ASSESSING THE EVIDENCE:

MIGRATION, ENVIRONMENT AND CLIMATE CHANGE IN

VIET NAM

This project is funded by the European Union

65 YEARS
International Organization for Migration

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Migration, Environment and Climate Change: Evidence for Policy (MECLEP) is a three-year project funded by the European Union, implemented by the International Organization for Migration (IOM) through a consortium with six research partners. The project aims to contribute to the global knowledge base on the relationship between migration and environmental change, including climate change. The innovative research aims to formulate policy options on how migration can benefit adaptation strategies to environmental and climate change. The six project countries are the Dominican Republic, Haiti, Kenya, Mauritius, Papua New Guinea and Viet Nam.

This publication is one of six national assesssments on the MECLEP pilot countries.

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Cover Photo: Houses and roads are affected by coastal erosion in the Mekong River Delta region of Viet Nam. © IOM 2015 (Photo: Susanne Melde)

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AMC	Asian Migrant Centre
CCSC	Central Census Steering Committee
GDP	Gross domestic product
GSO	General Statistics Office
HCMC	Ho Chi Minh City
HDI	Human Development Index
IDP	Internally displaced person
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IOM	International Organization for Migration
ISPONRE	Institute of Strategy and Policy on Natural Resources and Environment
LANDac	Land Governance for Equitable and Sustainable Development
MARD	Ministry of Agriculture and Rural Development
MECLEP	Migration, Environment and Climate Change: Evidence for Policy
MMN	Mekong Migration Network
MOLISA	Ministry of Labour, War Invalids and Social Affairs
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
NCCC	National Climate Change Committee
NEZ	New Economic Zone
NGO	Non-governmental organization
NTP	National Target Program
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs

UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees

EXECUTIVE SUMMARY

The Socialist Republic of Viet Nam is one of the six pilot countries of the European Union-funded Migration, Environment and Climate Change: Evidence for Policy (MECLEP) project.

Drawing from an extensive number of sources, including academic papers and reports produced by the Government and national and international organizations, this assessment aims to: (i) provide an overview of the linkages between migration patterns and environmental change in Viet Nam; (ii) critically analyse national policies that address these links; and (iii) propose some related research and policy implications.

Viet Nam is particularly exposed to floods and typhoons as well as droughts and sea-level rise, which have major impacts on the country's environment and the livelihoods of its 90.73 million people. Adverse environmental conditions clearly influence migration patterns in the country: since the 1990s, the relocation programmes implemented by the Government for communities affected by environmental degradation and the number of people internally displaced by natural hazards in recent years (more than 2 million between 2008 and 2015) are clear signs of the migration–environment nexus.

The report concludes that more detailed research should be conducted in order to fully understand the migration–environment nexus and exhaustively address the needs of relocated and displaced people in the country. The establishment of a ministry of migration could play an important role in ensuring that people migrate in the best conditions.

I

INTRODUCTION

The Mekong River Delta. © IOM 2015 (Photo: Susanne Melde)

I. INTRODUCTION

The Asia and Pacific region, which is home to more than 4.4 billion people (UN DESA, 2015), is more exposed to – and more affected by – natural hazards than anywhere else in the world. This is due to the combination of the frequency and the strength of extreme climatic events and the vulnerability of the inhabitants, most of whom live in high-risk zones. Like many other countries in the region, the Socialist Republic of Viet Nam (hereafter Viet Nam) is particularly vulnerable to the impacts of climate change: due to its long coastlines (3,200 km) and large deltas, the country is exposed to floods, heat and cold waves as well as drought and sea-level rise (UNHRC, 2008; Koubi et al., n.d.). Different regions of the country are impacted by different climatic and environmental stressors. Adverse environmental conditions have played a major role in influencing migration patterns in Viet Nam – as becomes clear when looking at the relocation plans implemented by the Government in recent years to reduce the exposure of specific communities to natural hazards and environmental degradation. Moreover, between 2008 and 2014, 2,088,417 people were displaced by natural disasters in Viet Nam, of whom 1,109,078 were displaced in 2013 and 2014 alone (IDMC, 2015).

Globally, the impact of climate change is of increasing concern for policymakers and the wider society (Ionesco, Mokhnacheva and Gemenne, 2017). Natural hazards, as well as slow-onset processes such as sea-level rise, increasing temperature, deforestation and land degradation, are posing several challenges in terms of their effects on development and livelihoods, settlement options, food production and disease. These environmental events have been predicted to lead to the displacement of increasing numbers of people, both within countries and internationally, although no reliable estimates are available (Laczko and Piguet, 2014; Ionesco, Mokhnacheva and Gemenne, 2017). Moreover, they are expected to disproportionately affect the poor and marginalized population groups, who are generally the least able to adapt (Hutton and Haque, 2004; Sherwood et al., 2014 and 2015; IOM, 2014; Melde, 2015). Although many of those forced to leave their homes because of hazards and environmental degradation may eventually be able to return to their villages if conditions improve, an undetermined number of people will have to migrate – seasonally or permanently, both internally and internationally – or be relocated, as a last resort. However, migration

could also be an adaptation option to environmental and climate change, particularly if it is supported by policy action (IOM, 2014).

Under a medium-emission scenario, the average annual temperature in Viet Nam is expected to rise by 1.6°C to reach 2.8°C by 2100, relative to the baseline period (1980–1999). In the same scenario, sea level is expected to rise by about 72 cm, depending on the coastal region (ISPONRE, 2009), threatening the lives of those living in the coastal areas. Although the migration–environment nexus is complex and needs to be considered in relation to economic, social and demographic factors (Nelson, 2010; Foresight, 2011; IOM, 2014), it is likely that, in Viet Nam, the impacts of current and future climate trends on settlements and livelihoods will increase the pressures that trigger environmentally induced migration (ADB, 2012).

Although projections relating to climate change and its impact on human life include a great deal of uncertainty (Black et al., 2011; Hugo, 2008; IOM, 2012 and 2014), it is extremely important for policymakers to consider climate change and socioeconomic development scenarios before formulating environmental and climate change adaptation policies. Comprehensive and detailed information on the environmental challenges faced by different communities in specific regions can help policymakers and national authorities to reduce disaster risk, decrease vulnerability and thus properly address the migration–environment nexus (Ionesco, Mokhnacheva and Gemenne, 2017). This is particularly important in countries, such as Viet Nam, that are especially vulnerable to natural disasters and environmental degradation.

The need for monitoring of the environmental situation throughout the country and for implementing and further developing coping and adaptation strategies is highlighted in the most important environment-related policies of the country (see, for example, the *National action plan on climate change for the period 2012–2020 and the National strategy for natural disasters, prevention, response and mitigation to 2020*). Significantly, since the 1990s, the Government of Viet Nam has implemented several relocation plans to enable communities strongly affected by environmental degradation to build a new life in safer areas. By evacuating people from disaster-prone areas, the Government has often managed to prevent sudden-onset environmental events from provoking major tragedies. However, policies and plans related to

environment and climate change adaptation have not always been fully implemented and, at times, have had problematic outcomes. Moreover, the linkage between environmental and climate change and different forms of migration is still not fully recognized or addressed in national policies.

Hence, this national assessment aims to provide an overview of the environmental situation in Viet Nam, to shed light on the various facets that characterize the environment–migration–climate change nexus in the country, and to propose some related policy implications.

The background section of this assessment includes an outline of the socioeconomic and environmental characteristics of Viet Nam, followed by an overview of the country's migration history and current situation. The climatic and environmental challenges that characterize the country are subsequently outlined, focusing on both sudden-onset events (such as hurricanes, storms and floods) and slow-onset processes (such as sea-level rise, salinization and land degradation). The impact of these phenomena on settlements and livelihoods in different regions – particularly the existing and potential links between environment and migration in the country – is also reviewed. Lastly, an analysis of how Viet Nam's policy framework addresses the migration–environment nexus will be provided, highlighting possibilities, research gaps and policy implications, together with the conclusions of this assessment.

II

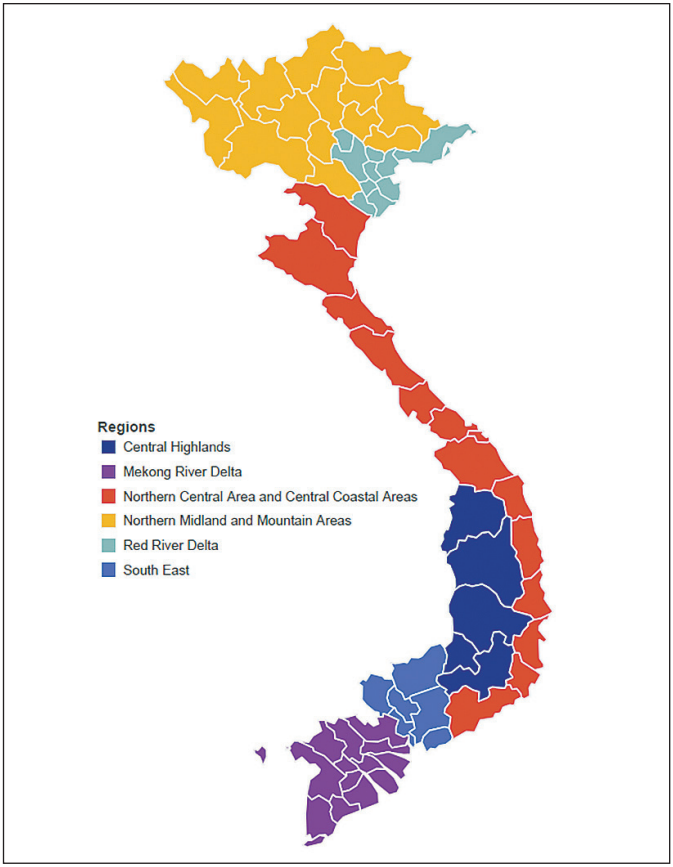
BACKGROUND

II. BACKGROUND

II.1. Socioeconomic context of Viet Nam

Viet Nam is located at the centre of South-East Asia, in the south-eastern part of the Indochinese Peninsula. It occupies an area of 330,967 km² (GSO, 2014a) and is divided into six regions: (i) Red River Delta; (ii) Northern Midland and Mountain Areas; (iii) Northern Central Area and Central Coastal Areas; (iv) Mekong River Delta; (v) Central Highlands; and (vi) the South East (GSO, 2016). The country has a population of 90.73 million people (GSO, 2014a) with a sex ratio of 98 men per 100 women (UNFPA, 2016). The population density of the country – 259 persons/km² – is about five times higher than the average population density worldwide. However, population distribution in the country is uneven. The Red River Delta, with a population of nearly 20 million people and a population density of 930 persons/km², is the most densely populated region of the country, followed by the South East, with a population density of 594 persons/km² (CCSC, 2010). The Northern Midland and Mountain Areas and the Central Highlands, despite covering almost one half of the nation's land area, are inhabited by only 19 per cent of the population (CCSC, 2010). The Northern Central and Central Coastal Areas cover 29 per cent of the nation's land mass and have a population density of 196 persons/km², while the Mekong River Delta, which covers 12 per cent of the nation's land area, is inhabited by approximately 17.5 million people (20% of the population) and is thus the third most densely populated region of the country (with a population density of 423 persons/km²) (CCSC, 2010).

Figure 1: Regional map of Viet Nam



Source: Based on GSO, 2016.

Viet Nam's large population puts considerable pressure on ecological systems, resulting in exploitation and degradation that lead to more disasters, including those that are man-made. Although the level of urbanization in Viet Nam is very low, it is growing (Anh, Tacoli and Thanh, 2003). In 2014, the urban population was about 30 million people, accounting for approximately 33 per cent of the total population. People living in rural areas accounted for 60.7 million, representing 67 per cent of the total population (GSO, 2014a).

There are 54 different ethnic groups inhabiting Viet Nam, of whom the Kinh people (who live by the deltas and in the coastal provinces) consitute about 86 per cent of the entire population (Oanh, 2012). The other 53 ethnic groups (about 14% of the population) mostly reside in remote, mountainous zones of the Northern Central and Central Coastal Areas and of the Central Highlands, and they are often economically and socially disadvantaged (ibid.). Mostly farmers, these ethnic minories often suffer from low agricultural productivity, a slow rate of development and limited access to facilities and services, including education (ibid.). Vietnamese is spoken by 90 per cent of the population, while some of the ethnic groups speak only their own languages (among others, Tay – Thai; Mon – Khmer; Kadai; Mong – Dao; Malayo – Polynesian; Han; and Tibeto – Burman) (ibid.).

In relation to the economic sector, it is important to highlight that, before 1986, Viet Nam was an economy-centralized country, similar to the economies of the socialist countries of Eastern Europe. As of 1986, however, the Doi Moi policy established a market economy with a socialist orientation, whereby all economic multi-sectors must be expanded and social protection must be the main focus. Since then, Viet Nam's economy has developed very quickly and has achieved an annual economic growth rate of 9 per cent, on average, over the 1993–1997 period. Thus, the gross domestic product (GDP) grew very fast from 1990 onwards, averaging 5.5 per cent a year in the 1990s, and 6.4 per cent per year in the 2000s; it continued growing and reached 6.7 per cent in 2015 (World Bank, 2016). Because of the low cost of labour and policies emphasizing openness to international markets, Viet Nam has been successful in attracting foreign direct investment (FDI), which has contributed significantly to the country's economic growth.

Currently, Viet Nam is entering a period of "demographic bonus", due to its large workforce: the number of working-age people – approximately 53.7 million (GSO, 2015) – is double the number of dependents (UNFPA, 2016). In this respect, the population burden of Viet Nam is very low. Almost half of the workforce is employed in the agricultural, forestry and fishery sectors (46.3%), 21.5 per cent in the industry and construction sectors, and 33.2 per cent in other services (GSO, 2015). Countrywide, the current unemployment rates are very low: 2.1 per cent at the national level, 3.4 per cent in urban areas and only 1.5 per cent in rural areas, where almost 70 per cent of the population lives (ibid.). The

rate of underemployment, by contrast, is 2.4 per cent at the national level, but it is higher in rural areas (2.9%) than in urban areas (1.2%). Young persons aged 14–24 years account for the vast majority of the unemployed (ILO, 2013) – a fact that might be interesting to consider when planning future migration scenarios. Nevertheless, despite the quick economic development of the country and the implementation of a number of successful projects related to poverty reduction and hunger eradication, poverty remains a significant problem within the country, especially among rural ethnic minorities living in mountainous areas where there are few opportunities for income generation.

In tandem with economic development, the quality of education has improved throughout the country in recent years: the literacy rate among the youth (aged 15–25) grew from 93.1 per cent in 2001 to 96.8 per cent in 2012, while the literacy rate among adults (at least 15 years old)[1] grew from 86.2 to 89.1 per cent over the same period (Ministry of Education and Training Viet Nam, 2014). This progress resulted in Viet Nam scoring a 0.666 value on the Human Development Index (HDI) in 2014, which put the country in the medium human development category, together with countries such as Egypt, Paraguay and South Africa. Furthermore, it is interesting to note that, between 1980 and 2014, Viet Nam's HDI value increased by 43.8 per cent (UNDP, 2015).

II.2. Environmental profile of Viet Nam

Two thirds of the inland territory of Viet Nam are mountainous and hilly, mostly running from the North West border to the East Sea coast. More than 2,700 islands in the East Sea belong to Viet Nam. The country has a long and narrow shape, with two main deltas: the Red River Delta in the North and the Mekong River Delta in the South. Between these two main deltas, there are smaller deltas and lowland areas along the Northern Central and Central Coastal Areas. There are 2,360 major rivers and streams longer than 10 km in the country, about 8 per cent of which are considered big rivers (Socialist Republic of Viet Nam, 2002). Most of the rivers flow south-eastward towards the East Sea, except for some located in the Central Highlands, which flow westward towards the Mekong River Delta, in Cambodia (ibid.). Viet Nam's rivers tend to have a powerful flow, which erodes the terrain and carries a large amount of mud (ibid.).

1 Age categories – youth (15–25 years old) and adults (at least 15 years old) – are here reported as in the source of the data: Ministry of Education and Training Viet Nam, 2014.

The terrain of Viet Nam can be classified into three categories: (i) steep terrain, which tends to be characterized by soil erosion and barren soil, especially in areas where there is no sustainable land use planning; (ii) flat terrain, which tends to be affected by water erosion that results in land degradation; and (iii) waterlogging terrain, which is often affected by acidulation and salinization and is typical of the coastal areas.

Viet Nam has a tropical monsoon climate. The South Asian monsoon and the East Asian monsoon both strongly affect Viet Nam, especially in the winter (ADB, 2013a) when the country is exposed to cyclones that often generate heavy rain, triggering floods and landslides (ADB, 2013a). The total amount of rainfall per year can reach 500–2,500 mm, with most rainfall (about 80%) concentrated in the wet season – July, August and September. However, in recent years, heavy rains have occurred throughout the year, making cities particularly vulnerable to flooding. The temperature, number of hours of sunshine and rainfall patterns vary in different parts of the country and throughout the year. In the north of the country, the average summer temperature of 22.5–27.5°C drops to 15–20°C in winter; in the south, the variation is less: from 28–29°C in summer to 26–27°C in winter (Mc Sweeney, New and Lizcano, 2012). Humidity throughout the country ranges from 40 to 94 per cent, with the highest humidity occurring between June and September and the lowest between January and March.

The six regions of Viet Nam present very diverse and complex geographical conditions:

1. The Northern Midlands and mountain region is characterized by large areas with scattered population and by the fact that it is home to different ethnic minorities. The high mountain zone suffers from water scarcity and often very low temperatures. The mid-elevation and low-mountain zones present a more temperate climate and are better watered (Do, Nguyen and Phung, 2013).
2. The Red River Delta region has good soil conditions with developed irrigation systems and a high population density of mainly Kinh ethnicity.

3. The Northern Central and Central Coastal Areas are relatively poor, with the lowest income per capita and limited natural resources. The south-central coastal zones are the most exposed to natural hazards, especially to severe droughts, provoked by dry hot winds during the summer (ADB, 2013a), typhoons and floods.
4. The Central Highlands region is characterized by good soil conditions and is thus the region that presents the best conditions for agricultural development in the form of coffee, rubber and cashew plantations.
5. The South East region has a multi-character economy with several big cities, a concentration of foreign investment and the highest income per capita of the whole country.
6. The Mekong River Delta region is characterized by good soil and natural conditions and it is the most important area for rice production and exportation. However, as the land is largely low-lying, it is increasingly vulnerable to floods, soil erosion, sea-level rise and salinization.

Over the past 50 years, the frequency and intensity of natural hazards – particularly of tropical cyclones and floodings – have increased in Viet Nam, causing great human and property losses and damage to all types of infrastructure. Hundreds of thousands of people have been displaced, while many others have had to leave their homes and be relocated elsewhere as living conditions in certain regions, especially in coastal zones, became very harsh. Given that climate change is expected to have increasingly heavy impacts on the environment, human livelihoods and communities, Viet Nam clearly faces a challenging future.

II.3. Migration – evidence from the past

II.3.a. International migration and emigration

When the Viet Nam war ended in 1975 and following the Sino-Vietnamese War in 1979, about 4 million Vietnamese left the country, and nearly half of them migrated to the United States of America (Miller, 2015). Many travelled by boat and were accepted in refugee camps in Malaysia and Indonesia before being resettled to the United States, Australia and Canada. Others were students and labour migrants who headed to Viet Nam's communist allies – primarily to the Russian Federation.

The implementation of the Doi Moi reforms in 1986 generated further migration – both internal and international – especially towards the Soviet Bloc (Ishizuka, 2013). Since then, the overseas migration rate of Vietnamese labourers has remained comparatively high: about 90,000 people (of whom 35% are women) leave the country each year to seek employment opportunities abroad, mainly in Japan, Malaysia, the Republic of Korea and Taiwan Province of the People's Republic of China (Ishizuka, 2013; Miller, 2015). In fact, despite the economic growth and the general development that have characterized the country since the Doi Moi reforms, about 1.5 million Vietnamese labourers are unable to find work each year (Miller, 2015). For this reason, the Ministry of Labour, War Invalids and Social Affairs (MOLISA) is responsible for expanding overseas markets for Vietnamese workers by sponsoring migration programmes, while protecting migrants from abuse and enforcing minimum labour standards (Ishizuka, 2013; Miller, 2015). The United States remains the country with the largest community of Vietnamese nationals abroad, followed by Australia and Canada (Miller, 2015). Women represent about 30 per cent of the total number of Vietnamese abroad, and many of them are employed as domestic workers in China and Saudi Arabia (ILO, 2015). An increasing number of Vietnamese women – most often from the Mekong River Delta – are marrying foreigners, mainly in Taiwan Province of the People's Republic of China and the Republic of Korea (Miller, 2015).

Given the high number of Vietnamese workers abroad and the fact that the income of Vietnamese workers overseas is roughly double that earned in the country in the same occupation (Ministry of Foreign Affairs of Viet Nam, 2012), remittances are very important for Viet Nam's

economic development. In fact, in 2014, they equalled more than half of the country's foreign investment (Miller, 2015).

Moreover, a significant number of young Vietnamese migrate abroad for study reasons. Favoured destinations are Australia, China and the United States. State-sponsored overseas study, training and research programmes play an important role in preparing highly qualified civil servants and government officials (Ministry of Foreign Affairs of Viet Nam, 2012). However, many students decide to remain abroad after finishing their studies. According to the Migration Policy Institute (MPI), despite changing demographic characteristics (including an increasingly elderly population and declining population growth rate), the excess of highly skilled, productive workers is likely to foster international migration for many years to come (Miller, 2015).

On the other hand, international migration inflows to Viet Nam are also increasing. Foreigners migrate to the country to seek job opportunities, especially in the construction sector. However, given the country's surplus labour supply, immigration flows towards Viet Nam are restricted (ibid.). Finally, tourism has also become increasingly important for the economy of Viet Nam in recent years: according to statistics of the Government of Viet Nam, more than 7.8 million people arrived in Viet Nam with a tourist visa in 2014 (ibid.).

II.3.b. Internal migration

Policies in Viet Nam distinguish between two types of internal migration: (i) organized migration; and (ii) spontaneous migration. The former refers to government-sponsored programmes that take care of the registration of the beneficiaries in the receiving districts and thus ensure migrants' access to all public services; the latter refers to people who decide where to migrate without government support and hence have limited access to public insurance and services (Anh, Tacoli and Thanh, 2003). Spontaneous migration in Viet Nam is generally viewed negatively by the Government, and there is a need to re-conceptualize it as contributing positively to social and economic development (United Nations Viet Nam, 2010).

Following the French colonial period, which ran from 1858 to 1954, Viet Nam was divided into two main regions. This division triggered significant internal movements: overall, about 900,000 people are

estimated to have moved from the north to the south, and 100,000 from the south to the north (Anh, Tacoli and Thanh, 2003). The long history of migration from the northern to the southern provinces of Viet Nam is due to the lack of cultivable land in the North and the abundance of better quality terrain in the South.

During the American war (1954–1975), people in the north of the country were evacuated from major cities to the rural areas to avoid bombing, while people in the south were forced to leave their villages to move to urban centres, to reduce the risk of contact with the northern army. These dynamics let to a sharp decline in urban populations in the north and to the opposite trend in the southern provinces (ibid.).

The reunification of North and South Viet Nam in 1975 triggered new large-scale population movements, both internally and internationally. A substantial repatriation of southern people to their native villages took place in the south of the country, often for family reunification reasons. Simultaneously, many people started to migrate from rural to urban areas, especially in the north (Anh, 2010), although migration to the major cities was discouraged to limit population growth in urban areas (Anh, Tacoli and Thanh, 2003). During the early 1980s, state-controlled rural-to-rural and urban-to-rural migration constituted the main flow of people. The government-led relocation programmes aimed to balance population distribution within the country, between the North and the South, between the two deltas and the mountainous areas, the New Economic Zones (NEZs) in upland northern Viet Nam and throughout central and southern Viet Nam (ibid.). However, relocation programmes were not always successful, especially to the NEZs. In fact, the lack of services and infrastructures pushed people to return to their homes or to migrate elsewhere, soon after being relocated (ibid.).

The Doi Moi Economic Renovations introduced in 1986 led to greater development of the informal sectors and triggered migration. In particular, the shift to individual land ownership and household enterprises, the end of the subsidy system that linked residence or workplace to basic services, together with the fact that the economic reforms benefited mainly urban sites, fostered a great migration stream from rural to urban areas (Anh, Tacoli and Thanh, 2003). A large part of the rural populations seeking jobs and better economic conditions migrated to the major cities such as Hanoi, Ho Chi Minh City (HCMC), Hai Phong and Da Nang. Other

areas, such as the Industrial Parks and the Export-Processing Zone, also attracted migrants. Spontaneous movement also happened between rural places, especially from the Northern Midland and Mountain Areas to the Central Highlands (Anh, 2010; Iwai, 2010).

The 1999 and 2009 population and housing census reports provide useful data on the patterns of migration flows within Viet Nam. In these reports, migrants are defined as people whose place of residence, at the time of the survey and place of residence five years prior to the survey, are not in the same administrative unit at the commune level (CCSC, 2010). In the census, four types of migration are considered: (i) inter-district migration; (ii) intra-district migration; (iii) inter-provincial migration; and (iv) inter-regional migration (CCSC, 2010). As reported by the last census of 2009, migration flows in Viet Nam involve a large percentage of the population: indeed, about 6.7 million people aged 5 and older were migrants between 2004 and 2009 (comprising 8.7% of the total population). Among internal migrants, 2.1 per cent or about 1.6 million people were intra-district migrants; 2.2 per cent or 1.7 million people were inter-district migrants; and 4.3 per cent or 3.4 million people were inter-provincial migrants (GSO, 2011).

Internal migration in the period 2004–2009 was much more intense than in the period 1994–1999, and it also became more long-distance. All kinds of migration movements were affected. In fact, the inter-regional migration rates saw the strongest growth, increasing from 19 per thousand in 1999 to 30 per thousand in 2009; inter-provincial migration increased from 29 per thousand in 1999 to 43 per thousand in 2009; and inter-district migration increased from 16 per thousand to 22 per thousand, over the same period (CCSC, 2010). These figures do not, however, consider the number of people who migrated and also returned during the period 2004–2009, nor is the frequency of seasonal flows taken into account (Anh, Tacoli and Thanh, 2003; CCSC, 2010).

Moreover, it is important to note that internal migrants are not a homogenous group. While many have rural backgrounds, their age, gender and education can vary considerably. The 2009 census migration data revealed a wide age range of people migrating internally in relatively equal numbers of men and women, confirming an increasing "feminization of internal migration" in the past two decades (GSO, 2011). Compared to men, women migrate much more often internally than

internationally. In general, migration seems to reduce gender differences in occupational status throughout the country by facilitating women's involvement in traditionally male occupations (Anh, Tacoli and Thanh, 2003). Increasingly, more young people are leaving their rural homes to work or study in the city. It is noteworthy that young women are more likely to migrate to other provinces than are young men.

From 1994 to 2009, the Central Highlands and the South East were the main net migrant-receiving regions, while the Mekong River Delta and the Northern Central and Central Coastal Areas were the main net migrant-sending regions. This trend clearly denotes the prevalence of rural to urban migration. HCMC and Hanoi are the two main cities of Viet Nam in terms of population size, population growth and infrastructural development. Both became the major destinations of internal migration flows. Urban centres such as HCMC and Hanoi attract female and male workers for different reasons: men find work mainly in the construction sector, while women from poor rural areas find work in low-skilled jobs such as domestic service (Van, 2015).

Rural–urban migration in Viet Nam can be viewed as positive, as it offers opportunities for economic development by meeting the labour demand created by industrial development in urban centres, thus reducing inequalities within the country through remittances and the exchange of knowledge and skills (United Nations Viet Nam, 2010). Yet rural–urban movements are also problematic, as they also tend to increase urban poverty and urban unemployment: recently arrived migrants (especially those who migrate spontaneously from poor rural areas) are often subject to job insecurity and have limited access to social and health insurance (ibid.). For these reasons, they tend to settle in substandard accommodation in unsafe areas that can be prone to flooding, landslides and other natural hazards.[2] While people now have a greater freedom of movement in Viet Nam, they are still restricted by policy regulations, as well as by social and economic factors that limit their ability to find a sustainable income and therefore support their migration. The increasing number of unregistered migrants in Hanoi, HCMC and other destinations shows, however, that many migrants are willing to migrate despite the costs and risks involved. In fact, despite often being exposed to unsafe conditions and inadequate protection, migrants in large cities can earn

2 For more information on rural–urban migration and urbanization processes in Viet Nam, see subsection III.3.c. of chapter III in this assessment: Internal migration, relocation and displacement dynamics due to environmental factors.

much higher incomes than on their farms or in rural employment. In fact, city-dwellers in Hanoi and HCMC are reported to earn at least double the annual income of farm labourers in rural areas (ibid.).

II.3.c. Development-induced displacement

Viet Nam has developed very quickly in recent years, with intense processes of urbanization and industrialization. It is now clear that the economic and population pressures resulting from development in certain areas of the country, and particularly along the coast, are increasingly affecting ecosystems. For instance, rapid economic development has posed several issues in relation to the national energy supply. There are more than 2,100 rivers in Viet Nam, providing a great amount of energy for the country. However, hydropower plants (and especially dams built during the 1990s and the 2000s) caused severe environmental damage and required the implementation of extensive relocation programmes. According to data gathered in 2015, approximately 200,000 people have been displaced and relocated for the construction of hydroelectric dams, of whom over 90 per cent were members of ethnic minorities (LANDac, 2015). Relocation programmes in the context of development-induced displacement are difficult to implement and need to take into account several variables.

In the north-west of the country, for example, the Son La hydropower plant – one of the largest hydropower projects in South-East Asia – involved the relocation of 20,340 households (about 90,000 people). This relocation plan, despite being more comprehensive in terms of compensation and rehabilitation support than previous relocation programmes, was considered partly unsuccessful because of the lack of participation of those displaced in the selection of the relocation sites and in the general planning of the project (Dao, 2010). Moreover, the shortage of cultivable land, the poor water availability as well as the lack of jobs and livelihoods available to those who had been relocated were also highlighted as significant issues (ibid.).

It is also important to stress that the alteration, management, engineering or transformation of all river basins in Viet Nam (ibid.) had clear impacts on the environment. In fact, the construction of large-scale hydropower dams has caused a huge loss of natural forests and bio-diversity (LANDac, 2015). One hundred thousand hectares of fertile land (which could have

been used for agriculture) have been submerged under hydropower reservoirs. This has been particularly evident in the case of the Mekong River Delta region, where dam-building on the Mekong River Basin damaged agriculture and fisheries (US NIC, 2010), while upsetting the normal stream of the river, causing an increase in the avarage annual flood level and triggering displacement and migration in general (Belay et al., 2010). Other hydropower plants and navigation-related projects implemented by China upstream of the Mekong River also drastically altered the downstream flow, provoking unprecedented damage to the environment surrounding the Mekong River Delta, submerging cultivable land and contributing to salinization (Miao et al., 2015).

As the demand for electric power is expected to rise significantly, hundreds of new hydropower projects are planned in Viet Nam. These projects will likely require the relocation of many more people and could produce new environmental issues while exacerbating the effects of climate change.

In this sense, environmental protection programmes and environmentally sustainable projects need to be implemented more effectively throughout the country.

II.3.d. Relocation

Following the reunification of Viet Nam in 1975, several population policies addressed population redistribution and relocation. These policies focused on three main objectives: (i) address the great disparities between labour force and natural resources; (ii) reduce population pressure in the most densely populated areas and urban centres; and (iii) strengthen national defence and security (Anh, 2006). Thousands of people were relocated from the populous Red River Delta in the Northern Midland and Mountain Areas to the Central Highlands, in an attempt to prevent mass migration flows to the major cities and to direct people towards the NEZs (Anh, 2006; UNDP, 2012). However, many of these government-organized programmes were not successful, largely because of the difficulty of integrating the new settlers into ethnic minorities' communities, the high cost of the relocation operations (especially in terms of infrastructure and service provision), and the shortage of cultivable land (Anh, 2006). As living conditions in the relocation sites were disappointing, many people decided to go back to their place

of origin or to migrate elsewhere (ibid.). For these reasons, as well as resource constraints, large-scale relocation programmes were stopped by the Government at the end of the 1980s (ibid.). However, in recent years, there has been an increase in government-sponsored relocation programmes, mostly motivated by environmental and climate-change-related issues (United Nations Viet Nam, 2010). Relocation programmes in the context of environmental degradation, as well as environmental and climate change, will be further explained in subsection III.3.c. of chapter III and in the Toolkit for Policymakers (chapter IV).

II.3.e. The role of remittances

Remittances are among the main positive effects of internal and international migration in Viet Nam as they allow part of the incomes earned by migrants to circulate within their area of origin, thus providing financial support to their families and communities. According to the World Bank, Viet Nam was the eleventh biggest recipient of remittances in the world in 2015, when remittances reached USD 12.3 billion (World Bank, 2015). The amount of remittances keeps growing every year, demonstrating the strong connection between the Vietnamese living overseas and their families and communities of origin (Ministry of Foreign Affairs of Viet Nam, 2012). Banking services are convenient and individual income tax is not applied to remittances. Yet a large amount of money also seems to be remitted through unofficial channels.

The development of high profit-making economic activities, such as stock markets and real estate, is one of the major reasons why more overseas Vietnamese are attracted to investing their remittances domestically (Thao, 2009). However, remittances seem to be used mainly for daily expenses, savings and special occasions, as well as for medical and educational porpuses (Narciso, 2015). In rural areas, remittances can reduce the need for farmers to sell their paddy field as a source of income and thus ensure food security for migrants' families and the community (Anh, Tacoli and Thanh, 2003). In this sense, migrants seem to act also as risk-mitigating economic agents, with their remittances serving as an insurance in times of economic uncertainty (Niimi, Pham and Reilly, 2008). Overall, in recent years, remittances have helped to reduce the disparities between urban and rural areas throughout the country (United Nations Viet Nam, 2010).

III

KEY CHALLENGES:

THE MIGRATION, ENVIRONMENT AND CLIMATE CHANGE NEXUS

III. KEY CHALLENGES: THE MIGRATION, ENVIRONMENT AND CLIMATE CHANGE NEXUS

III.1. Sudden-onset events and their effects on migration patterns

III.1.a. Hurricanes, tropical storms, typhoons and heavy rains

As a country with a long coastline, located in the tropical monsoon belt of South-East Asia, Viet Nam is one of the nations most impacted by tropical storms and typhoons in the entire world, and it has one of the highest levels of displacement related to these natural hazards (IDMC, 2015). The majority of the rainfall in the country is provoked by monsoon circulations that bring heavy rains from May to October in the North and South, and from September to January in the central regions (Mc Sweeney, New and Lizcano, n.d.).

Viet Nam's long coastline is particularly affected by heavy rains, and it is especially vulnerable to tropical storms and tropical cyclones (typhoons) between June and November. From 1964 to 2009, the coastline was affected by 311 tropical storms, equal to an average annual frequency of 6.9, which accounts for 62.7 per cent of the total number of tropical storms in the East Sea (ISPONRE, 2009). On average, some 30 typhoons originate in the Western Pacific Ocean each year, of which four to six hit Viet Nam, often with devastating consequences (Hays, 2008). Thunderstorms occur almost all year round, but mostly during the rainy season. There are more thunderstorms in the South than in the North, especially in mountainous areas (ISPONRE, 2009). In recent years, the trajectory of typhoons seems to also have moved southward (GFDRR, 2011).

All these water-related sudden-onset events often happen simultaneously, with one being the consequence of the other: typhoons generally induce storm surges, strong winds and waves and even tornadoes. They cause heavy and prolonged rainfall and flooding, flash flooding and landslides, especially in the Northern Midland and Mountain Areas region. Moreover, the collapse of sea dikes often results in saltwater intrusion, the contamination of freshwater aquifers near the coast and the destruction of crops fields, making farmland unusable (Thao, Takagi and Esteban, 2014). For these reasons, the consequences of typhoons and heavy rains can be truly devastating.

Since 1990, several typhoons and tropical storms have provoked large disasters, causing the death of hundreds of people and affecting millions, especially those living in the poorest areas (EM-DAT, 2016). Particularly in the last 10 years, heavy rainfall and typhoons have wrought enormous damage and great economic losses. In 2005, Typhoon Damrey killed 68 people and caused injury for 28 others, while more than 150,000 people had to be evacuated (Trung, 2013). In 2006, Typhoon Xangsane struck 15 provinces in the Northern Central and Central Coastal Areas region and caused damages totalling USD 624 million (World Bank, 2010b). In 2009, Typhoon Ketsana struck the same region, killing 163 people and causing a total economic loss of about USD 750 million (World Bank, 2010b). In 2012, as a consequence of Typhoon Kai-Tak, which provoked heavy storms and floods, around 12,000 homes were damaged in the North of the country, with over 22,600 hectares of crops and farmland destroyed (Davies, 2013).

During the autumn of 2013, Viet Nam was hit by several typhoons within over a period of five weeks. In October 2013, Typhoon Wutip struck the northern coast of the country, destroying or heavily damaging over 200,000 houses, schools and health centres, while almost 19,000 hectares of paddy, cash crops and perennial trees were damaged. About 106,000 people were displaced (IDMC, 2014). During the same month, Typhoon Nari made landfall in the Da Nang and Quang Nam areas, causing severe flooding and displacing another 109,000 persons. In November, Typhoon Haiyan struck Viet Nam after hitting the Philippines, causing the displacement of 800,000 people. According to the Emergency Events Database (EM-DAT), between September and November 2013, about

100 people were killed by typhoons (EM-DAT, 2016). The total economic loss due to typhoon Nari was USD 71 million, while Typhoon Wutip caused about USD 663 million in damages (IFRC, 2013).

In July 2014, Viet Nam evacuated preventively more than 118,000 people after Typhoon Rammasun displaced almost 3 million people in the Philippines and killed at least 54. Despite these measures, 11 people were still killed by the typhoon. In addition, several towns and villages suffered from the subsequent extensive flooding. In June 2015, Typhoon Kujira hit north-western Viet Nam, bringing very strong winds and rainfall, which killed at least nine people. Local newspapers reported that at least 70 houses were swept away, 382 other houses were submerged and about 600 hectares of rice and other crops were inundated.

In recent years, according to the Ministry of Natural Resources and Environment (MONRE), there has been an increase in the number of high-intensity typhoons, and this trend is predicted to continue and worsen in the context of climate change (Thao, Takagi and Esteban, 2014). For this reason, the Vietnamese Central Committee for Flood and Storm Control (CCFSC) and the Vietnamese Hydro-meteorological Service have been improving their monitoring systems to track the path of storms, forecast the areas of impact with adequate notice and thus respond to potential risks with the prompt evacuation of residents and damage-minimizing strategies in the targeted areas (Bocchini, 2014). In the past few years, emergency evacuation measures have been implemented successfully by the Government and the Red Cross in several dangerous circumstances (ibid.). For example, in the case of Typhoon Wutip, temporary shelters were constructed on higher land, while sandbags and sandbag bunkers were positioned in specific areas to protect houses. In the case of Typhoon Haiyan, 20,000 people were evacuated in less than one day (ibid.).

Based on the limited information available in English regarding the situation of those displaced by natural hazards, it seems that people in Viet Nam tend to reside in shelters for the time strictly necessary and return to their home as soon as the main risks seem to have been avoided. Reconstruction of damaged houses is the first priority after a natural disaster and it is undertaken mostly by local people, with the support of non-governmental organizations (NGOs) and international organizations providing reconstruction material (ibid.). However, the

techniques used in the reconstruction process often seem to be designed to meet immediate needs rather than for long-term resilience. For this reason, settlements in certain areas are constantly exposed to the same risks, making their populations more and more vulnerable (ibid.).

III.1.b. Floods, flash floods and landslides

As mentioned in the previous section, floods are very common in Viet Nam and, consequently, have always strongly influenced people's lives (World Bank, 2010a). While slow and regular riverine flooding is an integral part of the livelihoods of the Vietnamese population (at least in some areas of the country, because of their vital importance for rice plantation), varying riverine and coastal flood levels and durations can have extremely negative consequences throughout the country, increasing the vulnerability of directly affected households and requiring adaptation strategies (MMN and AMC, 2013). Floods occur mostly close to the main rivers and deltas (Mekong River Delta and Red River Delta regions), where population density is very high, while flash floods and landslides are more likely to happen in the north of the country in mountainous areas.

Between 1990 and 2009, Viet Nam experienced 3.4 floods every year and the number seems to be increasing (Trung, 2013). From 1989 to 2010, floods accounted for 67 per cent of deaths (Nhu, 2011). Floods and flash floods are particularly devastating when they occur in concomitance with other natural phenomena such as heavy rains and typhoons. Since the beginning of the twenty-first century, these types of events have happened almost every year, hindering the capacity of families and communities to develop and move beyond poverty (Nguyen, 2007). In fact, regular hazards cause substantial and often repeated damage to housing, infrastructure, agriculture and fisheries, displacing thousands of people and resulting in great economic loss.

In October 2008, at least 60 people were killed and thousands were displaced by particularly strong flooding that affected the north and central areas of the country. In 2010, flooding caused severe loss and damage in the central regions of Viet Nam – particularly in the five provinces of Quang Binh, Ha Tinh, Quang Tri, Nghe An and Thua Thien Hue, where more than 150,000 houses were flooded, 66 people died and several others were injured (Trung, 2013). The central provinces

also suffered from severe flooding in 2011, when 100 people were killed and 30,000 others had to be evacuated from their homes. In 2014, Viet Nam's northern provinces experienced heavy rains, which resulted in flash floods and landslides that killed at least six people. In July 2015, heavy rainfalls hit most of the north of Viet Nam, with some provinces experiencing extreme rainfall and serious flooding, flash flooding and landslides, which killed 30 people and injured several others (Davies, 2015a). According to a report by United Nations Viet Nam (2015a), local and central governments were able to respond in a timely manner to the disaster by providing direct support and relief, search and rescue, while the Viet Nam Red Cross assisted the most affected communities with relief kits.

HCMC has been particularly affected by floods in recent years. Periods of intense rainfall regularly inundate the city, while also triggering riverine flooding in the Saigon River and Mekong Delta. Since the mid-1990s, the number of locations flooded and the frequency and duration of floods in the city have greatly increased. This has caused important economic and social losses, such as damaged infrastructures, water pollution and traffic jams (Deltacities, n.d.). Given its position in the low-lying delta area, as well as the projected changes in climate and the prospects for urban expansion, HCMC is expected to experience an increase in flooding over the next few years, which will pose several challenges to its development and for its growing population (ibid.). For this reason, in 2015, the Viet Nam Climate Adaptation PartnerShip (VCAPS) – a partnership between Viet Nam and the Netherlands – announced the creation of new water-storage reservoirs to control flooding in HCMC (Davies, 2015b).

The consequences of flooding on livelihoods becomes particularly significant in the Mekong River Delta, where regular and slow flooding is essential to the irrigation of rice paddies, the creation of habitats for fish and the spread of necessary sediments and soils (Warner et al., 2009). This highly populated region produces more than 50 per cent of the country's staple foods and 60 per cent of the fish harvest (Minh, 2000) while accounting for about 40 per cent of the cultivated land of the country (Warner et al., 2009). However, the sharp increase in the frequency of severe floods over the past 40 years has had detrimental consequences for the region, seriously damaging both buildings and agricultural fields, and resulting in the evacuation of thousands of families (Entzinger and Scholten, 2015). In 2011, the Mekong River Delta region was particularly

badly hit by flooding; 85 people lost their lives and around 13,000 families were displaced. Many of those displaced lived in temporary shelters for more than six months, while agriculture was also severely affected, with over 4,450 hectares of rice fields ruined (Davies, 2013). Several studies conducted in the region have revealed that many people now migrate to urban centres for seasonal labour during the flooding season, while an increasing number of families and communities living close to river banks have been relocated to safer areas through plans implemented by the Government[3] (Warner et al., 2009).

III.1.c. Earthquakes

Despite being located very close to the "Ring of Fire" – where 90 per cent of the world's earthquakes occur – few earthquakes have happened in Viet Nam in recent years. The northern regions, and particularly the north-western areas, are more exposed to this type of natural hazard than the rest of the country (Ngo, Nguyen and Nguyen, 2008). In fact, this area has often suffered from the effects of earthquakes that had their epicentre in neighbouring regions (mainly the north of Lao People's Democratic Republic and southern China): for instance, an earthquake that struck the province of Nam Oun (Lao People's Democratic Republic) in 2001 damaged several masonry structures and destroyed more than 130 houses in the north-east of Viet Nam (ibid.). Other, smaller-scale earthquakes were recorded in 2005, not only in the north of the country but also in the central and southern regions, but they had no significant impact.

In recent years, several studies have been conducted to analyse and predict the potential effects of earthquakes in the north of the country and, especially, in the city of Hanoi (Tuladhar, Cuong and Yamazaki, 2004; Ngo, Nguyen and Nguyen, 2008; Phuong, 2012). It is clear that efforts have been made to mitigate the potential damage and loss of life due to earthquakes.

3 For more information on relocation plans in the Mekong River Delta, see subsection III.3.c. Internal migration, relocation and displacement dynamics due to environmental factors.

III.1.d. Wildfires

Although not among the most frequent or most dangerous natural hazards in Viet Nam, wildfires occur throughout the country every year. Indeed, large areas of Viet Nam's forests are characterized by deciduous or semi-deciduous tree species, which are very prone to fires because of the regular dry seasons and the seasonal shedding of leaves (FAO, 2016). Several tracts of the lowlands and the high plateaux of the country, which were formerly covered by seasonal or evergreen broadleaved forests, are now largely covered by a shrub-tree-grass savannah where wildfires occur frequently (ibid.). The Mekong River Delta region is also exposed to wildfires. In particular, wildfires are seriously damaging the territory of the Tram Chim National Park, one of the last remnants of freshwater and wetland habitat in the delta. This highlights the need for improving fire prevention and fire-fighting measures.

Human activities are the major causes of forest and grassland fires in Viet Nam. More specifically, the two main causes of forest wildfires seem to be the following: (i) local people using fire for hunting, trapping and catching wild animals in the forest, or using smoke to harvest bees' honey; and (ii) using fire for agricultural purposes (Hien, 2007). Moreover, grassland fires in southern Viet Nam seem to be attributed, at least in some cases, to the destruction of forested areas by United States' military herbicides and explosives, as well as mechanical land-clearing and -burning operations (Henkel, 2015). However, no information has been found about wildfires causing population displacement.

III.2. Slow-onset processes and their effects on migration patterns

III.2.a. Sea-level rise

Data on tidal gauges along Viet Nam's coasts show that the sea level rose at the rate of about 2.9–3.0 mm per year from 1993 to 2008, which is comparable with the global trend (MONRE, 2012). However, over the past 50 years, the sea level has actually risen by about 20 cm (IPONRE, 2009). Natural resources such as forests, farming lands, drinking water and wildlife have been affected and even destroyed by the consequences of sea-level rise. For instance, large areas of agricultural and gardening lands as well as shrimp areas have been reduced due to increasing salinity and floods.

As of late 2016, preserved areas such as Tram Chim, U Minh Thuong, Đat Mui, Ha Tien and Tra Su are at high risk. If sea-level rise continues at the current rate, coastal land will shrink, increasing the possibility of coastal erosion and directly threatening ecosystems and infrastructures in some coastal cities (Phan and Tran, 2009). In fact, it is estimated that, if sea level along Viet Nam's coasts rises 1 metre, over 10 per cent of the densely populated Red River Delta region and 39 per cent of the Mekong River Delta's lands will be under water. The two delta regions are indeed the areas that are most at risk. Together with the Ganges–Brahmaputra Delta in Bangladesh and the Nile Delta in Egypt, the Mekong Delta is one of the world's three deltas most vulnerable to sea-level rise (ADB, 2013b).

Studies of the impact of climate change on migration in Viet Nam have revealed that a one-metre sea-level rise could displace more than 7 million residents and flood the homes of more than 14.2 million people in the Mekong River Delta, in addition to submerging half of the region's cultivated land (Warner et al., 2009). Moreover, this slow-onset process could also lead to rapid tidal rise in the Saigon and Dong Nai Rivers, causing an increasing number of floods in HCMC and throughout southern Viet Nam. Sea-level rise is expected to also affect Hanoi, which lies on the Red River and the dikes of which have never been breached, even during the most intense flooding periods (UNDP, 2012:127). For this reason, the city has been developing a water adaptation programme, which includes the strengthening of the dikes to reinforce the banks of the Red River (UNDP, 2012).

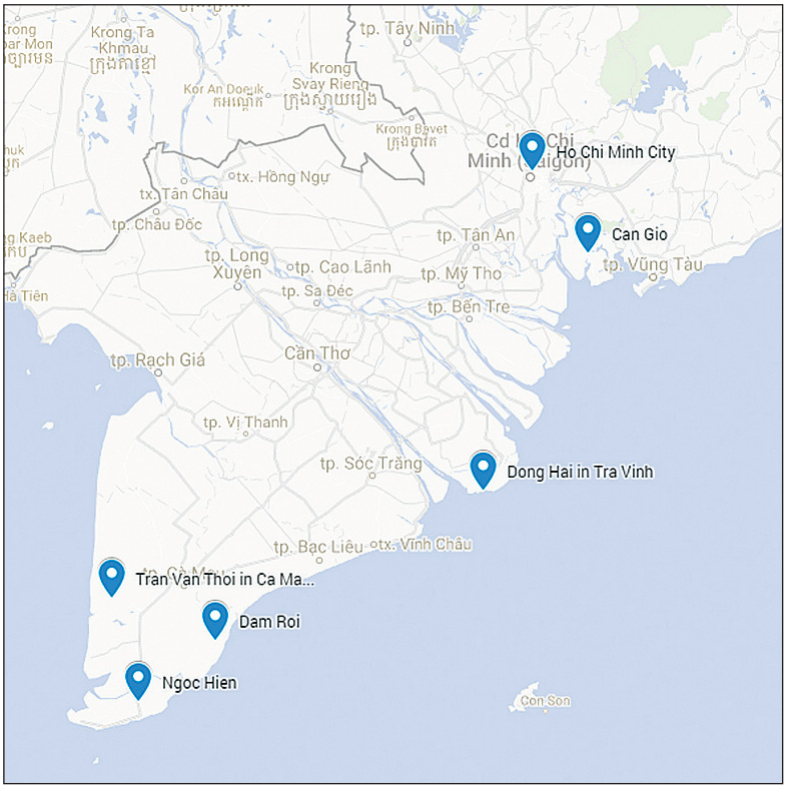
Sea-level rise, combined with other slow-onset processes, is expected to increase saltwater intrusion and degrade freshwater resources, reducing the viability of cultivable land and destroying mangrove forests, especially in the south of the country (ADB, 2013a).

III.2.b. Coastal erosion

The coastal zone of Viet Nam is 3,260 km long, extending through the territories of 24 provinces and 127 urban and rural districts. Coasts are exposed to several risks, including coastal erosion due to the strong waves, typhoons and storms that characterize this region. The erosion process occurs at different rates, intensities and extents in different areas but, since 1990, it has become more and more pronounced (Cat et al., 2005). The consequences of climate change and especially sea-level rise are exacerbating coastal erosion. Moreover, the effects are worsened by development projects on coastal areas and by unsuitable reinforcement structures. In the rainy season, when sea-level rise combines with flood tides, coasts are severely damaged by erosion. The high water levels, together with large waves, induce overtopping and erosion of dikes as well as sand dunes.

Throughout the country, coastal erosion is reduced by the presence of mangroves, which constitute an important breeding ground for aquatic organisms and act as a barrier against typhoons. In the Northern Central Area and Central Coastal Areas, the local population is aware of the natural protection that mangrove plants can provide and have thus supported plans to renew mangrove forests. The Red River Delta region and the central area of Viet Nam, because of their exposure to different types of sudden-onset phenomena (such as typhoons, heavy rains and flooding), have also been strongly affected by erosion (Thao, Takagi and Esteban, 2014). In the south of Viet Nam and particularly in the Mekong River Delta, coastal erosion has greatly increased in the last 25 years, with severe consequences. The most serious erosion has occurred in the following areas: the Can Gio coast, HCMC, Dong Hai in Tra Vinh Province, Ngoc Hien, Dam Roi and Tran Van Thoi in Ca Mau Province (see figure 2). In these areas, coastal erosion severely threatens residential areas, economic development and food security (ibid.). In fact, the reduction of mangrove forests has made coastal erosion more serious, thus facilitating flooding and saltwater intrusion to the land.

Figure 2: Sites experiencing the most serious coastal erosion in southern Viet Nam



Source: Based on Thao, Takagi and Esteban (2014) from Google Maps.

Coastal erosion has clearly been one of the reasons for fostering the development of the Government's relocation plans in areas irreversibly damaged and rendered uninhabitable.

III.2.c. Increasing temperature

Increasing temperature is one of the clearest consequences of climate change and it is particularly evident in Viet Nam. The annual average temperature is estimated to have increased by about 0.5°C in the past 50 years (Schmidt-Thomé et al., 2015). The number of hot days increased, according to most observation stations, especially in the north of the

country and in the Central Highlands, but decreased, according to some stations in the south. However, the number of heat waves increased nationally (UNDP, 2015).

Furthermore, according to the Global Climate Model (GCM), temperature is expected to keep increasing by 0.8–2.7˚C between now and the 2060s, and by 1.4–4.2˚C by the 2090s (Haggar and Schepp, 2011).

These trends are expected to have a negative impact on land, forest biodiversity and health. The relationships are complex but many areas and natural systems will be negatively affected due to a lack of adaptive capacity. For instance, the mangrove systems may be further degraded due to more frequent wildfires and the lack of habitat that would allow these ecosystems to exist inland (ADB, 2013a). Increased temperatures are expected to also have significant effects on water demand and crop growth rates, while an increase in the incidence of pests could also be substantial (World Bank, 2011). Consequently, local governments' efforts to relocate several communities in the Mekong River Delta, with the aim of creating natural reserves to protect and restore mangrove ecosystems, are particularly important.

Although, over the last two decades, the number of cold periods affecting Viet Nam has dropped significantly, the Northern Midland and Mountain Areas region has been more frequently hit by extreme and prolonged cold, which has directly affected the productivity of many crops and has often caused fatal diseases in animals (Do, Nguyen and Phung, 2013). These were significant problems in 2013.

III.2.d. Salinization

Saltwater intrusion is increasing throughout the country. As a consequence of rising sea levels, decreasing upstream flows, drought and the increasing number of hot and dry days, saline water is penetrating deeper inland in the downstream areas of the Red River, Thai Binh River and Dong Nai River and the Mekong River basin (UNDP, 2015). Due to the pressure created by tides, saltwater penetrates 30–50 km up the Red River Delta region and 60–70 km up the Mekong River Delta region. As mentioned in subsection II.3.c. Development-induced displacement, salinity intrusion is often also caused by the reduction of water flows and by the stagnation of the deltas' silt deposits, due to the construction of

dams (CGIAR, 2016). Due to this intrusion, about 1.7 million hectares of land have been affected by saltwater intrusion in the Mekong River Delta and this area is expected to increase to 2.2 million hectares unless appropriate management practices are implemented (Hanh and Furukawa, 2007). Simultaneously, salinization has moved inland by 4–10 km in the north-eastern part of the Red River Delta (Thanh et al., 2004). This trend is causing serious problems for coastal agriculture but also for other economic sectors (ibid.). Along the central coast, the Thua Thien Hue Province (with a population of nearly 1 million) also suffers from a shortage of fresh water for agricultural, domestic and industrial uses because of saltwater intrusion (ibid.). Moreover, salinization processes have several negative consequences for Viet Nam's coastal environments, including the reduction in the density of mangrove forests and the decline in marine biodiversity (ISPONRE, 2009).

In recent years, the high salinity level in the Mekong River Delta region has had very negative impacts on rice paddies, requiring the Government of Viet Nam, the United Nations Development Programme (UNDP) and other international organizations to discuss joint plans to address this issue. This became particularly important in light of the drought caused by El Niño in 2015 and 2016, which further exacerbated salinity problems in the Mekong River Delta (IRRI, n.d.). In fact, the significant salinity intrusion triggered by this strong and prolonged drought had a very negative impact on agriculture, fisheries and the livelihoods of people in the region (CGIAR, 2016).[4]

III.2.e. Desertification and droughts

There are many criteria for drought assessment, but two types of drought are generally considered: agricultural and meteorological. Agricultural droughts indicate a situation in which there is insufficient soil moisture to meet the needs of a particular crop, whereas meteorological droughts refer to rainfall deficits over extended periods of time (FAO, 2013). Despite large amounts of rainfall, meteorological droughts occur almost every year in different areas of Viet Nam – especially in the north-eastern part of the country and the Red River Delta, but also in the Mekong River Delta (World Bank, 2010a). The distribution of water resources in the country can be highly variable and, due to irregularities in monsoon rainfall, severe

4 More information about the damage caused by El Niño in the Mekong River Delta region is provided in chapter III, subsection III.2.e. Desertification and droughts of this assessment.

floods can occur in some seasons and insufficient flows in others, leading to severe drought conditions (World Bank, 2011). Droughts and water shortages that last for a few months are very common in Viet Nam and have been more frequent in recent dry seasons, such as those in 2004, 2005, 2010 and 2015. Rising temperatures and changes in precipitation, as previously explained, have had great impacts on agriculture and water resources. Some estimates suggest that over 254,000 hectares of crops are affected yearly by drought, including 25,000 hectares of rice fields and 178,000 hectares of coffee plants, with about 3.8 million people throughout the country lacking fresh water.

The drought in the dry season of 1998 and the one that occurred in mid-2015, as a consequence of El Niño, are considered to be the most acute droughts in recorded history, as they spread to almost all parts of the country. During the summer of 2015, the temperature was very high (ranging from 35°C to 42°C) while rainfall ranged from 40 to 250 mm, thus accounting for only 5–20 per cent of the annual average. These factors, together with the low air humidity and a dry-hot wind coming from the Lao People's Democratic Republic, caused canals, lakes and water reservoirs to run dry, especially in the Central Highlands and South East regions. Moreover, the humidity of flammable materials dropped to under 15 per cent. In the south of the country, millions of people were without fresh water. A report published by United Nations Viet Nam at the end of April 2016 stated that 18 provinces were still severely affected by the drought, 22 provinces were still affected (although not severely) and 52 provinces had been aided by the Government since mid-2015 (United Nations Viet Nam, 2016).

Water shortage and/or the use of unsafe drinking water, together with food insecurity due to drought-induced crop loss, were indicated as factors likely to increase the rate of severe acute malnutrition (SAM) in the country (ibid.). The Mekong River Delta region was described once again as one of the most affected areas: the drought as well as saltwater intrusion had very negative impacts on 400,000 hectares of cropland (CGIAR, 2016). For these reasons, since late 2015, the Government has provided 5,221 tons of relief food for distribution to the three regions most affected by drought and allocated VND 1,008 billion (USD 45 million) for drought relief efforts nationally (United Nations Viet Nam, 2016). Migration was not directly mentioned in any available document as a coping strategy in the areas affected by El Niño, probably because no

clear correlation between migration and the acute drought could yet be determined. However, it is likely that droughts and related salinization processes, because of their impact on livelihoods and food security in general, are contributing and will increasingly contribute to permanent and seasonal migration out of the most affected areas of the country (Koubi et al., n.d.) and particularly out of the Mekong River Delta region towards urban centres.

III.2.f. Land and forest degradation

About 13 million hectares of the country's land (i.e. about 40% of Viet Nam's total land area) are forested, of which three million hectares are plantations. Moreover, of the 25 million people living in or near forests in Viet Nam, the poor are particularly dependent on forest products for meeting basic needs (World Bank, 2011). Seven million hectares of forested land (about 20% of the country's total land mass) were degraded in the second half of the twentieth century (Socialist Republic of Viet Nam, 2002). Mangroves declined from 400,000 hectares in 1943 to less than 60,000 hectares in 2008, due to the conversion of marginal lands to agriculture, infrastructure development, illegal logging, overexploitation and forest fires (World Bank, 2011). Moreover, high-intensity rainfall in certain seasons, improper irrigation techniques and a general lack of incentives for farmers to adopt sustainable natural resource management strategies have, in recent years, led to high levels of soil loss and use of pesticides as well as fertilizers, which resulted in decreased productivity and groundwater and surface-water contamination (ADB, 2013a). As mentioned in the previous sections, one of the consequence of this decline is that flash flooding and mudslides pose increasingly serious risks to settlements and livelihoods. In coastal areas, about 1.1 million hectares are threatened by sea-level rise and saltwater intrusion; 70 per cent of this is under cultivation and more than 930,000 hectares are in the Mekong River Delta. Kien Giang, which borders Cambodia in the south, seems to be the most affected province, with almost 75 per cent of its cultivated land being threatened (ibid.). For these reasons, new techniques of sustainable land and forest management should be developed (World Bank, 2011).

III.2.g. Loss of biodiversity

Viet Nam ranks sixteenth worldwide in terms of species richness – a factor that has always contributed to the national economy, especially in relation to agriculture, fisheries and tourism. However, in recent years, a continuous loss of species has been having a significant negative impact on the economy (ADB, 2013a). In particular, although fish and shellfish are very important in the diet of Vietnamese people, freshwater biodiversity is declining, and no monitoring or management programmes are in place and it is not known what is being lost (ibid.). Climate change and particularly increasing temperatures and sea-level rise are expected to have significant effects on biodiversity as most species lack the capacity to adapt. Moreover, some communities will also be severely affected by the loss of biodiversity – for example, mangrove loss will make coastal fishing communities more vulnerable to extreme events (ibid.).

III.3. Vulnerability, environment and migration

III.3.a. Vulnerability mapping

As outlined throughout sections 1 and 2 of chapter III Viet Nam is affected by a wide range of hazards including floods, typhoons, landslides and drought. It is estimated that approximately 71 per cent of the population and 59 per cent of the land area are exposed to disasters, with floods and storms being the most destructive occurrences, causing the highest number of fatalities and the greatest amount of economic damage (Give2Asia, 2016). Climate change is expected to worsen the already serious impacts of natural hazards and slow-onset processes on the population of Viet Nam, which are felt primarily by the poor and vulnerable, especially women, children and the elderly (ADB, 2013a).

The negative impact of environmental and climate change on poverty is already visible in many areas, exacerbating the vulnerability of people to displacement or even leaving them trapped and unable to leave (Hutton and Haque, 2004; Sherwood et al., 2014 and 2015; Melde, 2015). The rural poor in Viet Nam are particularly vulnerable, given their reliance on agriculture for their livelihoods and their lack of assets and capital for developing long-term resilience strategies and disaster management systems (Smyle and Cooke, 2010) for dealing with natural hazards.

The densely populated River Delta regions – especially the Mekong River Delta – are particularly vulnerable to all forms of natural hazards and slow-onset processes. Again, poverty contributes to the population's vulnerability. Rural households often live in poorly constructed homes and have poor-quality schools, irrigation systems and infrastructures that cannot withstand many of the natural hazards. The Northern Midland and Mountain Areas region of the country has also been particularly affected by environmental and climate change in recent years, mainly because of its high poverty incidence and the population's reliance on agricultural livelihoods. Indigenous groups and tribes in this region have also been particularly hard hit by recent natural hazards. For example, in 2008, the Bac Me District (at the border of China and the north of Viet Nam) experienced seven flash floods while, in mountainous areas, ethnic minorities have been affected by an increasing number of cracks along mountain slopes resulting from drought or excessive rainfall (UNDP, 2012).

However, the urban population might also be increasingly threatened by natural hazards. Due to economic growth, urban migration places increasing stress on land-use planning, infrastructures and housing (Ionesco, Mokhnacheva and Gemenne, 2017). High population density and increased economic assets contribute to the population's exposure in major cities such as Da Nang, HCMC, Can Tho, Hai Phong and Hanoi (Give2Asia, 2016). However, as highlighted above, urban migrants clearly are not only an integral and important part of urban development, but also a significant source of remittances for rural households. Consequently, there is a need for pressure on infrastructure and overloaded public services to be seen not as unwanted impacts of migration but as challenges to be addressed (Thanh, Anh and Phuong, 2013).

III.3.b. Types of livelihood affected (and co-stressors)

As illustrated in sections 1 and 2 of chapter III, natural hazards and slow-onset processes are having several adverse impacts on livelihoods, particularly on agriculture (rice and other crops) and fisheries. The increasing frequency and magnitude of flooding is seriously damaging the delta regions and, particularly, the Mekong River Delta region – the "rice bowl" of the country. High temperatures, desertification and droughts are also strongly impacting the agricultural sector. It has been

predicted that, by 2100, almost 5,500 km² of arable land (equivalent to about 9% of all arable land) and about 168 km² of aquaculture area may be lost, and that 320 km² of forest land may be submerged (IFAD, 2010). Moreover, in 2050, total GDP could be reduced by 0.7–2.4 per cent as a result of climate change impacts on agriculture (World Bank, 2013). The International Food Policy Research Institute (IFPRI) expects the impact of a sea-level rise of 1 metre to submerge over 2 million hectares of land suitable for crop cultivation (World Bank, 2013). There is a risk that, by 2030, rising sea levels in the deltas would expose 45 per cent of the land to high salinity levels and crop damage, with rice productivity falling by 9 per cent (ADB, 2013a).

Also, as described above, climate change will affect temperature and precipitation patterns; this will have direct effects on crop production and indirect effects on irrigation water availability and potential evapotranspiration (ibid.). Moreover, climate change could reduce annual rice production by 9.1 million metric tons by 2050 (GFDRR, 2011). The aquaculture sector, which accounts for five per cent of the country's GDP, will also be affected by increasing tropical cyclone and typhoon intensity, salinization, and increasing temperatures. Capture fisheries are also expected to be impacted by warmer oceans and ocean acidification associated with rising atmospheric and ocean carbon dioxide concentrations, which will likely result in substantial reductions in catch potential (World Bank, 2013).

In light of these forecasts, the Government of Viet Nam is promoting agricultural techniques and technologies that aim to allow farmers to cope with environmental and climate change. Moreover, the Food and Agricultural Organization of the United Nations (FAO), in collaboration with other organizations and countries (UNDP, IOM, UN Women, Norway and Finland), is providing support in the implementation of climate change adaptation strategies for the agricultural and rural development sector (Socialist Republic of Viet Nam and FAO, 2013). These organizations and State actors are supporting the development of early-warning systems for environmental and climate change events affecting aquaculture, fisheries and agricultural livelihoods, while also enhancing general awareness and skills (Socialist Republic of Viet Nam and FAO, 2013).

III.3.c. Internal migration, relocation and displacement dynamics due to environmental factors

Despite the majority of international and internal migrants in Viet Nam migrating for economic and demographic reasons, both spontaneously and through government-sponsored programmes (United Nations Viet Nam, 2010), it is currently evident that environmental degradation plays an increasingly significant role in influencing and determining Vietnamese population mobility patterns. As reported in the previous sections of this assessment, as a consequence of natural hazards, about 2 million people were displaced throughout the country between 2008 and 2015, according to IDMC's (2016) data. Limited information is available on the situation of these displaced people: many were probably able to return to their area of origin and repair or reconstruct their houses. However, their level of vulnerability might have remained very high as the same areas are often struck by environmental hazards several times a year. Many people also move back to their areas of origin as soon as the main risks are perceived to be gone, without any long-term resilience strategies. At the same time, several hundred thousand people living in areas severely damaged by natural hazards or at high risk of exposure have been relocated through government programmes. Many others have undertaken seasonal migration or have migrated permanently to urban centres to escape environmentally unbearable living conditions, to enhance their livelihoods, or simply to support through remittances their family and community in their efforts to adapt to environmental degradation and climate change in their areas of origin.

Viet Nam has one of the fastest rates of urbanization in the world (ADB, 2013a). In 2014, urban population accounted for 30 per cent of the total population (GSO, 2014) but this figure is expected to reach 50 per cent by 2030 (ibid.). According to MOLISA, the country lost 73,300 hectares of cultivated land annually, between 2001 and 2005, due to urbanization, affecting the lives of 2.5 million farmers (ibid.). Rapid urbanization together with industrial development contributes to the pollution of water, air and land. However, in recent years, urbanization in Viet Nam also promoted development and poverty reduction, both in urban and rural areas, especially through remittances (Thanh et al., 2013). For these reasons, urbanization in Viet Nam needs to be analysed from different perspectives – especially in relation to the impact of natural hazards and climate change on migration trends and dynamics, as well as the

subsequent emergency and security issues in destination areas. It is clear that climate change and environmental degradation in the country will further affect urbanization dynamics (ADB, 2013a), resulting in costs and benefits. In fact, Viet Nam seems to be the South-East Asian country at greatest overall risk of mass inland migration triggered by climate and environmental change (US NIC, 2010). This trend is confirmed by the increasing number of people migrating out of the rural Mekong River Delta to settle in major cities such as HCMC, due to environmental and climate change, as well as development projects (particularly the construction of dams), which are making agriculture and livelihoods increasingly unsustainable in the region.

Temporary or long-term rural–urban migration undertaken individually or in groups (in the case of a household or an extended family) could protect people living in rural areas from major natural hazards and serve as an adaptation strategy for dealing with economic and agricultural crises. It can also foster resilience, mostly through remittances, especially if only one member of the family migrates. Simultaneously, it could also contribute to further rapid and uncontrolled urban development that might create new vulnerabilities and expose people to other risks. Migrants often end up living in poor and unsafe urban areas. The 2009 Urban Poverty Survey, undertaken by the UNDP in collaboration with the Hanoi and HCMC municipal statistical agencies, showed that two thirds of the poor living in the two main cities were migrants (Thanh et al., 2013).

A study conducted by the Asian Development Bank in HCMC to assess the impact of climate change on the city (where half of the land area is less than 1 metre above sea level), as well as strategies for adaptation, showed how rapid urbanization of low-lying areas will increase the number of assets at risk from extreme events. This research highlighted how effective management of runoff is an increasingly pressing issue in Viet Nam (ADB, 2013a).

Since people living in areas most at risk – typically along canals and riverbanks, as well as in coastal areas – are normally the poorest, there is a great need to properly and efficiently manage urbanization processes and security plans in order to protect the most vulnerable (ibid.). Moreover, it is necessary to address practical barriers to migration – particularly spontaneous migration – and to plan and promote relocation and

migration programmes, while taking into account the environmental situation and people's level of exposure to disaster in both the area of origin and the area of arrival.

Relocation programmes are definitely among the Government of Viet Nam's key climate change adaptation strategies to decrease the exposure and vulnerability of populations at risk, while allowing people to remain close to their area of origin. With the aim of ensuring continuation of the relocated population's previous livelihoods, relocation in Viet Nam usually takes place over short distances, within a commune, from affected areas to more stable locations. Such relocation is mainly on a voluntary basis and is quite comprehensive. Relocated persons are entitled to a certificate that guarantees them access to land and also loans to rebuild their lives. The frequency of relocation in the area is such that Vietnamese people accept this kind of government intervention as a normal procedure (Entzinger and Scholten, 2015).

The "Living with Floods" policy implemented since 1996 in the context of the government disaster-management strategy for the Mekong River Delta is perhaps the most important relocation programme for dealing with environmental degradation in Viet Nam. The programme aims to support communities living in areas at risk of flooding, landslides or river bank erosion, by resettling them in nearby and safer residential zones (UNDP, 2012). In fact, as pointed out elsewhere in this report, the densely populated Mekong River Delta region is very much exposed to environmental and climate change and is probably the most vulnerable region of the country: sea-level rise, salinity intrusion, river flooding and erosion of river borders and coasts have a very negative impact on the region. These events have triggered different migration flows, mostly within the Delta area but also towards urban centres and, in particular, towards HCMC (Entzinger and Scholten, 2015:2–3). The Living with Floods policy is aimed at facilitating interest-free loans for purchasing housing plots and basic housing frames in government-built relocation sites. Who can access this relocation process and under which conditions is defined by the local authorities, based on households' income. There are basically two types of households: (i) poor and relatively poor households that are eligible for low-interest and long-term loans to cover the relocation cost; and (ii) households with a better economic situation that can opt to purchase plots (Chun, 2015). In 2007, the programme had already built more than 1,000 resettlement clusters for 200,000 households (about

1 million people) living in the frequently flooded areas. The project aimed to provide households with secure and safe places, while granting them the possibility of preserving their previous source of income. For example, between 2005 and 2010, in the coastal areas surrounding Nam Can District in Ca Mau Province, about 4,000 households, which relied mostly on fisheries, were relocated one kilometre away from their previous settlements, so that their livelihood did not have to change (Entzinger and Scholten, 2015). In other cases – for instance, in Can Tho Province – relocation projects were juxtaposed to the foundation of new factories and investments in vocational training courses as the location of the new settlements could not guarantee that the newcomers could retain the same livelihoods upon which they used to depend. In these cases, relocation due to environmental and climate change could also be seen as an opportunity, allowing people to learn new skills and enhance their financial status by adopting alternative livelihoods.

In general, the creation of dike/residential clusters for people relocated in the Mekong River Delta region, under the Living with Floods policy, can be considered successful in that it allowed about 200,000 households to move away from disaster-prone areas and improve their housing conditions. At the same time, the policy has been criticized for certain shortcomings that could be taken as lessons learned and areas to be focused on for further improvement. The policy did not always provide for proper infrastructure in relation to sanitation, water and health services, nor did it always actively involve poor and landless families in the implementation of the relocation programmes, putting them at risk of isolation from social networks linked to their new livelihoods (UNDP, 2012; Chun, 2015). Additionally, the number of loans remained limited and, after five years, only 5–10 per cent of the loans were repaid. Actually, loans seemed to be often used for other purposes, such as household purchases or the paying off of other loans and debts (United Nations Viet Nam, 2014; Chun, 2015). In cases where new sustainable livelihoods were not available in the new locations, some migrants either sold their properties and moved back to their original and highly risky locations or migrated to urban areas in search of an alternative source of income (Chun, 2015; Entzinger and Scholten, 2015).

Other resettlement programmes have been implemented for some communities from the Northern Midland and Mountain Areas region affected by frequent flash floods, mudflows and landslides. Resettlement from the Red River Delta has been mainly due to riverbank and coastal erosion; from the Central Highlands because of floods and from the South East region, due to the impact of flooding from the Dong Nai River and the Sai Gon River (United Nations Viet Nam, 2014). Another resettlement programme was implemented to help people living on boats (sampan), as was the case in Thua Thien Hue Province, where the resettlement of the sampan people on land began after a severe typhoon in 1985, which killed 604 people. By 2010, 555 sampan households in Tam Giang Lagoon and 343 households on the Huong River had also been resettled (ibid.).

Research conducted by Dunn (2009) to explore the linkages between flooding and migration and/or population displacement in the Mekong River Delta shows that, in addition to the government relocation programmes aimed at improving the conditions of people in exposed zones, there is also seasonal labour migration towards urban centres, during the flooding season, by those seeking to supplement their livelihoods. Moreover, the research points out how those dependent on agriculture for their livelihood often decide to migrate in search of alternative livelihoods when crops have been too severely damaged by intense flooding (ibid.). Another study conducted by the Mekong Migration Network (MMN) and the Asian Migrant Centre (AMC) in the Thanh An Commune in the Vinh Thanh District of Can Tho City, in the Mekong River Delta region shows how more extreme hot weather and desertification are having a severe impact on local people, water quality and the soil quality of the area. Plants and crops are also being damaged and housing and infrastructures such as buildings, roads and riverbanks are also being negatively affected. The study demonstrates the relationship between environmental change in the area and local people's migration to major urban centres such as HCMC, Can Tho City, Lam Dong and Dong Nai. In fact, environmental change seems to be one of the main factors driving local people's migration, together with the lack of jobs and health hazards (MMN and AMC, 2013; Bocchini, 2014). Consequently, short-term or permanent migration often become strategies for livelihood diversification among households coping with agricultural and economic crises due to environmental stressors (Loc and Grote, 2015). Survey data from Viet Nam, including both migrants and non-migrants, suggest that individual perceptions of slow-onset

processes, such as droughts, seem to affect migration patterns much less than sudden-onset events, such as typhoons and floods, which significantly increase the likelihood of migration (Koubi et al., 2016).

Given that climate change is expected to increase the frequency of natural hazards and slow-onset processes, while exacerbating their effects on populations and livelihoods, the number of people who will consequently have to seasonally or permanently leave their area of origin is likely to increase dramatically. What little research has been conducted on environmental migration in Viet Nam focuses almost exclusively on relocation programmes and on the Mekong River Delta region and is also often fragmented and outdated. Hence, there is a clear need for more data to be collected and for studies to be undertaken in order to inform policies and provide appropriate support to migrants.

III.3.d. Cross-border movements

As mentioned earlier, international migration is a key phenomenon in Viet Nam, with about 90,000 people (35% of whom are women) leaving the country each year to seek employment opportunities abroad – mainly in Japan, Malaysia, the Republic of Korea and Taiwan Province of the People's Republic of China (Ishizuka, 2013; Miller, 2015). Although social and economic factors remain the most important elements triggering international migration, it is clear that environmental factors increasingly influence migration patterns. Even though the nexus between environmental change, climate change and internal migration has been demonstrated and analysed in several studies, it is harder to prove a similar correlation for international migration. However, if we consider, for instance, that an increasing number of Vietnamese women (mostly from the Mekong River Delta) marry foreigners in Taiwan Province of the People's Republic of China and the Republic of Korea, with the aim of seeking economic security (Miller, 2015), it is possible that the harsh environmental conditions of the Delta might also be a factor. Further research in this area needs to be conducted.

IV

TOOLKIT FOR POLICYMAKERS

Relocation site in a northern province of Viet Nam.

IV. TOOLKIT FOR POLICYMAKERS

As previously explained, the process of economic development in Viet Nam has changed greatly since the introduction of the Moi Doi reforms in the 1980s. Basically, the country shifted from a system of collective agriculture (with a largely homogeneous society), to private economic activities. It also opened up to foreign investment, which led to exponential economic growth but also to increasing social inequalities as the country grew.

This section presents the existing policies for tackling the migration, urbanization, poverty and environmental issues previously described. It also incorporates an analysis of the policies that are being developed and ends with a summary of the knowledge gaps that need to be addressed for further development of the country.

IV.1. Existing policy framework

IV.1.a. Climate change and environment: Disaster management

In terms of climate change in Viet Nam, policies and programmes have been developed at all levels – from national to local level. This process was formally initiated in 1992 when Viet Nam signed the United Nations Framework Convention on Climate Change (UNFCCC), and ratified it in 1994. The first outcome of this commitment was the launch of the Viet Nam Initial National Communication under the UNFCCC in 2003, with the Ministry of Natural Resources and Environment (MONRE) as the national authority for its implementation (Socialist Republic of Viet Nam, 2003). Furthermore, in 2005, the Prime Minister initiated the implementation of the Kyoto Protocol of the UNFCCC through the Directive 35/2005/CT-TTg.[5]

The next step was the development in 2008 of the National Target Program (NTP) to Respond to Climate Change through the Decision 158/2008/QD-TTg.[6] Its main objective was to "assess climate change

5 The Directive 35/2005/CT-TTg is available here: www.vietnam-redd.org/Upload/Download/File/35_2005_CT-TTg_5015.pdf

6 The full version of the Decision 158/2008/QD-TTg is available here, in English: www.vietnam-redd.org/Upload/CMS/Content/Library-GovernmentDocuments/158-2008-QD-TTg.pdf

impacts on sectors and regions in specific periods and to develop feasible action plans to effectively respond to climate change in the short-term and long-term to ensure sustainable development of Viet Nam, to take opportunities to develop towards a low-carbon economy, and to join the international community's efforts in mitigating climate change and protecting the climatic system" (Socialist Republic of Viet Nam, 2008). This first step did acknowledge the relevance of climate change and the focus on Viet Nam's carbon emissions, but not on the nexus between these phenomena and migration or population displacement.

The National Steering Committee of the National Target Programme on Climate Change Response was created as a result of Decision 419/QD-TTg.[7] At this initial stage, the Government focused on the diagnosis of climate change impacts for future action plans, which led to the National Strategy on Climate Change, launched in 2011 by Viet Nam's Prime Minister Nguyen Tan Dung (and laid down in Decision 2139/QD-TTg).[8] This National Strategy included the following strategic viewpoints: (i) Viet Nam's response to climate change should be closely linked with low carbon emissions; (ii) all efforts should be made to adapt to climate change in the early stages; (iii) the response to climate change is the responsibility of all levels of society (the State, enterprises, professional organizations and communities); (iv) coping strategies should be systemic, integrated, interregional and interdisciplinary; and (v) the strategy must have a century-long vision (Socialist Republic of Viet Nam, 2011b). After the diagnostic stage, a call for action to reduce the impacts of climate change and to develop strategies for adapting to it will be required, and such measures are already, at least partly, envisioned.

The strategy is broken down into the following eight missions:

1) Proactively cope with natural disasters and monitor climate.
2) Guarantee food security and water resources.
3) Actively respond to sea-level rise as required in vulnerable regions.
4) Protect and develop forests sustainably, increasing the absorption of greenhouse gases and preserving biodiversity.

7 The Decision 419/QD-TTg is available here: www.vietnam-redd.org/Upload/Download/File/419_Q%C4%90-TTg_4831.pdf

8 The Decision 2139/QD-TTg is available here: www.vietnam-redd.org/Upload/CMS/Content/Library-GovernmentDocuments/2139-QD-TTg.pdf

5) Reduce greenhouse gas emissions to protect the Earth's climate.
6) Strengthen the key role of the State in responding to climate change.
7) Build communities that can effectively cope with climate change.
8) Develop advanced technology and scientific approaches to coping with climate change.

Some of these measures are closely related to climate change and environmental migration. As previously explained in this assessment, sea-level rise and coastal erosion are among the main threats to the livelihoods of the population. These threats are acknowledged among the strategy's missions, as is the need to develop capacities for coping with climate change at the community level. The missions also focus on monitoring climate change and actively coping with natural hazards, alongside food security. If these missions are successfully accomplished, the number of people displaced and the extent of forced migration due to environmental degradation or climate change could be greatly reduced in the country.

In relation to the strategic planning for climate change, the Government of Viet Nam established a number of programmes and plans for achieving the national strategy objectives, some of which have a direct impact on environmental and climate change-induced migration. These programmes tackle more precise elements of the climate change–migration nexus – focusing, for example, on climate change in urban areas where displaced rural households tend to migrate, as previously explained, as well as on the development of residential areas and on how communities can effectively cope with environmental and climate change.

These programmes include the following:

- National Goal Programme on Climate Change;
- Programme on water management and adaptation to climate change in the Mekong and Red River Deltas;
- Programme on responding to climate change in Viet Nam's large urban areas;
- Programme on upgrading and improving the system of breakwaters and river dikes;
- Plan on upgrading the community health-care system;
- Programme on socioeconomic development on residential islands;
- Plan on piloting and popularizing models for effective coping with climate change by communities.

Although these programmes are comprehensive, it is not clear how successful they have been. Further research on the impact of these programmes on the beneficiaries (vulnerable communities) would be useful in developing future environmental and climate change displacement and/or migration policies.

The National Strategy in Viet Nam involves four main implementing actors: the MONRE, which plays a leading role; the MPI; provincial-level agencies as well as government bodies; and social organizations, NGOs and enterprises. However, with the success of the strategy depending on so many institutions at all levels in the country, there could be a loss of efficiency in coping with environmental migrants and the problems and needs of internally displaced persons (IDPs).

The National Climate Change Committee (NCCC), created by Decision 43/QD-TTg[9] in 2012, is also composed of representatives from several different ministries. The NCCC´s Chair is the Prime Minister, with a Deputy Prime Minister and the Minister of the MONRE as first and second Vice-Chairpersons. Other members include several ministers from MPI, the Ministry of Finance (MoF), the Ministry of Agriculture and Rural Development (MARD), the Ministry of Construction (MoC), the Ministry of Transport (MoT) and the Ministry of Industry and Trade

9 The Decision is available via the following link, in Vietnamese only: www.vietnam-redd.org/Upload/Download/File/QD_43_TTg_thanh_lap_UBQG_ve_BDKH_4234.pdf

(MoIT). However, it is important to note that none of these ministries has a direct responsibility for climate change or migration issues. In this respect, like in the case of the Nation Strategy, the National Climate Change Committee is often unable to implement programmes effectively and follow-up with programmes' outcomes.

In the same year (2012), the National Action Plan on Climate Change for the period 2012–2020 was approved by Decision 1183/QD-TTg,[10] together with the National Green Growth Strategy, by Decision 1393/QD-TTg.[11] These two strategies form the overarching policy framework for environment and climate change, and they acknowledge that climate change response is vital for the country's development. However, both focus largely on greenhouse gas emissions, while the link to migration and/or displacement as a consequence of environmental degradation and climate change is missing.

Regarding disaster management (sudden-onset climate change events), the national policy framework is the National Strategy for Natural Disasters, Prevention, Response and Mitigation to 2020. It was signed in 2007 and is considered a milestone in the country´s disaster risk reduction. The general objective is to "mobilize all resources to effectively implement disaster prevention, response and mitigation from now up to 2020 in order to minimize the losses of human life and properties, the damage of natural resources and cultural heritages, and the degradation of environment, contributing significantly to ensure the country's sustainable development, national defence and security", and it has a specific objective stressing relocation. More precisely, it calls for actions to "complete the relocation, arrangement and stabilization of the life for people in disaster prone areas according to the planning approved by authorized government agencies". Action plans based on this National Strategy are expected to be developed by the 23 provinces and the 12 ministries, in accordance with the decentralized government system of Viet Nam. Its implementation, continuing with the previous relocation programmes explained earlier (see subsection III.3.c. Internal migration, relocation and displacement dynamics due to environmental factors), is expected to reduce the impact of environmental and climate change in

10 The Decision 1183/QD-TTg is available in Vietnamese here: www.vietnam-redd.org/Upload/Download/File/1183_QD-TTg_146967_3123.pdf

11 The Decision 1393/QD-TTg is available in Vietnamese here: www.vietnam-redd.org/Upload/Download/File/1393_5934.pdf

the country, thus preventing displacement and forced migration. Hence, the strategy is a milestone not only in terms of disaster risk prevention, but also in terms of displacement and forced migration due to natural disasters.

Furthermore, in 2009, a National Implementation Plan for Natural Disaster Prevention, Response and Mitigation was developed to ensure structural consistency in disaster prevention, response and mitigation institutions from central to local levels and to enhance disaster risk management capacities at all levels and in all sectors. This plan is also expected to mitigate disaster risk factors by applying measures such as protective forest planting and sustainable management, for both upstream and coastal forests, as well as reinforcement and development of disaster prevention and response structures, among other actions, in disaster-prone areas.

In addition to disaster management, the Law on Natural Disaster Prevention and Control was promulgated in Viet Nam in 2013. It "provides natural disaster prevention and control activities, rights and obligations of agencies, organizations, households and individuals engaged in natural disaster prevention and control activities; and the state management of, and assurance of resources for, natural prevention control" (Law on Natural Disaster Prevention and Control, 2013: Art. 1). This law empowers organizations and households to engage in natural disaster prevention and control activities, as they are "on-the-spot forces" (Art. 6), and it seems to be in line with the country's high level of exposure to environmental hazards. Some of the key elements of this law are: (i) the integration of natural disaster prevention and control in the socioeconomic development master plans showing the relevance of disaster in Vietnamese life; (ii) the assessment and zonification of natural disaster risk areas and their monitoring, to prevent further impacts; and (iii) residential planning and production organization considering natural disaster risks.

In terms of climate change research, one of the recent government policies of note is the National Scientific and Technological Programme on Climate Change (2011), which aims to support and provide scientific and technological evidence on which to base adaptation and mitigation responses and to integrate climate change into strategic plans and implementation procedures. The outcomes of the programme focus on

technological measures across climate change projections, adaptation and emissions reduction, and mainstreaming climate change into socioeconomic development. The information generated through this programme will be key for future migration and displacement policies, enabling policymakers to clearly distinguish between safe and risky areas, to plan for future climatic scenarios and to use the baseline data for the development of environmental migration policies.

Between 2011 and 2013, nearly 50 projects were approved, many of them relating to climate change adaptation in the food security sector. Mainly government-funded, the programme is administered by MONRE, rather than the Ministry of Science and Technology (MOST), which has overall responsibility, according to Decision 1244/QD-TTg. Unfortunately, none of the programme activities have focused on migration as an adaptation strategy in response to climate change. This means that Viet Nam's climate change policy and strategy miss out on a very important component: human beings – the ones who both respond to, and are affected by, climate change and environmental degradation. Consequently, it seems clear that there should be more opportunities for civil society to play an active role in developing policies and strategies for adapting and responding to climate change.

IV.1.b. Migration, displacement and planned relocation

The rights of internal migrants in Viet Nam are fully recognized and deemed equal to those of all other citizens, according to Viet Nam's Constitution (Socialist Republic of Viet Nam, 2013b, Art. 14, 22 and 23). This includes the right to education, health care and freedom of movement. However, the category under which a household is registered in the Household Registration System determines its level of access to these social services. Thus, citizens are recognized in one of the following categories: (i) permanent resident; (ii) intradistrict migrant (with household registration in the province of current registration); (iii) temporary resident with registration valid for 6–12 months; and (iv) temporary resident with registration valid for 1–6 months. Accordingly, several laws have come into force in the last decade to fullfil the Vietnamese Constitution statements. The Residence Law of 2006 entitles citizens freedom of residence in different locations, be it temporary or permanent. Thus, non-local residents are given the right to request a residence certificate from the local authorities and are

entitled to protection of their rights. Furthermore, according to this law, authorities are not allowed to create obstacles to people's freedom to move. In 2013, a revised version of the Law of Residence came into force to amend regulations on banned forms of behaviour, as well as on the conditions for registering temporary or permanent residence certificates. Related to this, the Law of Civil Status of 2014 ensures the civil status registration and obligation not only for Vietnamese citizens but also for Stateless persons residing in Viet Nam. This law also reinforces the decentralized system promoted in Viet Nam, as civil status can be claimed at the local level, and it aims to simplify the registration procedure. Finally, in 2016, the Law on Identification entered into force; accordingly, Vietnamese aged 14 or older will have access to an ID that replaces the passport and will facilitate identification processes and the management of registration details, via a national database.

Nevertheless, if migrants cannot fulfil the registration requirements, they can either remain in the area but in a vulnerable situation with limited access to social services, or they can return to their place of origin or go elsewhere (Entzinger and Scholten, 2015). In fact, as explained earlier, most mobility is not registered, given that only movement outside the place of residence for periods of more than 30 days must be registered (United Nations Viet Nam, 2014).

Furthermore, the internal migration phenomenon is handled differently by different cities, due to Viet Nam's decentralized administration system. According to a report from the United Nations in Viet Nam (2014:2), HCMC "provides better access to housing, whilst there are more restrictions regarding migrants in Ha Noi" yet, in both cities, the situation of original residents is much better than the situation of internal migrants.

Viet Nam does not have an agency specifically in charge of migration. In fact, according to Chun (2015:4), the involvement of "government ministries […] in internal and international mobility […] is often nebulous and spread across various government agencies and legal documents", as in the case of climate change strategies, committees and missions.

The main ministries involved in migration policies and their functions are as follows:

- The Ministry of Public Security, which is responsible for controlling and registering internal and international migration;
- MARD, which manages State-led relocation;
- MOLISA, which focuses on economic migration; and
- The People's Committees, which can also issue its own policies and regulations, given the decentralized system.

Given the impact of environmental and climate change in Viet Nam, government-led relocations[12] (also referred to as resettlements) have been implemented since 1961 in the north and extended throughout the nation with a State-led policy after the end of the Viet Nam War in 1975, as explained earlier. According to Anh (2006, in United Nations Viet Nam, 2014), initially the relocation processes focused on moving people from dense (urban) areas to the rural and less populated regions of the country. Between 1976 and 1995, approximately 4.57 million people were relocated, mainly over short distances, whereas from 1994 to 1999, the number of people relocated was only 2,105,000 (Anh, 2005 in Chun, 2015). Currently, relocation programmes have a wider scope, extending to different critical situations related to climate change and environmental degradation, as well as development and disaster-affected areas (Chun and Sang, 2012). For more information about relocation programmes in Viet Nam, please refer to subsection III.3.c. Internal migration, relocation and displacement dynamics due to environmental factors.

IV.1.c. Economic growth and poverty reduction

Viet Nam has developed a number of policy reforms directly and indirectly related to poverty reduction. As a consequence of the Doi Moi reforms, Viet Nam´s economy has performed extremely well, with a growing GDP, controlled inflation, expansion of exports, diversification and, of course, poverty reduction. The poverty rate fell from 60 per cent in 1990 to 29 per cent in 2002, together with impressive improvements in education, health care and life expectancy (Ngu, 2004).

12 The World Bank defines it as "a process whereby a community's housing, assets, and public infrastructure are rebuilt in another location" (World Bank, 2010:77).

However, Viet Nam remains a very unequal society). One of the main sources of inequality relates to the disparity in natural endowments, whereby an abundance of natural resources, soil fertility and favourable location create areas with a high economic potential, whereas other areas, prone to floods or storms or due to their remote location in the mountains, are naturally disadvantaged (for details on Viet Nam's regions, please refer to chapter II of this assessment (Background).

The two main documents on poverty reduction in Viet Nam are: (i) the Socio-economic Development Strategy (SEDS) for 2011–2020; and (ii) the Socio-economic Development Plan (SEDP), which was implemented from 2011 to 2015 (Hong and Hoai, 2015). The latter targeted an annual reduction of 2 per cent nationally among poor households and 4 per cent in particularly poor areas.

More precisely, in 2011, Resolution No. 80/NQ-CP[13] on sustainable poverty reduction in 2011–2020 was adopted. It aimed at "improving and incrementally raising the living conditions for the poor, first of all those in mountainous and ethnic minority areas; at making strong and comprehensive improvements in poor areas; and at narrowing the gap between urban and rural areas, among regions, ethnic minorities and population groups" (ILO, 2014). As stated, the target of this resolution are people residing in the mountains and the ethnic groups in Viet Nam; both groups are usually located in highly vulnerable areas. Thus, improving the housing conditions of the poor is a key element in reducing the level of poverty among environmentally displaced people. According to Hong and Hoai (2015:14), the resolution was successfully implemented in two phases: (i) the National Target Program (NTP) on Poverty Reduction for 2006–2010; and (ii) the National Target Programme on Sustainable Poverty Reduction for 2012–2015. The most recent NTP considered poverty as a multidimensional phenomenon, shifting its focus from poverty reduction targets to a broader spectrum including access to social services, housing, domestic water supply, health care, education and infrastructure.

Specific attention was given to the communes in extremely difficult situations through Programme 135. It was launched on 31 July 1998 with the objective of improving "the material and spiritual life of the ethnic

13 The resolution in Vietnamese can be accessed here: www.ilo.org/dyn/natlex/docs/ELECTRONIC/91859/106704/F1936324665/VNM91859%20Vnm.pdf

minority people in mountainous, deep-lying and remote communes with special difficulties; creat[ing] conditions for these areas to overcome poverty, backwardness and under-development and integrate themselves into the overall national development, thus contributing to the maintenance of social order and safety, national security and defense" (Prime Minister of the Government of Viet Nam, 1998). Since then, three different phases have been developed, the last will be implemented until 2020 (see next section for further details).

IV.1.d. Land use

After the Doi Moi reforms in 1986, land was allocated to households and individuals, and agricultural cooperatives were dissolved. In the next stage (from 1996 onwards), land was used for infrastructure development, including economic zones (Chun, 2015).

The latest amendment of the Land Law was implemented in 2013, further to the expiration of the Land Law issued in 1993. The Land Law of 1993 and its amendment in 2013 grant households Land Use Right Certificates (LURCs), offering them the right to farm, transfer, lease, mortgage or even inherit the land. However, it simultaneously keeps the State as the manager of all land (Wells-Dang, Quang Tu and Burke, 2016). Thus, the approach to land ownership is implemented as follows: "land belongs to the entire-people with the State acting as the owner´s representative and uniformly managing land" (Chun, 2015:15).

As Viet Nam is prone to climate change impacts, the Land Law indicates that local institutions should "recover unused or inefficiently used land of organizations, agricultural forestry, farms or change the use purpose of land" according to the plans previously defined to secure "allocation to households and individuals under population distribution projects" (Chun, 2015:11). Furthermore, according to Article 16 of this law, the State can recover land if there is a "risk of threatening human life", such as polluted areas or areas at risk of being eroded or sunk; and it can also recover land "to prevent and combat national disasters" (Chun, 2015:16). The latter elements of the law are key to guaranteeing people's security, especially those located in risk-prone areas. In fact, the same law applies for the acquisition of land for relocation procedures, and in case "individuals refuse to vacate their land […] the People´s Committees competent to recover land shall issue decisions on coercive execution

of the decisions" (Land Law 2013 in Chun, 2015:17, Article 39). This also applies to the relocation processes, as land users who are forced to leave their land due to natural hazards are compensated by the State, which offers them "new land with the same land use purpose as the recovered land", or money if no land is available (please refer to subsection IV.1.b. earlier in this chapter for further details). However, as explained in previous sections, if livelihoods are not guaranteed in the new locations, people tend to return to their place of origin (at risk) or move somewhere else (see subsection II.3.d. Relocation).

IV.2. Policies in development

Further to the 2015 Paris Agreement, Viet Nam will develop action plans to implement the UNFCCC through the NCCC and with its main partners (UNDP, the United Kingdom and Japan International Cooperation Agency) (Viet Nam Breaking News, 2016). Additionally, Viet Nam´s Prime Minister has requested a post-2015 phase for the Support Programme to Respond to Climate Change (SP-RCC).

The poverty reduction programmes that started in 2002 are still in place in Viet Nam. Programme 135 also contributes to reducing the risk to communities most vulnerable to climate change, such as minorities living in the mountains or remote communes (for details, please refer to subsection IV.1.c. Poverty reduction in this chapter). In 2016, the Prime Minister agreed to include 2,275 villages in the programme for the 2016–2020 phase (Viet Nam plus, 2016) and, due to its success, Programme 135, launched in 1998, remains in place for the coming years.

In general, as previously stated, and according to Hong and Hoai (2015), Viet Nam has moved from a purely economic approach to tackling poverty (2000–2010) and, from there, to a broader and more comprehensive understanding of the linkages between environment and poverty (2010–2020).

V

CONCLUSIONS, RESEARCH PRIORITIES AND POLICY OPTIONS

V. CONCLUSIONS, RESEARCH PRIORITIES AND POLICY OPTIONS

This assessment provides an overview of the environmental situation in Viet Nam, drawing the links between the environment, climate change and migration in the country and discussing the relevant existing policies. Viet Nam is exposed to a wide range of natural hazards and slow-onset processes that have had catastrophic impacts on the environment, livelihoods, settlements and the health of people throughout history. Although migration occurs within the country and internationally, mainly for economic and social reasons, it is evident that the increasingly degraded environment in certain areas also plays a role in influencing people's movements.

Several studies have been conducted on the environmental situation of the country, but information is generally fragmented and not up to date. Although much information is available on environmental degradation and its impacts on human life in certain regions of the country, particularly in the Mekong River Delta region, other areas (particularly the Northern and the Central regions of the country) remain understudied. Further research should be conducted to shed light on how environmental and climate change affect vulnerable groups in different regions of the country and so that policies and programmes can be created to properly support those most in need. This is particularly true for natural hazards and slow-onset processes, as there is very little detailed information on the characteristics and the impacts of these phenomena. Although, in recent years, situation reports on the latest environmental disasters have been more detailed, regularly updated information on the situation of those internally displaced by disasters – especially IDPs in protracted displacement – remains scarce. There is therefore a need for further research in this area, as well as additional information on how people manage to return to their areas of origin after being displaced and the strategies that they use to build resilience.

There is a clear need to guarantee equal rights to internal migrants, as per Viet Nam´s Constitution. However, there are several gaps between what is stated in the Constitution and what happens in reality. Thus the enforcement of constitutional rights should primarily involve implementing the political framework reforms to facilitate and improve effective mobility in the country (such as household registration to ensure full access to social services).

In terms of government-sponsored relocation programmes, several studies have been conducted but more extensive consultations with, and active participation by, the relevant communities would greatly improve the quality and outcomes of these programmes. The implementation of the Grassroots Democracy legislation that advocates "practicing participation at the local level in resettlement schemes, meaning that affected people should officially be informed, they should discuss, be consulted, monitor and inspect local projects" (United Nations Viet Nam, 2014:4) would help resolve this issue. Moreover, relocation programmes and plans should be holistic in nature, reducing the exposure to environmental and climate change stressors while simultaneously guaranteeing households livelihoods and support (such as by ensuring access to agricultural land, minimizing the distance to former livestock and/or crops, and ensuring access to social networks). Additionally, receiving communities should also be considered in the relocation projects. How are the communities prepared to welcome relocated people, how are they integrated and what benefits do the receiving communities obtain from their actions? These and other aspects should be included in future relocation and development plans. To this end, since 2016, IOM has been developing a research programme to support MARD in gathering evidence on the current situation and practices, so that it can make recommendations on how to better promote a participatory approach in planning for and implementing environment-induced resettlement schemes.

In general, the establishment of a ministry of migration could play an important role in mobilizing the necessary resources to ensure that people migrate in the best conditions.

It is also clear from this report that disaster preparedness in Viet Nam seems to have greatly improved in recent years. However, monitoring of natural hazards and of the impact of slow-onset processes needs to

be enhanced. Similarly, there is a need for detailed and comprehensive future climate change scenarios to be developed as the basis for mobility and resettlement plans that consider all environmental and climate change stressors.

This assessment shows that making the link between climate change, migration, social services and resettlement projects is fundamental for Viet Nam, given its vulnerability to environmental degradation and the exacerbating effects of climate change. Hence, a fluent and rich dialogue between experts from the different sectors would be beneficial for the entire country (Dunn, 2009; Hong and Hoai, 2015:18). Moreover, the nexus between poverty reduction and environmental policies is weak, as these two areas are currently handled by different ministries. This generates an overlap of programmes that leads to funding allocation inefficiencies and lack of consistency (Dunn, 2009; Hong and Hoai, 2015). It would also be advisable to have a central department – a one-stop agency – for migrants and relocated people that coordinates all their needs and becomes the link to the institutional network (providing guidance and access to social protection, health care, relocation programmes and plans, education, and household registration, among others).

Finally, it is worth stressing the limitation of this assessment to secondary data. Hence, further and more detailed research on the links between environmental degradation, climate change and migration is crucial to the country's development.

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ASSESSING THE EVIDENCE:

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