2018

**CLIMATE CHANGE, DISASTER AND POVERTY NEXUS IN VIETNAM**



Hanoi, 2018

# ACRONYMS

|  |  |
| --- | --- |
| ACIAR | Australian Centre for International Agricultural Research |
| ADB | The Asian Development Bank |
| ARP | Agricultural Restructuring Program |
| AWD | Alternate Wetting and Drying |
| CAP | Center for Agricultural Policy |
| CBCCI | Community-Based climate change initiatives |
| CBDRM & CCA | Community Based Disaster Risk Management and Climate Change Adaptation |
| CC-D-P | Climate Change, Disaster, Poverty |
| CCAFS | Climate Change, Agriculture and Food Security |
| CCWG | Climate Change Working Group |
| CGIAR | The Consultative Group on International Agricultural Research |
| CSA | Climate Smart Agriculture |
| CSV | Climate Smart Village |
| GDP | Gross Domestic Product |
| DARD | Department of Agricultural and Rural Development |
| DOLISA | Department ofLabour, Invalids and Social Affairs |
| DONRE | Department of Natural Resources and Environment |
| DWG | Disasters Working Group |
| EBA | Ecosystem Base Adaptation |
| EU | European Union |
| FAO | Food and Agriculture Organization |
| GIZ | The Deutsche Gesellschaft für Internationale Zusammenarbeit |
| INHEM | Institute of Meteorology, Hydrology and Climate Change |
| IPCC | Intergovernmental Panel on Climate Change |
| IPSARD | The Institute of Policy and Strategy for Agriculture and Rural development |
| ISPONRE | Institute of Strategy and Policy on Natural Resources and Environment |
| LEG | Livelihood improvement Group |
| M2M | Machine to Machine |
| MARD | Ministry of Agricultural and Rural Development |
| MDGs | Millennium Development Goals |
| MOLISA | Ministry of Labor, Invalid, and Social Affairs |
| MONRE | [Ministry of Natural Resources and Environment](http://www.monre.gov.vn/wps/portal/english) |
| MPI | Ministry of Planning and Investment |
| NGO | Non-Governmental Organization |
| NRD | New Rural Development |
| NTP | National Target Program |
| ODA | Official Development Assistance |
| PPP | Private Public Partnership |
| SDGs | Sustainable Development Goals |
| SNV | Netherlands Development Organisation |
| SRD | Sustainable Rural Development Center |
| SRI | System of Rice Intensification |
| TP | Target Program |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNISDR | UN International Strategy for Disaster Reduction |
| USD | The United State Dollar |
| VARHS | Viet Nam Access to Resources Household Survey |
| VND | Vietnam Dong |
| VSLA | Village Savings and Loan Association |
| WB | The World Bank |
| WMO | World Meteorological Organization |

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# INTRODUCTION

# INTRODUCTION

## **The necessity of climate change, natural disaster and poverty nexus**

There has been a clear upward global trend in the frequency of large disasters arising from natural events between 1950 and 2005 and especially from 1980; and the evidence that demonstrates the vulnerability of populations to climate change shows a dramatic upward trend in the number of people killed or seriously impacted by extreme weather events (UNISDR (2015). The scientific communities of the Intergovernmental Panel on Climate Change (IPCC) argue that the main impacts of climate change and climate variability on urban and rural areas in the next few decades are likely to be increased (IPCC 2007).

Vietnam is at the highest risk of natural disasters in East Asia and the Pacific region, ranking fifth among countries most severely affected by climate change, increasingly impacted by natural disasters, particularly the increase in duration, frequency, severity and intensity of extreme weather events (INHEM &UNDP 2015). In the past decades, nearly 60% of the country's land area and 70 per cent of the population have been exposed to various types of natural disasters, such as storms, floods, typhoons, flash floods, and droughts, resulting to heavy damages to people's lives, infrastructure, and the socio-economic development, and causing the death of more than 13,000 people and property damage of more than USD 6.4 billion (WB 2016).

Since 1986, the successful transformation of Vietnam's economic model has helped more than 40 million people escape from poverty, created steady economic growth and become a low-income country (WB 2016). However, climate change and natural disasters are becoming a big challenge, and the threat is on the rise each year as climate change make natural disasters happen more frequently and severely. This can undermine efforts, progress and achievement in poverty reduction as well as sustainable development, increasing the number of people needing short-term and long-term assistance (INHEM & UNDP 2015). Climate change is making the poor poorer, hindering economic growth and poverty alleviation, continuing to erode food security, and creating new poverty traps (Carter et al. 2007). Communities suffer property, livelihoods and labor losses, and all of the most vulnerable people are trapped in a vicious cycle of poverty, as the boundaries between non-poor – pro-poor - poor – extremely poor become fragile due to climate change and natural disasters impacts. These challenges are not only at national but also global levels, directly affecting the United Nations' sustainable development goals (SDGs).

The concept of "vulnerability" is central to identifying the nature of climate change and natural disaster impacts (Birkmann et al. 2012). While vulnerability generally depends on specific hazards, a number of factors, such as poverty, and the shortage of social support networks and mechanisms, will exacerbate vulnerability regardless the type of vulnerability (IPCC 2012). In particular, poverty is one of the major factors that increase vulnerability to climate change and natural disasters *Wilkinson & Peters (2015)*. Moreover, in the context of rapid climate change in Vietnam, new emerging forms of vulnerability and poverty require new approaches to awareness, solution and measures of poverty and vulnerability (UNISDR 2015). At the same time, underlying causes of vulnerability need to be addressed to increase the resilience of household livelihoods.

This research aims to identify the climate change – natural disaster - poverty (CC-D-P) triple nexus in Vietnam to strengthen resilient livelihoods, especially for small farmers in the context of changing climate and the increasing risk of natural disasters in Vietnam, and to recommend the Food & Agriculture Organization (FAO) of the United Nations (UN)'s strategic interventions to achieve the UN's SDG 1 of ‘no extreme poverty’ and the SDG 2 of ‘no hunger’.

## **Research objectives**

* To develop a conceptual framework for the CC-D-P nexus in Viet Nam
* To review Vietnam's policy options related to the CC-D-P nexus
* To review NGOs and community/household initiatives related to the CC-D-P nexus
* To evaluate the effectiveness of addressing the CC-D-P nexus in policy and practical initiatives.
* To propose solutions to strengthen the CC-D-P nexus in policies/ programs and implementation processes at different levels.
* To recommend FAO interventions to promote the CC-D-P nexus

## **Research methodology**

The research was conducted with five following steps. First, the research team implemented an extensive literature view combining with expert consultation to conceptualize the CC-D-P nexus for Vietnam. After that, a review on policies related to climate change, disaster, and poverty in Vietnam was conducted to analyse how the nexus between these three pillars had been developed at macro level. The bulk of this study is the review of practices/models of the triple nexus at grass-root level. To do so, the research team had field trips and interviews with farmers and local authories at six provinces in three ecological sub-regions of Vietnam to analyse how CC-D-P nexus practices had been developed and contribute to increasing the resilence of household livelihood. Finally, the authors provided some suggestions in terms of government’s policy at central and local levels; and potential intervention for the FAO in future.

**Figure 0.1. Research procedure**

Definition of the CC-D-P nexus

Analyse the impact of nexus policy and practices on improving the resilience of household livelihood

Step 4. Policy recommendations

Step 5. Suggestions for FAO’s interventions

Step 1. Literature review

Step 2. Policy review on the CC-D-P nexus

**Steps**

**Activities**

* Desk-study of available literature
* Expert consultation

Step 3. Review grass-root initiatives on the CC-D-P nexus

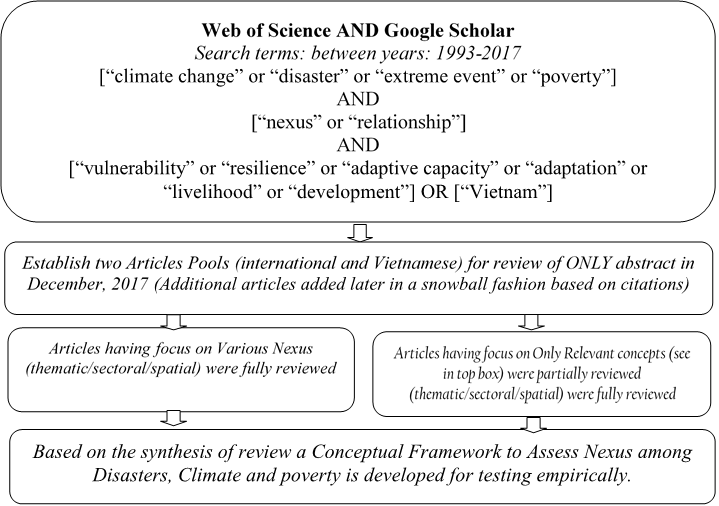
* Desk-study of available literatures
* Expert consultation
* Local consultation and NGOs consultation
* Group discussions and field surveys and observations
* Expert consultation
* Organizing seminars
* Expert consultation
* Organizing seminar

*Source: Prepared by CAP/IPSARD research team (2017).*

### ***Literature review***

The research selection and review process is illustrated in Figure 1.2. This step aims to provide an overview of international and in-country studies of CC-D-P nexus. This literature review explains key definitions related to poverty, disasters and climate change, how these components link to each other, which theories/approaches are the foundation for this nexus, how is the relationship between poverty reduction, disaster risk management and climate change adapation. To do so, the research team collected international and Vietnamese studies from 1990 to 2017. The year of 1990 is selected as the beginning point because this is the time when the Intergovernmental Panel of Climate Change (IPCC) published its first assessment report about climate change, marking the birth of CC-D-P. Documents and reports were collected from the libraries of research institutes (Institute of Meteorology, Hydrology and Climate Change – INHEM, CGIAR centers) and universities, relevant ministries (Ministry of Agricultural and Rural Development - MARD, Ministry of Natural Resources and Environment - MONRE) in Vietnam. In addition, the research team also searched and collected materials from the internet using keywords related to poverty reduction, natural disasters and climate change and ‘snow ball’ approach (Figure 0.2). Main sources include websites of UN organizations such as UNFCCC, UN International Strategy for Disaster Reduction (UNISDR), FAO, and UNDP; donors such as World Bank, ADB and ACIAR, and NGOs such as Oxfam, World Vision, GIZ, SNV, CARE, and ActionAID.

**Figure 0.2. Literature review process**

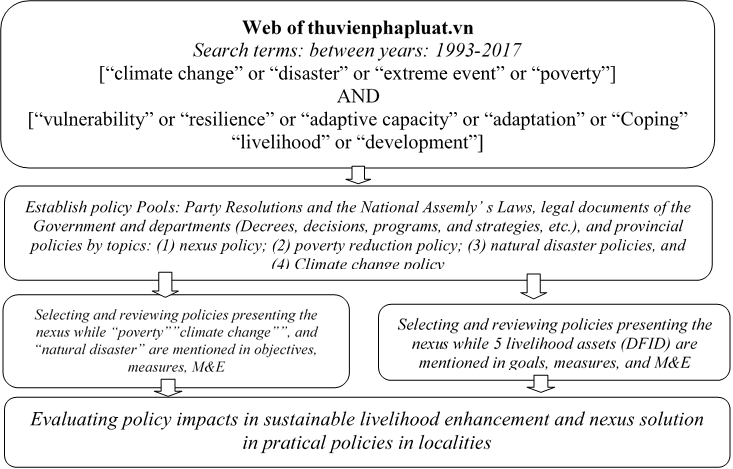


*Source: Prepared by CAP/IPSARD research team (2017).*

### ***Policy review***

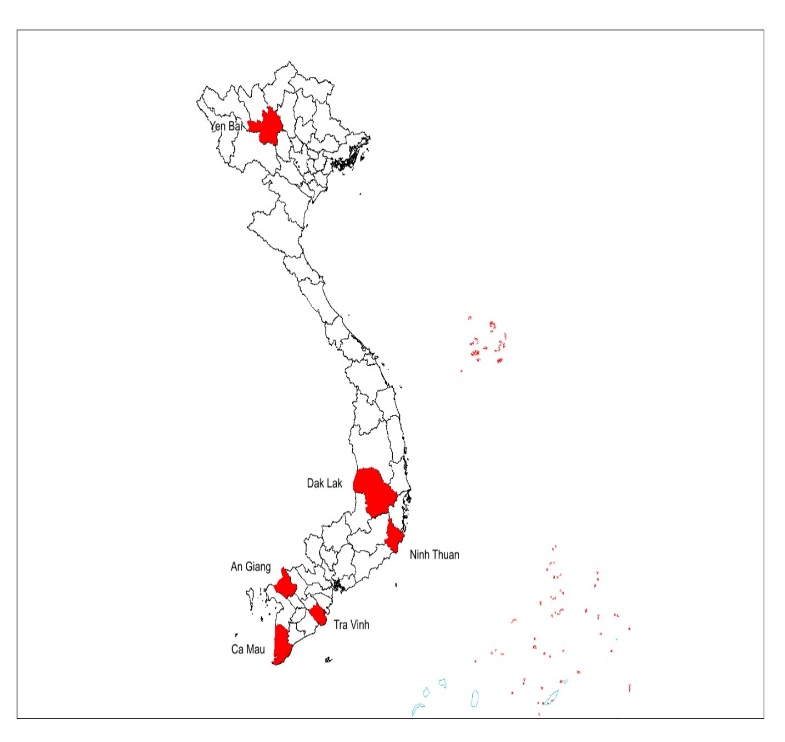
The step targets to provide an overview of policy framework and instutitional arrangement related to CC-D-P nexus in Vietnam. This part focuses on describing and analysing policy, institutional, financial, human resources, information issues related to CC-D-P nexus to assess the efforts of Vietnam in responding to climate change, managing disaster risks and poverty reduction and how the nation has integrated these three pillars together. To do so, the research team collected policy documents from the Party (general congress documents, resolutions, directives, etc), National Assembly (laws), Government (decrees, resolutions, decisions, circulars, etc), and guiding documents of line ministries and localities (six surveyed provinces). During the process of collecting documents, the team consulted experts to identify important documents for each topic: poverty reduction, natural disasters, climate change as well as documents on CC-D-P nexus. While documents at central level were mostly collected the website *thuvienphapluat.vn*, local documents were collected from different departments in six surved provinces.

**Figure 0.3. Policy review process**



*Source: Prepared by CAP/IPSARD research team (2017).*

### ***Selection of research provinces***

 Research provinces are selected to ensure the representativeness of the sampling basing on the diversity in characteristics of climate change, natural disasters impacts and poverty characteristics of Vietnam. Thereby, the research team selected the research sites in six provinces (6 districts, 8 communes) in four ecological regions in Vietnam, including: (i) Mekong Delta (plain region): upper Mekong (An Giang), river estuary (Tra Vinh), peninsula (Ca Mau); (ii) Central Coast (Ninh Thuan); (iii) the Central Highlands (Dak Lak); and (iv) Northern Mountains (Yen Bai)

*Source: Prepared by CAP/IPSARD research team (2017).*

*Climate change in research sites*

Over the years, the weather indicators have changed dramatically and continuously in the 6 provinces, in particular, the temperature increased by 0.17 per cent per year, the sun-shining time increased by 0.32 per cent per year, while the rainfall and moisture reduction is 0.16 per cent per year and 0.11 per cent per year, respectively, for the period from 2000 to 2016. Extreme temperature fluctuation and off-seasoned rains do not only affect the life of the people, but also agricultural production by severely affecting the growth and productivity of crops, the increase and change of weeds, pests and biodiversity. Official scenarios by MONRE (2016) show that climate change will be stronger in these areas in the future.

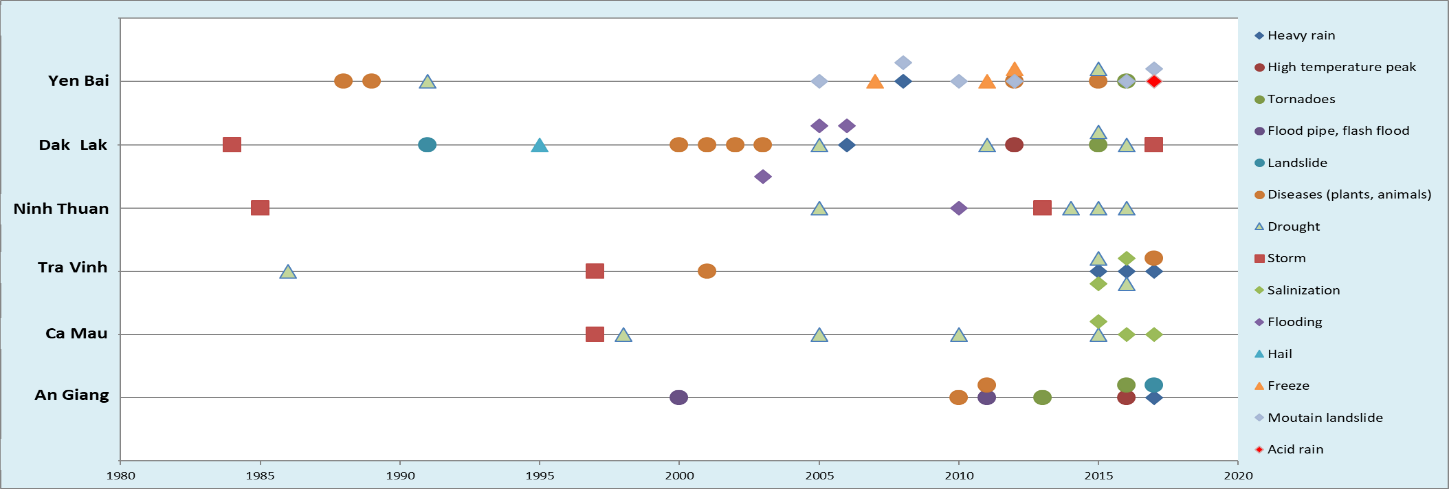
Figure 0.4. Annual changes in climatic indicator, 2000 - 2016 (%)

*Source: Department of Meteorology, Hydrology and Climate Change (2017).*

*Exposure and vulnerability to disaster risks in research sites*

Six selected provinces are representative for regions facing with various types of natural disaster risks. Surveys of CAP/IPSARD research team have recorded more than 60 extreme phenomena/events affecting the residents in these six provinces from 1984 to 2017, of which 61 per cent of them occurred after 2010, 43 per cent of them occurred in only three most recent years (from 2015 to 2017). In this period, most provinces are affected by natural disasters every year, even the number of phenomena occurring in the same year also increased strongly. In particular, slow onset events (droughts, landslides and freezing cold) have increased faster than rapid onset events. In addition, outbreaks of diseases in plants and animals tend to appear continuously and directly affect productivity of plants, animals and fisheries.

Figure 0.5. Frequency of extreme events in research sites, 1980 -2017

**

*Source: Summarized from surveys by CAP/IPSARD research team (2017).*

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| --- | --- |
| Figure 0.6. Financial and human losses caused by natural disasters in research sites, 2016 | **Figure 0.7. Natural disaster impacts on housing consition in research sites, 2016** |
|  |  |

*Source: Provincial reports on natural disaster prevention and control (2016)*

Consequently, all these six provices are highly exposed to climate change and disasters. Yen Bai is a mountainous province with 67.56 per cent of the mountains are over 600m, and thus high levels of exposure to landslides, floods and flash floods; Dak Lak is located in the center of the Central Highlands, with high levels of exposure to droughts as temperature and rainfall patterns change rapidly; Ninh Thuan has 105 km of coastline, 63.2 per cent of the area is mountainous, the province has a very steep slope, low water retention capacity, strong currents at downstream, this is the province with the highest exposure level and affected by most types of natural disasters; An Giang is the upstream province of the Mekong River, with low terrain, but also mountainous and delta areas, so the exposure is very high with floods, saline intrusion and droughts; Tra Vinh is a coastal province, mainly in plain areas with an altitude of 1m above sea level, located between two large rivers, so the province has a very high exposure to saline intrusion, floods, sea level rise and tropical cyclones; Ca Mau has two sides of the sea with a coast length up to 254 km, the delta area with a common height of only 0.5-1m compared to sea level accounts for 89 per cent of area, and is the only province without the freshwater supply from the Mekong river system and this province has high levels of exposure to storms, floods, saline intrusion and sea level rise.

In terms of vulnerability,the key drivers of vulnerability of the six provinces are high dependence on agriculture, high rate of poverty and limited household assets. Agricultural income accounts for about 35 per cent of total income of households in these provinces, 48 per cent of laborers depend on agriculture. The proportion of households without agricultural land in rural areas accounts for 36 per cent, especially in Ninh Thuan province (50 per cent). On average, 67 per cent of households live in semi-permanent houses, and 20 per cent in temporary houses, especially in An Giang (28 per cent) and Ca Mau (35 per cent). 68 per cent of the heads of households have not completed primary school, of which, 26 per cent do not attend school, and over 90 per cent of them have not attended vocational training. Except for An Giang and Ca Mau, the other four provinces have higher poverty rate than country average, of which Yen Bai is typically high (17,5 per cent) followed by Tra Vinh (10 per cent).

|  |  |
| --- | --- |
| Figure 0.8. Dependence of household livelihood on agriculture in surveyed provinces | Figure 0.9. Natural, physical and human assets of households (%) |
|  |  |

*Source: CAP/IPSARD research team calculate from Agricultural, Forestry and Fishery Census (2016)*

|  |  |
| --- | --- |
| Figure 0.10. Proportion of poor households in research sites vs national rate, 2016 | Figure 0.11. Poverty reduction rate research sites |
|  |  |

*Source: GSO (2017)*

### ***Selection of research communes/ districts in the survey provinces***

After selecting the six provinces, the research team worked with provincial agencies including: Department of Agriculture and Rural Development (Steering Committee for Disaster Prevention and Control), Department of Natural Resources and Environment (DoNRE), Department of Natural Resources and Environment, Department of Planning and Investment, Department of Ethnic Minorities, Women's Union and Farmers' Union (see Appendix 1 for detailed list). The discussion on selection criteria includes: (i) Districts/ communes most affected by climate change, natural disasters, and the province’s typical natural disasters; (ii) communes/ districts with high poverty rates and main livelihoods relied on agriculture; (iii) specific effective practice models applied in the communities, including those embodied in government policies, NGOs' initiatives and local community initiatives.

Table 0.1. Selection of surveyed districts/ communes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Province** | **District** | **Commune** | **General model** | **Typical model** |
| Yen Bai | Yen Binh | Vinh Kien | The 4 in-the-spots; post natural disaster supports; vocational training – job creation; new rural development program; changes in land use planning | Integrated migration; smart villages; CSA; land and forest allocation |
| Dak Lak | Buon Don | Ea Nuol  Ea Wer | Poverty reduction; CSA; agro-information access |
| Ninh Thuan | Ninh Phuoc | An Hai | CSA; lake and dam interconnection; community-based storm escape places; housing supports |
| An Giang | Cho Moi | My Hoi Dong  Tan My | Agri-information access; CSA; urgent movements; agricultural insurance |
| Tra Vinh | Duyen Hai | Don Chau | Job – migration changes; CSA; agricultural insurance |
| Ca Mau | Ngoc Hien | Dat Mui | Urgent migration; residential clusters; river dams; ocean dams, embankment; land and forest allocation. |

*Source: Prepared by CAP/IPSARD research team (2017).*

Interviews were conducted with staff of DPCs, district functional departments (DARD, DONRE, DOLISA, and Financial Planning Division) and Commune People's Committee (see Appendix A for detailed interviewee list).

### ***Field survey method***

For local agencies, discussions are conducted using the checklist of prepared questions. Key information collected and consulted include vision, strategies, policies, programs, projects institutions, human resources, financial resources, infrastructure, relevant skills and knowledge related to CC-D-P nexus; the process and level of integration/ interconnection of policy solutions at the local level; and obstacles in the implementation of integrated solutions and objectives related to CC-D-P nexus into the local socio-economic development plan.

At community and household levels, two activities were conducted in parallel, including participatory group discussions and household interviews using structured questionnaires. Participants were selected basing on different criteria - the characteristics of households affected by climate change and natural disasters which are typical of ecological regions, age, gender and education levels. Methods and information collecting include: (1) mapping information collection on the history of natural disasters and changes in the weather patterns in the community. For each category, revealing information about the impact on the community/ household, support policies received and processed by the community/ household against the changes and negative impacts of the weather; (2) find out information about production systems and their dependence on main livelihoods; (3) poverty at the community level, assessing the effectiveness of poverty reduction policies, NGO support (if any) and community initiatives/ application to escape poverty; (4) in-depth assessment of specific community/ household models/ measures to cope with climate change, disaster risk reduction and poverty reduction, effectiveness and replication (scoring to assess the role of stakeholders in implementing solutions, suitability, the effectiveness of solutions, obstacles, and barriers, etc). In-depth interviews with households to explore household characteristics, livelihoods, degree of impact, awareness of agricultural risks, household response strategies and the degree of support of policies, programs/ projects in the context of climate change and natural disaster risks in the models.

In this step, the research team also described good practices/models related to existing CC-D-P nexus at community level and analyses their impacts on livelihood of households at grass-root level using the DFID’s livelihood analysis framework (2003).

After identifying good practices in communities, the team conducted interviews with NGOs carrying out activities related to CC-D-P nexus including World Vision, CARE, OXFAM, SRD, and CIAT to collect more information and verify our findings (see Appendix A for detailed interviewee list).

### ***Workshops***

A national workshop was conducted to share and validate the findings of the study as a basis for the team to finalize the final report.

## **Report structure**

After this section, the report is structured into five chapters. Chapter I sets up the conceptual framework of the Climate Change, Disasters and Poverty nexus for Vietnam by reviewing the available literature on the bilateral and triple relationships between climate change, disasters and poverty and current momentum to address the nexus in the world. Based on the framework of Chapter I, Chapter II stock takes the current policy interventions and NGOs’ initiatives that aim to address the nexus in Vietnam. Chapter III concentrates on reviewing how the nexus is addressed by policy interventions and NGO’s initiatives in the field through the lens of resilient livelihoods by studying different models and exploring the gaps and constraints. Based on the findings of Chapter III, Chapter IV puts forward policy recommendations to promote the nexus in Vietnam and Chapter IV proposes how FAO can contribute to consolidate the CC-D-P nexus and contribute to improve the household livelihood resilience.

# CHAPTER I. CONCEPTUAL FRAMEWORK OF THE CLIMATE CHANGE, DISASTERS AND POVERTY NEXUS FOR VIETNAM

# CHAPTER 1

## **Literature review of bilateral relationships between climate change, disasters and poverty**

***Disaster – poverty nexus***

Poverty is a complex concept with conflicting definitions and considerable disagreement in terms of framings, methodologies, and measurements. Over the last six decades, conceptualizations of poverty have broadened, expanding the basis for understanding poverty and its drivers. Poverty measurements now better capture multidimensional characteristics and spatial and temporal nuances. Attention to multidimensional deprivations—such as hunger; illiteracy; unclean drinking water; lack of access to health, credit, or legal services; social exclusion; and disempowerment—have shifted the analytical lens to the dynamics of poverty and its institutionalization within social and political norms (UNDP 1994; Sen 1999;World Bank 2001).

Among other relationships (climate change – disasters, climate change – poverty), the mutual disaster -poverty nexus has been highlighted in research earlier, for at least 30 years (Wisner et al. 1976). On the one hand, most evidence supports the conclusion that disasters lead to negative economic outcomes, particularly in developing countries (Wilkinson & Peters 2015).

**Table 1.1. Summary of disaster impact on poverty**

|  |  |  |
| --- | --- | --- |
|  | Direct impacts on the poor | Indirect impacts on the poor (via development impacts) |
| Shorter-term impacts | * Loss of earnings * Loss of assets: housing, savings, crops, land and possessions * Forced consumption of limited assets and savings * Reduced access to food, water and health care * Halt in schooling and healthcare programmes (e.g. vaccinations) | * Loss of economically active persons (through death, injury and sickness) * Loss of labour force and lower productive output (e.g. crops, industry) * Loss of assets: government buildings e.g. healthcare facilities, schools; infrastructure e.g. water, electricity and road networks * Diversion of government and private spending to response * Short term supply chain disruption |
| Longer-term impacts | * Loss of productive agricultural land * Increase in the price of staple foods * Reduction in food security, leading to malnourishment and stunting * Lowered educational attainment and life expectancy * Undermined future resilience and capacity to cope with shocks * Secondary and longer-term impacts | * Increased spending on imports to meet food demands * Allocation of budgets to reconstruction and recovery * Increased debt responding to recovery needs * Long-term supply chain disruption * Relocation of productive sectors (regionally or internationally) * Reduced income and consumption levels * Reduction in exports and export income and increase in imports * Slower economic growth due to long term consequences of reduced investment in physical and human capital |

*Source: Wilkinson & Peters (2015).*

On the other hand, previous studies also show that poverty is translated into disaster risk through the vulnerability of rural livelihoods (Chambers 1983; Ingham 1993; Hutton and Haque 2003). Empirical results indicate that the poorest people in a community are often affected disproportionately by disaster events, particularly in the long-term. Wealth, especially at the local level affects the ability of a households or localities to prepare for, respond to, and rebound from disaster events (Cutter et al., 2008; Masozera et al., 2007).Wealthier places have a greater potential for large monetary losses, but at the same time, they have the resources (insurance, income, political cache) to cope with the impacts and recover from extreme events, and they are less socially vulnerable. Poorer localities and populations often live in cheaper hazard-prone locations, and face challenges in responding to, and recover from disasters. In that in many cases, disasters can push households into ‘poverty traps,’ that is, situations where productivity is reduced, making it impossible for households to rebuild their savings and assets (Carter et al. 2007). The process by which a series of events generates a vicious spiral of impacts, vulnerability, and risk was first recognized by Chambers (2006), who described it as the ratchet effect of disaster, risk, and vulnerability. These micro-level poverty traps can also be created by health and social impacts of natural disasters: it has been shown that disasters can have long-lasting consequences for psychological health (Norris 2005), and for child development from reduction in schooling and diminished cognitive abilities (Alderman et al. 2006).

Where disaster loss is widespread, micro-level poverty traps can aggregate to the regional level. Here, poor regions impacted by disaster are unable to fully recover so that capacity is reduced and vulnerability heightened, making future disasters more likely. Without enough time to rebuild between events, such regions may end up in a state of permanent reconstruction, with resources devoted to repairing and replacing rather than accumulating infrastructure and equipment. This obstacle to capital accumulation and infrastructure development can lead to a permanent disaster-related underdevelopment (Hallegatte et al. 2007; Hallegatt and Dumas 2008). This can be amplified by other long-term mechanisms, such as changes in risk perception that reduce investments in the affected regions or reduced services that make qualified workers leave the region. These effects were discussed by Benson & Clay (2004), and investigated by Noy (2009) and Hochrainer (2009), who found that natural disasters have a negative impact on economic growth and development, especially when direct losses are large.

For Vietnam, although previous studies gave different estimation of loss and damages, they all indicate that disaster negatively affect the economic development and poverty reduction process of Vietnam. Tran & Vu (2012) estimates that disasters caused economic losses of about 1.5 per cent of GDP per year and during 2002-2006, property losses were estimated at nearly 1.5 billion USD. According to UNISDR (2015), among several types of disasters, Viet Nam suffered most losses from tropical cyclones and floods, followed by drought and landslides. Over the period 1990-2012, nearly 4.7 billion USD and 3.7 billion USD were lost due to tropical cyclones and floods, and droughts and landslides caused damages of 649 and 2.3 million USD. Besides above disasters, flash floods and stony mud floods are a frequently occurring natural hazard, causing high human and property losses, especially in the North West mountainous region of Viet Nam (Do 2009; Lee & Nguyen 2005). Modelling projections of these authors indicated that the damage from extreme climate events in the future on different economic sectors socio-economic system is significant.

***Climate change – disaster nexus***

Previously, the two fields (disaster, climate change) tended to follow independent paths of advance and development and employed different interpretations of concepts, methods, strategies, and institutional frameworks (IPCC 2012). Since early 1990s, the nexus between climate change and natural disasters has been gradually documented in the literature (see IPCC 1990; 1992; IPCC 1995; IPCC 2001; IPCC 2007; IPCC 2013). Most previous studies agree that a changing climate leads to changes in the frequency, intensity, spatial extent, duration, and timing of weather and climate extremes, and can result in unprecedented extremes. Synthesizing from most prominently empirical and modelling studies, IPCC (2012) concludes that climate change has a strong association with changes in weather and climate variables (temperature, precipitation), phenomena related to weather and climate extremes (Elninos and other modes of variability, tropical cyclones, extra-tropical cyclones), and impact on physical environment (droughts, extreme sea level and coastal impacts).

In this context, relationship between disaster management and climate change adaptation is close because both areas same objectives (i.e., seeking appropriate allocations of risk reduction, risk transfer, and disaster management efforts) and are mutually supportive. Therefore, IPCC (2012) suggests that there are potential synergies for the two areas. First, disaster risk management covers a wide range of extreme events, including most of those of interest in the adaptation to climate change literature and practice (IPCC 2012). Thus, adaptation could benefit from experience in managing disaster risks that are analogous to the new challenges expected under climate change. On the other hand, literature also indicates that adaptation to climate change can support those practicing disaster risk management to more effectively address future conditions that will differ from those of today (Collins, 2007; Barron 2009; Doherty et al. 2009; Goddard et al. 2009; Shukla et al. 2009; Piao et al. 2010). Moreover, like disaster risk management, adaptation to climate change will often take place within a multi-hazard locational framework given that many areas affected by climate change will also be affected by other persistent and recurrent hazards (Wisner et al. 2004, 2011; Lavell 2010; Mercer 2010).

The relationship between climate change and disasters has been studied for the last two decades in Vietnam. Many studies have shown that climate change results in higher intensity and frequency of climate extremes (typhoons and tropical storms, heat waves, cold spells, frost, hail, floods and other hazards such as landslides, erosion and accretion (Mai 2008; ISPONRE 2009; Nguyen et al. 2010; Tran et al. 2011; Do et al. 2012), floods, drought, salinity intrusion (Dasgupta et al. 2009; Tran et al. 2011; Birkmann et al. 2012; Wen-Cheng & Hong-Ming 2014), forest fires, desertification, epidemic diseases (WMO 2007; Running 2008; Tran et al. 2013). The government has produced three national reports on climate change and sea level rising scenarios in 2009, 2012 and 2016, in which some key climate variables, climate extremes and impact on physical environment are evaluated (MONRE 2009; 2012; 2016). The most comprehensive and updated research on this topic is IMHEN & UNDP (2015). In this work, the authors apply the conceptual framework and methodology from IPCC (2012) with some modifications to suit with Vietnam conditions. Most findings of the research are in line with those in IPCC (2012) which indicates that due to climate change, extreme events are more likely occur.

***Climate change – poverty nexus***

The relationship between climate change and poverty has been first quantitatively studied by Stern et al. (2009). The author used economic models incorporating climate change projections to create plausible scenarios for how climate change would have an impact on poverty and growth in the future. After that, there are many studies using economic models to analyze the impact of climate on poverty (e.g. Hope 2009; Stern 2009; Thurlow et al. 2009; Iglesias et al. 2011; Skoufias et al. 2011b) and also exaggerate inequality (Challinor et al. 2007; Assuncao & Cheres 2008; Lobell et al. 2008; Liu et al. 2008; Thornton et al. 2008; Jones & Thornton 2009; Menon 2009; Nordhaus 2010; Burke et al. 2011; Jacoby et al. 2011; Skoufias et al. 2011a; Adano et al. 2012). Nevertheless, the precise impact climate change will have on poverty has been particularly difficult to estimate. Climate change projections have their own uncertainties, as do poverty projections (with their many dimensions). Also, not all models agree and, as a result, there are too many uncertainties for reliable results to be produced. Studies give an indication of the direction of some of the effects, but stop short of predicting or quantifying impacts. The IPCC (2007) highlights that - with very high confidence - climate change will impede the ability of nations to alleviate poverty and achieve sustainable development, as measured by progress toward the MDGs.

For Vietnam, at macro level, DARA (2012) estimates that the impacts of climate change (expressed in percentage of GDP losses) in 2030 on labour productivity, in fisheries, agriculture and biodiversity are 8.6 per cent, 1.6 per cent, 0.4 per cent, and 0.1 per cent, respectively. These authors also predict that various climate extreme events affect the Vietnamese economy differently in the future, in which sea level rise, heating and cooling, floods and landslides reduce the national GDP by 2.7 per cent, 0.3 per cent 0.1 per cent, respectively in 2030. According to UNU-WIDER (2012), Vietnam is of the most affected developing countries by sea level rise. The result of Dasgupta et al. (2009) assessment of potential impacts of sea level rise on 84 coastal developing countries by 6 indicators of land, population, GDP, urban extent, agriculture extent and wetlands showed that Viet Nam is one of 5 countries potentially affected if mean sea level rises by one meter. Moreover, the World Bank ranked Viet Nam as one of 12 countries most affected by sea level rise due to climate change (Gebretsadik et al. 2012).

At household level, literature also indicates that climate change and disaster are likely to cause reversed outcomes to farmer livelihood and push them to the danger of poverty. Land area, and quality of water - main input resources for agricultural production are degraded by climate change (Vu & Glewwe 2008; Zhai & Zhuang 2009; Tran 2008) causing the decrease in agricultural productivity in Viet Nam (Yu et al., 2010). Regarding accommodation, MONRE (2012) forecasts if the sea level rises by one m, then nearly 35 per cent of people in the Mekong River Delta and over nine per cent of people in the Red River Delta and Quang Ninh province are directly affected, as well as about seven per cent of the population in Ho Chi Minh City and nine per cent of the population in Central coastal provinces. Moreover, climate change also affects negatively on people’s health. According to the Viet Nam Ministry of Health, over time there is an increase of climate change related diseases such as respiratory diseases, hepatitis B, rheumatism, typhoid, malaria and dengue (McElwee et al. 2010). In general, climate change and disaster’s negative impacts may push farmer’s livelihood into a poverty trap from different dimensions (INHEM & UNDP 2015).

## **Exploring the climate change – disaster – poverty nexus**

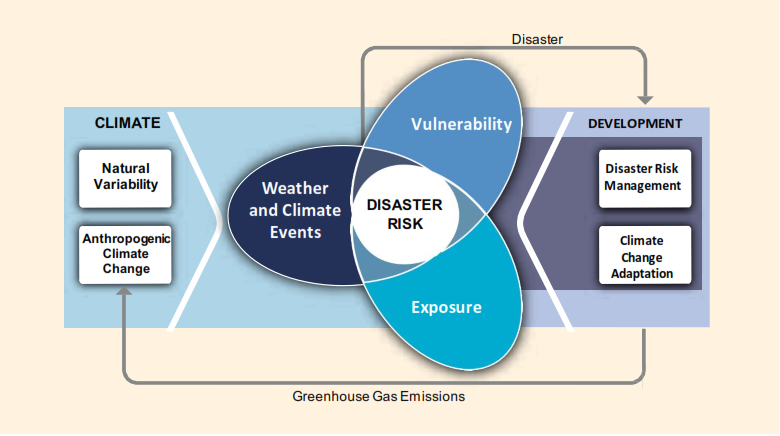
Compared to twin nexuses, the CC-D-P nexus has just discussed recently. In 2009, for the first time, the UN International Strategy for Disaster Reduction in its 2009 Global Assessment Report on Disaster Risk Reduction (UNISDR 2009) focused attention on the nexus between disaster risk and poverty, in a context of global climate change. The author argues that efforts to reduce disaster risk, reduce poverty and adapt to climate change are poorly coordinated, while innovative approaches and tools, in areas such as ecosystem management, sustainable rural livelihood and community based approaches, exist and are being applied creatively at local level and in different sectors throughout developing countries. The central message of that report is that reducing disaster risk can provide a vehicle to reduce poverty, safeguard development and adapt to climate change, with beneficial effects on broader global stability and sustainability. After that, UNISDR (2011), UNISRD (2013), UNISRD (2015) continues to highlight opportunities to integrate disaster risk reduction and climate change adaptation into existing development instruments and mechanisms in environment, social and economic sectors.

Most notably, Wilkinson & Peters (2015) first introduced the terms ‘climate change – disaster – poverty nexus’. This report explores the relationships between climate change and poverty, focusing on climate extremes, on the basis that these manifestations of climate change will most affect our attempts to reduce poverty over the next 15 to 25 years. Framed by a wider analysis, three detailed studies – on drought risk in Mali, heat waves in India and typhoons in the Philippines – illustrate the relationship between climate change, climate extremes, disasters and poverty impacts. These authors call for improved resilience to climate extremes as a requisite for achieving poverty reduction targets. They argue that to achieve this, planners and policy makers will need to support the strengthening of the absorptive, anticipatory and adaptive capacities of communities and societies. New ways of working are required to link institutions that have previously been poorly connected, with new criteria for decision-making, such as considering the best solutions across different possible climate futures. The scale of the challenge suggests more transformative actions may be necessary, including through the use of new risk financing mechanisms.

Recently, scholars begin to provide more evidence about the importance of this CC-D-P nexus. For instance, according to Aon Benfield (2014), global economic losses from natural disasters today are between $250 and $300 billion each year (UNISDR 2015), up from $50 billion in the 1980s (UNISDR 2015), of which a high proportion is due to extreme climate events (Aon Benfield, 2014). In a same direction, FAO (2015) and FAO (2018) explored the negative effects of naturally-induced and climate-related disasters on agriculture and FAO (2015) showed that about 22 per cent of total damage and loss from natural disasters in developing countries was absorbed by the agriculture sector alone. Apart from affecting poverty multidimensional, climate change and disasters also influence livelihood trajectories and dynamics in livelihood decision making, often in conjunction with cross scalar socioeconomic, institutional, or political stressors (IPCC 2012). Shifting in and out of hardship and well-being on a seasonal basis is not uncommon. To a large extent, the shifts from coping and hardship to recovery are driven by annual climate variability (Karambiri et al. 2011; Lacombe et al. 2012), but may become exacerbated by climate change (Eakin et al. 2012). Households in transient poverty may become chronically poor due to a lack of effective response options to weather events and climate, compared with more affluent households (IPCC 2012).

Currently, different theoretical frameworks have been introduced to analyze the CC-D-P nexus (see IPCC 2012; Turner et al. 2003; Wisner et al. 2004). There is a general consensus that it is not only natural events that cause disaster; in fact, disaster risk derives from the interaction of social and environmental processes from the combination of physical hazards and the vulnerabilities of exposed elements. At macro level, IPCC (2012) explains climate change lead to the increase in frequency and magnitude of disasters. Disaster risk happens when hazardous physical events interacts with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects (Figure 1.1).

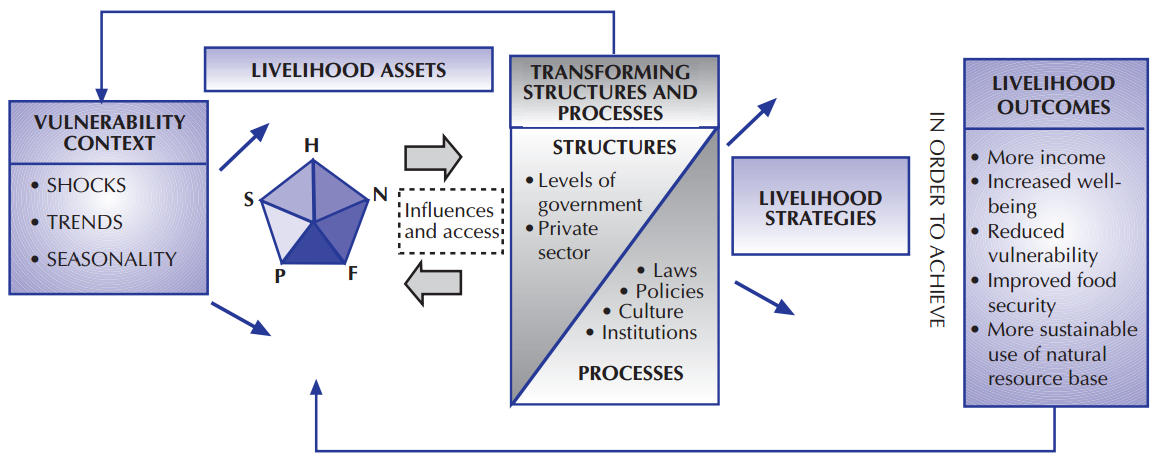
**Figure 1.1. Links between the climate change, disasters, and development**



*Source: IPCC (2012).*

At micro level, DFID (2003) proposes a Sustainable Livelihood framework which puts emphasis on the acquisition, substitution and utilization of different types of assets that an individual or household has for pursuing livelihood strategies (Figure 1.2). The availability of, access to, and operational effectiveness of these asset portfolios are thereby regulated by transforming structures and processes that shape livelihood outcomes and the internal dimension of vulnerabilities (Chambers 1989). The DFID framework conceptualizes: (i) how people operate within a vulnerability context shaped by different factors; (ii) how they draw on different types of livelihood assets or capital in different combinations which are influenced by the vulnerability context and a range of institutions and processes, and (iii) how they use their asset base to develop a range of livelihood strategies to achieve desired livelihood outcomes. DFID's approach focuses both on people (especially the poor) and environmental and policy factors. In this framework, climate change and disasters are treated as shocks that can negatively affect the five assets of households (physical, financial, human, social and natural), and their livelihood outcomes.

Figure 1.2. Livelihood analytical framework of DFID



*Source: DFID (2003).*

In Vietnam, INHEM & UNDP (2015) is among very few studies examining this nexus. Nevertheless, these authors only describing three pairs of relationship: climate change – disasters, climate change – poverty, and disaster – poverty by reviewing previous studies, rather than analyzing the mechanism of connecting these three pillars at the same time. This work did not either provide a conceptual framework for CC-D-P nexus for Vietnam.

## **Current global momentum related the climate change – disaster – poverty nexus**

In parallel with the development of academic research, global interest in the relationship between climate change, disaster and poverty have also evolved significantly. Debates concentrate increasingly on transforming the development pathways toward greater social and environmental sustainability, equity, resilience, and justice, calling for a fundamental move toward long-term climate-resilient development pathways. Three major international frameworks (the 21st Session of the Conference of the Parties (COP21) in Paris, the Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals (SDGs)) which guide post-2015 action on climate change, disasters and development acknowledge the shortcomings of silo-approach and promotes the nexus. Both the Inter-governmental Panel of Climate Change and the UN International Strategy for Disaster Reduction – the two key UN agencies responsible for climate change and disasters have gradually adopted the CC-D-P nexus in their periodical report series.

The importance of this nexus has been integrated in Sustainable Development Goals (SDGs). In 2012, the UN developed Sustainable Development Goals (SDGs) building on the Millennium Development Goals (MDGs), which are criticized for not explicitly addressing the root causes of poverty, inequality, or climate change (Melamed 2012; UN 2012b) and the anticipated failure to reach MDG 1 (eradicate extreme poverty and hunger by 2015),with or without climate change (Tubiello et al. 2008). SDGs discussions reveal a stronger focus on eradicating extreme poverty and environmental problems facing poor people (UN 2012a). This framing of development acknowledges shared global futures that require collective action from the richest, not merely promoting welfare for the poorest, to address both climate change and poverty (Ayers & Dodman 2010; UN 2012a,b). Paying attention to dynamic livelihoods and multidimensional poverty and the multifaceted impacts of climate change and climate change responses is central to achieving climate-resilient development pathways). Conceptually, the nexus addresses SDGs 1 (No poverty), 2 (Zero Hunger), 5 (Gender Equality), 11 (Sustainable Cities), 13 (Climate Action), and 17 (Global Partnership for Development). At can be said that the CC-D-P nexus underpins the core message of the SDGs: Development is multi-faceted and the achievement of many of the individual development goals is dependent on the achievement of other goals. The vision set out in the SDGs that ‘no one will left behind’ requires a specific focus on the poorest and most vulnerable people, which is a key challenge. Therefore, a stand-alone priority program of disaster management, climate change adaptation or poverty reduction will not act as a development strategy, rather a focus on an integrated approach that combines positive attributes such as capacity, governance, resources and social safety nets, along with access to availability of systems and services will be required to achieve the aforementioned SDGs.

## **Conceptualizing the climate change – disaster – poverty nexus for Vietnam based on resilience approach**

Over the past 20 years, Vietnam’s achievements in poverty reduction have been impressive. The official poverty rate had decreased rapidly from nearly 30 per cent in 1993 to 9.6 per cent in 2012 (Nguyen 2015) and 9.88 per cent in 2015 based on multi-dimensional poverty measurement. Alongside with this progress, the concept of poverty has been broadened and upgraded. In Vietnam, in the past, poverty was primarily defined, measured and assessed through income. The poverty line is based on expenditure level that meets the minimum needs and is converted into money. If people whose income falls below the poverty line, they are considered poor. This is the single-dimensional poverty index set by the Government. The current poverty line is VND 700 thousand /person/month in rural areas and VND 900 thousand/person/month in urban areas - equivalent to about $US 1 to 1.3/person/day, respectively (Decision 59/2015/QD-TTg). The concept of multi-dimensional poverty has been applied since 2016 which combines both the poverty line in terms of income and the level of access to basic social services. Accordingly, the criteria for poverty measurement include: (i) Income criteria (including the criterion of minimum standard of living based on income, income poverty line, and the criterion of average standard of living based on income) and; (ii) Access to basic social services (including: access to health care, education, housing, clear water and sanitation, and information). On this basis, the Government has developed 10 indicators for measuring the degree of poverty in multidimensional poverty, namely education level for adult, education level for children, medical examination and treatment, health insurance, housing, clean water, hygienic latrines, telecommunication services, assets for access to information.

Nevertheless, poverty reduction process in Vietnam is recognized as unsustainable to climate change and disasters (UNDP 2012) for several reasons (Vu & Le 2014). First, poverty is usually associated with rural areas, agriculture and farmers. Over 90 per cent of the poor and 94 per cent of the extremely poor live in rural areas; 32.9 per cent of agricultural households live below the poverty line; agricultural households account for 65 per cent of the poor and 73 per cent of the extremely poor (World Bank, 2012) while agriculture is the sector most affected by climate change. Second, poverty is usually associated with disaster-prone areas. Most areas with high poverty rate have harsh climatic conditions and face a high risk of suffering natural disasters. In particular, the three regions with the highest poverty rates in Vietnam which are the Northern Mountains (45 per cent), the Central Highlands (33 per cent) and the North Central and South Central Coast (24 per cent) are also regions frequently suffering disastrous consequences of extreme climatic events (WB 2012). Third, poverty is usually associated with gender inequality. The poor, women and children are the most vulnerable to the impacts of climate change and natural disasters, and in reality climate change can exacerbate gender inequalities, create more burden of works for women, and increase the vulnerability of women in poor households (Oxfam 2009). Fourth, poverty is usually associated with the factors of ethnic minorities and remote areas. Although 53 ethnic minorities in Vietnam account for only 15 per cent of the total population, they account for nearly half (47 per cent) of the total number of the poor in Vietnam and 68 per cent of the total number of the extreme poor.

In short, the poor in Vietnam is vulnerable to disasters and climate change and this vulnerability in turn could undermine the nation’s efforts and progress in sustainable poverty reduction and development. Therefore, this paper uses the concepts of vulnerability/sensitivity and resilience/adaptability combining with the five types of household asset to frame the nexus between climate change, disasters and poverty for Vietnam (Figure 1.3). Accordingly, household livelihood rely on five types of assets including: (i) human capital (skills, knowledge, ability to work, health, etc); (ii) physical capital (basic infrastructure, production equipment and means, etc.); (iii) social capital (networks, membership of groups, relationships of trust, access to wider institutions of society, etc.); (iv) financial capital (savings, supplies of credit or regular remittances or pensions, etc.); and (v) natural capital (land, water, wildlife, biodiversity, environmental resources, etc.). A nexus intervention is regarded successful if its three pillars (climate change adaptation, disaster risk management and poverty reduction) can support the five household asset types in the way that these assets can improve the resilience or adaptive capacity (anticipate, adapt, and respond in absorbing the socio-ecological and economic impact). By doing so, the resilient livelihood development and sustainable development goals will be achieved.

**Figure 1.3. Conceptual framework of the climate change – disaster – poverty for Vietnam**

**Weak**

**Strong**

**Feedback**

**Vunerability**

**Resilience**

**Feedback**

**Sustainable Development Goals**

**Resilient livelihood development**

**Poverty reduction**

**Climate change adaptation**

**Disaster risk management**



**Human**

**Household assets**

**Financial**

**Physical**

**Natural**

**Social**

*Source: Prepared by CAP/IPSARD research team (2017).*

# CHAPTER II. STOCKTAKING OF policy interventions and nGos’ initiatives on tHE NEXUS OF CLIMATE CHANGE-DISASTER AND POVERTY in vietnam

# 3. CHAPTER 2

## **1. The policy interventions on the nexus of climate change-disaster and poverty**

To stoke take the policy interventions, 110 policy documents have been reviewed and categorized into four main groups: (i) poverty reduction policies (27 documents); (ii) climate change adaptation and mitigation policies (33 documents); (iii) disaster management policies (41 documents); (iv) and integrated policies[[1]](#footnote-1) (9 documents).

**Table 2.1. Number and type of policy documents reviewed**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Integrated | Poverty | Climate Change | Disaster | |
| Party Resolution |  | 07 | 04 | 03 | |
| Legal documents |  | 08 | 17 | 30 | |
| Development strategies/plans | 8 | 01 | 04 | 01 | |
| Development programs/Target programs | 1 | 11 | 08 | 07 | |
| **Total** | **9** | **27** | **33** | **41** |

*Source: CAP/IPSARD research team (2017).*

By reviewing seven policy contents of (i) objective; (ii) intervention; (iii) resource; (iv) beneficiary; (v) scale; (vi) implementation arrangement; (vii) and monitoring and evaluation to see whether these contents mention at least two key words among “climate change”, “disaster management” and “poverty reduction”, 19 policy documents have been screened and selected for deep analysis including 05 integrated policies; 02 poverty policies; 06 climate change policies; and 06 disaster management policies.

The selected policies are scanned to get understanding of the process to integrate the nexus into policies, the policy target area, beneficiaries and resources, the institutional arrangement for implementation and then stock take the most prevalent interventions for assessment in Chapter III.

### **Overview of the nexus integration process into policies**

Since the Party Resolution IX in 2001 was issued to foster the industrialization and modernization course in the 21st century, policies related to climate change, disaster and poverty have been more nexus integrated, especially after 2010. Up to now, most macro policies have been integrated triple nexus in its content via stating in the objectives or mentioning in some parts of the documents. The integration process is also different among policy groups of which the integrated policy group takes the lead and the disaster management group is the slowest.

The integrated policy group is the most comprehensive and shows the triple nexus integration earliest since 2001, starting with the sustainable development strategy 2001-2010 followed by the Sustainable Development Direction in 2004 and the Sustainable development Strategy 2011-2020; the Resolution on Agriculture, Farmer and Rural Area (“Tam Nong”) in 2008 followed by the Agricultural Restructuring Program (ARP) 2013; the National Target Program- New Rural Development (NTP-NRD) 2016-2020[[2]](#footnote-2) and the Target Program (TP) – Agriculture Restructuring Program – Disaster Management 2017. Though being worded differently, the objectives of these policies (except the NRD) all stated to stimulate poverty reduction, climate change adaptation and disaster prevention. In addition, in sustainable development policies, the nexus is identified as priority areas. In “Tam Nong” Resolution and ARP, disaster management is integrated in irrigation sollutions while climate change adaptation is stated in development direction of all regions and commodities. The NRD program set separate indicator for poverty reduction and mentioned climate change and on-spot disaster management in the indicator for irrigation system. The NRD program is also the only policy that has monitoring and evaluation indicators for the triple nexus, though still not comprehensive.

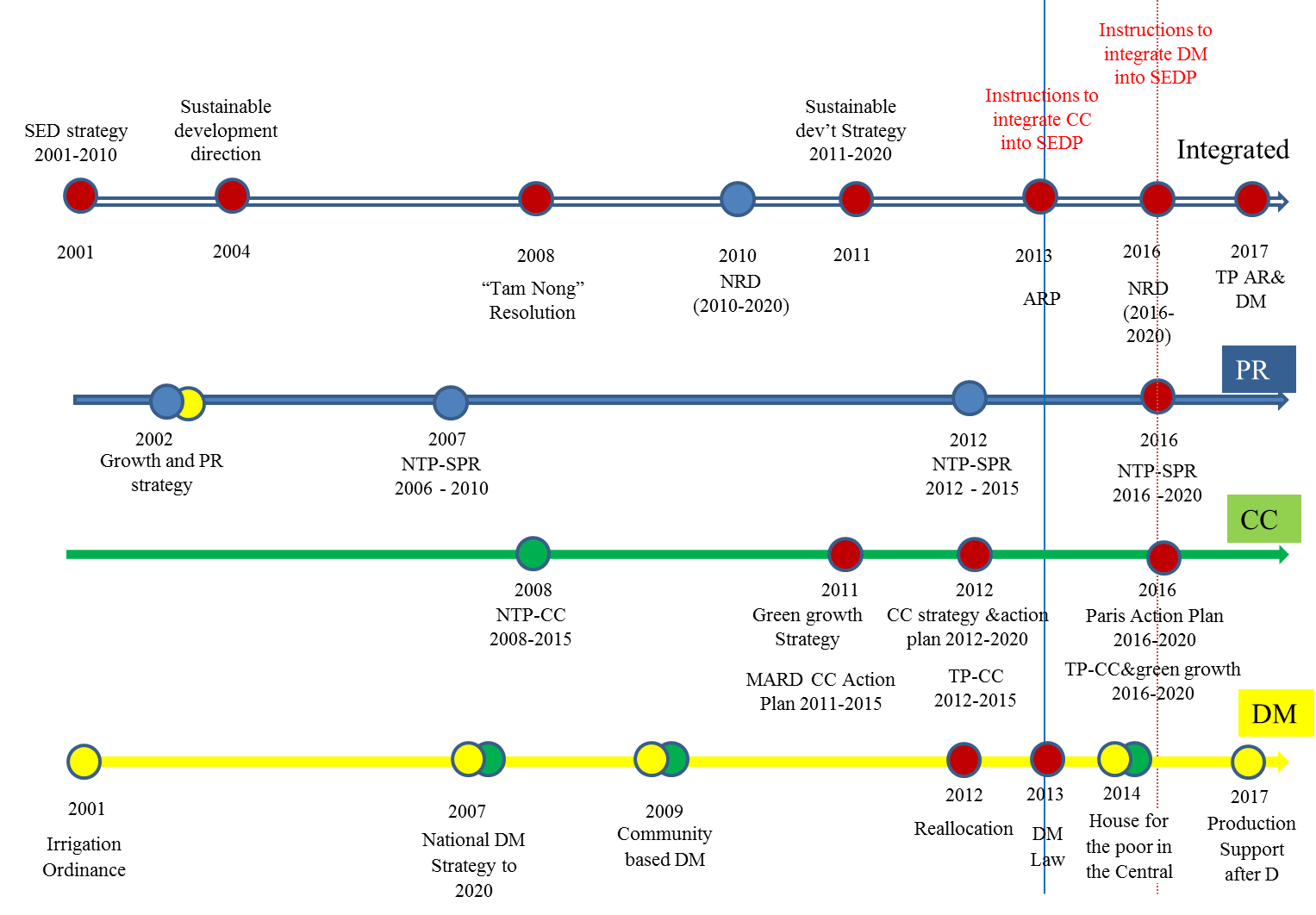
In the poverty reduction policy group, the Comprehensive Poverty Reduction and Growth Strategy starts to include disaster management as an important part of the poverty reduction process in 2002. It has defined that the poor is vulnerable to risks due to low and insecure income, thus unable to cope with risks including natural disasters. Therefore, one of the key solutions is to develop a strategy for natural disaster prevention and mitigation to minimize damage, stabilize the living and production of people in natural disaster areas. The Oorientation for Sustainable Poverty Reduction 2011-2020 targets the people in extremely difficult areas that are frequently affected by natural disasters and shows needs for sollutions to adapt to climate change. However, the following NTP- Sustainable Poverty Reduction 2006-2010 and 2012-2015 are back to poverty only without considering the other two pillars. Only in 2016 does the NTP-Sustainable Poverty reduction 2016-2020 integrate the triple nexus. It is well defined that disaster and climate change risks are one of the major causes to poverty and the low capacity to recover from damage. Therefore, disaster management and climate change adaptation are considered as an important part of engineer and production solutions.

The climate change policy group shows the CC-D-P nexus since 2011 with the Green Growth Strategy 2011, the NTP-climate change 2012-2015, the National Strategy and Action Plan for Climate change 2012-2020, Paris Agreement 2016. The nexus is reflected mainly in priority area and sollutions that encourage the active climate change adaptation and disaster control to ensure food security and poverty reduction. However, the NTP- climate change and green growth 2016-2020 issued in 2017 does not include poverty reduction.

The disaster management policy group starts to integrate climate change in the Disaster Management Strategy to 2020 promulgated in 2007 and the Program to raise community awareness and community-based disaster management in 2009. The Disaster Management Law 2013 marks the triple nexus integration, together with the Residential Allocation Program 2012 and the Housing Program for the poor in the Central Coast 2014. However, there are still some policies that only integrate poverty pillar (Social Welfare policy 2013) or target disaster only (post-disaster production support policy 2017).

To facilitate the integration, the Guidelines on climate change integration in National Socio-economic Development Plan was issued in 2013 and the Guidelines on disaster management integration in National Socio-economic Development Plan introduced in 2016. These guidlines specify the principles and the process of integration that includes the assessment of the impacts of disaster and climate change, assessment of the vulnerability of people and how to set priority.

**Figure 2.1. The integration process of the key policy groups**

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*Source: CAP/IPSARD research team (2017).*

### **Policy target area, beneficiaries and resources**

The Tam Nong Resolution, ARP and NTP- New Rural Development target mainly the rural area, rural people and farmers. The disaster management policies target the area that are affected, mostly the coastal area, mountainous area and rural area; accordingly the main beneficiaries are difficult people. The poverty reduction policies give priority to mountainous areas and ethnic areas and the target is the poor. Meanwhile, the climate change policies and some other integrated policies target the whole country and people. At present, it is proposed that the NTPs and TPs shift from household support to community-based support where the beneficiaries are engaged in the design, implementation and monitoring the interventions, however, this idea is still in discussion, official guidelines is not yet introduced.

This picture shows that there are overlaps in both target area and target beneficiaries in most of the policies. On one hand, this naturally makes it convenient for the policies to be nexus integrated, on the other hand, if not well planned, the same interventions can be overlapped and focus too many on some specific areas and beneficiaries while still cannot be accessed by the others.

One remarkable point is that not all policies have allocated budget, other than the NTPs and TPs. Only the NTP-Sustainable Poverty Reduction still receives a lot of budget from central government. For the others, the budget source has been diversified to other social sources showing the diversion away from subsidy policy. The most typical policy following this rule is the NTP-New Rural Development that mobilize more business, cooperatives and people’s co-investment. This is a good mechanism for the interventions to be more demand-driven, transparent and feasible with the engagement of beneficiaries and related stakeholders.

**Table 2.2. Budget allocations for some NTPs, TPs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Policy/ Budget structure** | TP-ARP and DM | NTP-RD | NTP-PR | TP-CC | MARD CC Action plan |
| Central government | 7% | 30% | 86% | 50% | 10% |
| Local goverment |  |  | 10% |  |  |
| ODA | 5% |  | 4% | 50% | 4% |
| Credit | 88% | 45% |  | 86% |
| Business and cooperatives | 15% |  |
| People | 10% |  |
| Others |  |  |

*Source: CAP/IPSARD research team (2017).*

### **Institutional arrangement for implementation**

All the nexus policies are administered by a system from the government to provincial, district and commune level. Accordingly, they are usually led by a Government Steering Committee/Committee with representatives of different related ministries, and coordinated by an in-charge Ministry as a standing office. This structure is designed the same to provincial level, district and commune level. Exceptionally, regarding to climate change, many provinces do not yet have a steering committee down to commune level. Even at provincial level, there is no professional staff on climate change. Similary, the implementation system for sustainable development and green growth policies are not well strucutured at provincial level as designed.

At present, Ministry of Agriculture and Rural Development (MARD) is in charge of agriculture and rural development policies (which are in the integrated policy group) and disaster management policies, Ministry of National Resources and Environment (MONRE) is in charge of climate change policies, Ministry of Labor, Invalid, and Social Affairs (MOLISA) takes responsibility for poverty reduction policies, and Ministry of Planning and Investment (MPI) manages policies covering sustainable development, green growth and some NTPs. However, down to implementation level (district and commune), there is not such clear distinction. Similar interventions of different policies can be implemented by the same staffs. For example, agricultural extension is normally done by agriculture staff regardless of policies it belong to *(See Appendix B for the institutional mapping).*

Such institutional arrangement on the one hand is quite systematic that allows for the mobilizations of sources when needed, on the other hand without a clear coordination mechanism, the ministries and sectors still have the tendency to act separately, making it challenging for nexus integration in implementation. This situation implies it is the implementation level at grassroots that seems to play more critical role in coordinating resources to address the nexus.

### **Key interventions of the nexus policies**

To analyze the intervention of nexus policies on farming household livelihood, we utilize the conceptual framework formed in Chapter I. The underlying factor that drives the nexus is resilience. The three pillars are considered to be supported if the household become more resilience to poverty, to climate change and to disaster. In order to improve the resilience, the policies have tried to enrich five types of household assets though differently among policies.

**Table 2.3. Household assets addressed by nexus policies**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| # | Policy group | Human | | | | Natural | | | Finance | | | | | | | | | | | Physical | | | | Social | | |
| Skills | Knowledge | Awareness | Security | Land | Clean water | Production water | Market | | Value chain | | Credit | | Production | | Income | | Housing | | Other properties | Public infrastructure | Participation | | Voice | Network |
| **I** | **Integrated policies** | | | |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 1 | Sustainable Development Strategy |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 2 | “Tam Nong” |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 3 | ARP |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 4 | NTP-NRD |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 5 | Agricultural Insurance |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| **II** | **Poverty Reduction** | | |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 6-7 | NTP-PR (2012-2015; 2016-2020) |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| **III** | **Climate change** | | | |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 8 | NTP-CC |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 9 | CC strategy and action plan 2012-2020 |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 10 | Green growth strategy |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 11 | Paris Action plan |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 12 | NTP-CC and green growth |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| 13 | MARD-CC action plan |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  |  | |  |  |  | |  |  |
| **IV** | **Disaster management** | | | | |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 14 | National DM Strategy to 2020 |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 15 | Residential reallocation |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 16 | Community capacity building |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 17 | Housing for the poor in Central Coast |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 18 | Post-disaster production support |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |
| 19 | Social protection |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  |  |  | |  |  |

*Source: Prepared by CAP/IPSARD research team (2017).*

Among policies studied, the integrated policies and poverty reduction policies including “Tam Nong” Resolution, ARP, NTP-New Rural Development, NTP-Sustainable Poverty Reduction introduce the most comprehensive package that address all five household assets. Meanwhile, the other policies focus on some factors of the assets only. In addition, human assets and physical assets appear to be of the most concern of policies.

*Regarding to human assets*, the poverty reduction policies and the NRD share similar interventions which focus a lot on improving human assets of all aspects: awareness, health, education, production skill, culture and sports,…via various interventions such as health insurance support (100 per cent for ethnic minorities and 70 per cent for near-poor), tuition fee reduction, agricultural extension, vocational training, information access. Meanwhile, the climate change policies only focus on awareness raising for the people and capacity building for government staff on climate change adaption. The disaster management policies aims towards 70 per cent of the people in 6000 villages affected to be enhanced awareness, skills in disaster mitigation, resource identification, disaster preparedness planning following "four on-the-spot motto”, 100 per cent of government officials at all levels directly involved in natural disaster prevention and controlled to be enhanced capacity.

*Regarding physical assets*, all policies pay lots of resources to improve these assets. The ARP, NTP- New Rural Development and the NTP-Sustainable Poverty Reduction support more infrastructure for living and production such as housing, irrigation, roads, schools, clinics, electricity grids, clean water system. The climate change and disaster management policies focus largely on infrastructure like sea and river dykes upgrading, lakes and damps construction and upgrading for flood regulation and droughts; salinity control systems in the coastal areas. The disaster management policies also support housing to reallocate affected people combined preferred credit and cash transfer.

*Regarding natural assets,* the climate change and disaster management policies focus on newly planting, rehabilitation and protection of forest, mangroves to prevent coastal erosion, regulate the climate, protect the ecosystem but do not directly target households. At the same time, the poverty reduction and integrated policies try to allocate land, improve irrigation for production and clean water access for daily use.

*Regarding financial assets,* the ARP and NTP- New Rural Development support agricultural production via provision of inputs (seeds, fertilizers, land, equipment, etc.); value chain development, high-tech application, crop shifting, and climate-smart agriculture. They also support livelihood diversification to non-farm work or labor export. Particularly, the NTP- New Rural Development promotes “state and people work together motto” to share investment in public goods. The PR policies focus on employment support by vocational training, labor export; 15 credit programs with low interest rates (0% per annum for production; 3% for housing; 7.8% for other loan, etc.). Meanwhile, climate change policies promote CSA via application of sustainable standards; the disaster management policies mention only post-disaster cash transfer and other reliefs.

*Regarding social assets,* allthe policies do not have many interventions to improve social assets of households. Integrated policies appear to care most about social assets by promoting farmer organization into collective groups and cooperatives as well as value chain linkage. The disaster management policies try to promote community-based disaster management via capacity building and engagement of the community in planning. However, climate change policies do not mention any clear interventions in improving social assets.

**Table 2.4. Key interventions by nexus policies**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Policy group | | **Key interventions** | | | | |
| Human  Assets | Social assets | Financial  assets | Physical  assets | Natural assets |
| **Integrated polices** | ARP | Agricultural extension | * Cooperative development * Business linkage | * CSA * Crop shifting * Value chain development | * Production infrastructure * Sea and river dykes construction and upgrading | * Flexible land use change |
| NRD | * Agricultural extension and technology transfer * Vocational training * Health care * Education * Sport& culture | * Cooperatives development * Co-investment by farmers & government in infrastructure | * Multi-dimensional poverty reduction | * Housing * Infrastructure upgrading: road, electricity, small irrigation, clean water, clinics, schools, other community infrastructure | * Clean water access |
| **Poverty Reduction** | | * Health insurance * Tuition fee reduction * Agricultural extension * Vocational training * Information access | * Collective farming | * Agri production (seeds, fertilizers, land, equipment, etc.) * Livelihood diversification: non-agri employment, export labor * Credit access | * Housing * Infrastructure: road, electricity, small irrigation, clean water, clinics, schools, community infrastructure | * Clean water access * Land& forest land allocation |
| **Climate Change Adaptation and Mitigation** | | * Awareness raising and knowledge enhancement * Climate change and saline intrusion monitoring system |  | * CSA | * Lakes and damps construction and upgrading for flood regulation and droughts * Salinity control systems in the coastal areas * Sea and river dykes construction and upgrading | * Forest rehabilitation and protection |
| **Disaster Management** | | * Awareness raising and knowledge enhancement * Early warning and disaster information systems | * Community-based activities | * Cash transfer * Relief | * Sea and river dykes upgrading * Residential reallocation | * Forest rehabilitation and protection |

*Source: Prepared by CAP/IPSARD research team (2017).*

Based on the above review, the policy interventions that are taken to examine in Chapter 3 includes: disaster management policy group (residential reallocation, housing support, “four on-the- spot motto”, post disaster support, infrastructure); climate change policy group (infrastructure, crop calendar shifting); poverty reduction policy group (vocational training and employment; poverty reduction support, land allocation); and Integrated policy (NRD).

## **2. NGOs’ initiatives on the nexus of climate change-disaster and poverty in Vietnam**

The consultation with key NGOs working in related fields show that almost all of these organizations have integrated the pillars of climate change, disasters and poverty reduction in their activities, but mainly climate change adaptation and poverty reduction. In general, they focus on livelihood development, climate change adaptation and humanitarian support. Sometimes, NGOs’ interventions are driven by donners. For example, it can be seen that after many years of focusing on adaptation, to date, most NGOs have focused more on climate change mitigation.

There is considerable variation in approach between public policy and NGO solutions. While policies often use a top-down approach, NGOs use community-based approaches. For example, in Yen Bai, the World Vision supports the implementation of community-based climate change adaptation in the project "Capacity Building for Ethnic Minorities in Luc Yen District". The Embassy of Finland supports the project "Strengthening People's Participation in climate change response plan in Nam Khat and Mo Cay communes, Mu Cang Chai district, Yen Bai province". In Ca Mau the World Vision supports the implementation of the project "Community-based Climate Change Adaptation in Ca Mau". The Swiss Red Cross continues to invest in the Community Based Disaster Risk Management and Climate Change Adaptation (CBDRM & CCA) in 07 coastal communes in three districts: Dam Doi, Nam Can, Ngoc Hien. In Tra Vinh, AusAID sponsors the project "Cooperation to enhance the adaptability to climate change of coastal communities in Vietnam". In An Giang, the Australian NGO Program implemented a community-based disaster risk management project. AusAID funded a community-based disaster risk reduction project linked to climate change in the MekongDelta, etc.

The target area of NGOs mainly focuses on difficult areas while the beneficiaries are more diversified depending on the mission of each NGOs. Some target children, the other aims at women, disabled people, etc. The budget allocated to the initiative of NGOs are usually project-based and smaller compared to public policies.

While the public policies focus a lot on human assets and physical assets, the key interventions of NGOs focus more on social assets, natural assets and financial assets, focusing on capacity building and non-engineered solutions.

**Table 2.5. Synthesize the solutions of NGOs**

|  |  |  |  |
| --- | --- | --- | --- |
| **Organizations** | **Solution system** | **Application platform** | **Overarching goal** |
| World Vision | - Microfinance service  - CSA and market linkage  - Capacity building  - Vocational training and employment  - Child sponsorship (nutrition, education, health care)  - Support to develop commune disaster preparedness plan  - Humanitarian relief (disaster) | - Mutual livelihoods group  - Village savings group | - Child sponsorship |
| Oxfam | - Sustainable livelihoods development and poverty reduction  - Capacity building  - CSA application  - Disseminating the law on gender equality, against family security  - Humanitarian relief (disaster) | - Livelihoods development group | - Gender equality  - Poverty reduction |
| Sustainable Rural Development Center (SRD) | - CSA application  - Capacity building for social organizations  - Market connections  - Indigenous product development  - Support for disabled people in disaster prevention | - Livelihoods development group | - Gender equality  - Responding to climate change  - Disabled people protection |
| Care International | - Village credit and savings  - Capacity building  - Livelihood development  - Value chain development  - Strengthening the participation of women  - CSA | - Village Savings and Loan Association (VSLA) | - Gender equality |
| CIAT-CCAFS | - Apply CSA models in a systematic manner  - Capacity building for the community  - Support for weather information system for production | - Ecosystem approach,  Community and production support groups | - Climate Smart Village (CSV) |

*Source: Prepared by CAP/IPSARD research team (2017).*

# CHAPTER Iii. assessment of policy interventions and ngos’ initiatives to address THE nexus

## **Overview of interventions and initiatives to address the nexus in Vietnam**

Based on the stoke taking in Chapter II, twenty-two models have been studied in 6 provinces, of which 7 are for disaster prevention and disaster risk reduction, 7 are in response to climate change, 5 are poverty reduction and 3 are integrated interventions.

**Table 3.1. Summary of activities/models being implemented in localities**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Group** | **Activities/models** | **Source** |
| 1 | Integrated interventions | Implementation of New Rural Development Program | Decision 1600/QĐ-TTg |
| 2 | Agricultural insurance services | Decree 58/2018/NĐ-CP |
| 3 | Model of providing information for decision-making process | Initiatives of enterprises |
| 4 | Poverty reduction | Implementation of vocational training and job creation policies | Decision 1956/QĐ-TTg |
| 5 | Implementation of poverty reduction programs in poor communities (credit, education, healthcare, basic services) | National Target Program on Poverty Reduction |
| 6 | Frequent implementation of social protection policies for disadvantaged groups (social protection policy) | Decree 136/2013/NĐ-CP |
| 7 | Model of micro-finance groups (Community-based climate change initiatives) | Initiatives of NGOs |
| 8 | Model of LEG livelihood group (Community-based climate change initiatives) | Initiatives of NGOs |
| 9 | Climate change | Building adaptation structures (irrigation systems, embankment) | Action program to respond to climate change |
| 10 | Implementation of land and forest allocation to households | Decree 75/2015/NĐ-CP; Directives of the government since 1983 |
| 11 | Model of transforming production system & changes in land use at local level | Local people to change |
| 12 | Model of changing crop calendar | Agricultural extensions at local areas |
| 13 | Model of climate change adaptive production support group (Community-based climate change initiatives - CBCCI) | Initiatives of NGOs |
| 14 | Model of climate smart village (EBA) | Initiatives of NGOs |
| 15 | Model of applying new technologies into production (Climate smart agriculture - CSA) | Initiatives of NGOs |
| 16 | Natural disasters | Implementation of relocation and resettlement policies | Decision 1776/QĐ-TTg |
| 17 | Support to build houses against floods and storms | Decision 48/2014/QĐ-TTg |
| 18 | Implementation of the motto “Four on-the-spot” | Dike Protection Experience 1970, Flood Prevention and Control Ordinance 2006, Law on Disaster Prevention 2013 |
| 19 | Implementation of post- disaster supporting policies | Decree 02/2017/NĐ-CP |
| 20 | Construction of disaster prevention works (dikes, dams, and shelters) | Disaster Prevention Program |
| 21 | Implementation of social protection policies in the events of natural disasters | Decree 136/2013/NĐ-CP |
| 22 | Job switching or migration (spontaneous) | Spontaneous at local areas |

*Source: Prepared by CAP/IPSARD research team (2017).*

Analyzing the participation of stakeholders, it is seen that overall, the central government still plays the leading role in disaster prevention and poverty reduction while the NGOs’ initiatives are more prominent in climate change adaptation. The local authorities mainly implement the government policies other than introducing any typical local policy interventions.

Regarding interventions for natural disaster prevention and reduction such as relocation and resettlement, support to build houses, implementation of the motto “Four on-the-spot”, post-disaster support and infrastructure are derived from the orientations and policies of the government. NGOs have mainly involved in supporting planning (World Vision, Care) in some localities and emergency assistance in the event of major disasters through the activities of the working group on natural disasters (CCWG) and from international aid. Meanwhile, the participation of community in implementing these solutions is very passive, especially when the flow of information between organizations and individuals in charge of the disaster management and the community/households is still sporadic.

Regarding to climate change adaptation, current models focus on the initiatives and supports of NGOs including promoting the application of CSA in production, the application of community-based approaches and ecosystem-based approaches in climate change adaptation. The involvement of the government is mostly in engineering and forest development because the relevant directions, policies and activities are still being developed and there are only few specific actions are being integrated at the local level. Meanwhile, communities and households often come up with effective measures such as transforming production system (shifting to aquaculture, shrimp-rice model, adoption of new crop or livestock varieties, etc.), however, these are only immediate changes in order to increase income and respond to changing natural conditions. There has not been any overall planning orientations.

The government is playing a fundamental role in poverty reduction. The implementation of the National Target Program on poverty reduction, program 135, program 30A, and the Vocational Training program has made great contributions to poverty reduction at the local level. NGOs have also actively contributed to poverty reduction, especially in the areas with special difficulties, such as Yen Bai, Tra Vinh, and Dak Lak. However, the approaches in the implementation of poverty reduction measures between the government and the NGOs have a relatively substantial difference. The majority of NGOs are now using the community-based approach, employing internal resources of the community to reduce poverty through microfinance group models or livelihood group models. Primarily, the government applied a top-down approach to invest in necessary activities in poverty reduction at a national scale.

Regarding integrated interventions, the NTP on New Rural Development (NTP NRD) has integrated the objectives on climate change, natural disasters, and poverty reduction and called for the participation of the community in implementing the program. Meanwhile, businesses will be an important stakeholder for the development of inclusive service solutions such as agricultural insurance and providing information to support decision-making process.

**Table 3.2. Participation of stakeholders in the implementation of measures**



*Source: Prepared by CAP/IPSARD research team (2017).*

## **The effectiveness of policy interventions and NGO’s initiatives in addressing the nexus of climate change, disaster and poverty**

### ***2.1. General assessment***

It is acknowledged that Vietnam is one of the most active and dynamic countries in the world that introduce a lot of policies and initiatives to address climate change, disaster and poverty in the past years. These policies and initiatives have contributed to the remarkable and constant poverty reduction and better disaster management in Vietnam as a whole. In the past 10 years, the poverty rate in Vietnam has decreased by 2.6 times to 5.8% in 2016. According to World Bank (2018), the risk of falling into extreme poverty has substantially declined. The percent of the population fell into poverty declined from 4% in the period of 2010-2012 to 2% in the period of 2014-2016. Almost all the households are classified as economically secure in 2014 remained non-poor in 2016. At the same time, the damage caused by flood and storms – the two most frequent disasters- is not recorded considerable. The last big damage caused by flood is recorded back to 2003 and storm 2005. On the other hand, climate change adaption is not shown very clear. It is only witnessed that traditional disasters are managed but new type of disasters have occurred in more severe and extreme manner, which is partly due to the climate change impacts, for example: the continuous typhoons since 2006 (Xangsane, Lekima, Kammuri, Ketsana, Son Tinh and Damrey), the drought and salinity intrusion in 2010 and 2016 that caused huge damage and current policies have not yet been able to manage.

**Figure 3.1. Poverty reduction against exposure and vulnerability index**

*Source: CAP/IPSARD research team (2017).*

Nevertheless, there are still a lot of poor people who are living in rural areas, mountainous areas and among ethnic minorities. These areas are the most exposure and vulnerable to disasters and extreme events and suffered a lot of damage in the past years. It is clearly shown that since 2010 when the triple nexus is considered to be integrated into policies, the ratio of poverty reduction is still completely opposite with the vulnerability index. This implies, to some extent, that the policies and initiatives, including disaster management and climate change policies, seem not to be successful yet in bridging the gaps between the vulnerable groups and others.

The recovering capacity from disaster of the poor is getting worse despite of many support policies. According to VARHS (2010-2016), the recovering pattern from natural disaster has been changing toward increasing trend in percentage of household not recover. This situation is more serious for the poor when more poor people cannot recover than other income quintile.

**Table 3.3. Recovery capacity of households**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2012-2014** | | | **2010-2012** | | | **2010-2008** | | |
|  | Fully recover | Partly recover | Not recover | Fully recover | Partly recover | Not recover | Fully recover | Partly recover | Not recover |
| Poorest | 43,00 | 28,02 | 28,02 | 35,85 | 49,69 | 14,47 | 48,02 | 41,81 | 9,60 |
| 2nd Poorest | 44,13 | 39,91 | 14,55 | 39,90 | 44,95 | 15,15 | 57,79 | 33,17 | 9,05 |
| Middle | 43,51 | 36,36 | 18,83 | 42,11 | 42,11 | 15,79 | 51,36 | 37,73 | 10,45 |
| 2nd Richest | 52,63 | 37,89 | 9,47 | 48,68 | 44,74 | 6,58 | 61,65 | 31,07 | 7,28 |
| Richest | 59,00 | 35,00 | 6,00 | 69,64 | 23,21 | 7,14 | 68,16 | 27,93 | 3,35 |

*Source: Prepared by CAP/IPSARD research team (2017).*

The prevalent cause is the absence or low effectiveness of policies. VARHS (2006-2016) shows that most households are self-reliant in dealing with the shocks. Though this percentage is reduced from 93% to 90% of the total households but still 90% on average. In addition, the informal mechanism is more favoured by the poor to cope with risks. Amongst them, the majority did nothing (39%-49%) and reduced consumption (38-62%). Following is using savings (9-17%), or getting assistant from relatives or friends (6-16%) There is an interesting point is households tend to increase their loans from relatives and friends while reduce borrowing from formal banking system. There was only a small percent of household getting insurance payment, approximately 1% in the period of 2006-2010 and increasing to about 4% in 2014-2016 (VARHS, 2006-2016).

Figure 3.2. Household copping mechanism to shocks

*Source: CAP/IPSARD research team (2017) calculating using VARHS.*

For the poorest households, they relied most on consumption reduction (40.46%), then sale of assets and assistance from friends and relatives (7.51% and 4%). This figure is higher than other income quintile. Also, the use of savings was less in the poorest income quintile (9.83 percent), which indicates that these households did not have much savings at their disposal for dealing with the shocks (VARHS, 2016). This situation implies that the shock impacts are more severe for the poor and the poor’s capacity to cope with risk is very limited though there are a lot of policies to improve the 5 household assets in the past years.

Table 3.4. Household risk copping mechanism by household categogies

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Did nothing | Reduced Consump-tion | Sold Land, Livestock, or other | Assistance From Relatives | Assistance from NGOs, Govt. | Got Insurance Payment | Bank borrow-ing | Other borow -ing | Saving | Other |
| **Total** | 49.25 | 37.81 | 6.91 | 16.96 | 3.77 | 4.15 | 4.27 | 5.15 | 13.19 | 5.78 |
| Poorest | 48.55 | 40.46 | 7.51 | 19.65 | 4.05 | 4.05 | 4.05 | 3.47 | 9.83 | 4.62 |
| 2nd Poorest | 49.02 | 36.60 | 5.88 | 15.69 | 3.27 | 3.92 | 3.27 | 5.88 | 14.38 | 6.54 |
| Middle | 49.34 | 39.47 | 6.58 | 14.47 | 3.29 | 3.29 | 1.97 | 4.61 | 17.11 | 6.58 |
| 2nd Richest | 49.39 | 37.80 | 8.54 | 17.07 | 4.88 | 4.88 | 6.10 | 6.71 | 13.41 | 5.49 |
| Richest | 50.00 | 34.42 | 5.84 | 17.53 | 3.25 | 4.55 | 5.84 | 5.19 | 11.69 | 5.84 |

*Source: CAP/IPSARD research team (2017) calculating using VARHS.*

### ***2.2. Models assessment***

The assessment of 22 activities/models agree with the general assessment that the effectiveness of policy interventions and NGOs’ initiatives in addressing the nexus in reality is still limited. Most of the policy interventions only address the double nexus but the effectiveness is not long term and sustainable, except for the NTP-NRD.

**The disaster policy interventions** have helped households to escape poverty in some cases, but not shown clearly the support to climate change adaptation. In recent years, the linkage between disaster and poverty reduction has been tightened. Poor and disadvantaged households are always priority target beneficiaries in disaster policies and vice versa, the poverty reduction policies also give priority to the poor in the disaster-affected areas. The support to poverty reduction of disaster policy interventions is mainly through improving the physical assets via dyke construction to prevent floods, resettlement for households in high risk areas, and build houses to avoid storms and floods. The dyke construction to prevent floods seem to help reduce poverty considerably. In An Giang, thanks to this construction, the farmers can shift from 1 crop of rice to 2 and 3 high yield crops of rice. Even some household have managed to shift to fruits which bring about 10 times of income more than rice. However this intervention has reduced the flood retention capacity of the area, increasing the water level and speed of flows in some downstream provinces that leads to riverbank erosion and flooded in the downstream cities. In addition, it prevent the replenishment of soil with sediment and for a long time leading to land degradation and pollution. This situation, in turn, in the long run can create negative impacts on people’s livelihood and poverty reduction efforts through diminishing natural assets.

According to resettlement program, by 2015, An Giang has built 244 residential clusters, more than 39,975 households have built houses; Yen Bai carried out 32 relocation projects from high risk areas to safer areas, with 4,243 households relocated to safe places; Ca Mau is developing 30 residential clusters to relocate the population; 119 households are relocated in Tra Vinh from 2016 to 2017; Ninh Thuan has completed 05 projects (01 centralized project and 04 mixed projects), settled cultivation and resettlement for 290 households/1,053 people (DARDs). Through improving physical assets, these residential clusters and houses really support disaster prevention, at the same time help people escape from poverty list due to satisfying the criteria of housing. However, this success is not sustainable and in some cases put the households in more difficult conditions later on due to creating the imbalance of livelihood assets. Except for housing, usually, the people are not supported with other assets and livelihood alternatives. In the new place, the people often loose income due to living far from their working place or even loose their job. Some are in debt due to their housing construction. In Dat Mui, Ca Mau, the people decided to return to their old places.

The other interventions are mainly on-the-spot support or post-disaster relief mainly improve human and financial assets that do not show effectiveness in poverty reduction in the studied models.

**The climate change policy interventions** implemented in reality are limited to awareness raising, infrastructure construction and crop calendar shifting. They seem not to have a lot of impacts on poverty reduction but to some extent help disaster prevention through infrastructure construction.

Up to now, most of the resources for climate change response activities are focused on infrastructure development (dykes, dams and roads), accounting for nearly 90% of the expenditure for climate change response (MPI & WB 2014). In the plan for responding to climate change in provinces during the period 2011 - 2015, the activities and resources for the construction of infrastructure accounts for the majority. For example, Ca Mau has 24/29 projects which are implemented to build embankments, roads, anchorage and residential areas; 2/4 projects in Yen Bai aiming to prevent landslide and build reservoir (the remaining two projects are transition steps including the building of an action plan to respond to climate change in Yen Bai during the period 2011 -2015 and the establishment and strengthening of the National Steering Committee for Responding to Climate Change); 93% of program funds in An Giang focuses on solutions for construction (DoNREs). Nevertheless, limitation in understanding the difference between climate change and natural disaster makes most of these works are more for natural disaster prevention rather than climate change adaptation purposes. Therefore, this intervention shows effectiveness in disaster prevention more clearly than climate change adaptation itself in the studied sites. Meanwhile, the crop calendar shift helps the farmers to avoid loss from impacts of climate change but does not really help with poverty reduction nor disaster prevention.

**The poverty reduction policy interventions** have helped to reduce the level of exposure to natural disasters of the studied models thanks to the comprehensive support to improve the 5 household assets and target the most affected areas and people. However, the effectiveness of climate change adaptation is not shown.

The most obvious poverty reduction intervention that helps disaster prevention is the support to improve physical assets of the poor households to respond to floods in the North Central and the Central Coast. Up to now, this policy has supported to build and repair housing for over 531 thousand households, including 230 thousand ethnic minority people[[3]](#footnote-3), completed supports to construct 700 shelters to avoid and prevent floods. Different from the housing support in disaster prevention policies, this intervention is integrated with other supports that improves other types of household assets such as human assets so it helps poverty reduction more sustainable. However, still the issues of indebtedness exist.

Other support to improve other household assets such as health insurance, tuition fee reduction, agricultural extension and technical transfer, land allocation, credit support, employment support...are said to help the people better recover from disasters but not really help them in disaster prevention. In addition, they do not show effectiveness in climate change adaptation.

Of the integrated policies, the NTP-NRD proves to be a good framework to address the triple nexus effectively. The model of Tan My-An Giang was awarded the certificate of new rural development as it has successfully fullfil all the required criteria. Among the criteria, Tan My has infrastructure that can resist to disasters, the production system is climate change adaptive and the poverty rate is reduced. The NTP-NRD does not have big resource and has its own problems but it creates a framework to mobilize different resources to address all 5 household assets in order to meet all the criteria including the CC-D-P nexus.

**On the contrary, the initiatives of NGOs and community prove to be more effective in addressing the double nexus and some initiatives can address the triple nexus; however, most of them are at small scale**

To cope withdisaster, besides the policy interventions, the people and community in some cases decide to migrate or shift to non-agricultural work which helps address the CC-D-P nexus, though the sustainability is still of concern. Employment shifting is more popular in high climate risk provinces such as Tra Vinh, Ninh Thuan where people switch to construction work or hired labors. Labor migration is also the solution of the community in some areas in Tra Vinh; in some areas in Dak Lak the rate of labor migration are very high (about 50% of labors). In the short run, this initiative helps them to avoid disaster and climate change risks, at the same time earn higher income to escape poverty. However, the people interviewed confess that their work is not sustainable. Many of them go to informal sector for employment and face a new set of risks associated with employment instability, health problems, and labor safety.

More effective initiative of the community in addressing the nexus of climate change and poverty reduction is the transformation of crop & livestock structure. Until now, Tra Vinh has transformed 30 thousand ha of 2-3 rice crop lands into rice-shrimp production land; transform 10.500 ha rice land into upland crops land. In An Giang, 30,130 ha of low-effective rice land has has been transformed in to land for other crops and vegetables, 9800 ha into fruit tree land. In Ninh Thuan, from 2015, 3,089 ha of rice land has been switched to grapes, watermelon, greenbean, corn and grass for animal feed. In Yen Bai, models of switching from rice to other upland crops are also implemented. The effectiveness on climate change adaptation is mainly through the improvement in natural capital, resulting in better adaptive cultivation system and greenhouse gas reduction. By improving financial capital, the models have increased twice the profit as rice cultivation while making use of by-products for animal feed purposes (Ninh Thuan DARD). The transformation of rice land into mango land offered 10 times profits as per discussion with farmer group in An Giang. The shrimp-rice model also offered 2-3 times profits compare to rice cultivation, at 60-70 million dong/ha/year (Tra Vinh DARD). Human and social capital, the indigenous knowledges and community initiatives have been strongly promoted. This solution was supported in most provinces in developing concentrated and large sourcing zones and promoting the formulation of cooperatives, such as Mango Cooperative in An Giang, Vegetable Cooperative in Ninh Thuan, etc, that accelerates poverty reduction sustainably and creats employments effectively for rural areas.

The application of CSA is an effective and long-term solution to cope with climate change and at the same time increase income for the people. New cultivation techniques, such as SRI, 3G3T, 1P5G, IPM, AWD (Alternate Wetting and Drying), has become more and more popular. Typically, An Giang had over 200,000 hectares of rice applying 3G3T, with more than 165,000 households involved. Approximately, 38.5% of ​​paddy rice area in An Giang is applying AWD, 534 demonstration places applying 1P5G as a basis to mobilize farmers’ participation. Tra Vinh province has also integrated 3G3T and IPM practices into the Large Scale Rice Field Model and organic rice production with the area of over 100ha. The SRI model has been piloted in five over six surveyed provinces, including An Giang, Ca Mau, Tra Vinh, Ninh Thuan and Yen Bai. Water efficiency has been applied in Dak Lak (coffee) and Ninh Thuan (dry crops). Biogas models have been implemented in livestock production in most provinces. These techniques help reduce cost and raise income for the people.

The other typical initiatives of NGOs that can address the triple nexus is the community-based climate change adaptation and disaster risk reduction (CBCCI) and Ecosystem-based adaptation (EBA). Regarding the CBCCI, it has been considered by both Vietnamese and international NGOs as an effective solution to climate change, disaster risk reduction and at the same time create income opportunities for the people. CBCCI attracts communities to actively participate in solutions to cope with climate change and natural disasters and sustainable development in long term with low cost. CBCCI includes a number of models such as insurance, microcredit; community-based mangrove planting; enhance embankment in order to build houses; storm shelter model in the central provinces; vegetable cultivation model on exalted ground; planting vegetables and flowers on the floodplain; construction of public works on high ground; core house model, etc. with the combination of comprehensive measures on livelihood assets (infrastructure, awareness, science, indigenous knowledge and ecological system development, community organization development). The community is at the center of CBCCI.

Similarly to CBCCI is the EBA which uses natural systems and ecosystem services as an important component of the overall strategy to help humans adapt to the adverse effects of climate change. The purpose of the EBA is to increase the resilience of communities and ecosystems through specific activities such as management and conservation of natural resources, etc to maintain and restore the integrity of ecosystems and the benefits that ecosystems provide. Thus, it helps the people adapt to the negative impacts of climate change, reduce their vulnerability and improve their resilience, and at the same time, brings economic benefits to the people via a comprehensive support for livelihood assets. So far, the EBA has been identified as an effective adaptation measure in the context of climate change.

Despite of its advantages, CSA, CBCCI and EBA are still in the framework of NGOs’ project with small scale.

## **Constraints and gaps**

The limited effectiveness of policy interventions and NGOs’initiatives in addressing the nexus are due to the following constraints and gaps

*The Climate change-Disaster and Poverty nexus is newly introduced in Vietnam*. The nexus integration into policies started since 2001 with the sustainable development policies but only until 2011 did it integrated widely in other sector policies and only until 2013 and 2016 are there guidelines on integrating disaster management and climate change into SEDP. There is always time lag from the policy formulation to implementation, thus, it is required a period of time for the nexus to be really integrated and effectively addressed in implementation.

The Climate change-Disaster and Poverty nexus concept is quite new and even the policy makers and other stakeholders are not yet well aware of how to do. Only 5 out of 19 policies reviewed mention the nexus in objectives and only the NRD has monitoring and evaluation indicators mentioning the nexus. At the same time, the nexus integration shown in the policy interventions and initiative is quite vague, which normally state that the interventions should ensure disaster management or climate change adaptation or poverty reduction but not really show the connection among them in the real context and how to do. This really challenges the implementation and appears that the nexus is incorporated into policies and initiative design mechanically without clear intention.

*The development of policies are not yet accompanied with institutional reform.* The institutional arrangement is still the same as long time ago where each ministry is separately in charge of their own programs and resources. The planning is mainly top-down and the beneficiary is not the real owner of the process. In addition, the capacity of related parties is limited. Most of the government staff take concurrent tasks and have very little incentives due to low salary and allowances, lack of working facilities, etc. Most of studied provinces do not have staff specialized in climate change. Therefore, the integration of nexus in planning and implementation is poor even if the policies and initiative design are good. Except for the NDP, almost all policies do not have a clear monitoring and evaluation indicators and system that can monitoring and evaluation the nexus. It is challenging to analyze how the policies have addressed the nexus in reality.

*Policies and solutions are lack of linkages and synchronized on the same subject, on the same space and time.* Communities/households may receive different supports but they are not connected properly. For example, survey results in Dat Mui and An Hai commune show that housing assistance and resettlement solutions only support residential land and a small amount of money for construction, without linkage with vocational training policies and alternative livelihoods development. Disaster management focuses on response in short time, without long-term solutions. Most of CSA models lack market supports, CSA integration in agricultural vocational training programs is limited, and the applicability is low. In Eawer, EaNuol (Dak Lak) and Don Chau (Tra Vinh) commune, there are high risks of natural disasters, inefficient production land, 60-70% of workers have to work in other areas or switch to other jobs. However, the vocational training is still the same without oriented and supportive policies.

*Lack of classifications of the targeted group leads to a uniform application of policies on the beneficiaries with different characteristics, thus, undermine the utilization of households and communities’ resources.* The survey shows that the majority of poor households are ethnic minority households, landless households, displaced households, many-children and elderly households, and single women. It can be divided into two groups, including (1) the group which is capable of developing and escaping from poverty (labor, capital goods); and (2) the group which is unable to escape poverty (the elderly, the disabled, the handicapped, etc.). The application of same solutions to these two groups causes the resources to be fragmented and lack of concentration. Meanwhile, the spread of support resources lead to a smaller value of support which is insufficient for households to escape poverty.

*As usual, most interventions focus on physical assets and production technical knowledge.* Some other important aspects are not yet paid attention to. This constrains the impacts of policies on the nexus. For example, the climate change policies promote CSA but no interventions on market promotion for CSA products mentioned while investing in CSA is high. In this situation, CSA may not help poverty reduction. Meanwhile, NGO initiatives show that social capital and human capital are the basis of actions that not only aim to escape poverty but also ensure long-term sustainable livelihoods for households. Different from policies, NGOs’ initiative are often based on the establishment and operation of a microfinance group, a village financial savings group (VSLA), and a livelihood development team to promote social capital and capacity building activities to create a platform to integrate poverty reduction, livelihood development, women's voice, climate change adaptation, and disaster risk reduction. Thus, the interventions of NGOs are now on the whole community, involving and mainly based on internal resources to ensure sustainability.

*Policy implementation is difficult to access; supports are not enough to generate significant impacts.* Many people interviewed do not know what policies they are eligible to benefit and in fact, in some cases, they do not receive the policies. For example, most interviewees did not receive information nor directly involved in any training courses on flood prevention and natural disaster risks mitigation.

The state budget is shrinking while ODA is shifting from grant to loan and many donors have shifted from ODA to mixed financing, including both funding and commercial loans associated with other conditions. Thus, the resource for policy implementation is limited. Most of support interventions are designed very low that is not sufficient to incentivize the people to change. For example, the support for housing is only from 900$-1000$ cash and the loan size is only around 700$ that meets only half of the financial requirement for housing. The people may have to take unofficial loan and fall into debt. This type of policy may help address disaster management but cannot help with poverty reduction (Dat Mui commune-Ca Mau province, My Dong commune -An Giang province, An Hai commune -Ninh Thuan province). Support for seedlings only meet about 10 per cent of requirements that is insufficient to help people recover and reproduce.

*There is lack of mechanisms to attract the participation of the communities, enterprises in both the consultation and implementation process of policy interventions and initiatives*. Although current policy solutions mentioned the need of promoting the role of communities (for example, as regulated in the Law on natural disaster prevention and control, natural disaster prevention is responsibility of the whole society), however, the implementation of this law is still considered as tasks of the government system without proper community participation. Survey results show that community participation, especially in responding to climate change is very limited. This is due to the following reasons: (i) the communities’ capacity is limited because they are not equipped with the necessary knowledge and skills; (ii) in some cases, communities has not been involved in supporting policies, such as the case of immediate relocation in My Hoi Dong commune (An Giang), thus, this solution did meet the needs of local people; (iii) lack of a mechanism to engage the communities’ participation in the consultation and implementation process of solutions. For enterprises, policy solutions for production have not been linked to market solutions, which makes small production areas cannot form value chains and restrict their participation. At the same time, the PPP mechanism is not strong enough to encourage enterprises to invest in extending supporting services such as credit, insurance and information.

*Lack of scientific basis and decision supporting tools to integrate activities on a same subject at the local level.* The objectives of poverty reduction, climate change adaptation and natural disaster reduction are all integrated into the socio-economic development plans at all levels. However, this integration is blurred due to the lack of scientific basis. There is no reliable localized analysis on the relationship between climate change, disaster risk, and poverty reduction, leading to separate implementation. Our survey shows that the main causes that limit the integration process are the lack of a reliable database on climate change impacts and forecasts, and disaster at local level. There is also a lack of mechanisms to integrate available resources from programs and projects into the implementation of climate change adaptation solutions and lack of qualified staffs who have rich knowledge on climate change. At the community level, most of the surveyed models do not have localized and regularly monitored short-term, long-term forecasts on climate change and natural disasters for effective integration. Most of these constructions are not linked to the Vietnam climate change scenario and still apply old technical standards in construction. Therefore, most of these constructions do not have a climate change adaptation intuition. Nonetheless, NGOs' initiatives pay more attention to this content, for example, in Vinh Kien commune (Yen Bai), weather information is updated on the 6:00 am. newscasts, providing weather forecast for the local, a library is also set up to provide information about CSA, climate change and disaster presentation.

*Lack of risk management mechanisms to support adaptive livelihoods for households*. Agricultural insurance is an effective tool for enhancing the resilience of agriculture and agriculture-dependent households through risk financing in agricultural production. However, the agricultural insurance market has not been promoted due to the lack of regulating legal documents.

*NGOs’ initiatives have not been replicated due to the lack of linkage to policy*. The approaches of NGOs such as community-based and ecosystem-based approach are more solid, effective and sustainable. However, due to resource limitation, these activities often have small scale and only operated in a short-term, leaving the risks of unsustainability after the end the projects. In addition, the connection between NGOs and local authorities is generally weak, leading to difficulties in maintaining the models after the end of the project; policy advocacy have been weak, a lot of activities are very well appreciated but lack of solutions to integrate into policy. Even, due to implementation based on the project, many NGO’s projects have no advocacy component.

## **Ability of implementing and integrating solutions to link climate change, natural disasters and poverty reduction in localities.**

To evaluate solutions and linkage among such solutions, we used the MOTA[[4]](#footnote-4) analysis framework to evaluate these solutions in the scale of 1 to 30, including three main indicators:

* Performance: Ability to enhance tolerated livelihoods of households through effects on livelihood capital
* Feasibility or motivation: The level of consistent with policies and institutions
* Adoption or capability: Ability to receive and implement solutions of the community

**Table 3.5. MOTA assessment for solutions in localities**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Activities/Models** | **Performance** | **Feasibility** | **Adoption** | **Total** |
| 1 | Relocation and resettlement policies | 1 | 10 | 5 | 16 |
| 2 | Support to build houses against floods and storms | 1 | 5 | 5 | 11 |
| 3 | “Four on-the-spot” motto models | 5 | 10 | 5 | 20 |
| 4 | Post- disaster supporting policies | 5 | 10 | 1 | 16 |
| 5 | Building disaster prevention structures (dikes, dams, and shelters) | 1 | 5 | 5 | 11 |
| 6 | Social protection policies in the events of natural disasters | 1 | 10 | 5 | 16 |
| 7 | Spontaneously job change and migration of households | 5 | 1 | 5 | 11 |
| 8 | Building adaptation structures (irrigation systems, embankment) | 1 | 10 | 5 | 16 |
| 9 | Land and forest allocation policies | 5 | 10 | 10 | 25 |
| 10 | Production system transformation + local land use change models | 10 | 5 | 10 | 25 |
| 11 | Adjusting crops schedule models | 1 | 5 | 10 | 16 |
| 12 | Community-based  climate change initiatives | 10 | 1 | 5 | 16 |
| 13 | Climate smart village (CSV) models | 10 | 5 | 10 | 25 |
| 14 | Climate Smart Agricultural models | 5 | 10 | 5 | 20 |
| 15 | Vocational training and job creation policies | 5 | 10 | 5 | 20 |
| 16 | Poverty reduction programs in poor communities (loans, education, healthcare, basic services) | 10 | 10 | 5 | 25 |
| 17 | Social protection policies for disadvantaged groups | 1 | 10 | 5 | 16 |
| 18 | Micro-finance group (CBCCI) models | 5 | 5 | 10 | 20 |
| 19 | LEG livelihood group (CBCCI) models | 10 | 5 | 10 | 25 |
| 20 | NTP for NRD | 10 | 10 | 10 | 30 |
| 21 | Providing information for decision-making process services | 10 | 5 | 10 | 25 |
| 22 | Agricultural insurance models | 5 | 10 | 10 | 25 |

*Note: 1-low motivation/capability; 5-medium motivation/capability; 10-high motivation/capability*

*Source: Prepared by CAP/IPSARD research team (2017).*

Implementing the NTP for NRD is currently the best solution to connect climate change, natural disaster, and poverty reduction policies. In addition, other effective solutions are land and forest allocation policies, Production system transformation + local land use change models, integrating climate smart village models with climate through establishing a close CSA production system, integrating solutions into poverty reduction programs, applying community-based models, support the development of information services for decision-making, and agricultural insurance.

# Chapter IV. recommendations FOR ADDRESSING POVERTY, DISASTER AND CLIMATE CHANGE NEXUS THROUGH RESILIENT LIVELIHOODs

# CHAPTER 4

## **1. Viewpoints on the linkage between climate change, disasters, and poverty**

Disasters and climate change are associated with poverty through the loss of lives, assets, and income sources of the poor and vulnerable groups (poor farmers, the elderly, children, women ...). Moreover, poverty is a major obstacle to climate change adaption and disaster prevention because the poor households are more vulnerable. Therefore, strengthening the nexus between climate change adaption, disaster prevention and poverty reduction (CCA, DP & PR) is an urgent matter in order to improve resiliency and ensure sustainable development goals. From the research results, strengthening this nexus should be based on the following points of view:

* Strengthening the CC-D-P nexus is a comprehensive approach to sustainable socio-economic development.
* Strengthening the CC-D-P nexus should increase resiliency via a balanced development of households’ livelihood capita.
* The community is the beneficiary and the subject of implementing the CC-D-P nexus, the government plays a guiding role, enterprises promote the nexus through appropriate supports.
* Strengthening of the nexus should mobilize all available resources and consider communities as the central subject.

On this basis, in order to strengthen the CC-D-P nexus, Vietnam needs to overcome obstacles and deficiencies to create necessary conditions for integration, including (i) awareness; (ii) legal framework; (iii) institutional or mechanism to coordinate related organizations and individuals; (iv) resources (financial and human); (v) science and technology. Also, creating sufficient conditions for integration, including: (i) the power of will, responsibility and capability of the leaders in the integration and their creativity, flexibility, and innovatory in planning and implementing; (ii) capability to integrate programs, policies and projects on climate change adaption into socio-economic policy making processes and short-term and long-term goals; (iii) capability of the planning officer to identify and address the underlying causes of vulnerability; (iv) strong and long-term commitments among stakeholders; (v) innovation in development thinking in the context of climate change and disasters.

## **2. Recommendations for addressing the climate change, disaster and poverty nexus through resilient livelihoods**

***Accelerating integrating climate change, disaster and poverty reduction into socio-economic development planning at the implementation phase***

Research results show that the effectiveness of the current integration is hampered by many factors, such as inadequate guidance, limited implementing capability at the local level and overlapping and spreading in management. As a result, the lower the level, the more the limitations. In our view, the most important levels of integration are the commune level and the community level. At these level, we can mobilize and utilize resources directly from local communities to meet the urgent needs at the community level, to minimize risks and vulnerability. Therefore, a bottom-up planning process (community-to-central) is the most appropriate. Thus, the integration and addressing obstacles and challenges should also use a bottom-up approach, looking forward to enhance the balance between household livelihood development goals, local socio-economic goals, and national targets for climate change, disaster prevention and poverty reduction. On that basis, the policies and solutions will be more effective.

With this approach, NGOs’ initiatives in successful models using community-based and ecosystem-based approaches to improve resiliency and recovery capability of communities are good lessons and need to be recognized and integrated into policy solutions. Not only that, community values ​​and perceptions also influence climate change adaption and disaster prevention and they can be a part of sustainable development through the utilization of indigenous knowledge, culture and experience in dealing with climate change and disasters.

To accelerate the integration between CC-D-P nexus with socio-economic development planning in the implementation process, we propose the following solutions:

*Developing guidelines for integrating CC-D-P nexus at the commune level.* In particular, reviewing local solutions and implementing resources to connect them with these following main contents: (1) linking the goals of direct solutions at community and household levels to ensure the balance between the goals of stakeholders (Government, NGOs, communities and households), in which strengthening resilient livelihoods for communities/households is the central objective. The objectives of CC-D-P nexus social protection, agricultural and rural development should be integrated in a scientific method based on the conditions of each commune and community; (2) linking implementing activities to reach an united scope, target and time, ensuring sustainable development, minimizing the vulnerability of the targeted groups; (3) linking resources, the allocation of resources should be based on the subjects and contents of interventions, and mobilize communities’ internal resources and with the involvement of the private sector. For example, for commercial production zones, it is necessary to focus on solutions to improve the adaptability of agricultural production systems and market development through linkages with enterprises. Meanwhile, small-scale production areas with high risks of natural disaster and climate change impacts need to focus on solutions to create jobs and diversify income sources. (4) Linking participating stakeholders through enhancing vertical integration of information. Evaluate and classify household groups in communities to have specific intervention solutions for different targeted groups.

*Better decentralizing and empowering at the implementation phase*. Commune governments and communities have the best understanding of the impacts of climate change, natural disasters, as well as the situation of local livelihoods and poverty. At the same time, they also directly implement supporting measures for communities and households. Therefore, the role of the locality is very important not only in the implementing but also in the planning phase. As a result, it is necessary to strengthen the responsibility and role of local governments at all levels and communities in integrating development goals in the context of climate change and natural disaster risks. On the one hand, it is necessary to reduce the rigidity of the guiding documents and the directing work of local leaders. On the other hand, local leaders need to strengthen their innovation, initiative and proactiveness in planning and implementing local activities by establishing feedback channels and rapidly adjusting policies at this level. They also need to be more flexible in allocating resources to optimize investment efficiency and achieve sustainable development. In addition, it is necessary to promote the participation of social organizations in supporting, evaluating, monitoring and feedback. The overlapping and being unconnected among the activities of social organizations (Women's Union, Farmer's Union, Youth Union, etc) should also be addressed in order to achieve the common development goals of the localities.

*Local socioeconomic development plans must contain comprehensive and linked solutions according to the natural, economic and cultural condition of localities.* Individual solutions might have positive results, however, they fail to maximize the utilization of resources. Therefore, it is necessary to evaluate and introduce comprehensive, unified, and long-term solution packages which have balanced impacts on households’ livelihood capita. On that basis, the proposed solutions (application of science and technology, crop as well as animal husbandry restructuring, forest development, resettlement, housing support for poor households, vocational training, etc.) must unify the most common goal in the same community. The reason is proposing appropriate support measures integrating livelihoods at the household level with the ecology of the area and improving the vulnerability of the household.

Figure 4.1. Contents need integrating to improve livelihoods and resilience at the household level

*Source: CAP*

*Focusing on improving capacity, supportive information and evaluating indexes for the development and implementation of local socioeconomic development plans.* There is a need to reviews and evaluate regions and areas to provide scientific evidence for the implementing governments, thus, improving the capacity of government leaders as well as implementing staff of developing an integrated development plan. Developing indicators for monitoring and evaluation in each period to propose necessary adjustments.

***Focusing on enhancing human and social capital, capacity building, voice and participation of communities***

In the livelihood capita, solutions that affect financial, physical and natural capital will have more immediate results. For example, financial support can help households get out of poverty quickly, and solutions involving building facilities can help reduce disaster risks exposure and directly assist production. However, these impacts may not last in the long run, especially when external supports (government, NGOs) are limited. Therefore, while having slower results, interventions on human capital (awareness, knowledge, and skills) and social capital (participation, status, and community solidarity) create a solid foundation to ensure sustainability and promote the internal strength of communities in the implementation of livelihood improvement solutions.

The results of this study allow proposing a number of measures to increase human and social capital including:

*Organizing and strengthening communities to develop community’s spirit, creating a basis of communities*. Initially, it is necessary to review and evaluate local communities to integrate community development solutions into the NTP on NRD. These solutions may be based on NGOs’ initiatives, such as the establishment of livelihood development groups, village credit and savings groups, disaster prevention groups, or village culture groups. Thereby, looking forward to building communities with targets and subjects to create community-based activities, promoting community’s strength as well as the strength of each individual in the community.

*Integrating community-based goals with activities through raising awareness and capacity.* It is necessary to improve the capacity of the community in developing resilience livelihood base on livelihood capital at the grassroots level. Targets and activities on CC-D-P nexus, resources management, gender equality, and etc. should be properly combined with the activities of these communities in order to raise the awareness, knowledge and skills of each household as well as the connection between households in the same community. Raising public awareness is a core requirement for proactively implementing integrated solutions to promote indigenous knowledge in the planning and implementation process. Hence, the maintenance and development of community-based disaster risk management programs is necessary and becomes an integral part of the overall development strategy. Raising awareness and changing people’s behavior using different forms of education and communication, indicating the CC-D-P nexus.

*Increasing the participation of communities in developing and implementing development plans*. It is necessary to develop transparent mechanisms and procedures to mobilize the participation of communities in developing and implementing integrated socio-economic development plans. The government should transfer monitoring and evaluation process to communities and recognize their evaluation as an official result. Contents related to community development should be included in the criteria 16 of the NTP on NRD to promote the participation of the community in development activities. Encouraging people's participation in the process of disaster risk management and climate change adaptation in livelihood strategies at the household level.

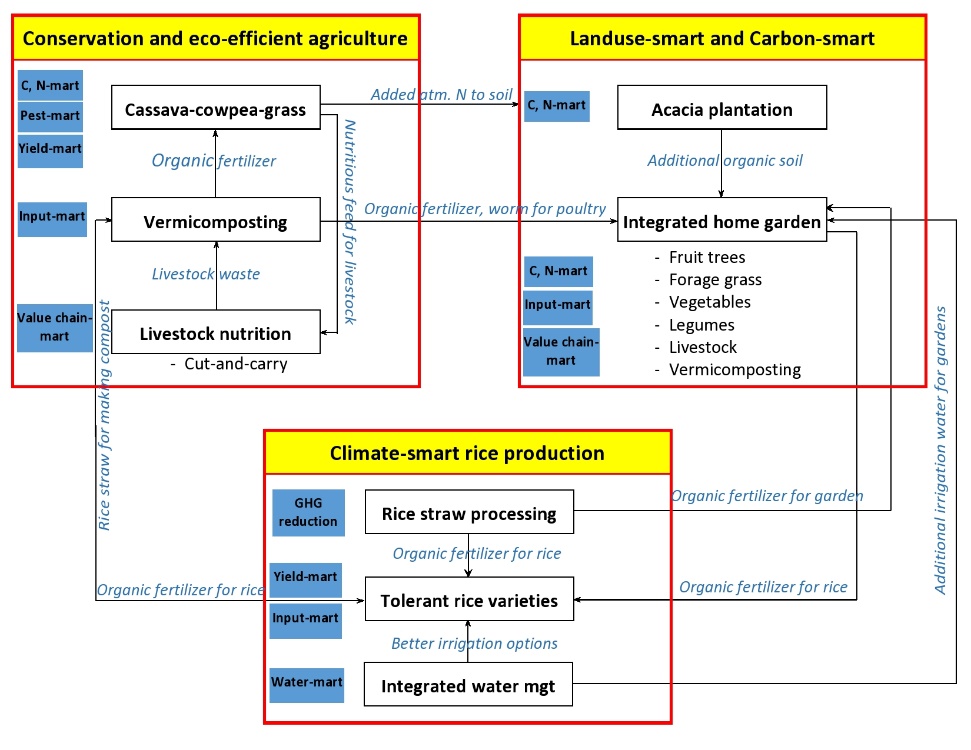
*Encouraging and prove community initiatives to increase their status and voice.* Community solutions, such as transforming production system, changing job or labor migration should be evaluated and practical solutions should be proposed to bring into play community initiatives according to natural, economics, and social conditions. Providing knowledge on climate change and natural disasters so that communities can themselves propose solutions with support from the governments and scientists.

***Effective management of natural resources and improving natural capital through the development of CSA***

CSA has proven to be economically, socially and environmentally effective after a long period of implementation. However, in order to improve tolerance at a higher level (community, commune, region), it is necessary to develop an effective and tolerant agriculture system.

As mentioned, climate-smart village (CSV) can be used as a model for linking CSA solutions to the establishment of intelligent farming systems. This connection will not only help to adapt and mitigate climate change, increase the efficiency of agricultural production and resource exploitation, but also to prevent cope-able natural disasters (drought, frost, saline intrusion, landslides), and at the same time, create rural landscapes and reduce pollution, especially in livestock production.

**Figure 4.2. Linkage of CSA measures to establish the closed farming system at Ma village**



*Source: CCAFS (2017).*

From the potentials of the model, we propose the following solutions for replicating and up-scaling these models:

* Review and evaluate CSA models on a national scale and propose suitable implementing solutions for each region/sub-region.
* Evaluate and propose CSA solutions according to natural, socio-economic conditions of each locality.
* Document approaches and measures to establish a closed CSA system as guidebooks for communities.
* Pilot integrating and replicating CSA models in the NTP on NRD to implement income, environment, irrigation criteria. Thereby, making closed/smart agricultural system an important trend in developing an adaptive rural area, thus, to be up-scaled in the following period from 2020 to 2025.
* Strengthen the linkage between sub-sectors (crop production, livestock, fisheries, and forestry) in agricultural development planning based on adopting the closed/smart agricultural systems.

***Strengthening financial capital through promoting income effectiveness and linking with microfinance solutions in order to enhance physical capital of households***

Income and savings determine the improvement of household’s physical capital (housing and other assets), meanwhile, income is determined by investment and productivity of households. Therefore, strengthening the financial capital is a key issue. According to the research’s results, solutions are proposed as follows:

* Promote adaption models and models that increase the profitability of agricultural production, through a more comprehensively combination of market and technical solutions in communities and households production models.
* Diversify income, create more job by adjusting the objectives and approaches of vocational training and rural career development programs. In particular, priority should be given to the areas with high vulnerability to natural disasters and high poverty rates. Connect with enterprises to ensure that trainees are employed after graduation.
* Increase the accessibility of investment capital through the development of microfinance services in the disadvantaged regions, associated with training on capital usage and management for borrowers. Provide policies of support and calling for investment by businesses, foreign and domestic banks. The Vietnam Women’s Union and TYM organization should be the focal point for the development of this service.
* Improve the effectiveness of credit for the poor programs by integrating them in production solutions at localities.

***Developing information systems to support decision-making for communities and households***

Information and information transmitting systems to the communities/households are currently a great weakness, especially information that can support communities/households to make decisions in production and adaptation, resulting from a limited public information infrastructure. Therefore, the involvement of enterprises in this system would benefit a wide range of stakeholders including the government, enterprises and local people.

*Developing a database on natural, environmental, socio-economic conditions specific for each sub-region.* Provide a theoretical and practical basis for each sub-region and specifically targeted groups, classified by vulnerability and livelihood resources of households to provide directions for interventions through policies and programs.

*Developing the systems of real-time information, forecast on climate change risks and natural disasters specific to each sub-region and early warning system by means of telecommunications and local and community systems*. There is a small number of meteorological stations (173 Radios/Stations[[5]](#footnote-5), reaching averagely 1,400-2,000 km2/station (according to EU standards, it needs 200 km2 to achieve a resolution of 20 km). They are operated by semi-automatic technology and primarily to collect data for disaster prevention and climate research with an extremely low frequency of 2-4 times per day (while standard frequency is one time per 5 seconds to maximum 6 minutes). Thus, the weather information only meets the need of an emergency response. To address this problem, smart weather stations with low cost and involvement of enterprises should be promoted in order to establish an adequate information system for each region/sub-region to directly support production activities of local people.

*Analyzing and providing people/community friendly consultation on production and adaption to support decision making*. To enhance resilience at the community level, there are two forms of the most essential information including weather forecasts and alerts, and production-oriented information for households. Production-oriented information (market, diseases, etc.) is currently limited and delayed affecting the production decisions of farmers. Meanwhile, weather information is inadequate to support households making decisions in agricultural production. Therefore, development of the information service to support decision-making by the application of information technology is necessary and appropriate. Currently, there are a number of enterprises adopting M2M technology in agriculture to bring smart and efficient agriculture solutions. Some examples include using mobile phones to provide extension news through SMS, websites/wapsite, fan-page, extension switchboard. The daily updated information will significantly increase farming system’s tolerance to changing weather and market. These activities should be associated with the supporting policies of the government. Strengthening the capacity and the role of extension systems, mass organizations in the dissemination of information and techniques for people, associating with enterprises to provide prompt recommendations for communities and needed households.

***Encouraging private investments to diversify and increase resources, resolve bottlenecks on market, science and technology***

The government should focus more on appropriate policies to attract private investments in the linkage of climate change, natural disasters and poverty in the long term. Enterprises have great potential to participate in the following topics:

*Developing appropriate services to enhance resistant livelihoods to households and generating profits for enterprises.* These services may include: warning and monitoring of weather, pets/diseases and market price; technical and market consultancy for farmers in production activities; investments and exploitation of irrigation systems for production; development of agricultural insurance. However, there should be appropriate policies to support the development of these services, and PPP is the optimal solution for the development of these services in the future.

*Promote the application of technologies in agricultural production,* through the implementation of preference on land, taxes and credits to attract the investment of enterprises in modern agricultural production technologies transfer (e.g. building smart farms and greenhouse, etc.) in order to increase agriculture production value as well as mitigate weather risks. To do this, investment attraction policies should be adjusted towards more an accessible and practical approach.

*Developing market and value chains, increase the value of products, especially CSA products.* Enterprises play a leading role in the agricultural value chain. Thus, in addition to an interest in technical solutions and establishment of production sites, investment incentive policies should pay attention to CSA products to encourage farmers to adopt and develop a market in the extremely disadvantaged and climate change vulnerable regions.

*Create more job opportunity for climate change and natural disaster vulnerable regions or high poverty rate regions.* The lack of linkages between vocational training contents and the needs of employers need to resolve through encouraging a stronger involvement of enterprises in the current vocational training activities. Direct support policies are needed for enterprises to employ local people at the recommended areas.

***Promote risk financing mechanisms, especially agricultural insurance***

Risk financing tools, such as insurance and disaster bonds, aimed at diffusing economic loss from one person to other people, it provides a compensation in exchange for a payment, usually an insurance fee (IPCC, 2012). In Vietnam, research on risk financing tools are still in a beginning phase, and it has been applied in sectors which are vulnerable to natural disasters and climate change. However, there are many difficulties in the implementation of these tools. To enhance the tolerance for agricultural/rural livelihoods, the government needs to focus on these following risk management mechanisms:

*Developing agricultural insurance and micro-insurance,* international experiences (USA, Spain, South Korea, etc.) indicate that insurance is an effective tool for dealing with agricultural and ensuring social security, raising awareness of proactive risk prevention, precaution, reducing losses, promoting the application of science and technology, increase accessibility to credit, and promote cooperation between farmers. From 2011 to 2013, the government implemented the National Agricultural Insurance Pilot Program in 20 provinces for rice, livestock and fisheries. After the termination of this program in 2014, there has not been another program, therefore farmers still rely on the government’s subsidies when affected by natural disasters.

The IPSARD’s assessment (2017) shows that major bottlenecks in the development of agricultural insurance are: (1) identifying a suitable agricultural insurance model for the current situation of Vietnam to ensure the accessibility of people, reduce insurance premium and increase profit of insurers; (2) supporting policies are not strong enough to help insurers sustain market in a certain period of time (3-5 years), since after that period of time, the market begins stabilizing and the insurance principles (e.g. the many compensate the few) will take effect; (3) identifying suitable products for the development of agricultural insurance in an appropriate pathway. Lessons learnt from the Pilot Program showed that the application of insurance on fisheries was extremely risky which affected the results of the whole program, although the insurance application on rice and livestock were profitable. Although initial investments can be substantial, however, in the long term, agricultural insurance can be considered as an effective measure to effectively helping farmers recover after natural disasters and diseases. It can also replace emergency aid policies resulting in reducing the government's investment in the long term, moving from crisis management to risk management.

*Establishing post-disaster credit services,* the government should study and establish a credit program to rebuild after a natural disaster, create financial support mechanisms which can help people recover in the long-term.

Institutionalizing risk-coping mechanisms within the community and from organizations outside the community in case of a disaster event in order to effectively utilize the support resources for equitable, efficient and sustainable recovery.

***Providing proper livelihood supports for vulnerable groups***

Poverty aspects show that poor households are often at high risk of adverse impacts, very vulnerable, their resilience and recovery capacity is very limited. At the same time, Viet Nam tends to gradually approach the core of poverty as a majority of poor households focus on ethnic minorities, landless households, non-productive households, households with many children and elderly people, and helpless women. Thus, detailed reviews and assessments of vulnerable groups are needed to classify this population before preparing socio-economic development planning at all levels.

For group is able to develop and escape poverty (having labour and production means), priority should be given to program and policy participation, implementation and support receipt that are integrated with poverty reduction, climate change, natural disaster prevention, and training, vocational training to improve their livelihood assets, reducing these households’ vulnerability.

For group inability to escape poverty group (elderly, disabled, and non-productive people), the weakest group, climate change and disaster prevention should also be intertwined in the improvement of policy effectiveness and social protection activities. As a matter of fact, social protection policies in Vietnam are well implemented, but this policy has not been tied to other supportive policies such as the new poverty reduction and rural development programs. A new orientation in social protection, particularly in high-risk areas, needs to be established in the current context.

At the same time, in annual planning and capacity building for local people, community support for these groups should be promoted through community solidarity building, and promote the culture of rural people, especially in the case of facing with natural disaster risk.

## **3. Priority development strategies for each locality and region**

In this research, we discover many differences in the approach of implementing solutions of the government, NGOs and between regions. It is understandable that according to the socio-economic condition and disaster risks, level of priority of each solution is different. However, based on different type of disaster, climate change impacts and poverty rate, in the following part, we would like to recommend priority strategies for each region in Vietnam.

***Increasing the adaptability, resilience and rehabilitation of the Central Coast region***

The central coastal region is facing the rapid increase of natural disasters such as droughts, storms and floods caused by climate change. These challenges, along with the low income of the people, will make the vulnerability of the household rise sharply. Therefore, in addition to strategies to ensure and develop livelihoods for people, this area should focus on promoting solutions to increase adaptability, resilience and recovery for the community.

Concrete measures include: supporting safe housing for vulnerable communities to floods and storms; increase forest coverage to create natural buffers between communities and the sea; improving people’s response capacity by providing knowledge, skills, and measures for handling and overcoming natural disasters; providing reliable information on natural disaster risks, and guiding household and community based planning.

Regarding livelihood guarantee, it is advisable for the central coastal regions to focus on an important strategy of vocational training, creating employment to absorb rural labour in order to reduce their dependence on agricultural livelihoods. With agriculture sector, it is necessary to concentrate on studying and multiplying short-term crops, applying proper cultivating plans to respond to natural disasters and climate change in a proactive way. Meanwhile, it requires to develop social aid programs for rapid recovery from natural disasters.

***Promoting the competitive advantage of the Mekong Delta***

In the past, the development options did not seem to be fully understood in the Mekong Delta region, making it unsuitable for many areas to meet the needs of development in the context of increasing saline intrusion and drought. At the same time, low-level connectivity impedes ecological advantages promoting in the best way to contribute to overall development and livelihood support for the population. The development of Mekong Delta region is mainly based on exploiting natural resources (land, water, etc.), making use of cheap labor which causes negative impacts on the environment.

Although climate change and natural disasters are causing many dangers to the life and socio-economic activities of the region, however, in a different light, it is bringing opportunities and motivations in changing thinking, models and methods of development for the Mekong Delta. In particular, stopping watching the invasion of salt as an enemy which gradually becomes a brackish economy instead of investing to fight back. The socio-economic structure should be shifted towards green growth, reduction of greenhouse gas emissions and sustainable development. Especially in the field of agriculture, it is necessary to orient to a rational production system that is better adapted to climate change and create high added value, take advantage of competitive advantages and deep international economic integration to exploit the market. Thereby, the formation of specialized areas (aquatic products, rice, fruit, etc) is arranged reasonably throughout the region, accompanied by the development of auxiliary systems (processing industry, logistics, etc).

At the same time, in the context of climate change, the Mekong Delta is receiving great attention from both the Government and international organizations, making full use of the investment resources that will create a resurgence in this area in the future.

However, a comprehensive, cross-sectoral and cross-sectoral strategy needs to be addressed. At present, sectoral plans at the regional and provincial levels are almost unaltered, even though the availability has not yet been applied in practice under climate change scenarios and economic development scenarios. Therefore, in the coming time, the formation of regional management and coordination mechanisms towards regional development and investment planning should be taken into consideration by the Government.

***Developing smart agriculture in the Highlands***

Water scarcity, soil erosion, rising temperatures, unseasonal rain (resulting to unfruitful coffee harvest or poor quality drying during harvests),and the increase in epidemic disease are major challenges of the whole Central Highlands region in response to climate change and natural disasters. The instability in the production of main products makes people disoriented, leading to an increasing popular phenomenon of cutting down coffee trees for pepper, fruit trees, or deforestation for rubber plantations by local people.

In Highlands region, agriculture plays dominant roles in the livelihood of most of local population, not only at present but also in the future. Therefore, the region interconnection strategy on smart agriculture development towards climate change adaptation is an urgent requirement at present to maintain livelihood stability, minimize risks and fragileness of cultivated crops in future.

This strategy needs to handle core issues, including: (1) promoting science and technology application in the production (water-saving irrigation, soil erosion control, use of organic fertilizer, intercropping of pepper, cashew and legume crops, and sustainable farming,…); (2) studying and using proper plant species which are highly adaptable to changing climate conditions; (3) accelerating research and application of water storage measures, particularly underground water at households; (4) studying and applying manufacture technologies, especially for coffee, at household or community level to minimize impacts of unseasonal rains to postharvest quality of agricultural products; (5) establishing and developing proper production organization (cooperatives, cooperative groups, for instance) to support the application of climate change smart measures; (6) strengthening climate smart agriculture promotion services in Highlands regions by connecting weather information with technical information, and adopting information disseminating technology to convey information to people via mobile phones and computers, etc.; (7) stabilizing output markets for agricultural products.

***Safe rural areas and indigenous agriculture for the West-North region***

Landslides, flash floods are natural disasters which are most difficult to forecast and cope with in Vietnam, particularly in West-North region. Thus, the authors recommend guaranteeing the ultimate result of rural development in this region which is all households live in safe areas, to focus efforts on completing residential allocation and resettlement as soon as possible.

Whereas it is necessary to accelerate afforestation, forest reservation to minimize mentioned situations. Particularly in production forests, it requires proper allocation and structure with measures, such as: promoting FSC certificates, strengthening state management roles in forest exploitation activities. Synchronous adoption of these measures will contribute to the balance of carbon reservoirs, and create higher and more sustainable income for forest-based households.

Moreover, to promote residents’ livelihood in the changing context regarding temperature fluctuation and rainfall amount, and to satisfy high market demand, the West-North region should focus on developing the production of indigenous agriculture products which are adaptive to climate change, as well as eco-tourism and culture to diversify income generating sources for local people and to take the region’s advantage. Accelerating poverty reduction and ethnic minority people capacity enhancement to minimize vulnerability and to increase households livelihood assets.

# Chapter V. RECOMMENDATIONS FOR THE FOOD AND AGRICULTURE ORGANIZATION

# CHAPTER 5

## **Some key orientations for FAO on consolidating the climate change - disaster - poverty nexus**

Based on the analysis of the previous chapters, the authors propose some viewpoints that the FAO should consider to include in its strategy for the next period.

First, improving the resilient livelihood via consolidating the CC-D-P nexus of marginalized groups (the poor, elderly, women, and children, etc) is a vital task of FAO to achieve its target ‘No one be left behind’’ in the next period when climate change and natural disaster become more severe. Consolidating the CC-D-P nexus to build up the household livelihood resilience via enhancing all the five household assets is a comprehensive approach to achieve sustainably socio, economic and environmental development. This is one key solution to achieve FAO's goal of ensuring food security, nutrition and sustainable development and FAO's commitment with Vietnam in the framework of the Vietnam - FAO (CPF) Program 2017-2020. Nevertheless, as described in Chapter II, there are very few studies about the CC-D-P nexus in Vietnam. Thus, FAO could become the focal point for gathering UN organizations and NGOs to support technical assistance to establish a consent and comprehensive understanding and knowledge among government, localities, organizations, communities and individuals related about the nexus and to provide evidence of the effectiveness and feasibility of this approach.

Second, as Chapter III and VI explained, there are many policies/programs and practices related to the CC-D-P nexus in Vietnam but most of them are not linked and lack of resources and institutional framework to operate the nexus at a large scale. Give the reputation and mandate of FAO, this organization can become a bridging actor to link triple nexus efforts of different stakeholders to make a bigger impact to the nation. FAO becomes a facilitator to connect household/community nexus efforts with existing resources from the government at central and local level via integrating nexus initiatives in agriculture and rural development into on-going governmental programs/policies implementation and the policy making process. FAO should play an important role in enhancing inter-regional, inter-sectorial interventions which is the key to consolidate the nexus via improving the effectiveness of investment in infrastructure and production material zones and natural resource use efficiency. Moreover, the organization can mobilize the resources from enterprises and local authorizes via opening up business opportunities based on nexus initiatives of households and create institutional framework for them to work together. FAO continues to call for investments and support Vietnam in approaching international funds to strengthen the nexus.

Third, as discussed in Chapter V, the involvement of grass-root level is the key for a successful triple nexus. In the process of consolidating CC-D-P nexus, it is regarded that household/community is the main beneficiary and the owner of the nexus, and thus FAO should focus on this stakeholder in its intervention in the future. Key interventions of FAO may include: improving the human and social asset of households particularly the capacity of household/community to participate in socio economic development planning process, or establishing institutional framework or mechanism to increase the adaptive capacity of community to climate change and disasters, or improving trade, commercialization capacity of CSA products.

## **Some key interventions for FAO to address the climate change – disaster – poverty nexus to improve the resilient livelihood**



### ***The National Target Program on New Rural Development***

The National Target Program on New Rural Development is a comprehensive and unified rural development in the whole nation at the moment. This program has reserved a large proportion of financial resource to especially difficult communes at border areas, coastal areas and islands where is prone to climate change and natural disasters. The set of criteria for New Rural Development in the period of 2016-2020 has integrated issues related to climate change and disaster risks. Specifically, Criterion Number 1 on Planning clearly states that the planning of a commune is required to be integrated with climate change; Criterion Number 3 about Irrigation requires communes have to have irrigation systems that meet the demand of residents nearby and follow regulations on on-spot disaster control. Nevertheless, it can be seen that these requirements are insufficient to ensure the communities to adapt well to and be resilient to climate change and disasters. As well reviewed in Chapter 2, many studies in Vietnam show that once severe disasters happen, it is likely that locations with low high exposure and low adaptive capacity will be affected seriously. The lack of requirement on climate change and disaster adaptive capacity issues in the set of New Rural Development Criteria makes the whole National Target Program vulnerable to climate change and disasters.

In the future, consolidating the climate change – disaster – poverty in the New Rural Development Program is an appropriate, effective and efficient intervention of FAO to improve the resilient capacity of agriculture and rural areas for several reasons: (1) the program is a the biggest CC-D-P nexus which has been implemented at the national scale; (2) this is the most comprehensive national program so far covering: planning, infrastructure, economic socio and political institutions, and production area; (3) the program has the biggest financial support of the nation with the support from the World Bank and the Asian Development Bank; (4) the program has established a policy framework and institutional system from central to commune level (via New Rural Development Offices); (5) the implementation level of the program is at village and commune which is absolutely suitable to CC-D-P nexus approach; (6) the program has attracted the participation of the whole political system, social networks and communities; (7) the program has established protocols and procedures to attract the participate of community in planning and implementing activities in the program; (8) the program has a set of monitoring and evaluation criteria at different administrative level.

In the period of 2018 – 2020, FAO should focus on support the National Target Program to design a good orientation for the Program in the next cycle, during 2020 – 2025 with the target to upgrade the capacity of rural areas in adapting better with climate change and disasters. These supports can be classified in two groups:

*Propose to integrate CC-D-P nexus into the set of 19 criteria of New Rural Development applied to capable communes which can achieve these criteria.* Specifically, the FAO should work more closely with and support the National New Rural Development Program Office and its offices at provincial level to implement following activities:

* Review and propose to adjust the set of 19 criteria of New Rural Development to integrate the CC-D-P nexus in potential criteria including: planning, road system, irrigation, information, residential areas, income, poverty, employment, production organization, culture, and environment; instead of only integrating the nexus in only two criteria (planning and irrigation) currently.
* Develop guiding materials (curriculum, manuals) to help households increase their livelihood resilience to climate change and disasters when implementing the New Rural Development Program (at commune and village levels).
* Pilot some models to mobilize community to participate in designing, implementing, monitoring and evaluating socio economic development plans and new rural development plans at commune level in different ecological regions to adaptive with climate change and disasters. These pilot models can be done in the period of 2019-2020 as some samples for the novel direction for the next cycle of the New Rural Development Program from 2021-2025.
* Pilot some models to test the potential of enterprise’s participation in the New Rural Development Program in business models for public services such as garbage treatment and collection, or early warning systems.
* Based on successful models and international experience, conduct policy advocacy to translate the CC-D-P nexus with the aim at improving household livelihood resilience to become one of core contents of the New Rural Development Program in new phase (2021-2015).

*Propose to change the approach of the New Rural Development Program to extremely difficult communes which are not able to achieve 19 criteria.* FAO should focus on following activities:

* Support to develop a separate set of criteria for extremely difficult communes at border areas, coastal areas and islands (who can only achieve less than 5 criteria) based on the viewpoint that these commune should focus more a set of fewer criteria on livelihood resilience rather than achieve all 19 criteria.
* Develop the community value of each village, hamlet based on typical characteristics, traditions of each community; utilize these characteristics as the foundation to promote the livelihood resilience to climate change and disaster. FAO should support research and development activities to promote the nexus initiatives based on community value of these localities.
* Develop guiding materials (protocols, manuals) to improve the resilience and adaptive capacity to climate change and disasters in extremely difficult areas (mountainous, island) adoptable to households.
* Pilot models to improve the household livelihood resilience via consolidating the CC-D-P nexus based on utilizing indigenous knowledge, upgrading traditional production systems to adapt better with climate change and disaster risks.

### ***Development of Agricultural Insurance***

As reviewed in Chapter IV, agricultural insurance has been shown as a good CC-D-P nexus in theory but has not been successful applied in reality. If this nexus model can be applied large-scale, it will help to increase the livelihood resilience of farming households. The Government just issued a new Decree on Agricultural Insurance[[6]](#footnote-6) with maximum subsidy of 90% for the poor and near poor and up to 20% for normal households and agricultural organizations co-operating to production in large scale, applying advanced science and technology and advanced production process towards eco-friendly, high-tech, safe agriculture. Subsidies in this Decree are lower and more restrictive than the pilot phase of agricultural insurance in the period of 2011 - 2013. In our opinion, these supports are not enough to develop agricultural insurance in Vietnam in the future, especially in specifying the optimal agricultural insurance model for insurance companies in Vietnam. Therefore, in order to contribute to the development of agricultural insurance, FAO should consider supporting to pilot agricultural insurance models on some suitable agricultural products (rice, coffee, livestock) with sustainable production process (CSA, GAP, large-scale commodity production) in commercial production areas where witness a lot of risks from climate change and disasters such as Central Highlands and Mekong River Delta. Tentative detailed activities include:

* Research and propose solutions to integrate agricultural insurance into agricultural restructuring program and other support programs to promote the participation of households. For examples: direct support to producers by Government (Decision 142/2009 / QD-TTg); Government support to protect paddy land (Decree 35/2015 / ND-CP); Credit for agricultural and rural development (Decree 55/2015 / ND-CP); Supportive policies on reduction of post-harvest losses in agriculture (Decision No. 68/2013 / QD-TTg) and Incentive policy for development of cooperation between farmer organizations and enterprises in ‘small households, big fields’model (Decision 62/2013 / QD-TTg), etc.
* Conduct pilot insurance products such as weather index insurance, yield index insurance, and damage insurance to evaluate and recommend the appropriate type of insurance to each type of agricultural products, and minimize operation cost of the insurer. At the same time, study the appropriate level of subsidy for the insurance premium.
* Support insurance enterprises to define appropriate insurance conditions: production planning, infrastructure, technical process, production conditions, production organization, production linkage, etc. to ensure the balance of benefits and risks between insurers and farmers.
* Conduct piloting and proposing a Public – Private Partnership (PPP) in the development of the insurance and reinsurance market in Vietnam to provide appropriate solutions for the implementation of the Decree 58/2018/ND-CP on agricultural insurance.
* Support to establish a complete database system, combined with 4.0 generation technology for risk calculation and damage calculation.
* Support the pilot application of advanced technologies in operating agricultural insurance such as remote sensing, online data, mobile phone system, etc so that insurance companies can design suitable insurance product index to increase the attractiveness of the products and reduce the insurance premium by reducing the cost of system operation.

### ***Agricultural information service for decision-making***

Early-warning information system as mentioned in Chapter IV is another potential CC-D-P nexus as it can help farmers have more rational production decision when they have better information and knowledge about climate change and disaster risks. In Vietnam, there are currently about six enterprises/organizations (Agroinfo, Agromonitor, Giacaphe, Viettel, Greencoffee, AgriMedia) providing information for farmers and policy makers to make decisions. AgriMedia is considered to be the most comprehensive enterprise information system, such as weather (from the company's Imetos weather station system), market price information, insects / diseases, agricultural extension (from content management system (CMS)), various forms of information provided via SMS (vinaphone and mobilephone), Web/wap, Fanpage, agricultural extension central (vinaphone). In fact, this is a relatively new business sector for enterprises, which makes it difficult to build an effective and sustainable information system and reach customers in order to serve the development process, by which creates support tools for farmer’s livelihood to increase resilience. With the great potential of this type of service in linking climate change, natural disasters and poverty, FAO should support a number of enterprises to upgrade and disseminate services on a larger scale, increasing farmer’s accessibility by setting up projects supporting the development of agricultural information services for decision-making with the participation and investment of service providers, technology enterprises and telecommunication enterprises. , to carry out the following activities:

* Develop/consolidate a comprehensive information database for decision-making on key products (rice, coffee, pepper, cashew, fruit, rubber, aquaculture ...) in sub-ecological zones. Information systems include: agricultural weather, crop/livestock science, land and soil conditions, and information on demand and supply volatility, input and output markets, production policies and trade, event information in the field (warning of natural disasters, price pressure phenomenon ...). Propose and transfer techniques and sources of data updates.
* Call for investment of enterprises and the state in the installation of weather monitoring and disease/pest surveillance systems in agro-forestry to ensure the coverage of information by sub-ecological zones and establish information systems which can serve directly for decision-making of farmers.
* Support the service provider to build a system of local collaborators to update daily price information, including input and output prices for crop/livestock products; Monitoring and responding to information on disease / pests occurring in the management area; supervising and providing continuous information on seasonality, seasons and general situation according to the growth and development of plants/animals; Monitoring and providing information about the outstanding events in the area of management of each collaborator. Thereby, adding most reality farmers' ecosystem information and information management systems provided to the farmers.
* Support enterprises in designing and applying technology in information processing such as forecasting, warning, and monitoring and information transfer technology for farmers and policy makers from the data system via Internet of Things (IOT) or Artificial Intelligence (AI) or other technology.
* Support enterprises in developing and upgrading information and transmission systems to farmers and policy makers in appropriate ways to maximize accessibility, such as SMS, applications, website / wapsite, fanpage, switchboard and possibly through local extension or loudspeaker system.

### ***Developing climate smart agriculture with aims to build smart production system***

CSA is an effective solution to mitigate climate change and increase production efficiency, which has been supported by FAO in Vietnam for many years. However, to improve CSA enhancing the resilience of agricultural and rural livelihoods and to expand the scale of application, the FAO should implement the following measures:

* Provide analytical results, evaluation to show the scientific based evidence about the superiority of CSA products to conventional products. Evaluate the trade-off between adaptation, cost reduction and profitability of CSA practices, and identify barriers to adoption.
* Implement solutions to organize production, connect enterprises for CSA products through a market-based approach to developing CSA, and promote the participation of private sector in the supply chain through PPPs.
* Establish CSA product value chains, in harmony with Vietnamese and international standards (VietGAP, global gap, organic), develop traceability and labeling systems to generate added value which creates higher income for farmers.
* In order to minimize the impact of extreme weather, FAO should focus not only on applying CSA to individual products but also create smart production systems based on CSA linkages among other sub-sectors (cultivation, livestock, aquaculture and forestry) in the same area (landscape approach).
* For appropriate products and models, supports should be provided in conjunction with local authorities to integrate them into planning to build larger scale, intelligent production as well as production systems.

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# APPENDICES

**Appendix A. List of consulted local officials**

1. **An Giang provice**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Nguyen Thi Huong | Deputy head of division | Branch of cultivation and plant protection |
| 2 | Nguyen Anh Tuan | Deputy manager of branch | Branch of Rural Development |
| 3 | Vuong Huu Tieng | Manager of Branch of Irrigation | Branch of Irrigation |
| 4 | Phan Le Hong Ngoc | Official | Branch of Irrigation |
| 5 | Truong Thi Hue | Official | Planning and finance Division |
| 6 | Mai Tan Thao | Official | Provincial agricultural extension center |
| 7 | Tran Hoang Hung | Head of division | Branch of aquaculture |
| 8 | Tran Chau Phuong Phan | Official | Branch of aquaculture |
|  | *Department of Natural Resources and Environment* | | |
| 9 | Huynh Van Thai | Head of division | Water resources and climate change division |
| 10 | Nguyen Cong Khai | Official | Water resources and climate change division |
|  | Committee for Ethnic Affairs | | |
| 11 | Chau Anne | Deputy chief | Committee for Ethnic Affairs |
| 12 | Chau Chanh Thay | Official | Ethnic Policy Division |
|  | *Department of Planning and Investment* | | |
| 13 | Tran Thanh Tu | Official | Science, culture and society division |
| 14 | Vo Chi Trung | Head of division | Sectoral economic division |
| 15 | Dinh Viet Tuyet Hien | Official | Sectoral economic division |
| 16 | Tran Quang Trung | Deputy head division | Synthesis - planning division |
|  | Department of Labour, War Invalids and Social Affairs | | |
| 17 | Le Vo Cam Huong | Deputy head of division | Social Protection division |
| 18 | Le Van Vinh | Official | Social Protection division |
|  | *People’s Committee of Cho Moi district* | | |
| 19 | Nguyen Huu Tri | Head of division | Agriculture and rural development division |
| 20 | Ton Thanh Tam | Head of division | Labour, War Invalids and Social Affairs division |
| 21 | Nguyen Phuoc Tai | Duputy head of division | Natural Resources and Environment division |
| 22 | Phan Van Lam | Official | Department of statistics of Cho Moi district |
| 23 | Nguyen Van Cuong | Official | Agriculture and rural development division |
| 24 | Tran Quang Vinh | Duputy head division | Finance and planning division |
|  | *People’s Committee of Tan My commune* | | |
| 25 | Huynh Cam Giang | Chairman | People’s Committee of Tan My commune |
| 26 | Pham Thi Hanh Trinh | Official | People’s Committee of Tan My commune |
| 27 | Nguyen Trung Tay | Statistics Official | People’s Committee of Tan My commune |
|  | *An Giang fruits GAP cooperative* | | |
| 28 | Tran Khanh Du | Director | An Giang fruits GAP cooperative |
|  | *People’s Committee of My Hoi Dong commune* | | |
| 29 | Ho Dang Nguyen | Vice chairman | People’s Committee of My Hoi Dong commune |

1. **Ca Mau province**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Nguyen Long Hoai | Manager of Branch | Branch of Irrigation |
| 2 | Nguyen Huu Sam | Deputy director | Provincial agricultural extension center |
| 3 | Le Song Hung | Deputy manager of Branch | Branch of aquaculture |
| 4 | Pham Van Hoa | Deputy head of division | Construction management division |
| 5 | Ly Minh Kha | Deputy manager of branch | Branch of Rural Development |
|  | *Ca Mau Farmers’ Union* | | |
| 6 | Tran My Duyen | Oficial | Ca Mau Farmers’ Union |
|  | *Department of Natural Resources and Environment* | | |
| 7 | Nguyen Sy Thoai | Deputy head of division | Meteorology and climate change division |
| 8 | Nguyen Manh Vu | Oficial | Meteorology and climate change division |
| 9 | Le Ngoc Thanh | Oficial | Meteorology and climate change division |
|  | *Committee for Ethnic Affairs* | | |
| 10 | Trieu Quang Loi | Chairman | Committee for Ethnic Affairs |
| 11 | Nguyen Van Thành | Vice chairman | Committee for Ethnic Affairs |
| 12 | Tran Thi Tuyet Nga | Chief of Office | Committee for Ethnic Affairs Office |
| 13 | Nguyen Thi Thu Tam | Head of division | Policy division |
| 14 | Huynh Cong Thieu | Head of division | Planning division |
|  | *Department of Labour, War Invalids and Social Affairs* | | |
| 15 | Nguyen Thu Tu | Deputy director | Department of Labour, War Invalids and Social Affairs |
| 16 | Huynh Quoc Cuong | Deputy head of division | Vocational division |
| 17 | Nguyen Viet Nan | Oficial | Labor, employment and social insurance division |
| 18 | Ho Quoc Danh | Oficial | Employment and occupational safety division |
| 19 | Cao Van Loi | Deputy head of division | Social Protection division |
|  | *Ca Mau Woman Union* | | |
| 20 | Le Thi Cam Tu | Oficial | Ca Mau Woman Union |
|  | *Department of Planning and Investment* | | |
| 21 | Pham Phuong Thao | Oficial | Department of Planning and Investment |
| 22 | Nguyen Tan De | Oficial | Department of Planning and Investment |
|  | *People’s Committee of Ngoc Hien district* | | |
| 23 | Nguyen Hoang Khuong | Chief of Office | People’s Committee Office |
| 24 | Nguyen Minh Duong | Head of division | Labour, War Invalids and Social Affairs division |
| 25 | Nguyen Minh Khoa | Head of division | Natural Resources and Environment division |
| 26 | Tăng Thiện Tinh | Head of division | Agriculture and rural development division |
| 27 | Ha Van Trung | Oficial | Agriculture and rural development division |
|  | *People’s Committee of Dat Mui commune* | | |
| 28 | Bui Thanh Phuong | Chairman | People’s Committee of Dat Mui commune |
| 29 | Nguyen Van Thinh | Oficial | People’s Committee of Dat Mui commune |

1. **Tra Vinh Province**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Doan Van Minh | Head of division | Finance and planning division |
| 2 | Nguyen Van Ngon | Deputy manager of Branch | Branch of aquaculture |
| 3 | Trang Tuong | Head of division | Policy division |
| 4 | Huynh Quang Son | Official | Provincial agricultural extension center |
| 6 | Pham Thanh Tieng | Deputy manager of Branch | Branch of Rural Development |
| 7 | Nguyen Thi Lung | Head of plant protection division | Branch of cultivation and plant protection |
| 8 | Tu Thau Quyen | Official | Branch of Irrigation |
|  | *Tra Vinh Farmers’ Union* | | |
| 5 | Thai Nguyen Van | Official | Tra Vinh Farmers’ Union |
|  | *Department of Planning and Investment* | | |
| 9 | Le Thanh Tuan | Head of division | Science, culture and society division |
| 10 | Tu Chung Loc | Official | Synthesis - planning division |
| 11 | Pham Thi My Xuong | Official | Sectoral economic division |
|  | *Department of Natural Resources and Environment* | | |
| 12 | Tran Thanh Phong | Head of division | Water resources and mineral division |
| 13 | Nguyen Minh Hai | Official | Climate Change officce |
| 14 | Ho Ngoc Hien | Official | Climate Change officce |
| 15 | Nguyen Thi Doan Diem | Deputy head of division | Water resources and mineral division |
|  | *Tra Vinh Woman Union* | | |
| 16 | Son Thi Hiep | Official | Tra Vinh Woman Union |
|  | *Department of Labour, War Invalids and Social Affairs* | | |
| 17 | Hoang Van Tri | Deputy chief of office | Poverty Reduction Steering Committee office |
| 18 | Do Tri Tam | Head of division | Labor, employment and social insurance division |
| 19 | Tu Minh Dien | Head of division | Social protection division |
| 20 | Duong Quang Goc | Duputy director | Department of Labour, War Invalids and Social Affairs |
| 21 | Ngo cong Duc | Official | Vocational division |
|  | *Committee for Ethnic Affairs* | | |
| 22 | Truong Thanh Cong | Head of division | Ethnic Policy Plans division |
| 23 | Truong Ngoc Tan | Official | Committee for Ethnic Affairs |
| 24 | Huynh Quang Tri | Official | Committee for Ethnic Affairs |
|  | *People’s Committee of Duyen Hai district* | | |
| 25 | Tang Huu Dien | Official | Natural Resources and Environment division |
| 26 | Tran Phong Lem | Deputy head of division | Labour, War Invalids and Social Affairs division |
| 27 | Le Thanh Vu | Official | Agriculture and rural development division |
| 28 | Lam Tan Son | Official | Finance and planning division |
|  | *People’s Committee of Don Chau commune* | | |
| 29 |  | Vice chairman | People’s Committee of Don Chau commune |
| 30 | Ngo Thanh Tac | AMD project staff | People’s Committee of Don Chau commune |

1. **Dak Lak Province**

|  |  |  |  |
| --- | --- | --- | --- |
| **Or** | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Nguyen Quoc Hung | Head of division | Construction management division |
| 2 | Trinh Thai Binh | Official | Branch of Rural Development |
| 3 | Tran Quoc Toan | Deputy of Branch | Branch of quality management |
| 4 | Nguyen Van Nam | Deputy of Branch | Branch of aquaculture |
| 5 | Dang Van Tuoi | Director | Provincial agricultural extension center |
| 6 | Nguyen Ngọc Tang | Deputy of division | Finance and planning division |
| 7 | Vu Kinh Thanh | Deputy of professional technical division | Branch of Irrigation |
| 8 | Dam Quang Hung | Deputy head office | Steering Committee for disaster prevention office |
| 9 | Ha Thanh Luan | Official | Finance and planning division |
|  | *Department of Natural Resources and Environment* | | |
| 10 | Nguyen Van Tuyen | Head of division | Water resources and climate change division |
|  | *Department of Planning and Investment* | | |
| 11 | Ho Xuan Vinh | Deputy head division | Synthesis - planning division |
| 12 | Tran Minh Hoang | Official | Synthesis - planning division |
| 13 | Nguyen Van Truong | Official | Sectoral economic division |
| 14 | Nie Knong Y Son | Official | Enterprise economic division |
| 15 | Do Thi Lan Huong | Deputy head of division | Science, culture and society division |
|  | *Department of Labour, War Invalids and Social Affairs* | | |
| 16 | Nguyen Chien Thang | Deputy head of division | Employment and occupational safety division |
| 17 | Doan Ngoc Xuyen | Chief of office | Department of Labour, War Invalids and Social Affairs office |
| 18 | Tran Kim Tien | Deputy head of division | Social Protection division |
|  | *Committee for Ethnic Affairs* | | |
| 19 | Le Ngoc Vinh | Head of division | Ethnic Policy Plans division |
|  | *People’s Committee of Buon Don district* | | |
| 20 | Y Se Oban | Head of division | Labour, War Invalids and Social Affairs division |
| 21 | Nguyen Ngoc Thu | Official | Agriculture and rural development division |
| 22 | Vu Dinh Thang | Deputy head division | Agriculture and rural development division |
| 23 | Kham Phon Lao | Head of division | Agriculture and rural development division |
|  | *People’s Committee of Ea Nuol commune* | | |
| 24 | Tran Quang Huy | Official | People’s Committee of Ea Nuol commune |
| 25 | Nguyen Thi Binh Thuong | Poverty redution official | People’s Committee of Ea Nuol commune |
| 26 | Nguyen Chi Linh | Official | People’s Committee of Ea Nuol commune |
|  | *People’s Committee of Ea wer commune* | | |
| 27 | Mr Du | Vice chairman | People’s Committee of Ea wer commune |
| 28 | Mrs Ngoc Anh | Disaster prevention official | People’s Committee of Ea wer commune |
| 29 | Mr Huong | Poverty redution official | People’s Committee of Ea wer commune |
| 30 | Mr Hai | Poverty redution official | People’s Committee of Ea wer commune |

1. **Ninh Thuan Province**

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| --- | --- | --- | --- |
|  | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Du Ngoc Tuan | Deputy manager of Branch | Branch of aquaculture |
| 2 | Nguyen Le | Deputy manager of Branch | Branch of cultivation and plant protection |
| 3 | Nguyen Van Binh | Head of devision | Finance and planning division |
| 4 | Nguyen Cong Xung | Deputy head of division | Construction management division |
| 5 | Truong thi Thanh Van | Deputy manager of Branch | Branch of Irrigation |
| 6 | Nguyen Thi Kim Yen | Deputy head of devision | Policy division |
|  | *Ninh Thuan Farmers’ Union* | | |
| 7 | Pham Thi Nhu Y | Official | Ninh Thuan Farmers’ Union |
|  | *Department of Natural Resources and Environment* | | |
| 8 | Huynh Thanh | Head of devision | Water resources and climate change division |
|  | *Department of Planning and Investment* | | |
| 9 | Pham Ninh Thuan | Official | Synthesis - planning division |
| 10 | Phu Trang | Official | Science, culture and society division |
| 11 | Nguyen Thi Nhu Thy | Deputy of division | Science, culture and society division |
| 12 | Tran Minh Dao | Official | Synthesis - planning division |
|  | *Department of Labour, War Invalids and Social Affairs* | | |
| 13 | Dang Thi phan | Deputy director of Deparment | Department of Labour, War Invalids and Social Affairs |
| 14 | Nguyen Vy | Head of devision | Social Protection division |
| 15 | Nguyen Ngoc Dinh | Head of devision |  |
| 16 | Huyen Xuan Phong | Head of devision |  |
|  | *People’s Committee of Ninh Phuoc district* | | |
| 18 | Do Ngoc Son | Head of extension station | Extension station of district |
| 19 | Nguyen Van Thuong | Head of devision | Labour, War Invalids and Social Affairs division |
| 20 | Truong Thanh Thuan | Deputy head of department | Department of statistics of Cho Moi district |
| 21 | Chau Tan Dat | Deputy head of division | Finance and planning division |
| 22 | Huynh Tuan Anh | Deputy head of division | Agriculture and rural development division |
| 23 | Nguyen Dinh Thuong | Official | People’s Committee Office |
| 24 | Le Van Niem | Official | People’s Committee Office |
|  | *Committee for Ethnic Affairs* | | |
| 25 | Le Thanh Hung | Deputy of committee | Committee for Ethnic Affairs |
| 26 | Phan Nhat My Linh | Official | Committee for Ethnic Affairs officce |
| 27 | Truong thi Ai | Official | Ethnic Policy Plans division |
| 28 | Pham Thi Nhu Thuy | Official | Synthesis - planning division |
|  | *People’s Committee of An Hai commune* | | |
| 29 | Bui The Ly | Vice chairman of People’s Committee | People’s Committee of An Hai commune |
| 30 | Mr Thanh | Agricultural Official | People’s Committee of An Hai commune |
|  | *Tuan Tu cooperative, An Hai commune* | | |
| 31 | Mr Ky | Director | Tuan Tu cooperative |
|  | *People’s Committee of Ninh Phuoc district* | | |
| 32 | Mr Quoc | Official | Extension station of district |

1. **Yen Bai Province**

|  |  |  |  |
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|  | **Full name** | **Position title** | **Organization** |
|  | *Department of Agriculture and Rural Development* | | |
| 1 | Truong Tuan Cuong | Deputy of division | Finance and planning division |
| 2 | Nguyen Tien Thanh | Official | Branch of Rural Development |
| 3 | Pham Thanh Mung | Deputy head | Brand of livestock |
| 4 | Luong Tuan Anh | Official | Branch of Irrigation |
| 5 | Hoang Van Toan | Deputy manager of Branch | Branch of Rural Development |
| 6 | Duong Anh Tuan | Official | Branch of Irrigation |
| 7 | Nguyen Van Doan | Official | Branch of cultivation and plant protection |
| 8 | Nguyen Ngoc Xuan | Deputy director | DARD |
| 9 | Tran Anh Van | Deputy manager of Branch | Branch of Irrigation |
| 10 | Nguyen Xuan Huy | Deputy chief of office | DARD office |
|  | *Department of Natural Resources and Environment* | | |
| 11 | Pham Thu Hang | Head of division | Water resources and climate change division |
|  | *Department of Planning and Investment* | | |
| 12 | Doan Thi Kim Anh | Deputy of division | Synthesis - planning division |
| 13 | Nguyen Huy Long | Deputy of division | Sectoral economic division |
|  | *Department of Labour, War Invalids and Social Affairs* | | |
| 14 | Tran Dai Quyen | Deputy head of division | Vocational division |
| 15 | Hoang Ngoc Tuyen | Deputy head of division | Labor, employment and social insurance division |
| 16 | Dinh Xuan Truong | Head of division | Social Protection division |
| 17 | Do Ngoc Son | Official | Porvety redution office |
| 18 | Nguyen Thi Thuy Van | Official | Social Protection division |
|  | *Committee for Ethnic Affairs* | | |
| 19 | Do Quang Vinh | Vice chairman | Committee for Ethnic Affairs |
| 20 | Phung Van Dung | Head of division | Propaganda and location division |
| 21 | Ho Manh Khoa | Head of division | Planning division |
| 22 | Đô Ngọc Duc | Head of division | Inspectors division |
| 23 | Sa Huy Hoang | Deputy chief of officce | Committee for Ethnic Affairs office |
| 24 | Nguyen Minh Nguyet | Head of division | Policy division |
|  | *People’s Committee of Yen Binh district* | | |
| 25 | Tran Dinh Nhu | Head of station | Extension station of district |
| 26 | Nguyen Hoang Anh | Official | Extension station of district |
| 27 | Hoang Huy Hieu | Official | Red Cross Society |
| 28 | Le Duc Huan | Official | culture and sports division |
| 29 | Kieu thi Muoi | Reporter | Radio and television division |
| 30 | Nguyen Thi Yen | Deputy head of division | Finance and planning division |
| 31 | Phạm Thi Lan Anh | Head of division | Natural Resources and Environment division |
| 32 | Pham Thanh Dat | Deputy head of division | Agriculture and rural development division |
| 33 | Dao Thi Thanh Hien | Official | People’s Committee Office |
| 34 | Dang Thanh Hai | Head of division | Labour, War Invalids and Social Affairs division |
| 35 | Hoang Hai Yen | Reporter | Radio and television division |
| 36 | Vu Thi Nhan | Official | People’s Committee Office |
| 37 | Phung Phuong Hanh | Deputy chief of officce | People’s Committee Office |
| 38 | Nguyen Duc Dieu | Vice chairman | People’s Committee of Yen Binh district |
|  | *People’s Committee of Vinh Kien commune* | | |
| 39 | Mr Toan | Vice chairman | People’s Committee of Vinh Kien commune |

1. **NGOs**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Full name** | **Position title** | **Organization** |
| 1 | Tran Huong Giang | Technical Program Manager - Livelihoods | World Vision Vietnam |
| 2 | Mr. Nguyen Van Cong | Microfinance program coordinator |
| 3 | Le Van Dương | Chairman of the Disaster Working Group (DWG) |
| 4 | Vu Quoc Anh | Coordinator of Climate Change Working Group (CCWG) | OXFAM |
| 5 | Nguyen Thi Yen | Advise on CC and Disaster | Care international |
| 6 | Vu Lan Huong | Program coordinator for empowering women |
| 7 | Ms. Nguyen Thi Nhan | Coordination of policy advocacy |
| 8 | Mr. Nguyen Van Hieu | Climate change expert |
| 9 | Vu The Thuong | Program officer, in charge of climate change | SRD |
| 10 | Bui Le Vinh | Project Coordinator of Climate Smart Village (CSV) at Ma Village | CIAT-CCAFS |

**Appendix B. Institutional mapping related to CC-D-P nexus**

1. **Organizational structure to implement the National Target Program for Sustainable Poverty Reduction**

Government

Central Steering Committee for National Target Programs

[Central Coordination Office for New Rural Development](http://en.vietnamplus.vn/tags/Central-Coordination-Office-on-New-Rural-Development.vnp) Program

**MARD**

[Central Coordination Office for 135 Program](http://en.vietnamplus.vn/tags/Central-Coordination-Office-on-New-Rural-Development.vnp)

**CEMA**

[Central Coordination Office for](http://en.vietnamplus.vn/tags/Central-Coordination-Office-on-New-Rural-Development.vnp) Poverty Reduction

**MOLISA**

**MPI**

**MOF**

Other Ministries

Provincial People’s Committee

Provincial Poverty Reduction Board

District People’s Committee

District Poverty Reduction Board

Commune People’s Committee

Commune Poverty Reduction Board

Village Poverty Reduction Group

*Source: Compile by CAP/IPSARD research team (2017)*

1. **Organizational structure to implement the National Target Program for Sustainable Poverty Reduction**

Government

**Central Committee on Natural Disaster Prevention and Control**

**Chairman**: MARD Minister

**Vice Chairman**: Vice Head of Government Office, Standing Vice Chairman of the National Search ad Rescue Committee

**Members**: leader representatives of related ministries and social organizations

**National Search and Rescue Committee**

**Chairman**: Deputy Prime Minister

**Standing Vice Chairman**: Deputy Chief of Staff of the Ministry of Defense

**Vice Chairman**: Vice Head of Government Office, leaders of Ministry of Police, Ministry of Transportation, MARD

**Members:** leader representatives of related ministries and social organizations

**Standing agency**: Ministry of Defense

**Standing office:** Department of Rescue

**Provincial Search and Rescue Committee**

**Chairman**: PPC Chairman

Standing Vice Chairman: PPC Chairman

**Vice Chairman**: Vice Director of DARRD, provincial Army Commander

**Members**: leader representatives of related ministries and social organizations

**Standing agency:** MARD

**Standing office:** Disaster Prevention and Control Authority

**Ministerial Search and Rescue Committee**

**Chairman:** Leaders of related Ministry

**Standing agency:** DARD

**District Search and Rescue Committee**

**Chairman**: DPC Chairman

Standing Vice Chairman: DPC Vice Chairman

**Vice Chairman:** Head of District Police, District Army Commander

**Members**: leader representatives of related departments and social organizations

**Commune Search and Rescue Committee**

**Chairman:** CPC Chairman

**Standing Vice Chairman:** CPC Vice Chairman

**Vice Chairman:** Head of Commune Police, Commune Army Commander

**Members:** related staffs

**Search and Rescue groups**

*Source: Compiled by CAP research team (2017).*

1. **Organizational structure of climate change adaptation**

**MARD**

National Committee on Climate Change - NCCC

**MOF**

**MPI**

**MOC**

**MONRE**

**MOIT**

**MOT**

Office for Climate Change Programs

Local office for Climate Change Programs

NCCC Office

NTRCC Office

SPRCC Office

International organizations and PCP

Community groups

*Note: MOF: Ministry of Finance, MPI: Ministry of Planning and Investment, MOC: Ministry of Construction, MONRE: Ministry of Natural Resources and Environment, MARD: Ministry of Agriculture and Rural Development, MOIT: Ministry of Industry and Trade, MOT: Ministry of Transportation.*

*Source: Compiled by CAP research team (2017).*

1. Macro economic-socio development policies that cut cross all three pillars of poverty reduction, climate change adaptation and mitigation and disaster management. [↑](#footnote-ref-1)
2. The previous NRD 2010-2020 only mention PR but then the NTP-NRD 2016-2020 has fixed this. [↑](#footnote-ref-2)
3. In the period of 2009-2011, more than 507 thousand households have been supported housing, of which 224 thousand households are of ethnic minorities [↑](#footnote-ref-3)
4. The MOTA framework (Phi et al., 2015) is bottom‐up approach to inform planning practices based on a behavioral perspective, centralizing the motivations and abilities of actors to act. The framework focuses on an integrated correlation between Motivation – Ability – Trigger to assess potential outcome of a plan or a trigger. By indicating interactions between the three components, the framework also addresses potential influences that need to be adjusted in order to narrow gaps between an expected outcome and an estimated potential outcome. [↑](#footnote-ref-4)
5. http://cmh.com.vn/article/201-Danh-sach-cac-tram-khi-tuong.html [↑](#footnote-ref-5)
6. Decree of Government No 58/2018/ND-CP dated of April 18, 2018 [↑](#footnote-ref-6)