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Experience of Non-Governmental Organisations in Vietnam in Responding to Climate Change
A Summary

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INTRODUCTION

This publication documents adaptation and mitigation projects implemented by non-governmental organisations (NGOs) and Civil Society Organisations (CSOs) that aim to curb the impacts of climate change (CC) in Vietnam. The findings of featured projects are country and context specific, however, details may be found relevant for replication in other settings.

This document consists of four chapters that distinguish models by practice type:

- Natural resource management and livelihood development
- Disaster risk reduction
- Greenhouse gas emissions reduction
- Building capacity and changing behaviours in responding to CC

15 models[1] were selected according to criteria used to distinguish 'good' practices in response to climate change. Sub-chapters provide a brief description of a model's key activities, how it addressed the selection criteria in terms of the 'effectiveness' in response to CC, and some of the key challenges or lessons learnt through implementation.

This document is a summary of the report **"Practices in responding to climate change – Experience of Non-Governmental Organizations in Vietnam",** which was an output of the Project "Building capacity on climate change for Civil Society Organizations" funded by the Embassy of Finland, and developed by SRD for The Climate Change Working Group (CCWG) and the Vietnamese Non-governmental Organizations and Climate Change (VNGO&CC) networks.

For more detailed information about the models presented here, refer to the full report "Practices in responding to climate change – Experience of Non-Governmental Organizations in Vietnam", available online via the website of the Centre for Sustainable Rural Development – SRD: ***http://www.srd.org.vn/*** *or the website of the VNGO&CC:* ***http://www.vngo-cc.vn/***

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[1] *A 'model' refers to a group or set of good practices demonstrated through the success of a pilot project*

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We would like to express our sincere thanks to the organizations and staff involved in implementing solutions to respond to climate change, for their collaboration and support in the planning, development and completion of this document, for providing information, responding to interviews and surveys and providing invaluable suggestions and input.

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We are looking forward to receiving suggestions and ideas from specialists, experts, scientists and government management authorities to improve and complete this document.

With sincere thanks
On behalf of the Project Management Board

Vu Thi Bich Hop

ACRONYMS

CC	Climate Change
CCWG	Climate Change Working Group
CCFSC	The Central Committee for Flood and Storm Control
CBDRM	Community-Based Disaster Risk Management
CBO	Community-Based Organisation
CRD	Co-operative for Rural Development
CSOs	Civil Society Organisations
CBET	Community-Based Ecotourism
DMWG	Disaster Management Working Group
DRR	Disaster Risk Reduction
EcoEco	Ecological Economy Institute
EMS	Environment Management System
HVCA	Hazard, Vulnerability and Capacity Assessment
MARD	Ministry of Agricultural and Rural Development
NGO	Non-Governmental Organisation
(N)DRM	(Natural) Disaster Risk Management
REDD	Reducing Emissions from Deforestation and Forest Degradation
SRI	System of Rice Intensification
VAC	Garden – Pond – Pigsty model
VNGO&CC	Vietnamese Non-Governmental Organisations and Climate Change

BACKGROUND

1.1. Overview of Climate change in Vietnam

Climate change is one of the major challenges facing humanity in the 21st century. The impacts of climate change are multifaceted, cross-cutting global development and security in a range of sectors including energy, water, food, society, employment, diplomacy, culture and the economy.

Vietnam is ranked as one of the countries that will be most seriously affected by climate change, with the Mekong one of the three deltas in the world most vulnerable to sea level rise. According to the Government of Vietnam's Ministry of Natural Resources and Environment (2012), average temperatures are expected to increase 2.5-3.1°C by the end of the 21st century and sea level to rise 57-73cm (B2 scenario). Complex weather systems will be affected, causing changes to rainfall patterns and seasonal shifts. The impacts of climate change pose serious constraints on Vietnam's

economic growth and threaten to hinder achievement of the millennium development goals. Increases in temperature, sea level and the severity of natural disasters such as typhoons are examples of climate change effects that have negative impact on agriculture and other industries.

From the onset Vietnam has been involved in international coalitions to drive further actions to adapt to and mitigate climate change, including the release of the National Target Program to Respond to Climate Change (NTP-RCC) in 2008, the National Strategy on Climate Change (2011) and the recently developed Action Plan to Respond to Climate Change at provincial and sub-provincial levels.

1.2. NGO/CSO activities in responding to climate change in Vietnam.

Over the past few years, NGOs and CSOs in Vietnam have played an active part in responding to climate change, particularly at the grassroots level and in remote areas where government efforts are often limited. Both national and international NGOs have been working together with government and the community. NGOs have been implementing projects in a range of areas including:

- Awareness raising on CC issues (causes, impacts and response solutions);
- Sustainable agriculture and environmentally-friendly cultivation;
- Mainstreaming Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) in the development of Social, Economic Development Plans (SEDP);
- Developing and implementing initiatives in community based disaster risk management (CBDRM) and community based adaptation (CBA);
- Implementing flood plain disaster mitigation projects;
- Piloting and promotion of energy efficiency and renewable energy sources; waste treatment; reduction of environmental pollution and GHG emissions;
- Forest and ecosystem protection and afforestation, community based forest management;
- Natural resource and biological diversity conservation and rehabilitation;
- Policy advocacy and technical support for government to develop and implement policies, with a particular focus on vulnerable groups and at-risk biospheres;

NGOs in Vietnam have also been active in voluntary networks. The Climate Change Working Group (CCWG) and the Vietnamese Non-Government Organisations and Climate Change Network (VNGO&CC)[2], established in 2008, provided a platform for co coordination , sharing and capacity enhancement in climate change response.

The CCWG has also been creating opportunities to increase the participation of NGOs, government, donors, the private sector and the community at large. The group convenes monthly and has served to inform policy-making processes nationally and sub-nationally (including those of the Ministry of Agriculture and Rural Development, the Natural Disaster Risk Management Unit, the Central Committee for Flood and Storm Control (CCFSC)), as well as participating in regional and international fora.[3]

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[2]Minh, D.Q, 2008, CBDRM in Vietnam – Selection criteria of good practice and the inventory of integrating 135 program with DRR.
[3]CCWG, 2009, Synthesized from reports of CCWG.

A Memorandum of Understanding was signed by the Department of Meteorology, Hydrology and Climate Change (DMHCC), the CCWG and VNGO&CC on November 18, 2011, as a formal agreement to assist the process of mainstreaming climate change concerns, the arrangement of a national dialogue workshop on climate change, a new roundtable forum on technical issues, and to further strong communications mechanisms.

Other NGO network that contributes significantly to climate change response in Vietnam include: the Vietnam River Network (VNR), the Civil Society Inclusion in Food Security and Poverty Elimination Network (CIFPEN), the Joint Advocacy Network Initiative (JANI) and the Disaster Management Working Group (DMWG).

Signing ceremony of the MOU
(Source: SRD)

(Source: SRD)

GOOD PRACTICES IN RESPONDING TO CLIMATE CHANGE

2.1. Good practice indicators

The practices included herein, defined as 'good' practices in response to climate change, were selected using assessment criteria established through evaluation and review of literature, current evidence and exemplary case studies in CC. The five main assessment criteria were grouped as follows:

- Effectiveness in responding to the impacts of climate change[4] which may include aspects of climate change mitigation and/or adaptation as well as socio-economic or development outcomes[5] as a result of the practice. Good practices often include application of the "precautionary principle" in response to climate change uncertainty during project implementation.[6]
- Participation of local community, which includes (i) engagement with different stakeholders in each activity, (ii) the degree of involvement of stakeholders in project activities, (iii) level of co-operation and co ordination among different stakeholders, (iv) link between project activities and demands, priorities and knowledge of local communities.
- Sustainability, where practices must (i) meet local communities' immediate needs and also have a vision/plan that outlines medium and long term priorities, (ii) address the root

[4]Further details of this criteria are included in the extended good practices guideline available at: http://www1.srd.org.vn/en/content/good-practices-responding-climate-change

[5]Outcomes may include factors such as improved standards of subsistence and health, equality in gender roles, perceived improvements in relationships between community and government and increased resilience extreme to weather events or disasters.

[6]A 'precautionary principle' or precautionary approach, reflected in the UNFCCC as well as the Rio Declaration 1992, suggests that in the absence of scientific evidence for actions that may be harmful to the public or environment, then the burden of proof that it is not harmful falls on those taking the action.

causes of vulnerability/poverty in the project area, (iii) predict and provide solutions for potential and existing conflicts that may arise during project implementation (iv) consider indigenous knowledge and (v) be aligned with the national and international climate change response context.

- Creativity, where the practice must (i) show flexibility and creativity in its implementation, (ii) integrate both local and scientific knowledge in solving local issues and (iii) show outstanding results compared to previous practices (if any).
- Replicability, practices should have certain characteristics: (i) easy to understand, simple, easily accepted and applied in a number of areas, (ii) solve typical problems that are representative of a wider region/community groups, (iii) have outcomes that satisfy both local demands and national and international priorities and (iv) include an effective communication/sharing mechanism.

2.2. Natural resource management and livelihood development in response to climate change

The agriculture, forestry and fishery sectors are highly vulnerable to climate change. According to the report of the Vietnam General Statistics Office in 2010 these sectors employed almost half of total national labour force (49%)[7] with a production of 20.58% of GDP[8]. Vulnerable groups employed in these sectors were often engaged in small scale, household level production using traditional, manual methods which are directly affected by adverse weather conditions.

Over the past few years NGOs have made a significant contribution towards assisting poor people to increase their livelihood security, reduce vulnerability and enhance their resilience. There are many examples of good practice models that assist people to develop coping mechanisms and the capacity to deal with the impact of disasters and other environmental/development challenges. A number of models promote the application of sustainable production and/or a community-based management approach. All models demonstrate positive outcomes in addition to improved socio-economic conditions, such as improvement in the relationship between local authorities and the community through benefit sharing, and improvement in the understanding of roles and responsibilities in terms of natural resource management.

The good practices selected include:

- The System of Rice Intensification (SRI);
- The Garden – Pond – Pigsty (VAC) model;
- Change of cultivation methods and livelihood diversification in responding to climate change;
- Watershed management with community participation;
- Enhancing coastal ecosystems management and developing community livelihood in responding to climate change.

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[7]General Statistics Office, 2010, Statistics Information of labor force over 15 years old, working on 1/7 yearly, [internet] http://www.gso.gov.vn/default.aspx?tabid=387&idmid=3&ItemID=11466, last accessed 19/08/2011.
[8]General Statistics Office, 2010, Statistics Information of Social Economic Situation 2010, [internet] http://www.gso.gov.vn/default.aspx?tabid=621&ItemID=10835, last accessed 19/08/2011

(Sources: SRD)

System of Rice Intensification – SRI

SRI is a farming method that originated in the 1980s in Madagascar for farmers with small landholdings, developed to address problems with sustainability and limited yields in rice production due to overuse and/or misuse of nitrogenous fertilisers and pesticides. SRI also addresses problems of water scarcity and crop damage as a result of climate related disasters such as floods, storms and droughts. Since 2003, SRI has been introduced and implemented in Northern Vietnam by a number of organisations (including Oxfam, the Japan International Volunteer Center (JVC), World Vision and the Centre for Sustainable Rural Development (SRD)), with support from, and the active participation of, local authorities and farmers.

Effectiveness in responding to climate change

Broadly this method has been proven to save costs and resources whilst enhancing crop resilience to extreme weather changes and reducing greenhouse gas emissions. More specifically:

- **SRI enhances the resistance of rice plants against harsh weather conditions and epidemic disease** as they have stronger stalks and larger and deeper root systems than rice plants grown with conventional methods.
- **SRI reduces the dosage and frequency of pesticide application** but still maintains good, and sometimes even better, growth and resistance to epidemic diseases for the rice plants.
- **SRI can reduce the use of water through periodic drainage,**

SRI basic technical principles:

1. *Sow seedlings: sparsely plant (0.05 – 0.1 kg/m2).*
2. *Transplant rice seedlings one per hill (avoid root injury when uprooting the rice seedlings), with width of planting space based on soil quality, seed and season. Plant in a square grid pattern with wide spacing to ensure equal sunlight is received from all directions.*
3. *Weeding then stir mud and combine with fertiliser during the tillage stage.*
4. *Periodically manage water supply and aerate the soil (it is necessary to keep soil moist but not to allow inundation of the rice fields).*
5. *Apply organic fertiliser to improve soil nutrient conditions, to increase biological activity.*

estimated to be approximately 2-3 times less per crop compared to conventional methods, which helps conserve irrigation water and the reduce risk of water scarcity during drought season.

- **SRI may reduce the emission of green house gases (GHGs) such as methane (CH_4) and nitrous oxide (N_2O)** through regular drainage of rice paddies and a reduction of chemical fertilisers and pesticides.
- **SRI technical principles are simple easy to apply and very low cost.** SRI is also very flexible and can be applied on a small scale using select activities.

Rice cultivated based on SRI. Photo taken in Van Chan, Yen Bai Province (Source: Chau Doan)

Lessons learnt

- **Positive support from local authorities plays an important role in the application of SRI at a larger scale, as well as ensuring the maintenance and expansion of SRI after the project ends.**
- **The selection of place and participants by the farmer households that applied SRI demonstration model plays an important role in the success of the project.**
- **The communication of SRI application via mass media aided the effectiveness of applying SRI in local area.** Communication activities, such as awareness raising via loudspeaker, radio, signboards and advertising panels, play an important role in encouraging the application of SRI techniques.
- **Frequent supervision and support systems at the grassroots level is necessary to enhance participation of government at all levels.** In addition, there should be sufficient local supports to avoid dependence on project staff expertise and labour.

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Visit the SRI weblog http://srivietnam.wordpress.com/ for more information.
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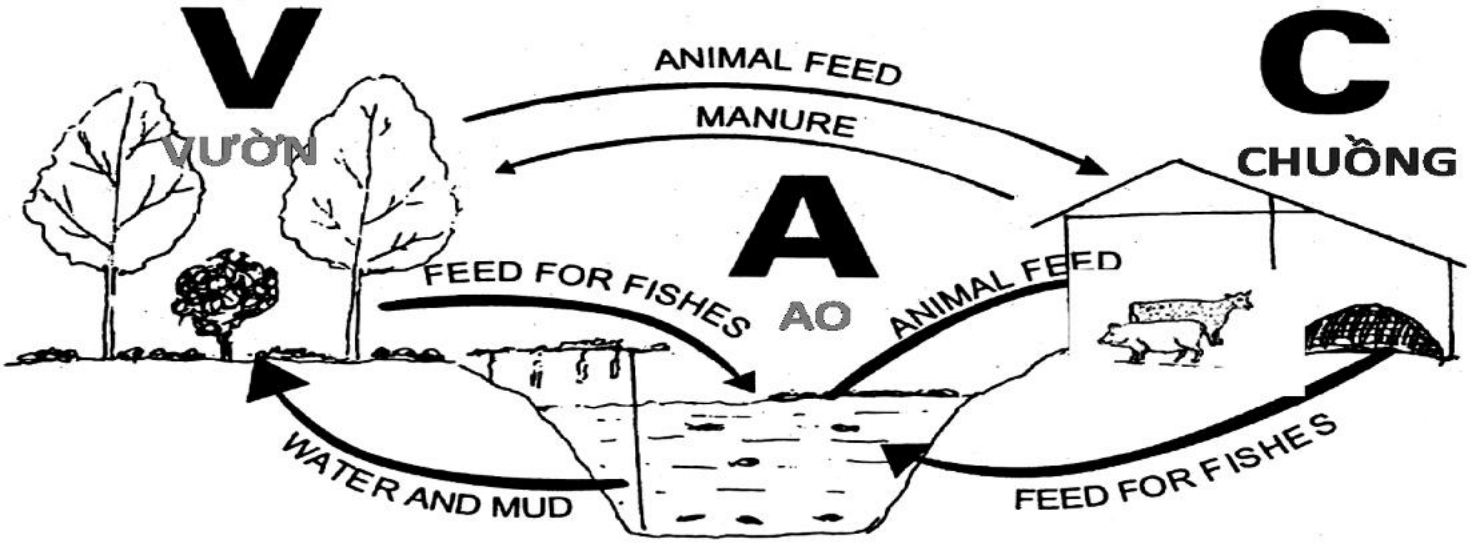

Drawing : **VAC ECOSYSTEM**

GARDEN – POND – PIGSTY

Animal husbandry, farming and fishery are primary livelihood sources of many in rural areas of Vietnam. In recent years the cost of inputs including stock feed, fertilisers and pesticides have been subject to increasing market fluctuations. In addition, use of processed foods and chemical fertilisers have created significant health risks.

The Garden (V) – Pond (A) – Pigsty (C), or VAC model, has been apparent in Vietnam since 1986 as a small-scale, self-sufficient and diversified farming model.[9] Variants of this model include Forestry (VACR), Biogas (VACB) or even Aquaculture inputs in combination with cultivation and/or animal husbandry which is also popular in areas across Vietnam, especially in the Mekong Delta.[10] Similar to SRI, the focus of VAC centres on livelihood security whilst minimising environmental impact.

Effectiveness in responding to climate change

- **VAC employs a three-tier approach to reducing salt intrusion, soil erosion and desertification, whilst reducing dependence on chemical fertilisers and related methane emissions**. (1) Gardens or 'greening' with select flora for mountainous and coastal areas reduce risk of landslides and tidal encroachment[11], (2) ponds limit

"The purpose of VAC model development is the optimal utilization of land area, terrain, water and labor resources in order to increase the economic effectiveness of farmer households. Thus, there is no standard model for crop and animal pattern in VAC. In order to develop an effective VAC model there should be a crop and animal pattern that corresponds with the natural conditions (area, land specification, terrain, water resource, and climate) and social conditions (working labour, market, transportation). The crop and animal pattern of each component of such model depends on each other. For instance, if raising chickens and fish in the confined space, a few falling leaves of surrounding canopy creates a good condition for the supported chicken and fish livestock" (Tran Ngoc Hien and partners, 2009)

[9]*Established by the Vietnamese Gardener's Association (VACVINA)*
[10]*Hatim I., Anh Đ.Q, Nguyet Đ.V, 2009, Assessment Report on Ecological Village Practice, Assessment of Three Ecological villages, implemented by EcoEco and sponsored by CCFD*
[11]*Khanh Phuong, 2010, VAC with Climate Change, [internet] http://www.baomoi.com/VAC-voi-bien-doi-khi-hau/79/4748316.epi, last accessed 19/08/2011*

salination of the fresh water table[12] and act as rainwater catchments to reduce the need for irrigation in times of drought, and (3) pigsties help reduce pollution and methane emissions through the utilisation of animal waste and other farming by-products as organic fertilisers or fish fodder.

- **The VAC model has proven to be popular as it can be applied at the household level, involving the extended family and the community.** Small households with labour shortages can still adopt VAC model.
- **VAC relies on local knowledge of cultivation and husbandry for the selection of appropriate interventions.** Although in some instances beneficiaries have sought technical advice to select an appropriate mix of flora and fauna, such as plants resistant to inundation and drought.

Lessons learnt

- **Farmer households were more engaged; they assumed ownership when their ideas and opinions were acknowledged.**
- **Farmers in Vietnam have experience with co-operatives and are subject to the hierarchical structure of national education and training, therefore success hinges on the involvement of local leadership.**
- **Learning by doing or 'hands-on' training is preferred in communities with low literacy**. Instructions should be detailed in a step-by-step process; Gradual progression should be subject to review and adjustment.
- **Selection criteria should be developed in consultation with, and be clearly communicated to the community.** Targeting those most in need is not as simple as identifying households classified as 'poor' or 'near poor' by government standards. Criteria should focus on potential beneficiaries rather than highly technical agricultural practices. **VAC model should not be introduced as a 'closed' system. Variants of the VAC model should be discussed and** encouraged within reason, however changes and adjustments should be considered according to the stage of progression of introducing the key factors.

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[12] *VAC economical development, [internet] http://dongtamxanh.com.vn/Story.aspx?lang=vn&zoneparent=97&zone=107&ID=590, last accessed 19/08/201*

Model of planting chillies at Hai Qua commune, Hai Lang district, Quang Tri. Source: CRD

Model of vegetable off-season crop at Trieu Giang commune, Trieu Van, Quang Tri. Source: CRD

Change of cultivation methods and livelihood diversification in responding to climate change

Vietnam has a long coastline with diverse marine and coastal ecosystems such as mangroves, coral reef, lagoons, sea grass bed, and tidal flats. Coastal areas are regularly affected by natural disasters and climate change; Quang Tri is located in the north-centre of Vietnam, one of the most hazard-prone provinces. Much of the area is below sea level and is subject to increasing saltwater intrusion through a combination of drought and sea water level rises. Intensive agriculture in these areas exacerbates adverse impacts on soil integrity.

Solutions for salt intrusion based on research, experience and local knowledge is crucial for Quang Tri province to adapt to climate change. As a result, the Centre for Rural Development of the Central Vietnam – Hue Argo-forestry University has developed effective measures to help farmers in coastal areas of Quang Tri to adapt to these changes. The method includes a combination of crop selection, seasonal planting, fallow (rest cycle), increased use of organic fertilisers (instead of chemical solutions), and the inclusion of indigenous knowledge (e.g. communities' experiences how to identify salt intrusion areas) and other good agriculture practices in each models. The measure has

not only had economic benefits but it has also created environmental buffers to climate change impacts.

Effectiveness in responding to climate change

- **Reduced risk of desertification through maintenance and improved fertility of soil**. Use of organic fertilisers, selecting seasonal rotation of flora and managing planting density maintains soil moisture and allows soil-nutrient contents to replenish.
- **Enhanced resilience to pestilent insects, drought, flood and/or frost**. Indigenous sweet potato crops in two of the project communities confirmed a reduction of sweet potato weevil by 10-12% compare to traditional methods.
- **Enhanced resilience to extreme weather condition and protection of livelihoods**. Crop species selected to adapt to drought conditions (lettuce, cabbage sprouts, centella, amaranth leaves and malabar spinach) have not only contributed improved soil conditions but also led to increased household income and provided employment opportunities in the off-season period.

Lessons learnt

- **The model should be implemented in parallel with capacity building,** which can be undertaken through various methods such as training at each stage of cultivation. Arranging the model adjacent to a control field (without intervention) can serve as a useful comparison for data collection.
- **Prospective participant households should commit to activities and self-report data using the model handbook** to assist with monitoring factors such as plant growth and prevalence of pests, for sharing of experience and for calculating the economic efficiency of the model.
- **Supervision should be carried out frequently** in order to recognise mistakes/ shortcomings of households and have take corrective action in a timely fashion.
- **The 'research to practice" framework adopted in this model increased the efficacy of the project by allowing specifications to be guided for each** context. This meant that local knowledge and the demands of local people were taken into account and incorporated into problem solving and model application.
- **Mobilising key stakeholders to participate in the model (commune, village and farmer representatives) in all stages (training, study tour and workshop) helps to increase the replicability**.

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Watershed management with community participation

Many poor people living mountainous areas depend on natural resources and small areas of land. Constraints to changing livelihood opportunities such as high poverty rates, limited access to information and crop production techniques, a lack of co-ordination, regulations and environmental planning, as well as a lack of participation of local people in land and natural resources management are contributing factors for the vulnerability for these communities.[13]

Cultivation on slopping land, Ba Thuoc, Thanh Hoa. Source: CARE

In Ba Thuoc District, Thanh Hoa Province, ethnic minority groups are facing a number of issues related to natural resource management linked with deforestation and different climate change related risks, such as changing rainfall patterns, severe droughts, cold spells, flashfloods, landslides and flooding. By applying Visioning Approach, a comprehensive plan towards improving their natural resources and creating sustainable livelihoods has been developed and implemented jointly by CARE Vietnam and Thanh Hoa Union of Science and Technology Associations (TUSTA) in this area. The model included a series of activities that strengthens inter-commune watershed management, local resilient livelihoods, diversified income sources, participatory disaster risk reduction planning and implementation, and climate change adaptation have been piloted and mainstreamed into commune socio-economic development plans, capacity building and gender mainstreaming. The model has helped construct a more equitable society in Ba Thuoc and has led to capacity building of local authorities and communities.

Effectiveness in responding to climate change

- **Improved community participation** (including active participation of people living in poverty and vulnerable groups) through engagement in visioning planning, climate vulnerability and capacity analysis and mainstreaming of climate change into socio-economic development plans. This ensures local government decisions and policies that shape climate change adaptation activities are realistic, feasible and have the support of local people.

[13] *CARE, 2007, Project document: Watershed management with community participation*

- **Improved adaptive capacity of local authorities** through involvement in conducting climate vulnerability and capacity analysis and mainstreaming climate change adaptation and disaster risk reduction into socio-economic development plans. Down-scaled information on agro-climate is also introduced => Agro-climate information is also introduced to local authorities and communities for better use in the development of seasonal calendars.
- **Effective watershed management** with the establishment of an inter-commune watershed management structure and participation of different community groups from up and down stream. The result is a joint effort in conserving and sharing water sources for crop production.
- **Livelihoods are diversified and adapted to climate change:** different livelihoods are developed with the incorporation of indigenous knowledge and information of weather changes and climate variability
- **More equal participation of women and men through costs and benefits sharing in natural resource management and usage.**

Lessons learnt

- **The visioning approach is a good way to integrate disaster and climate issues with landscape management and resilient livelihoods in planning processes;**
- **Using flexible participatory tools and relevant information on climate change is a key factor in effectively building capacity at the level of the community and local authorities;**
- **Flexible application of the participatory method** is necessary to maximise collaboration withlocal authorities, and capitalise on community strengths and resources;
- **Application of the people-centred approach in defining community demands and in developing an equitable natural resource management mechanism** helps promote a spirit of volunteerism, self-awareness and sense of responsibility for local people in all activities, which in turn develops a sense of local ownership and ensures the sustainability of activities;
- **Community and supporting groups ensure that the community voice is represented in decision-making processes by local authorities;**
- **A combination of activities serves to promote action and behaviour change in stakeholders:** 1) Creating livelihood opportunities, 2) Capacity building and skills development, 3) Awareness raising; and
- **Full participation and active support of related parties, including local government, local people and technical organisations, play a very important role in the success of the project.**

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Community-based coastal livelihood management (Source: MCD)

Enhancing coastal ecosystems management and developing community livelihood in responding to climate change

In addition to a wide range of economic and social benefits, marine and coastal ecosystems serve to mitigate the effects of GHG emissions and protect the coastline from erosion, tropical storms and king tides.

"Enhancing the coastal and marine ecosystem management and developing community sustainable livelihoods" is a mixed climate change mitigation and adaptation model formulated in 2007 that aims to enhance awareness, knowledge and capacity of the patrons of coastal and marine resources; promote and support restoration and conservation; To support diversification of marine livelihoods; To disseminate experience, knowledge and lessons learnt of policy makers.

Effectiveness in responding to climate change

- **Annual community-led campaigns and coastal clean-ups served to raise awareness and action on environmental issues** such as climate change, waste management, green living, etc. The environment and climate change education spaces were successful in raising awareness whilst enhancing social and financial capacity. Through such activities, participants were more confident, better prepared and more active in responding to the challenges related to climate and weather changes.
- **Environment-friendly livelihood practices** (aquaculture, community based ecotourism –CBET, Ecolife Café, red worms raising, mushroom planting) **created employment related opportunities**, in particular for women seeking to improve household income. In addition, the practices

have reduced pressure of natural resources exploitation in conservation areas.

- **Community social capital is enhanced** through cooperatives, social networks and gender equality. Women are more involved in planning the co-management of coastal natural resources and in developing their community's livelihoods.
- **Effective measures in ecosystem conservation and coastal resources management** such as co-management and environment-friendly livelihood developments have increased the resilience of the coastal ecosystems and coastal communities. Joint management of the conservation zone has played a part in **maintaining, recovering and developing of thousands of hectares of mangrove forest, coral reefs and sea grass** which in turn play a part in climate change mitigation and adaptation
- Ecosystem-based measures for responding to climate change were taken into account in community regulations and local government management plans, which may enable follow-up and scale-up.

Lessons learnt

- **Active participation in all phases of the model** plays an important role in strengthening capacity of participants. It also provides a means for monitoring and assessing results;
- **Assessments and applied scientific research in the design of the model** provided useful information, especially at the local level.
- **Community based and ecologically based approaches play a crucial role in meeting response objectives and ensuring the models sustainability. Implementation should be in line with the national and local programs and plans.**
- Regular dialogue was the precursor to building consensus among related stakeholders. **Enact policy advocacy activities, build institutional capacity and enhance the integration of climate change in management plans/programs. Those programs/plans should consider response solutions for sustainable livelihood development and increase the adaptive capacity to long term impacts of climate change.**

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Disaster risk reduction

Due to its unique geographical layout, Vietnam is particularly vulnerable to the impacts of tropical cyclones, floods, droughts, king tides, landslides, forest fires and occasionally even earthquakes. Nearly 60% of Vietnam's land area and more than 70% of the population are regularly subject to natural disasters, notably from tropical cyclones and floods. In the past 20 years, natural disasters have claimed more than 13,000 lives and, on average, cost approximately 1% of the national GDP annually.[14] Climate change adds further complexity to the incidence of natural disasters.

A recently published IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX report[15]) confirms that in order to ensure sustainable development within this current context, disaster risk reduction (DRR) should be considered as a core component in climate change adaptation (CCA).

Experiences and outcomes of Disaster Risk Reduction activities in Vietnam have shown that it is vital to have an appropriate combination of both structural and non-structural measures (e.g. community-based disaster risk management) with emphasis on engaging the community at the grass-roots level in decision-making and response activities. With the efforts of the government, NGOs, local authorities and communites in recent years, we have gained significant progresses in disaster preparedness and prevention. A series of initiatives, models and good practices on disaster risk reduction have been implemented and replicated by the relevant agencies and organizations. Some good community based DRR models include Four on-the-Spot Motto; Disaster Risk Reduction and Management Council. Information about these practices is well documented and can be found at the website of the Standing Committee of the Flood and Storm Control Panel. (CCFSC website: http://www.ccfsc.gov.vn/KW376B3F/An-pham--Tu-lieu.aspx).

DRR models have been well documented and will not be mentioned in this chapter. Instead, two models will be discussed that include more holistic approaches, emphasizing the importance of integrating DRR activities with diversified livelihoods, namely:

- Community-based mangrove plantation, protection and management
- Integrating Disaster Risk Reduction and Climate Change Adaptation into Socio-Economic Development Plans (SEDP) and Planning Processes at Local Level.

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[14] *World Bank, 2011, Vietnam Development Report 2011 – Natural Resources Management, [internet] http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/VIETNAMINVIETNAMESE-EXTN/0,,contentMDK:22416760~pagePK:1497618~piPK:217854~theSitePK:486752,00.html, last accessed 15/11/2011.*

[15] *IPCC, 2011, Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation – Summary for Policy Makers, [internet] http://ipcc-wg2.gov/SREX/, last accessed 25/11/2011.*

Community-based mangrove plantation, protection and management

Mangrove ecosystems serve to prevent and reduce the impacts of natural disasters such as typhoons, high waves and rising tides. Mangroves also help to stabilise the coast, facilitate sedimentation and reduce coastal erosion.[16]

Wars destroyed approximately 30% of the Vietnam's mangrove areas. Rapid development of the fishery, tourism and other coastal industries since the beginning of the 'Đổi Mới' period (1986) also led to the continuous reduction of mangrove areas.[17]

Helping the community to diversify their livelihoods – Raising Oyster in Len River

Source: CARE

MARD, previously the Ministry of Forestry, has supported restoration, protection and management mangrove forest since the 1960s. Since the 1990s international organisations have been implementing activities under various schemes with varying levels of success.

CARE's Community-based Mangrove Plantation practice implemented in Hậu Lộc, Thanh Hóa since 2006 proved to be successful with many valuable lessons learnt on how to implement community-based approaches in mangroves management to reduce disaster risk and respond to climate change.

Effectiveness in responding to climate change

- **Newly planted mangroves had positive impacts in helping to stabilize the coast and the alluvial areas as a green belt to protect communities and dykes from typhoons and in creating options for use of forest area.**
- **Mangroves serve as carbon sinks to help mitigate climate change**. The potential to make earnings from carbon credit through CDM and REDD+ have also been studied[18] during practice implementation.
- **The established mangrove nurseries provided on-site seedlings and juvenile**

[16]*Hong P.N. & San H.T., 1993, Mangroves of Vietnam, IUCN, Bangkok, Thailand.*
[17]*Hong P.N. & San H.T., 1993, ibid.*
[18]*Mangrove for the Future(MFF), 2010, Summary report: Mangrove for the Future, Phase 2, Vietnam Launch , [internet] http://cmsdata.iucn.org/downloads/mff_2_launch_meeting_summary_october_2010_final_1.pdf, last accessed 15/10/2011*

trees for planting as well as creating an additional source of income for the local people.

- **Stronger co-operation, improved capacity and enhanced awareness of community members and local government in co-managing the mangrove forest, mobilising collective strength in disaster response, and responding to climate change.**
- **Mangrove afforestation and other activities supported community livelihoods and created diversification options (raising pigs, oysters, bio-fertiliser, excavatus and bee keeping) that served in reducing poverty and people's vulnerability against disaster risks and climate change.**

Lessons learnt

- Integrated approach of mangrove plantation and maintenance with livelihood options and diversification and disaster risk reduction planning at village and commune levels brings comprehensive impacts.
- **Appropriate distribution of resources in (i) plantation, (ii) helping the community mangrove management and protection (iii) capacity building for the community, mass organizations and local government,** are crucial in ensure the sustainability of the newly planted mangroves.
- **On-site leadership, monitoring and evaluation are critical to the success of the project,** however it is also important to have a clear and appropriate exit strategy for project staff for the sustainability of the project.
- **Maintain transparency in all project activities to build trust; Seek to utilise indigenous knowledge, where possible; Build a culture of participation and seek to include community in decision-making processes.**
- **Seek to maintain flexibility through innovative means of mobilising people to participate in project activities.**
- **Maintain the relationship with local partners from provincial to commune levels** through facilitation of administration procedures and project activities, such as the preparation for workshops, training courses and meetings; Participation of different stakeholders help to raise the perceived value of the community-based approach.

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Integrating disaster risk reduction and climate change adaptation into socio-economic planning at the local level

Vietnam is currently implementing policies related to climate change and disaster risk reduction (DRR) response. All of these policies highlight the importance and necessity of integrating DRR and climate change adaptation (CCA) into strategies, policies and plans, especially socio-economic development plans, at all levels.

"Integrating DRR and CCA into the socio-economic planning processes at the commune level" is a recent publication of the NGO network led by Oxfam that provides clear guidance for local authorities and related agencies. Initial DRR and CCA integration pilots plans guided with the use of this resource have shown positive changes in the commune planning processes, where poor people, ethnic minorities and women played an active role in verifying that their short term and long term priorities were appropriately factored in to local plans and budgets.

Integration Principles

Integration of DRR and CCA into socio-economic planning should abide by the following principles:

- Integration at all steps of the planning process;
- Based on the principles of sustainable development, policy is systematic, wholistic, sector-based, interdisciplinary and regionally specific, contributing to the poverty reduction and gender equality, and prioritises vulnerable groups such as the poor and children;
- Set clear priorities and take into account DRR & CAA with other immediate impacts and potential impacts in the future;
- Based on active participation of all stakeholders;
- Mobilise community resources: based on the results of hazards & climate risk assessment to analyse the strength and weakness of the community, promoting self-active and innovative methods of the local people in the design and integration process;
- Must not be complex or create additional responsibilities and work for the planning officers and local authority.

(Source: Oxfam in Vietnam, 2011, Draft Manual on the Integration of Disaster Risks Reduction and Climate Change Adaptation into the socio-economic planning process at commune level)

Effectiveness in responding to climate change

- Disaster and climate risks are reviewed, response measures are proposed and planned development activities are revised appropriately.
- Vulnerable groups (ie. poor people and ethnic minorities) are involved in key stages of this process to ensure their voice is accounted for.
- The process of integration is institutionalised, step-by-step, and can then be replicated in other communes and districts.
- A pilot Community Development Fund that aims at promoting activities in the integrated plan is established and serves as an example of the need for budgetary allocations and for promoting the participation of community.
- The manual for "Integrating DRR and CCA into socio-economic planning process" has been successfully developed and piloted. It has received positive feedbacks from government agencies and related NGOs. Efforts to introduce this guideline as an advocacy tool aim to institutionalise the integration processes.

Lessons learnt

- A draft version of the integrated socio-economic plan should be developed from (i) district's development direction and with guidance from the community-based CCA and DRR (CBDRM), (ii) contributions from village representatives through vulnerability assessment (VCA), and (iii) sector feedbacks via consultation of related technical groups.
- Analysis of impacts, causes and measures to adapt to climate change and reduce disaster risks should be integrated at each step of the planning process.
- Participation of local authorities at all level, especially related provincial agencies, plays an important role in guiding and monitoring the commune's planning processes.

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Greenhouse gas emissions reduction

Vietnam has experienced remarkable economic growth of approximately 7% per annum since the 'renovation' reform in the 1990s, however the country is now facing many problems as a result of sudden growth, specifically environmental degradation and a growing development gap between rural and urban areas in Vietnam.

Up to date climate change mitigation activities are limited and are still in their infancy, however when looking at environment protection movements and various agriculture development activities and the development of business sectors in Vietnam, there a number of good practices/models with good potential for replication. Within the scope of this study, we have chosen the following models:

- Biogas market development for the VACVINA biogas system
- Market development for the fuel efficient cooking stove
- Development of the bamboo industry in Thanh Hoa – experience of managing and utilizing resources sustainability.
- Promoting an environment, resources and energy management system for business enterprises

These models have not only shown clear results for climate change mitigation, but also other novelty approaches that are worth mention:

- Using a market approach to promote the sustainable development of mitigation technologies, and promoting the adoption of management, operation and monitoring systems to be used appropriately and effectively.
- Considering small and medium business enterprises as their main target groups and/or aiming at establishing the business sector at the local level (e.g. as in the cases of VACVINA biogas and fuel efficient cooking stove) for the sustainability of the models.
- Participatory approaches are used actively and regularly in the planning, in the implementation, and in monitoring and evaluation, in which all stakeholders (local authority, other organisations and enterprises, the community members and the project staff) participate in project activities.
- Capacity development, awareness raising and skills development for stakeholders play a crucial role.

VACVINA Biogas system (Source: CCRD)

Biogas market development for the VACVINA biogas system

The biogas industry in Vietnam began to develop in the 1980s with the government endorsement of the National Program on New and Renewable Energy (Code 52C) and with support, research and collaboration of international organisations such as OXFAM, UNICEF, ACCT, SIDA and SNV.[19]

The Centre for Community Research and Development (CCRD) under the Vietnamese Gardeners Association (VACVINA) have developed a unique biogas design with research of foreign prototypes and with consideration of the local context. In 2002 the Ministry of Agriculture and Rural Development issued Decision No. 4414/QĐ – BNN – KHCN which recognised the VACVINA biogas digester as an advanced technology and allowed the replication of this model across the country. There are now nearly 10.000 digester systems installed and in operation and all costs for construction were paid by the local people themselves.[20]

Effectiveness in response to climate change

The use of biogas for cooking and light can help mitigate climate change. On average, a VACVINA biogas system with tank size from 7 to 8 m^3 can generate approximately 2.5 m^3 biogas per day. According to CCRD calculation, when using VACVINA biogas system each household can reduce their fuel wood consumption by approximately 4.5 tons/year and reduce about 5.67 tons CO_2 equivalent/year.[21]

In addition to help mitigate climate change, biogas technology has other benefits such as (i) improvement of health and hygiene conditions, (ii) reduced time spent collecting firewood (especially for

[19] *Lượng, N.G & Khải, N.Q, 2005, Biogas Technology Development Status in Vietnam, Husbandry Magazine, No. 05/2005, [internet] http://www.vcn.vnn.vn/PrintPreview.aspx?ID=2895, last accessed 26/07/2011.*

[20] *Civil Society Inclusion in Food Security and Poverty Reduction Network - CIFPEN, A selection of good practices in Sustainable Agriculture for small scale farmer, [internet] http://cifpen.org/wp-content/uploads/2011/02/Mot-so-mo-hinh-NN.pdf, last accessed 20/07/2011, pp. 20-24*

[21] *Thành P.V, VACVINA Biogas in the combat against climate change, Rural Economy Online Magazine, 23/06/2010, [internet] http://www.baomoi.com/Home/KhoaHoc-TuNhien/kinhtenongthon.com.vn/Biogas-VACVINA-voi-cuoc-chien-chong-bien-doi-khi-hau/4441261.epi, last accessed 09/08/2011.*

women), (ii) reduction in would be costs for daily fuel consumption (coal or firewood), (ii) built underground and may be used for warming breeding facilities or toilet[22] areas (iii) simple design does not require high skilled mason and technician

Lessons learnt

Consumer confidence was identified as one of the biggest challenges. Some solutions include:

- Details of different biogas models are best displayed and described in detail using a small-scale, showroom prototypes.
- The owner of the showcase models should meet the following criteria: (i) have easy access for potential customers to visit (ii) willingness to host visiting guests, (iii) a good reputation and prestige in the local community, (iv) have husbandry activities that provide sufficient fuel, and (v) secondary jobs (ie. production of wine, tofu or fresh noodles).
- Provide training for customers on how to use the biogas system and honouring the five years warranty services.
- Set up local service provider groups at local level, where they both construct biogas plants and provide warranty and maintenance services and training end users.

The biogas market in Vietnam is in its infancy, which means that extensive communication efforts are required. Mass organisations such as the Women's Union, Farmers Union, Youth Union and Veteran Union, have a significant influence over the local community and as such were effective communication partners.

Addressing difficulties in accessing credit resources for the construction of biogas plants requires close collaboration with local authorities and organisations. The implementation of the project has shown that the ability of local people to access loans plays an important role in the development of biogas market at the local level. In addition, local authority support also plays a critical role in the replication of the biogas system in rural animal husbandry communities.[23]

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[22] *CCRD, 2008, ibid.*
[23] *Biogas Market Development Project: Up scaling in 1 Province, Project Closing Form, [internet] http://www.ease-web.org/?p=1302 last accessed 15/08/2011.*

Market development for the fuel efficient cooking stove

Health problems associated with the usage of traditional cooking stoves and efforts to reduce def orestation prompted new developments of cooking stoves since the 1970s. The technology spread to Vietnam in the 1980s, focused in rural areas where the majority of the population still use traditional biomass stoves.

Fuel efficient advanced cooking stoves have gained the interest of organisations working to combat climate change, since it can help reduce GHG emissions, save resources and improve health conditions for local people, especially for women and children.

More than 9 million households in Vietnam still use biomass for daily cooking activities, in which approximately 70 – 80% still uses traditional, inefficient cooking stoves.[24]

Direct marketing of fuel efficient cooking stove (Source: CRD Quan Hoa)

Financing this technology using the subsidy approach – a method applied by many organisations in Vietnam – presented several shortcomings: (i) high cost for the producers, (ii) may not suitable in other areas due to diverse cooking habits and uses of different types of biomass for cooking, and (iii) issues with the quality of the cooking stoves.[25]

Instead, some other approaches in Vietnam have shown positive results and potential for replicability such as the market-based approach by Centre for Population, Environment and Development Research (PED) which focus on the establishment of technician groups, local cooking stove enterprises and adopting door-to-door advertisement and marketing activities.[26] Quan Hoa's Cooperative for Rural Development (CRD) is an example of a market-based, participatory approach to the promotion of small scale cooking stoves.

Effectiveness in responding to climate change

- The replacement of traditional cooking stoves with fuel efficient stoves can help reduce emissions from 40 to 50% and save 40 – 50% fuel.

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[24]*Centre for Energy Saving in HCM City, 2010, The wide spread of fuel efficient cook stoves using agriculture by products in rural households, [internet] http://thanhgiong.vn/Home/To-quoc/NewsDetail.aspx?id=4171, last accessed 15/10/2011.*

[25]*Giang, D. H & Pauline, O., 2010, Fuel Efficient Stoves – Air Quality and Health: An Assessment of Initiatives and Opportunities, [internet] www.mcnv.nl/uploads/media/Fuel_Efficient_Stoves.pdf last accessed 30/08/2011.*

[26]*Khôi, Đ.Đ., 2007, ibid*

- Improved cooking stoves can help mitigate climate change by: (i) saving biomass, (ii) reducing black carbon emissions and other GHGs such as nitrous oxide and methane generated during incomplete burning process (which often observed in traditional stoves).
- Additionally, the application of fuel efficient cook stoves helps (i) improve health through the reduction of pollutants and time for collecting fuel wood, (ii) reduce pressure on natural resources through the reduction of biomass fuel used, and (iii) create new jobs and livelihoods for local technicians and enterprises focused on vulnerable and poor people.

Lessons learnt

- **A market approach for the dissemination of fuel efficient stoves needs clear direction**. Detailed discussions with local partners, potential customers and technicians should be done right at the beginning of the project to shape and clarify direction.
- **Local partners play a critical role in the success of the projects.** The Women's Union has been an effective partner to engage the primary target group (women- a leading role in family cooking) and to take advantage of their intensive networks for the continuation of activities.
- **Determining project sites and implementing market research activities should have the active participation of local partners and community members.**
- **Providing support for the development of service providers' network plays a critical role** in the establishment of product delivery systems and related consultancy services.
- **Diversification of products is necessary to meet the demand and increase options for customers.** However, introduced products should meet the needs of customers, e.g. their cooking habits, their ability to pay, and should respond to previous feedback.

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Bio-fertilizer made from Luong by-products (Source: CRD Quan Hoa)

Development of the bamboo industry in Thanh Hoa - experiences of managing and utilizing resources sustainably

The support of the Research and Technology Transfer Organisation (GRET) in the Luong (bamboo) Value Chain Development Project in Thanh Hoa since 2005 has helped the people in the mountainous districts of the North-Western Thanh Hoa province **(Quan Son, Quan Hoa, Ba Thuoc, Ngoc Lac and Thuong Xuan districts)**, especially in terms of poverty reduction. However, there are many social and environmental issues upon completion of the project including local unemployment, shortage of resources for livelihoods, bamboo by-products and the degradation in bamboo plantation areas due to excessive exploitation and lack of proper cultivation techniques. [27]

GRET has collaborated closely with the Quan Hoa–Thanh Hoa Cooperative for Rural Development (CRD) and with local bamboo enterprises to implement the Green Future Project. The project aims to create more jobs and income at the local level by utilizing bamboo by-products to generate energy by producing activated charcoal for growing mushrooms and making organic fertilizers. Additionally, this project also aims at building capacity for the bamboo sector in Thanh Hoa so that they will be ready for the carbon market and different mechanisms such as CDM and REDD, as well as building capacity for local partner and communities on issues related to climate change.[28]

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[27] *GRET, 2009, Annual report GRET, [internet], http://www.gret.org/decouvrir_gret_uk/ra04.htm last accessed 30/08/2011.*

[28] *GRET, 2009, Annual report GRET, [internet], http://www.gret.org/decouvrir_gret_uk/ra04.htm last accessed 30/08/2011.*

Effectiveness in responding to climate change

- Climate change mitigation and environmental protection through (i) the application of technologies that use less fossil fuels, (ii) reduced use of chemical fertilisers through increased uses of organic fertilisers in agro-forestry activities.
- Employment opportunities for poor households in bamboo processing factories and new livelihoods such as handicrafts, efficient cooking stove productions and growing mushrooms
- Small and medium sized 'Luồng' bamboo processing enterprises saved costs and increased income for farmers through the utilisation of bamboo processing by-products (previously discarded or used as fuel);
- Increased skills and local ownership of technology in poor, remote communities, such as how to make (and use) organic fertilisers to grow bamboo.
- Favourable conditions for women to participate in local economic and production activities (e.g. growing mushrooms and making handicrafts).
- Strengthened relationships between local authority, local NGOs and local people; Improved community relationships through cooperatives.
- Improved community and related stakeholder awareness on environment protection, sustainable production, marketing and technical skills.

Lessons learnt

- Few programs and projects related to poverty reduction, development and climate change choose small and medium enterprises as their main target group, yet it was found to be effective **in poverty reduction and facilitating local economic development locally.**
- **Attention should be paid to the scale of support**. Small and medium support activities with careful piloting will be welcomed more easily and present with less risk. A focus on local and domestic markets is within reach of small/medium enterprises.
- **Strengthening relationships in the bamboo supply chain in Vietnam plays a critical role in sustaining the sector.** Where local capacity is limited, project support for local enterprises is critical to meet the demands of the market and of other partners in the supply chain.

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Promoting an environment, resources and energy management system for business enterprises

Efforts to assist the hotel industry in Vietnam to become environmentally sustainable through resource management commenced in 2000 at the Majestic Hotel (Ho Chi Minh City). Its success attracted other hotels to participate in the framework of Asia EcoBest program and the participation of Saigon Tourist (largest tourism business group in Vietnam).

The National Administration of Tourism, impressed with the success of Asia EcoBest program, sought to spread the benefits of "Greening the Hotel" in 2001 by developing a guidebook for ethical resources management in the hotel industry.

In 2003, A "Business Environment Planning" method involving collaboration between resources and environment management was rolled-out and applied by a number of hotels operated by Saigon Tourist in Ho Chi Minh City. This method has helped these hotels achieved remarkable outcomes and become a seminal resource for environmental planning of hotels in Vietnam.

Effectiveness in responding to climate change

- **Effectiveness related to the saving of resources, energy and climate change mitigation.** In five years of applying environmental management solutions, from 2003 to 2007, 15 hotels and tourism attractions of Saigon Tourist had saved 5.5 million kWh of electricity, equal to about 7.7 billion VND.[29] Process solutions relating to behaviour of resources use supported Saigon Tourist branches in saving costs as well as ensuring the quality of products and services, reducing waste, protecting environment, enhancing company's brand images and client trust.
- **The benefits to the application of the Environment management system as meeting to the ISO 14001 standards.** All participating hotels gained ISO 14001 Certification at the end of 2004. The accreditation of Environment & Energy Management System (EMS) meeting with ISO 14001 has brought many benefits to the hotels. Some of which are included:
  - Successive reduction of operational (electricity, water and waste) costs.
  - Enhanced awareness of staff and officers of the hotel in resource management and environmental protection.
  - Improved brand image of hotel in the eyes of tourists, especially amongst the growing number of tourists who are interested in environment issues.

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[29]News dated 11/04/2008, Saigon Tourist takes interests in energy saving – green environment, [internet] http://www.saigon-tourist.com/news/detail_vn.asp?id=12949, last accessed 30/08/20011.

Lessons learnt

- **Appeal of resource efficiency and energy costs saving attracts significant attention from business enterprise**, providing an entry-door for introducing subjects such as climate change, mitigation or environmental projection.
- **Management commitment and leadership is required;**
- **A clear mission statement will** serve to guide active participation;
- **Sharing of successful stories, experiences and breakthroughs** with staff, even if very small, can play a decisive role in enhancing the participation.
- **Build on existing environment or efficiency programs** of any departments or branches/sub-branches of the enterprise to develop the EMS system.
- **Developing the capacity of employees**. This should also involve clients, suppliers and partners.
- **Training with adequate duration and reasonable content is important for the success of the practice** in all the implementation stages including EMS maintenance.
- **Sharing experiences between business enterprises may help the expansion of good practices and habits**.

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Enhancing awareness and changing behaviour

Climate change is a global problem that requires international agreement and co-operation that is only achievable if awareness and capacity of individuals and communities is increased to through improved education.[30]

Climate Change Education (CCE) has been successfully implemented in many countries all over the world. There have been several remarkable advances in Vietnam and NGOs have been instrumental in supporting communities to understand the reasons for and impacts of climate change, as well as helping them to develop solutions in adapting to and mitigating climate change.

Nevertheless, with the urgency of climate change as a broad social problem, awareness strengthening, education and communication should be more rapidly up scaled. At the International Seminar of Climate Change in Paris (July 2009) participating parties stated that more attention must be paid to the following strategic orientations:

- Integrate contents of climate change into educational practice, programming and planning;
- Enhance development and usage of educational tools, materials and good practices of climate change;
- Encourage the development of climate change education networks and co-operation.

Over the last few years, NGOs in Vietnam have led initiatives to help the communities understand the causes and impacts of climate change and to help with the implementation measures to respond to these challenges. There have been several success stories:

- Building capacity responding to climate change for civil society organisations in Vietnam
- Enhancing the capacity of communities to respond to disasters and climate change through promoting participation of children
- Building a Green Generation Network – Engaging Vietnamese youth on climate change and sustainable development
- Developing green living in schools and communities

[30] *Tuan, Tran Duc, 2009, Introductory Report – Practical demand of Education on Climate Change*

TOT on climate change (Source: SRD)

Building capacity for responding to climate change for Civil Society Organisations (CSOs) in Vietnam

NGOs and Civil Society Organisations (CSOs) play an important role in supporting communities facing the serious impacts of climate change through the introduction of climate change adaptation solutions and disaster preparedness measures. In order to ensure more effective implementation of these activities the capacity of NGO and CSO officers requires enhancement.

This model is a typical exercise in enhancing awareness and building capacity of development NGOs and CSOs, however the content of the training is focused on climate change mitigation, adaptation and long term, sustainable development in Vietnam.

Effectiveness in responding to climate change

- **Team of climate change trainers established and operates effectively**. Trainers play an important role in promoting communication about climate change through their training activities, as well as integrating the knowledge they receive into their organisations' climate change projects.
- **Database of training and communication materials on climate change developed as a reference source for NGO/CSO officers**. Knowledge management allows organisations to share information and learn from the experiences of previous projects. This information has been made available via the website, through online forums and through print materials sent to local organisations with limited internet access.

- **Awareness and knowledge on climate change increased for NGO/CSO staff from CCWG, VNGO&CC and their local partners.** Increased awareness aids in the formulation of ideas and with new processes, such as piloting the integration of climate change and disaster risk reduction into development projects and contributes to the promotion of actions to mitigate climate change through behavioural change.

Lessons learnt

- **Involvement of beneficiaries in the planning and preparation of activities ensured** that interventions achieved the proposed objectives and effectively addressed gaps in capacity.
- **Flexibility and creativity in implementation,** in the planning phase and throughout the implementation of the project, ensured that the interventions were responsive and relevant for the beneficiaries.
- **Selection of an appropriate organisation to lead the project co ordination** was one of the key factors in ensuring the success of project. The project connects a diverse range of participants, so the project co-ordination role was vitally important. Having an experienced lead organisation with strong administrative capacity ensured that other NGOs and CSOs were able to focus their attention towards achieving the objectives and outcomes.

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Children communicate climate change (Source: CARE)

Enhancing the capacity of communities to respond to disasters and climate change through promoting participation of children

It is necessary to have a focus when seeking to enhance capacity on climate change, especially when targeting and tailoring activities to specific beneficiary groups.

Disaster Risk Reduction work is aimed at addressing essential needs and demands of at-risk communities before, during and after disasters occur. Many organisations now place emphasis on child and youth-centred DRR work as these are the future generations that will bear responsibility as the custodians of the environment. From this perspective children are recognised as active agents in the development process as opposed to being victims of extreme climate phenomena. Their potential contributions to risk reduction in the community are identified, supported and encouraged.

A rights-based approach to DRR, which is recognised by the Convention on the Rights of Children of the United Nations, has been successful implemented in Vietnam by a number of organisations, notably by Save the Children and Plan International. In the implementation of these models, children are always at the centre of activities and contribute actively to all processes, including meetings, training courses, communication campaigns, as well as in the development of formal curriculum (school) and extra-curricular activities.

Effectiveness in responding to climate change

- There are currently 21 child-focused DRR community plans, all were developed with active contributions from children and youth.
- Child participation in disaster management groups for the implementation of Hazard, Vulnerability and Capacity Assessment (HVCA) can often bring

out important insights and propose practical suggestions that might not have been considered otherwise.

- Activities also helped teachers, parents and community leaders to recognise the importance of mobilising children in awareness raising and behaviour change activities in response to climate change and disaster risk.
- Children positioned at the centre of monitoring and evaluation tasks whenever possible provided insightful assessment of project achievements. Upon meeting with children during the evaluation, evaluators could determine the knowledge gained, understanding concepts and value added.

Lessons learnt

- **Children are very creative; their ideas should be highly appreciated.**
- **Programs with child participation have low costs** and can have high effectiveness.
- In education, **raising awareness for children should use dynamic visual and creative educational materials,** such as learning games (e.g. jigsaw puzzles) on selected themes in open spaces to encourage their active participation.
- **A child-focused approach in the activities contributed to enhancing capacity in responding and mitigating the vulnerability of children when a disaster occurs**, and it also gave them a sense of responsibility and involved them in making decisions about their lives.
- **Experiences gained from these practices are good references and can be replicated** for the implementation of the tasks **"to integrate knowledge of disaster risk management and prevention into the schools' educational program",** which is stated in the Strategy of Disaster Risk Prevention and Mitigation to 2020 and the in the implementation of Action Plan of for the implementation of the Strategy of Disaster Risk Prevention, Response and Mitigation in the Education Sector in 2011-2020.

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Vietnamese youth with 350.org movement

Source: Live & Learn

Building a Green Generation Network – Engaging Vietnamese youth on climate change and sustainable development

Vietnam has a burgeoning youth – 60% of the population is under the age of 30 and a quarter is between the age of 15 – 24 years old.[31] Vietnamese youth are engaging technology and are exposed to global information and popular culture, however youth in Vietnam face challenges of ecological literacy as rapid economic development in the country has been afforded at the expense of environmental pollution. In addition, their understanding of climate change is still quite abstract that some see the issue as too big a problem relative to their daily life.

The Green Generation Network was established on July 2009 by promoting and connecting Environmental Clubs and individuals that have a desire to learn and take action for a green community. The network is supporting an active youth generation willing to enhance community awareness on climate change and sustainable development, promoting actions for a sustainable future. The objective is to share common concerns on climate change and sustainable development, to learn from each other and from sharing experience, and to take action for a sustainable way of life.

Effectiveness in responding to climate change

In the future youth need certain skills to adapt and mitigate climate change. Thus, it is important that they share information and be active in the combat against these challenges.[32] The Green Generation Network has

[31] *United Nations, 2010. "World Youth Report 2010: Youth and Climate Change". United Nations, New York*
[32] *United Nations, 2010. ibid.*

demonstrated effectiveness in raising awareness and action of youth, with outstanding results as follows:

- Green Change Agents improved awareness and action on climate change and sustainable development through participatory training. (In 2010-2011, the network organised training aimed at capacity building for 1,108 youths);
- Green Change Agents shared their knowledge and skills gained in training workshops with others at their schools, with their families and peers and in their local communities;
- Green Generation funded 35 youth-led projects/initiatives to improve public awareness on and support actions responding to climate change;
- The Green Generation network are now active in 23 cities/provinces and support 77 clubs and schools to connect and work together. The clubs have mobilised 5,000 young people in Vietnam to participate in the events organised by Green Change Agents.

Lessons learnt

- The Green Change Agents and key members of the network **play an important role in the promotion of active participation of youth in all the stage of activities.**
- Actively applying, updating and using online channels for the communication and information sharing activities plays an important role in attracting youth and student participation.
- Promoting creativeness and activeness of youth in all activities, from forming ideas, developing plans, deploying the implementation and conducting the monitoring and assessment, plays a very important role.
- The Green Generation is an "open network" that operates without a fixed governance structure which helps Green Generation to be flexible and in line with the youth trends and links with social media. Support staff co-ordinate and implement activities as well as networking with other organisations and groups.

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Developing green living in schools and in communities

Rapid economic development has increased social and environmental problems in the urban areas related to traffic, water management and the urban sprawl. Urban dwellers are faced with challenges including limited housing, barriers to social connection, pollution and limited green spaces.

The 'Green Living' program, supported and facilitated by Action for the City, aims to empower people to live more sustainably at home, in school and at work. Using schools and local communities as communication hubs on a variety of sustainability topics including electricity, water, food, garbage, shopping, health and personal relationships. Neighbourhood residents and individuals first implement changes in their personal consumption and energy habits and then engage in Green Community initiatives such as community gardens, maintaining and improving playgrounds, and clean-up of unused or degraded land. The program has helped establish groups of 'Eco Teams' volunteer clubs to engage in learning, sharing and modelling of sustainable lifestyles for students and young people both in school and in local community. Eco-Team's practice in schools and the community were developed based on the successful practices of the Global Action Project in Ireland.

Also, many volunteer youth clubs nationwide agreed to take action together in Living Green campaigns at the Vietnam Youth and Sustainable Development Summit (2010) with support and facilitation from a number of organisations such as Live & Learn Vietnam and the Centre for Development of Community Initiative and Environment (C&E). Some of the campaigns include '3R', 'Fun recycle', 'Cycling for Environment (C4E)' which are focused on conservation, recycling and alternative transport respectively.

Effectiveness in responding to climate change

- Activities of EcoTeams to promote effective use of resources, both in urban community and in schools, have attracted the participation of 1,000 households in Hanoi, Hue, Da Nang and Ho Chi Minh City. An example of periodic energy consumption auditing by the member indicated the following results as a result of this intervention:

Index	Average reduction of consumption/month
• Electric	• 9 kW
• Water	• Reduce $2m^3$
• Solid waste	• Reduce 30 kg
• Average use of nylon bags	• Reduce 90 bags

- Living Green campaigns implemented by various youth clubs across the country have involved over 8,000 youths participated in the youth-led, Green events, activities and campaigns in 2010-2011. For example, 1,500 young people participated in the global action day 350.org on October 10, 2010, while 3,000 young people participated in Earth Hour events.

Lessons learnt

- Effective implementation of Green Living model required a geographical focus where in-placed

Eco-Teams can be established and members recruited, usually from within a specific neighbourhoods.

- Community Centre development is important both as a place to meet and host activities. Developing a physical space is only possible with support of local authorities.
- Dissemination of project results through publication and media is important for replication. This can be done through books and media products, presentations to government, donors and other NGOs.
- Activities of Eco-Teams must be scheduled around the availability members prepared to volunteer their time. Seeking the support of members that are not employed full time, such as elderly, women, and students, has proven to be effective in mobilising sufficient human resources and in encouraging them to be leaders of activities in their own areas.
- Continuous capacity building is required for local partners, as well as for promoting active involvement of local authorities.
- Regular support is required for network facilitation. Young people have limited skills in terms of developing strategies, activity planning and financial management.
- Volunteer spirit is an important factor that leads to the success of the Living Green practices of youth clubs. However, it is important to ensure the clubs are flexible as some key leaders would leave the club when work, study or family commitments would arise.
- When implementing campaigns or organising environment events at a large scale, youth often do not take advantage of the support from local authorities due to the lack of experience in the complex administration procedure (such as applying for the authorisation of local authorities). Further increase of broad based involvement of stakeholders, including schools, parents and other local agencies, such as the Women's Union and Veterans Association, will help identified financial and co-ordination resources to extend good practices beyond the life of the project.
- All campaigns and youth-led activities involved minimal financial outlay yet these activities hosted good participation that resulted in increased community awareness and knowledge.
- Strategic guidance assisted network volunteers to identify and highlight linkages between local and international green awareness campaigns.
- Detailed documentation of project activities serves to ensure the sustainability of good practices and transfer of knowledge to the network.

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POSTSCRIPT

The 15 models presented in this publication are only a selection of good practices that have been implemented by NGOs/CSOs in Vietnam in recent decades.

The models selected were originally designed in response to a number of different community needs, such as problems with environmental management, food security, poverty and the risks associated with natural disasters, hence the intervention approaches differ considerably. However, through assessment against the guideline's selection criteria it appears that all models share a common, longer term vision of helping local communities to better cope with climate/weather related impacts.

The 'good' practices in response to climate change included in this guideline all contribute to a reduction in people's vulnerability to negative climate/weather induced impacts, help to curb greenhouse gas emissions and create social, economic and environmental benefits for the communities most at risk from climate change.

NGOs/CSOs play an active role in guiding climate change initiatives in Vietnam, both directly, through community-based interventions (particularly in remote areas), and indirectly, through advocating for a more supportive policy environment.

For further information on the cooperative efforts to respond to climate change between NGOs and the Government of Vietnam please contact the Climate Change Working Group (CCWG) at ***http://www.ngocentre.org.vn/ccwg*** or the network of Vietnamese NGOs and Climate Change (VNGO&CC) at ***http://vngo-cc.vn/en/home.***

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