulnerability and Capacity Analysis (CVCA) methodology helps CARE and its partners to understand the implications of climate change for the lives and livelihoods of the people we serve. By combining local knowledge with scientific climate information, the process builds people's understanding about climate risks and adaptation strategies. It provides a framework for dialogue within communities, as well as between communities and other stakeholders.

The results provide a solid foundation for the identification of practical strategies to facilitate community-based adaptation to climate change. The CVCA methodology can also be used to gather and analyse information essential to integrating climate change into livelihoods and natural resource management programs. It can also provide practical evidence for advocating pro-poor climate change policies. The CVCA Handbook provides an overview of the methodology, as well as practical guidance for using it in the design and implementation of adaptation actions.

The CVCA handbook can be downloaded at the following website:

[www.careclimatechange.org](http://www.careclimatechange.org)

## Tool D

### RESOURCE TABLE ON BEST-PRACTICE COMMUNITY- BASED ADAPTATION EXPERIENCES

The table below outlines some examples of best-practice community-based adaptation measures. However it should be noted that whilst adaptation measures are not unique e.g. diversifying livelihoods and sources of income, improving traditional irrigation techniques, they are context-specific. The adaptation measures implemented will depend on the specific climate change impacts experienced and the vulnerability, resilience and capacity of the affected community to cope with those impacts. It is also important to remember that communities vulnerable to climate change are diverse not homogenous – different groups such as men and women, the elderly and people with disabilities will experience climate change differently. Adaptation measures appropriate for one vulnerable group may not be appropriate for others.

Care In Vietnam Programme Sectors	Regions	Impacts	Adaptation Measures
<b>Emergency response</b>	Central Mekong River Delta Red River Delta	<ul style="list-style-type: none"> <li>About 30 tropical cyclones occur in the Western North Pacific annually, of which 6-8 storms and tropical depressions affected Viet Nam each year from 1960-2005</li> <li>The typhoon season has been observed to occur later and more southwardly in recent years</li> <li>Sea level in Viet Nam has increased 5 cm within the past 30 years. Sea level rise and increased flooding in delta region are expected</li> <li>In the Central region, rainfall will increase by approximately 19% in the rainy season by 2070, leading to increased flooding</li> <li>Because rainfall will be concentrated in the rainy season, rainfall in the dry season will decrease in the Central region, leading to more frequent droughts</li> </ul>	<ul style="list-style-type: none"> <li>Explore drought and flood-resistant crops</li> <li>Promote safer housing/infrastructure and zoning away from high-risk coastal areas</li> <li>Increase disaster preparedness and risk reduction capacity</li> </ul>
<b>Natural resource management</b>	All	<ul style="list-style-type: none"> <li>Temperatures and rainfall variability will increase, which will significantly affect the country's ecosystems. These impacts will be combined with environmental degradation and increasing urbanization</li> </ul>	<ul style="list-style-type: none"> <li>Implement sustainable natural resource use</li> <li>Support integration of indigenous knowledge and community-based management</li> <li>Support livelihood diversification and management of non-timber forest products</li> </ul>
			<p><b>Water resource sector</b></p> <ul style="list-style-type: none"> <li>Appropriate land use practices to reduce sedimentation in reservoirs for water supply and hydropower generation</li> <li>Construction of reservoirs on rivers which currently have run-of-the-river intakes</li> <li>Afforestation to enhance dry season flows.</li> <li>Improvements in construction of hydropower schemes, irrigation systems and water supply infrastructure to improve efficiency</li> <li>Water conservation education for general public</li> <li>Recycling of water for domestic and industrial purposes.</li> </ul>

### Land use

- Diversified land use systems, including agro-forestry, dry land farming and vegetable production would be promoted to reduce risk and increase the capacity of farmers to cope with droughts
- Mixed farming (crop + livestock) would be promoted as a drought coping strategy and for income generation
- Regeneration forestry would be promoted to rehabilitate degraded forest sites
- Alternative livelihood systems are proposed to reduce pressure on the land
- Rangeland management to sustain fodder production would be promoted

### Agriculture

- Developing drought resistant crop varieties
- Provision of know-how on dry season cropping techniques
- Ensuring appropriate crop seeds in place before rains
- Develop village seed bank with seeds of traditional and improved drought resistant crops/varieties
- Impart training on economic water use
- Subsidize/facilitate supply of seeds/irrigation equipment
- Establish farmer field schools and mobile libraries
- Meteorological forecasts and corresponding cultivation advise
- Improved soil moisture management
- Reduce run-off/increase rain water infiltration by planting barriers such as Vetiver, lemon grass, Agave, etc.
- Increase fertility and water holding capacity of the soil through addition of organic manures and green manures
- Proper land use planning as per the land capability classification
- Promote the mulching practices so that the limited available soil moisture is saved during critical stages of the crop growth

Care In Vietnam Programme Sectors	Regions	Impacts	Adaptation Measures
<b>Economic development</b>	All	<ul style="list-style-type: none"> <li>An estimated 19.5% of the total population lives below the poverty line, and much economic development still relies on natural resources, particularly agriculture, fisheries, and forestry, which will be vulnerable to climate change.</li> <li>Large areas of the country may suffer from drought, and agriculture crops will be heavily lost</li> </ul>	<ul style="list-style-type: none"> <li>Diversify income generation sources</li> <li>Implement sustainable resource management</li> <li>Build resilient infrastructure</li> </ul> <p><b>Livelihood strategies</b></p> <ul style="list-style-type: none"> <li>Support and protect livelihoods, and livelihood diversification (carpentry, petty shops, handicraft, etc.), so that people have a safety net to rely on during all stages of drought</li> <li>Establish/strengthen micro-credit system</li> </ul> <p><b>Animal husbandry</b></p> <ul style="list-style-type: none"> <li>Store rice, paddy husk and other crop residues in barns for use during scarcity</li> <li>Grow seasonal grasses/perennial fodder trees in community forest, fallow lands, and permanent pastures</li> <li>Recommend farmers to avoid burning of crop residues in the field and use them as animal feed by treating them</li> <li>Establish fodder bank at community/household level</li> <li>Improve the quality and productivity of the existing livestock population either through artificial insemination or other breeding practices or replacing them with exotic breeds</li> <li>Preserve endangered productive and drought resistant local animal breeds</li> <li>Promote rearing goat, sheep and dry ducks in areas of feed and water scarcity</li> <li>Construct rainwater harvesting structures (mini-ponds, tanks)</li> </ul>

Health and social	North		
		<ul style="list-style-type: none"> <li>• Epidemic diseases will increase and spread rapidly along the length of the country</li> <li>• Injuries, psychological impacts, and death from disasters</li> <li>• Food insecurity</li> <li>• Reduced cold-related mortality and sickness</li> <li>• Access to health services will be disrupted by increasingly extreme weather events</li> </ul>	<ul style="list-style-type: none"> <li>• Increase awareness impacts and preventative measures</li> <li>• Mapping of disease incidence and identification of vulnerable groups for climate-sensitive diseases</li> <li>• Establishment of community health groups and development of capacity to identify health risks and facilitate access to services and decision-makers</li> <li>• Epidemic management through the creation of an emergency health preparedness unit</li> <li>• Monitoring and communication of disease risk</li> <li>• Improvement of nutrition through increased food processing capacity, food banks, nutrition education, and food storage and quality control</li> <li>• Providing training in First Aid (e.g. treating diarrhoea and respiratory diseases)</li> <li>• Public health promotion, awareness raising on health and hygiene</li> <li>• Awareness raising on nutrition and home gardening</li> <li>• Improve access to clean water</li> <li>• Providing hygiene kits and knowledge to women on use of them</li> </ul>

## CASE STUDY THREE: Identifying adaptation measures

The case study below links to the previous PWM case study which indicated that the program was likely to be significantly impacted by climate change. Using the checklist above component managers and project officers concluded that the program should follow the CVA pathway to ensure development gains are sustainable.

Activity	Impact of climate change	Potential adaptation option
<b>Output 1: Community analysis and vision building (<i>awareness raised on livelihood strategies and natural resource management activities, and community goals identified</i>)</b>		
Design process and facilitate participatory mapping of current land use and land allocations	Implementation progress affected by flood, storm, typhoon. Climate change may lead to decreases in water run-off and agricultural patterns.	Incorporate climate change and disaster information into planning. Determine how land use patterns may change after a disaster and with future climate change.
Conduct a detailed participatory mapping of current livelihood strategies, natural resources management practices and their constraints and options using for example seasonal calendars, ranking, history lines etc. in selected villages	Implementation progress affected by flood, storm, typhoon. Climate change may affect resources available for livelihood strategies and natural resource management practices.	Take climate change information into consideration during planning. Identify more than one suitable time period for implementation of these tasks (e.g. shifting between field work and office work or vice versa depending on disaster risk). Determine how livelihood strategies may change and rank livelihood strategies for climate-resilience over next decades.
<b>Output 4: Community watershed protection (<i>watershed management and protection plans agreed and implemented in each community</i>)</b>		
Support community tree planting and forest enrichment planting for water source, river bank and steep slope protection using economic trees	Transportation and quality of seedlings may be affected by flood, drought, rainfall, typhoon and temperature.	Use of local service providers Use of indigenous species. Use tree species that will be least affected by climate change, and plant them in areas to minimize impacts from disasters and climate change.
Explore options for eco-tourism, design, and test in one commune	Eco-tourism attractions may be affected by climate change.	Feasibility assessment of these options should include disasters and climate change. Identify measures for continuing the eco-tourism service in case of a disaster, and identify attractions that will be resilient to climate change.



## Step 4: Prioritise Adaptation Measures

**TOOLS:** Tool E: Priority Adaptation Matrix

The purpose of Step 4 is to assist programme and component managers and project officers to prioritise each of the adaptation measures identified during Step 3. Measures should be evaluated in terms of their effectiveness at building resilience to the climate risks identified in Step 1 and their feasibility in terms of project budget, timeframes and the technical requirements for implementation.

Step 4 will assist project managers and officers to answer two questions:

1. How do I prioritise adaptation measures?
2. Should CARE undertake the adaptation measures identified?

The process involves choosing a range of criteria on which to prioritise the range of potential adaptation measures. Whilst this step is not intended as a clear-cut means for determining priorities the final outcome should be a ranked list of adaptation measures. This process is intended to stimulate discussion over the identified measures and also any additional activities for integration into project or programme objectives, and how to integrate implementation into the project cycle.

## Tool E

### PRIORITY ADAPTATION MATRIX

**TIME:** 3 – 4 hours

**PURPOSE:** Once a wide range of adaptation measures have been identified you will need to evaluate the benefits and feasibility of implementing the various options and priorities which measures to implement.

Using the Priority Adaptation Matrix below will help you answer two questions:

1. How do I prioritise adaptation measures?
2. Should CARE undertake the adaptation measures identified?

**PARTICIPANTS:** Programme and component managers, project officers and partner organisations.

**MATERIALS:**

- Flipchart and markers or a computer and projector
- Project work plan
- Tool D Resource Table on Best-Practice Community-based Adaptation Experiences
- List of potential adaptation measures

**PROCESS:** **STEP 1:** Identify the criteria relevant for your analysis from the list below. Criteria chosen should evaluate the economic, social and technical feasibility of the adaptation measures. The list is intended as a guide only and criteria are not arranged in any order or particular importance. Consultation with stakeholders and decision-makers may identify additional factors you want to consider.

#### CRITERIA TO PRIORITISE THE BENEFIT AND FEASIBILITY OF ADAPTATION MEASURES

- **Cost:** cost to implement adaptation measures; cost of not modifying the project
- **Effectiveness:** effectiveness of adaptation measures in reducing vulnerability to climate variability and climate change (benefits, damages mitigated, costs avoided, lives saved, etc.)
- **Ease of implementation:** includes issues such as barriers to implementation and the need to adjust other policies to accommodate the adaptation option
- **Acceptability to local stakeholders:** not all measures will be equally attractive to all stakeholders for political, economic, social, or cultural reasons
- **Acceptability to CARE and donors:** any measures that CARE or its donors are unwilling to support should be identified and the reasons communicated to stakeholders
- **Endorsement by experts:** in some cases, decision-makers will partly base their selection on consistency of proposed adaptation measures with international best practices
- **Timeframe:** for implementing the adaptation measure

cont.

### CRITERIA TO PRIORITISE THE BENEFIT AND FEASIBILITY OF ADAPTATION MEASURES cont.

- **Capability:** how much additional capacity building and knowledge transfer is required for the adaptation option to be implemented
- **Adequacy for current climate:** are there negative consequences of the adaptation option in the current climate? Some adaptations may be targeted at the future climate but have costs and consequences under the current climate
- **Size of beneficiaries group:** adaptations that provide small benefits to large numbers of people will often be favoured over those that provide larger benefits, but to fewer people<sup>36</sup>

Once you have chosen your criteria list them across the top row of the matrix and list your adaptation measures down the first column. An example is provided below.

Adaptation Option	Cost	Ease of Implementation	Effectiveness	Speed	Capability	Total	Rank
Option 1							
Option 2							
Option 3							

**STEP 2:** Agree on how to assign values to each of your criteria. For example “high = 3, medium = 2, low = 1”. You may find that putting very different adaptation measures together in the table is like “comparing apples and oranges”. That is, if adaptation measures have significantly different aims or will be implemented on different scales, it may not be easy to compare, for example, how much more cost-effective or easy to implement they will be. In this case, the level of importance assigned to each criterion will be important in ranking these measures.

**STEP 3:** Determine a cut-off score below which adaptation measures will not be considered. For example the matrix below uses a cut-off score of 10.

Adaptation Option	Cost	Ease of Implementation	Effectiveness	Speed	Capability	Total	Rank
Option 1	3	2	3	2	3	13	1st
Option 2	3	3	1	2	3	12	2nd
Option 3	1	3	1	1	1	7	n/a

**STEP 4:** Complete matrix to facilitate comparison and selection of adaptation measures. The output of this step should be a completed matrix with a clear priority list of adaptation measures.

#### KEY OUTCOMES:

- List of criteria for determining benefits and feasibility of adaptation measures
- List of adaptation measures ranked in order of priority

<sup>36</sup> USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*, USAID, Washington.

## CASE STUDY FOUR: Prioritising adaptation measures

Evaluation and ranking of potential adaptation measures identified during a CVCA undertaken in the Mekong Delta, Dong Thap Province.

Adaptation Option	Cost	Ease of Implementation	Effectiveness	Speed	Capability	Total	Rank
Adapting existing rice production systems through the introduction of alternative saline and flood resistant varieties	3	2	2	2	2	11	2nd priority
Develop and pilot low-cost disaster-proof housing scheme	1	1	3	1	3	9	n/a below cut off
Diversification of local agriculture systems for example livestock raising and mushroom farming	2	3	3	2	3	13	1st priority

High = 3 Medium = 2 Low = 1 (Scores below 10 will not be considered)

## Step 5: Select Adaptation Option(s) for implementation

**TOOLS:** Tool F Stakeholder Workshop Methodology

The purpose of this step is to use the results from Step 4 to select one or more adaptation measures for your project to be implemented.

This step uses the results of step 4 to select one or more adaptation measures to be implemented, through consultation with project beneficiaries and other stakeholders such as partner organisations and local decision-makers. It is very important to ensure the local ownership adaptation measures as this will ultimately determine the success of implementation. The process will involve holding focus groups and village level meetings to gain consensus and gather information. Such a process is consistent with CARE International's commitment to participatory and community-based programming.

## Tool F

# FOCUS GROUP METHODOLOGY FOR SELECTING ADAPTATION OPTIONS

**TIME:** 2 – 3 Hours

**PURPOSE:** This tool uses the results of CVA Pathway Step 4 to select one or more adaptation measures to be implemented, through consultation with project beneficiaries and other stakeholders such as partner organisations and local decision-makers. It is very important to ensure the local ownership of adaptation measures, as this will ultimately determine the success of implementation. The process will involve holding focus groups and village level meetings and gathering information.

Focus groups are fairly small discussion groups (10-15 people) led by a facilitator. They enable us to understand and describe better the range of perspectives in a community or local organisation through small group discussions. Focus groups can be single or mixed gender. Focus groups can be useful where women do not feel comfortable speaking in large group settings or with men present. Even when women do participate in mixed gender groups, they may speak more freely in groups of only women.

Focus Group discussions will identify:

- priorities for community-based adaptation based on gender, class, ethnicity and other markers of identity
- women's and men's perceptions of what effective and feasible climate change adaptation measures are for the community
- the capacity and options for working with local partners and authorities

The objectives of the Focus Group are:

- to provide information on adaptation measures that is as specific as possible so as to direct the discussion towards a decision
- foster interaction that explores participant's feelings and opinions in some depth

**PARTICIPANTS:** Project officers, partner organisations and community members.

- MATERIALS:**
- Prepare the questions you want to ask ahead of time
  - List of priority adaptation measures
  - Paper
  - Markers
  - Dictaphone (optional)

**PROCESS:** **STEP 1:** Plan and write out your questions before the meeting. To ensure a structured discussion, five questions are appropriate and you may have more detailed questions under each.

**STEP 2:** depending on the number of participants, you may like to ask each individual to make a short statement about themselves.

**STEP 3:** begin the structured discussion with a general question not intending to get a full answer, but to lead the direction of the conversation.

**STEP 4:** end the discussion with a summary and agreement on which measures the community supports.

#### **SAMPLE QUESTIONS FOR THE PROMOTION OF MIXED FARMING (CROP & LIVESTOCK) IN RESPONSE TO DROUGHT**

- How do you think introducing livestock to your farming system would benefit you and your family?
- How will having both crops and livestock make things easier when the drought comes?
- How will livestock fit into your other livelihood responsibilities?
- Who would be responsible for looking after the livestock? Does your family have the time or resources?
- How would you like to use your livestock? For food? For money? For labour?
- Do you think livestock would be good for the land? Is there enough space for crops and livestock? Is the land healthy enough for both?
- Does your community support crop and livestock farming as an option?

**KEY OUTCOMES:** • Community support for selected adaptation measures

## Step 6: Implement Adaptation Option(s)

Once the priorities for adaptation are selected and supported by the target beneficiaries, responsibilities for the implementation of each measure or activity should be clearly assigned to partners or CARE project officers based on the project workplan or project activity plan.

If the measures selected are to modify an ongoing CARE project, implementation of the measures will become a part of that 'parent' project. In many cases results will not change, but activities may change or the method and/or technology for an activity may change. The budget may also require reallocation and donor approval.

## Step 7: Evaluate Adaptation and the CVA Pathway

### TOOLS: Tool G Checklist: Evaluating Adaptation

After adaptation measures have been implemented, the final step is to evaluate them. The purpose of evaluation is to determine whether adaptation measures delivered intended benefits and/or caused any adverse consequences. CARE in Vietnam managers, project officers and partners will need to assess whether the activities undertaken at each step of the CVA Pathway have managed to effectively climate-proof CARE in Vietnam programs and projects, and raise the adaptive capacity of partner organisations and vulnerable communities. The Information and Knowledge Management section of the CARE International 'Toolkit for Integrating Climate Change Adaptation' provides qualitative and quantitative indicators for strengthened adaptive capacity and M&E methodology and standards that programme and component managers and officers may find useful during evaluation.

Evaluating an adaptation measure for effectiveness in reducing vulnerability to climate variability and change presents a challenge for two reasons. One reason is that the completion of the project may be earlier than any changes in adaptive capacity can be measured. Secondly in some cases, the adaptation measure may be targeted at building capacity for an event (disasters) or long-term chronic conditions (climate change) that may not occur for some time.

In these cases there are other ways to evaluate a project or activity using an evaluation framework. In establishing the evaluation framework CARE programme and component managers and officers should begin by selecting indicators to measure effectiveness. You may want revisit the criteria used in Step 2 to assess whether they were effective in selecting adaptation measures. For example, sample criteria include cost-effectiveness, capacity, and reduced vulnerability. So you could ask:

- Was the adaptation option cost-effective?
- Was the capacity available to implement the adaptation measure?
- Did the adaptation measure reduce vulnerability?



## Tool G

### CHECKLIST: EVALUATING ADAPTATION

**TIME:** 2 hours

**PURPOSE:** After adaptation measures have been implemented the final step is to evaluate them. This tool will help you determine whether the adaptation measure implemented:

1. delivered the intended benefit and/or
2. caused any unintended additional benefits or adverse outcomes.

**MATERIALS:**

- Flipchart and markers, or computer and projector
- Implementation plan and/or work plan
- Checklist: Evaluating Adaptation and the CVA Pathway

**PARTICIPANTS:** Programme and component managers and project officers.

**PROCESS:** Suggested factors you may wish to consider in your evaluation are outlined below in a checklist and divided into three groups of questions:  
1) implementation, 2) effectiveness, 3) context

Implementation	Effectiveness	Context
<ul style="list-style-type: none"> <li>• How easy or difficult was it to implement the project? Did implementation follow the plan?</li> <li>• Was adaptation cost-effective?</li> <li>• Were the technical expertise required to implement the adaptation measures available and accessible?</li> </ul>	<ul style="list-style-type: none"> <li>• Did adaptation produce immediate benefits?</li> <li>• Did adaptation measures reduce vulnerability?</li> <li>• Did adaptation cause any adverse impacts? Were these anticipated? Do they outweigh the realised or potential benefits of adaptation?</li> </ul>	<ul style="list-style-type: none"> <li>• Were any models for community-based adaptation developed during implementation? Is there the potential for replication?</li> <li>• Were lessons and best practices on community-based adaptation shared with partner organisations, local authorities and policy-makers?</li> <li>• Was there active participation of local civil society during implementation further building awareness and capacity?<sup>37</sup></li> </ul>

**KEY OUTCOMES:**

- Organisational sharing and learning
- Applied case-studies

36  
USAID, 2007. *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*, USAID, Washington.

## CONCLUSION

CARE in Vietnam is constantly learning and innovating in its efforts to help poor communities overcome the challenges posed by climate change. This mainstreaming climate change adaptation handbook will require periodic evaluation and feedback by users to improve effectiveness and inform organisational learning and sharing. The evaluation should include consideration of whether any steps of the CVA Pathway should be amended to reflect changes in scientific understanding of climate change and progressions in best-practice community-based adaptation and lessons learned.

By mainstreaming climate change adaptation CARE in Vietnam can effectively climate proof projects ensuring that development interventions are more resilient and most importantly, make a lasting contribution to reducing poverty and improving the lives of poor and vulnerable communities.

# NOTES

A series of horizontal dotted lines for taking notes.



## FURTHER INFORMATION

Further information on CARE International's response to climate change can be found at the following website:

**[www.careclimatechange.org](http://www.careclimatechange.org)**

Further information on the Vietnam NGO Climate Change Working Group can be found at the following website:

**[www.ngocentre.org.vn/node/5457](http://www.ngocentre.org.vn/node/5457)**

Any further queries relating to CARE International in Vietnam's Climate Change Program should be directed to:

Climate Change Coordinator  
Climate Change Program

**CARE International in Vietnam**  
66 Xuan Dieu, Tay Ho, Ha Noi, Vietnam  
P: +84 4 3716 1930  
E: [carevn@care.org.vn](mailto:carevn@care.org.vn)