



Climate Change and Migration

Exploring the Impacts of Climate Change on
People's Livelihoods and Migration in the Greater
Mekong Sub-region (GMS)

5 June 2013
World Environment Day



Mekong Migration Network (MMN)



Mekong Migration Network & Asian Migrant Centre

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Structure of this Report

The sections of this report can be summarised as follows:

- **Executive Summary**: Summary of this report, including overview of the project and key findings;
- **Overview of MMN CC-M Project**: Based on the project proposal and other key project documents, this section outlines the project objectives and implementation process;
- **Overview of CC-M in the GMS**: Based on the secondary literature review, this section aims to provide background and context of climate change and migration in the GMS, and provide an overview of current discourse;
- **Current Responses to CC-M**: Based on the secondary literature review, this section summarises current policy responses to climate change and migration (international, regional and national);
- **CC-M: Conceptual Issues**: Based on the secondary literature review, this section explores the discourse relating to key concepts and outlines the challenges in conceptualising ‘climate change induced migration’;
- **MMN CC-M Project Hypotheses**: Based on the secondary literature and discussions at the First Consultation Meeting, this section outlines the general hypotheses formulated prior to conducting the primary research, and notes some initial assumptions;
- **Myanmar Research Findings**: This section outlines the site-specific research methodology and contains the report of findings from the primary research undertaken in Myanmar;
- **Vietnam Research Findings**: This section outlines the site-specific research methodology and contains the report of findings from the primary research undertaken in Vietnam;
- **Analysis & Synthesis of Research Findings**: This section analyses the findings of the primary research, including unexpected findings, issues encountered, and key similarities and differences in the respective case studies. It also reflects on conclusions to be drawn from the primary research, including whether the findings support the initial project hypotheses;
- **Global Justice: Climate Change, Mobility, Solidarity**: Based on the secondary literature review, this section explores climate change and mobility as issues of global justice, and reflects on the need for solidarity in any response to climate change related migration;

- **Areas for Further Research:** Based on discussions at the Second Consultation Meeting, this section outlines key areas identified for possible further research and possible advocacy points to be considered;
- **General Comments:** This section outlines some recommended responses to CC-M, as well as concluding remarks regarding the research project and linkages between climate change and migration in the GMS.

Executive summary

Exploring the Impacts of Climate Change on Peoples' Livelihoods and Migration in the Greater Mekong Sub-region (GMS)

Project Overview

The Mekong Migration Network (MMN) and the Asian Migrant Centre (AMC), supported by the Rockefeller Foundation, have undertaken a project aiming to contribute to a greater understanding of climate change in the Greater Mekong Subregion (GMS), and the effects that climate change may or may not be having on people's livelihoods and migration. The project aims to explore what kind of negative environmental changes (which may be related to climate change) are being felt by communities; if and how these environmental changes are impacting peoples' lives; if these changes and related impacts are influencing migration; and what other factors may also be influencing migration. A literature review was undertaken to understand the current discourse; followed by primary research in two case study communities: Ma Gyi Chay Htaut Village, Magway Region, in Myanmar's central 'Dry Zone'; and Thanh An Commune, Vinh Thanh District, Can Tho City, in the Mekong Delta region of Vietnam.

Climate Change and Migration (CC-M) in the Greater Mekong Subregion

The GMS covers Cambodia, the People's Republic of China (specifically Yunnan Province and Guangxi Zhuang Autonomous Region), Lao People's Democratic Republic, Myanmar, Thailand, and Vietnam. The impact that climate change will have on increased flows of migration in the coming years may be significant, however such impacts are not easily quantifiable, and will likely develop slowly over the coming decades. In Vietnam the Mekong Delta provides almost half of Vietnam's rice production, and it is estimated that 30 million people in Vietnam depend on the Mekong River Delta for sustenance. In the Delta region, the sea level and mean temperatures are rising, and there has been an increase in extreme hydro climatic events. In Myanmar, there has been an increase in extreme hydro climatic events, and the central 'Dry Zone' is experiencing drought and desertification.

Project Hypotheses

Due to the selection criteria for the primary research sites, it was envisaged that both the Vietnam and the Myanmar communities would be experiencing environmental changes that could be linked to the probable impacts of climate change; and that people would be migrating away from these communities. It was predicted that despite this, it might not be easy to identify clear links between climate change and migration, because: there are difficulties in establishing specific environmental changes that are definitively linked to the impact of climate change; and multiple factors play a role in decisions to migrate (for example: socio-economic circumstances, livelihood stress, government policies, infrastructure projects, and

land-grabbing). Due to empirical definitional issues, it was decided that instead of focussing on 'climate change migration' the primary research should focus instead on whether 'environmental migration' was occurring, with links being made in analysis to probable climate change effects (including, sea level rise, warming, extreme hydro-climatic events, drought, and desertification).

Myanmar Research Findings

The Myanmar research was undertaken by ECODEV, an environmental NGO based in Myanmar, and the Foundation for Education and Development, a migrant support NGO based in Thailand. The research site was located in Myanmar's central 'Dry Zone,' where conditions are arid year round with limited rainfall, and where local livelihoods - which are primarily dependent on agriculture and natural resources - are highly susceptible to water stress and environmental changes. Primary research included a survey of 50 households, focus group discussions, and key informant interviews.

The greatest environmental change felt in Ma Gyi Chay Htaut Village was less rainfall, followed by more extreme warm weather. The findings also point to higher climatic variability such as increased flooding and other weather events such as storms and torrential rain. These environmental changes were found to be having significant impacts on peoples' lives, in particular in relation to increasing debt, decreasing income, unemployment, access to food, health, and the quality and quantity of crops.

The survey area had a high rate of out-migration, with Yangon, Mandalay, Nay Pyi Taw and Magway being the primary destinations. Key drivers of migration included a lack of jobs, environmental changes, and low wages in the home community. The community cited several key needs to be able to cope with the environmental changes and related impacts, including different types of jobs and skills training in origin, access to loans and financial assistance, and government assistance to safely stay in their home community.

Results overall show that the environment is changing and that it is an important reason for migration. Most local people depend directly on the climate and may be adversely affected by even small environmental and climatic fluctuations. A degrading environment has played a strong role in why people would migrate. More respondents cited economic drivers as the main reason to migrate, however with a majority of the population dependent on the land and productive resources, and the decline in productivity and income, both economic and environmental factors are inextricably linked.

Vietnam Research Findings

The Vietnam research was undertaken by the Center for Research & Consultancy for Development (CRCDD), Southern Institute of Sustainable Development. The research methodology included a survey of 50 households, focus group discussions and key informant interviews.

Vietnam's Mekong Delta is facing simultaneous impacts from flooding of the Mekong River and rising sea levels in the region. Many hydropower projects, construction and agricultural production upstream have been changing the water flow, and along with high tides combined with monsoon these factors are leading to a change in the flood

regime. There is also increasing drought and saltwater intrusion in the dry season. Limited development of commerce and industry means that the local economy is primarily dependent on pure wet rice agriculture. When agricultural production is negatively affected by climate change related impacts, the livelihoods of local people are usually adversely affected.

Household survey results outline many changes in the environment over the last 10 years, such as increased extreme hydro-climatic weather, irregular flooding, more extreme warm weather, less rainfall, drought, and desertification (understood as soil degradation). Salinity is also an approaching threat, not yet evident to residents, but known to commune leaders and local authorities. Environmental changes are having significant negative impacts on the health of local people, the water quality, and the soil quality. Changes are also seen to be generating insects or pests in the area, which harms plants and crops, leading to a decrease in the quality and quantity of cultivated crops. Further, a majority of respondents expressed that environmental changes are impacting their lives, causing a decrease in the quality of life, decreasing incomes and livelihoods, less employment, increasing debt, and less economic development.

Out-migration is occurring primarily to Ho Chi Minh City, Can Tho City, Lam Dong, and Dong Nai provinces. The main factors driving out-migration from the origin community are a lack of jobs, environmental changes, and health hazards. People are migrating to new places because many perceive there to be more job opportunities and better education opportunities in destination places. Moreover, social networks also play a role in migration decisions.

The most pressing community needs for coping with environmental changes as expressed in the Vietnam case study are: access to information regarding environmental issues; and availability of different of jobs and skills training in the home community.

Analysis and Synthesis of Research Findings

Generally the research findings show a strong correlation between negative environmental changes and migration - perhaps somewhat stronger than predicted in the initial hypotheses. Environmental changes are being felt by communities, and these changes are negatively impacting people's lives and influencing migration. However, other factors are also influencing migration. It is clear from responses to household questionnaires that whether or not communities are experiencing environmental changes (that may be linked to climate change) people will still migrate because of low incomes in origin, less jobs in rural areas, and more jobs and educational opportunities in destinations (usually urban centres).

Global Justice: Climate Change, Mobility and Solidarity

Climate change and migration can both be viewed as global justice issues. Climate change inevitably has a differentiated impact, depending on the physical conditions and the adaptive capacities of the countries and communities concerned. The poor are generally disproportionately affected by extreme weather events because of the poor quality of their housing, and also because their livelihoods are often connected to land

and natural resources. Mobility, or the ability to move, is also an issue of global justice. Unequal distribution of resources affects personal decisions about whether or not to migrate in the face of climate change impacts. Migration is not an option for everyone, because due to a lack of resources, the most vulnerable people are often not able to move. Increasingly, discriminatory attitudes and policies are evident in response to both cross-border, and internal rural-urban migration. It is therefore important to consider both climate change and mobility as issues of global justice, and to urge greater solidarity amongst States and peoples in addressing these issues.

Conclusions

The future effects of climate change are unpredictable and hard to quantify, but it is recognised that climate change will have a growing influence on human movement. It is hoped that the findings of this study will be useful in better understanding linkages between climate change and migration in the GMS. Recognising the complexity of causal factors of migration, the outcomes of this project may serve as a basis for further research (including further case studies in other GMS countries, and research into the impact of development projects in the GMS); a tool for advocacy for protection of migrant rights in the face of increasing environmental and climate change; and a foundation for further developing partnerships in the region between climate change experts and migrant advocates; including through strengthening those partnerships formed in the course of this project.

The most suitable approach to CC-M at the international level is the enhancement and utilisation of a range of existing mechanisms, including: mitigation and adaptation under the climate change framework; disaster risk reduction and disaster management mechanisms; law relating to internally displaced persons; international human rights law; sustainable development approaches; and traditional migration pathways. Further, in terms of soft law, the 2011 Nansen Principles - which recognise the importance of existing mechanisms and are underpinned by the fundamental principles of humanity, human dignity, human rights, and international cooperation - may prove to be a useful tool. Within the ASEAN region and the GMS subregion, much stronger genuine cooperation on the transborder issues of climate change and migration is vital, to ensure genuine regional sustainable development that respects the rights of communities that are affected. At all levels, it is essential that responses recognise the agency and human rights of affected communities, facilitate voluntary migration as a positive adaptive strategy, and prevent forced migration where possible.

Overview of MMN CC-M Project

Summary

In late 2011, the Mekong Migration Network and the Asian Migrant Centre, supported by the Rockefeller Foundation, commenced a pilot research project to explore the links between climate change and migration in the Greater Mekong Subregion (GMS). The project involved secondary research (literature review of existing discourse); primary research in Vietnam and Myanmar; and consultations with organisations in the region working across both the climate change and migration sectors. The project aims to contribute to a greater understanding of climate change in the GMS, and the effects that this phenomenon may or may not be having on people's livelihoods and migration.

Project Objectives

1. Explore the following questions:
 - a) What kind of negative environmental changes are being felt by communities (which may or may not be climate change related)?
 - b) How do these environmental changes impact peoples' lives?
 - c) Are these environmental changes and related impacts influencing migration? And if so, how?
 - d) What other factors are influencing migration?
2. Establish a mechanism through which migration experts and climate change experts in the GMS can exchange information and discourse on climate change and migration;
3. Identify priority areas concerning climate change and migration in the GMS for a further study.

Measurable Outputs and Main Activities

1. Conduct secondary research on climate change and migration in the GMS:
 - a) Review the current discourse on climate change and migration, explore relevance to the GMS and identify key questions;
 - b) Review the current and predicted impacts of climate change in the GMS;
 - c) Review related initiatives by regional bodies such as the Asian Development Bank (ADB);

- d) Identify areas in the GMS that have been affected by the impacts of climate change and where a significant number of people may have opted to (or potentially will) migrate out;
2. Write an initial working paper on climate change and migration in the GMS for further debate;
3. Organise the First Consultation Meeting among experts and advocates working on migration issues, climate change/environmental issues, and development issues:
 - a) Present and critique the above mentioned working paper;
 - b) Identify gaps in existing studies on the theme;
 - c) Identify specific areas for further study;
 - d) Identify communities for case studies; and
 - e) Develop a joint working mechanism.
4. Set up and manage a list serve on climate change and migration:
 - a) Set up and facilitate a list serve where project partners and collaborators can regularly exchange relevant information and circulate draft papers for inputs;
 - b) Information that may particularly be of interest to migrant advocates in general (who are not necessarily project partners) will also be sent to the MMN list serve.
5. Conduct case studies in two selected communities:
 - a) Conduct key informant interviews with leaders of local communities, local authorities, local civil society representatives;
 - b) Conduct a survey of around 30~50 households concerning how the impact of climate change has affected their livelihoods and what are their coping strategies, keeping in mind possibly differing impacts based on their socio economic status, family composition, gender etc;
 - c) Conduct in-depth interviews with selected families to explore the linkages between climate change and their decisions to migrate; and
 - d) Develop contact with resource people in the area with whom the MMN can follow up in the future.
6. Organise a Second Consultation Meeting to:
 - a) Present the findings of the case studies;
 - b) Re-visit the possible link between climate change and migration as previously discussed during the First Consultation Meeting and compare with the findings of the case studies;

- c) Identify possible impacts on urban areas that may experience increased inbound migration as a result of a climate change in the GMS;
 - d) Identify key issues and concerns including policy gaps; and
 - e) Identify recommended themes for a further study.
7. Write a research paper including the following:
- a) Revised/updated discourse and mapping of the issues (revised based on the inputs during the consultations and secondary studies);
 - b) Findings from the case studies;
 - c) Issues and concerns relating to climate change induced migration and the current response to the issues in the GMS;
 - d) Recommended themes for a further study; and
 - e) Executive Summary, which will be translated into 6 GMS languages
8. Publish the project progress on the MMN website including:
- a) Proceedings of the consultations;
 - b) References useful in understanding and/or exploring the issues of climate change induced migration will be introduced for the purpose of capacity building and public awareness on the issue;
 - c) The PDF of the final research paper.
9. Publish the final paper:
- The final paper in English and its executive summary translated into 6 GMS languages will be published in PDF.
10. Organise a press conference:
- The key findings of the project and the identified areas for a further study will be widely published through a press conference.

Project Partners

Research Conveners

Research Conveners undertook the primary research in case study communities in Myanmar and Vietnam, and were involved in Consultation Meetings, preparation of research methodology, preparation of report, preparation for press conference, and developing a work plan for advocacy efforts and further research.

- **Myanmar Research Convener:** ECODEV, led by Mr. Kyan Dyne Aung, ECODEV Program Officer; assisted by Ms. Wai Hnin Po, MMN Steering Committee Member and Director of Foundation for Education and Development (FED); and accompanied by the Myanmar Research Team:

- Mr. Nyan Myint Maung (Trainer for Survey Enumerator)
 - Mr. Tony Neil (Survey Report Writer, ECODEV)
 - Mr. Thaung Win (Survey Team Leader, ECODEV)
 - Mr. Yu Maung Maung Thein (Survey Enumerator, ECODEV)
 - Mr. Pyae Sone Soe (Survey Enumerator, ECODEV)
 - Ms. Kyi Pyar Aung (Survey Enumerator, ECODEV)
 - Ms. May Thet Mon (Project Assistant, ECODEV)
 - Ms. Khay Mar Aye Mon (Database Specialist, ECODEV)
 - Ms. Poe Poe Thin San (Database Entry Personnel)
 - Ms. Hla Hla Thi (Database Entry Personnel)
- **Vietnam Research Convener:** Center for Research & Consultancy for Development (CRCD), Southern Institute of Sustainable Development (Ho Chi Minh City, Vietnam), led by Ms. Huynh Thi Ngoc Tuyet, Ph.D, MMN Steering Committee Member, former Director of CRCD, CC-M Research Project Holder and Research Team Leader, and assisted by Vietnam Research Team:
 - Le Thanh Sang, Professor-Dr., Deputy Director, Southern Institute of Social Sciences (SISS), Research Team Scientific Advisor
 - Nguyen Thi Minh Chau, MA., Executive Director of Center for Research & Consultancy for Development (CRCD), Southern Institute of Social Sciences (SISS), Research Team Coordinator
 - Nguyen Thi Bao Ha, researcher of Center for Research & Consultancy for Development (CRCD), Southern Institute of Social Sciences (SISS), Research Team Member
 - Nguyen Quoc Dinh, researcher of Center for Research & Consultancy for Development (CRCD), Southern Institute of Social Sciences (SISS), Research Team Member
 - Huynh Thi Thuy Duong, researcher of Can Tho Center for Development Studies (CIDS), Research Team Member
 - Nguyen Thuy Van, Tay Do University in Can Tho City, Research Team Member

Advisory Working Group

The Advisory Working Group consists of attendees at Consultation Meetings who agreed to provide further advice and inputs in relation to the preparation of the research methodology, the draft household questionnaires, and the draft report.

- Mr. Kyan Dyne Aung, ECODEV, Myanmar
- Ms. Wai Hnin Po, Foundation for Education and Development, Thailand
- Ms. Huynh Thi Ngoc Tuyet, Center for Research & Consultancy for Development (CRCD), Southern Institute of Sustainable Development, HCMC, Vietnam
- Mr. Ky Quang Vinh, Climate Change Coordination Office (CCCO), Can Tho City, Vietnam
- Dr. Tran Thanh Be, Can Tho Institute of Socio-Economic Development Studies, Vietnam
- Professor Lynn Thiesmeyer, Faculty of Environment and Information Studies, Keio University, Tokyo

Consultation Partners

Consultation Partners were those who provided inputs at the Consultation Meetings.

- Mr Nguyen Quoc Dinh, Center for Research & Consultancy for Development (CRCD), Southern Institute of Sustainable Development, HCMC, Vietnam
- Ms. Namisi Jate, MAP Foundation, Thailand
- Mr. Saw Nay Kaw, Karen Environmental Working Group (KESAN), Thailand
- Ms. Catherine Martin, Burma Environmental Working Group (BEWG), Thailand

MMN Project Team

MMN personnel involved in implementing the project:

- Ms. Reiko Harima, MMN Regional Coordinator & AMC Director
- Ms. Jessica Marsh, MMN Secretariat, CC-M Project Coordinator
- Ms. Pranom Somwong, MMN Advocacy Convener
- Ms. Hkun Sa Mun Htoi, MMN Secretariat
- Ms. Hannah Withers, MMN Secretariat
- Ms. Omsin Boonlert, MMN Secretariat
- Ms. Anna Hanssen, MMN Secretariat

Timeline of Project Implementation

December 2011 - April 2012	Preparation for the project implementation, development of project design; commence secondary research; identify project partners
May - June 2012	Contact potential project partners and invite to First Consultation Meeting; preparatory strategy meeting (to prepare for key positions and program of the First Consultation Meeting)
July 2012	Continue secondary research; prepare working paper for discussion; prepare for First Consultation Meeting
August 2012	First Consultation Meeting (17 - 18 August); identify Project Partners; identify research sites; discuss working paper and draft methodology
September - October 2012	Set up list serve; prepare proceedings of the First Consultation Meeting; confirm terms of engagement with Project Partners; prepare for primary research; draft and circulate methodology and household questionnaire to Advisory Working Group for comment
November 2012	Finalise methodology and questionnaires; translate questionnaires into Burmese and Vietnamese; Project Partners conduct field work, training and primary research; Project Partners prepare report of findings
December 2012	Project partners submit report of research findings to MMN Secretariat
January 2013	MMN Secretariat review and follow up with Project Partners with any areas for clarification of research findings
February 2013	Prepare for Second Consultation Meeting; Prepare draft Research Paper
March 2013	Second Consultation Meeting (18-19 March 2013)
April 2013	Write final Research Paper
May 2013	Prepare Executive Summary of Research Paper; Translate Executive Summary into GMS Languages (Burmese, Chinese, Khmer, Laotian, Thai, Vietnamese)
June 2013	Publish Research Paper; Launch at Press conference (5 June 2013, World Environment Day)

Potential Usage of Project Outputs beyond Project Period

1. **Basis for further research:** The knowledge generated from this project will be widely circulated among migrant advocates, climate change/environment advocates, development advocates and researchers. As the final report will include a list of recommended areas for further study, AMC and MMN will encourage various stakeholders to conduct follow up research over the coming years.
2. **Recognizing complexity of causal factors of migration:** While conceptual clarity in the causal link (direct or indirect) between climate change and migration is essential we are concerned that narrow definitions that fail to take into account the multiplicity and complexity of causal factors may risk making resultant policy responses irrelevant and/or result in the exclusion of a large number of people who are considered to be migrating for “other reasons”. As migrant rights advocates, AMC and MMN aim to present the multiplicity and complexity of causal factors through the proposed study and use this in our future advocacy campaigns for broader approaches to protect people whose livelihoods are negatively impacted by climate change.
3. **Tool for advocacy:** Developing a better understanding and concrete recommendations concerning climate change and migration will help strengthen AMC’s and MMN’s advocacy on sustainable development and decent jobs in migrants’ home countries.
4. **Developing partnerships:** Our initial communications with potential project partners has revealed that those working on migration and those working on climate change issues in the regions have at present very limited partnerships. As practical responses to climate change induced migration will certainly require multi-stakeholder collaboration, it will be essential for the concerned groups and stakeholders to strengthen their ties. If the project partners find it helpful, AMC and MMN hope to be able to continue to facilitate information exchange through its list serve beyond the project period.



Overview of CC-M in the GMS

Climate Change and Migration

Climate change has been called ‘one of the greatest social, economic and environmental challenges of our time.’¹ There is evidence that human activity and increased carbon emissions are contributing to a warming of the planet, and leading to unforeseen changes in the natural environment and weather patterns. Achim Steiner, Executive Director of the UN Environment Programme stated in 2011, that ‘it is the speed of environmental change, including climate change, that will be increasingly at the heart of our collective concern and response,’ and, ‘there can be little doubt today that climate change has potentially far-reaching implications for global stability and security in economic, social and environmental terms which will increasingly transcend the capacity of individual nation States to manage.’ One such implication is a change in human migration flows linked to the impacts of climate change.

The *United Nations Framework Convention on Climate Change* (UNFCCC) defines ‘climate change’ as ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in

¹ Australian Department of Climate Change and Energy Efficiency, n.d., available at: <http://www.climatechange.gov.au/climate-change/impacts.aspx>

addition to natural climate variability observed over comparable time periods.’² While it is often difficult to directly attribute specific environmental changes or events to ‘climate change,’ there are general trends that can be seen to have some link to the changing global climate, including: significant variations in precipitation patterns, drought, higher temperatures, increased evidence of severe weather events, sea-level rises in many highly-populated coastal regions, and saltwater intrusion into coastal and groundwater resources. The impacts of these phenomena can threaten freshwater sources, irrigation, economic development, human security and livelihoods, and may lead to voluntary or involuntary migration.

Climate Change in the Greater Mekong Subregion (GMS)

The Intergovernmental Panel on Climate Change (IPCC)’s Fourth Assessment, in 2007, highlights vulnerable areas as, ‘low-lying coastal settlements; rain-fed farm regions and those dependent on rivers fed by snow and glacier melt; subhumid and arid regions; and humid areas in Southeast Asia vulnerable to changes in monsoon patterns.’³ The Asian Development Bank (ADB) sees coastal flooding as the greatest climate change related risk in Southeast Asia, potentially affecting approximately the one-third of the Southeast Asian population who live in high-risk areas.’⁴

The Greater Mekong Subregion (GMS) covers Cambodia, the People's Republic of China (specifically Yunnan Province and Guangxi Zhuang Autonomous Region), Lao People's Democratic Republic, Myanmar, Thailand, and Vietnam. The impact that climate change will have on increased flows of migration in the coming years within the GMS may be significant, however such impacts are not easily quantifiable, and will likely develop slowly over the coming decades.

Some key observations relating to climate change in the GMS - specifically Vietnam and Myanmar - include:

Vietnam

In Vietnam the Mekong Delta provides almost half of Vietnam’s rice production, and it is estimated that 30 million people in Vietnam depend on the Mekong River Delta for sustenance. Since 1901 sea level in Vietnam has risen by a total of 20cm, 5 cm of which has occurred in the past 30 years.⁵ Migration away from coastal areas will thus be likely to put extreme pressure on cities and urban areas in the future, as well as increasing competition for resources.⁶ It is also believed that ‘the melting of polar ice

² *United Nations Framework Convention on Climate Change* (UNFCCC), opened for signature 9 May 1992, entered into force 21 March 1994

³ Caroline Fritz, ‘Climate Change and Migration: Sorting through complex issues without the hype’, Migration Policy Institute, 2010

⁴ ADB, ‘Policy Dialogues on Climate-induced Migration in Asia and the Pacific,’ 9 June 2011 Bangkok, 16-17 June 2011

⁵ Mekong River Commission, ‘Adaptation to climate change in the countries of the Lower Mekong Basin: Regional Synthesis Report’. MRC Technical Paper No. 24, Vientiane, 2009, p.19.

⁶ National Intelligence Council, ‘Southeast Asia: The Impact of Climate Change to 2030: Geopolitical Implications,’ 2010.

sheets will affect a rise in sea levels adding to other hydrodynamic stresses in the Mekong Delta floodplain system.’⁷

It is projected that the mean temperature during the hot season in the Mekong Basin will increase by 1-3 °C in the next two to three decades, with dry seasons expected to intensify and increase in duration, and wet seasons expected to be delayed. The resulting decrease of water flow from upstream of the Mekong River in the dry season coupled with the rise in sea levels may thus lead to serious salinity problems in the lower Mekong river delta in Vietnam, potentially leading to ‘changes to cropping patterns and productivity and negative effects on aquatic and terrestrial ecosystems’. The consequent damage to the nutrient composition of land from salinity intrusion would affect rice farmers, shrimp farmers, and salt farmers alike. Land used for agriculture and livestock will be impacted upon at the same time that food needs increase with population growth, potentially resulting in migration by those whose livelihoods depend on agricultural production.⁸

There has been a significant increase in the number of typhoons and tropical depressions over Vietnam, and ‘the impact of storms and floods has intensified in part due to increasing populations and settlements in vulnerable areas.’⁹

Myanmar

Indicative of a trend of drought and extreme weather patterns Myanmar, in 2010, the late start to the monsoon and extreme temperatures ‘dried up wells and ponds across the country, leaving many villages without access to clean drinking water,’ and reliant on donors for water for several weeks.¹⁰ Additionally, there is evidence that ‘the Himalayan glaciers that feed Burma’s main rivers are slowly melting,’ which will lead to decreased water flow and volume in the future, exacerbating water shortages in the country, and negatively impacting on biodiversity and livelihoods.¹¹

Dr. Tun Lwin, a former director general of the Myanmar Government Department of Meteorology and Hydrology, states that extreme weather events, such as tornados, storms and lightning, have increased in frequency since 2006, and the number of lightning-caused deaths increased to as high as 100 between 2006 and 2009. He views the increase in extreme weather events as due to the fact that ‘the monsoon period has shortened, the pre-monsoon and post-monsoon periods have become longer, the likelihood of cumulonimbus clouds to form is higher which in the end creates tornadoes, strong winds, lightning and isolated heavy rain.’¹² An example of the vulnerability of the country to extreme climatic events may be seen in the impact of Cyclone Nargis, which killed an estimate of between 78,000 to 150,000 people in 2008.

⁷ Water and Development Research Group, Helsinki University of Technology (TKK), and Southeast Asia START Regional Center (SEA START RC), Chulalongkorn University, ‘Water and Climate Change in the Lower Mekong Basin: Diagnosis & Recommendations for Adaptation’, 2009, Water & Development Publications, Helsinki University of Technology, Espoo, Finland, p.39.

⁸ Tuan, Le Anh, ‘Impacts of climate change and sea level rise to the integrated agriculture-aquaculture system in the Mekong River Basin - A case study in the Lower Mekong River Delta in Vietnam’ International workshop on ‘Climate Change Responses for Asia International Rivers: Opportunities and Challenges,’ China, 26-28 February, 2010, p.4; and Mekong River Commission, ‘Adaptation to climate change in the countries of the Lower Mekong Basin: Regional Synthesis Report’. MRC Technical Paper No. 24, Vientiane, 2009.

⁹ Ibid; see also Ministry of Natural Resources and Environment (MONRE), Vietnam, Climate Change Scenarios, 2009.

¹⁰ Myanmar Times, ‘Villages in Bago, Yangon divisions rely on donors for water’, 18 May 2010

¹¹ Burma Environmental Working Group, ‘Burma’s Environment: People, Problems, Policies’, 2011

¹² Ibid;

Many point to this event in arguing that there is ‘a significant need for disaster risk management and a focused approach and policy to increase capacity to respond to climate change.’¹³ In 2010, Cyclone Giri hit the western coast of Arakan State and is considered to be the second worst damaging cyclone on record in Burma, after Nargis.¹⁴

In 2011, the UNDP put forward a concept proposal to the Adaptation Fund, focusing on adaptation, water resources, and food security, in Myanmar’s central ‘Dry Zone’. The proposal aims to respond to ‘high vulnerability of local rural communities to rainfall variability and drought,’ addressing ‘the improvement of the adaptive capacity of farmers through targeted interventions in sustainable land and forest management, technical measures (irrigation), as well as collection and dissemination of information to feed back into policies that better enable adaptation.’¹⁵ The project will operate in five townships in the Sagaing, Mandalay and Magway Regions. These areas were selected on the basis of observed temperature extremes, frequency of drought per year, food security issues, and access to ground and surface water resources. In these areas, farmers and workers’ ‘access to arable land is severely threatened by erosion and land degradation.’¹⁶

A recent study in the Dry Zone outlined the fact that ‘agriculture is the major income source in Dry Zone which is mostly challenged by climate change because most of farmers rely solely on rainfall which has become erratic in recent years for their cultivation.’¹⁷ The study found that traditional knowledge and current strategies of farmers in the region are no longer able to provide adequate adaptation to the impacts of climate change; and ‘subsequently, Dry Zone farmers proposed to have some supports like accurate and regular basic broadcasting of weather related information, [and] efficient and effective agricultural techniques for weed, pest and disease controls.’¹⁸

Land degradation and deforestation is a major issue relevant to climate change in Myanmar, and is influenced significantly by human activity. For example, the Ayeyawady mangrove forest has suffered from serious deforestation and environmental degradation, due in part to agricultural expansion, and ‘over-exploitation of mangrove products, including woodfuel and charcoal, to meet the demand of Yangon City.’¹⁹ Further, the IPCC reports that ‘low lying coastal areas, small islands and deltas like those of the Irrawaddy, Salween, Sittaung and Kaladan rivers in Burma are at serious risk of sea level rise, especially during cyclones and floods,’ predicting that, ‘sea level rise will eventually displace millions from the densely populated and fertile plains and coastal communities.’²⁰

¹³ Adaptation Learning Mechanism Country Profile, Myanmar, 2011

¹⁴ Burma Environmental Working Group, ‘Burma’s Environment: People, Problems, Policies’, 2011

¹⁵ UNDP, ‘Proposal for Myanmar: Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar’, ‘Endorsed Concept’ paper submitted to the Adaptation Fund, 2011

¹⁶ Ibid;

¹⁷ Lwin Maung Maung Swe, ‘Farmers’ Perception and Adaptation to Climate Change through Agriculture in the Dry one of Myanmar’, Thesis, Master of Science in Natural Resources Management, Asian Institute of Technology, School of Environment, Resources and Development, Thailand, May 2012, iii

¹⁸ Ibid;

¹⁹ Myanmar, National Report on UNCCD Implementation, 2005

²⁰ Burma Environmental Working Group, ‘Burma’s Environment: People, Problems, Policies’, 2011

Important factors that influence the environment and the impacts of climate change in Myanmar include: militarized development, infrastructure development (for example, dams, natural gas, roads), foreign business activity, government policy, conflict, deforestation, natural resource management, lack of information and data, lack of awareness, poverty, and low adaptive capacity across the country. Many of these factors are also present in Vietnam.

Current Responses to CC-M

Overview of Existing International CC-M Responses

Given the various challenges and risks in addressing so-called ‘climate change migration’, it is not surprising that there is no clear consensus amongst policy and law-makers regarding the most suitable response. Policy responses to date have been hampered by a lack of empirical data, and the problem of assigning accountability, among other things. At present, climate change-impacted migrants face a void with regard to policies of protection and generalised understandings of displacement. The most common definitions that apply to migrants, such as internally displaced persons (IDPs), asylum seekers, refugees and ‘economic migrants’ do not easily fit the climate change discourse, nor do these terms account for the multiplicity of different factors that contribute to climate change-induced displacement and the differences in responses that may be called upon in order to address the issue. The use of labels that impose narrow categories on ‘people who move’ is not desirable in any case. Nonetheless, there are currently no binding international legal mechanisms that directly address those whose livelihoods and environments have been affected by climate change (particularly slow-onset climate change impacts) to the extent that they are forced or choose to move.

There is no consensus as to which actors should be responsible for assisting those who migrate because of environmental factors: for example, the home State, regional bodies, the host country, or the UNHCR? Although the UNHCR recognises the plight of environmentally motivated migrants, and has provided significant assistance to victims of recent natural disasters, the agency often seeks to diminish its role in the protection of the environmentally-displaced, reasoning that because environmental displacees and migrants still fall under the purview of national governments, they can and should turn to their home State for assistance. However, while in some cases it may be straightforward to assign a duty of care to a State because migrants have moved within their own borders, cross-border migration poses a more complex dilemma that is yet to be fully considered in the international arena.

Outlined below are some existing mechanisms and responses that relate in some way to climate change and/or migration: ²¹

²¹ Also relevant are: resettlement programs initiated by national governments; social protection programs; the 2005 ILO Multilateral Framework on Labour Migration; the 2005 Pinheiro Principles, stating the right for refugees and displaced people to return to their land and home; the 2006 Inter-Agency Standing Committee Operational Guidelines on the Protection of Persons in Situations of Natural Disasters; the 2010 People’s Accord of the People’s World Conference on Climate Change and the Rights of Mother Earth (PWCCC); regional conventions on migration (the 2009 Kampala

1992 UN Framework Convention on Climate Change

The UNFCCC framework is aimed at negotiating limits on greenhouse gas emissions. It ‘is concerned with both mitigation (“avoiding the unmanageable”) and adaptation (“managing the unavoidable”).’²² The UNFCCC is not legally binding on states and has no enforcement mechanisms, but instead provides ‘protocols which set mandatory emission limits’.²³

National Adaptation Programmes of Action (NAPAs)

The UNFCCC has supported the development of National Adaptation Programs of Action (NAPAs), which are aimed at helping developing countries identify ways to adapt to climate change and access funds to do so. There is very little recognition in existing NAPAs of migration as a possible adaptation mechanism or policy response. A 2012 Migrating Out of Poverty review of NAPAs found that discussion of migration issues varied widely, and that NAPAs that did consider migration in their proposed adaptation activities were often concerned with reducing migration flows, rather than recognising potential benefits migration can bring to people (poor people in particular).²⁴

1997 Kyoto Protocol

Entering into force in 2005, the Kyoto Protocol set binding obligations on industrialised nations to reduce greenhouse gas emissions. It is focussed on mitigating the impacts of climate change, and does not deal with migration.

1998 Guiding Principles on Internal Displacement

Where environmental displacement is internal, the Guiding Principles on Internal Displacement are seen by some as appropriate guidelines for response. The Principles define different protection and assistance needs in line with basic human rights principles. As outlined in Principle 28, internally displaced persons (IDPs) have the right to a durable solution, but often need assistance. A durable solution is reached when ‘IDPs no longer have specific assistance and protection needs linked to their displacement.’²⁵

Hyogo Framework for Action 2005–2015 (Disaster Risk Reduction)

Where climate change-induced natural disasters occur, the existing humanitarian emergency response framework may be utilised. The Disaster Risk Reduction framework, including the Hyogo Framework for Action 2005-2015, is also relevant, as

Convention for IDPs in Africa and the 1984 Cartagena Declaration on Refugees in Latin America); bilateral arrangements for migration (as within the ASEAN Economic Community); and regional arrangements for migration (as within the European Union).

²² UNHCR, ‘Climate change, natural disasters and human displacement: a UNHCR perspective’, 2009

²³ Draft Myanmar NAPA, 19 May 2012, “Myanmar_NAPA_C4ES_19 May 2012_18h00.docx,” p31

²⁴ Migrating Out of Poverty, ‘Migration in National Adaptation Programmes of Action (NAPAs)’, Briefing Paper No. 2 March 2012

²⁵ International Organization for Migration, ‘Disaster Risk Reduction, Climate Change Adaptation, and Environmental Migration: A Policy Perspective’, 2010

it aims to prepare for and mitigate the effects of potential disasters. The five priorities of the Hyogo Framework are to:

- Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.
- Identify, assess and monitor disaster risks and enhance early warning.
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
- Reduce the underlying risk factors.
- Strengthen disaster preparedness for effective response at all levels.²⁶

2007 Bali Road Map & Bali Action Plan

After the 2007 UN Climate Change Conference in Bali, the Bali Road Map was adopted by participating nations as a two-year process to finalizing a binding agreement in 2009 in Copenhagen. The Bali Road Map includes the Bali Action Plan and the following pillars:

- A shared vision for long-term cooperative action, including a long-term global goal for emission reductions.
- Enhanced national/international action on mitigation of climate change.
- Enhanced action on adaptation.
- Enhanced action on technology development and transfer to support action on mitigation and adaptation.
- Enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation.

The Bali Road Map recognized that addressing the impact of a changing climate on vulnerable populations (adaptation) is as important and necessary as curbing carbon dioxide emissions (mitigation).²⁷

2009 Copenhagen Accord

The Copenhagen Accord was negotiated by 194 countries during the UN Climate Change Conference in Copenhagen in December 2009 to support adaptation, reduce vulnerability, and build resilience, especially among developing countries. The Accord 'highlights the responsibility of developed countries to provide financial and technological resources to developing nations so they can build their capacity to adapt to and mitigate the effects of climate change.'²⁸ The mechanism through which this is expected to occur is the Copenhagen Green Climate Fund, which aims to support short-term adaptation and mitigation programs.

²⁶ International Organization for Migration, 'Disaster Risk Reduction, Climate Change Adaptation, and Environmental Migration: A Policy Perspective', 2010

²⁷ Ibid;

²⁸ Fritz, Caroline, 'Climate Change and Migration: Sorting through complex issues without the hype', Migration Policy Institute, 2010

The Colombo Process (initiated in 2003)

A Ministerial Consultation for Asian Labour Sending Countries was held in 2003 in Colombo, Sri Lanka. The 10 initial participating States—Bangladesh, the People’s Republic of China, India, Indonesia, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Viet Nam—made recommendations for the effective management of overseas employment programs and agreed to regular follow-up meetings. Since the meeting, the member States of the ‘Colombo Process’ have met in Manila (2004), Bali (2005), and Dhaka (2011) to review and monitor the implementation of previous recommendations and identify areas of future action, with the aims of providing a forum for dialogue among member States; and contributing to strengthening migration management both in Asia and in other destinations.²⁹

The 2011 Nansen Principles

The Nansen Principles are a relatively recent contribution to the climate change migration discourse, and elaborate a very useful new framework with which to shape appropriate responses. They recognise the importance of existing mechanisms, including human rights law, the Hyogo Framework, the Guiding Principles on Internal Displacement, and existing norms of international law. Building on the legacy of the humanitarian and Nobel Peace Prize laureate Fridtjof Nansen, at an international conference led by UNHCR, IPCC and the Norwegian Government, the following principles (among others) were recommended to guide responses to some of the challenges raised by displacement in the context of climate change and other environmental hazards:

- ‘Responses to displacement related to climate and the environment need to be informed by adequate knowledge and guided by the fundamental principles of humanity, human dignity, human rights, and international cooperation.
- States have a primary duty to protect their populations and give particular attention to the special needs of the people most vulnerable to and most affected by climate change and other environmental hazards, including the displaced, hosting communities, and those at risk of displacement. The development of legislation, policies, and institutions, as well as the investment of adequate resources, are key in this regard.
- When national capacity is limited, regional frameworks and international cooperation should support national action and contribute to building national capacity, underpinning development plans, preventing displacement, assisting and protecting people and communities affected by such displacement, and finding durable solutions.
- Prevention and resilience need to be further strengthened at all levels, particularly through adequate resources. International, regional, and local actors have a shared responsibility to implement the principles enshrined in the

²⁹ Asian Development Bank, ‘Addressing Climate Change and Migration in Asia and the Pacific, Final Report’, 2012

Hyogo Framework for Action 2005-2015: Building Resilience of Nations and Communities to Disaster.

- The existing norms of international law should be fully utilized, and normative gaps addressed.
- The Guiding Principles on Internal Displacement provide a sound legal framework to address protection concerns arising from internal displacement related to climate and other environmental factors. States are encouraged to ensure these principles are adequately implemented and made operational through national legislation, policies, and institutions.
- A more coherent and consistent international approach is needed to meet the protection needs of people displaced externally by sudden-onset disasters. States, working in conjunction with the UNHCR and other stakeholders, could develop a guiding framework or instrument in this regard.
- National and international policies and responses, including planned relocation, need to be implemented on the basis of non-discrimination, consent, empowerment, participation, and partnerships with those directly affected, with due sensitivity to age, gender, and diversity. The voices of the displaced or those threatened with displacement or loss of home or livelihood must be heard and taken into account, without neglecting those who may choose to remain.’³⁰

International Human Rights Law & Sustainable Development

In addition to the above-listed instruments, the existing body of international human rights law, and existing ‘sustainable development’ theory (development that ‘meets the needs of the present without compromising the ability of future generations to meet their own needs’³¹) are also extremely useful lenses through which to examine climate change-induced migration. These two paradigms will be discussed in more detail below, in the ‘General Comments’ section of this report.

Existing Responses in the ASEAN Region

The Association of South East Asian Nations (ASEAN), was established in 1967 and now consists of 10 member states: Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Vietnam, Lao PDR, Myanmar and Cambodia.

The 2008 ASEAN Charter

The ASEAN Charter entered into force in December 2008, and was intended to serve as a foundation for achieving the ASEAN Community.³² The Charter does not directly address climate change or migration, but does include the following statements and principles:

³⁰ Norwegian Refugee Council, ‘The Nansen Conference: Climate Change and Displacement in the 21st Century’, Oslo, Norway, June 5-7, 2011

³¹ United Nations, 1987, Report of the World Commission on Environment and Development, General Assembly Resolution 42/187, 11 December 1987

³² The ASEAN Charter, 2007, Available at: <http://www.asean.org/archive/publications/ASEAN-Charter.pdf> (Accessed 16 April 2013)

The Preamble of the Charter refers to the need to be ‘mindful of the existence of mutual interests and interdependence among the peoples and Member States of ASEAN which are bound by geography, common objectives and shared destiny;’ ‘regional solidarity;’ ‘One Vision, One Identity, One Caring and Sharing Community;’ and resolution to ‘ensure sustainable development for the benefit of present and future generations and to place the well-being, livelihood and welfare of the peoples at the centre of the ASEAN community building process.’

Article 1(8) refers to the need to ‘respond effectively...to all forms of threats, transnational crimes and transboundary challenges.’ Article 1(9) speaks of the need to promote sustainable development so as to ensure the protection of the region’s environment, the sustainability of its natural resources, the preservation of its cultural heritage and the high quality of life of its peoples.’

With regards to migration within ASEAN, Article 1(5) of the Charter refers to a single market and production base, economic integration, and the objective of ‘free flow of goods, services and investment; facilitated movement of business persons, professionals, talents and labour...’ Article 1(11) states the aim of enhancing ‘the well-being and livelihood of the peoples of ASEAN by providing them with equitable access to opportunities for human development, social welfare and justice.’

While the Charter does refer to cooperation between States and provides for the establishment of dispute settlement mechanisms, it also places strong emphasis on national sovereignty and non-interference in internal affairs (for example, as expressed in Article 2(a), 2(e), and 2(f)). The primacy of the sovereign state and the principle of non-interference in the ASEAN Framework may pose an obstacle to genuine cooperation on environmental issues such as cross-border resource management and effective regional responses to climate change.

Roadmap for and ASEAN Community 2009-2015

The three pillars constituting the ASEAN Community are: the Political-Security Community, the Economic Community and the Socio-Cultural Community. Each of these pillars has their own Blueprints, which are part of the ‘Roadmap for and ASEAN Community 2009-2015’.³³

Climate Change falls under the ASEAN Socio-Cultural Community Blueprint. Section D of this blueprint outlines ASEAN’s commitments towards environmental sustainability, including the strategic objective of enhancing ‘regional and international cooperation to address the issue of climate change and its impacts on socio-economic development, health and the environment, in ASEAN Member States through implementation of mitigation and adaptation measures, based on the principles of equity, flexibility, effectiveness, common but differentiated responsibilities,

³³ Association of Southeast Asian Nations, ASEAN, Overview. Accessible at: <http://www.asean.org/asean/about-asean/overview> (Accessed 02 April 2013)

respective capabilities, as well as reflecting on different social and economic conditions.’³⁴

The Blueprint outlines 11 actions for ASEAN, in response to climate change, including to:

- ‘Encourage ASEAN common understanding on climate change issues and where possible, engage in joint efforts and common positions in addressing these issues.
- Encourage the efforts to develop an ASEAN Climate Change Initiative (ACCI);
- Promote and facilitate exchange of information/knowledge on scientific research and development (R&D), deployment and transfer of technology and best practices on adaptation and mitigation measures, and enhance human resource development;
- Encourage the international community to participate in and contribute to ASEAN’s efforts in afforestation and reforestation, as well as to reduce deforestation and forest degradation;
- Develop regional strategies to enhance capacity for adaptation, low carbon economy, and promote public awareness to address effects of climate change;
- Enhance collaboration among ASEAN Member States and relevant partners to address climate related hazards, and scenarios for climate change;
- Develop regional systematic observation system to monitor impact of climate change on vulnerable ecosystems in ASEAN;
- Conduct regional policy, scientific and related studies, to facilitate the implementation of climate change convention and related conventions;
- Promote public awareness and advocacy to raise community participation on protecting human health from the potential impact of climate change;
- Encourage the participation of local government, private sector, non-governmental organisations, and community to address the impacts of climate change; and
- Promote strategies to ensure that climate change initiatives lead to economically vibrant and environment friendly ASEAN Community taking into account win-win synergy between climate change and the economic development.’³⁵

Although migration and climate change are not specifically linked in the ASEAN framework, migration also falls under the Socio-Cultural Community Blueprint, in the section entitled “Social Justice and Rights”. Section C.2 concerns the protection and promotion of the rights of migrant workers, and the strategic objective of ensuring ‘fair and comprehensive migration policies and adequate protection for all migrant

³⁴ ASEAN Secretariat, June 2009, ASEAN Socio-Cultural Community Blueprint, Jakarta (pp. 19-20) Available at: <http://www.asean.org/archive/5187-19.pdf> (Accessed 15 April 2013)

³⁵ Ibid;

workers in accordance with the laws, regulations and policies of respective ASEAN Member States as well as [implementing] the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers.’³⁶

The 10 points of action outlined in relation to migration are to:

- ‘Operationalise the ASEAN Committee on the Implementation of the ASEAN Declaration on the Protection and Promotion of Rights of Migrant Workers under the auspices of the SLOM to implement the provisions of the Declaration and work towards the development of an ASEAN instrument on the protection and promotion of the rights of migrant workers;
- Institutionalise and convene on a regular basis the ASEAN Forum on Migrant Labour as a platform for broad-based discussions on migrant labour issues under the auspices of the Committee, which reports to SLOM;
- Promote fair and appropriate employment protection payment of wages and adequate access to decent working and living conditions for migrant workers and provide migrant workers, who may be victims of discrimination, abuse, exploitation, violence, with adequate access to the legal and judicial system of the receiving states;
- Intensify efforts to protect the fundamental human rights, promote the welfare and uphold human dignity of migrant workers by, among others, facilitating the exercise of consular functions to consular or diplomatic authorities of states of origin when a migrant workers is arrested or committed to prison or custody or detained in any other manner, under the laws and regulation of the receiving state and in accordance with the Vienna Convention and Consular Relations;
- Facilitate data-sharing on matters related to migrant workers for the purpose of enhancing policies and programmes concerning migrant workers in both sending and receiving states;
- Strengthen policies and procedures in the sending state to facilitate aspects of migration workers, including recruitment, preparation for deployment overseas and protection of the migrant workers when abroad as well as repatriation and reintegration to the countries of origin;
- Facilitate access to resources and remedies through information, training and education, access to justice, and social welfare services as appropriate and in accordance with the legislation and of the receiving state, provided that they fulfil the requirements under applicable laws, regulations, and policies of the said state, bilateral agreements and multilateral treaties;

³⁶ ASEAN Secretariat, June 2009, ASEAN Socio-Cultural Community Blueprint, Jakarta (pp. 12-13). Available at: <http://www.asean.org/archive/5187-19.pdf> (Accessed 15 April 2013)

- Establish and promote legal practice of the sending state to regulate recruitment of migrant workers and adopt mechanisms to eliminate recruitment malpractices through legal and valid contracts, regulation, and accreditation of recruitment agencies and employers, and blacklisting of negligent/unlawful agencies; and
- Promote capacity building by sharing of information, best practises as well as opportunities and challenges in relation to protection and promotion of migrant workers' rights and welfare.'³⁷

2005 ASEAN Agreement on Disaster Management and Emergency Response (re-affirming the Hyogo Principles)

In 2005, in Vientiane, ASEAN countries reaffirmed and complemented the Hyogo priorities in the ASEAN Agreement on Disaster Management and Emergency Response.³⁸

2011 Joint Declaration on Comprehensive Partnership between the Association of Southeast Asian Nations (ASEAN) and the United Nations (UN)

The Joint Declaration coming out of the 4th ASEAN-UN Summit, on 19 November 2011 in Bali, Indonesia outlines ASEAN (and UN) commitments regarding Climate Change. Under section C, "Socio-Cultural Cooperation", the following aims are stated:

'3.1 Enhance cooperation towards strengthening international efforts, recognizing the central role of the United Nations Framework Convention on Climate Change (UNFCCC) to address climate change and respond to its impacts on socio-economic development, health, environment and water resources, including activities on building adaptive capacities and supporting mitigation and adaptation actions as well as incorporate such actions into national development strategies and policies in line with sustainable development.

3.2 Pursue the realization of priorities set out in the Bali Road Map under the UNFCCC, including the Bali Action Plan, to ensure the continued implementation of international efforts in addressing climate change to achieve the ultimate objective of the Convention in stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, and recognizing the needs of developing countries for financing, technology transfer and capacity building.'³⁹

2012 ASEAN Human Rights Declaration

The recently adopted ASEAN Human Rights Declaration⁴⁰ (which is not binding on States) does not mention climate change or related migration. It does refer to the right to freedom of movement and residence within the borders of the home State,

³⁷ ASEAN Secretariat, June 2009, ASEAN Socio-Cultural Community Blueprint, Jakarta (pp. 12-13). Available at: <http://www.asean.org/archive/5187-19.pdf> (Accessed 15 April 2013)

³⁸ Asian Development Bank, 'Addressing Climate Change and Migration in Asia and the Pacific, Final Report', 2012

³⁹ Joint Declaration on Comprehensive Partnership between the Association of Southeast Asian Nations (ASEAN) and the United Nations (UN) 2011 (p. 8). Accessible at: <http://climate-iiisd.org/news/un-asean-conclude-joint-declaration-on-climate-energy-food-and-disaster-cooperation/>

⁴⁰ ASEAN Human Rights Declaration, 2012. Available at: <http://www.asean.org/news/asean-statement-communicues/item/asean-human-rights-declaration> (Accessed 16 April 2013)

and the right to leave and return to the home State (Article 15); the right to seek and receive asylum in accordance with laws of asylum country and applicable international instruments (Article 16); the right to safe drinking water and sanitation and the right to a safe, clean and sustainable environment (Article 28); the right to development that equitably meets the developmental and environmental needs of present and future generations (Article 35); and the recommendation that States should adopt meaningful people-oriented and gender responsive development programmes that include the protection and sustainability of the environment (Article 36).

Other Declarations and Statements

ASEAN has released a number of other declarations and statements on climate change, including:⁴¹

- ASEAN Declaration on Environmental Sustainability (13th ASEAN Summit, 2007)
- ASEAN Declaration on COP-13 to the UNFCCC and CMP-3 to the Kyoto Protocol (13th ASEAN Summit, 2007)
- Singapore Declaration on Climate Change, Energy and the Environment (3rd EAS Summit, 2007)
- Joint Ministerial Statement of the First EAS Energy Ministers Meeting (2007)
- Ministerial Statement of the Inaugural EAS Environment Ministers Meeting (2008)
- ASEAN Joint Statement on Climate Change to COP-15 and CMP-5 (15th ASEAN Summit, 2009)
- Singapore Resolution on Environmental Sustainability and Climate Change (11th AMME, 2009)
- ASEAN Leaders' Statement on Climate Change to COP17 and CMP7 (19th ASEAN Summit, 2009)⁴²

Critique of ASEAN's Response to Climate Change

Some criticisms of ASEAN's Response to climate change include the argument that ASEAN has failed to 'reach a consensus for a strong position on climate change.' In a 2010 policy brief by WWF-Oxfam-Greenpeace, it was argued that ASEAN needed to 'articulate and adopt a consistent set of objectives, concerns, aspirations, demands and responsibilities in the UNFCCC negotiations,' otherwise it 'will be more difficult to muster the will for sufficiently strong action' to mitigate and adapt to the effects of climate change.⁴³

⁴¹ Dr. Raman Letchumanan, ASEAN Secretariat, Is there an ASEAN policy on climate change? Accessible at: <http://www2.lse.ac.uk/IDEAS/publications/reports/pdf/SR004/ASEC.pdf> (Accessed 16 April 2013)

⁴² Ibid;

⁴³ WWF-Oxfam-Greenpeace 2010, ASEAN'S Challenges in the Cancun Climate Change Talks, Policy Brief, Accessible at: <http://afabglobalclimatedeal.files.wordpress.com/2011/08/a-fab-policy-brief-2010-01.pdf>

Existing Responses in the Greater Mekong Subregion (GMS)

The governments of the GMS are increasingly taking steps to institute climate change policies, due in part to recognition that climate change will inevitably have a negative economic impact on countries in the region and/or complicate their development strategies. For instance, Cambodia, Lao PDR, Thailand and Vietnam have all ratified the UNFCCC and the Kyoto Protocol; and have each implemented a NAPA, with the aim of developing country-specific programs of action and lists of priorities for adapting to the impacts of climate change. Various other policies have been instituted in the region, for example, Thailand's Five-Year Strategy on Climate Change (2008 - 2012); and Vietnam's National Target Program to Respond to Climate Change (NTP).⁴⁴ Myanmar has signed the UNFCCC and the Convention on Biodiversity Conservation, and has acceded to the Convention to Combat Desertification (UNCCD). The country's NAPA was due for release in early 2012, but as yet has not been finalized. While all of the above-mentioned policy frameworks are important achievements, adaptation strategies remain chiefly focused on climate-change mitigation and disaster relief management, and rarely consider migration.⁴⁵

Further, there remain serious challenges in developing a coherent subregional response to environmental issues such as climate change. One body concerned with subregional natural resource management is the Mekong River Commission (MRC). The MRC is 'the only inter-governmental agency that works directly with the governments of Cambodia, Lao PDR, Thailand and Viet Nam on their common specific interests—joint management of shared water resources and sustainable development of the Mekong River.' Its stated aims include sustainable development and poverty alleviation, as well as trying to 'ensure that the Mekong water is developed in the most efficient manner that mutually benefits all Member Countries and minimises harmful effects on people and the environment in the Lower Mekong Basin.'⁴⁶ The body is funded by the governments of the four member countries as well as through bilateral foreign aid, development banks, and international organisations. The two upper states of the Mekong River Basin, the People's Republic of China and the Union of Myanmar, are 'dialogue partners' with the MRC.

Recent tensions surrounding the development of the controversial Xayaburi dam in Laos illustrate the weaknesses of the MRC and the challenges facing the GMS in cooperating on resource management and environmental issues. Laos, supported by Thailand and private sector funding, aims to build nine hydropower dams on the river, and has started construction on the first, the Xayaburi Dam. Laos hopes to generate income from the sale of hydropower produced by the dams, but scientists have warned of dire consequences for downstream countries, including the blocking of fish migrations, a 'drastic decline in Cambodia's fisheries industry,' and reduced 'flow of nutrients downstream to rice paddies and agricultural land in Vietnam's Mekong

⁴⁴ Mekong River Commission, 'Adaptation to climate change in the countries of the Lower Mekong Basin: Regional Synthesis Report'. MRC Technical Paper No. 24, Vientiane, 2009. pp. 28-30.

⁴⁵ Asian Development Bank, 'Transcript of Discussion Assessing Impact of Climate Change on Human Displacement in South Asia', Manila, Philippines, 9 February 2011; and Mekong River Commission, 'Adaptation to climate change in the countries of the Lower Mekong Basin: Regional Synthesis Report'. MRC Technical Paper No. 24, Vientiane, 2009, p25.

⁴⁶ Mekong River Commission, 'About the MRC', available at: <http://www.mrcmekong.org/about-the-mrc/>

Delta.’⁴⁷ The MRC treaty ‘requires governments to seek agreement before beginning projects on the Mekong, using a process called “prior consultation”.’⁴⁸ Despite this requirement, there is no real enforcement mechanism. The current process if member countries violate prior consultation procedures is a dispute resolution process coordinated by the MRC Council and Joint Committee, and if that fails, and the MRC is ‘unable to resolve the difference or dispute within a timely manner, the issue is then referred to the governments of Member Countries to resolve by negotiation through diplomatic channels.’⁴⁹ This process is inadequate for the complex transnational decisions that are currently being made about Mekong River resources, and leaves the MRC ineffectual against non-compliance, such as the recent action by Thailand and Laos in proceeding with the Xayaburi dam construction despite strong protest from other MRC members and persuasive evidence of projected adverse impacts on downstream countries.

The MRC 2011-2015 Strategic Plan highlights the Xayaburi dam prior consultation process as one that will set an important precedent for other developments.⁵⁰ If this assessment is correct, the precedent currently set by MRC negotiations does not bode well for future joint resource management efforts in the GMS. In the Strategic Plan, the MRC recognises that ‘Climate change is one of our basin’s most prevalent and complex environmental challenges. The Mekong River Basin stands to suffer from climate change due to the intensification of flood and drought conditions amid lacking resources for mitigation measures and a higher proportion of people living a subsistence lifestyle.’ Further, it states the goal of working ‘towards preparing for climate change adaptation so it does not affect quality of life for the basin’s people.’⁵¹ It is clear that much greater cooperation amongst GMS countries is necessary if there are to be effective responses to trans-border environmental issues such as river management, and climate change.

Existing Responses in Vietnam

Vietnam is party to the following international environmental laws:⁵²

- Biodiversity
- Climate Change

⁴⁷ Kirk Herbstson, ‘Mekong Countries at Odds Over Mega-Dams,’ 4 February 2013, International Rivers. Available at: <http://www.internationalrivers.org/resources/mekong-countries-at-odds-over-mega-dams-7824> (Accessed 15 April 2013)

⁴⁸ Ibid;

⁴⁹ Mekong River Commission, ‘FAQs to the MRC Procedures for Notification, Prior Consultation, and Agreement process.’ Available at: <http://www.mrcmekong.org/news-and-events/consultations/xayaburi-hydropower-project-prior-consultation-process/faqs-to-the-mrc-procedures-for-notification-prior-consultation-and-agreement-process/> (Accessed 15 April 2013)

⁵⁰ Mekong River Commission, Strategic Plan 2011-2015, p17. Available at: <http://www.mrcmekong.org/assets/Publications/strategies-workprog/Stratigic-Plan-2011-2015-council-approved25012011-final-.pdf> (Accessed 15 April 2013)

⁵¹ Ibid;

⁵² ADB, Asia Regional Integration Centre, Tracking Asian Integration, Climate Change Strategies Database, Vietnam Strategies. Available at: <http://aric.adb.org/climate-change.php> (Accessed 15 March 2013)

- Climate Change-Kyoto Protocol
- Desertification
- Endangered Species
- Environmental Modification
- Hazardous Wastes
- Law of the Sea
- Ozone Layer Protection
- Ship Pollution
- Wetlands

Vietnam signed the UNFCCC on 11 June 1992, ratified on 16 November 1994, and it entered into force on 14 February 1995. It signed the Kyoto Protocol on 3 December 1998, ratified on 25 September 2002, and entered into force on 16 February 2005, under the responsibility of the Ministry of Natural Resources and Environment. Vietnam submitted its Initial National Communication under the UNFCCC in 2003, and its Second National Communication in 2010.

Vietnam approved the National Target Program to Respond to Climate Change (NTP-RCC) in 2008, which aims to: ‘assess climate change impacts on sectors and regions in specific periods; develop feasible action plans to effectively respond to climate change in the short-term and long-term to ensure sustainable development of Viet Nam; take opportunities to develop towards a low-carbon economy; [and] join the international community’s efforts in mitigating climate change and protecting the climatic system.’⁵³

The Vietnamese Government approved the National Climate Change Strategy in 2011, aiming to: ‘[sustainably utilize] national resources; carry out adaptation measures and GHG mitigation options; safeguard people’s life and properties; ensure the sustainable development goals; strengthen human and natural system resilience to climate change; develop the low-carbon economy to protect and enhance quality of life; [and] ensure national security and sustainable development.’⁵⁴

The National Green Growth Strategy was approved in September 2012, and states that: ‘green growth, as a means to achieve the low carbon economy and to enrich natural capital, will become the principal direction in sustainable economic development; [and] reduction of GHG emissions and increased capability to absorb GHG are gradually becoming compulsory and important indicators in social-economic development.’⁵⁵

Most recently, the National Action Plan to Respond to Climate Change in 2012-2020, was approved by the Prime Minister of Vietnam in October 2012. The Action Plan

⁵³ ‘Introduction to Several Climate Change Policies in Vietnam,’ Department of Meteorology Hydrology and Climate Change, Ministry of Natural Resources and Environment of Vietnam, Presentation from UNFCCC COP18/CMP8 Side Event, Doha, Qatar, 28 November 2012

⁵⁴ Ibid;

⁵⁵ Ibid;

‘includes 65 programs, projects and tasks in 2012-2020 with 10 priorities in 2012-2015.’ This Plan is in addition to an updated National Target Program to Respond to Climate Change (NTP-RCC) for 2012-2013, which was approved in August 2012.⁵⁶

Existing Responses in Myanmar

Myanmar is party to the following international environmental laws:⁵⁷

- Biodiversity
- Climate Change
- Climate Change-Kyoto Protocol
- Desertification
- Endangered Species
- Law of the Sea
- Ozone Layer Protection
- Ship Pollution
- Tropical Timber 83
- Tropical Timber 94

Myanmar signed the Climate Change Convention on 11 June 1992, ratified on 25 November 1994, and it entered into force on 23 February 1995. Myanmar ratified the Kyoto Protocol on 13 August 2003, and it entered into force on 16 February 2005, under the responsibility of the National Commission for Environmental Affairs.’ It has been argued that, ‘national environmental laws and policy measures to integrate climate change concerns into national long-term socio-economic and environmental planning are the critical needs of Myanmar under climate change arena;’ and ‘in addition, network between researchers, institutions and policy makers is urgently needed so that climate change policy, strategy and programmes, as well as the integration of this policy and strategy into sustainable development have to be established.’⁵⁸

The draft Initial National Communication (INC) (which is yet to be submitted to the UN) has suggested introducing a ‘National Environmental Policy [in order to] enhance the harmonization and balance between environment and development through the

⁵⁶ ‘Introduction to Several Climate Change Policies in Vietnam,’ Department of Meteorology Hydrology and Climate Change, Ministry of Natural Resources and Environment of Vietnam, Presentation from UNFCCC COP18/CMP8 Side Event, Doha, Qatar, 28 November 2012

⁵⁷ ADB, Asia Regional Integration Centre, Tracking Asian Integration, Climate Change Strategies Database, Myanmar Strategies. Available at: <http://aric.adb.org/climate-change.php> (Accessed 15 March 2013)

⁵⁸ Lwin Maung Maung Swe, ‘Farmers’ Perception and Adaptation to Climate Change through Agriculture in the Dry one of Myanmar’, Thesis, Master of Science in Natural Resources Management, Asian Institute of Technology, School of Environment, Resources and Development, Thailand, May 2012, 92

integration of environmental considerations into [the] development process.’⁵⁹ A new Environment Conservation Act (Law No. 9/2012)⁶⁰ was adopted on 30 March 2012, as part of ongoing efforts to update the environmental legislative framework.

A draft NAPA for Myanmar⁶¹ (dated 18 May 2012) is awaiting Cabinet approval, and states that the national coordinating body is the National Environmental Conservation Committee, Ministry of Environmental Conservation and Forestry, with the executing agency being the Department of Meteorology and Hydrology, Ministry of Transport. The NAPA ‘specifies 32 urgent and immediate Priority Adaptation Projects for effective climate change adaptation for eight main sectors/themes, namely: i) Agriculture; ii) Early Warning Systems; iii) Forest; iv) Public Health; v) Water Resources; vi) Coastal Zone; vii) Energy, and Industry; and viii) Biodiversity.’⁶²

The draft NAPA states that the following main treaties/agreements were ‘considered when prioritising NAPA Adaptation Projects:’

- The UNFCCC
- The Convention on Biological Diversity (CBD 1993)
- The Kyoto Protocol (1997)
- The UN Convention to Combat Desertification (UNCCD 1997)
- The Hyogo Framework for Action (HFA)
- The ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry towards Food Security (AFCC), which is ‘an integrated framework (finalised in 2009) to facilitate ASEAN to respond to climate change threats and food security;’ and provides ‘an arena for ASEAN to coordinate the support it receives.’⁶³

The draft NAPA outlines potential barriers to NAPA implementation, including:

- ‘limited technical capacity of local and national stakeholders for planning (including cross-sectoral planning) and implementing climate change adaptation;
- insufficient evidence and demonstration of climate change adaptation benefits in the country to influence policy- and decision-making;
- limited policy, strategy and legislative environment for providing incentives for adapting communities to climate change;
- limited community awareness and understanding regarding climate change impacts and adaptation;

⁵⁹ Lwin Maung Maung Swe, ‘Farmers’ Perception and Adaptation to Climate Change through Agriculture in the Dry one of Myanmar’, Thesis, Master of Science in Natural Resources Management, Asian Institute of Technology, School of Environment, Resources and Development, Thailand, May 2012, 92

⁶⁰ Environment Conservation Act - Pyidaungsy Hluttaw Law No. 9/2012. Available at: http://www.burmalibrary.org/KN/9_2012_Environment_Conservation_Law_Mirror2012-04-01.pdf

⁶¹ Draft Myanmar NAPA, 19 May 2012, “Myanmar_NAPA_C4ES_19 May 2012_18h00.docx”

⁶² Ibid; p4

⁶³ Ibid; p31

- poor understanding of climate change adaptation benefits as a result of limited on-the-ground adaptation intervention demonstrations to enhance resilience to climate change - without access to replicable demonstrations, government decision-makers and resource users do not have the tools and knowledge necessary to decrease climate change vulnerability;
- limited financial resources to adapt to climate change and climate variability;
- limited effective assessment of climate change impacts in Myanmar, which in turn limits the planning of effective adaptation activities; and
- limited secure land tenure particularly for rural communities.’⁶⁴

In an attempt to address some of these potential barriers in the Myanmar context, one recent initiative in Myanmar, coordinated by Partnerships for International Strategies in Asia (PISA) and ECODEV (CC-M Myanmar Research Convener), was the establishment of a Myanmar Leadership Institute on Climate Change.⁶⁵ Initially directed at mid-level government officials, the institute provided its first 5-day training program in Naypyitaw in February 2013, covering environmental governance issues, and ‘Climate Wise Development’. The training involved 29 government departments and 13 ministries. ECODEV also provided training on climate change for schoolteachers in 2012, and there has been discussion of inclusion of such modules in the Myanmar school curriculum in the future.

CC-M: Conceptual Issues

Increasing attention is being paid to the connection between climate change and migration, with some dramatic estimates suggesting that between ‘200-250 million people will be displaced by environmental causes before 2050.’⁶⁶ In the face of this imminent ‘global threat,’ it is therefore understandable that there are urgent calls for a new international regime to protect vulnerable climate change migrants and displacees. However there are a number of significant challenges in conceptualising and responding to the climate change and migration nexus. Firstly, there are difficulties in defining ‘climate change events’ or ‘climate change migrants.’ This is due to the complex science behind climate change impacts, which may include slow-onset phenomena that occur gradually over a long period of time; and also because of the many varied human responses to such phenomena. Secondly, the drivers of migration are complex and multicausal. An individual or community’s vulnerability and responses to the impacts of climate change, including any decisions to migrate, are subjective and contextual. There are many drivers of migration that often are at play simultaneously, including - inter alia - government policy, access to information and

⁶⁴ Draft Myanmar NAPA, 19 May 2012, “Myanmar_NAPA_C4ES_19 May 2012_18h00.docx,” p32

⁶⁵ Suzanne Kelly-Lyall, ‘Myanmar Leadership Institute on Climate Change,’ 17 March 2013. Available at: <http://www.boell-southeastasia.org/web/52-805.html>

⁶⁶ McAdam, Jane (2009) ‘Environmental Migration Governance’, University of New South Wales Faculty of Law Research Series, 2009, Paper 1.

resources, and socio-economic factors. It is usually very difficult to identify climate change as the primary or sole reason for migration. Thirdly, there are a number of risks in directly linking climate change to migration, including the risk of co-option of the notion in order to distract from other drivers of migration; in order to access climate change funding; as a rationale for forced resettlement; and in order to fuel anti-migrant sentiment.

Definitional Problems

Defining key terms such as ‘climate change events’ and ‘climate change induced migration’ is a ‘central point of confusion’⁶⁷ in the field of environment and migration. Gunvor Jonsson, in his review of various research projects examining climate change and migration in Africa, noted ‘frequent confusion between terms such as climatic conditions versus climatic events, or climate change versus climate variability.’ He argues that this lack of clarity on key terms ‘obscures our understanding of the nature of the relationship between environmental change and migration.’⁶⁸

Migration research is traditionally undertaken by social scientists, whereas climate change has conventionally been housed in a purely physical science world. While there is a growing understanding of the need for multi-disciplinary approaches, there is still a disjuncture between the complex scientific understandings of climate change and the social science approaches in this field. Some view the divide in approaches as one between migration specialists ‘who focus on practical solutions in their empirical research as well as in their normative proposals’ and environmentalists, ‘who stress the responsibility of large emitter nations for anthropogenic climate change.’ They view environmentalists as leading the cause for ‘a new global regime on climate change displaced persons’, while migration specialists are generally cautious of portraying climate change induced migration as a ‘phenomenon [that] is different and totally separate from other forms of mobility’ and wary of neglecting existing migration patterns.⁶⁹

In addition to the technical difficulties, the exercise of defining terms is a political action, which may draw arbitrary distinctions between different types of environmental factors, and which deems certain environmental factors and not others as being relevant to the debate. Jonsson queries: ‘Should research only focus on climate change, or also, the weather, natural disasters, and socially engineered development projects? Where do we draw the line? And who draws it, policy-makers or researchers?’ Arguing further that, ‘Authorities may have a different opinion than migrants about what constitutes an environmental problem; just as policy-makers make have a different interest in examining the environment-migration nexus than academic researchers.’⁷⁰ Given the lack of reliable data, it has been queried, ‘why is it that policy-makers are attempting to identify, create or highlight the environment-

⁶⁷ Jónsson, Gunvor, ‘The environmental factor in migration dynamics – a review of African case studies’, International Migration Institute Working Papers, 2010

⁶⁸ *Ibid*;

⁶⁹ Stoutenburg, Jenny Grote, ‘Book Review of: Jane McAdam (ed.), Climate Change and Displacement. Multidisciplinary Perspectives’, *Eur J Int Law*, November 2011; 22: 1196 – 1200

⁷⁰ Jónsson, Gunvor, ‘The environmental factor in migration dynamics – a review of African case studies’, International Migration Institute Working Papers, 2010

migration linkage? Why has environmental migration suddenly been rediscovered?⁷¹ There is no doubt that many non-climate related environmental changes may contribute to human displacement, and a response that deals only with climate change risks arbitrarily defining human experience in a way that makes no sense to those who are affected.

Despite these definitional challenges, international agencies, researchers, and policy makers have come up with labels, including ‘environmental migrant’, ‘environmentally displaced person (EDP),’ ‘environmentally motivated migrant,’ and more controversially ‘environmental/climate change refugee’, to describe those who, ‘whether forced or voluntary, experience environmentally induced migration.’⁷² Indicative of the difficulty in identifying a clear scientific ‘climate change’ basis to environmental changes and resulting migration, much research in this field prefers to investigate the more general concept of ‘environmental migration’ to ‘climate change migration.’

For example, in the International Organisation for Migration (IOM)’s 2011 International Dialogue on Migration, the following definitions were utilised:

‘Climate change: A change in the climate that persists for decades or longer arising from either natural causes or human activity (Source: Intergovernmental Panel on Climate Change).

Environmental migrant: Environmental migrants are persons or groups of persons who, predominantly for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad (Source: IOM World Migration Report 2008).⁷³

The difficulty of neatly categorising ‘climate change migration’ is compounded by the fact that there are various ways in which such migration can manifest including seasonal migration (‘eating the dry season’), temporary migration as an adaptive strategy, displacement due to natural disasters and sudden onset climate events, distress migration, and voluntary (economic) mobility.⁷⁴ Responses to climate change, and decisions to migrate are highly contextual, and result in a ‘complex range of migration flows with differences in terms of destinations, duration and composition.’⁷⁵

The ADB also rejects the notion that ‘climate change induces a distinct category of migrants,’ but rather views it as interplaying with other drivers of migration. It is reasoned that ‘the very nature of migration is generally not well understood,’ and in

⁷¹ Betts, Alexander, ‘Climate Change and Migration: What we don’t know’, Global Economic Governance Programme Blog, University of Oxford, 20 January 2009

⁷² Fritz, Caroline, ‘Climate Change and Migration: Sorting through complex issues without the hype’, Migration Policy Institute, 2010

⁷³ International Organization for Migration, ‘International Dialogue on Migration, Intersessional Workshop on Climate Change, Environmental Degradation and Migration, Background Paper’, March 2011

⁷⁴ Tacoli, Cecilia, Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy’, International Institution for Environment and Development, London, 2012

⁷⁵ Ibid;

particular, ‘little is known about the factors that induce some people affected by climate change to migrate while others stay behind.’⁷⁶

Many forms of migration are difficult to compartmentalise, but perhaps climate change-induced migration is even more so than others, due to the uncertain nature of the science, the difficulty of predicting climate change patterns and human responses, and the various socio-economic, cultural and political factors that interact with and influence the relationship between people and their environments.

Migrants’ rights advocate Jackie Pollock, of MAP Foundation Thailand, has rejected the increasingly institutionalised way in which ‘people who move’ are profiled, arguing that, ‘they may be labelled the ‘migrant worker’, the ‘refugee’ or the ‘trafficked person’ but people’s life experiences resist being so neatly categorised.’ Further, she argues that, ‘international law will never be able to respond effectively to the infinite combinations of experiences of migrants when the root causes are not addressed and when some of the responses themselves create new categories of people.’⁷⁷ She urges migrant workers, refugees and trafficked persons and their support groups, to ‘question the labels that are assigned to people but which reflect only a small portion and time of a person’s life.’ This argument may easily be extrapolated to apply to the so-called category of climate change-induced migrants.⁷⁸

Multicausality

A key factor that makes defining climate change migration so difficult is the fact that it is a ‘multi-causal phenomenon.’⁷⁹ Climate change alone will rarely be the only factor leading to the displacement of people within or outside of their State. It is argued that the relationship between climate change and migration ‘is not a linear one, but rather more complex, unpredictable, and influenced by larger social, economic, and political forces that shape how societies interact with their environments.’⁸⁰ Factors that interplay with climate change, and influence the decision whether or not to migrate, include: poverty, demographics, support networks in origin and destination, human agency, presence (or lack of) financial or human resources, government policy, diversified livelihoods, land ownership, vulnerability, resilience and adaptive capacity.

Carolina Fritz sums up the complexity, reflecting that:

‘a person’s decision to migrate is based on many factors, including financial capital (can I pay for or find a way to pay for the journey?), social capital (who can help me in the potential destination area?), conditions at home (do I see a future here?), and conditions in the potential destination (will I be able to get a job or find safety there, will it be a good place for my family?) For example, the ability of Bangladeshi and Somali farmers to deal with more frequent floods

⁷⁶ Asian Development Bank, ‘Policy Dialogues on Climate-induced Migration in Asia and the Pacific’, 9 June 2011 Bangkok, 16-17 June 2011

⁷⁷ Pollock, Jackie, ‘What’s in a label?’, 2011, *Forced Migration Review* 37

⁷⁸ *Ibid*;

⁷⁹ International Organization for Migration, ‘International Dialogue on Migration, Intersessional Workshop on Climate Change, Environmental Degradation and Migration, Chair’s Summary’, March 2011

⁸⁰ Fritz, Caroline, ‘Climate Change and Migration: Sorting through complex issues without the hype’, Migration Policy Institute, 2010

and droughts, respectively, is vastly different than that of their Swiss and Australian counterparts.’⁸¹

Livelihood stress, where a person can no longer sustain their means of living as a result of an external shock, may come about as a result of the depletion in arable land (due to salinity, erosion, flooding, droughts, or sea-level rise), an impact on fishery production, or because of the sudden destruction of infrastructure in a disaster, amongst other things. Livelihood stress will often be the primary reason a family chooses to migrate, with environmental factors acting as the trigger. As such, it will often not be possible to isolate climate change or environmental degradation as the sole, direct cause of displacement or migration. This is particularly true in the case of slow-onset climate change impacts, which happen gradually over a long period of time.

Some common factors that can interact with climate change in influencing migration include:

Business interests, investments, infrastructure and development

The development of infrastructure projects such as dams, roads and ports significantly impact on the natural environment. Access to water is often a key determinant in resilience to climate change and in the decision to migrate, and this is often influenced by the construction of hydroelectric dams, water reservoirs, and other infrastructure.⁸²

The ADB’s GMS Program has been criticised for having a ‘huge impact on the 70% of people in the region who rely upon agriculture and natural resources for their living;’ and for playing a large role in the ‘massive increase in the commercial exploitation of natural resources through forestry, mining, hydropower and plantation agriculture; as well as widespread over-harvesting of river and forest resources by rural communities.’⁸³ Oxfam Australia views ADB-fuelled development in the GMS as both contributing to climate change and environmental degradation, and also increasing the vulnerability of communities to climate change.⁸⁴

Availability of alternative livelihoods and support networks

Cecilia Tacoli points to the lack of non-farm employment in rural areas, and a dependency on natural resources, as a key determinant for climate change induced mobility.⁸⁵ She states that, ‘in many cases the key factor that compels people to move elsewhere is the lack of alternative local sources of income-

⁸¹ Fritz, Caroline, ‘Climate Change and Migration: Sorting through complex issues without the hype’, Migration Policy Institute, 2010

⁸² Tacoli, Cecilia, Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy’, International Institute for Environment and Development, London, 2012

⁸³ Ransley, Carol, Jonathan Cornford, and Jessica Rosien, A Citizen’s Guide to the Greater Mekong Subregion, Oxfam Australia, 2008

⁸⁴ Ibid;

⁸⁵ Tacoli, Cecilia, ‘Migration, Climate Change and the Multiple Drivers of Mobility: current debates, empirical evidence and implications for policy’, Presentation, International Institute for Environment and Development, London, 2011

generation and employment.’ She notes that ‘[f]or the poorest and least skilled farmers, seasonal movement to areas with irrigated agriculture provides opportunities for waged agricultural labour. For better educated people, or those who can count on the support of relatives and friends, towns and cities provide employment opportunities in construction, domestic service and small-scale trade.’⁸⁶

*Impact of policy responses to climate change – for example
‘mitigation/adaptation as cause’*

It is recognised that changes in agricultural production systems, desertification, rainfall, and access to land and water will play an important role in responses to climate change, but just as important is ‘the growing appropriation of land by large investors, frequently foreign, in what are often called ‘land grabs’,’ which are ‘in many cases driven by the growing production of biofuels and biomass as alternative sources of energy that contribute to mitigation efforts, but which in many cases reduce the availability of land to smallholders and to pastoralists.’⁸⁷

Castles and Rajah give an ironic example of the way climate change adaptation measures can have an impact on displacement. They cite that one of the ‘solutions’ under the UNFCCC, ‘Reduction in Emissions from Deforestation and Degradation’ (REDD), ‘has been widely critiqued by indigenous communities [and by Bolivian President Evo Morales] for treating Mother Earth and particularly forests, as merely carbon absorbing commodities.’⁸⁸ REDD is predicted to ‘most certainly lead to the loss of legal title over lands settled by indigenous communities for generations, as ‘increasing the financial value of forests could lead to the biggest land grabs of all time’ Strikingly, ‘according to Interpol, large multinational organized crime syndicates are already planning to reap unscrupulous profit through REDD by expelling indigenous communities from their forests in order to acquire legal title over it.’⁸⁹ It is seen as very problematic that REDD allows polluting states and corporate entities to offset their emissions through the purchase of carbon credits, while continuing with damaging environmental practices. Further, the global south, particularly forest-dwelling communities, have to ‘bear the burden of this indiscretion, while the REDD agencies and Global North industries profit from it.’⁹⁰

The above list is only a small sample of the types of factors that can influence the way in which particular communities experience the impact of climate change, and which may or may not lead to out-migration from communities. The complex and numerous causal drivers of migration, and the subjective way in which people respond to these drivers, make identifying, responding to, or planning for ‘climate change migration’ extremely difficult. The causation hurdles required in a policy response to climate

⁸⁶ Tacoli, Cecilia, Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy’, International Institution for Environment and Development, London, 2012

⁸⁷ Ibid;

⁸⁸ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

⁸⁹ Ibid;

⁹⁰ Ibid;

change migration may involve: linking the ‘source of harm’ (climate change impact) to migration, assessing the degree of harm, and singling out the harm as a single or primary cause of movement. McAdam believes that ‘these levels of complexity could lead to considerable difficulty and inconsistency in decision-making.’⁹¹

Risks of Linking Climate Change to Migration

There are a number of risks in linking migration to climate change. Although climate change is increasingly viewed as having some influence on migration patterns, the links are at times tenuous. Individual actors have been accused of co-opting the linkage between climate change and migration for their own causes, be it to secure their share of climate change funding, to fuel xenophobic anti-migrant sentiment, or in the case of some Northern States, to use the link ‘to reinvigorate the securitisation of South-North migration.’⁹²

Examples of such co-opting, and the related risks are discussed below:

Co-opting to distract from other key (man-made) drivers of migration

There has been a rush of interest and funding in climate change issues in recent years, prompting some to suggest an over-enthusiasm for ‘climate change and migration’ related research and programming, without a sufficient empirical basis for such interest. It is clearly advantageous for some parties (for example, some States, multinational private business, or international institutions like the Asian Development Bank), to focus on climate change as a stand-alone environmental phenomenon, for which it is difficult to attribute accountability. This conceptualisation results in the ‘evacuation of political responsibility by overplaying the hand of nature.’⁹³ This gives rise to a serious risk that policy makers and governments will ignore the social, political and economic elements that interplay with environmental factors, and which may provide more direct causes for migration in many cases.

Co-opting as a rationale for forced resettlement

The Commission on Climate Change and Development has found that there is a danger that some in power are using climate change as an excuse to forcibly resettle communities for political or economic gain. It calls for the ‘careful monitoring’ of instances of resettlement purportedly in the name of reducing climate change vulnerability. It has been observed that ‘involuntary resettlement rarely leads to improvements in the quality of life of those who

⁹¹ McAdam, Jane, ‘Protection or Migration? The “Climate Refugee” Treaty Debate’ in *Climate Change, Forced Migration, and International Law*, p197

⁹² Betts, Alexander, ‘Climate Change and Migration: What we don’t know’, *Global Economic Governance Programme Blog*, University of Oxford, 20 January 2009

⁹³ Pigué, Etienne, Antoine P’ecoud, and Paul de Guchteneire, ‘Migration and Climate Change: An Overview’, *Refugee Survey Quarterly* (2011) 30 (3): 1-23

are moved,’ as it opens up space for corruption, disrupts lives, and may lead to conflict.⁹⁴

Co-opting to support securitisation / militarisation

There has been criticism of the ‘securitization of the climate change debate,’ which is where vulnerable developing countries (primarily in the global south) are posed as a risk to the security of developed (primarily northern) States. This framework gives priority to ‘defence and immigration control, at the expense of adaptation responses and existing development interventions.’⁹⁵ Castles and Rajah see a serious danger in the exaggeration and ‘fear-mongering’ in the climate change discourse, and the use of climate change as rationale for ‘military amplification efforts.’ They criticise a 2003 US Pentagon-sponsored study, which ‘depicted poor, starving, over-populated communities in the Global South overwhelming the environmental capacities of their lands, engaging in violent conflict over scarce resources, and storming en masse towards Western borders.’ This narrative is being incorporated into efforts to repress migration, and US military interventions into Africa in particular. Additionally, ‘some extremists are even going so far as to suggest that millions of displaced Muslim “climate refugees” present a new and growing source of potential Islamic terrorists.’⁹⁶

Co-opting to fuel anti-migrant sentiment / population control

Castles has argued that ‘the doomsday prophesies of environmentalists may have done more to stigmatize refugees and migrants and to support repressive state measures against them, than to raise environmental awareness.’⁹⁷ Rajah refers to a ‘Greening of Hate’ movement, wherein climate change is co-opted by the population control and anti-migrant lobby, and migrants are blamed for over-population in urban centres, environmental degradation, and over-consumption of resources. He sees these arguments as veiling ‘the fact that the global north is still disproportionately responsible for the majority of carbon emissions and other pollutants,’ and argues that this ‘should be the target for correction, not laying the blame on vulnerable communities under enormous economic pressures already.’⁹⁸

In addition to the risks of co-option of the climate change-migration nexus, a further issue is the way in which climate change is linked to migration. In common discourse, the link between climate change and migration is overwhelmingly seen in a negative light. The ADB has argued that this means that ‘migrants have often been portrayed as lacking in resources, as helpless victims of environmental forces beyond their control;’ and that this reasoning is detrimental to migrants, narrowly shapes their identities and

⁹⁴ Barnett, Jon, and Michael Webber, ‘Accommodating Migration to Promote Adaptation to Climate Change’, Commission on Climate Change and Development, University of Melbourne, 2009

⁹⁵ Governance and Social Development Resource Centre, ‘Climate Change, Conflict, Migration and Fragility’, n.d

⁹⁶ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

⁹⁷ UNESCO, ‘Book Review, Migration and Climate Change, A UNESCO publication on one of the greatest challenges facing our time’, 2011

⁹⁸ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

risks putting them in a ‘relativist trap.’⁹⁹ This prism, as found in the various proposals for a ‘climate change refugee’ convention, ignores that often migration can link to climate change as a positive and entrepreneurial adaptive strategy. The way in which climate change has been linked to migration to date has often been over-simplified, and the multicausality of the range of factors that push (or pull) people to migrate has been ignored. This distorts and polarises an already heavily politicized discourse.

Finally, when linking migration to climate change, there is a risk of forgetting those who are impacted by climate change but who are unable to migrate. In considering proposals for a new convention for people displaced by climate change, some have warned that as those who migrate are often those with the means and support to do so, ‘those most vulnerable to climate change will not be protected by the proposed convention.’¹⁰⁰ It is therefore important that the climate change and migration nexus is not viewed in a vacuum, but it seen as a part of the wider picture of the many ways in which communities respond to the impacts of climate change.

MMN CC-M Project Hypotheses

Findings of the literature review for this project have been outlined in the above sections (Overview of CC-M in the GMS; Current Responses to CC-M; and CC-M: Conceptual Issues). The findings of the literature review, as well as existing knowledge based on the experiences of the Advisory Working Group and the Consultation Partners in the region, were discussed at MMN’s First Consultation Meeting for this project. From this knowledge base, some general assumptions and hypotheses were formulated prior to undertaking the primary research:

- Due to the selection criteria for the site selection of primary research sites, it was envisaged that the community in Vietnam and the community in Myanmar would be experiencing environmental changes that could be linked to the probable impacts of climate change;
- It was also envisaged that people would be migrating away from these communities;
- It was predicted that despite this, it may not be easy to identify clear links between climate change and migration, because:
 - Firstly, there are difficulties in establishing specific environmental changes that are definitively linked to the impact of climate change; and
 - Also, it was expected that other factors might play a more important role (or at least, equally important role) in decisions to migrate (for

⁹⁹ Asian Development Bank, ‘Addressing Climate Change and Migration in Asia and the Pacific, Final Report’, 2012

¹⁰⁰ Burton, Tess, and David Hodgkinson, draft, n.d. ‘Climate Change Migrants and Unicorns: A discussion note on conceptualising climate change displaced people’, Hogkinson Group

example: socio-economic circumstances, livelihood stress, government policies, land-grabbing by government and business);

- As a result of discussions in the First Consultation Meeting, the project objectives as listed in the initial proposal were modified in accordance with the general hypotheses, and instead of focussing on ‘Climate Change Migration’ it was decided that the primary research should focus instead on whether ‘Environmental Migration’ was occurring; however in analysis, links should be made to probable climate change effects (for example, sea level rise, warming, extreme hydro-climatic events, drought, desertification). This modified approach recognised the empirical difficulties in definitively identifying what exactly is a climate change event or climate change impact.
- Recognising the predicted multicausal drivers of migration, other factors in the origin location likely to influence migration were included in the Household Questionnaire, including: low wages; lack of jobs; lack of access to basic services (e.g. health); lack of access to education; health hazards (e.g. poor air or water quality); illegal logging and deforestation; forced relocation (e.g. government resettlement); lack of security/conflict; social problems (e.g. discrimination); sudden natural disasters not related to climate change (e.g. earthquake); man-made disaster (e.g. chemical spill/industrial accident); political reasons (e.g. corruption, poor governance); negative impacts of big projects (e.g. dams, mining, big business).
- Further, ‘pull factors’ in the destination were also included as possible factors influencing decisions to migrate, including: education opportunities; more jobs; higher wages; better access to services (e.g. healthcare); networks (e.g. marriage/family).
- During the First Consultation Meeting, it was proposed¹⁰¹ that the research team should be aiming to identify the ‘threshold’ to be reached before people decide to move, in terms of the negative environmental changes that are being experienced. It was recognised that this threshold was likely to be highly subjective, and linked to a range of other factors (for example: adaptive capacity, vulnerability, access to resources, and access to diversified employment options).
- It was predicted that negative environmental changes (that may be linked to the probable impacts of climate change) would be evident as indirect drivers of migration, but acknowledged that people were likely to be migrating with or without climate change, for socio-economic and other reasons.

¹⁰¹ Proposed by Mr. Ky Quang Vinh, Climate Change Coordination Office (CCCO) (Cantho City, Vietnam) on 17 August 2012, at the MMN First Consultation Meeting in Chiang Mai, Thailand



Myanmar Research Findings

Introduction to Myanmar Research

Environmental changes in general, and those associated with climate change in particular, are increasingly recognized as growing drivers of migration across the world.

The Mekong area is highly prone to natural disasters, both in terms of the absolute number of disasters and of populations affected. It is highly exposed to climate impacts, and is home to highly vulnerable population groups, who are disproportionately poor and marginalized.

Climate-induced migration is a highly complex issue, which needs to be understood as part of global migration dynamics. Migration typically has multiple causes, and environmental factors are intertwined with other social and economic factors, which themselves can be influenced by environmental changes.

Though every effort should be made to ensure that people can stay where they live, it is also important to recognize that migration can also be a way for people to cope with environmental changes. If properly managed, and efforts made to protect the rights of migrants, migration can provide substantial benefits to both origin and destination areas, as well as to the migrants themselves. However, migrants - particularly low-skilled ones - are among the most vulnerable people in society and are often denied basic protections and access to services.

According to the organizations working on migration issues, it is known that there are around 4 million migrants in Thailand, from Myanmar alone. They are from different regions of Myanmar and migration is caused by different reasons. Due to migration, some issues and problems occur in the host area as well as in origin. This research mainly focuses on environmental migration (which may be linked to climate change) and survey findings will be used in future advocacy campaigns for broader approaches to protect people whose livelihoods are negatively impacted by climate change.

This report explains the findings from research conducted in Ma Gyi Chay Htaut village in Magway Region. Magway Region is located in the Dry Zone in Central Burma, where conditions are arid year round with limited rainfall, which is highly susceptible to water stress. This survey tests the hypothesis that environmental change leads to migration in Magway Region.

Objectives of Myanmar Research

The overarching goal of this report was to better understand the causes and effects of environmental change in Ma Gyi Chay Htaut village, Central Myanmar. The research also focused on whether environmental change led to migration within the community.

The following objectives were set:

- 1) To find out negative environmental changes being felt by communities (which may or may not be climate change related);
- 2) To explore the impact of environmental changes on people's lives;
- 3) To investigate whether these environmental changes and related impacts influence migration and if yes, how; and
- 4) To survey other factors influencing migration.

Myanmar Survey Area

The research was conducted in the village called Ma Gyi Chay Htaut (Magway Region - Dry Zone). That village was selected based on the following factors:

- Easy access to site
- Access to interviewees
- Availability of local research partners
- Severity of climate change impacts
- Evidence of climate change induced migration

At present, ECODEV is implementing a project in Dry Zone covering some villages of Magway Township. Among these villages, Ma Gyi Chay Htaut village is known to have a high level of migration.



Myanmar Research Methodology

The research design used both qualitative and quantitative approaches in order to strengthen the results by being able to capture both statistical data, which could be triangulated with more rich in-depth responses from using participatory approaches.

Quantitative Approaches

A household survey was carried out of 50 households in Ma Gyi Chay Htaut village. The survey covered three main areas: 1) Socio-economic status of the households (income, type of livelihoods, landholdings, assets); 2) Environmental change (changes and impacts of environmental change); and 3) Migration (drivers of migration, positive and negative effects of migration, reasons for future migration).

Table 1: Households in Myanmar Survey Area

Households	Male	Female	Total
510	951	1,138	2,089
Migration occurring Households	Male	Female	Total
175	169	138	307
Surveyed Households	Male	Female	Total
50	32	18	50

In total 50 households were included in the sample, with one individual respondent answering on behalf of each household. There are a total of 510 households in Ma Gyi Chay Htaut Village, of which there are incidences of migration in 175 households. From the 175 households in which migration occurred, 50 were selected using a snowball sampling. Snowball sampling is a research method which uses recommendations to find people who share the characteristics that make them eligible for inclusion in the

study; in this case those households who have experienced migration. In practice at the village level, snowball sampling involved asking village leaders, NGO staff and the informants themselves if they know other households who have experienced migration and then interviewing them, then asking them if they know more households who have experienced migration and following up with interviews, thus expanding the sample size. Statistical bias was thought to be minimal due to a high number of initial contacts who supplied information about households who have experienced migration.

The results were captured by the survey however they were triangulated based on focus group discussions and key informant interviews. The data was processed using Statistical Package for Social Sciences software (SPSS).

Qualitative Approaches

In total three different participatory tools were chosen, and carried out by the survey team in Ma Gyi Chay Htaut Village. Focus group discussions were carried out in order to capture rich detailed information about the drivers of environmental change, their effects, and why households or individuals made the decision to migrate. Participants were selected based on having lived in the village for more than 30 years with good knowledge of migration, climate and environmental change. There was an equal number of female and male individuals.

A resource map was used to establish the land and water based resources surrounding the village and was also used as a way for the participants to visually explain the resources they depend upon. The local people have an in-depth knowledge of their surroundings where they have lived for a long time. The resource map reflects how local people view their own locality in terms of natural resources.

A histogram was used as a way to capture environmental change over a period of time. The histogram captured information over a period of 50 years at 10-year intervals. Trend analysis is a useful PRA tool for capturing and exploring temporal dimensions with a focus on change. On this basis it was effective in capturing environmental change over a 50 year time span, as it gave an account of the past and how things have changed thus providing an understanding of the dynamics of change.

The third participatory approach was conducting key informant interviews which are qualitative in-depth interviews with people who have a strong knowledge base of environmental changes that have taken place and who have been involved in migration. There were seven people (5 males and 2 females) who were interviewed as key informants. Among them, three were village administration staff, and the rest were farmers. The purpose of key informant interviews is to collect information from a wide range of people—including community leaders, migrants, farmers and fisher folk—who have firsthand knowledge about the community. These community experts, with their particular knowledge and understanding, can provide insight on the nature of problems and give recommendations for solutions.

Myanmar Findings

This section explains the results of the survey. Quantitative information is displayed and is backed up by qualitative information gathered in key informant interviews and focus group discussions.



Characteristics of Survey Population

In Ma Gyi Chay Htaut Village, 47% of members from the households are male and 57% female. In the village 100% of the households surveyed are from the Bamar ethnic group, and all are also Myanmar nationals. 94% of the population are born in Ma Gyi Chay Htaut Village, with the remaining 6% coming from the same township.

Figure 1: Occupation of Respondents

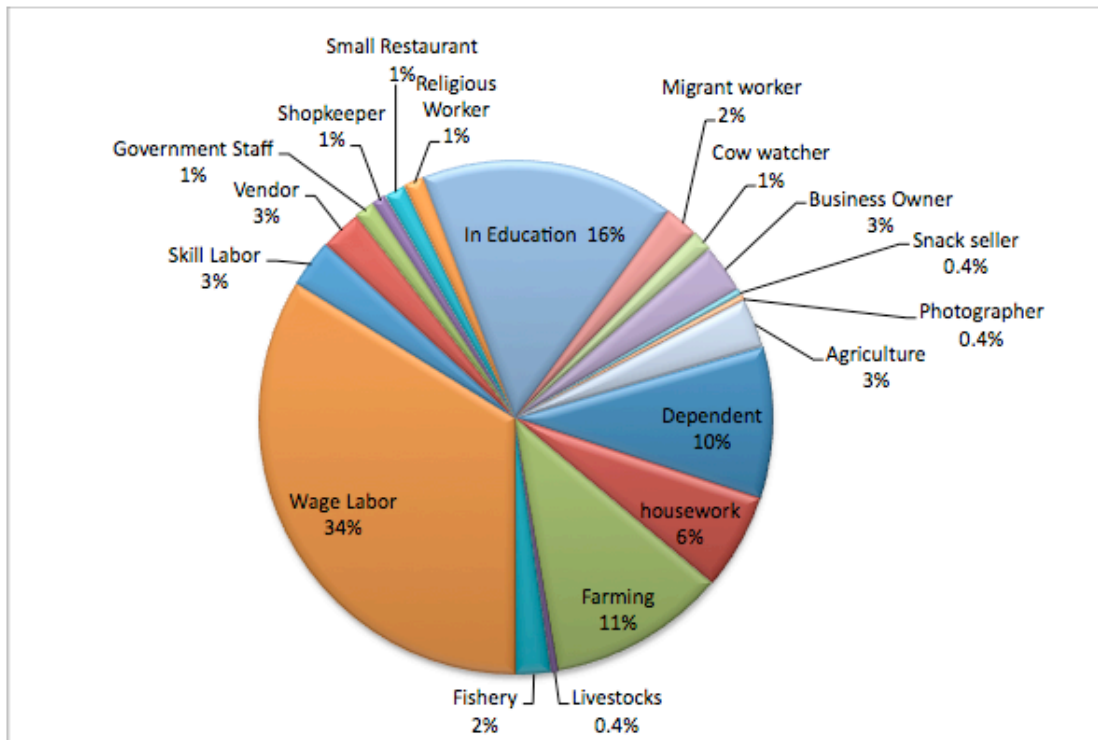


Figure 1 above shows the occupation of the members of the households in the survey. By far the largest group is those who work as wage labourers (34%), this group also tends to be one of the most vulnerable as they have no land holdings. Following this 11% of households are in education at different levels, from primary school onwards. Following this 11% work in agriculture, and have land holdings. 10% are dependent and rely on other household members.

Figure 2: Primary Source of Income

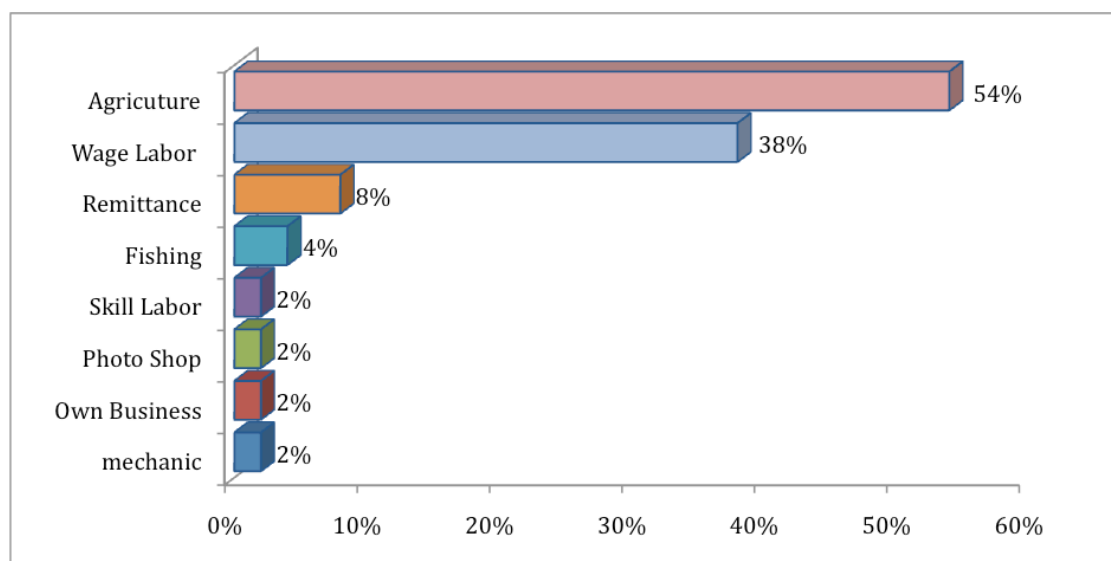


Figure 2 shows that the primary source of income for all households is agriculture closely followed by wage labour. Some respondents had more than one source of primary income. Overall the respondents rely heavily on land and water based resources, either directly or as working as wage labourers. A much smaller proportion of respondents are deriving income from the services sector. With such a high proportion of the respondents directly relying on the land and surrounding natural resources, this also makes the population highly sensitive to environmental changes. This in turn means that the population will be highly sensitive to environmental change.

Table 2: Annual Household Income

Annual Income	Frequency	Percent
Below 500,000 Kyats	16	32%
500,000 – 1,000,000 Kyats	27	54%
Above 1,000,000 Kyats	7	14%
Total	50	100%

Table 2 shows that over half the respondents (54%) depend on between 500,000 and 1,000,000 Kyats per annum. With only 14% earning above 1,000,000 Kyats and 32% being in the most economically vulnerable category earning below 500,000 Kyats per annum. With such a high proportion of households being dependent on agricultural work and on other natural resources it makes them highly vulnerable to environmental change, and combined with small incomes and limited household assets it limits their coping strategies to environmental change which in turn is a driver of out-migration.



Environmental Change

Figure 3 captures the environmental changes felt by the respondents. The greatest change felt was that there is less rainfall (46%), followed by more extreme warm weather (37%). Both of these trends can have a very negative impact in the Dry Zone, where there are high levels of water stress especially during the summer season.

The findings also point to higher climatic variability such as increased flooding and other weather events such as storms and torrential rain.

Figure 3: Environmental Changes felt by Community

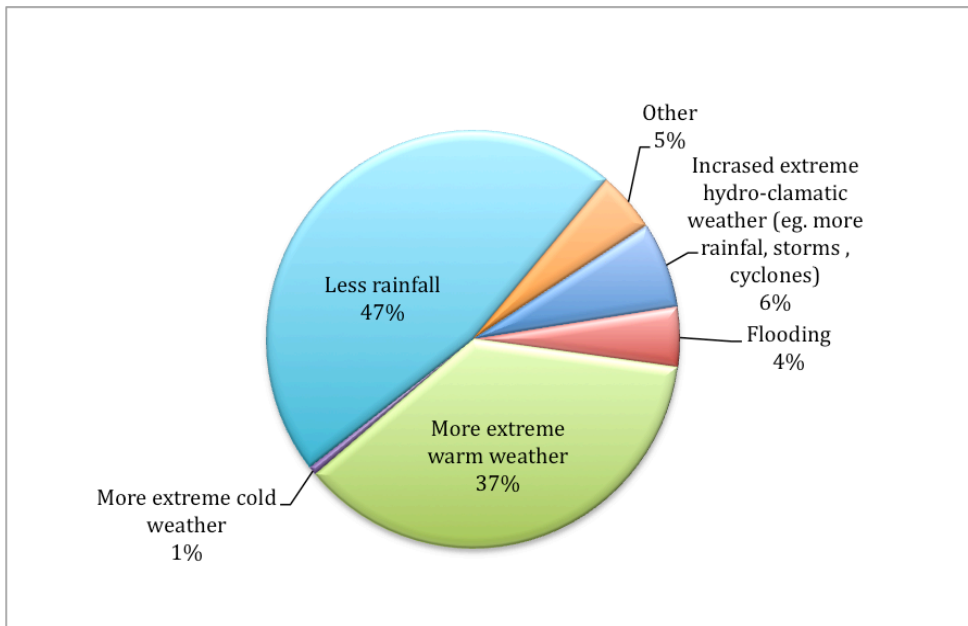
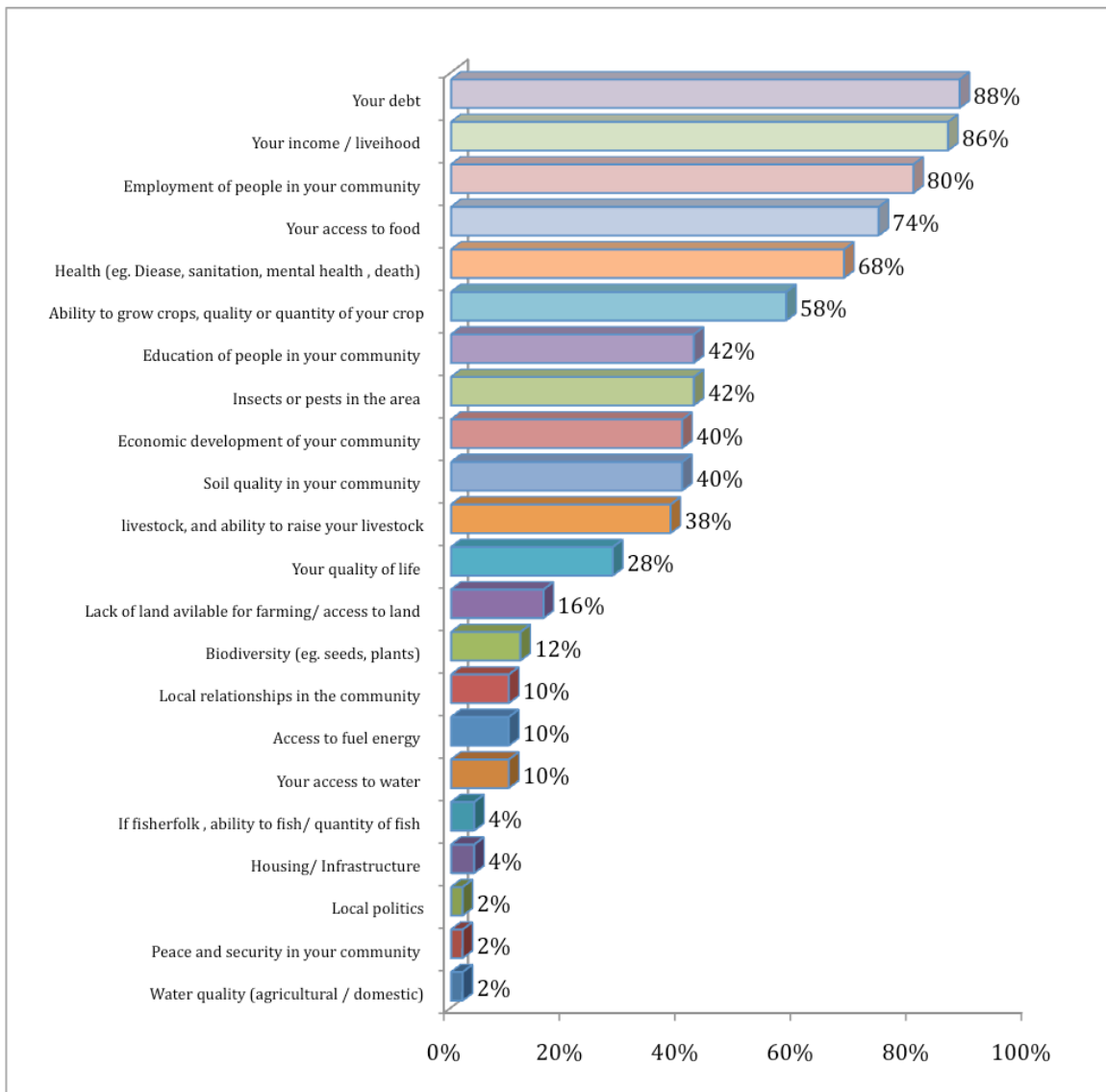


Figure 4: Negative Impacts on People’s lives



According to Figure 4 environmental change is having a negative effect on people’s lives. 88% said that levels of indebtedness have risen. 72% of respondents said that they have a negative effect on the access to food. With less rainfall, more heat and more climatic variability, food insecurity is greater. Respondents said that higher levels of indebtedness are occurring as agricultural productivity decreases due to increased water stress, and land degradation, so it’s more difficult to pay back the amounts that have been borrowed. Indicators of land degradation were quality and yield of plants (58%), quality of soil (40%). A knock on effect is that some respondents commented that they are struggling or no longer able to pay debts any longer. 68% of respondents commented that environmental change was having an effect on health, such as greater incidence of dysentery and diarrhoea, and that hotter conditions during summer meant the heat was debilitating.

Figure 5: Is Environmental Change Having Any Positive Effects?

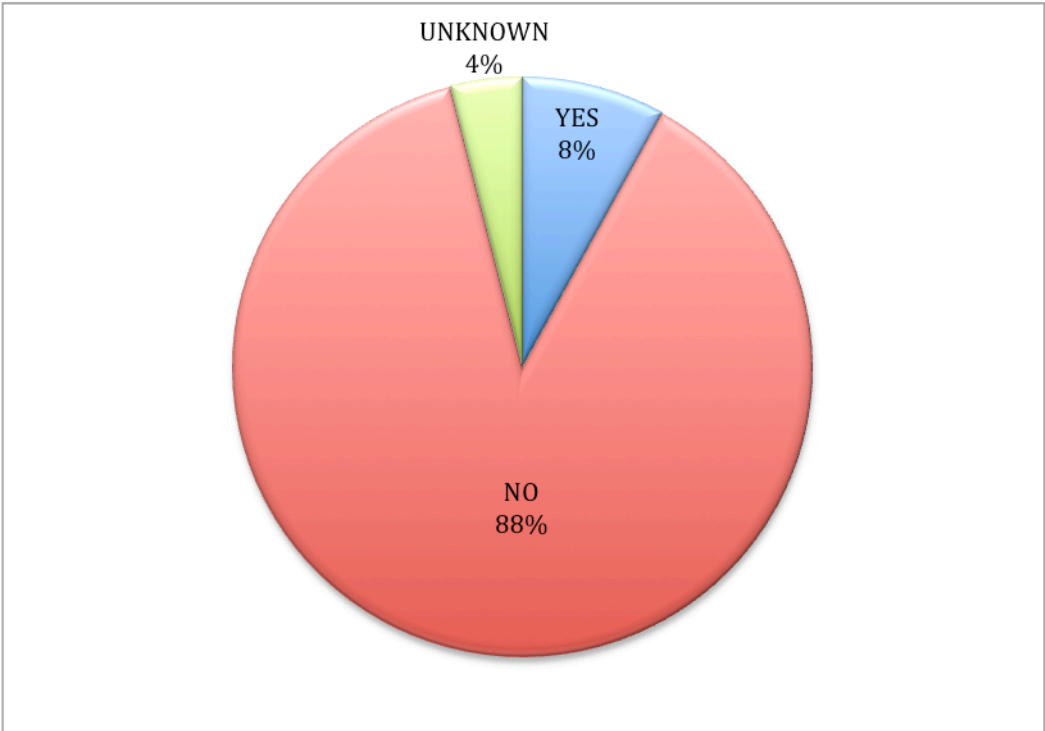


Figure 5 captures the respondent’s view of whether environmental change is having any positive effects. 88% stated that they could not see any positive effects, whereas only 8% said they saw any positive effects.

The respondents cited only one positive effect from environmental change, which was that the sesame was able to complete seeding due to less rainfall. Sesame seed is a high value crop and increased yields were harvested due to less rainfall.

Migration

Figure 6 displays the reasons for migration from the point of origin, in this case Ma Gyi Chay Htaut village in the central Dry-Zone. Respondents were able to select several main reasons for migration. 77% of people left due to lack of employment opportunities in the village, which was cited as the main reason, whereas 72% cited

environmental changes as a main reason to migrate. Low wages was also a significant factor, which like lack of employment, says that there are few economic opportunities for people to live adequately. To a lesser extent lack of education and other basic services was also a factor. These results suggest that the main direct ‘push’ factors for migration are economic (few jobs and low wages), followed by environmental changes. Indirectly both environmental changes and the economic situation are closely linked as most households are dependent on agriculture or natural resources.

Figure 6: Drivers of Migration from Point of Origin

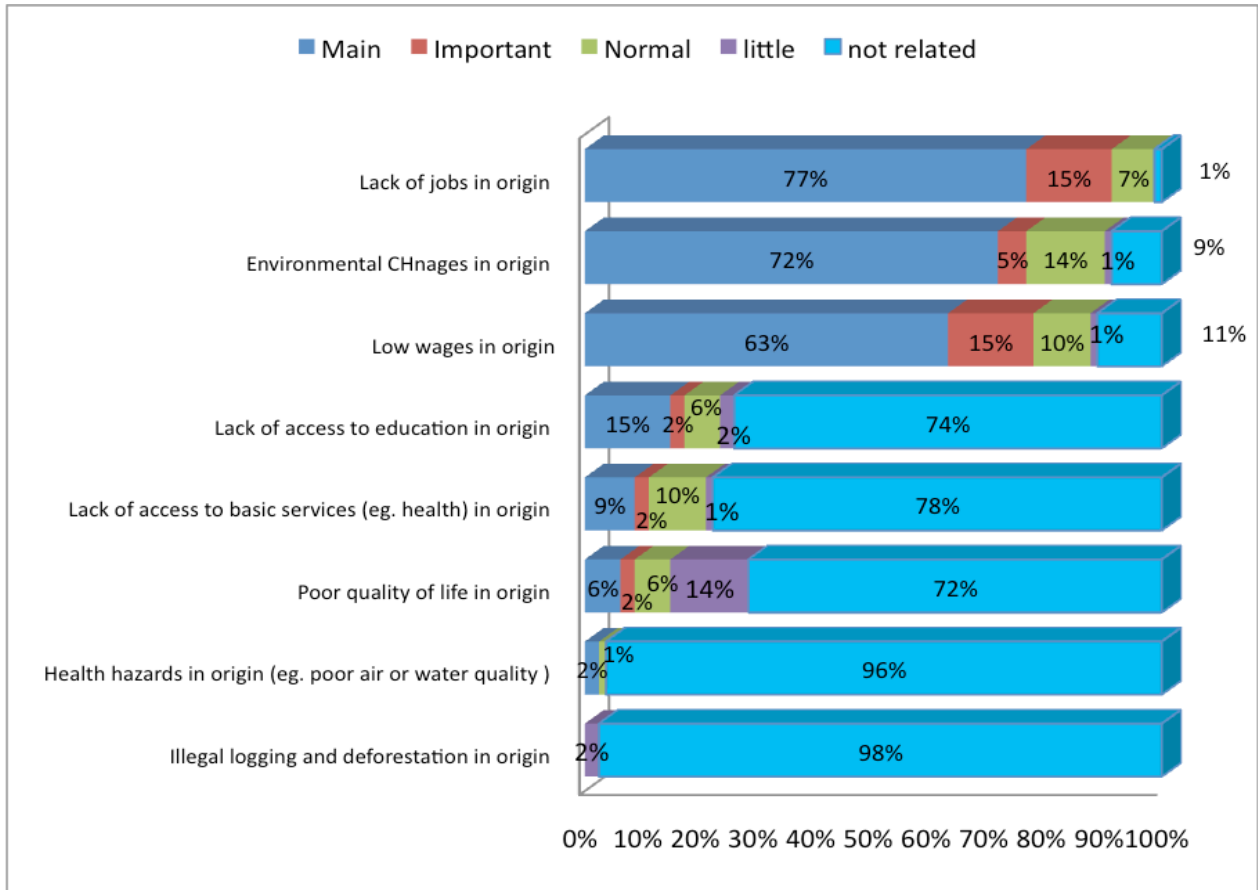


Figure 7: Drivers of Migration to New Place

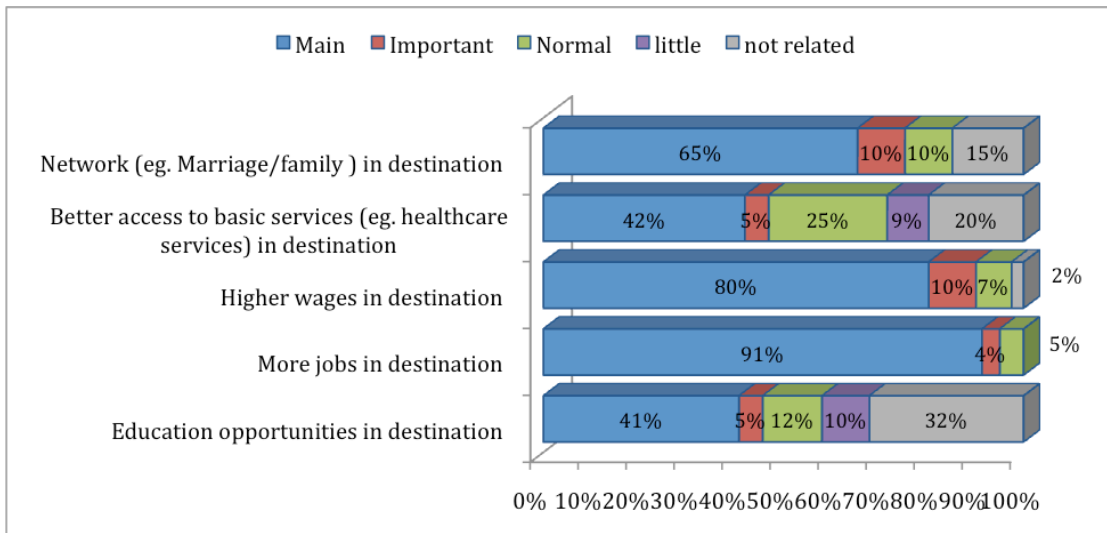


Figure 7 displays people’s reasons to migrate to a new location. 91% of people cited the main reason as more jobs in the new destination, and 80% cited higher wages which suggests that the main ‘pull’ factors for migration are economic. The existence of family networks in the place of destination can also be a reason to migrate (65% main reason). Better services and improved education opportunities also play a significant role.

Figure 8: Migration Destinations

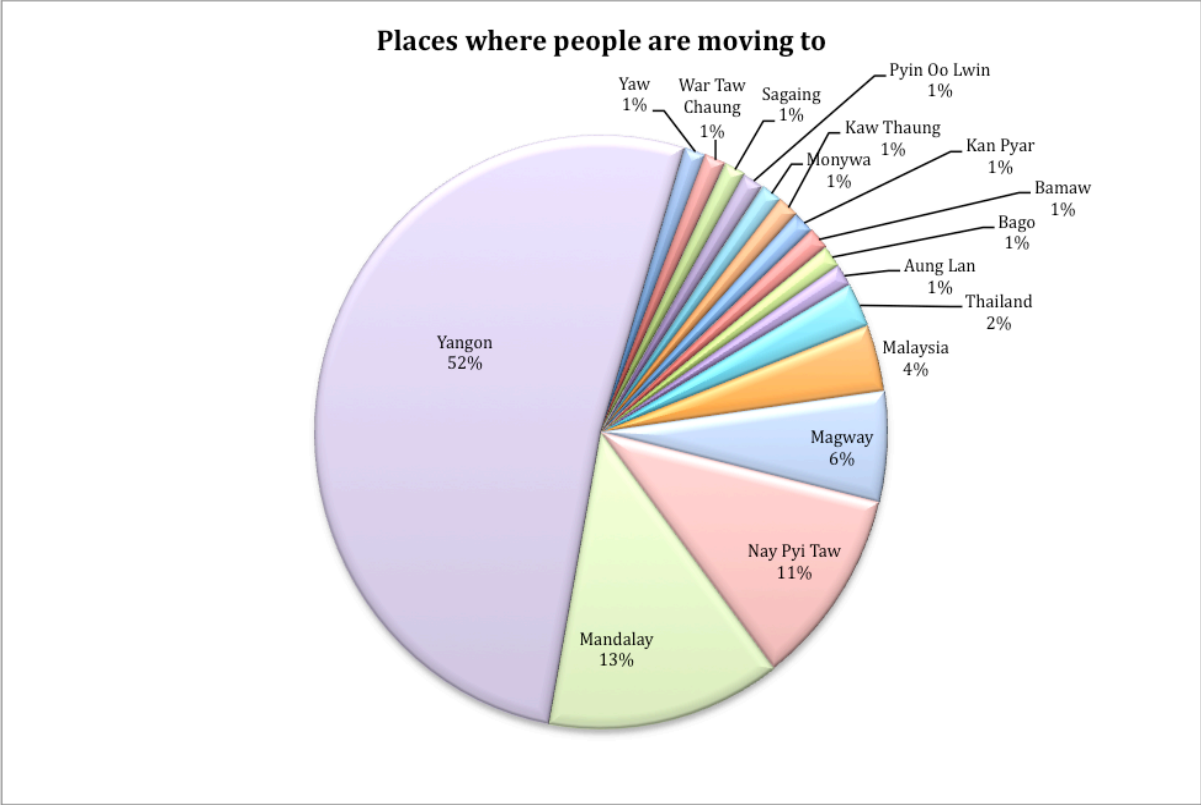
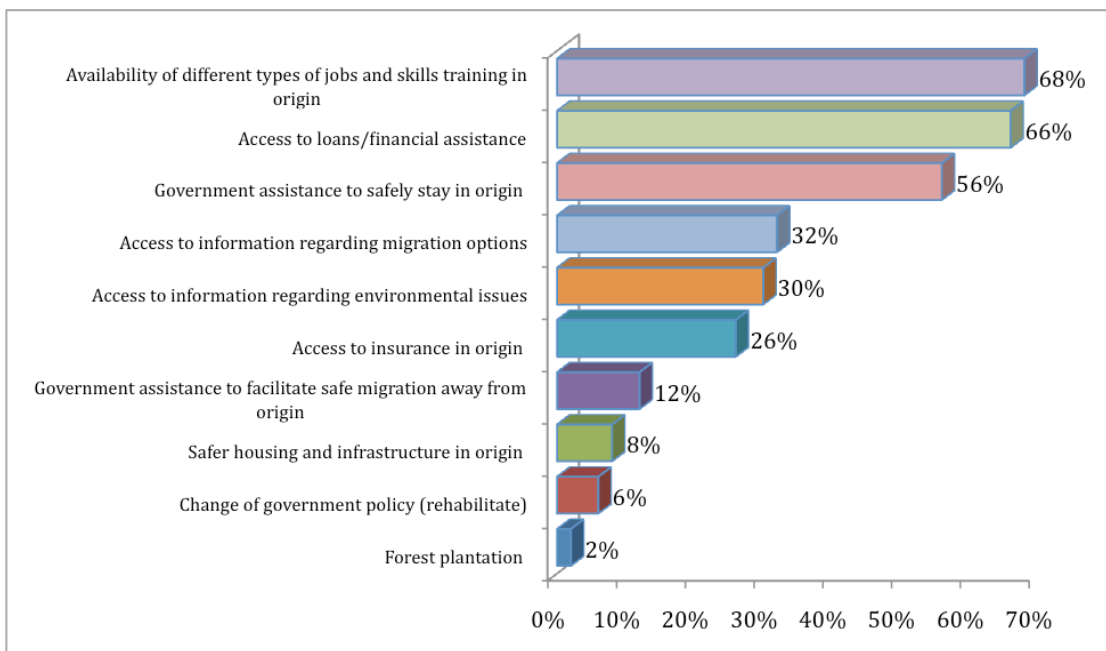


Figure 8 shows that the most common migration destinations are Yangon (52%), Mandalay (13%), and Nay Pyi Taw (9%). There was a clear migration trend for those surveyed in this study to move internally within Myanmar, to bigger cities.



Figure 9: Community Needs to cope with Climate Change



The highest number of respondents (68%) stated that they needed a wider variety of employment opportunities in the village, that weren't so heavily tied to productive resources such as agriculture. Followed by this people desired improved access to credit, and government assistance and provisions so that people can survive in their place of origin. Information provision was also an important factor with some respondents expressing desire that they had more information about migration, which would make migrating less risk averse. Respondents also expressed a desire to have more information about environmental issues so that they were able to understand the expected changes and be able to make more informed decisions.



Myanmar Conclusions

Results overall show that the environment is changing and that it is an important reason for migration. This section is divided into three parts, summary remarks for the socio-economic status of the villagers, environmental change and reasons for migration.

Most of the villagers depend on productive resources or as landless wage labourers who predominately work in the agricultural sector (agriculture 54%, wage labour 38%, fishery 4%). There are only a relatively small number of people engaged in employment in different sectors. This means that most local people from Ma Gyi Chay Htaut village in the dry zone, depend directly on the climate and may be adversely affected by even small environmental and climatic fluctuations.

The relatively small earnings of those households in the survey indicates that with 54% of people earning between 500,000 - 1,000,000 Kyats and 32% earning less than 500,00 Kyats per annum, per household, means that income is very limited, and that it will be difficult to accrue savings which act as buffers during periods of climatic variability, water stress and environmental change.

Given the lack of adaptive capacity due to limited household assets and savings, the environmental changes cited by the respondents show a worrying trend as the greatest changes were less rainfall (46%), followed by more extreme warm weather (37%). Both of these trends can have a very negative impact in the Dry Zone, where there are high levels of water stress and the temperature is very high, especially during the summer

season. The findings also point to higher climatic variability such as increased flooding and other weather events such as storms and torrential rain.

These deteriorating environmental conditions have further impacted on the livelihoods and socio-economic status of the local people. 88% said that levels of indebtedness have risen. 72% of respondents said that they have a negative effect on the access to food. With less rainfall, more heat and more climatic variability, food insecurity is greater. Respondents said that higher levels of indebtedness are occurring as agricultural productivity decreases due to increased water stress, and land degradation, so it becomes more difficult to pay back the amounts that have been borrowed. Indicators of land degradation were quality and yield of plants (58%), quality of soil (40%).

These impacts have clearly played a role in people's choices to migrate. Although most people cite economic reasons as the primary motive, a knock on effect is that some respondents commented that they are struggling or no longer able to pay debts any longer. 68% of respondents commented that environmental change was having an effect on health, such as greater incidence of dysentery and diarrhoea, and that hotter conditions during summer meant the heat was debilitating.

A degrading environment has played a strong role in why people would migrate. 72% of people cite environmental changes as the direct cause as to why they would migrate from the village. More respondents cited economic drivers as the main reason to migrate (77% of respondents cite lack of jobs and 63% as low wages), however with the majority of the population dependent on the land and productive resources and the decline in productivity and income, both economic and environmental factors are inextricably linked.



Vietnam Research Findings

Vietnam Introduction

Objectives

This section of the report presents the actual survey results from a case study of a hamlet of Thanh An Commune, Vinh Thanh District, Can Tho City located in the Mekong Delta of Vietnam, focusing on environmental changes, impacts of these changes on livelihoods, living and working conditions of local people and migration as factual results of many complex factors, including both economic factors and environmental changes.

The report focuses mainly on the assessment of the impacts of environmental changes on livelihood, income, health, quality of life and in the extent of economical and environmental factors affecting migration flows and trends in the past 10 years. Greater understanding about these processes is useful in seeking coping strategies to adapt to the adverse impacts of climate change.

Methodology

Quantitative Methodology

A household survey was carried out with 50 households in E1 Hamlet, Thanh An Commune, Vinh Thanh District, Can Tho City. The respondents to the questionnaire-based survey were representatives of the local households residing in the surveyed community (one respondent per household). They were selected by convenience sampling, based on the list of all households in the hamlet which had members who were migrants and settling down in destination places or migrant-returnees and re-residing in the surveyed hamlet.

Half of the respondents were male and half were female. Most people were able to represent their families because they were 30 years old and above (82% from 30 - 59 and 14% ≥ 60) and were married (88% married, 10% widow/divorced). Respondents were Kinh people, Catholic (100%), with a low education level (50% primary and lower, 32% lower secondary). Economic activities concentrate on agriculture (88%). They have been living there for a long time, longer than 20 years, of which, 68% of interviewees representing 50 interviewed households reported that they had lived in this commune for 20 to 50 years, and the rest amounting to 32% have lived there for more than 50 years. (Refer to Table V1, Appendix C).

The household survey provides: (i) basic information of socio-economic characteristics of the household (income, type of livelihoods, landholdings, assets); (ii) environmental changes and their impacts; and (iii) migration (drivers of migration, positive and negative effects of migration, and reasons for future migration).

The results collected by the household survey were triangulated based on the information combined from the focus group discussions and key informant interviews. The data from the household survey was processed by using the Software Package for Social Sciences (SPSS).

Qualitative Methodology

In order to get more in-depth information of surveyed households, qualitative tools were used as follows:

- Focus group discussions were used for obtaining detailed information about environmental changes and impacts, and the reasons behind decisions to migrate. There were 5 group discussions: 2 groups representing migration-related households, including 1 group of males and 1 group of females; 2 groups representing non-migration households (1 group of males and 1 group of females); and one 1 group of authorities representing the Commune People's Committee, Police, Department of Agriculture, Labor, Transportation, Irrigation and Construction, Women's Union, Youth's Union, and Fatherland.
- In-depth Interviews were undertaken with key informants who have comprehensive knowledge on the commune history, environmental changes and impacts of the changes on the commune, and migration from the commune.

Framework Analysis

Environmental changes (related to climate change) have damaged livelihoods, and due to these changes as well as other factors migration away from the origin is occurring.

Climate change and variability	The interfering factors affecting adaptation and vulnerability	Vulnerabilities of livelihood and daily activities/living	The process of migration as a coping strategy
	<i>Demography (age, sex, education, dependent ratio ...)</i>	<i>Destroying homes, production means, assets, facilities ...</i>	<i>Nature of migration (migration / immigration, origin / destination, type of migration, migration trends...)</i>
<i>Instantaneous events</i>	<i>Socio-economic conditions of households (resources, housing, land, means of production, income...)</i>	<i>Destruction of habitat and natural conditions, biodiversity ...</i>	<i>Characteristics of migrants (age, sex, education, occupation, employment, income...)</i>
<i>The process of change as a gradual, step by step sequence of events</i>	<i>Occupation and income structure (level of dependence on agriculture and fishery)</i>	<i>Health (injury, loss, illness, death)</i>	<i>Positive / negative experiences of migrants and their families</i>
<i>The process of change based on turn by turn, spell by spell</i>	<i>Institutions, socio-economic structures, facilities and technology (community, state, civic, market...)</i>	<i>Loss of jobs, reduction of work and incomes</i>	<i>Factors affecting migration (socio-economic and environmental factors)</i>
	<i>Social Network (the Catholic community, country man, relatives)</i>	<i>Increase costs, reduction of productivity, profits, the increase of debts</i>	<i>The mechanism through which environmental change impacts on migration</i>



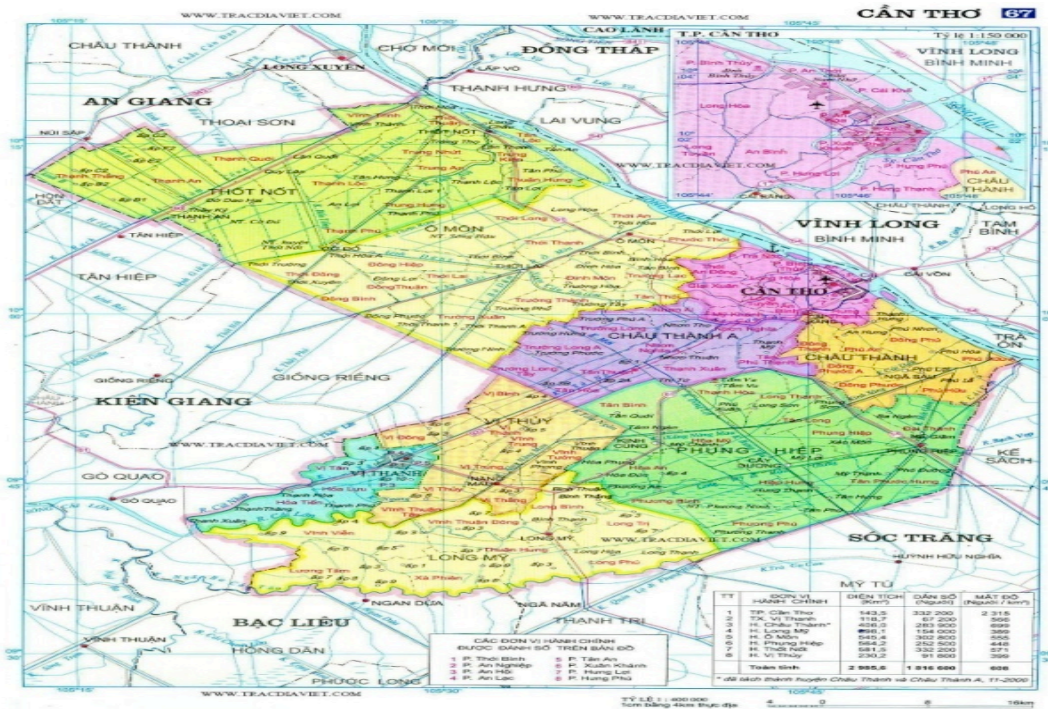
Vietnam Key Findings

Characteristics of Surveyed Site

Vietnam's Mekong Delta is the downstream region of the Mekong River, which is contiguous to the East Sea. The region is facing simultaneous impacts from flooding of the Mekong River and rising sea levels on this region. This dual effect increases flooding, saltwater intrusion, and environmental change. Many hydropower projects, construction and agricultural production upstream have been continuing to change the water flow, and along with high tides combined with monsoon these factors are leading to a change of the flood regime, flood stage, and the starting time and the level of continuous duration in the rainy season, as well as increasing drought and saltwater intrusion in the dry season.

Thanh An commune, Vinh Thanh district, Can Tho city, which is adjacent to An Giang and Kien Giang provinces and belongs to the Long Xuyen quadrangle region, is an area affected directly by the annual flood scheme of the Mekong River. Although it is not influenced directly by sea level rise, the groundwater resources in this area are regularly contaminated with salinity, followed by water discharge from Kien Giang province. At the peak of the dry season in recent years the river water contaminated with salinity has penetrated further inland, about 5-10 km towards the studied area. Therefore, this is one area that is highly sensitive to environmental change in the context of the current climate change.

Figure 10: Location of the study site in Can Tho city



Source: <http://www.google.com.vn/imgres?imgurl=http://www.quangnamtourism.com.vn/vn/images/can-thomap.jpg&imgrefurl>

Figure 11: Location of the survey site, Thanh An Commune, Vinh Thanh District



Source: <http://www.gis.downappz.com/vn/can-tho/vinh-thanh/thanh-an.html>

Thanh An commune of Vinh Thanh district, Can Tho city, is located about 13 kilometers away from the district center and is adjacent to An Giang province. The commune has flat terrain with elevations from 0.95 to 1.2 meters and a system of interlaced rivers and canals evenly distributed throughout. Annually, the commune is affected by the flood and tide scheme of the Hau River, one of the two major branches of the Mekong River running through the Mekong Delta of Vietnam. In flooding season, the overflowing water carries fertile alluvium to rice paddies,

removes alum, and also provides abundant aquatic products. When the floodwater recedes, the canals and waterways play an important role in leading water to irrigate rice fields of the whole commune. Groundwater contaminated with heavy metals and salinity does not guarantee water quality for serving the residents' needs. The climate is quite humid with tropical monsoon, and fairly temperate with two distinct seasons. The rain season from July to November, corresponding to the South-West monsoon. The dry season is often from December to April of the following year, corresponding to Southeast monsoon. The total average rainfall is 2,000 mm³ per year. The average evaporation is 1,160 mm³ per year. The average wind speed is 1.8 meters per second. The annual average temperature is 28°C. The average humidity is 70%. This is an area with a weak geological foundation and the load capacity of the natural ground is only 0.3 kg/cm²-0.5kg/cm². Thanh An commune is located in an area less affected by storms and strong whirling winds, but much influenced by flooding from the Mekong River.¹⁰²

The whole commune is 4,488.69 ha, of which the agricultural production land is 3,888.9 ha, residential land is 141ha, fruit orchard land is 75.08 ha and aquacultural land is 51.33 ha. According to the results of the population census on 1 April 2009, Thanh An has 12 villages with 1,996 households and 8,505 people, of which males made up 4,324. The number of employees is 4,860 people constituting 45% of the total population. The percentage of working-age labor force in the agricultural sector 35.58%, with 3,840 persons.¹⁰³ (In 2012, the commune had 2,330 households with 10,742 people, including 101 poor households.¹⁰⁴ The commune is composed of 12 hamlets located on canals parallel to each other, crossing the river in the middle. Local residents are settled down along both sides of the canals, forming so that the residential areas and the rice fields are well protected, ensuring that rice production is safe from seasonal floods. Houses are built overlooking the canal and along the rural roads alongside the canals, with rice fields at the back; making it convenient for rice cultivation. The structure of the economy is mainly based on wet rice cultivation, pig husbandry and some small business activities.

Currently, Thanh An commune has built a dike system serving double rice cropping. In 2011, the commune began to pilot the third rice crop in the three hamlets. Beside agriculture and petty business, remittances from migrant workers play a significant role in the communal household income during the past 5 years.¹⁰⁵ The commune has two private enterprises trading in agricultural supplies; one combine-harvester unit consisting of 15 machines; and 15 cooperative units, however effective production is not high. The cooperative units are for agricultural production, but they only link several stages in the production: pumping for drainage, constructing and maintaining small dikes, breeding or cooperating in husbandry and livestock. These cooperatives have not yet associated with each other in product consumption or harvesting.¹⁰⁶

Regarding the road transportation, the commune has provincial highways 916B and 921C running through and main roads linking the commune with the central area of the

¹⁰² Can Tho Centre of Assessment and Construction Planning, 2011, p5.

¹⁰³ Ibid; p2.

¹⁰⁴ Report of the Chairman of the communes, at the Focus Group Discussion with Key Informants

¹⁰⁵ As reported in the focus group discussion with commune key informants.

¹⁰⁶ Can Tho Centre of Assessment and Construction Planning, 2011, p9.

district town, other communes of the district as well as the An Giang province which shares a border with Cambodia. As a result, it is convenient for those in the commune to travel and exchange goods. However, the inter-communal roads and inter-hamlet road channels are still under standard requirements. According to the criteria of the Ministry of Transport, the width of the hard surface of the standard road must be amounting to 3.5 meters or up, but most of the hardened rural roads of Thanh An commune do not reach this standard. The inter-communal concrete roads only reach about two third of the total - 7,650 meters long compared with the total 11,000 meters long. Road channels linking neighborhoods, residential areas and hamlets are only about fifty per cent concrete - 29,410 meters long compared with the total of 57,580 meters long.

Regarding fluvial transportation, the total length of waterway amounts to 90,030 meters, including 7 main canals totalling 42,370 meters long, and 9 on-farm canals totalling 47,660 meters long. These channels ensure transportation of goods and facilities for agricultural production, and respond to the need of drainage pumping for agricultural production.¹⁰⁷

Most houses in the commune are solid. There are no dilapidated and thatched houses. The number of solid houses is 134; the number of semi-solid houses is 1,732; and the number of tin-roofed and wooden-wall houses is 122. Thanh An has three kindergartens, six elementary schools and one middle school, which basically meet the education needs of the commune at the primary and secondary level. Thanh An also has a health station which is quite spacious, and which provides initial medical care and public health programs at the local level.

Regarding local infrastructure, in the commune densely populated areas, residential areas and the district town, are built on the ground with an elevation of 2.7 meters and up, combined with the protective dike system, these areas are not facing inundation and flood. Residential areas located in the center of the commune have invested in drainage and sewage systems. Other areas do not have these systems. Some rainwater penetrates the soil, and the rest flows into low-lying areas and runs out to the irrigation canals and waterways. For water supply, most households pump water from canals and use alum to clean it. Thanh An has medium voltage gridlines with a total length of 32,900 meters and low-voltage gridlines with a total length of 66,760 meters for production and domestic use of local households.

Regarding sanitation, there are serious problems with solid waste collection and treatment, especially in relation to the manure of raised pigs. Many residents do not apply any treatment for solid and water waste, causing serious water pollution. Hamlets have no garbage collection system.¹⁰⁸

Vietnam is a country that often faces natural disasters and it has therefore developed a number of policies and institutions to mitigate the adverse impacts of environmental events. A Steering Committee of flood and natural disasters prevention and control has

¹⁰⁷ Can Tho Centre of Assessment and Construction Planning, 2011, pp. 10-11

¹⁰⁸ Ibid; pp. 9-11

been set up from the central level to the ward and commune level, to take direct responsibility for responsive activities. The Steering Committee of the commune was set up with the contribution of relevant sectors and mass-unions and coordinated by the Commune People's Committee (PC) whose the head is also the PC's chairman. The District and City levels provide the Commune-level People's Committee with rescue boats, life vests, training on disaster control, and updated forecasting information. Based on the mass media and the direct guidance of superiors, the Steering Committee carries out duties at the office of the People's Committees of communes and address key points in relation to natural disasters.¹⁰⁹

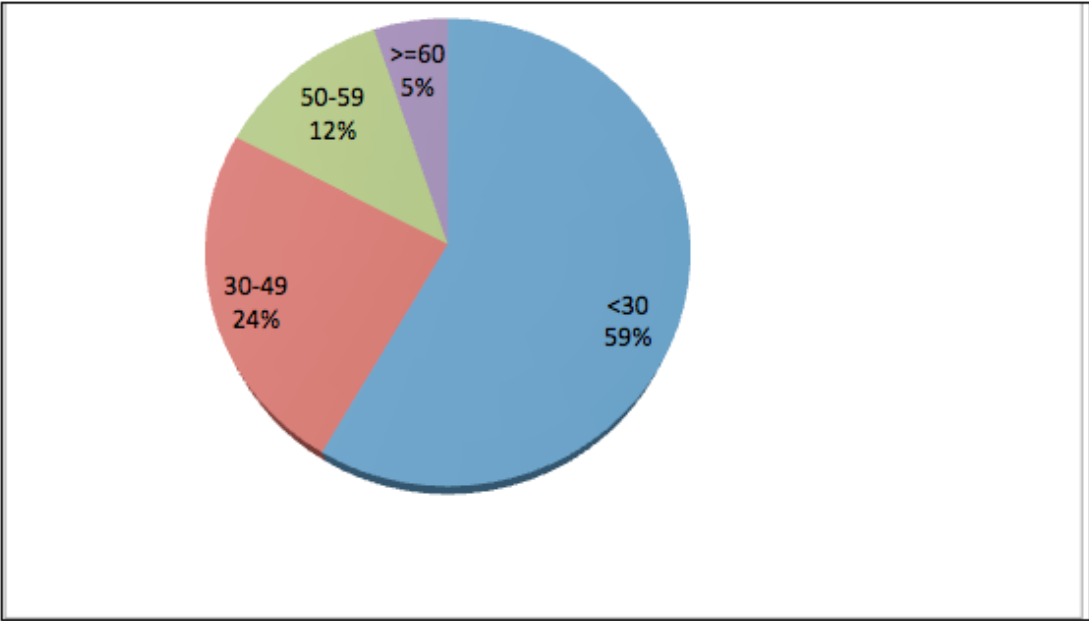


Socio-economic Characteristics of Surveyed Households: land ownership, agricultural activity, income and property of households

There were a total of 296 persons in the 50 surveyed households (52% male and 48% female). The ratio of the elderly is low (5.1% people are 60 and above), with most belonging to the labor force. 53.7% are single, 43.6% are married and 2.7% are widowed or divorced. The education level of members in the households is higher than that of the interviewees representing the surveyed households: 29.4% at primary and lower level, 27.7% at lower secondary, 31.4% at higher secondary, 9.8% at the college and upper level, compared from 50%, 32%, 14% and 4% for the interviewees (Refer to Table V1, Appendix C).

¹⁰⁹ Reported during the Focus Group Discussion with commune key informants.

Figure 12: Age of surveyed population

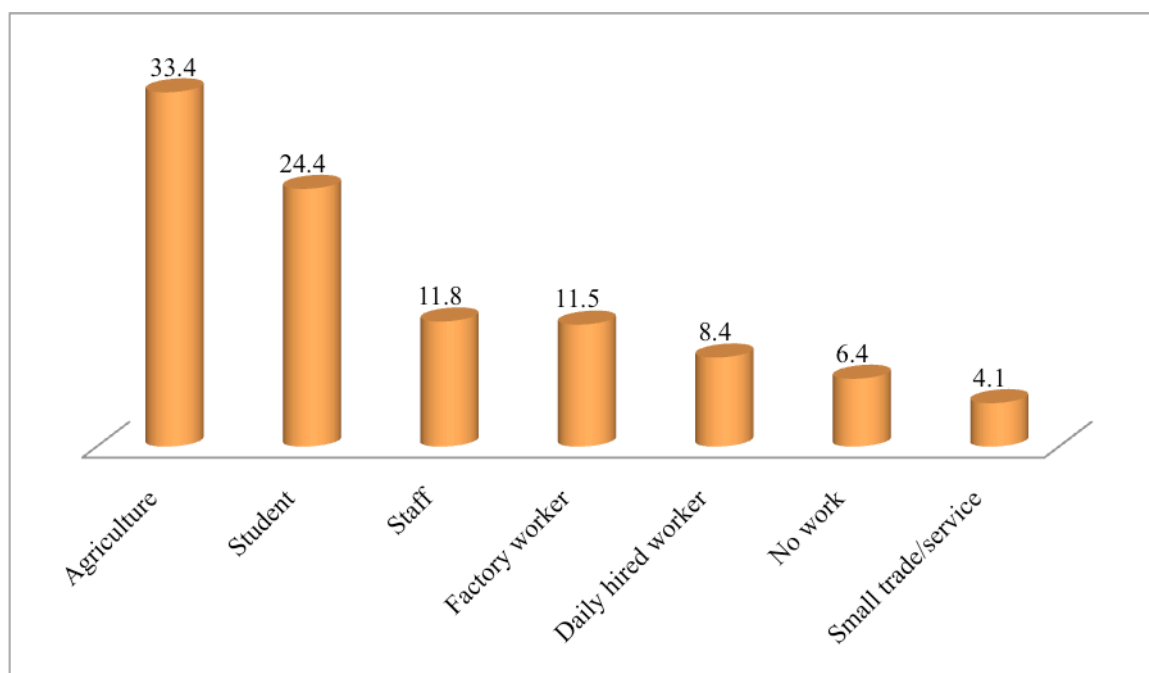


The results of the survey show that there is a huge gap between quintiles in the 5 groups of landholders in both residential and agriculture land. Residential landholding per capita is 123.4m², of which the lowest 20% of land holdings amount to only around 24.8 m², while the highest 20% hold land amounting to 279.7 m² (more than 12 times higher). Similarly, household agricultural land average per capita is 3,442.2 m², of which, the lowest 20% having an average of 418.7m², and the highest 20% having land on average amounting to 11,231.4 m², (nearly 27 times more than the lowest group) (Refer Table V3, Appendix C).

Livelihoods

Local residents work in many sectors such as small trade/service, agriculture, staff employment, daily hire work, and factory work. There has been some change in occupations over the last 10 years. The highest percentage occupation is agriculture, with 88% of 50 interviewees and 33.4% of all 50 households’ members. The percentage of people working as paid staff is a little bit higher than it was 10 years ago (11.8% against 9.5%, while the percentage of small/petty trade is only 4.1% nowadays compared to 5.1% in the past (Refer Table V1, Appendix C). As reported by local people, limited development of commerce and industry is a relevant indicator showing the dependence of the local economy on pure wet rice agriculture. When agricultural production is negatively affected by climate change related impacts, the livelihoods of local people are usually automatically adversely affected.

Figure 13: Current Occupation of all members of 50 interviewed households (%)



Agricultural activities concentrate on paddy production (98%), and raising pigs, poultry and cattle (10%).

Income

The average income per capital is 7.9 million VND per year. There is a big gap between the highest income group and the lowest, with the highest incomes amounting to about 24 times the lowest. The income per capita of the lowest group is 0.8 million VND per year (equal to only USD 38 per year) and the highest group is 19.2 million VND per year (equal to USD 914 per year). (Refer Table V3, Appendix C).

Property of Households

Thanh An is a remote village of Vinh Thanh district where the life quality is very poor. Property of households is also poor. Two kinds of assets which are very common are televisions and motorbikes (90% of total surveyed households have a television, 80% have a motorbike). (Refer Table V3, Appendix C).

Environmental Changes and Impacts on the Commune

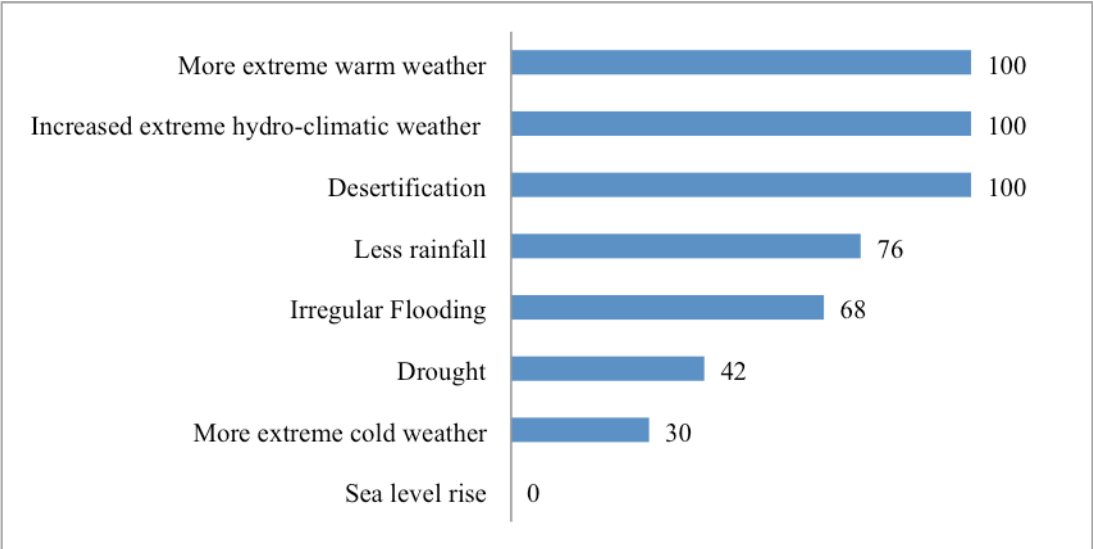
Environmental Changes

According to the respondents' awareness, there have been many changes in the environment over the last 10 years, such as: increased extreme hydro-climatic weather (reported by 100% of respondents); irregular flooding (68%); more extreme warm weather (100%); less rainfall (76%); drought (42%); and desertification (100%). In terms of the answers relating to desertification (see Figure 14 below), it is necessary to note that there was some confusion or misunderstanding between the interviewers and interviewees in the meaning of desertification. It is clear that in fact respondents to the Household Questionnaire understood 'desertification' to mean impoverishment or degrading of the soil quality. The information from the focus group discussion

with local residents and key informant commune leaders and officers clarifies that there is no occurrence of desertification in the commune in general and the surveyed community specifically. However, the soil in the commune is obviously being exhausted, impoverished, and degraded due to the lack of alluvial nutrients, less rainfall and drought.

Furthermore, though it was not seen clearly by respondents to the questionnaire survey, there is evidence of a threat of salinity in the area as a direct impact of sea level rise. Focus group discussions with local authorities and key informant interviews confirmed knowledge that saline water could arrive in the commune through the canals linking it with Kien Giang province and over the last several years, the saline water has been penetrating through canals and reaching towards the surveyed community. Knowledge of this threat was not clear at the community level as it is not yet evident in the surveyed area, however Can Tho authorities have warned that this is a growing threat and there is saline intrusion about 15km inland from the Thailand Gulf already, or about 5km away from the surveyed area.

Figure 14: Environmental changes in community in the last 10 years



The three most evident environmental changes, occurring in recent years are: extreme hydro-climatic weather, more extreme warm weather and desertification (understood as exhaustibility, impoverishment, and degrading of the soil).

“In the past, there were likely four different seasons per year, but the weather in the last years 5 or 7 has seemed to be irregular, causing many difficulties for rice crops. For instant, in the year 2011 there were more floods than in 2012, which was quite different from the previous cycle of seasons. We no longer see an amount of rainfall like in July or August many years ago.”
 (Male #39, born 1971, education level grade 7, farmer)

“The rain is likely to be unpredictable. Both rainy and dry seasons do not follow any order; sometimes there is some long-lasting heavy rain. The

livelihood of local people living along the channel depends much on the quality and quantity of flood water but unfortunately, the flood in recent years hasn't been as good as expected, resulting in little alluvium which is needed to have a good crop. Additionally, the heat seems so terrible that nobody can do their field work in the late morning and early afternoon. We have to reverse our daily routines, it means that we stay at home during the daytime and go to the rice field to work at night-time. As a matter of fact, all of our routines, working shifts are messed up and we must adjust our biorhythm. In recent years, the temperature has started to exceed the average temperature. It is too hot. Weather conditions are much more irregular and disordered". (Female#6, born 1958, education level grade 4, daily hired laborer).

"In the last four years, the weather has changed significantly. It has become hotter and hotter. Last Christmas, we could not experience and enjoy cold or even cool weather as we did many years ago. In the rainy season, the rainfall exceeds the quantity we want. By contrast, in the dry season, we suffer the heat from the sun. During the rice growing season, we need rain a lot but cannot see any raindrops, but when we are harvesting the rice crop, there is untimely rain. This makes harvesting much harder and much more costly, but there is much less yield and a low consumption price."(Female #32, born 1961, education level grade 3, farmer).

"The rainfall is unpredictable, the weather deteriorates more than normal. Usually, we only need to pay 50,000 VND for the monthly expenditures for electricity bills but because the hot days last longer we now have to pay double. In March, the weather is so terrible that the river is as dry as a bone."(Male #7, born 1961, education level grade 3, farmer).

Impacts of Environmental Changes on the Commune: Livelihood, Income and Life

Positive impacts

24% of the 50 respondents said that environmental changes have had some positive impacts, as follows:

- Sometimes, more rainfall provides clean water for cleaning the soil in the rice fields and vegetable crops. Moreover, it provides sufficient water for watering rice production.
- Sometimes, the blazing heat helps to dry rice instead of drying by machine. So, it helps to cut down production costs.

However, there are a series of negative impacts of environmental changes, which badly influence the quality of life of local people.



Negative impacts on health, water quality, soil quality and agriculture activities

Figure 15: Factors being negatively impacted by environmental changes (A)

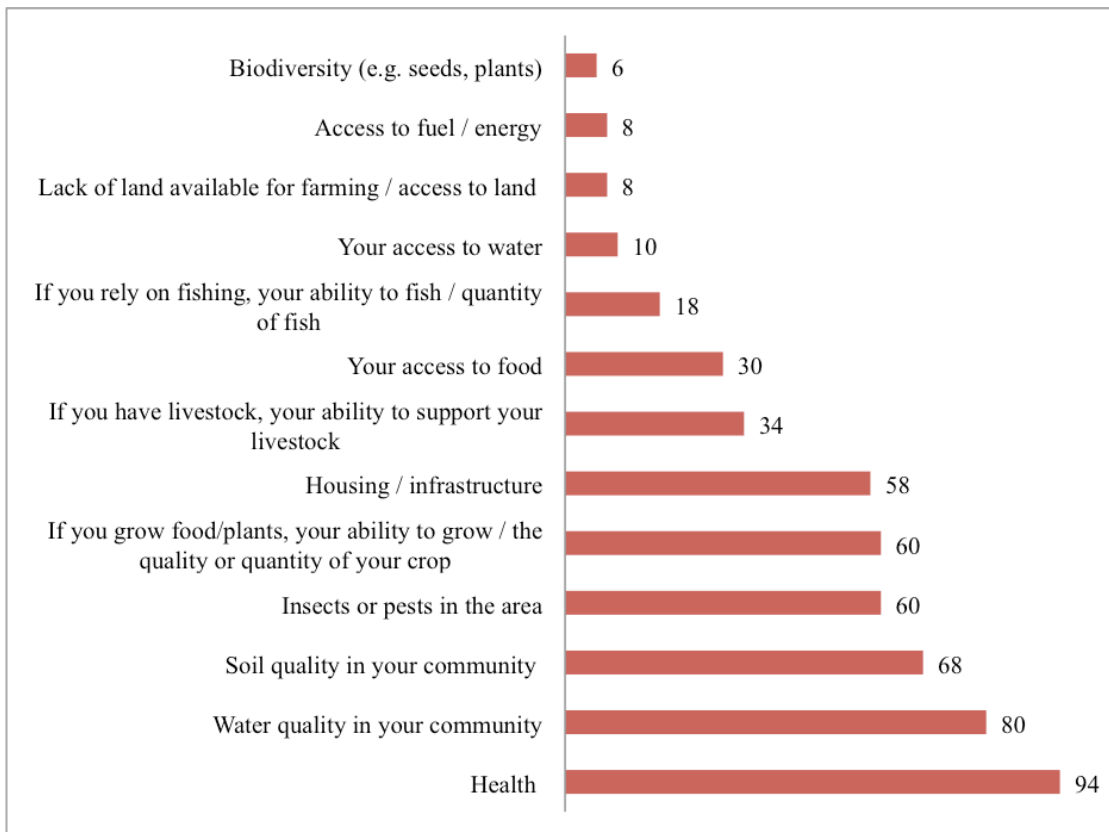


Figure 15 shows that environmental changes are negatively impacting the health of local people (94%), the water quality (80%), the soil quality (68%). Changes are also seen to be generating insects or pests in the area, which harms plants and crops (60%). Therefore, the quality or quantity of cultivated crops is decreasing fast. Further, housing and infrastructure such as buildings, roads, and riverbanks, are also affected.

There is a correlation between these negative impacts and a poor quality of life generally.

The health of local people is not good because of variety of diseases. It is not only from direct impacts of irregular weather changes, but also indirectly from impacts of environmental changes. Irregular weather changes as well as polluted air can be linked to an increase in skin diseases, cancers, and respiratory diseases. Water quality is degraded badly by many kinds of pesticides, insecticides, wastewater and solid waste, which evaporates in burning heat. People in the commune often get headaches resulting from bad smells originating from this sort of pollution.

“The health of poor farmers is not good. Sickness appears in every household because of poisonous things surrounding them. After finishing work in the field, the farmers have to buy medicine to cure diseases, resulting from the poisoned surface water and ground water. The income from our works cannot afford medical treatment fees.” (Female #6, born 1958, education level grade 4, farmer).

The water used for paddy production is extremely polluted due to a lack of awareness and knowledge of local people on how to protect the environment. Many farmers have been overusing pesticides, insecticides, and fertilizers in their production activities of farming and husbandry of pigs, fish farming, and rice crops. This leads to wastewater discharge directly into canals and waterways without any primary treatment. Combined with a lack of water flows from main rivers and canals, the waste water creates serious water pollution which is harming people’s lives, especially the health of women and children who are much more sensitive to water-borne diseases. Many reported that there is an obvious change in the colour and smell of water for both domestic use and production use.

“Five years ago, we could drink the water of canal E directly without boiling it but now it is extremely polluted, resulting from the waste water of domestic livestock breeding and pesticides as well. On the other hand, nowadays, the amount of flood water has not been as much as many years ago, so it cannot clean the dirty water and cannot fertilize the soil due to the lesser alluvium.” (Female #6, born 1958, education level grade 4, farmer).

“There has been a seasonal lack of water, especially in 2011. The water quality of the winter-spring season has not been affected, but it has in the summer-fall season because the river water is contaminated by aluminium, which may cause disease for the rice fields, and contains less alluvium. In the past, we could have one fifth of the alluvium in a full bowl of river water, compared with no more than one tenth at the present. The consequence of less alluvium is a decline of the soil quality and an increase in using fertilizer and an increase in the cost of production as well. Another typical sign of the decrease in the environment’s quality is the poisoning of water and soil from pesticides and wastewater coming from livestock breeding. Moreover, alien species have started to appear, such as cowage trees, and yellow medium-sized edible snails, no matter how hard the farmers try to get rid of them.” (Male #10, born 1968, education level grade 9, farmer)

“Contrary to the harmony of the weather in the olden days, the flood and the heat are now unpredictable, affecting the growth of crop and increasing production cost. If you sow seeds during the rainy days, it can completely fail and you have to do everything again.”(Male #45, born 1957, education level grade 2, farmer).

“The changes of weather have affected seriously the productivity, quality and effectiveness of crops. In the past, we did not need to use much pesticide but it’s changed completely at the present. If you do not want to see your plants die because of diseases, you must use a lot of chemicals. For all plants nowadays we need to spray varieties of chemicals such as pesticides, fertilizers, and stimulants. From fruits like banana and guava, to vegetables and rice, all are in need.” (As reported by an officer of the commune People Committee in a focus group discussion.)

Soil quality for agricultural production is also influenced: less alluvial, less fertile, and poorer nutrients. The lower level of flooding is one of the main reasons leading to the degrading of soil quality.

Sometimes, housing and infrastructure are seriously damaged due to strong whirling winds. Some houses were collapsed. Riverbanks, channel banks and roads are eroded when there are heavy rains.

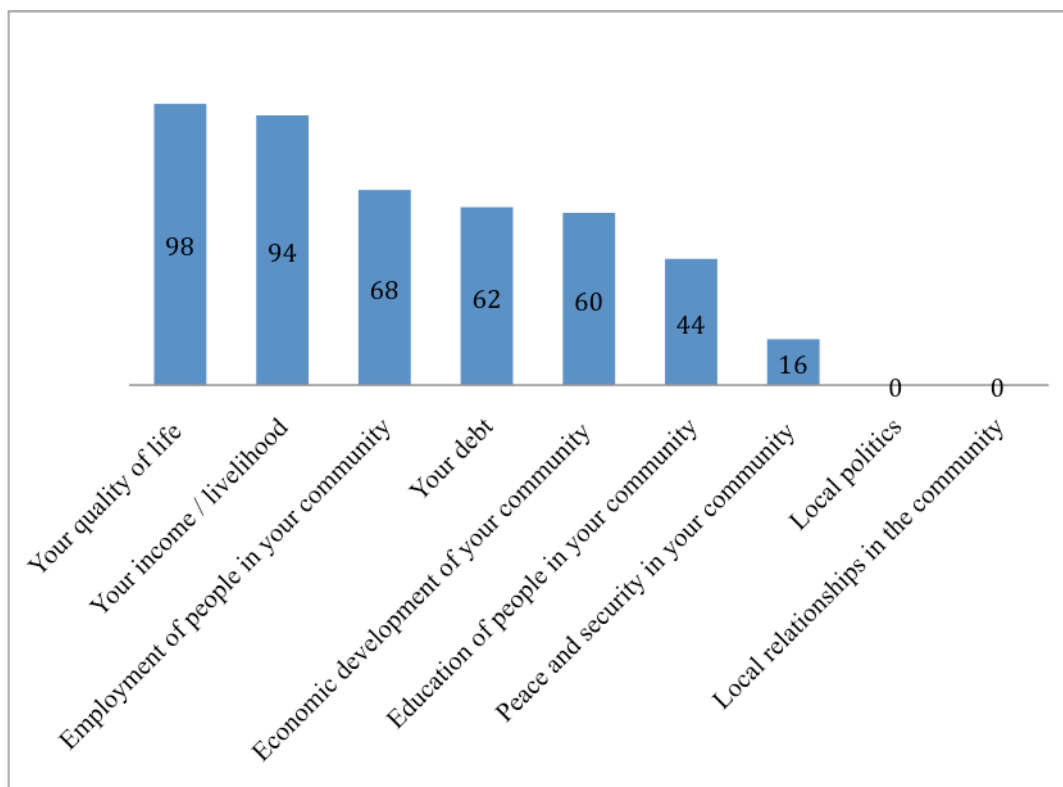


Negative impacts on agricultural activities, income and quality of life

There is a close correlation between agricultural activities, income and quality of life in the surveyed community. The main income source for local people is agricultural income. Environmental changes which influence agricultural activities also influence income and quality of life.

When being asked “are environmental changes having negative impacts on your life”, most people answered that they are experiencing: decreasing quality of life (98%), decreasing income/livelihood (94%), less employment (68% respondents), increasing debt (62%), and less economic development (60%).

Figure 16: Factors being negatively impacted by environmental changes (B)



Significant changes in incomes and livelihoods of farmers

Vegetable crops: The alteration of crop production to adapt to the changeable weather results in tension, increased costs and many risks when the weather is disadvantageous.

The unseasonal weather causes considerable difficulty in relation to rice crops; and there is a reported increase in harmful insects that in turn leads to a higher demand for pesticides which may pollute the environment, poison products and decrease profit.

Wind and rain concurrences close to harvesting time cause the rice crops to collapse, and lead to an increase in production costs, a decline productivity, and a decline in the quality of products as well. Moreover, blazing heat, water shortages and drought are key factors damaging rice crops, causing crop diseases and slower growth.

Livestock: As well as vegetable crops, livestock are also affected by unpredictable weather and the apparent consequence is an increase in diseases in livestock such as pigs, poultry and cattle. It is reported that such diseases are occurring more and more frequently, compared with several years ago, when diseases attacked livestock less frequently and usually only at a specific time of the year. A common disease is oedema in pigs, which can lead to a loss of appetite, and eventually death. Further, there were many reported cases of pregnant pigs losing their foetus as a consequence of polluted water and blazing heat.

Overall, options for livelihoods and jobs are limited and the lives of local people have not improved. Compared with ten years ago, interviewees perceived that their quality of live has decreased significantly.

“Failing crops pulls the development of the locality down and affects job opportunities. The harsh climate makes people feel tired and uncomfortable. Joblessness means that the poor fall into the trap of indebted situations. Generally, the quality of life is going down.” (Female #49, born 1976, education level grade 5, farmer)

“In the past, farming was very stable but in recent times, the changes in weather have resulted in increased costs and decreased profits. The farmers have to borrow money with high interest to re-invest and they have the burden of paying debts on their shoulders”. (Male #50, born 1971, education level grade 8, farmer)

Adaptation and sustainable livelihoods to cope with environmental variation

The farmers alter their daily routines, since they have to work at night and take a short rest in the daytime in order to avoid the heat. In recent years, the working day begins at 1 or 2 am and finishes at 8 or 9 am. One significant impact from this abnormal routine is a rise in electricity bills from daytime electricity use, while at the same time there is no change in total income, or there is even a decrease due to lean harvests.

Facing a declining quality of life, increased sickness, low income, unreliable access to jobs and changes in bio-routines, some residents in the community have made up their minds to emigrate to adapt to environmental changes.

Selectivity of Migration: Indirect Influence from Environmental Changes

Characteristics of Migrants

33.4% of people in surveyed households (99 people of 296 respondents of 50 surveyed households) have ever migrated. The ratio of male migrants is higher than that of female (55.6% and 44.4%, respectively). Most of them are young (74.7% under 30 years old) and single (72.7%). They have a higher education level (48.5% at higher secondary, 16.2% at college and upper level education) than non - migrants (69.9% of non - migrants had lower secondary education levels or lower).

Most migrants belong to households whose agricultural land per capita is average or above average (30.3% migrants have agricultural land per capita of average group and 29.3% migrants have agricultural land per capita of above average group; people whose agricultural land per capita belong to lowest group and highest group are non - migrants. (Refer Table V3, Appendix C)

People whose income per capita is in the average group and above average group migrate more than those of lowest group and lower group (Refer Table V3, Appendix C).

Choice of destination and characteristics of migrants

Ho Chi Minh City (HCMC), Can Tho City, Lam Dong, and Dong Nai provinces are destinations where people in the surveyed community often migrated to. Among these, HCMC is the most popular destination (60% of the total of 99 migrants), followed by 17% to Lam Dong, 10% to Dong Nai, 7% to Can Tho city and then other provinces.

Who migrated to HCMC and other provinces?

There is a big difference between males and females in choosing migration destinations. The ratio of men migrating to HCMC and Dong Nai province is higher than women (63.6% male and 54.5% female to HCMC; and 12.7% male compared with 6.8% female to Dong Nai province). The ratio of women migrating to Lam Dong (22.7%) is higher than men (12.7%).

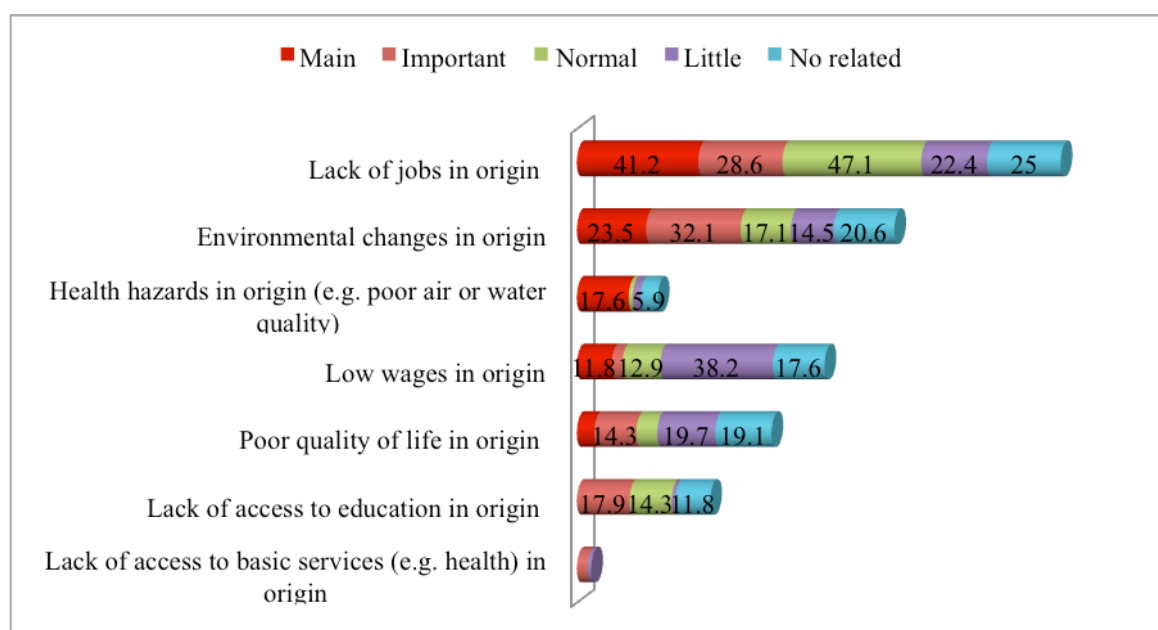
Those migrating to HCMC are younger (67.6% being 30 years or younger) and most are single (69.4%). For migrants to Lam Dong and Dong Nai, the ratio of migrants aged 30 to 49 years is higher than the under 30's group (Lam Dong: 33.3% versus 12.2%; Dong Nai: 20.8% versus 5.4%). The ratio of married migrants is also higher (Lam Dong: 33.2% married versus 11.1% single; Dong Nai: 22.2% married versus 5.6% single).

Most migrants who had a higher education level chose Ho Chi Minh City and Can Tho City to migrate to. People who migrated Lam Dong and Dong Nai had lower education levels.

Most migrants in HCMC work as staff and factory workers or study at college or university. Migrants to Lam Dong and Dong Nai mainly work in the agricultural sector (50% in Lam Dong and 42.9% in Dong Nai). (Refer Table V8, Appendix C)

Factors Influencing Migration Decisions

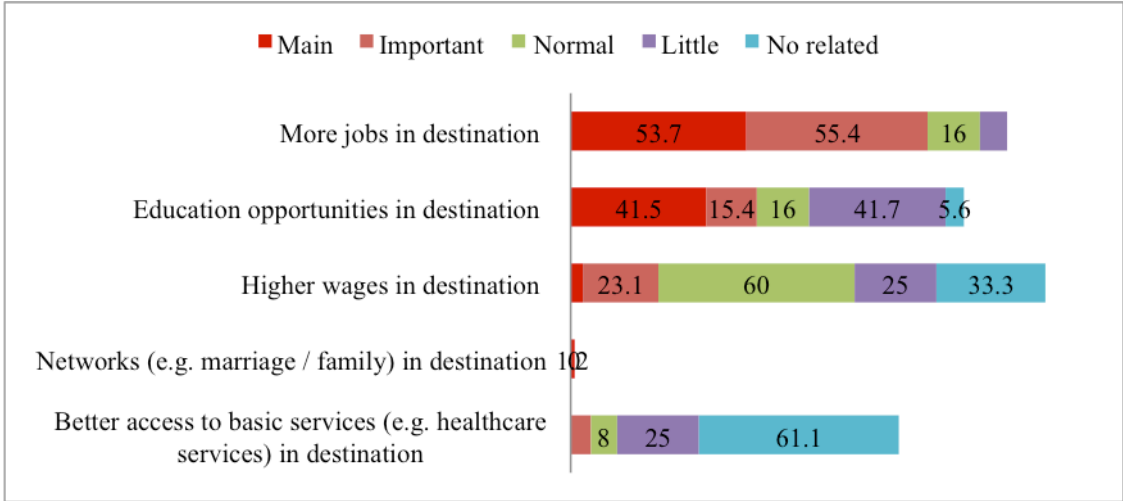
Figure 17: Factors in Origin Community Driving Out-Migration



The main factors driving out-migration from the origin community are a lack of jobs (41.2%), environmental changes (23.5%), and health hazards (17.6%).



Figure 18: Destination Factors Influencing Migration



People migrated to new places because most of them thought there were more job opportunities (53.7%) and better education opportunities (41.5%) in destination places.

Moreover, social networks also play a role in migration decisions. The qualitative findings in this study showed that most people in the commune have some heritage in Northern Vietnam, with many coming to the commune in the period from 1954-1955. Many have relatives originating from the North now living in migration destinations such as HCMC, Lam Dong and Dong Nai, and these existing social networks play a role in influencing migration decisions.

Many people reported that environmental changes are significantly affecting their lives. As mentioned above, they reported facing many difficulties relating to agricultural and livestock production, and therefore, some chose migration as a way to adapt to these environmental changes. 50% of respondents claimed that environmental changes and related impacts influenced decisions to migrate. The three most evident environmental changes that respondents said would influence future decisions to migrate are: increased extreme hydro-climatic weather (96%), warmer weather (76%) and irregular flooding (68%).

Figure 19: Environmental changes and related impacts influencing future decisions to migrate

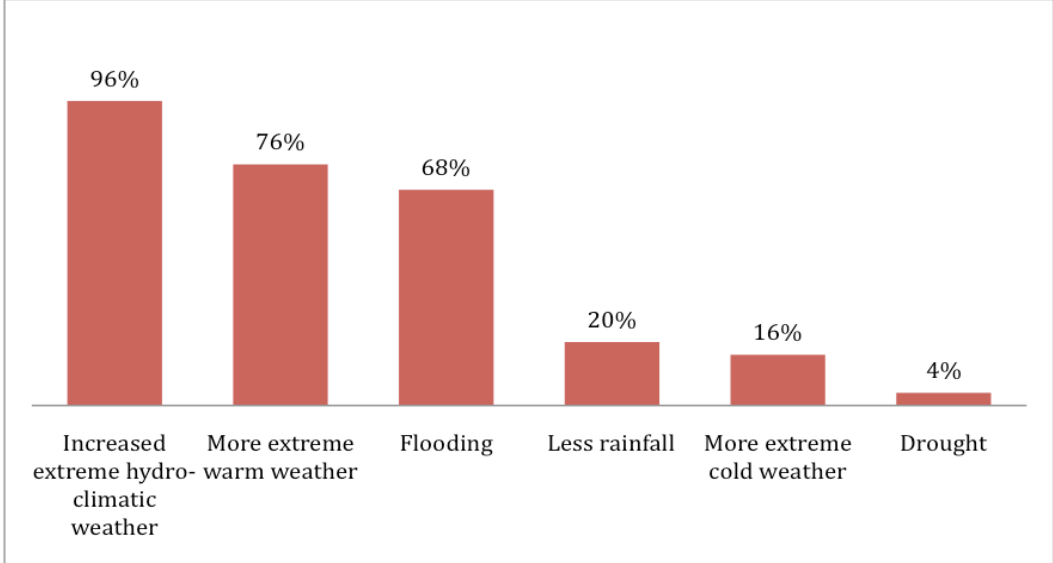


Figure 20: Relevant negative impacts (related to environmental changes) likely to contribute to future decisions to migrate

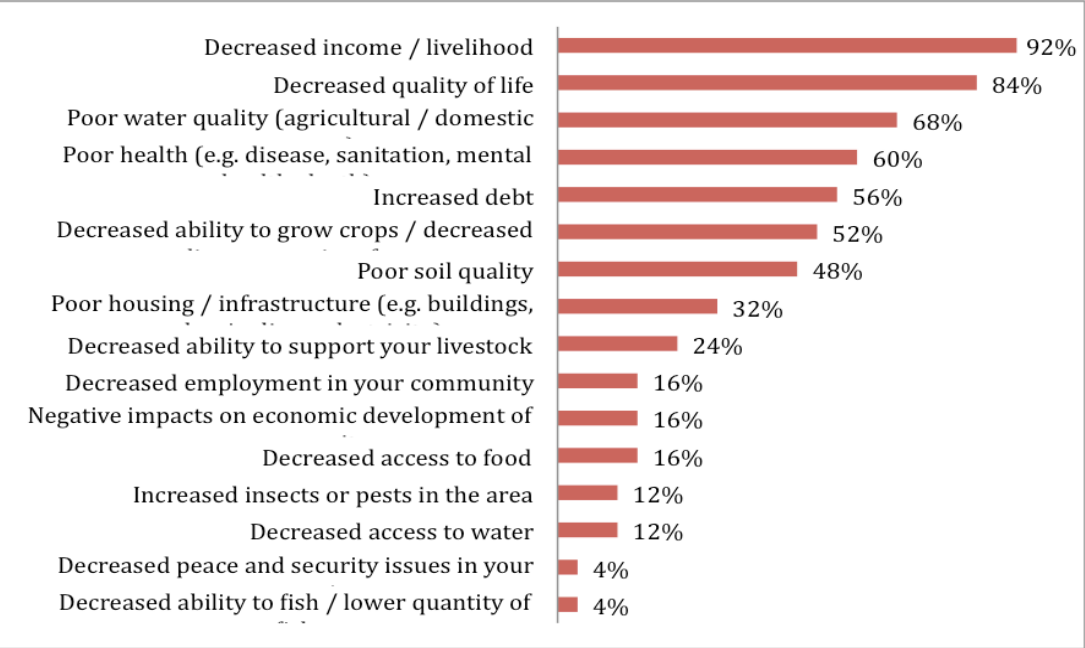
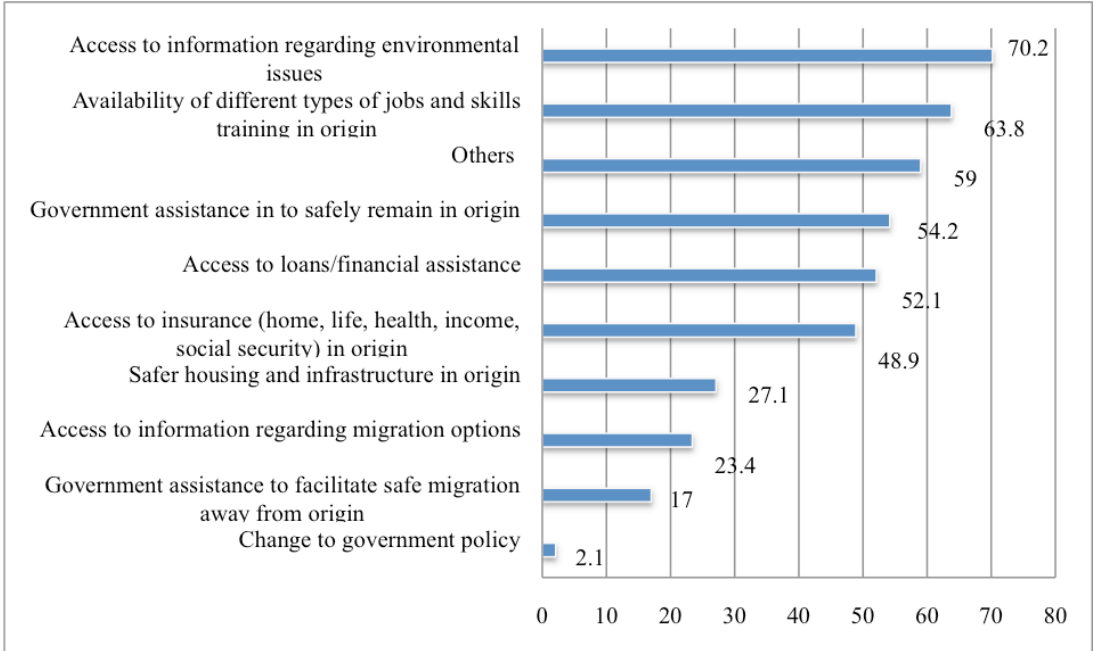


Figure 20 shows that decreased income/livelihood (92%), decreased quality of life (84%), poor water quality (68%), poor health (60%), and increased debt (56%) are the

top five negative impacts of environmental changes that are likely to push people to migrate away from the origin community in the future.

Vietnam Recommendations

Figure 21: Community needs for coping with environmental changes



The most pressing community needs for coping with environmental changes as expressed in the Vietnam case study are: access to information regarding environmental issues (70.2%); and availability of different of jobs and skills training in origin (63.8%). During focus group discussions with local residents and commune leaders, the following sentiments were expressed:

- There is an urgent need for more updated, more precise and more timely forecasting and news relating to weather, diseases and proposed measures to tackle environmental risks.
- More investment is required in small industries and trade to create more jobs for local residents and to mitigate forced migration flows.
- Central and city authorities should provide more budgets for dyke and embankment systems to fully protect rice fields and residential areas.
- More water supply investment is required, to build water treatment plants.
- Better financial policies are necessary, for example through loan provision to farmers to purchase harvesting machinery to assist in adapting to a lack of labour force.
- More mass-media programs are required to communicate information relating to climate change and its impacts, as well as information relating to safe migration.

Analysis & Synthesis of Research Findings

Below is an analysis of the findings of the primary research, as undertaken in the Second Consultation Meeting, outlining key similarities and differences in the respective case studies, and reflecting on whether the findings support the initial project hypotheses and existing discourse.

Key Similarities in Research Findings: Myanmar & Vietnam

Common findings between the Myanmar and Vietnam case studies included:

- The presence of environmental changes having negative impacts on the survey community (Vietnam: more extreme warm weather, increased extreme hydro-climatic weather, desertification/soil degradation; Myanmar: less rainfall, more extreme warm weather);
- A lack of jobs in the origin community was the main factor causing migration (77% of respondents in Myanmar, and 41.2% of respondents in Vietnam, cited this as a primary driver of migration);
- More jobs in destinations that people are migrating to (cited as primary ‘pull factor’ in both Vietnam case study: 53.7% and Myanmar case study: 91%);
- A small number of positive impacts were cited in each community: Vietnam 24% (more rainfall cleans water/soil, the heat dries rice crops), Myanmar 8% (sesame crop seeding possible due to less rainfall);
- There was a big gap between rich and poor in both survey communities, and widespread poverty was limiting people’s coping strategies in relation to negative environmental changes;
- Health issues related to environmental changes were found in both survey communities (Vietnam: waterborne diseases; Myanmar: heat-related problems including heat stroke experienced by the elderly); and
- Multicausality was evident in decisions to migrate in both case studies; various drivers of migration were identified, including environmental change as one factor.

Key Differences in Research Findings: Myanmar & Vietnam

Key differences in findings between the Myanmar and Vietnam case studies included:

- The number one environmental changes causing negative impacts were different in the country contexts (Vietnam: more extreme warm weather, increased extreme hydro-climatic weather, desertification/soil degradation; Myanmar: less rainfall, more extreme warm weather);

- In Vietnam, major changes to the farming community's lifestyle was apparent. For example, due to increased heat and other factors (including changes to communal farming practices), farmers were doing a lot of the farming work during the night to avoid the heat of the sun, causing a significant change to bio-routines. These changes are also affecting the electricity usage and costs for households, as they sleep more during the day and use fans and air conditioning in the home during the day.
- The primary negative impacts caused by environmental changes differed: in Vietnam the biggest negative impacts were on health (94%) and water quality (80%); in Myanmar the biggest negative impacts were on household debt (88%), incomes and livelihoods (86%);
- The nominated community needs in order to cope with climate change also differed, with most respondents in Myanmar suggesting the need for different types of jobs and skills training in origin (68%) and access to loans and financial assistance (66%); and respondents in Vietnam calling for access to information regarding environmental issues (70.2%) and availability of different types of jobs and skills training in the origin community (63.8%).

Unexpected Results & Issues Encountered

Myanmar

Issues encountered in the Myanmar research were the mixture of quantitative and qualitative questions in the Household Questionnaire, making the survey quite complex; and the tight time constraint of only five days in which to conduct training and undertake primary research.

Unexpected results included:

- Deaths reported of migrants from the area: a father and son from one household who were caught up in the conflict between Muslims and Buddhists in Rakhine State, and died in a riot there;
- The benefits of migration highlighted in one success story, wherein a household member migrated away for work, learned new skills in brick-making in the destination, then moved back to the origin village and established his own successful small business in brick-making;
- The range in different views of respondents regarding the benefits of migration, with some viewing the positives of saving money, gaining exposure and experience through migration, while others were reluctant to send their children to other areas; and
- Due to large migration flows out of Kyauk Padaung township in the Dry Zone area, with many migrating to Malaysia and Singapore, some of the villages in the area have changed their names to 'Malaysia Village' and 'Singapore

Village.’ ECODEV is aiming to conduct further research in this area in the future.

Vietnam

Issues encountered in the Vietnam research included problems in accessing the lowest income households, as they were busy sowing crops during the survey period. Further, as outlined above, some respondents misunderstood terms in the household questionnaire (‘sea level rise’ and ‘desertification’). In addition, due to the context in Vietnam and at the local level, respondents reported no issues with local politics, as it is common to avoid speaking about politics, to avoid any controversy or issues with authorities.

Unexpected results included further misunderstanding of terminology in the household questionnaires, in relation to some evident subjectivity in relation to perceptions of ‘extreme cold weather.’ Some respondents reported more extreme cold weather, despite the fact that Southern Vietnam does not experience extreme cold weather. This was due to subjective assessments of cold weather relative to usual temperature ranges.

Conclusions to be drawn from Primary Research

Generally the findings of the primary research in Vietnam and Myanmar support the initial hypotheses. Environmental changes are being felt by communities. Environmental changes are negatively impacting peoples lives. These environmental changes and related impacts are influencing migration. Other factors are also influencing migration (primarily lack of jobs in origins and access to jobs in destinations).

The research findings show a strong correlation between negative environmental changes and migration - perhaps somewhat stronger than predicted in the initial hypotheses. However, it is clear from responses to household questionnaires that whether or not communities are experiencing environmental changes (that may be linked to climate change) people will still migrate because of low incomes in origin, less jobs in rural areas, and more jobs and educational opportunities in destinations (usually urban centres). For example, when asked whether environmental changes and related impacts are likely to contribute to future decisions to migrate, 50% of respondents in Vietnam said that environmental changes and related impacts will not contribute to future decisions to migrate (See Table V12, Appendix C). While not refuting that negative environmental changes are occurring, respondents point to the fact that farming life is becoming more and more difficult, and so family members are seeking out better prospects in urban areas such as Ho Chi Minh City, Ha Noi, and Can Tho City, to find better jobs and higher levels of education. This process may be seen as the wider phenomenon of mechanisation of agricultural life, and global urbanisation.



Global Justice: Climate Change, Mobility, Solidarity

It is useful to consider both climate change and mobility in the context of ‘global justice;’ and recognise calls for genuine solidarity amongst nations in approaching both of these issues.

Climate Change as a Global Justice Issue

Climate change inevitably has a differentiated impact, depending on the physical conditions and the adaptive capacities of the countries and communities concerned. The poor are generally disproportionately affected by extreme weather events because of the poor quality of their housing, and also because their livelihoods are often connected to land and natural resources. In this light, susceptibility to climate-induced migration in the GMS may be distinctly higher than in many of the more developed regions of the world, as many GMS countries have a low adaptive capacity, including limited access to climate mitigation technologies, lower levels of development and equity, fewer resources and poor infrastructure.

A commonly cited assertion is that ‘the 50 least-developed countries are responsible for less than 1 percent of worldwide carbon emissions, yet the developing world records 99 percent of climate-related deaths and 90 percent of economic losses.’¹¹⁰ Castles argues that, there is a ‘decisively socio-economic, political and racial injustice’ to climate change impacts. He states that ‘98% of the 262 million people affected by natural disasters between 2000-2005, lived in the Global South.’¹¹¹ As

¹¹⁰ Funk, McKenzie, ‘Come Hell or High Water’, *World Policy Journal*, Vol. 26, No. 2 (Summer, 2009), pp. 93-100, The MIT Press and the World Policy Institute

¹¹¹ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ *Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos*, Mexico, 2010

such, many argue that there is ‘clearly a responsibility on the part of high greenhouse gas emitters and industrialised nations to support wide-ranging adaptation efforts in the Global South, and especially community-based initiatives.’¹¹² It has been said that climate change is a by-product of ‘a neoliberal global economic system, which has created vastly unequal development between regions.’¹¹³ Within this system, wealthy developed countries continue to consume energy and natural resources excessively, and contribute to carbon emissions disproportionately; while the Global South suffers the majority of negative effects of human-induced climate change, which may lead to involuntary displacement of people.

The IOM has stated that ‘climate change is best understood as exacerbating...underlying structural factors of vulnerability.’¹¹⁴ It is a process that ‘does not take place in a vacuum but is closely associated with underdevelopment, inequalities within and between countries, global justice, and the lack of solidarity between States, human rights, or human security,’ which is why policy responses to climate change and migration must be accompanied by ‘renewed efforts to combat the very context that make people vulnerable in the first place.’¹¹⁵ This applies not only at the global and regional level, but also within regions and within States.

Mobility as a Global Justice Issue

Mobility, or the ability to move around the world, is also an issue of global justice. Citizens from the developed world have relatively easy access to travel and migration. They have the resources to afford it, and usually have much greater ease in accessing travel documentation such as visas. By comparison, citizens of less developed countries are less able to afford the costs of mobility, and face many more obstacles in gaining entry to regular migration pathways. Pecoud and de Guchteneire see ‘mobility is a privilege that is unevenly distributed among human beings...[and] citizenship [as] a birthright privilege that is difficult to justify.’¹¹⁶ It is also important to note that citizenship (of any nation) is not granted as a ‘birthright privilege’ to many stateless people in the GMS region. In international law, the human right to leave the home State (to emigrate) is recognized,¹¹⁷ however there is no corresponding right to enter another State, rendering the right ‘morally asymmetrical’ in practice.¹¹⁸ Some argue that freedom of movement should be granted to all, as ‘restrictions on mobility violate the liberal egalitarian perspective according to which people should have equal opportunities.’¹¹⁹

¹¹² Tacoli, Cecilia, ‘Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy’, International Institution for Environment and Development, London, 2012

¹¹³ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

¹¹⁴ International Organization for Migration, ‘Disaster Risk Reduction, Climate Change Adaptation, and Environmental Migration: A Policy Perspective’, 2010

¹¹⁵ Pigué, Etienne, Antoine Pécoud, and Paul de Guchteneire, ‘Migration and Climate Change: An Overview’, *Refugee Survey Quarterly* (2011) 30 (3): 1-23

¹¹⁶ Antoine Pecoud and Paul de Guchteneire, ‘Migration without Borders: An Investigation into the Free Movement of People’, Global Migration Perspectives No. 27, (Global Commission on International Migration, 2005), p7

¹¹⁷ See ICCPR Article 12, ICPMW Article 8, ICERD Article 5, CRC Article 10, UDHR Article 13, General Assembly’s Declaration on the Human Rights of Individuals Who are not Nationals of the Country in which They Live Article 5

¹¹⁸ Antoine Pecoud and Paul de Guchteneire, ‘Migration without Borders: An Investigation into the Free Movement of People’, Global Migration Perspectives No. 27, (Global Commission on International Migration, 2005), p7

¹¹⁹ Ibid; p8

It follows then that unequal distribution of resources affects personal decisions about whether or not to migrate in the face of climate change impacts. Migration is not an option for everyone, because due to a lack of resources, the most vulnerable people are often not able to move. The IOM acknowledges that, ‘within any given set of social and environmental circumstances, decisions to move or stay depend on incomes, social networks, local patterns of gender relations and the perceived alternatives to moving.’

¹²⁰ By this logic, greater mobility equality is required to support migrants who are driven by climate change, through the opening up of migration pathways within and from the developing world. Further, the provision of resources and assistance to affected communities is important, so that the decision whether to stay or go is a decision that is genuinely available to them.

In the GMS region, affected communities are disproportionately rural agricultural communities, who are reliant on the natural environment for their livelihoods, and who typically have much lower incomes than those in urban areas. Within these affected communities, there also exist significant disparities of wealth, which greatly affect the vulnerability and adaptive capacities of households. Further, even where households do have the resources and capacity to move, many do not wish to permanently migrate, but prefer to stay close to their ancestral ground where possible, or access seasonal migration options that allow them to return home. It is therefore vitally important that policy responses to climate change affected communities do not automatically assume that migration is an appropriate or desirable adaptive strategy. Where possible, people should have a right to a decent life in their home communities, including adequate access to basic services (e.g. education, healthcare), social protection, and the ability to support themselves through decent work. A human rights framework should be applied both where people migrate and where they remain, to ensure fair and just outcomes for all.

Solidarity

Migrant rights advocate Colin Rajah calls for the development of a ‘climate justice movement among migrant communities and migrants rights advocates,’ arguing that a ‘preoccupation with defining “climate refugees” or “environmental migrants” has been useless and distracted attention and resources from the more urgent need for critical analyses and corresponding policy responses.’¹²¹ He argues that the processes of the UNFCCC are being ‘co-opted by economically rich and politically powerful states’ and points to the need for significant advocacy from migrant communities and migrants rights advocates to join the climate justice movement in demanding ‘just and equitable development while protecting the human rights of migrants.’¹²²

Rajah cites promising evidence of such advocacy at the 2010 People’s World Conference on Climate Change and the Rights of Mother Earth (PWCCC), convened by

¹²⁰ International Organization for Migration, ‘Disaster Risk Reduction, Climate Change Adaptation, and Environmental Migration: A Policy Perspective’, 2010

¹²¹ Castles, Stephen, and Colin Rajah, ‘Environmental Degradation, Climate Change, Migration & Development,’ Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

¹²² Ibid;

the Bolivian government, which emphasized the importance of a human rights framework and more significant engagement with migrant communities. The People's Accord of the PWCCC¹²³ and the working group archives from the conference contain discussion of climate change as a global justice issue, including the assertion that 'climate-drive migration stems from the dominant capitalist global development agenda which overexploits and degrades natural resources.' Rajah sees the People's Accord as a counterbalance to the 2009 Copenhagen Accord, but also views further analyses and engagement with the climate agenda as necessary, to 'ensure both climate justice and migrants rights advancements.'¹²⁴

Viewing both climate change and mobility through a global justice lens makes clear the need for solidarity among States in addressing and managing these issues. Developed States need to acknowledge their contributing role in relation to the effects of climate change being felt in the developing world. It is also necessary to recognise that the disproportionate concentration of resources in wealthy countries and the histories of unequal development do not point to a self-evident right to maintain the status quo and reinforce exclusionary policies and practices. Rather than taking a State-centric national security approach, stressing 'sovereignty and border control' and concerned with 'refugees and undocumented migrants;' a people-centred human security approach should be applied, stressing 'interdependences between countries and trans-border cooperation'¹²⁵ and focussing on the situation of migrants (and non-migrants) in terms of their human rights. In the words of Fridtjof Nansen, 'Nothing great and good can be furthered in the world without cooperation.'¹²⁶

Solidarity is also necessary within States, as increasingly, discriminatory attitudes and policies are evident in response to rural-urban migration. For example, household registration is used to control rural populations, and deny them access to basic services in urban areas. Vietnam's National Assembly has recently approved a new law (Luat Thu do (the Law of Capital) no. 25/2012/QH13 approved by the National Assembly on Nov 21, 2012)¹²⁷, introducing education and income tests for internal migrants to Hanoi, in an attempt to control the population of Hanoi. The rationale supporting the law, and in particular Article 19 (Inhabitant Management), which will take effect on 1 July 2013, aims to ensure that urban centres do not become overcrowded, and the services do not become overloaded. Social workers argued against this law, stating that public services in cities should be available to all citizens equally. These kinds of policies lead to segregated populations, and foster discrimination and inequality.

¹²³ *Peoples Accord*, World People's Conference on Climate Change and the Rights of Mother Earth, 22 April 2010, Cochabamba, Bolivia

¹²⁴ Castles, Stephen, and Colin Rajah, 'Environmental Degradation, Climate Change, Migration & Development,' Accion Global de los Pueblos sobre Migracion, Desarrollo y Derechos Humanos, Mexico, 2010

¹²⁵ Antoine Pecoud and Paul de Guchteneire, 'Migration without Borders: An Investigation into the Free Movement of People', Global Migration Perspectives No. 27, (Global Commission on International Migration, 2005), p3

¹²⁶ As quoted in the Chairperson's Summary of the Nansen Conference on Climate Change and Displacement, June 2011, available at: <http://d2530919.hosted213.servetheworld.no/expose/global/download.asp?id=2274&fk=1629&thumb=>

¹²⁷ Vietnam Luat Thu do (the Law of Capital) no. 25/2012/QH13. Available at: http://vanban.chinhphu.vn/portal/page/portal/chinhphu/hethongvanban?class_id=1&mode=detail&document_id=1649

Areas for Further Research

Areas for potential further research, as discussed at the Second Consultation Meeting, include:

- Further case studies exploring climate change and migration in other GMS countries.
- Research into the impact of development projects (for example: dams, mining, deep sea ports) on people's lives and livelihoods in the GMS.
- Further research into where people are migrating to, including expectations prior to migration, and the reality of the situation of migrants in the destination (for example: Have they been able to access more jobs? Has migration had positive impacts on their lives?).
- Further interviews in survey areas (origin communities), exploring expectations regarding migration (for example: better jobs, better income), and actual outcomes.
- Further analysis of histograms in Myanmar and Vietnam case study sites.
- Examination of voluntary and involuntary migrants, and outcomes (for example: who is happy in destination, who is not, and why?).
- Research into success stories and failure stories of migration, following from the origin to the destination, and exploring the impact of migratory status on peoples' lives. For example, during one interview with a returnee in Vietnam in this study, the returnee said that although the income in the destination was higher, they never felt safe as they could not afford a room in a good neighbourhood, and they had the feeling of humiliation from being looked down on as a second-class citizen.
- Research into the Kyauk Padaung township area of Myanmar's Dry Zone (as mentioned above), where there is a high incidence of out-migration to Singapore and Malaysia, and some villages have even been re-named 'Malaysia Village' and 'Singapore Village.'
- Research in the Myanmar Delta region, which is being significantly impacted by climate change; and comparative analysis of environmental migration in the Delta region and the Dry Zone.
- Research into protection or migration mechanisms in place in the GMS region, whether these mechanisms are effective in responding to climate change-related migration, and what positive and/or negative impacts these mechanisms are having on affected communities.

General Comments

Recommended Responses to CC-M

The IOM held a 2011 dialogue that aimed to identify some of the main areas in which governments and institutions may need to ‘reinforce their capacities to manage the complex interactions between climate change and environmental degradation and human mobility.’ The dialogue was guided by a human rights framework, and by the notion that a comprehensive approach to managing environmental migration would aim to ‘(a) minimize to the extent possible forced migration resulting from environmental factors; (b) where forced migration does occur, to ensure assistance and protection for those affected and seek durable solutions to their situation; and, lastly, (c) to facilitate the role of migration as an adaptation strategy to climate change.’ It was suggested that policymakers ‘should make full use of all existing bodies of laws and instruments, both hard and soft law (humanitarian, human rights and refugee law, instruments on internal displacement, disaster management, legal migration and others);’ and ‘that migration management systems should be linked with other policy objectives in terms of climate change adaptation, disaster risk reduction, humanitarian responses and sustainable development.’¹²⁸

The most suitable approach to CC-M is the enhancement and utilisation of a range of existing mechanisms, including: mitigation and adaptation under the climate change framework; disaster risk reduction and disaster management mechanisms; law relating to internally displaced persons; international human rights law; sustainable development approaches; and managed migration pathways. Further, in terms of soft law, the 2011 Nansen Principles (as outlined earlier in this report) are a very useful tool with which to shape a response. To ensure an appropriate contextual approach, the range of mechanisms elaborated below should be tailored to specific regional or country situations.

Mitigation and Adaptation under the Climate Change Framework

In responding to the effects of climate change, it is vital not to forget importance of mitigation efforts under the UNFCCC (such as the 1997 Kyoto Protocol), which aim to reduce carbon emissions, slow down negative climate processes, and ‘avoid the unmanageable.’¹²⁹ Without continuing mitigation efforts targeting the root causes of climate change, a purely reactive response would risk perpetuating the notion that high carbon-emitting countries can continue with damaging practices and simply deal with the consequences at a later date (or leave the consequences to be dealt with by more vulnerable developing countries).

In ‘managing the unavoidable,’¹³⁰ adaptation measures under the UNFCCC, including NAPAs, should be developed to incorporate migration as a key adaptation strategy that may be utilised by affected communities; and also should support, as far as possible,

¹²⁸ International Organization for Migration, ‘International Dialogue on Migration, Intersessional Workshop on Climate Change, Environmental Degradation and Migration, Chair’s Summary’, March 2011

¹²⁹ UNHCR, ‘Climate change, natural disasters and human displacement: a UNHCR perspective’, 2009

¹³⁰ Ibid;

people's ability to remain in their communities if they do not wish to migrate. International processes like the 2007 Bali Road Map and Action Plan, and the 2009 Copenhagen Accord, should be built upon to also recognise the forms that migration may take in relation to climate change, and provide funding for programs that support those who are moving, and, where possible, those who wish to remain. These frameworks should be critically engaged with, with special attention paid to ensure that adaptation and mitigation mechanisms (such as REDD) are not in fact having negative effects on communities and the environment.

Disaster risk reduction and disaster management mechanisms

In the case of sudden onset climate change impacts, like floods, cyclones or storm surges, existing disaster management and humanitarian emergency response mechanisms should be utilised. The disaster risk reduction framework, including the Hyogo Framework for Action 2005 - 2015 (and the 2005 ASEAN Agreement on Disaster Management and Emergency Response) should also be implemented, in order to prepare for and mitigate the impact of potential disasters, increase resilience, and reduce underlying risk factors. It is important that these tools are not used purely in a reactive way, but are used in combination with other instruments in order to provide enduring solutions for those at risk. Such solutions may include migration options out of severely affected or high-risk areas.

Guidelines relating to internally displaced persons

The 1998 Guiding Principles on Internal Displacement identify rights and guarantees relevant to the protection of persons from forced displacement and to their protection and assistance during displacement as well as during return or resettlement and reintegration. Internally displaced persons (IDPs) are 'persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border.'¹³¹ The Principles are consistent with international human rights law and international humanitarian law. They provide, inter alia, that: 'internally displaced persons shall enjoy, in full equality, the same rights and freedoms under international and domestic law as do other persons in their country,' without discrimination (Principle 1); National authorities have the primary duty and responsibility to provide protection and humanitarian assistance to internally displaced persons within their jurisdiction (Principle 3); and, significantly, 'all authorities and international actors shall respect and ensure respect for their obligations under international law, including human rights and humanitarian law, in all circumstances, so as to prevent and avoid conditions that might lead to displacement of persons' (Principle 5).

The Principles have been endorsed by the UN General Assembly and the African Commission on Human and People's Rights, and consistent application of some of the principles by States may eventually lead to the development of customary

¹³¹ 1998 Guiding Principles on Internal Displacement

international law. However, at present, as useful as they might be, the Principles do not bind States. Further, while useful as one element in a range of tools that may respond to climate change displacement, the Principles do not provide any guidance on movement across national borders, or approaches to supporting migration (rather than displacement) as an adaptive strategy. Notwithstanding the limitations to the Principles, it is clear that they are very useful in relation to the situation of those displaced by climate related natural disasters within national borders.

Human Rights & Migrants Rights

The most important paradigm through which to approach climate change-related movement, is the human rights framework. A purely protection-based approach (for example, a new ‘climate refugee’ treaty) is not the best way forward, as it risks obscuring the human rights of those affected, especially ‘those relating to cultural integrity, self-determination, and statehood.’¹³² Human rights, as enshrined in international law (including in the UDHR, ICCPR, ICESCR, CRC, CERD, and CEDAW) should be protected in the State of origin. As far as possible, free agency and full exercise of rights should be facilitated, and a genuine decision regarding whether to migrate or remain should be provided. Where a decision is made to migrate, human rights must also be upheld in the destination.

Migration is often the final outcome of an inability to adapt to the adverse effects of climate change, and the ensuing effect on fundamental human rights.¹³³ In facing negative climate change (or other) impacts, people usually decide to move when their situation ‘falls below a critical threshold of tolerance, below which they no longer perceive possibilities of survival according to local norms of safety, dignity and well-being.’¹³⁴ While adherence to, and perceptions of, economic, cultural and social rights vary greatly around the world, ‘the most basic consideration is ability to survive above a local minimum standard of decency.’ As Patrick Taran argues, ‘at its essence, displacement today is in no small part the direct consequence of the breakdown or absence of sustainable community and the denial of human dignity.’¹³⁵ Efforts to assist communities in adaptation efforts, reducing vulnerability and increasing resilience, should aim to facilitate the full enjoyment of human rights by those affected, in their home communities.

When the decision to migrate across national borders is made, migrants are facing an increasingly hostile global environment, shaped by notions of national security, border control and xenophobia. Despite a steady and rapid process of globalisation, the opening up of borders to flows of goods, services and capital, and the fact that more than 150 million people live outside their home countries,¹³⁶ there remains an increasing resistance to the free movement of people across national borders, particularly people from the developing world. This is evident in anti-refugee

¹³² Jane McAdam, ‘Protection or Migration? The “Climate Refugee” Treaty Debate’ in *Climate Change, Forced Migration, and International Law* (Oxford University Press, 2012) 186 – 211, p199

¹³³ The effects of and approaches to climate change can be seen to intersect with human rights in a number of conceptual areas including but not limited to: right to life; right to adequate food; right to water; right to health; right to security; rights of indigenous people; rights of the child; right to development (as recognized in the UN Millennium Declaration); housing, land and property (HLP) rights; and right to self-determination.

¹³⁴ Patrick Taran, ‘Human Rights of Migrants: Challenges of the New Decade’ (2001) 38(6) *International Migration* 7, p13

¹³⁵ *Ibid*;

¹³⁶ *Ibid*; p7

sentiment, and in the mistreatment of migrant workers in many parts of the world. This trend is also becoming more and more evident within national borders, as reactionary responses to rural-urban migration foster prejudice and inequalities.

Hostility is frequently made manifest in policies that criminalise ‘illegal migrants’, rendering them ‘outside the protection of law, contrary to the inalienability of human rights protection.’¹³⁷ The term illegal migrant renders people criminal without affording the human rights of recognition before the law or due process. Even where migrants are ‘legal’ and have come through regular channels, violations of migrants’ rights are prevalent, and migrants often constitute some of the most vulnerable segments of a country’s population. It has been said that ‘violations of migrants’ human rights are so widespread and commonplace that they are a defining feature of international migration today,’ and the resistance to recognition of the rights of migrants is ‘bound up in exploitation of migrants in marginal, low status, inadequately regulated or illegal sectors of economic activity.’¹³⁸

The migrant rights regime advocates for equal rights for migrants, and a rights-based approach to all migration. The 1990 Convention on the Protection of All Migrant Workers and Members of Their Families (CPWM), while specifically addressing labour migration, also has potentially great utility for ‘nearly all other migrants in vulnerable situations, notably those who are in irregular situations.’¹³⁹ Recognising that many climate change-affected communities are already using traditional migration schemes (such as labour migration, education and family reunion visa streams) as a means to adapt and withstand the challenges to their livelihoods and security, the strengthening of existing protections for all migrants is clearly advantageous in the context of climate change.

Some recommendations for the strengthening of the migrant rights system include: further ratification of the CPWM; the adoption at a national level of international standards (such as CERD and ILO Conventions relating to migrants); the enhancement of anti-discrimination legislation; improved interagency, interstate, and regional cooperation; the establishment of a monitoring body to implement laws and provide remedies for migrants’ rights violations; the implementation of national plans of action addressing migration, discrimination and integration; and the promotion of respect for multiculturalism and diversity.¹⁴⁰

The UN Human Rights Council has recognised the link between human rights and climate change in resolution 7/23 (2008), resolution 10/4 (2009) and resolution 18/22 (2011), affirming ‘that human rights obligations, standards, and principles have the potential to inform and strengthen international and national policy making in the area of climate change, promoting policy coherence, legitimacy, and sustainable outcomes.’ The Australian Human Rights Commission has argued that ‘a human rights-based approach to climate change refocuses and re-centres the debate on individuals and communities.’ It is argued that the value of such an approach is its focus on

¹³⁷ Patrick Taran, ‘Human Rights of Migrants: Challenges of the New Decade’ (2001) 38(6) *International Migration* 7, p23

¹³⁸ *Ibid*; p7

¹³⁹ *Ibid*; p17

¹⁴⁰ *Ibid*; p42

individuals as rights holders, emphasis on local knowledge, principles of non-discrimination and equity, and the identification of core minimum human rights standards available to guide policy-makers.¹⁴¹

Sustainable Development

In responding to the climate change and migration nexus, a holistic approach that aims at improving the situation of affected communities in places of both origin and - where people migrate - the destination, necessitates considerations of sustainable development. The 1987 Brundtland Commission defines 'sustainable development' as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'¹⁴² Sustainable development strategies can be seen to overlap with climate change mitigation and adaptation strategies, and are also beginning to be recognised as an important element in migration policies.

Tacoli argues that reducing vulnerability to climate change can only be achieved through sustainable development. She argues that the role of local governments and governance systems is increasingly recognised as central, but their capacity in the Global South is low (especially in small towns), and should be supported through development strategies.¹⁴³ She calls for further attention to the structural non-environmental factors that make people more vulnerable to the impacts of climate change, including: 'the management of urbanization to accommodate growing urban populations and avoid the increase of urban poverty;' the concentrations of people living in high climate change risk areas; and 'the impacts of transformations in agricultural production systems and the construction of infrastructure;' particularly because most of the time, the most vulnerable are also 'the ones who have least representation in policy debates.'¹⁴⁴

Cantho City, in Southern Vietnam, is known of the 'bread basket' of the country, due to the high levels of rice production in the area. Cantho is facing climate change threats in the form of regular and increasing flooding from the Mekong Delta, and rising sea levels that are salinifying water supplies and damaging agricultural production. The Climate Change Coordination Office (CCCO) in Cantho City is focusing on adaptation to allow communities to withstand the mounting impacts of climate change. The CCCO has undertaken strategic climate change resilience planning for 2010 to 2015 that aims to assist the poor by preventing livelihood stress, and preventing forced out-migration of the local population. The CCCO is undertaking studies investigating the threshold beneath which people can no longer tolerate their local conditions and must move to ensure their quality of life. It aims to use its research as a basis for a socio-economic development plan for the region, so that people in Cantho are not forced to move away.¹⁴⁵ This is an example of where

¹⁴¹ Australian Human Rights Commission, Climate Change and Human Rights, n.d. Available at: http://www.hreoc.gov.au/human_rights/climate_change/index.html

¹⁴² International Organization for Migration, 'International Dialogue on Migration, Intersessional Workshop on Climate Change, Environmental Degradation and Migration, Background Paper', March 2011

¹⁴³ Tacoli, Cecilia, 'Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy', Presentation, International Institute for Environment and Development, London, 2011

¹⁴⁴ Tacoli, Cecilia, 'Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy', International Institute for Environment and Development, London, 2012

¹⁴⁵ Discussion with Mr Ky Quang Vinh, Director of the Climate Change Coordination Office, Cantho City, at the Mekong Migration Network's First Consultation Meeting regarding the Research Project 'Climate Change and Migration', Chiang Mai, 17-18 August 2012

sustainable development and adaptation measures are being combined in efforts to respond to climate change.

As well as using sustainable development to prevent involuntary migration, voluntary migration may also be seen as a constructive sustainable development strategy. Mobility in many forms - seasonal, temporary or permanent - has the potential to contribute to development in the community of origin through the provision of remittances by migrants, through the transfer of skills and knowledge, and through relieving population density. In a 2012 report, the ADB recommended the incorporation of a development framework into climate adaptation strategies, stating that by framing climate-induced migration in a development agenda, community resilience may be increased.¹⁴⁶

In a 2009 report prepared for the UN Expert Group Meeting on Population Dynamics and Climate Change, Tacoli noted the necessity for a 'radical change in perceptions of migration.' She argued that rather than migration management based on control, 'policies might more usefully aim to accommodate changes in migration patterns that result from environmental degradation, economic growth or crisis, and other wider transformations,' which would more effectively contribute to adaptation and 'other development goals.'¹⁴⁷ In 2012, Tacoli reflected that the impacts of climate change will increase pressures on those who rely on agricultural production for their income, and lead to more people needing to undertake seasonal migration or non-farm work in urban centres.¹⁴⁸ It is thus important that policy supports such movement, rather than attempting to restrict mobility.

Supporting Existing Migration Pathways

It is clear that existing migration pathways are already being utilised by those affected by climate change, in order to diversify livelihoods, access employment, manage risk, or for reasons of personal security. Migration should be recognised as a positive adaptive strategy in many cases, and those who choose to migrate should be supported through managed migration programs. Harvey and Barnidge stress 'the importance of giving due regard to the human rights framework in the construction of a well-managed and humane regulatory system for migration.'¹⁴⁹ Current migration processes should be improved to better protect the human rights of migrants, and should be expanded to allow more equitable access - particularly within and from the developing world - to migration as a preparatory and/or responsive strategy, and as a component of sustainable development.

The IOM presents strong arguments in favour of giving more recognition to migration as an adaptation strategy, reflecting that while 'environmental migration is often portrayed as a failure to adapt to a changing environment and as a worst case

¹⁴⁶ Asian Development Bank, 'Addressing Climate Change and Migration in Asia and the Pacific, Final Report', 2012

¹⁴⁷ Tacoli, Cecilia, 'Crisis or adaptation? Migration and climate change in a context of high mobility', Prepared for Expert Group Meeting on Population Dynamics and Climate Change UNFPA and IIED In Collaboration with UN-HABITAT and the Population Division, UN/DESA 24-25 June 2009

¹⁴⁸ Tacoli, Cecilia, 'Migration, climate change and the multiple drivers of mobility: current debates, empirical evidence and implications for policy', International Institution for Environment and Development, London, 2012

¹⁴⁹ Colin Harvey and Robert Barnidge, 'Human Rights, Free Movement and the Right to Leave in International Law' (2007) 19(1) International Journal of Refugee Law 1, p20

scenario;’ in fact, although at times ‘migration can be a manifestation of acute vulnerability, it can also represent a logical and legitimate livelihood diversification and adaptation strategy.’¹⁵⁰ Further, ‘migration can help reduce risks to lives, livelihoods and ecosystems; it contributes to income diversification and enhances overall capacity of households and communities to cope with the adverse effects of environmental and climate change.’¹⁵¹

Harvey and Barnidge point to a current overall international approach to migration that is based on a ‘framework of control’ rather than a human rights framework. They see this as ‘both root and reflection of the fundamental contemporary impediments to rationally and effectively addressing international migration;’¹⁵² and argue that instead of fear and control, the preferable basis should be ‘long-term economic and social development considerations in the context of respect for international humanitarian and human rights norms.’¹⁵³

To facilitate the positive benefits of migration, it is argued that there must be ‘a significant degree of autonomy and choice in mobility decisions’ which can be maximised by ‘ensuring that those who move are accorded the same rights as people in the host community (which, in domestic law, would ordinarily mean at least the rights of permanent residents); facilitating mutual understanding between these groups; providing assistance with relocation costs (hence calls for an international relocation fund); clarifying property rights; and strengthening emergency response systems.’¹⁵⁴ Barnett and Webber,¹⁵⁵ for the Commission on Climate Change and Development, propose a similar policy response and warn against framing migration as a ‘threat,’ as this ‘leads to policies that do little to control migration, but which do limit the benefits of migration to migrants, their communities of origin, and their host communities.’¹⁵⁶

The ADB also proposes the strengthening and expansion of current migration channels to accommodate climate-related migration, stating that ‘these channels should be reinforced to allow for increased migration flows.’ This approach would facilitate the sending of remittances, which ‘can greatly reduce the vulnerability of families and communities living in regions at risk.’¹⁵⁷ The ADB argues that international cooperation regarding migration should be increased; bilateral and subregional agreements enhancing freedom of movement should be developed (for example, a visa-free ASEAN); seasonal, short-term and more permanent labour migration should be expanded; and intergovernmental organisations that deal with climate-induced migration should ‘step up collaboration.’¹⁵⁸

¹⁵⁰ International Organization for Migration, ‘Disaster Risk Reduction, Climate Change Adaptation, and Environmental Migration: A Policy Perspective’, 2010

¹⁵¹ Ibid;

¹⁵² Patrick Taran, ‘Human Rights of Migrants: Challenges of the New Decade’ (2001) 38(6) *International Migration* 7, p31

¹⁵³ Ibid;

¹⁵⁴ Jane McAdam, ‘Protection or Migration? The “Climate Refugee” Treaty Debate’ in *Climate Change, Forced Migration, and International Law* (Oxford University Press, 2012) 186 – 211, p202

¹⁵⁵ Barnett, Jon, and Michael Webber, ‘Accommodating Migration to Promote Adaptation to Climate Change’, Commission on Climate Change and Development, University of Melbourne, 2009

¹⁵⁶ Ibid;

¹⁵⁷ Asian Development Bank, ‘Addressing Climate Change and Migration in Asia and the Pacific, Final Report’, 2012

¹⁵⁸ Ibid;

The Colombo Process (initiated in 2003) is a regional consultative process on overseas employment and contractual labour for countries of origin in Asia. It is an example of a regional dialogue that may be built upon to accommodate increased flows of climate-related migrants. The dialogue focuses on: protection and provision of migrant workers; optimizing benefits of organised labour migration (including through increasing remittance flows and enhancing development impacts); and increasing institutional capacity and cooperation with destination countries. Bilateral agreements may also be utilised. For example, seasonal worker programs have been established in Australia and New Zealand, providing a migration scheme for labourers from Pacific Islands. Each of these schemes is premised, at least ostensibly, on the idea that seasonal migration will contribute to economic development in the countries of origin of migrants. These regional and bilateral arrangements are examples of existing managed migration options that should be developed to include climate-related migrants. It is important however, that migration options should be based on a solid foundation of human rights and dignity.



Final Comments

The According to the IPCC, ‘warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level.’¹⁵⁹ The specific effects of this pattern of global warming are uncertain, however trends are being observed around the world, including: significant variations in precipitation patterns, drought, higher temperatures, increased evidence of severe weather events, sea-level rise, and saltwater intrusion into coastal and groundwater resources. The impacts of these changes on communities are already being felt, in the form of livelihood stress, and threats to personal safety, security, and health. The future effects of climate change are unpredictable and hard to quantify, but it is recognised that climate change will have a growing influence on human movement.

Despite dramatic predictions of millions of ‘climate refugees’ escaping environmental devastation, it is necessary to exercise restraint in considering the most appropriate

¹⁵⁹ Intergovernmental Panel on Climate Change, Climate Change Synthesis Report, 2007

response to climate change-related migration. The nexus between climate change and migration is complicated, and is entangled with many other causal drivers, including: socio-economic factors; access to information and resources, government policies; business interests, investments, infrastructure and development; and the availability of alternative livelihoods and support networks. There are significant definitional problems in identifying what exactly would constitute ‘climate change migration,’ and some substantial risks in directly linking migration to climate change. These risks include the danger of parties co-opting the nexus for their own gain, including: to distract from other key (man-made) drivers of migration; as a rationale for forced resettlement; to support securitisation and militarisation of migration; and to fuel anti-migrant sentiment and support exclusionary and xenophobic population control measures.

There have been numerous calls for a protection-based ‘climate refugee’ regime to address climate-related movement. From an advocacy perspective, it is true that lobbying for a new international treaty may ‘successfully generate attention and place climate change-related movement on the international agenda,’ however, as McAdam argues, ‘it is imperative that advocacy is well-informed.’¹⁶⁰ A treaty response is inappropriate, as it attempts to universalise a very complex, and contextually subjective phenomenon, thereby attempting to reduce the many renditions of climate change-related movement into a narrow and possibly arbitrarily defined narrative. It is inappropriate because a protection regime is reactive and creates victims, rather than recognising the many positive entrepreneurial strategies that communities are already undertaking to adapt to climate change, including through migration. It is inappropriate because there is an evident lack of political will to implement a new protection regime, and the process of creating a new international convention is likely to distract attention and resources from the response mechanisms already in place that may be effectively built upon and utilised.

It is important to consider both climate change and mobility as issues of global justice, and to urge greater solidarity amongst States and peoples in addressing these issues. The developing world is much more vulnerable to the impacts of climate change, and is also much less able to access mobility as an adaptive tool. This imbalance should be addressed, and the developed world must recognise that climate change is a global phenomenon, that requires a truly global effort to counteract the negative effects on communities, through shared knowledge, resources, and responsibility. This global approach however, should not be universal in application, but should facilitate contextually appropriate responses at the regional, national and local level. Appropriate responses will make use of existing mechanisms, including: mitigation and adaptation under the climate change framework; disaster risk reduction and disaster management mechanisms; laws relating to internally displaced persons; the human rights & migrants rights frameworks; sustainable development approaches; and managed migration pathways.

The 2011 Nansen Principles are a useful instrument with which to guide responses. The Nansen Principles provide that responses ‘need to be informed by adequate knowledge

¹⁶⁰ Jane McAdam, ‘Protection or Migration? The “Climate Refugee” Treaty Debate’ in *Climate Change, Forced Migration, and International Law* (Oxford University Press, 2012) 186 – 211, p196

and guided by the fundamental principles of humanity, human dignity, human rights, and international cooperation;’ and further, ‘the voices of the displaced or those threatened with displacement or loss of home or livelihood must be heard and taken into account, without neglecting those who may choose to remain.’¹⁶¹

It is clear that climate change will have significant negative effects on human life in the coming decades. Former UN High Commissioner for Human Rights, and prominent climate justice advocate, Mary Robinson, warns that, ‘climate change threatens to be one of the great injustices we inflict on our grandchildren and great-grandchildren,’ cautioning, ‘we need to look at the potential impacts of climate change 100 years hence and plan for a world very different to that in which we live today.’¹⁶² Measured and informed responses, based on existing mechanisms, offer the best hope of countering the negative impacts of climate change. Existing mechanisms should be built upon, to recognise the agency and human rights of affected communities, prevent forced migration where possible, and facilitate voluntary migration as a positive adaptive strategy.

¹⁶¹ Norwegian Refugee Council, ‘The Nansen Conference: Climate Change and Displacement in the 21st Century’, Oslo, Norway, June 5-7, 2011

¹⁶² Irish Independent, ‘Robinson warns on climate change,’ 6 October 2012

Appendices

APPENDIX A: ABBREVIATIONS

Table A: Abbreviations

ha	hectare
HH	Household
kg	kilogram
km	kilometer
m	meter
PC	People Committee
VND	Vietnam Dong

APPENDIX B: MYANMAR RESEARCH: STATISTICAL DATA

Table M1: Statistical Description of Members of surveyed household

No	Characteristics	Frequency	%
1	Gender		
	Male	115	47%
	Female	128	53%
2	Age		
	< 30	140	58%
	30- 49	64	26%
	50 - 59	19	8%
	>=60	20	8%
3	Place of Birth		
	Bay Taw	1	0.4%
	Day Daye	1	0.4%
	Kan Yin	1	0.4%
	Magyi Chae Htauk	234	96%
	Maywe Kone	1	0.4%
	Myay Pyar Kan	1	0.4%
	Shar Taw	1	0.4%
	Wet lutt	1	0.4%

	Yaw Pay Tin	1	0.4%
	Yay Le Kyune	1	0.4%
4	Marital Status		
	Single	125	51%
	Married	105	43%
	Divorced	3	1%
	widowed	10	4%
5	Ethnic		
	Burma	243	100%
6	Language		
	Burmese	243	100%
7	Religion		
	Buddhism	243	100%
8	Education (age > 5)		
	No Education	9	4%
	Monastery	70	30%
	Primary School	102	44%
	Middle School	40	17%
	High School	9	4%
	Diploma	1	0.4%
	Don't Know	2	1%
9	Current Occupation		
	Dependent	34	14%
	Housework	14	6%
	Farming	26	11%
	Livestock	1	0.4%
	Fishery	5	2%
	Wage Labor	78	32%
	Skill Labor	7	3%
	Vendor	6	2%
	Government Staff	3	1%
	Shopkeeper	2	1%
	Small Restaurant	3	1%
	Religious Worker	3	1%

	Student	37	15%
	Migrant worker	5	2%
	Cow watcher	3	1%
	Business Owner	7	3%
	Snack seller	1	0.4%
	Photographer	1	0.4%
	Agriculture	7	3%
10	Living years at this commune		
	<= 10 Years	39	16%
	11 - 15 Years	31	13%
	16- 20 Years	34	14%
	> 20 Years	139	57%

Table M2: Household Detail

No	Characteristic	Frequency	Percentage
1	Annual Household Income		
	<= 500000 Kyats	16	32%
	50000 - 1000000 Kyats	27	54%
	Above 1000000 Kyats	7	14%
2	Household Owned land		
	Yes	22	44%
	No	28	56%
3	Household Owned land (acre)		
	<= 3 acre	18	86%
	Above 5 acre	4	19%
4	Household own any other substantial assets		
	YES	5	10%
	NO	45	90%
5	Household Property		
	Audio Cassette	1	20%
	Motorbike	3	60%
	Water pump	1	20%
6	Household depend on sources for livelihood		
	Agriculture	27	54%
	Fishing	2	4%

Other natural resources	11	22%
Mechanic	1	2%
Contribution	4	8%
Own Business	1	2%
Photo Shop	1	2%
Skill Labor	1	2%
Wage Labor	19	38%

Table M3: Environmental Changes in Community in Last 10 Years

	YES		NO		UNKNOWN	
	Freq	%	Freq	%	Freq	%
Environmental changes						
Increased extreme hydro-climatic weather (eg. more rainfall, storms , cyclones)	4	8%	46	92%	0	0%
Flooding	4	8%	45	90%	1	2%
More extreme warm weather	46	92%	4	8%	0	0%
More extreme cold weather	1	2%	49	98%	0	0%
Less rainfall	49	98%	1	2%	0	0%
Drought	3	6%	47	94%	0	0%
Desertification	2	4%	48	96%	0	0%
Sea Level Rise	2	4%	48	96%	0	0%
Land slide	9	18%	41	82%	0	0%

Table M4: Environmental changes in community in the last 10 years

	YES		NO		UNKNOWN	
	Freq	%	Freq	%	Freq	%
Having a negative impact on life and production						
Your access to food	37	74%	13	26%	0	0%
Your access to water	5	10%	45	90%	0	0%
Water quality (agricultural / domestic purposes) in your community.	1	2%	49	98%	0	0%
Soil quality in your community	20	40%	29	58%	1	2%
Housing/ Infrastructure (eg. buildings, roads, pipelines, electricity)	2	4%	48	96%	0	0%
Health (eg. Disease, sanitation, mental health, death)	34	68%	16	32%	0	0%

If you grow food/plants, your ability to grow/ the quality or quantity of your crop	29	58%	18	36%	3	6%
If you have livestock, your ability to support your livestock	19	38%	29	58%	2	4%
If you rely on fishing , your ability to fish/ quantity of fish	2	4%	46	92%	2	4%
Lack of land available for farming/ access to land	8	16%	40	80%	2	4%
Access to fuel energy	5	10%	45	90%	0	0%
Biodiversity (eg. seeds, plants)	6	12%	42	84%	2	4%
Insects or pests in the area	21	42%	27	54%	2	4%
Having a negative impact on income						
Your income / livelihood (eg. your ability to earn a living to support yourself)	43	86%	7	14%	0	0%
Your quality of life	14	28%	35	70%	1	2%
Your debt	44	88%	6	12%	0	0%
Peace and security in your community (eg. conflict/ crime/ insecurity)	1	2%	49	98%	0	0%
Local politics	1	2%	48	96%	1	2%
Local relationships in the community	5	10%	45	90%	0	0%
Economic development of your community	20	40%	30	60%	0	0%
Employment of people in your community	40	80%	10	20%	0	0%
Education of people in your community	21	42%	29	58%	0	0%

Table M5: Statistical Description of Migrants

No	Characteristic	Frequency	Percentage
1	Gender		
	Male	61	74%
	Female	21	26%
2	Age		
	Age <= 18	20	24%
	Age 19 - 24	16	20%
	Age 25 - 39	29	35%
	Age 40 - 60	17	21%
3	Migrant place		
	Aung Lan	1	1%
	Bamaw	2	2%

	Kan Pyar	1	1%
	Kaw Thaug	1	1%
	Magway	7	9%
	Malaysia	3	4%
	Mandalay	9	11%
	Meihtila	1	1%
	Moneywa	1	1%
	Nay Pyi Taw	6	7%
	Pauk	1	1%
	Pyin Oo Lwin	1	1%
	Sagaing	1	1%
	Thailand	3	4%
	War tau Chaung	1	1%
	Yangon	42	51%
	Yaw	1	1%
4	Mode of transport for migration		
	Bus	73	89%
	Aeroplane	4	5%
	Trawler jeep	3	4%
	Motor boat	2	2%
5	Travel documentation		
	ID/ NRC	65	79%
	Documentation	16	20%
	Passport	1	1%
6	Occupation in Origin		
	Dependent	1	1%
	Farming	12	15%
	Fishery	4	5%
	Wage Labor	54	66%
	Skill Labor	3	4%
	Student	1	1%
	Business Owner	4	5%
	No Response	3	4%
7	Occupation in Destination		

	Wage Labor	31	38%
	Skill Labor	29	35%
	Vendor	2	2%
	Trader	2	2%
	Government Staff	3	4%
	Shopkeeper	1	1%
	Small Restaurant	4	5%
	Business Owner	8	10%
	Photographer	1	1%
	Agriculture	1	1%
8	Living years at this commune		
	<= 1 Year	62	75.6
	2 - 5 Years	17	20.7
	above 5 Years	3	3.7

Table M6: Environmental changes having any positive effects

No	Description	Freq	%
1	Positive effects		
	YES	4	8%
	NO	44	88%
	UNKNOWN	2	4%

Table M7: Environmental changes and the related impacts contribute to future decisions to migrate

	Freq	%
YES	9	18%
NO	41	82%

Table M8: Environmental changes(s) contribute to future decision to migrate

	Yes	
	Freq	%
Increased extreme hydro-climatic weather (eg. more rainfall, storms , cyclones)	0	0%
Flooding	0	0%
More extreme warm weather	5	56%
More extreme cold weather	0	0%
Less rainfall	9	100%

Drought	0	0%
Desertification	0	0%
Sea Level Rise	0	0%
land slide	4	44%

Table M9: Relevant Negative impacts (related to environmental changes) contribute to future decision to migrate away from the origin community

Negative Impact	YES	
	Freq	%
Decreased access to food	2	22%
Decreased access to water	0	0%
Poor water quality (agricultural/domestic purposes)	0	0%
Poor soil quality	1	11%
Poor housing/ infrastructure (eg. buildings, roads, pipelines, electricity)	0	0%
Poor health (eg. disease, sanitation, mental health , death (1	11%
Decreased ability to grow crops/ decreased quality or quantity of crops	5	56%
Decreased ability to support your livestock	2	22%
Decreased ability to fish / lower quantity of fish	2	22%
Decreased land available for farming / lack of access to land	1	11%
Decreased access to fuel / energy	0	0%
Decreased biodiversity (eg. seeds, plants)	2	22%
Increased insects or pests in the area.	2	22%
Decreased income/ livelihood (decreased ability to earn a living to support yourself)	7	78%
Decreased quality of life	0	0%
Increased debt	7	78%
Increased peace and security issues in your community (eg. conflict/ crime/insecurity)	0	0%
Negative impacts on local politics	0	0%
Negative impacts on local relationships in the community	1	11%
Negative impacts on economic development of your community	4	44%
Decreased employment in your community	2	22%
Decreased access to education in your community	3	33%

Table M10: Factors of Migration from Origin Community

	Main		Important		Normal		Little		Not Related	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Environmental Changes in origin	58	72%	4	5%	11	14%	1	1%	7	9%
Low wages in origin	51	63%	12	15%	8	10%	1	1%	9	11%
Lack of jobs in origin	62	77%	12	15%	6	7%	0	0%	1	1%
Poor quality of life in origin	5	6%	2	2%	5	6%	11	14%	58	72%
Lack of access to basic services (eg. health) in origin	7	9%	2	2%	8	10%	1	1%	63	78%
Lack of access to education in origin	12	15%	2	2%	5	6%	2	2%	60	74%
Health hazards in origin (eg. poor air or water quality)	2	2%	0	0%	1	1%		0%	78	96%
Illegal logging and deforestation in origin	0	0%	0	0%	0	0%	2	2%	79	98%
Forced relocation from origin (eg. government resettlement)	0	0%	0	0%	0	0%	0	0%	81	100%
Lack of security / conflict in origin	0	0%	0	0%	0	0%	0	0%	81	100%
Social problems in origin (eg. discrimination)	0	0%	0	0%	0	0%	0	0%	81	100%
Sudden natural disasters not identified under section (B). (e.g. earthquake)	0	0%	0	0%	0	0%	0	0%	81	100%
Man-made disaster (eg. chemical or oil spill, industrial accident)	0	0%	0	0%	0	0%	0	0%	81	100%

Political reasons (eg. corruption, poor governance, poor government policy) in origin	0	0%	0	0%	0	0%	0	0%	81	100%
Negative impacts of big projects in origin (eg dams, mining, roads, infrastructure, big business)	0	0%	0	0%	0	0%	0	0%	81	100%

Table M11: Drivers of Migration from Destination

	Main		Important		Normal		Little		Not Related	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Education opportunities in destination	33	41%	4	5%	10	12%	8	10%	26	32%
More jobs in destination	74	91%	3	4%	4	5%		0%		0%
Higher wages in destination	65	80%	8	10%	6	7%		0%	2	2%
Better access to basic services (eg. healthcare services) in destination	34	42%	4	5%	20	25%	7	9%	16	20%
Social Networks	53	65%	8	10%	8	10%		0%	12	15%

Table M12: Migration Destinations

Migration Destination	Frequency	Percent
Yaw	1	1%
Yangon	43	52%
War Taw Chaung	1	1%
Thailand	2	2%
Sagaing	1	1%
PyinOoLwin	1	1%
Nay Pyi Taw	9	11%
Monywa	1	1%
Mandalay	11	13%
Malaysia	3	4%

Magway	5	6%
Kaw Thaug	1	1%
KanPyar	1	1%
Bamaw	1	1%
Bago	1	1%
AungLan	1	1%

Table M13: Community needs to cope with environmental changes

	YES		NO		UNKNOWN	
	Freq	%	Freq	%	Freq	%
Government assistance in to safely remain in origin	28	56%	18	36%	4	8%
Safer housing and infrastructure in origin	4	8%	42	84%	4	8%
Access to loans/financial assistance	33	66%	16	32%	1	2%
Availability of different types of jobs and skills training in origin	34	68%	14	28%	2	4%
Access to insurance (home, life, health, income, social security) in origin	13	26%	24	48%	13	26%
Access to information regarding environmental issues	15	30%	21	42%	14	28%
Access to information regarding migration options	16	32%	29	58%	5	10%
Government assistance to facilitate safe migration away from origin	6	12%	36	72%	8	16%
Change to government policy (rehabilitate)	3	6%	32	64%	15	30%
Forest plantation	1	2%	32	64%	17	34%

APPENDIX C: VIETNAM RESEARCH: STATISTICAL DATA

Table V1: Statistical description of respondents and members of surveyed HH

Characteristics	Respondent/interviewee		Member	
	N	%	N	%
Gender				
Male	25	50.0	154	52.0
Female	25	50.0	142	48.0
Total	50	100.0	296	100.0
Age				
<30	2	4.0	173	58.4

30-49	22	44.0	72	24.3
50-59	19	38.0	36	12.2
>=60	7	14.0	15	5.1
Total	50	100.0	296	100.0
Place of birth				
Can Tho city	36	72.0	266	89.9
Northern provinces	12	24.0	20	6.8
Other provinces	2	4.0	10	3.4
Total	50	100.0	296	100.0
Marital status				
Single	1	2.0	159	53.7
Married	44	88.0	129	43.6
Widowed/Divorced	5	10.0	8	2.7
Total	50	100.0	296	100.0
Ethnicity				
Kinh	50	100.0	296	100.0
Language				
Vietnamese	50	100.0	296	100.0
Nationality				
Vietnamese	50	100.0	296	100.0
Religion				
Catholicism	50	100.0	296	100.0
Education				
Primary and lower	25	50.0	87	29.4
Lower Secondary	16	32.0	82	27.7
Higher Secondary	7	14.0	93	31.4
College/University	2	4.0	29	9.8
Not yet schooling	0	0.0	5	1.7
Total	50	100.0	296	100.0
Current occupation				
Small trade/service	1	2.0	12	4.1
Agriculture	44	88.0	99	33.4

Staff	1	2.0	35	11.8
Daily hired worker	3	6.0	25	8.4
Factory worker	0	0.0	34	11.5
No work	1	2.0	19	6.4
Student	0	0.0	72	24.3
Total	50	100.0	296	100.0
Previous occupation				
Small trade/service	4	8.0	15	5.1
Agriculture	41	82.0	100	33.8
Staff	1	2.0	28	9.5
Daily hired worker	4	8.0	22	7.4
Factory worker	0	0.0	37	12.5
No work	0	0.0	15	5.1
Student	0	0.0	79	26.7
Total	50	100.0	296	100.0
Living years at this commune				
<=10 years	0	0.0	18	6.1
11-20 years	0	0.0	118	39.9
21-30 years	3	6.0	50	16.9
31-40 years	9	18.0	27	9.1
41-50 years	22	44.0	42	14.2
> 50 years	16	32.0	37	12.5
Missing	0	0.0	4	1.4
Total	50	100.0	296	100.0

Table V2: Education level of 50 interviewees representing surveyed households and all members

Characteristics	Respondents/interviewees		Members	
	N	%	N	%
Education				
Primary and lower	25	50.0	87	29.4
Lower Secondary	16	32.0	82	27.7
Higher Secondary	7	14.0	93	31.4
College/University	2	4.0	29	9.8

Not yet schooling	0	0.0	5	1.7
Total	50	100.0	296	100.0

Table V3: Land ownership, agricultural activities, income and property of households

	Mean	Std. Deviation
HH residential land per capita (m2)		
20% lowest group	24.8	18.7
20% lower average group	79.1	4.0
20% average group	98.8	7.5
20% higher average group	145.9	14.1
20% highest group	279.7	116.0
Total	123.4	96.9
HH agricultural land per capita (m2)		
20% lowest group	418.7	155.7
20% lower average group	1259.1	151.1
20% average group	1845.2	194.2
20% higher average group	2798.9	322.7
20% highest group	11231.3	15170.1
Total	3442.2	7442.4
Agricultural activities		
Paddy production	49	98.0
Fishery	1	2.0
Others (pig, poultry, cow raising)	5	10.0
HH income per capita (mil./yrs)		
20% lowest group	0.8	0.6
20% lower average group	3.7	1.3
20% average group	6.1	0.3
20% higher average group	10.0	2.4
20% highest group	19.2	4.4
Total	7.9	6.9
HH property		

Tractor	1	2.0
Water pumper	2	4.0
Motorbike	44	88.0
Television	45	90.0

Table V4: Current Occupation and job of all members of 50 interviewed households (%)

Characteristics	Respondent/interviewee		Member	
	N	%	N	%
Current occupation				
Small trade/service	1	2.0%	12	4.1%
Agriculture	44	88.0%	99	33.4%
Staff	1	2.0%	35	11.8%
Daily hired worker	3	6.0%	25	8.4%
Factory worker	0	0.0%	34	11.5%
No work	1	2.0%	19	6.4%
Student	0	0.0%	72	24.4%
Total	50	100.0%	296	100.0%

Table V5: Environmental changes in community in the last 10 years

Environmental changes	Yes		No		Don't know	
	N	%	N	%	N	%
Increased extreme hydro-climatic weather	50	100.0	0	0.0	0	0.0
Irregular Flooding	34	68.0	16	32.0	0	0.0
More extreme warm weather	50	100.0	0	0.0	0	0.0
More extreme cold weather	15	30.0	34	68.0	1	2.0
Less rainfall	38	76.0	12	24.0	0	0.0
Drought	21	42.0	29	58.0	0	0.0
Desertification	50	100.0	0	0.0	0	0.0
Sea level rise	0	0.0	50	100.0	0	0.0

Table V6: Environmental changes in community in the last 10 years

	Yes		No		Don't know	
	N	%	N	%	N	%
Having a negative impact on life and production						
Your access to food	15	30.0	35	70.0	0	0.0
Your access to water	5	10.0	45	90.0	0	0.0
Water quality in your community	40	80.0	10	20.0	0	0.0
Soil quality in your community	34	68.0	16	32.0	0	0.0
Housing / infrastructure	29	58.0	21	42.0	0	0.0
Health	47	94.0	3	6.0	0	0.0
If you grow food/plants, your ability to grow / the	30	60.0	19	38.0	1	2.0
If you have livestock, your ability to support your	17	34.0	31	62.0	1	2.0
If you rely on fishing, your ability to fish / quantity	9	18.0	40	80.0	1	2.0
Lack of land available for farming / access to land	4	8.0	45	90.0	1	2.0
Access to fuel / energy	4	8.0	44	88.0	1	2.0
Biodiversity (e.g. seeds, plants)	3	6.0	46	92.0	1	2.0
Insects or pests in the area	30	60.0	19	38.0	1	2.0
Having a negative impact on income						
Your income / livelihood	47	94.0	3	6.0	0	0.0
Your quality of life	49	98.0	1	2.0	0	0.0
Your debt	31	62.0	19	38.0	0	0.0
Peace and security in your community	8	16.0	42	84.0	0	0.0
Local politics	0	0.0	50	100.0	0	0.0
Local relationships in the community	0	0.0	50	100.0	0	0.0
Economic development of your community	30	60.0	20	40.0	0	0.0
Employment of people in your community	34	68.0	16	32.0	0	0.0
Education of people in your community	22	44.0	28	56.0	0	0.0
Having a positive impact	12	24.0	38	76.0	0	0.0

Table V7: Statistical description of non migrants and migrants

	Non migrants		Migrants	
	N	%	N	%
Gender				
Male	99	50.3	55	55.6
Female	98	49.7	44	44.4
Total	197	100.0	99	100.0
Age				
<30	99	50.3	74	74.7
30-49	48	24.4	24	24.2
50-59	35	17.8	1	1.0
>=60	15	7.6	0	0.0
Total	197	100.0	99	100.0
Marital status				
Single	87	44.2	72	72.7
Married	102	51.8	27	27.3
Widowed/Divorced	8	4.1	0	0.0
Total	197	100.0	99	100.0
Education				
Primary and lower	74	37.6	14	14.1
Lower Secondary	61	31.0	21	21.2
Higher Secondary	45	22.8	48	48.5
College/University	13	6.6	16	16.2
Missing	4	2.0	0	0.0
Total	197	100.0	99	100.0
Current occupation				
Small trade/service	6	3.0	6	6.1
Agriculture	85	43.1	14	14.1
Staff	16	8.1	19	19.2
Daily hired worker	16	8.1	9	9.1
Factory worker	14	7.1	20	20.2
No work	16	8.1	3	3.0

Student	44	22.3	28	28.3
Total	197	100.0	99	100.0
Previous occupation				
Small trade/service	5	2.5	10	10.1
Agriculture	85	43.1	15	15.2
Staff	11	5.6	17	17.2
Hired worker	16	8.1	6	6.1
Factory worker	18	9.1	19	19.2
No work	12	6.1	3	3.0
Student	50	25.4	29	29.3
Total	197	100.0	99	100.0
Living years at this commune				
11-20 years	55	27.9	63	63.6
21-30 years	31	15.7	19	19.2
31-40 years	18	9.1	9	9.1
41-50 years	39	19.8	3	3.0
> 50 years	37	18.8	0	0.0
Do not remember	17	8.6	5	5.1
Total	197	100.0	99	100.0
Agricultural land per capita of non-migrants and migrants				
20% lowest group	47	23.9	11	11.1
20% lower average group	29	14.7	18	18.2
20% average group	37	18.8	30	30.3
20% higher average group	41	20.8	29	29.3
20% highest group	43	21.8	11	11.1
Total	197	100.0	99	100.0
Income per capita of non-migrants and migrants				
20% lowest group	48	24.4	13	13.1
20% lower average group	46	23.4	24	24.2
20% average group	30	15.2	15	15.2
20% higher average group	33	16.8	24	24.2

20% highest group	35	17.8	22	22.2
Missing	5	2.5	1	1.0
Total	197	100.0	99	100.0

Table V8: Demographic and socio-economic characteristics of migrants by destination

	Destination of migrants						(N)
	HCMC	Can Tho city	Lam Dong province	Dong Nai province	Others	Total	
	%	%	%	%	%	%	N (respondent)
Gender							
Male	63.6	5.5	12.7	12.7	5.5	100.0	(55)
Female	54.5	9.2	22.7	6.8	6.8	100.0	(44)
Age							
<30	67.6	9.5	12.2	5.4	5.3	100.0	(74)
30 - 49	37.5	0.0	33.3	20.8	8.4	100.0	(24)
50 - 59	0.0	0.0	0.0	100.0	0.0	100.0	(1)
Marital status							
Single	69.4	9.7	11.1	5.6	4.2	100.0	(72)
Married	33.3	0.0	33.3	22.2	11.2	100.0	(27)
Education							
Primary and lower	42.9	0.0	28.5	28.6	0.0	100.0	(14)
Lower Secondary	42.9	0.0	38.1	4.7	14.3	100.0	(21)
Higher Secondary	62.5	12.5	10.4	10.4	4.2	100.0	(48)
College/University	87.4	6.3	0.0	0.0	6.3	100.0	(16)
Current occupation							
Small trade/service	83.3	0.0	0.0	16.7	0.0	100.0	(6)
Agriculture	7.1	0.0	50.0	42.9	0.0	100.0	(14)
Staff	78.9	0.0	10.5	5.3	5.3	100.0	(19)
Factory worker	90.0	0.0	0.0	0.0	10.0	100.0	(20)
Student	53.6	25.0	14.3	7.1	0.0	100.0	(28)
Others	41.7	0.0	33.3	0.0	25.0	100.0	(12)
Total	59.5	7.1	17.2	10.1	6.1	100.0	(99)
(N)	(59)	(7)	(17)	(10)	(6)	(99)	

Table V9: Factors of Migration from Origin Community

	Main		Important		Normal		Little		No related	
	N	%	N	%	N	%	N	%	N	%
Environmental changes in origin	4	23.5	9	32.1	12	17.1	11	14.5	14	20.6
Low wages in origin	2	11.8	1	3.6	9	12.9	29	38.2	12	17.6
Lack of jobs in origin	7	41.2	8	28.6	33	47.1	17	22.4	17	25
Poor quality of life in origin	1	5.9	4	14.3	5	7.1	15	19.7	13	19.1
Lack of access to basic services (e.g. health) in origin			1	3.6			1	1.3		
Lack of access to education in origin			5	17.9	10	14.3	1	1.3	8	11.8
Health hazards in origin (e.g. poor air or water quality)	3	17.6			1	1.4	2	2.6	4	5.9
Total	17	100	28	100	70	100	76	100	68	100

Table V10: Factors of Migration from Origin Community

	Main		Important		Normal		Little		No related	
	N	%	N	%	N	%	N	%	N	%
Environmental changes in origin	4	23.5	9	32.1	12	17.1	11	14.5	14	20.6
Low wages in origin	2	11.8	1	3.6	9	12.9	29	38.2	12	17.6
Lack of jobs in origin	7	41.2	8	28.6	33	47.1	17	22.4	17	25
Poor quality of life in origin	1	5.9	4	14.3	5	7.1	15	19.7	13	19.1
Lack of access to basic services (e.g. health) in origin			1	3.6			1	1.3		
Lack of access to education in origin			5	17.9	10	14.3	1	1.3	8	11.8
Health hazards in origin (e.g. poor air or water quality)	3	17.6			1	1.4	2	2.6	4	5.9
Total	17	100	28	100	70	100	76	100	68	100

Table V11: Drivers of Migration from Destinations

	Main		Important		Normal		Little		No related	
	N	%	N	%	N	%	N	%	N	%
Education opportunities in destination	34	41.5	10	15.4	4	16	5	41.7	1	5.6
More jobs in destination	44	53.7	36	55.4	4	16	1	8.3		
Higher wages in destination	3	3.7	15	23.1	15	60	3	25	6	33.3
Better access to basic services (e.g. healthcare services) in destination			4	6.2	2	8	3	25	11	61.1
Networks (e.g. marriage / family) in destination	1	1.2								
Total	82	100	65	100	25	100	12	100	18	100

Table V12: Environmental changes and the related impacts contribute to future decisions to migrate

	N	%
Yes	25	50.0
No	25	50.0
Total	50	100.0

Table V13: Environmental change(s) likely to contribute to future decisions to migrate

	N	%
Increased extreme hydro-climatic weather	24	96.0
Flooding	17	68.0
More extreme warm weather	19	76.0
More extreme cold weather	4	16.0
Less rainfall	5	20.0
Drought	1	4.0
Total	25	

Table V14: Relevant negative impacts (related to environmental changes) likely to contribute to future decisions to migrate away from the origin community

Relevant negative impacts	N	%
Decreased access to food	4	16.0
Decreased access to water	3	12.0
Poor water quality (agricultural / domestic purposes)	17	68.0
Poor soil quality	12	48.0

Poor housing / infrastructure (e.g. buildings, roads, pipelines, electricity)	8	32.0
Poor health (e.g. disease, sanitation, mental health, death)	15	60.0
Decreased ability to grow crops / decreased quality or quantity of crops	13	52.0
Decreased ability to support your livestock	6	24.0
Decreased ability to fish / lower quantity of fish	1	4.0
Increased insects or pests in the area	3	12.0
Decreased income / livelihood	23	92.0
Decreased quality of life	21	84.0
Increased debt	14	56.0
Decreased peace and security issues in your community	1	4.0
Negative impacts on economic development of your community	4	16.0
Decreased employment in your community	4	16.0
Total	25	

Table V15: Community needs to cope with environmental changes

	Yes		No		Unsure	
	N	%	N	%	N	%
Government assistance in to safely remain in origin	26	54.2	22	45.8		
Safer housing and infrastructure in origin	13	27.1	35	72.9		
Access to loans/financial assistance	25	52.1	23	47.9		
Availability of different types of jobs and skills training in origin	30	63.8	17	36.2		
Access to insurance (home, life, health, income, social security) in origin	23	48.9	24	51.1		
Access to information regarding environmental issues	33	70.2	14	29.8		
Access to information regarding migration options	11	23.4	35	74.5	1	2.1
Government assistance to facilitate safe migration away from origin	8	17.0	38	80.9	1	2.1
Government policies changes	1	2.1	44	93.6	2	4.3
Others	23	59.0	14	35.9	2	5.1

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