



ASIA-PACIFIC NETWORK FOR
GLOBAL CHANGE RESEARCH

*Project Reference Number: CAF2015-CD02NMY-Nhat
Capacity Building for National, Provincial Stakeholders and Remote Communities
on Loss and Damage Related to Disaster Risk Reduction and Climate Adaptation*

TRAINING REPORT

**Climate Change Adaptation and Disaster Risk Reduction
in the context of Loss and Damage**

SUPPORTED BY
ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH (APN)



ORGANIZED BY
DEPARTMENT OF METEOROLOGY, HYDROLOGY AND CLIMATE CHANGE (DDMHCC)
MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT OF VIET NAM (MONRE)

1-2 March 2017, HoChiMinh, Viet Nam

Table of Contents

PREFACE.....	5
ABBREVIATION	5
PHOTOGRAPHS FROM THE TRAINING	6
ORGANIZATION OF THE TRAINING.....	9
PART 1.	10
REPORT OF THE TRAINING.....	10
PART 2.	16
PRESENTATIONS AT THE TRAINING	16
ANNEX 1.....	83
Training Agenda.....	83
ANNEX 2.....	84
List of Participants	84

PREFACE

Vietnam suffers significantly increasing climate extremes in recent years with complicated occurrences of typhoons, floods and other extreme events. Although Vietnam has been active in implementing Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) initiatives at all levels, Loss and Damage (L+D) still occur and severely affect vulnerable communities, especially remote communities. Recognizing the risk of dealing with unavoidable L+D, the Department of metrology, hydrology and climate change (DMHCC) collaborates with Hue Economic University to develop a series of capacity building activities, including a national training, with an aim to establishing a comprehensive linkage between national agencies and local communities in a response to immediate impacts of disasters while ensuring a sustainable foundation of knowledge and knowledge transfer to effectively reduce long-term impacts of climate change.

The training for designated agencies on climate change at central levels in Vietnam was organized with participation of leaders of line departments under governmental ministries and Provincial People's Committees who directly involve in policy-making processes on climate change under supervision and coordination of Vietnam NTP and disaster reduction coordinated by the Central Committee for Flood and Storm Control (CCFSC).

The objective of the training was to seek strategic ways to improve coordination role of Vietnam NTP in directing and ensuring the effectiveness of disaster risk reduction and climate change adaptation activities by line ministries and related provinces will include (i) enhancing the knowledge-base of CCA-DRR-L+D including colloquially understanding of Loss and Damage and linkages between DRR and CCA, (ii) Successful practices of local, experiential and indigenous knowledge; and (iii) discussing potential integration of DRR and CCA to address L+D for sustainable development and how to establish linkages between DRR and CCA strategies to formulate a better protocol.

The presentations received attentions and appreciation as well as the fruitful comments of the experts and representatives from line ministries and related agencies. Based on the comments raised at the Training, Department of Meteorology, Hydrology and Climate Change, Ministry of Natural Resources and Environment will, in collaboration with the experts, finalize the report and

training documentation. The training was successfully organized on March 2017 in Ho Chi Minh, Viet Nam.

Taking this opportunity, I would like to express sincere thanks to APN for their generous supports and to all participants for their active and constructive comments to the training.

Dr. Le Minh Nhat - Project Leader
Director Climate Change Adaptation Division(CCA)
Department of Meteorology, Hydrology and Climate Change (DMHCC)
Ministry of Natural Resources and Environment, Viet Nam (MONRE)

***Project Reference Number: CAF2015-CD02NMY-Nhat
Capacity Building for National, Provincial Stakeholders and
Remote Communities on Loss and Damage Related to Disaster
Risk Reduction and Climate Adaptation***

ABBREVIATION

APN	Asia-Pacific Network for Global Change Research
CCA	Climate Change Adaptation
COP	Conference of Parties
DRR	Disaster Risk Reduction
DMHCC	Department of Meteorology, Hydrology and Climate Change
IMHEN	Institute of Meteorology, Hydrology and Environment
LD	Loss and Damage
MARD	Ministry of Agriculture and Rural Development
MPI	Ministry of Planning and Investment
MOF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MRV	Measurement, Reporting and Verification
UNFCCC	United Nations Framework Convention on Climate Change

PHOTOGRAPHS FROM THE TRAINING



*Project Reference Number: CAF2015-CD02NMY-Nhat
Capacity Building for National, Provincial Stakeholders and Remote Communities
on Loss and Damage Related to Disaster Risk Reduction and Climate Adaptation*

1- Opening session



Dr. Le Minh Nhat, Director CCA, DMHCC, MONRE, makes the welcome speech



2- Presentations at Training



Dr. Le Minh Nhat, Director Division of Climate Change Adaptation, DMHCC, MONRE, presents *Relationship between CCA and DRR in the context of Loss and Damage*



Dr. Mai Van Khiem, IMHEN *Sharing experience on implementing activities of capacity building on Loss and Damage at provincial level*



Dr. Pham The Duy, HCM university, presents *Disaster risk management: Opportunities and challenges in reducing loss and damage*



Group Discussion

	
<p>Mr. Doan Thanh Chung, MARD presents <i>Loss and Damage by climate change impacts in agricultural sector: Difficulties and Challenges</i></p>	<p>Discussion at the Training</p>
	
<p>Discussion at the Training</p>	<p>Discussion at the Training</p>
<p>3. Discussion at the Training</p>	
	
<p>Dr Le Minh Nhat answers a question</p>	<p>Discussion at the Training</p>

ORGANIZATION OF THE TRAINING

Objective

- (i) Sharing the knowledge-base of CCA-DRR-L+D including colloquially understanding of Loss and Damage and linkages between DRR and CCA,
- (ii) Sharing the successful practices of local, experiential and indigenous knowledge; and
- (iii) Discussing potential integration of DRR and CCA to address L+D for sustainable development and how to establish linkages between DRR and CCA strategies to formulate a better protocol.

Date of Training

1-2 march 2017

Venue

Au Lac Hotel,

No.90 Nguyen Thi Minh Khai , Ward 6 Dist 3, Ho Chi Minh, Viet Nam.

Organizer

Department of Meteorology, Hydrology and Climate change (DMHCC),
Ministry of Natural Resources and Environment (MONRE).

Supported by

Asia-Pacific Network for global Change Research (APN)

PART 1.

REPORT OF THE TRAINING

**Summary Training on
“Climate Change Adaptation and Disaster Risk Reduction In the
context of Loss and Damage”
Ho Chi Minh, 1-2 March 2017**

I. Introduction

Southern part of Vietnam has been very active in implementing CCA activities. Thus, by hosting a training course here, the team expects to interact with people who have actual experience of implementing CCA and seeks to know their suggestions for CCA policies in the future. A training courses will occur in two day with four key sections (i) Concepts of Loss and Damage (L+D); (ii) Understandings and Practices for Climate Change Adaptation (CCA); (iii) Understandings and Practices for Disaster Risk Reduction (DRR); and (iv) how to reduce L+D through CCA and DRR in Vietnam.

A training for designated agencies on climate change at central level in Vietnam for leaders of line departments under governmental ministries and Provincial People’s Committees who directly involve in policy-making process on climate change under supervision and coordination of Vietnam NTP and disaster reduction coordinated by the Central Committee for Flood and Storm Control (CCFSC), was held at the Au Lac Hotel in Ho Chi Minh on 1 to 2 March 2017. It was organized by the Department of Meteorology, Hydrology and Climate Change (DMHCC) of MONRE in collaboration with related agencies

II. Objectives of the training

The general objective of the training was to improve the coordination role of Vietnam in directing and ensuring the effectiveness of disaster risk reduction and climate change adaptation activities by line ministries and provinces.

The specific objectives of the meeting were to:

- (iv) Share the knowledge-base of CCA-DRR-L+D including colloquially understanding of Loss and Damage and linkages between DRR and CCA,
- (v) Share the successful practices of local, experiential and indigenous knowledge; and
- (vi) Discuss potential integration of DRR and CCA to address L+D for sustainable development and how to establish linkages between DRR and CCA strategies to formulate a better protocol.

III. Training Chairpersons and Participants

The training was co-chaired by Dr. Le Minh Nhat , Project leader, Director of Climate Change Adaptation Division, DMHCC, MONRE Director of CCA DMHCC, MONRE, Professor Dr. Truong Quang Hoc, a member of Vietnam's Advisory Committee of Climate Change (Decision 43/QD-TTg).

The training was attended by 40 participants, including representatives from: Sothern Institute of Water Resources Research, Southern Institute of Water resource, Planning Centre for hydro-meteorological forecasting at southern area, Vietnam Red cross society Office of Central Committee for Flood and Storm Control, Department of Natural Disaster Prevention and Control, Sub-Department of Natural Disaster Prevention and Control Sub-institute of hydrometeorology and climate change, as well as academics; Non-Governmental Organizations and journalists.

IV. Conduct of the Training

The training was opened by Dr. Le Minh Nhat, Director of CCA, DMHCC, MONRE. He warmly welcomed all participants to the training and provided some background information on the preparation of the APN project proposal. He introduced the objectives of the training and invited comments and inputs from the participants.

Presentation topics:

Dr. Le Minh Nhat: in the opening remarks, Dr Le Minh Nhat introduced key participants and emphasized the objectives of the national training trainings. He also pointed out that the important of adresssing loss and damage in context of climate change. He suggested that information sharing and cooperation among different provinces and ministries in thefield of disaster risk reduction and climate change adaptation should be enhanced in order to find out new reasonable mechanism for loss and damage.

Mr. Nguyen Viet Dung: In the first presentation, Mr Nguyen Viet Dung gave brief introduction and the diffrences on the definitions of loss and damage. The diffrences had been shown via methodologies, outcome and output. He also presented how to intergrated the loss and damage into climate change plans as well as the dificultes and challenges facing while intergrating.

Dr. Le Minh Nhat: He has explained deeply about the climate change adaptation and disaster risk reduction methodology including differences, past and future vision. His presentation also shown how funding mechanism works

with loss and damage.

Mr. Doan Thanh Trung had presented the lasted information on circulars 43 and 44 regarding compensation on loss and damage. The presentation had cover a lot of concerns of participants about the compensationin related sectors including, transportation, agricultural, construction. Moreover, Mr Trung as a team member of compilation of circulars 43 and 44

Discussion

Below we present findings from the three trainings conducted in Ho Chi Minh city. Trainings were held with over 30 participants. Policy question was discussed in groups once in groups formed followed by mixing up participants in a multi- stakeholder group setting. Although, training discussion questions were prepared, participants also have other questions during the trainings (listed below).

Training discussion question

Question 1	Gaps and challenges	What are the challenges for quantitative assessment? What methods can we use to address the problem of non-economic loss?
Question 2	Tools and methods to assess L+D	What tools are existed to assess losses and losses in an immediate and slow-acting state? How to assess the difference between disaster risk reduction and climate change adaptation?
Question 3	Financial mechanisms and mechanisms supporting loss and damage	Which financial mechanisms are being discussed internationally? Insurance is seen as a tool in supporting loss and damage, so how effective is it?
Question 4	Link between resilience and loss	How does loss and damage affect the development of resilience? How does resistance development affect loss and damage?

For prepared major questions, participants pretty concerned about the methodology which should apply for specific purposes. Participant also pointed out that although Vietnam has many circulars and law for natural disaster prevention, however, it still doesn't match with enormous demand. Moreover, participants admitted that the relationship between ministries remain weak, thus, the legal documents can not cover all fields of loss and damage. The initiative which participants suggested were about legalization the insurance mechanisms. Participants also believed that governments should request private sectors to join this insurance mechanism.

The discussion session started with group discussion. In Vietnam, loss and damage remains a new topic so that the definitions of this topic is quite strange to the participants. A question about the difference between loss and damage. Dr. Le Minh Nhat demonstrated the slow on set effects of the damage concept in order to distinguish between loss and damage. This discussion linked to the other question about how Vietnam government measures the slow on set effect, social and economic effects.

Extra discussion questions from participants

Question 1	Quantitative assessment of damage in climate change? How to assess the damage of slow on set effect?
Question 2	Which methodology should be use for quantitative assessment of damage in climate change? How to integrate L+D to Economic and social development plan?
Question 3	What was the gaps in L+D mechanism? Why and How Circular 43 about assessment of L+D works?
Question 4	How to prevent and control the damage of natural disaster? How to effectively overcome the consequences of natural disaster?
Question 5	How to access to funds for natural disaster recovery?
Question 6	Which insurance mechanism should be use to address loss and damage? How to attract private

	sector to join this mechanism?
Question 7	How in-line ministries co-operate to address the problem?

Before the trainings, loss and damage seem to be quite new to all stakeholders. Most of participants did not understand the different between loss and damage in climate change. Moreover, participants encountered gaps in assessing damage of natural disaster in context of climate change. The reasons for these gaps can be explained by difference in reviewing criteria and resources access. In addition, sharing information between organizations also remain as main challenge that leads to obstruct in decision making. Training participants outlined several support mechanisms and tools that would be useful in addressing these barriers both over the short- and long-term. All participants agreed that the insurance mechanism should be used as major methodology to address loss and damage. Another outcome of trainings was to recommend the setting up of “Information platform” to bring together stakeholders and avoid gaps in sharing data.

V. Conclusion of the training

Finally, Dr. Nhat briefly summarized what had been discussed during the training, and thanked all participants for their participation, especially those who contributed to the presentations and discussions. He concluded that:

One of the recommendations for a national support mechanism of the natural disasters related losses and damages is to strengthen the linkage between climate change adaptation and disaster risk reduction based on the solution of losses and damages.

The mechanism for compensation for losses and damages is a new concept which requires knowledge exchange and experiences sharing of specific activities undertaken by local people as well as discussing challenges in establishing mechanisms for compensation for losses and damages in Vietnam, therefore, identifying most suitable solutions to reduce losses and damages in Vietnam.

To adapt to climate change and disaster risk reduction, it is necessary to have a fundamental transition in the development and implementation of policies by each of the relevant stakeholders toward comprehensive, multi disciplinary coordinating approaches.

Some specific recommendations were given such as creating a network of stakeholders active in the area of climate change adaptation and disaster risk reduction at national and local level; seeking funding from organizations for the implementation of climate change activities, building joint programs for the planning and implementation of climate change adaptation and disaster risk reduction in collaboration with different stakeholders in the community; developing a forum to share experience on planning and developing of climate change adaptation and disaster risk reduction among stakeholders at all levels. With the responsibility as an organization of state management on climate change, Department of Hydrometeorology & Climate Change, Ministry of Natural Resources and Environment will continue to coordinate and consult with relevant agencies at the central, local levels and with international organizations during development of the mechanisms and policies related to the loss and damage in consistent with the country's development as well as global trends.

PART 2.

PRESENTATIONS AT THE TRAINING

BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG
CỤC KHÍ TƯỢNG THỦY VĂN VÀ BIẾN ĐỔI KHÍ HẬU

RELATIONSHIP BETWEEN CLIMATE CHANGE ADAPTATION RISKS AND DISASTER MITIGATION IN CONTEXT OF LOSS AND DAMAGE



DR. Lê Minh Nhật

TABLE OF CONTENT

1. International mechanism on loss and damage
2. Damage caused by climate change and natural disasters
3. Settlement Mechanism on loss and damage
4. Climate change adaptation and disaster risk reduction
5. Related regulations and mechanism about climate change adaptation and disaster risk reduction
6. Challenges and recommendations

DEFINITION OF LOSS AND DAMAGE

- ◆ **Loss:** Impacts of climate change that cannot be recovered
- ◆ **Damage:** Impacts of climate change that can be recovered
- ◆ **Loss and damage:** The impacts of climate change that people cannot cope with or adapt to (Warner and van der Geest, 2013)

INTERNATIONAL MECHANISM ON L - D

- ◆ **1991:** Alliance of Small Island States (AOSIS) proposes **insurance pool** in new climate change Convention
- ◆ **2007:** 'Loss and damage' appears for the first time in a UNFCCC text
- ◆ **2010:** **Work programme on loss and damage** created under Cancun Adaptation Framework
- ◆ **2013:** **Warsaw international mechanism on loss and damage** established (also under CAF)

INTERNATIONAL MECHANISM ON L - D

- ◆ At COP16 in Cancun, An agreement has emphasized minimizing losses and damages caused by climate change through enhanced international cooperation and capacity building.
 - (1) Risk assessment of damages for damage caused by the impact of climate change and the understanding of loss and damage;
 - (2) Identify approaches to address loss damage caused by climate change, including the impacts of extreme weather events and the slow start (slow on-set), and consider the impact at all levels;
 - (3) Define the role of the Climate Convention in supporting the resolution of issues related to loss and damage.

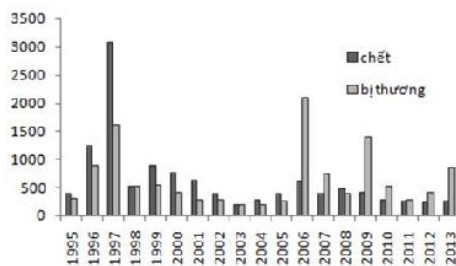
1. Cơ chế quốc tế về Tổn Thất và Thiệt hại

- ◆ COP18 in Doha, countries has come to an agreement to build an international mechanism to solve the problem of loss and damage.
- ◆ COP19 in Warsaw, the Parties have agreed to develop international mechanisms to solve the problem of loss and damage.
 - Commission of operating mechanism about loss and damage was established
 - General guidance resolve loss and damage to the countries affected by climate change.
 - Each country should develop a mechanism for resolving personal losses and damages.

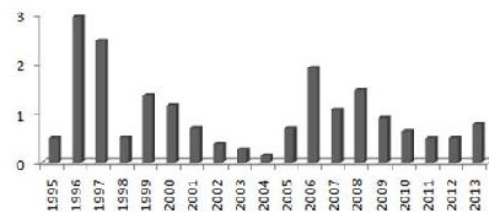
Cơ chế quốc tế Warsaw về tổn thất và thiệt hại

- ◆ **Highlights from the work plan** of the Executive Committee of the Warsaw international mechanism:
 - Identify tools, technologies, lessons learned and best practices to **facilitate comprehensive risk management**
 - Assess and develop recommendations to **enhance knowledge and capacity to address slow onset processes**
 - Invite relevant risk management and humanitarian organizations to **develop country specific analyses of the risk of loss and damage** and develop institutional arrangements to prevent and manage loss and damage
 - Establish an expert group to **develop recommendations for reducing the risk of and addressing non-economic losses**
 - Need to enhance understanding of: how loss and damage impacts **vulnerable people and countries, slow onset processes** and approaches to address them, **human mobility and non-economic losses**

2. Damage due to climate change and disaster



Hình 1: Tổn thất về người năm 1995 đến 2013



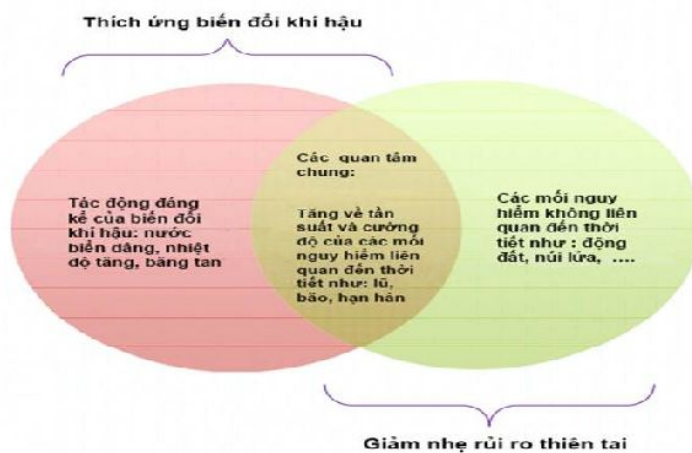
Hình 2: Tổn thất Thiệt hại từ năm 1995 đến năm 2013 so sánh với GDP (%)

- ◆ Under the impact of climate change, the frequency and intensity of disasters caused damage
- ◆ People : 11.743,
 - Property Damage estimate: more than 22 trillion GDP accounting for 1.5% / year

3. Settlement Mechanism on loss and damage

- ◆ **Settlement Mechanism on loss and damage:**
 - Strengthening the link between climate change adaptation and disaster risk reduction.
 - Both of DRR and CCA mentioned above aim to reduce losses damages.
- ◆ **Following discussion:**
 - (1) Disaster risk reduction and climate change adaptation in context of loss and damage ;
 - (2) Integrated approaches of disaster risk reduction and climate change adaptation to address loss and damage;
 - (3) Limitations and challenges.

Climate change adaptation and disaster risk reduction



4.Thích ứng biến đổi khí hậu và giảm thiểu rủi ro thiên tai

Đặc điểm		Direction
Disaster risk reduction (DRR)	Climate change adaptation (CCA)	
Related to all type of risk	Related to climate risk	Awareness about loss and damage
Derived from the humanitarian aid operations after disaster	Based on scientific theory	Recruitment of climate change adaptation experts from the fields of engineering, water and sanitation, agriculture, health and disaster risk reduction
Focus on solving the existing risk	Focus solve the risks that may happen in the future	Focus on disaster risk reduction in the future; climate oscillations are the basis for implementing climate change adaptation
Historical perspective	Future perspectives	Long-term strategy to address loss and damage
Indigenous knowledge and traditions at the community level is the foundation for resilience	Indigenous knowledge and traditions at the community level may not be sufficient for resilience to the type and scale of disaster risk has not occurred	Integration of scientific knowledge and indigenous disaster risk reduction creates learning opportunities

Climate change adaptation and disaster risk reduction

Feature		Development direction
Disaster risk reduction (DRR)	Climate change adaptation (CCA)	
Structural measures are designed with safety levels based on existing models and historical evidence	Structural measures are designed in safety levels based on existing models, historical evidence and the changes are predicted	Knowledge of structural measures needed to resolve loss and damage in context of climate change adaptation and disaster risk reduction
Focusing on risk reduction and preparation	Focus on adaptation measures to address the vulnerable	Long term focus on extreme weather and slow on set
The process relies on community based on experience	The process relies on community based on policy	The successful experience of the approach based on community
Practical applications locally	Apply theory at local level	Adapting to climate change gain experience through practical applications locally
Full of implementation tools	Lack of implementation tools	Deeply understand about loss and damage
Based on old foundation	New topic	Develop knowledge and expertise on damage losses
Less attention from political	Received strong political interest	Disasters related to climate were analyzed and compared with climate change
Small budget	Steady increase in budget	Disaster risk reduction participate financial mechanisms of climate change adaptation

5. Related regulations and mechanism about climate change adaptation and disaster risk reduction

Disaster risk reduction	Climate change adaptation
Ilyogo framework (2005)	UNFCCC (1992) First National Communication of Vietnam
National Report on Disaster Risk Reduction in Vietnam- Kobe (2005)	First report on technology needs assessments (2005) Bali Action Plan and Roadmap (2007) COP13
ASEAN Agreement on Disaster Management and Emergency Response (AADMER) (2005)	Second National Communication of Vietnam(2010) Nairobi Work Programme (2005-2010)
Roadmap and regional action programs Icheon (2010)	NTP – CC (2009)
National action plan to prevent natural disasters by 2020 (2007)	National climate change strategy (2011)
National action plan to prevent natural disasters by 2020	National action plan to respond to climate change (2012)
Disaster prevention law (2013)	Second report on technology needs assessments (2012)

5. Challenges

- ◆ **Integrated approach to climate change adaptation and disaster risk reduction to address damage losses**
- ◆ **Challenges**
 - *Scale of time and space:*
 - Minimize disaster risks at local focus - which is directly affected by the disaster
 - Addressing the impact of climate change through adaptation measures are primarily interested at national level and international level
 - Some adaptation activities have been implemented at the local level, just pilot project framework
 - **Differences in the nature of the time scale between disaster risk reduction and climate change adaptation**
 - The activities of disaster risk often focus only on the relief operations the emergency, occurs in a short time
 - Inactive, underestimated the importance of developing adaptation strategies for climate change and disaster risk reduction in long-term to build resilience.

5. Challenges

◆ Challenges

- Lack of coordination of related issues to climate change adaptation and disaster risk reduction at national level
- No criterion or criteria to guide the implementation and monitoring of adaptation activities and disaster risk reduction
- Dissent on two areas: while some said that adapting to climate change must be integrated into disaster risk reduction, other comments that disaster risk reduction should be seen as a topic throughout the climate change adaptation

6. Recommendation

Require a fundamental transition in the development and implementation of policies and approaches from each sector to coordinate to a comprehensive approach, multi sectors development and implementation of policies.

- ◆ Creating a network of active stakeholders in the field of DRR and CCA at local and national levels, including vulnerable communities, sharing knowledge and experience to address loss and damage;
- ◆ Find funding from organizations for the implementation of activities in the framework proposed;
- ◆ Develop joint programs for the planning and implementation, in collaboration with stakeholders in DRR and CCA community.
- ◆ Development of agreements to share experiences in the planning and development of CCA and DRR activities between stakeholders at all levels.

Thank you



EXPERIENCE FROM UNDERTAKING ACTIVITIES RELATED TO BUILDING CAPACITY ON LOSS & DAMAGE AT PROVINCIAL LEVEL

Dr. Tran Huu Tuan
College of Economics, Hue University
tuantranhuu@yahoo.com

Contents

- 1. Activities related to building capacity on Loss & Damage at provincial level**
- 2. Review best practices**
- 3. Sharing case study of “Assessing physical damage of the floods 2007 in Quang Nam province”**

Part 1:

Activities related to building capacity on Loss & Damage at provincial level

- Meeting with DMHCC on contents and activities related to the project that Hue College of Economics (HCE) is responsible for.



- Reviewing provincial documents and regulations related to DRR & CCA in the context of L&D.



- Collection of data & information related to DRR, CCA, and L&D at provincial and community levels



- Preparation of materials, lectures for the training courses that will be organized at provincial levels;
- Preparations for organizing the first training course that take place in TTH province: prepare list of participants, official invitations, meeting avenues...

ĐỀ BÀI
 "XÂY DỰNG NĂNG LỰC CHO CÁC BÊN LIÊN QUAN Ở CẤP QUỐC GIA, TỈNH VÀ CÁC CÔNG ĐỒNG
 VÙNG KÈM VÙNG XA VỀ THIẾT HẠI VÀ MẤT MẮT LIÊN QUAN ĐẾN GIAM THIỂU RỦI RO THIÊN TAI
 VÀ THÍCH ỨNG VỚI BIẾN ĐỔI KHÍ HẬU"

NỘI DUNG VÀ CHƯƠNG TRÌNH TẬP HUẤN
 XÂY DỰNG NĂNG LỰC VỀ GIAM THIỂU RỦI RO THIÊN TAI VÀ THÍCH ỨNG VỚI BIẾN ĐỔI KHÍ HẬU DƯỚI GÓC NHÌN THIẾT HẠI VÀ MẤT MẮT



Thuyết trình:
 Trần Hữu Tuấn
 Trần Văn Giải Phóng
 Trần Tuấn Anh

Bài giảng 1:

Biến đổi khí hậu và Rủi ro thiên tai

TS. Trần Văn Giải Phóng,

Bài giảng 3:

Thiệt hại và Mất mát Liên quan đến RRTT và BĐKH

TS. Trần Hữu Tuấn

tuantranhuu@yahoo.com

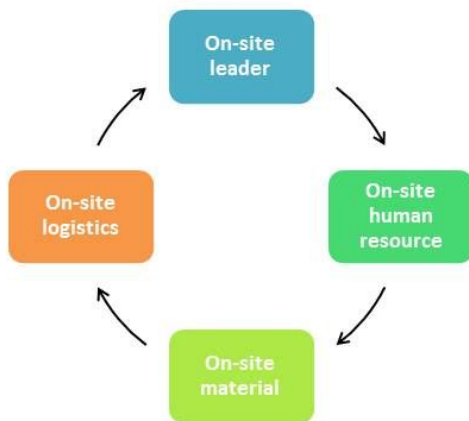
- Organizing the first training course in Thua Thien Hue province (at Nam Dong district)



Part 2:

Review best practices related to DRR & CCA in the context of Loss & Damage

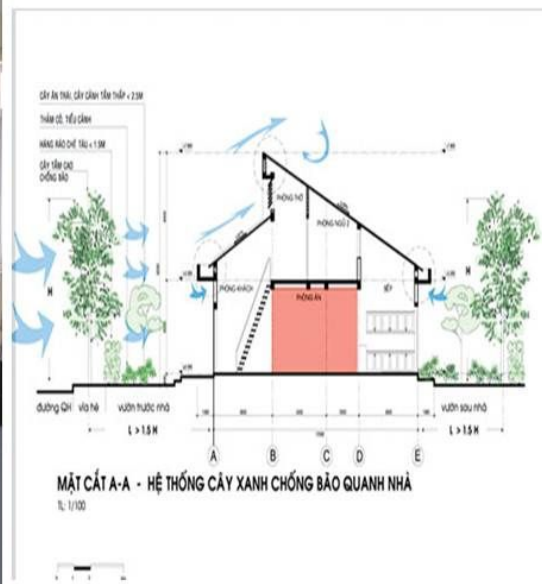
1. Model of “4 on-site actions” applied at Loc Tri commune, Phu Loc district, Thua Thien Hue province



2. 10 key principles for cyclone-resistant construction by Development Workshop France (DWF) in Central Vietnam



3. Model of building cyclone-resistant house by Da Nang city's Women Union



4. Program on planting mangrove forest in coastal provinces by Vietnam Red Cross: from 1994 to 2010, more than 22,000 ha of mangrove forest were planted by VNRC members, volunteers and local people in eight provinces of Vietnam.



5. Building “people-centered” early warning systems in Hai Lang district, Quang Tri province

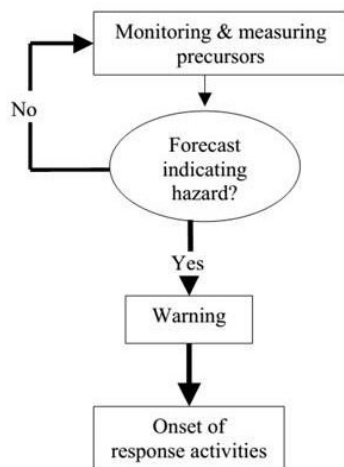
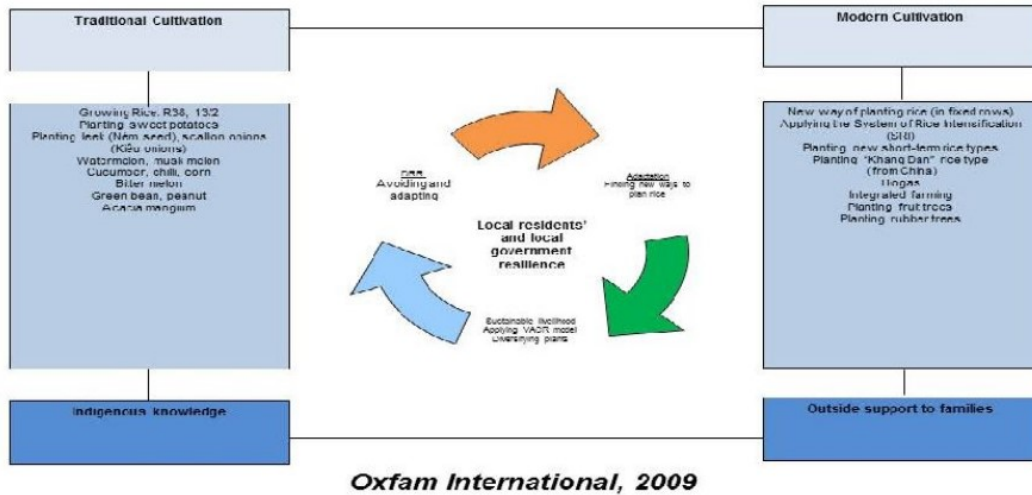


Figure 3. Four phase framework of early warning systems



6. Climatically adaptive farming measures by local communities and households



7. Diversified sources of income to sustain the family's economy in Quang Nam province

8. Improved local experience in disaster prediction in Central Vietnam

Part 3:

CASE STUDY:

Assessing physical damage of the floods 2007 in Quang Nam province

3.1 INTRODUCTION

- SHARING a part of the paper: "**Estimating the welfare loss to households from natural disasters in developing countries: A contingent valuation study of flooding in Vietnam**", *Journal of Global Health Action*, 2012, 5: 17609; (Navrud, S., T.H. Tuan and B.D. Tinh, 2012).
- ***Flooding in Quang Nam in 2007***
- The year 2007 was recognized as 'the year of flooding' in Quang Nam
- In 2 months, there were nine flooding events in the Quang
- Nam province, including three big floods that occurred
- over a 20-day period (from October 15 to November 5,
- 2007).
- Consequently, many communities were inundated,
- with the water rising to 1.51.7 m, i.e. about 0.51.5 m
- higher than the water levels of a historical flood in 1999

3.2 RESEARCH METHOD

- This study aimed to estimating physical damage & loss caused by floods in 2007 in Quangnam province.
- Damages include::
 - (i) damages of housing assets and
 - (ii) damages to agriculture, aquaculture, and animal husbandry...

Sample selection & household surveys

- A multi-stage cluster sampling technique was applied to randomly choose the two districts, villages within the selected districts, and households within the selected villages;
- 23 villages were selected for household surveys;
- Local enumerators conducted face-to-face interviews with respondents from a total of 706 households in July 2009.

3.3. Study results

profiles of repondents

Table 1. Characteristics of the respondents and their household ($N = 706$ households)

Characteristics	Description	Result
Gender (%)	Male	75.5
	Female	24.5
Age (years)	Mean	51
	Minimum	22
	Maximum	85
	Never attended school	20
Years of schooling (%)	Did not complete primary school	38
	Graduated primary school	20
	Graduated senior high school	9
	No. of household members (mean)	4.1
Household members (No.)	Working members (%)	66.6
	Children < 15 years (%)	24.0
	Members > 60 years (%)	9.4
	Permanent	28
House type (%)	Semi-permanent	61
	Not permanent	13
	Median	1,667
Area size of agricultural land (m ²)	Minimum	0
	Maximum	15,000
	Average (SD)	19,139,158 (14,857,376)
Income per household per year (VND); 1 US\$ = 19,000 VND	Income less than 7 million VND/year	22.7
Percentage of very poor households (%)	Agriculture	58
Main household income source (%)	Industry	3
	Services	3
	Other (interest, remittance, etc.)	38

Economic value of direct physical damages caused by the 2007 floods

Table 6. Economic damage cost (in VND) per household due to the 2007 floods

Type of damage	Min	Max	Mean	%
Damage to crops	0	41,000,000	983,423	25.8
Damage to livestock	0	26,000,000	849,646	22.3
Damage to aquaculture	0	45,000,000	160,765	4.2
Damage to family-based industry and service	0	830,000	6884	0.2
Damage to house	0	81,900,000	1,492,152	39.1
Damage to family goods	0	8,550,000	117,625	3.1
Damage to house due to public infrastructure	0	25,130,000	207,599	5.4
<i>Total damage</i>	0	83,740,000	3,816,105	100.0

Testing hypotheses

3 hypotheses have been assumed & tested:

- (i) the very poor suffer most from being exposed to flood;
- (ii) households with livelihoods largely depending on natural resources experience more severe damages;
- (iii) households located in flooded areas have greater damage than those located in less-flooded areas.

Hypothesis 1:

- We tested the first hypothesis by comparing the economic flood damage of the very poor (defined as monthly household income of less than 7,000 VND), the income distribution, and the relationship between flood damage expressed in percentage of household income and income distribution.
- The very poor had significantly lower economic damage resulting from the 2007 floods (mean \pm SD: 3,689,7509 \pm 5,223,597 vs. 5,090,5869 \pm 9,007,653; P=0.093), but they were more vulnerable because the flood damage made up a significantly larger portion of their annual household income (27.62% \pm 26.48 vs. 14.06% \pm 19.73; P<0.0001).
- This result confirmed that poor households are more vulnerable to floods;

Hypothesis 2:

- The second hypothesis was tested by looking at the relationship between flood damage and the percentage of household income coming from agricultural activities.
- As expected, the economic damage to households that fully depended on natural resources like agriculture were significantly higher ($5,050,280 \pm 9,608,627$) than for households that were not fully dependent on agricultural activities ($3,320,856 \pm 6,144,137$; $P < 0.007$).
- The result suggests that households' diversification in income sources is an effective coping strategy in the event of flooding.

Hypothesis 3

- We tested the third hypothesis by exploring the relationship between flood damage and the level of flooding.
- Damage costs of households located in flooded areas were not significantly different from damage costs in less flooded areas.
- This finding may be due to the fact, among other things, that this flood was not an average annual flood but an extreme event in the study area.

Thanks for your attention!

**DEPARTMENT OF DISASTER
PREVENTION**



**INTRODUCTION GUIDE
STATISTICS, ASSESSMENT OF
DAMAGE CAUSED BY NATURAL
DISASTERS**

Content

- ➔ **The legislation for damage assessment**
- ➔ **Methodology of damage assessment**
- ➔ **Statistical form for damage assessment**
- ➔ **Pros and cons**
- ➔ **Provisions of the Disaster Prevention Law on statistics, assessing damage**



I. Legislation for damage assessment

- Disaster Prevention Law No. 33/2013 / QH13
- Statistics Law No. 04/2003 / QH11
- Systems of national statistical indicators (Decision No. 43/2010 / QD-TTg dated 02/6/2010 by Prime Minister)
- Appendix 04, Regulation 31 / QD-CCFSC 24/02/2012
- Manual of assessing damage caused by natural disasters



II. Definition of assessing damage.

Statistics, damage assessment is the process of collecting information, statistics and analysis of the level of impact of disasters on people, the economy, society and environment in localities where natural disasters occur.

III. The purpose and significance of the statistics, assessing the damage.

Purpose: Statistics, damage assessment aim to determine the extent and scope of the disaster impact on people, property and the environment in the area of the disaster.

Significance: Based on statistics, assess the damage of disasters has collected and analyzed to propose remedial plan for the affected area and warning solutions and prevention for next disaster.

IV. Principles of statistical and damage assessment

1. Ensure competence and regulations in statistical work, evaluating the damage.
2. Ensure objectivity and transparency; reflect on the extent of damage.
3. Ensure consistent and coordinated among agencies and units related to statistical activities.

V. Methodology of damage assessment

1. Observation and investigation at the scene to count and statistical loss of people, material, crops, fisheries, natural resources and infrastructure, and record the results in statistical form.
2. Collect data through surveys and through people and local government report.
3. Analyze, evaluate and quantify the damage value of the data collected.
4. Summary and report

VI. Indicator System in statistical form

Based on statistical form specified damages caused by natural disasters in Appendix 04, Regulation 31 / QD-CCFSC date 24/02/2012 and the national statistical indicators on disasters and the extent of damage (expression of 027.H / BCB-ARD issued with Decision No. 15/2014 / QD-TTg dated 17/02/2014), damage caused by natural disasters can be quantified by the statistical indicators and quantitative value by province and by type of disaster, including the following basic criteria:

VI. Indicator System in statistical form

1. Group targets about human damage (including dead, missing, injured)
2. Group targets about housing damage (collapsed and washed away or damaged, roofs)
3. Group losses about education, health care
4. Group targets about agriculture and forestry damage (including rice area, plated, flowers, vegetables, cash crops, livestock and poultry losses)
5. Group targets about irrigation losses
6. Group targets about fishery damage

VI. Indicator System in statistical form

7. The Group targets traffic losses
8. Group norm loss of communication
9. Group indicator of building damage
10. Group targets water damage and environmental sanitation

VII. Report on statistical, assessing damage

- Emergency report
- Quick report
- Summary report
- Periodic report (semi-annually, annually)
- Statistical form of damage caused by natural disasters.

VIII. Pros and cons

- Pros
 - Having a unified form for statistical damage caused by natural disasters for all levels and sectors
 - Volume indicators are relatively complete with 14 types of disaster stipulated in Decree 14/2010 / ND-CP on the functions, duties and coordination mechanism of the Central Steering Committee on the prevention of natural disasters.
 - Basically meet the requirements for damage assessment, remedial for 14 disasters.
 - The form has considered about gender
 - Has defined the reporting period: Urgent Report, express reports, final reports, semi annual report, annual report

VIII. Pros and cons

Cons

- Statistical tables apply to all stages of disaster so troubled in emergency reporting period and reported daily express.
- Determine the price for some kind of damage during quick reports, consolidated reports are in trouble. Mostly only provisional and estimate.
- Excluding 21 types of natural disasters such as the provisions of Law Disaster Control and Regulation of warning, forecasting disaster communications.
- Missing some indicators of damage to perennial crops, forests, agricultural land encroachment, mangrove, erosion.

II. Pros and cons

Cons

- Statistical indicators should be considered to be remove as temporary housing omitted, bathrooms due to low value or having other indicators reflect the type of damage (Lao Cai)
- Some targets is difficult to determine necessary adjustments to suit the target name as residential land
- Need additional, specific indicators of damage such as roofs blown away, the damage, the damage on 50%, below 50%, the wooden floors, fences, dike embankments under special grade III to special grade,...

VIII. Pros and cons

Cons

- Clarify and classify solid houses, semi-permanent housing, temporary housing
- In some cases not clearly define the damage when disaster occurred two consecutive.

IX. Disaster Prevention Law provisions on statistical, assessing the damage caused by natural disasters

- Organizations and individuals report damage caused by natural disasters in the jurisdiction of objective agency,
- People's Committees at all levels synthesis, statistics, assess the damage; check for damage assessments and reports on people's committee. provincial people's committees report to the Prime Minister and to the Ministry of Agriculture and Rural Development

IX. Disaster Prevention Law provisions on statistical, assessing the damage caused by natural disasters

- Steering Committee for Disaster Prevention of ministries, summary damages reports of the Central Steering Committee for Disaster Prevention.
- MARD synthesis and evaluation of damage in the country reporting the Prime Minister and publication of data about loss.

IX. Construct Circular on statistics and assess the damage caused by natural disasters

- Circular name: Joint Circular guiding the statistics, assess the damage caused by natural disasters. (According to Decision No. 1061 / QD-TTg dated 01/7/2014 of plans to implement the Law on prevention of natural disasters)
- Leading agency: Ministry of agricultural and rural development
- Coordination: related ministries

IV. Construct Circular on statistics and assess the damage caused by natural disasters

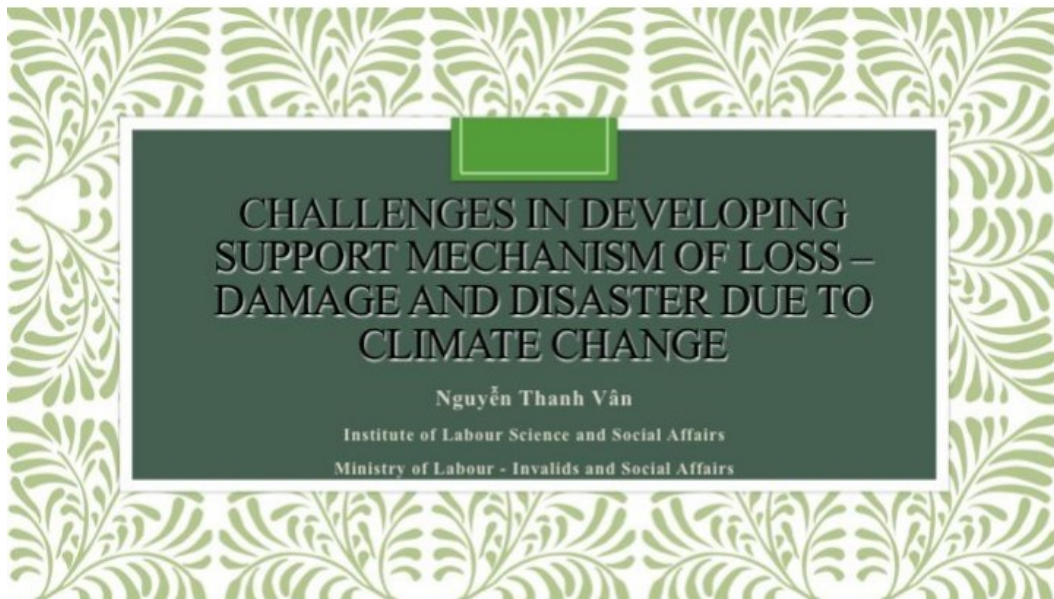
- Point of view:
 - Adhere to the Party's guidelines and policies, the law of the State in the prevention disaster
 - Unified form central to local level throughout the country.
 - Clearly, public, transparent, pragmatic and consistent with the conditions and socio-economic characteristics of the locality; meet statistical requirements, assess the immediate damage and long term.
 - Ensure inheritance rules on statistics, assess the damage caused by natural disasters in recent years

IV. Construct Circular on statistics and assess the damage caused by natural disasters

- Main content:
 - Scope of modification and subjects
 - Interpretation
 - Principles of statistical and assessing damage
 - Methodology of statistical and assessing damage
 - Indicators, statistical form of damage caused by natural disasters
 - Report on statistical and assessing damage
 - Reporting Regime
 - monitoring, inspection of statistics, assessing damage
 - Responsibility of agencies and unit who involved statistical and assess damage



THANK YOU FOR YOUR
ATTENTION



CONTENT

- LOSS - DAMAGE SUPPORTING MECHANISM AFTER DISASTER IN VIETNAM
- CHALLENGES IN IMPLEMENTING POLICIES
- CHALLENGES IN DEVELOPING SUPPORT MECHANISM OF LOSS AND DAMAGE DUE TO CLIMATE CHANGE
- RECOMMENDATION

I. LOSS - DAMAGE SUPPORTING MECHANISM AFTER DISASTER IN VIETNAM

- 1/ DAMAGES AND LOSS DUE TO DISASTER - CC IN VIETNAM
- Germanwatch - 2014:
Honduras, Myanmar, Haiti, Nicaragua, Bangladesh and Vietnam. – Vietnam ranks 6th on climate risk index. Summarizing 20 years of Vietnam from 1993 to 2012:
 - ✓ 419.70 dead people/ year;
 - ✓ average: 0.52/ 100.000 dead people due to disaster
 - ✓ GDP fell 0.91 %
 - ✓ Disasters appear 213 times
- Statistical :
2006 - 2011 disaster has killed more than 2,000 people; over 4,000 people were seriously injured; over 317,000 houses fallen, collapsed float, fire; over 1,960 thousand houses were flooded, damaged; total losses of over 74,000 billion inhabitants.

I. LOSS - DAMAGE SUPPORTING MECHANISM AFTER DISASTER IN VIETNAM

In the field of Labour sector, specific object of support losses, damages as follows :

- Loss and damage: only focus on the most important loss and damage such as essential for human life (such as life, health, food, housing)
- Support: irregular support to overcome difficulties.
- Subjects : individuals, households suffered damage (not to mention the loss of business, public works ...)

I. LOSS - DAMAGE SUPPORTING MECHANISM AFTER DISASTER IN VIETNAM

2/ EXTREME WEATHER TRENDS - DISASTER OF CLIMATE CHANGE IMPACTS

- The number of intense hurricanes is likely to increase
- The number of days and number of heat waves has increased and expected in most areas
- The frequency of heavy rainfall is expected to increase in the 21st century in many areas of Vietnam. Heavy rains will increase the risk of landslides in mountainous areas.
- The change in rainfall and temperature could lead to expected changes in flood.
- Drought likely rise in the 21st century in some seasons and in most climates
- The number of round cold weather variations caused quite complex and volatile.
- The rise in average sea levels are likely to contribute to the rising trend of extreme water levels along the coast..

I. LOSS - DAMAGE SUPPORTING AFTER DISASTER IN VIETNAM

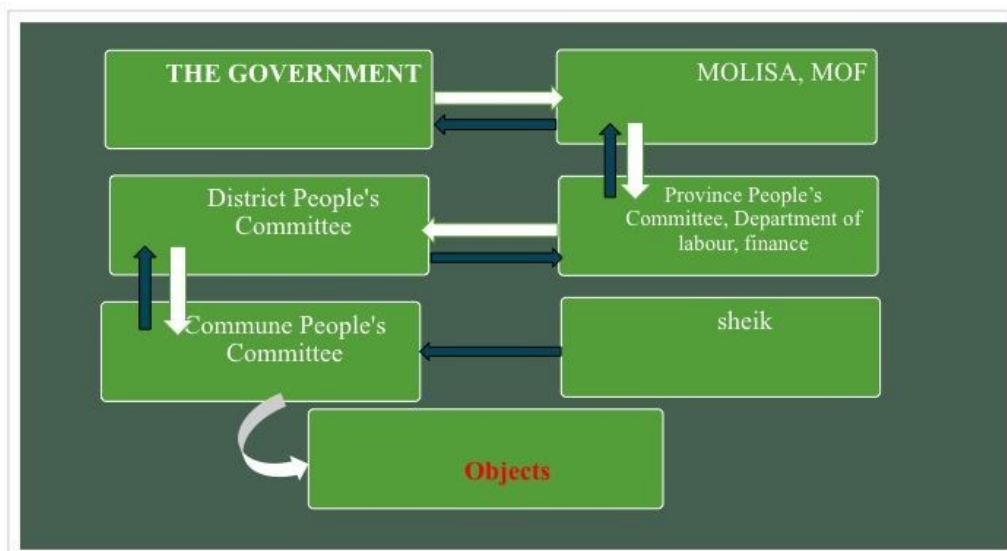
3. SUPPORTING POLICIES FOR LOSS AND DAMAGE



No.	Objects	Beneficiary level
1	There are dead people or missing	4.500.000 dong per person
2	There are serious injuries	1.500.000 dong per person
3	houses are fallen, collapsed, drifted, burnt or seriously damaged	6.000.000 dong per person
4	Displaced household emergency, housing risk due to landslides, floods	6.000.000 dong per person
5	Section 3.4 households living in disadvantaged areas	7.000.000 dong per person
6	Famine Relief	15 kg of rice/ person/ monthly from 1-3 month
7	Persons at risk outside the residence suffered serious injuries, the family did not know to take care	1.500.000 dong per person
8	People wandering beggars while awaiting to be sent to the residence	15.000 dong per person/ monthly not over 90 days
9	People risk dying outside their residential places, unknown to their families for burial	3.000.000 dong per person

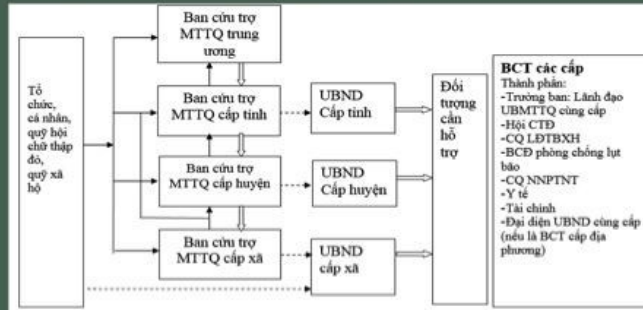
I. LOSS - DAMAGE SUPPORTING AFTER DISASTER IN VIETNAM

- ❖ SUPPORT FROM THE BUDGET: MOLISA regulation
- Decree No. 67/2007 / ND-CP dated 13/4/2007
- Decree No. 13/2010 / ND-CP dated 27/02/2010
- Decree No. 136/2013 / ND-CP dated 21/10/2013



I. LOSS - DAMAGE SUPPORTING AFTER DISASTER IN VIETNAM

❖ SUPPORT FROM SOURCES OUTSIDE THE BUDGET



I. LOSS - DAMAGE SUPPORTING AFTER DISASTER IN VIETNAM

Central budget expenditures 500-1,000 billion and 40000-60000 tons / year

Year	Dead (people)	Injured (people)	Houses collapsed (house)	Houses flooded, damaged (house)	Damages (billion)	Rice supports from government (tons)	Central budget support (billion)
2006	553	2.133	267.363	8.397	15.542	12.800	922
2007	492	740	15.825	739.761	11.490	63.515	717
2008	400	241	3.440	212.338	10.992	44.700	890
2009	430	783	24.701	319.273	19.096	58.920	1.009
2010	256	298	4.558	243.849	5.607	76.066	1.065
2011	200	206	1.118	437.365	11.496	70.096	660
2012	269	440	6.324	386.678	7.800	42.905	547
2013	313	1.150	11.109	851.393	23.717	67.223	1.060
Total	2.913	5.991	334.438	3.199.054	105.740	436.225	6.870.00

III. Difficulties in implementing policies

1. Resources

- Finance
- Human

2. Coordination mechanism

3. Terms details

Identify objects

- Natural disaster
- Support levels

4. Trust

- Between stakeholders
- Fair and equity

5. Other

- Procedures,
- Awareness
- Media
- ...

IV. CHALLENGES IN DEVELOPING SUPPORT MECHANISM OF LOSS AND DAMAGE DUE TO CLIMATE CHANGE

1. Current difficulties in implementing support policies

2. Reform or new construction?

3. Mainstreaming climate change

- Methods to integrate climate change
- Difficult in calculations of pension,
- Policy adjustments for various provinces.

4. Financial resource mobilization

V. RECOMMENDATION

1. Actively promote / participation Warsaw international mechanisms
2. To accelerate the mobilization of domestic resources and foreign
3. Develop mechanisms for coordination of resources between provinces
4. Supporting from national budget
 - Detailed regulations on targeting support;
 - Research level of support based on a minimum meet the essential needs of human,
 - Expansion of beneficiary
 - Reviewing and eliminating duplication
5. Develop a mechanism to coordinate the trust between parties to actively coordinate resources better, more efficient distribution



CONTENT OF REPORT

- I. Ben Tre Overview
- II. Climate change and disaster in Ben Tre
- III. Deployment of responding to climate change and disaster in Ben Tre Province
- IV. Result of implementation of responding to climate change
- V. Result, difficulties and limitations
- VI. Recommendation

VĂN PHÒNG CHƯƠNG TRÌNH MỤC TIÊU QUỐC GIA ỨNG PHÓ VỚI
BIẾN ĐỔI KHÍ HẬU TỈNH BẾN TRE



RESPONSE TO CLIMATE CHANGE AND DISASTER IN BEN TRE PROVINCE

I. BEN TRE OVERVIEW

- Belonged to Mekong delta; regional area: 2.360,20km².
- Terrain height 1-2 meters above sea level; lowland just under 1 metre above sea level, frequently flooded when the tide. .
- the vast river system; with 4 large estuaries: Co Chien, Ham Luong, Ba Lai, Tien Giang
- 65 km coastline with 20.000km² privilege



(<http://dpi-bentre.gov.vn>)

I. BEN TRE OVERVIEW (cont)

- Economic growth rate (GDP) in 2014 was estimated to increase by 7.7%.
- Average income reached about 31.15 million / person.
- Economy mainly focus on agriculture (coconut garden, fruit trees, livestock and poultry, ...) and aquaculture (shrimp, clams, oysters, crabs, and fishing ...).
- Industry, trade and services and tourism development is not highly compared with other regions in the country.



II. CLIMATE CHANGE AND DISASTER IN BEN TRE



CLIMATE CHANGE IN BEN TRE

Due to specific natural conditions, Ben Tre should be considered as one of the most heavily influence by sea level rise Provinces

- Sea levels rose about 20 cm compared to 10 years ago.
- The average temperature of the province in the 20th century increased about 0.05 - 0,150c
- Rain vagaries of time and intensity.
- The extreme events occur and affect more frequently (storms, depressions, unseasonal rains, droughts, intense heat).

IMPACT OF CLIMATE CHANGE ON BEN TRE PROVINCE ACCORDING TO CLIMATE CHANGE SCENARIOS

CLIMATE CHANGE SCENARIO IN BEN TRE (B2 – to 2100)

As predicted climate change impacts virtually across sectors

- Economic impact (agriculture, forestry, fisheries, construction, ...): scenario sea level rise of 75 cm.
- The area of flooded will be 162.81 km² for rice; 95.14 km² for aquaculture 95.14 km² and 40.38 km² for fruit trees.
- 12 health facilities, 16 temples, 3-ports, 8 bus station and four major bridges will be affected.
- 80.186 km of provincial and about 255 km of district roads will be affected.

CLIMATE CHANGE SCENARIO IN BEN TRE (B2 – to 2100)

Salinization: 4% according to the scenario

Impact on temperature change trend

+ Temperatures tend to rise: in 2020 (27,30C), 2100 (28,90C), ranged between 1-20C.

Impact on trends of rain:

+ Rainfall shows no variations: 2020 (1575.2 mm), 2100 (1594 mm), an increase of 200 mm.

Impact on natural ecosystems, biodiversity:

+ 41.05 Km2 affected forest.

Flooded area due to sea level rise

Flooded area (Km2) in Districts according to scenario B2

Area	Water level				
	12 cm Year 2020	17 cm Year 2030	30 cm Year 2050	46 cm Year 2070	75 cm Year 2100
Tp Bến Tre	4,76	4,80	5,58	6,47	9,09
Chợ Lách	34,44	36,49	39,09	41,18	47,89
Châu Thành	25,24	27,25	32,67	39,60	55,18
Giồng Trôm	32,31	34,88	42,13	57,13	93,92
Ba Tri	35,94	39,24	47,43	67,66	169,92
Mỏ Cày	50,23	51,94	54,88	61,06	88,86
Bình Đại	31,35	37,69	60,27	89,87	171,32
Thạnh Phú	57,82	58,17	60,01	62,70	89,07
% Area flooded in province	12,24 %	13,07 %	15,39 %	19,15 %	32,62 %

DISASTER IN BEN TRE

- *Before 1990 no significant natural disasters.*
- *Disasters are complicated, causing much damage and adversely affect the life of citizens, social and economic development of the province. the disaster prone areas of coastal provinces are three districts: Bình Đại, Ba Tri, Thạnh Phú; riparian areas; river islets of province: Giồng Trôm, Chợ Lách, Mỏ Cà Nam, Châu Thành.*



DISASTER IN BEN TRE

Storms, depressions

- Typhoon No. 5 (Linda) 1997 made a loss of total of 300 billion damage.
- Typhoon No. 9 of 2006 (Durian) killed 18 people, 700 people missing, 280,000 displaced households, total losses about 4000 billion.
- 2010 - 2014, the estimated total damage (rice, fruit trees, ornamental flowers, boats, ...) due to the impact of storms, depressions: 20.5 billion.

Salinization

- Complicated and delving deep into the land.
- 4 ‰ salinity line on the main river estuaries from about 50-60 km. 84,900 households living freshwater shortage.
- Salinization earlier than other province's compared to climate change scenarios.
- 1% salt concentration covered almost the entire province.

DISASTER IN BEN TRE

Tides

- 000 - 2008 caused total losses of about 340.1 billion, 1,870 households affected.
- Tide peaked in 2013 (199 cm) above the highest tide of the year period 1984 - 2012 (197 cm).
- From 2013 to 2014 about 8,000 dike overflow and erosion; 68,000 m of roads were flooded, 1,650 hectares of agricultural land were flooded, estimated losses of about 39 billion.

Erosion

- Tides combined with the water flowing as state erosion on a pole.
- From 2013 to 2014, estimates the total loss of 22.7 billion, 107 households need to be relocated, 4.5 hectares of coastal erosion.

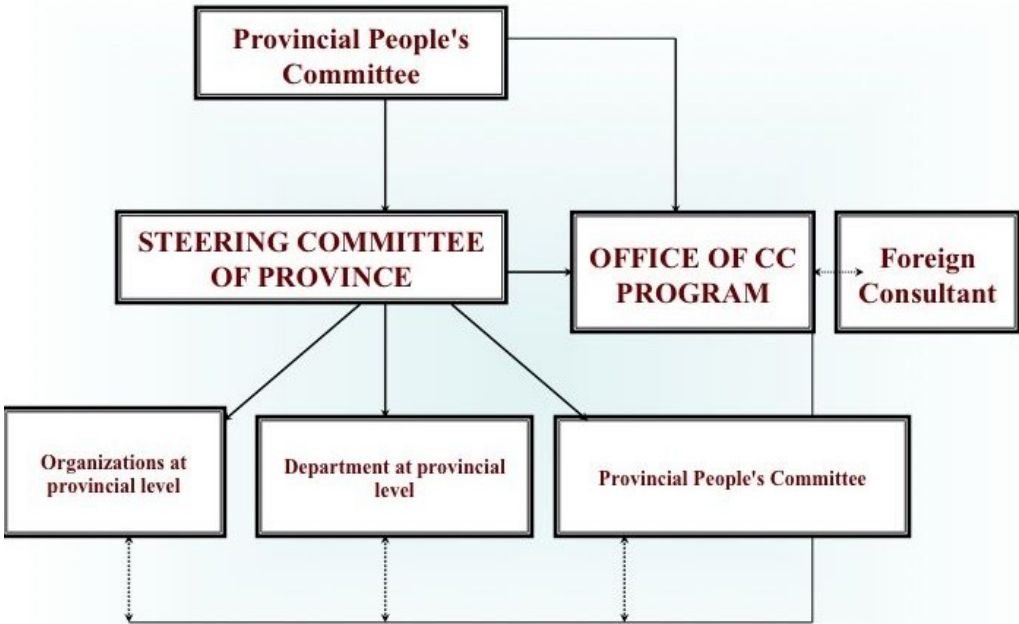
Tornadoes

- From 1999 to 2009, as 288 houses were completely destroyed; roofs, damaged 682 homes.
- From 2012 to 2014, estimates the total damage caused by the tornado about 31.8 billion, 895 homes suffered damage (82 apartments collapsed completely).

III. DEPLOYMENT OF RESPONDING TO CLIMATE CHANGE AND DISASTER IN BEN TRE PROVINCE

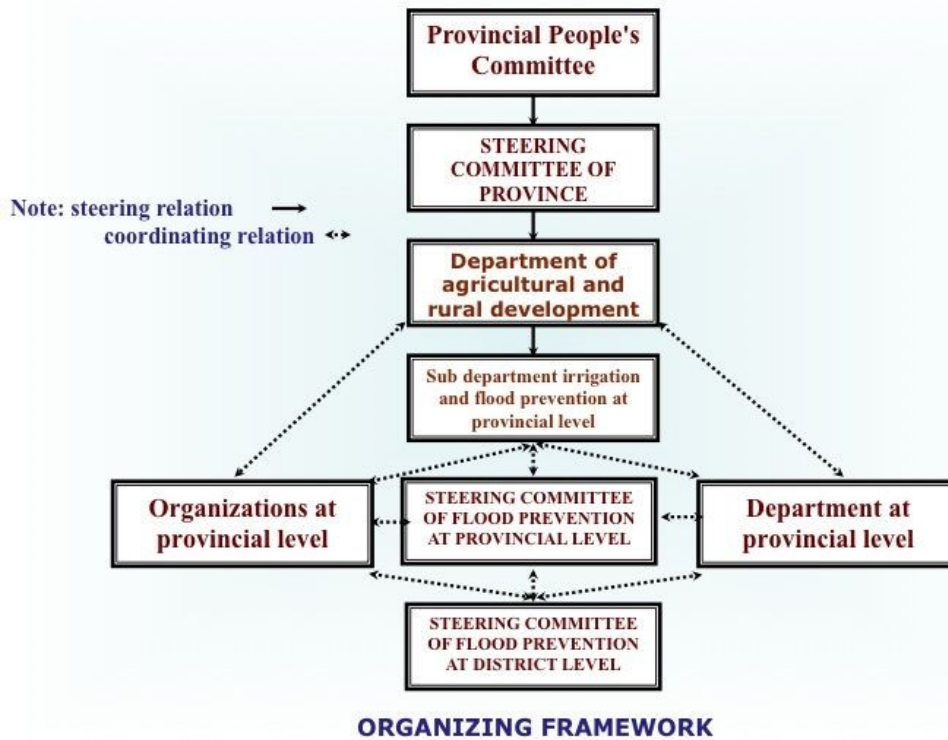
THE ORGANIZATION, DIRECTION AND ADMINISTRATION

The coordination of the operations unit in response to climate change, prevention, disaster reduction is tight, good to promptly advise the provincial People's Committee in implementing institutions and organizations management and administration.



Organization framework of NTPCC in Ben Tre

Note: steering relation: \longrightarrow ; coordinating relation: \longleftrightarrow



SSUED ON POLICIES AND PLANS TO RESPOND TO CLIMATE CHANGE AND DISASTER

DOCUMENTS ON RESPONDING TO CLIMATE CHANGE

- Framework action plan to respond to climate change (Decision No. 1720 / QD-Committee dated 07/27/2009)
- Action plan to respond to climate change and sea level rise (Decision No. 1224 / QD-Committee dated 27/05/2011 of Provincial People's Committees, replacing Decision No 1720 / QD-Committee)
- Implementation of Resolution IX Provincial Party Congress, in 2011, the provincial People's Committee issued scheme "Responding to climate change and sea level rise stage in Ben Tre province from 2011 to 2015 and directions towards 2020" (decision No. 1983 / QD-Committee dated 06/9/2011 of the provincial people's Committee).

DOCUMENTS ON RESPONDING TO CLIMATE CHANGE

- Action Programme of 29-Ctr / TU dated 23/9/2013 of the provincial People's Committee to implement Resolution No. 24-NQ / TW dated 03/6/2013.
- Plan No. 435 / KH-Committee dated 27.01.2014 on the implementation of the action program of the 29-Ctr / TU of the Provincial Party Committee.
- Deployment of responding to climate change, the provincial People's Committee issued the plan period 2011 - 2015 and the annual plan for coping with climate change.

DOCUMENTS ON DISASTER RISK REDUCTION

- Action Plan No. 4089/KH-PCLB-UBND October 8, 2008.
- Decision No. 1355 / QD-UBND June 10, 2010 approved Management Plan for Disaster Risk synthetic Ben Tre Province 2020.
- Plan No. 03 / KH-SNN implementing a project to strengthen community awareness and disaster risk management community-based Ben Tre period 2010-2020
- Decision No 27/2013 / QD-UBND August 15, 2013 provides for mechanisms and policies to support the seedlings, livestock and aquaculture production to restore areas damaged by natural disasters and epidemics in the area Ben Tre province.
- Official Letter No. 538 / HD-SNN-STC dated 09/25/2013 guiding the implementation of Decision No 27/2013 / QD-UBND.
- Decision No 16/2014 / QD-UBND defined level of support and allocate population stabilization disaster areas, especially hard, free migration, SUF Ben Tre province.



IV. RESULT OF IMPLEMENTATION OF RESPONDING TO CLIMATE CHANGE



RESPONSE TO CLIMATE CHANGE

- Building the foundation about responding to climate change (Plan of Action, the scheme cope with climate change, the Steering Committee and the Office of the National Program to respond to climate change);
- Update scenario for climate change of Ben Tre based on Vietnam climate change scenarios; Assess the impact of climate change on areas: biodiversity, tourism, coastal residential area;
- Build 15 farming on soil salinity in terms of climate change.
- Select 04 rice varieties with salt tolerance of high yield; determining threshold salinity some fruit trees of the province (durian, rambutan, mangosteen, green grapefruit).
- Construction works 06 local dike; water plant, water reservoir pipe 2383, 03 the storm, planted 200 ha of coastal forests,.....

COMMUNICATION, CAPACITY TRAINNING

important goal throughout the process Of the province's in order to response to climate change

Performing NTP, from 2010 to 2013 province was implemented :

- 19 training courses at district and commune people with about 3500 staff and students;
- 11th round of public consultation;
- Drafting and printing 15,400 manuals, 1,500 leaflets; Climate Change 2000 Report of Ben Tre;
- 18 categories of climate change on Television and Ben Tre;
- Installation of 12 copies propaganda hoardings placed on roads.



DISASTER REDUCTION AND PREVENTION

- From 2011 to 2014, Committee for Flood protection and search and rescue coordination with provincial agencies, boards commander flood prevention and search and rescue at district and commune held 45 training courses for officials levels with approximately 1466 participants.
- Dong Khoi newspaper Open Forum on flood prevention and disaster reduction in communities. Radio and television channel of the province performed a TV Reportage on disaster risk management. .
- To cope with storm surges and erosion. the province has implemented many projects such as river dykes and sluices under dyke Cash (Binh Dai),...
- Supports more than 50 households displaced riparian areas at risk of erosion and helps to stabilize people's lives.

V. RESULT ASSESSMENT, DIFFICULTIES AND LIMITATIONS

RESPONSE TO CLIMATE CHANGE

- The province has issued timely program, proposals, plans of action to implement the response to climate change
- Communication, training had helped enhancing capacity of staff. The community understand more about climate change (80% of households have a basic understanding climate change, over 60% of basic schools integrating the knowledge base on climate change education, teaching)
- Research and evaluation has identified climate change impacts affecting each sector and industrial construction are planned, from that proposed the measures to respond.
- The results of pilot project has brought practical results, improve the quality of life of poor people in areas frequently affected .

LIMITATIONS

- Responding to climate change in Ben Tre just stop at the level of implementation of small-scale projects. (funding for each project under the 15 billion) solve urgent problems ahead; lack of funds to invest in key priority projects with large scale and long term
- Do not have guidance from Central so Local encounter trouble in organizing.
- responding to climate change is not comprehensive, weak on developing models of fuel saving, energy; reduce greenhouse gas emissions.
- The training content limited to basic information about climate change, there was no organize specialized training courses, staff training and communication on climate change,...

DISASTER REDUCTION AND PREVENTION

- Building the foundation for the prevention and reduction of natural disasters. The coordination between the Steering Committee at all levels and departments are close.
- Communication activities, training, search and rescue exercises are conducted regularly to improve staff and people capacity.
- Steering Committee for Flood and Storm Search and Rescue promptly advise the provincial People's Committees of provinces solve remedial after disaster.

LIMITATIONS

- Irrigation system in Ben Tre has not completed and not connected to others resulting in annual regular saltwater intrusion and storm surges caused great impact on the lives and activities of people and produce.
- Funding sources for implementation of the scheme Raising community awareness and disaster risk management based on the province's communities still had some limitations so that it can not be deploy training courses on disaster risk at the community, communication information on the work of disaster risk management through the mass media ,...

VI. RECOMMENDATION

- Gradual improvement on policies and regulations to create legitimacy in the implementation and deployment of state management tasks to cope with climate change.
- There should be guidelines, agreed on the organization implemented to respond to climate change in the direction of compact, efficient and consistent with local conditions, to avoid overlap between the sectors, single location.
- Mekong Delta should establish binding regulations between provinces in the region in implementing coping with climate change effectively, especially irrigation system planning, regulating water use and protection flooded the entire region.

VI. RECOMMENDATION

- Steering Committee for Flood and Storm should regular organize training courses and seminars to exchange and share experiences, enhance their knowledge and skills for the Board members especially in building project dealing with strong storms, hurricane.
- Government fund priorities state budget for investment in the region, the province which was assessed to be severely affected by climate change and natural disasters. For Ben Tre, the Government should consider investing urgent projects (satisfy both objectives responding to climate change and prevention, disaster reduction associated with livelihood) as follows: Water Supply Project residential for Cu Lao Minh City area in terms of climate change and rising sea levels, Anti-erosion embankment in Mo Cay River, upgrading of sea dikes project, Construction of anti-erosion of river embankment in Giao Hoa, An Hoa bridge area, Long Hoa commune, Binh Dai district , protection and development of forests in Ben Tre Province period 2015-2020.

ANNEX 1. Training Agenda

TIME	CONTENTS	PERSON IN CHARGE
Day 1 (1/3/17)		
8h30-8h45	Opening speeches Introduction to the participants	Dr. Le minh Nhat
8h45-9h00	Introduction to the training course	Dr. Tran Huu Tuan, HCE
9h00-9h30	Lecturer 1: Integration of DRR and CCA	Mr. Nguyen Vietdung Dr. Le Minh Nhat
9h30-10h30	Lecture 2: Climate change and Disaster risks Loss and Damage HCM	Dr. Tran Phong, ISET Mr. Doan Thanh Chung MARD
10h30-10h45	Tea-break	
10h45 -11h30	Group discussions and group presentations	Group's representatives
11h30-13h30	Lunch time	
13h30-15h00	Lecture 3: Damage and loss in Quang Nam in terms of housing, infrastructure and ecosystems	Dr. Tran Tuan Anh, ISET
15h30-16h00	Tea-break	
16h45-17h00	Group discussions & group presentations	Group's representatives
Day 2 (2/3/17)		
8h30-10h00	Lecture 4: Improving governance capacity for disaster management and climate change response at community and local levels <i>Sharing experience on implementing activities of capacity building on Loss and Damage at provincial level</i>	Dr. Tran Phong, ISET Dr. Mai Van khiem IMHEN
10h00-10h30	Tea-break	
10h30 -11h30	Group discussions & group presentations	Group's representatives
11h30-13h30	Lunch time	

13h30-15h30	Lecture 5: Assessment of Loss & Damage in the Context of CCCA and DRR	Dr. Tran Huu Tuan, HCE
15h30-15h45	Tea-break	All participants
15h45-16h45	Group discussions & group presentations	Group's representatives
16h45-17h00	Closing speeches	Dr. Le Minh Nhat MONRE Dr. Tran Huu Tuan, HCE

ANNEX 2.

List of participants

No	Full name	Position/Organization
Not local participant		
1	Le Thi Minh Nguyet	Southern institute of water resources research
2	Giang Thi Hue	Southern institute of water resources research
3	Do Huu Tai	Southern institute of water resources research
4	Luong Cong Tuan Anh	Southern institute of water resource planning
5	Nguyen Duy Nho	Southern institute of water resource planning
6	Vo Duy Duy	Southern institute of water resource planning
7	Le Dinh Quyet	Centre for hydro-meteorological forecasting at southern area
8	Nguyen Trong Nghia	Vietnam red cross society
9	Ta Dang Quoc Vu	Office of Central Committee for Flood and Storm Control
10	Doan Thanh Trung	Department of Natural Disaster Prevention and Control
Local participant		
1	Phan The Duy	HCM University of Natural Resources and Environment
2	Le Cong Chinh	Water resource university
3	Nguyen Dang Tinh	Water resource university
4	Huynh Quoc Toan	HCM Agricultural and rural development department
5	Vo Nguyen Xuan Que	HCM University of Natural Resources and Environment
6	Vo Thi Thao Vi	Sub-institute of hydrometeorology and climate change
7	Le Thi Phung	HCM University of Natural Resources and Environment
8	Huynh Thi My Linh	Sub-institute of hydrometeorology and climate change

9	Vu Van Thuy	Nam Khang Consulting joint stock company
10	Ho Cong Toan	Sub-institute of hydrometeorology and climate change
11	Vo Thi Nguyen	Sub-institute of hydrometeorology and climate change
12	Nguyen Thi Phuong Mai	Water resource university
13	Hoang Trong Khiem	HCM University of Natural Resources and Environment
14	Hoang Dinh Thanh	Sub-institute of hydrometeorology and climate change
15	Bao Thanh	HCM University of Natural Resources and Environment
16	Nguyen Hong Thoa	Sub-institute of hydrometeorology and climate change
17	Phan Thuy Linh	Sub-institute of hydrometeorology and climate change
18	Nguyen Thai Son	Sub-institute of hydrometeorology and climate change
19	Nguyen Dinh Quan	Sub-Department of Natural Disaster Prevention and Control
20	Dao Viet Anh	Sub-Department of Natural Disaster Prevention and Control



**ASIA-PACIFIC NETWORK FOR
GLOBAL CHANGE RESEARCH**

*Project Reference Number: CAF2015-CD02NMY-Nhat
Capacity Building for National, Provincial Stakeholders and Remote Communities
on Loss and Damage Related to Disaster Risk Reduction and Climate Adaptation*



For more information please contact:

**Department of Meteorology, Hydrology and Climate Change
Ministry of Natural Resources and Environment of Viet Nam**

**No. 10 Ton That Thuyet street,
CauGiay district, Ha Noi, Viet Nam**

Tel: 84-4-37759384 - Fax:84-4-37759382

Email: vnadaptation@gmail.com