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Focus 7

## Migration as adaptation

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## Abstract

This focus explores the relationship between changes in the environment and migration decisions. It is based on a literature review and multisite qualitative research into rural-to-urban migration in a context of environmental changes, in particular from the Mekong Delta to Ho Chi Minh City. Key results show that environmental changes act as an underlying factor in the migration decision, masked by economic factors. Insufficient incomes from the agricultural sector and the lack of alternative job opportunities emerge as the primary reasons for moving – as consequences of the economic context, environmental changes and limited availability of farming land. Environmental hazards do affect livelihoods, but they are rarely identified as migration factors by migrants themselves. Economic and social dynamics feed populations' aspirations for upward social mobility, and propel them towards urban areas. Moreover, the research highlights that while out-migration from the Delta replaces or complements on-site adaptation strategies, it also can lead to multidimensional vulnerability in urban areas. Low-skilled rural migrants often make a long-term temporary move rather than a permanent one, before returning to the hometown where they have kept their land. However, land availability and current environmental trends in the Mekong Delta call the durability of these strategies into question. Therefore, it is increasingly necessary to support the local population in the Delta by developing local job opportunities and livelihood aids – especially for landless farmers – as well as to provide information on the medium- and long-term impacts of climate change. At the same time, it is equally important to accompany migrants in their migration via dedicated public support structures, to prevent them from entering urban poverty.

## Tóm tắt

Trọng tâm này khám phá mối quan hệ giữa những thay đổi về môi trường và các quyết định di cư. Nó dựa trên một tổng quan tư liệu và nghiên cứu định tính đa địa điểm về di cư từ nông thôn ra thành thị trong bối cảnh về những thay đổi môi trường, đặc biệt là từ khu vực Đồng bằng sông Cửu Long đến Thành phố Hồ Chí Minh. Các kết quả chính cho thấy những thay đổi về môi trường đóng vai trò như một yếu tố cơ bản trong quyết định di cư, bị che lấp bởi các yếu tố kinh tế. Thu nhập không đủ từ ngành nông nghiệp và thiếu các cơ hội việc làm thay thế nổi lên là những lý do chính để di cư – như những hệ quả của bối cảnh kinh tế, thay đổi môi trường và hạn chế về đất canh tác. Các hiểm họa môi trường có ảnh hưởng đến sinh kế, nhưng chúng hiếm khi được chính người di cư xác định là các yếu tố di cư. Động lực kinh tế và xã hội nuôi dưỡng khát vọng của người dân đối với sự dịch chuyển xã hội đi lên và thúc đẩy họ hướng tới các khu vực thành thị. Hơn nữa, nghiên cứu cũng nhấn mạnh rằng mặc dù việc di cư ra khỏi Đồng bằng, bản thân nó đã thay thế hoặc bổ sung bằng các chiến lược thích ứng tại chỗ, nó cũng có thể dẫn đến tình trạng dễ bị tổn thương đa chiều ở các khu vực đô thị. Những người di cư nông thôn có kỹ năng thấp thường di cư tạm thời

trong một khoảng thời gian dài trước khi trở về quê hương nơi họ có phần đất đai của mình, hơn là di cư vĩnh viễn. Tuy nhiên, đất đai hiện hữu và xu hướng môi trường hiện tại ở Đồng bằng sông Cửu Long khiến độ bền của các chiến lược này là một vấn đề đáng bàn. Thế nên, ngày càng cần thiết phải hỗ trợ người dân địa phương ở Đồng bằng bằng cách phát triển các cơ hội việc làm tại địa phương và hỗ trợ sinh kế – đặc biệt là cho những nông dân không có đất – cũng như cung cấp thông tin về tác động trung và dài hạn của biến đổi khí hậu. Đồng thời, điều quan trọng không kém là đồng hành với người di cư trong quá trình di cư của họ thông qua các cơ cấu hỗ trợ công riêng biệt để ngăn họ lâm vào tình trạng nghèo đói khi ở thành thị.

## Résumé

Ce focus explore la relation entre les changements de l'environnement et les décisions migratoires. Il se fonde sur un état de l'art et une recherche qualitative multisituée portant sur la migration rural-urbain dans un contexte de changements environnementaux, en particulier depuis le Delta du Mékong vers Ho Chi Minh Ville. Les résultats clefs montrent que les changements environnementaux contribuent à la décision migratoire en tant que facteurs sous-jacents, dissimulés derrière les facteurs économiques. Les revenus insuffisants retirés du secteur agricole et le manque d'opportunités d'emploi alternatives ressortent comme les raisons premières de partir – conséquences du contexte économique, des changements environnementaux et de la disponibilité limitée des terres agricoles. Les aléas environnementaux affectent les moyens de subsistance, mais sont rarement identifiés comme des facteurs de migration par les migrants eux-mêmes. Les dynamiques économiques et sociales alimentent les aspirations des populations à une ascension sociale, et les orientent vers les zones urbaines. De plus, la recherche met en lumière que l'émigration depuis le Delta, tout en remplaçant ou complétant les stratégies d'adaptation sur site, peut aussi mener à une vulnérabilité multidimensionnelle en zone urbaine. Les migrants ruraux peu qualifiés opèrent souvent un déplacement temporaire de long-terme plutôt qu'un déplacement permanent, avant de retourner dans leur commune d'origine où ils conservent leur terrain. Cependant, la disponibilité des terres et les évolutions environnementales actuelles dans le Delta du Mékong questionnent la durabilité de ces stratégies. Ainsi, il est de plus en plus nécessaire de soutenir la population locale du Delta en développant des opportunités d'emploi locales et des aides de subsistance – notamment pour les agriculteurs sans terres – ainsi qu'en informant sur les impacts du changement climatique à moyen et long termes. En parallèle, il est tout aussi important d'accompagner les migrants dans leur migration par des structures publiques de soutien dédiées, afin de les prémunir d'entrer dans la pauvreté urbaine.

According to the last national census, the Vietnamese part of the Mekong Delta numbered 17.3 million people in 2019 – 18% of the national population – on 12% of the country's total surface area [GSO, 2020]. Delta inhabitants have developed livelihoods based on seasonal transformations in the environment, and the rhythm of flooding – including adapted cultures, protective infrastructures, housing on stilts and boat transportation. In this deltaic context, flooding is not unequivocally considered as a threat, but also as a resource for agriculture. It contributes to alluvial deposition, fisheries, water quality, and rice field deacidification [Danh and Mushtaq, 2011], as mentioned in other contributions to this report, particularly [Focus 3](#) and [Focus 5](#) in this chapter. Given the favorable conditions for agriculture, the large majority of delta inhabitants earn their living from agriculture. In 2019, the Mekong Delta represented 48% of the country's cereal-planted surface area, 54% of paddy-planted surface area, and 72% of the aquaculture surface area [GSO, 2021]. But irregular environmental changes are disrupting these activities. Confronted with the changing environmental conditions identified in the COP26 GEMMES Viet Nam project report of 2021 [Espagne *et al.*, 2021, chapters 9 and 10], Delta farmers have had to adapt to maintain their incomes and livelihoods, either through on-site adaptations, or migration.

Historically, the Delta has been populated by migration waves, and the local population is made up of “open peasant settlements”, relatively unstructured in comparison with the population of the Northern Red River Delta [Rambo, 1977, p.187]. Today, the Mekong Delta is characterized by a very high out-migration rate. The last national statistical census, conducted in 2019, reveals that the out-migration rate of the Mekong Delta is up to 4.5%, with a net-migration rate of -4%. These are

the highest out-migration rate and the lowest net-migration rate of all the country's regions. Most of the migration flows head to the Southeast Region, including Ho Chi Minh City and neighboring industrial provinces such as Binh Duong province [GSO, 2020]. In 2019, Ho Chi Minh City had an in-migration rate of 9.1%, Binh Duong province 21.7% and Dong Nai province 6.6% [GSO, 2020]<sup>1</sup>. The 2014 intercensal survey on migration and urbanization counted the number of inter-provincial in-migrants and out-migrants by regions in the same year – *i.e.* people aged over-5 who reported having a different province of residence 5 years prior to the time of the survey. Out of all the out-migrants from the Mekong Delta recorded on that date (762,555 people), 76.5% had moved to the Southeast Region (583,358 people) [GSO and UNFPA, 2016].

This focus aims to document the potential relationship between changes in the environment and migration decisions in the Mekong Delta. We question to what extent migration can be considered as an adaptation strategy to environmental changes<sup>2</sup> in that context. Questioning migration as adaptation implies asking to

1. The in-migration and out-migration rates of a territorial unit reflect the number of people from other territorial units who immigrate to and emigrate from that territorial unit in proportion to the population of that territorial unit. These numbers include only official internal migrants, defined as residents of a specific administrative unit, who lived in a different administrative unit five years earlier, and aged 5 or older at the time of census enumeration [GSO, UNFPA 2010].

2. We choose to use the term “environmental changes” to encompass the multiplicity of changes in the environment of the Delta that affect the daily life and future projections of its inhabitants, whether they are of climatic or anthropogenic origin, since it is often challenging to dissociate the two. It refers to slow transformations of the environmental conditions such as sea level rise and salinization, disturbed periodic ones such as flood and drought, or rapid-onset events such as landslides. Environmental changes include the manifestations of climate change but also the consequences of local anthropogenic actions on the Mekong Delta which accelerate natural phenomena (groundwater extraction fostering land subsidence for instance), or which disturb local ecosystems (soil and water pollution for example).

what extent migration occurs in reaction to environmental changes, but also interrogating the impact of migration on vulnerability. This paper reviews a number of previous projects which tackled the issue of the link between environment and migration in the Mekong Delta. From there, we present preliminary results from a multisite research project on rural-to-urban migration directed towards Ho Chi Minh City, in a context of environmental changes.

## 1. Migration and environment: academic controversies and political agenda

### 1.1 Academic controversies

Migration related to environment and/or climate has been generating a growing field of literature internationally, especially since the late 2000s [Cattaneo *et al.*, 2019; Black *et al.*, 2011a; Tacoli, 2009; Hunter, 2005]. Research in particular highlights the multiplicity of factors which converge in the migration decision, and the difficulty in isolating and quantifying environmental migration [Gemenne and Cavicchioli, 2010; Véron and Golaz, 2015].

A landmark study on the topic was published in 2011 by the Foresight project. Based on multiple international case studies, it identifies five categories of migration drivers: economic, political, social, demographic and environmental [Black *et al.*, 2011b]. The report highlights the interactions between the multiple drivers, and the various ways in which

the environment can influence migration. It reveals that “environmental change is as equally likely to prevent migration as it is to increase it” [*ibid.*, p.104], by impacting the livelihoods and resources of affected households. It points out in particular the vulnerability of “trapped populations” unable to achieve migration, and the benefits migration can bring to individuals, households and communities in departure and destination areas. In the Foresight project's analysis, low-elevation coastal zones stand out as major areas of challenges in terms of population's vulnerability to the impacts of environmental change.

One critical field of research also alerts against potential neoliberal drift, acting to enforce the desirability of migration in support of a vision of development deliberately orientated towards industrialization and urbanization [Paprocki, 2018]. In light of this, some authors choose to focus rather on non-migration strategies, and on immobility in the face of environmental change [Sengupta and Samanta, 2022; Mallick *et al.*, 2022].

### 1.2 International political agenda

Despite these debates, environment-induced migrations have been established as a priority in the international political agenda. In its last report, the Intergovernmental Panel on Climate Change presents migration, in particular internal migration, as a possible response in the face of climate change. At the same time, it highlights that the relations between climate change impacts and migration vary in line with the socio-economic characteristics of individuals – in particular gender – and with the political context [IPCC, WG2, 2022, chapters 6, 7, 8]. Population displacement in reaction to climate change has also been

mentioned in the Sendai Framework for the reduction of disaster risks 2015-2030 [UN, 2015, Art. 33].

In addition, dedicated international cooperation frameworks have emerged, such as the multi-stakeholder platform on population displacements in the context of sudden- and slow-onset disasters (especially cross-border ones), which followed the Nansen initiative launched in 2012. The ten Nansen Principles of 2011 are recommendations “to guide responses to some of the urgent and complex challenges raised by displacement in the context of climate change and other environmental hazards” [Kalin, 2012, p.1]. They complete the Guiding Principles on Internal Displacement adopted by the United Nations Commission on Human Rights in 1998. Later, the Global Compact for Safe, Orderly and Regular Migration was released by the United Nations in 2018 [UN General Assembly, 2018, Art. 18]. More recently, the Global Mayors Task Force on Climate and Migration was launched in 2021 by the C40 Cities and the Mayors Migration Council. These cooperation frameworks aim to share experiences and provide a policy framework built using a bottom-up approach, and these international guidelines are intended to be turned into national legislations by states.

### 1.3 Migration and environment studied in the Vietnamese Mekong Delta

In Viet Nam in particular, the crucial challenge of the link between environment and migration has been highlighted by previous research in the Mekong Delta, and several major studies have provided insight into the question over the past 15 years: some of the main ones are reported below.

In 2007–2009, the European Commission-funded Environmental Change and Forced Migration Scenarios project (EACH-FOR) – implemented in partnership with the International Organization for Migration – examined multiple international case studies. In particular, it considered whether regular flooding, its intensification and its increased frequency in the Vietnamese Mekong Delta could trigger migration and population relocation. The study, based on three-months’ fieldwork in An Giang province, Ho Chi Minh City, Hanoi and Phnom Penh (Cambodia), finds that “environmental change (flooding in this case study) is shown to be a trigger for independent migration decisions when livelihoods are negatively affected, for example when crops are lost, generally on more than one occasion” [Dun, 2011, p.217]. It includes internal and international, seasonal, temporary or permanent migration. It does not identify environmental change as the main cause of migration. Instead, authors use the concept of “socio-ecological tipping points” to emphasize the importance of the socio-economic and political context in which the environmental changes occur [Warner *et al.*, 2010, p.708].

Over the same period, the large German-Vietnamese WISDOM project (Phases I and II), conducted between 2007 and 2013, also drew upon the concept of tipping points. Within the broader mission of providing the Mekong Delta with a water information system encompassing both natural sciences and socio-economic processes, Garschagen and colleagues chose to focus on peri-urban interfaces, which are affected by socio-economic transformation, biophysical degradation and climate change impacts [Garschagen *et al.*, 2011]. The concept of tipping points here designates the “decisions, events and access-portfolios” which lead from one section

to another on an individual- or household-level “dynamic resilience pathway”, that may include migration [*ibid.*, p.157].

In 2013, the Mekong Migration Network and the Asian Migrant Center – with the support of the Rockefeller Foundation – published a study on climate change and migration in the Greater Mekong Subregion<sup>3</sup>; initiated at the end of 2011, it compared two case studies from Myanmar and Viet Nam [MMN and AMC, 2013]. The Vietnamese case study was based on a survey of 50 households, focus group discussions and interviews with key informants, conducted in an agricultural hamlet of Can Tho City in the Mekong Delta. Environmental changes – potentially linked to climate change – included increased extreme hydro-climatic weather, more extreme warm weather, soil degradation or impoverishment, less rainfall, irregular flooding, and drought. Salinity was also recognized as a growing threat by local leaders and authorities, but not by residents. The study establishes a correlation between environmental changes and migration, through the negative impacts of environmental changes on the livelihoods and health of local inhabitants, and on soil and water quality (notably through increased pollution). However, the research also points out that migration would still occur independently of environmental changes, as a reaction to the low incomes and lack of jobs locally, in contrast with the employment and education opportunities available in urban areas. It urges that both climate change and mobility be taken into consideration as “issues of global justice” [*ibid.*, p.11].

3. The Greater Mekong Subregion covers Cambodia, the People’s Republic of China (specifically Yunnan Province and Guangxi Zhuang Autonomous Region), the Lao People’s Democratic Republic, Myanmar, Thailand, and Viet Nam.

Later on, between 2014 and 2017, the MECLEP project, “Migration, Environment and Climate Change: Evidence for Policy” – funded by the European Union and implemented by the International Organization for Migration (IOM) and a consortium of partners – highlighted poverty and livelihood insecurity as the main reasons for migrating from rural Mekong Delta areas to Can Tho and Ho Chi Minh City, including migration from a relocation site [Nguyen *et al.*, 2017; Chun, 2015]. A quantitative survey was completed by 1,232 households in six communes in Ho Chi Minh City, Long An province and Ca Mau province. It finds a positive correlation between specific forms of environmental stress (particularly erosion, cyclones and floods) and migration, but points out that other important factors may also have been at play [Entzinger and Scholten, 2016]. It reveals how, in that context, environmental and economic factors might overlap. Interestingly, the results also show that the observed migration is more likely to be a long-term move than a short-term one. From a qualitative perspective – based on fieldwork in two communes exposed to seasonal flood and riverbank erosion in Long An province and Dong Thap province respectively, as well as two sites in Can Tho and Ho Chi Minh City – Chun identifies a list of key assets which influence households’ vulnerability, their livelihoods and their decision regarding mobility in conditions of environmental stress: house ownership, access to agricultural land, financial planning skills and diversified income-generating skills, agency and confidence, as well as health and able-bodiedness [Chun, 2014].

In 2016, a multisite research project led by Koubi and colleagues documented the link between the temporality of the hazard and the decision to migrate [Koubi *et al.*, 2016]. The authors compared four districts in four provinces

as departure areas, two in the Mekong Delta, one on the South-Central Coast and one in the Red River Delta, with Ho Chi Minh City and Hanoi as destinations. The study was based upon 1,200 completed questionnaires, for which half the respondents were migrants and the other half non-migrants. It shows the importance of the actual speed of the event and of time perception by the local population in the decision to migrate. According to results based on respondents' perceptions of the weather event(s) they experienced over the past 5 years, rapid-onset and short-term events (such as flood or typhoons) were significantly likely to lead to a decision to migrate, whereas slow-onset and long-term events (such as drought or salinity) had little to no influence.

Finally, a more discrete study has also applied a quantitative method to the case of the Mekong Delta; it was conducted in 2015 by Oanh and Truong, based on a survey with 200 participants (migrants and non-migrants) in Ben Tre province and Dong Thap province (two communes in each). The authors identify only a small statistical correlation between the impacts of climate change and the migration decision [Oanh and Truong, 2017], through the impacts of climate change on local production activities (breeding, fishing and farming), overall quality of life (including incomes, access to food, housing and infrastructure), and the quality of the environment (water and soil). This leads them to point out that other factors must also affect migration.

Previous studies identify a tenuous link between environment and migration, often through the impact of environmental disturbance on farming incomes. However, the methodologies implemented do not allow for detailed understanding of the causal chains at play, or the per-

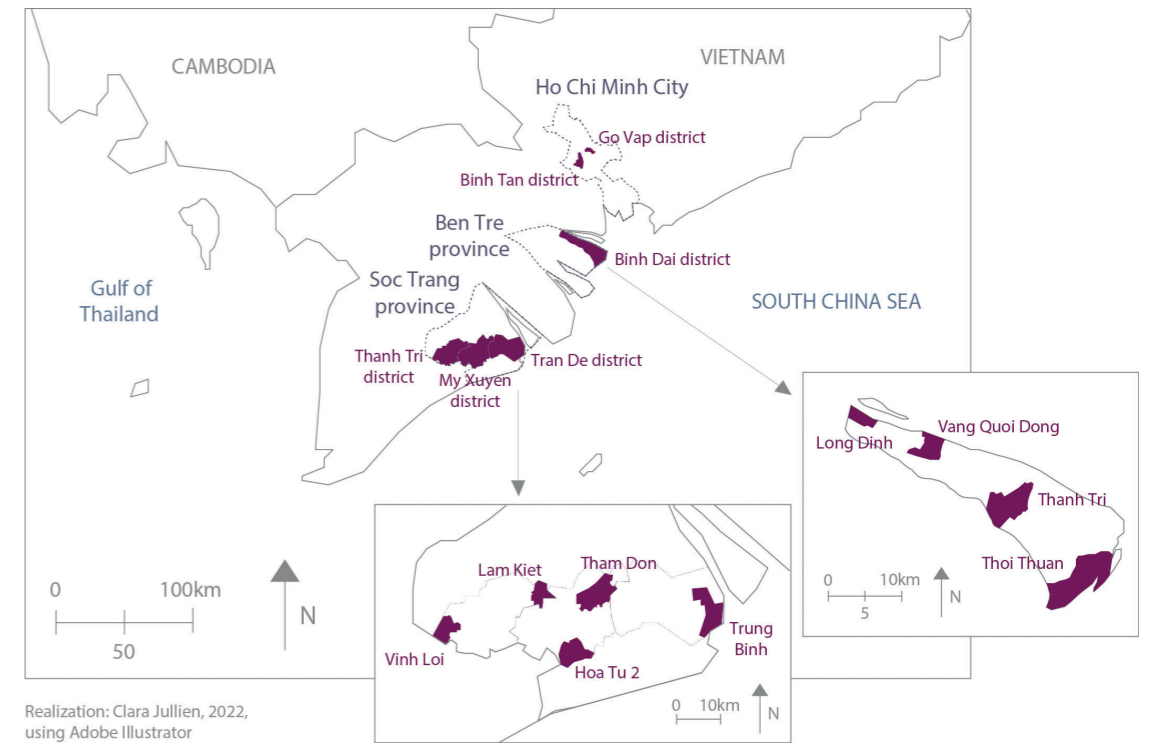
ceptions of migrants and local populations regarding environmental changes. Therefore, to follow up on this literature, a multisite research project has been conducted since 2020, to document rural-to-urban migration in Viet Nam in a context of environmental changes.

### 1.4 Research setting

From June 2020 to June 2022, around 120 rural migrants were encountered for in-depth qualitative interviews in Ho Chi Minh City (in Go Vap and Binh Tan districts), around half of them from the Mekong Delta. In addition, fieldwork was conducted in Binh Dai district, Ben Tre province, in order to collect information via interviews with local authorities and families of migrants, supplemented by a recent fieldwork study located in Tran De, My Xuyen and Thanh Tri districts, Soc Trang province<sup>4</sup> [Figure 2/7.1]. The two districts studied in Ho Chi Minh City enabled the observation of two types of urban fabrics which have been densified by migration flows at different periods of time (since the 1990s in Go Vap district, and since the 2000s in Binh Tan district), and which present different economic profiles today (a bigger tertiary sector in Go Vap district, and more industry in Binh Tan district). The two areas studied in the Mekong Delta were chosen for their exposure to different hazards (salinization in Binh Dai district, Ben Tre province, Tran De district and My Xuyen district in Soc Trang province; fresh water flooding in Thanh Tri district, Soc Trang province). In addition, the areas studied in Soc Trang province included rice farming, along with shrimp farming in the eastern area, while rice farming had totally disappeared in the communes stu-

4. The data analysis is currently in progress. The elements presented here are preliminary.

[ Figure 2/7.1 ]  
Location of study sites



died in Ben Tre province. Finally, the two areas were selected for their different distances to Ho Chi Minh City.

## 2. Preliminary results from fieldwork research

### 2.1 The environment as an underlying factor of migration, among converging ones

The insights from both the arrival areas and the departure areas converge towards the

same observation, in line with previous studies conducted on the climate-migration topic in the Mekong Delta. Environment stands out as an indirect factor of migration, easily hidden behind the economic factor. Indeed, the connection between environmental change and migration lies predominantly in the impact that changing natural conditions might have on farming activities, and therefore local inhabitants' livelihoods in rural areas of the Delta.

### Insufficient incomes from agriculture, and lack of alternative job opportunities

The interviews conducted in Ho Chi Minh City, with rural migrants who arrived from thirty years to three months before the meetings, re-

veal that although exposure to environmental hazards is often present in the migration stories, it is very rarely mentioned spontaneously by the interviewees as a factor in migration. Instead, almost all the interviewees primarily mention economic difficulties as the main reason for migrating. The majority of the interviewees previously earned their living from agriculture, or – in the case of people who migrated at a young age – came from families relying on agriculture as their principal source of income. They express insufficient incomes combined with lack of local job opportunities as their main reason to opt for migration.

This statement from interviewees themselves is coherent with the accounts from the migrants' families, interviewed in Binh Dai district, Ben Tre province as well as Tran De, My Xuyen and Thanh Tri districts, Soc Trang province; they explain the departure of their relatives (in most cases their children) as a reaction to the lack of local opportunities to attain the level of income they aspire to. The same statement is made by some representatives of the local authorities at the commune level in departure areas. Reflecting on the departure of young people, a local official from the social services of the People Committee of Vang Quoi Dong commune in Binh Dai district explained that they leave because the People Committee has not been able to provide them with enough support to do farming or access other suitable jobs. In that commune, according to the same official, some 2 households out of 3 have at least one member who works elsewhere. The population of Vang Quoi Dong relies on coconut manufacturing, as the commune is critically affected by drought during the sunny season and floods during the rainy season, particularly in recent years. The years 2016 and 2019–2020 especially brought extreme episodes of drought and salinization due to high heat and scarce rain

(see [Focus 6](#)). According to the commune's People Committee, coconut manufacturing represents 40% of the commune's local economy, agriculture and aquaculture represent 20%, while the remaining 40% consists of the remittances sent back by workers in other communes and people abroad, as well as interest on investments. The departure of young people is becoming problematic for the People Committee, since coconut manufacturing is beginning to experience a shortage of labor for physical tasks. On that note, the distance to Ho Chi Minh City does not seem to have a significant impact, since the same trends of migration towards the metropolis and its surroundings are observed at the study sites in Ben Tre province and Soc Trang province.

Interpreting this statement about the lack of job opportunities – expressed by local authorities, by migrants themselves and by their relatives – involves keeping in mind the subjective and relative nature of the concept of poverty. For some households, the idea of “insufficient income” might express extreme precarity and refer to survival mechanisms. But for other households, it might refer to a more relative sense of poverty, in comparison with others, with what could be achieved, in reference to a certain standard of what is considered to be a decent or desirable income. Migration might therefore occur in households with very different economic situations, from relatively wealthy households sending their children to study in the city, to households suffering from financial precarity whose members migrate in a final effort to make ends meet. On that subject, an aspect has been pointed out by previous international research and notably by the EACHFOR project, as well as the MMN and AMC project, in the Mekong Delta [MMN and AMC, 2013; Warner *et al.*, 2012]: migration may not be an accessible option to the most destitute

households, because it requires capital – be it financial capital for transportation and settlement, or social capital for support in finding a job and accommodation at arrival. However, this result has not been verified in the MECLEP project [Entzinger and Scholten, 2016]. In addition, in another geographical context (the Ganga-Brahmaputra Delta), some research found that capital-rich households were less likely to migrate than others [Mallick, 2022].

### Economic context, environmental changes and land availability

The economic insecurity reported by migrants and their relatives results from difficulties in the farming sector, as well as the lack of alternative economic activities. Global market dynamics, as well as the variation of local demand in Viet Nam, have generated highly volatile selling prices in the farming sector, and inflation of input prices, resulting in pressure on farmers, especially small-scale ones. But the economic context is not the only parameter involved, and is not isolated from other parameters, particularly the environment. Current environmental changes in the Mekong Delta have put the farming sector under great pressure. Salinization, disturbed flood patterns, repeated drought and erosion have all affected farming conditions (for more details please refer to [Focuses 1, 3, 4, 5 and 6](#)). These climate change-related hazards have been exacerbated by anthropogenic actions in the Mekong River Basin, such as sand extraction, groundwater extraction, dams, and urbanization accelerating land subsidence. In the case of Vang Quoi Dong, the same official of the People Committee sees improving the dike and irrigation system as an incentive for young people to stay in the commune and maintain agriculture. They can also benefit

from special loans to rehabilitate coconut farms. Environmental conditions, especially salinization, are seen by this official as contributing to the migration decision, since they affect both agriculture and living conditions.

In addition, one can mention pollution as an anthropogenic environmental parameter likely to affect local populations directly or indirectly. In Binh Dai district, Ben Tre province, water pollution generated by local industries and aquaculture farms, along with settlements located upstream on the Ba Lai River, was mentioned by several local farmers as a major handicap in maintaining their operations. In addition, the water sometimes contains excessive concentrations of alum (see [Focus 6](#)). Accessing clean water and accessing water with the right level of salinity are two cumulative challenges.

In an extensive understanding of what the environment encompasses – and stepping aside from climate change in the strict sense of the term – the surface area of farm land emerges as a major environmental influence on agricultural income. Many factors can contribute to progressively reducing land surface. First, the subdivision of the land among siblings over time via inheritance leads mechanically to a diminution of the land surface for each household. Second, erosion may affect the plot of land. Third, public development projects, such as infrastructure projects or industrial zones, may lead to a reduction of available land surface. Finally, households facing difficulties and constrained by debts may be forced to sell part (or all) of their farm land, especially in the context of an inflated land market. The land areas might not be sufficient to develop a commercial farming activity, or even subsistence-oriented agriculture. In a context where farming is more and more oriented towards market and exportation, and not only

household subsistence, this reduction of farm land can be critical, especially for younger generations choosing whether or not to follow in their parents' footsteps in the agriculture sector. Also, in extreme cases, this situation can force some destitute households into landlessness and over-indebtedness. Farm land often acts as a safety net for households, as it can guarantee subsistence food supply. It is also an asset for mortgages, a guarantee to get a loan, and a legacy for children [Pulliat, 2013]. In that context, some of the studies mentioned have pointed out the particular vulnerability of landless farmers, whose livelihoods rely entirely on hired labor to farm land they do not own, or in other sectors [Garschagen *et al.*, 2012; Warner *et al.*, 2012].

In the face of these changing environmental conditions, farmers implement adaptation strategies. To some extent, migration can be interpreted as one of them. But one of the reasons that makes this link difficult to pinpoint with precision is the fact that migrants themselves, as well as relatives in their hometowns, do not necessarily identify environmental changes as migration factors. The connection between harsh environmental conditions and economic difficulties leading to migration is rarely expressed – and even less so in terms of climate change impact. Environmental changes remain overshadowed by the broader “unprofitable farming sector” umbrella, which suggests that they are not the only reason for migrating nor the ultimate/proximate cause.

### Societal mutations

Research on migration has long shed light on the multifactorial nature of the phenomenon. In the current context of the Mekong Delta, and more broadly of Viet Nam, social factors are

particularly important in internal and international migration: societal mutations, especially since the 1990s, have shaped new conditions for migration flows to develop. Two major technical changes – the relaxing of the *hộ khẩu* residential registration system and the development of the transportation system – have been key factors in the development of internal migration [Li, 1996], and the apparition of the migration corridors towards the South-East region that we observe today. In that context, the promotion of urban lifestyles and the diffusion of international urban cultural references have contributed to enhancing the appeal of urban areas. The vision of the modern city as opposed to rural farm land acts as an incentive to turn away from agriculture and enter modernity and globalization. Modernity refers here to the multiplicity of options that the city has to offer. The city is the place where one can access diversity and life experience. It is seen as a potential stepping-stone towards foreign countries. Migrating therefore means obtaining choices, at least in theory, when initially viewed from the rural hometown.

In addition, another crucial element of Vietnamese society that shapes contemporary migrations is the importance of education. Encompassing wealthy households sending their children to study in the cities, less well-off households nevertheless dedicating their savings to send their children away to study, parents migrating themselves to fund the education of their children, and young adults migrating in anticipation of their education or the education of their future children, education is at the core of the migration decision. In that sense, we observe a generational shift between elder people who largely had no opportunity to access education, and young people who have been exposed to a broader portfolio of options over the past two decades as a result of the

education expansion policies initiated in the 1990s [Truong *et al.*, 2021].

To sum up, although migration decisions often involve changes in environmental conditions in the Mekong Delta, they take place within economic and social dynamics feeding populations' aspirations to upward social mobility, which for some seem unachievable if they stay in the farming sector.

### Direct impacts of environmental changes

Finally, in addition to the indirect impact they have on migration through agriculture, environmental changes can also have more direct consequences on local populations by threatening their personal safety or affecting their housing. These direct consequences are seen following rapid-onset disasters such as storms, or repeated and prolonged disasters such as drought or high seasonal floods. Thus, given the future climate projections, the potential direct impacts of environmental changes are likely to be growing concerns.

The direct and indirect causal chains from disruptive factors to migration are illustrated in [Figure 2/7.5](#).

## 2.2 Migration as an adaptation strategy, an alternative to on-site adaptations

### Changing activity within the primary sector

To fully understand the context in which the migration occurs, it is worth mentioning some

of the alternative options that local households might implement when faced with difficulties. Migration might replace some of them, or might occur in complement to them. For the upper-part of the Delta, literature reports changes in the rhythm of rice-field harvests as a way to cope with changing environmental conditions [Chapman and Darby, 2016]. For the case of rice farming in particular, we refer to [Focus 5](#) of this chapter. The switch from rice farming to aquaculture, and in particular shrimp farming, is another typical strategy adopted by populations (c.f. [Focus 6](#)). Our fieldwork in Binh Dai district, Ben Tre province, and in Tran De, My Xuyen, and Thanh Tri districts, Soc Trang province, confirms that this switch is triggered by both economic opportunity and salinization. The very high profit that can potentially be gained from shrimp farming provides an incentive for households to turn their fields into ponds, in a context that is less and less suitable for rice farming. However, once again, the idea of minimal cost (here the initial investment to develop a shrimp pond) comes into play in preventing part of the population from being able to access this option. In reference to the high unpredictability of this activity, we refer to [Focus 6](#) on the impacts of the Ba Lai dam.

In a highly salinized environment such as Binh Dai district, Ben Tre province, another option is to develop coconut farming, or other fruits that offer a high tolerance to salt. Nevertheless, these fruits crops make a relatively low profit, which in addition is likely to vary considerably according to changes in demand. As such, they might not appear very attractive to younger generations, especially when land surfaces are insufficient to harvest large quantities. Yet some varieties with high yields remain profitable, and the low labor requirements – especially in the case of coconut fields – makes them suitable for older generations.



In Ben Tre province, coconut farming has led to the development of a coconut manufacturing industry, which provides another sector of employment for the local population. However, despite their place in the secondary sector, the manufacturing warehouses specialized in food processing – whether seafood or fruits – remain highly sensitive to environmental conditions, in the present changing environmental context. Indeed, certain on-site adaptation strategies might potentially be heavily impacted by climate change.

### Turning away from food production and food processing

Another alternative is to leave any employment sector that relies directly or indirectly on environmental conditions. Locally, within Binh Dai district, the conversions are focused mostly on small-scale entrepreneurship in the case of households who have a small financial capital or access to land and buildings, or on the construction sector. The growing construction sector in rural areas generates a local job market, but offers irregular working schedules and incomes, as well as very tough working conditions. It is of course inaccessible to older people. Overall, the main growing alternative to farming is to become

a worker in a local factory. In the case of Binh Dai district, becoming a factory worker means migrating towards the massive industrial park of Giao Long in the neighboring district of Chau Thanh [Figure 2/7.2]. The future industrial zone of Phu Thuan will create a new local pool within Binh Dai district. The local recruitment centers under the supervision of the Department of Labour, Invalids and Social Affairs of Ben Tre province help to make the connection between employers and young people. In addition, migrants very often receive the support of their personal network to find a position. However, the industrial sector only offers a time-limited solution, as factories rarely employ workers over 40 years old.

both counteract long-distance migration. In Binh Dai district in particular, the development of Ben Tre province towards the East with a focus on developing industries – especially related to the sea and energy infrastructures – addresses the issue of migration by providing local employment that is less directly dependent on natural resources. But even though industrial parks and local urban centers might seem disconnected from their natural environment and exempt from vulnerability to environmental changes when compared to agriculture, they remain located in an area affected by subsidence and sea level rise, and therefore potentially exposed to submersion in the long run. For instance, the industrial park of Giao Long, in Chau Thanh district, next to Binh Dai district suffered severe floods at the end of May 2022. The long-term sustainability of this transition needs to be considered in order to optimize the use of investment.

### Migration within the Mekong Delta

The current industrialization policy implemented in the Mekong Delta is already generating alternative options to farming, leading to a local intra-district or intra-province migration, which absorbs part of the migration that would otherwise be directed towards other provinces and major urban and industrial hubs, such as Ho Chi Minh City or Binh Duong province. This migration can be temporary or circular, returning to the hometown on a weekly or bi-weekly basis, or – if the distance allows it – commuting on a daily basis. Thus, out-migration away from the Mekong Delta towards other Vietnamese regions, especially the South-East, needs to be put in perspective within a broader map of migration including intra-district, inter-district and inter-province migration within the Mekong Delta, as well as international migration.

Within the Mekong Delta, the development of industrial parks, as well as the growing local service sector generated by urbanization,

### Building protective infrastructure

To reduce exposure and vulnerability to submersion, flood, salinization and erosion, one of the main strategies implemented consists in building protective public infrastructure such as dikes, dams and sluiceways. Infrastructure can significantly reduce exposure, but a zero-percent risk can never be guaranteed. As stated in Chapter 12 of the COP26 GEMMES Viet Nam project report, “adaptation resources have mainly been spent on large-scale hard infrastructure, which is often designed without full recognition of the systemic nature of the risks and uncertainties associated with future climate change. [...] Some infrastructure is still necessary, but some may also increase existing risks or create new ones” [Espagne *et al.*, 2021, p.556]. Issues of dysfunction or coordination between different equipment



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[Figure 2/7.2] Migrant workers leaving Giao Long industrial park in Chau Thanh district at dusk and commuting back to their hometown in Binh Dai district, on the main road connecting the two districts through An Hoa bridge.

Photo credit: ©Clara Jullien - 02/04/2022



**[ Figure 2/7.3 ] Failing public sluiceway in Long Dinh commune, Binh Dai district, Ben Tre province**

Photo credit: ©Clara Jullien - 01/04/2022

and localities might reduce its efficiency. This is particularly the case in Long Dinh commune studied in Binh Dai district, where the sluiceways along the Mekong River have failed since their construction, and proven useless in limiting salt intrusion [ [Figure 2/7.3](#) ].

Consequently, on a much smaller scale and in a more rudimentary way, households in this commune implement similar mitigation via infrastructure on their plots of land, using handmade “sluiceways”. In fact, water mana-

gement in general generates a large range of coping mechanisms to maintain farming and aquaculture activities, including collecting rain water for personal consumption, stocking fresh water from the river dam during rainy season, purifying water extracted from the canals, or, in last resort, buying water at a very high price. On that point, we again refer to [Focus 6](#) of this report and Chapter 11 of the COP26 GEMMES Viet Nam project report of 2021, on the impact of the Ba Lai dam [ [Espagne et al., 2021](#) ].

## Relocation procedures

In addition to infrastructure, relocation has proved effective in reducing exposure to hazards. As pointed out by previous research [ [Miller, 2019](#); [Nguyen et al., 2017](#); [Chun, 2015](#); [Dun, 2011](#); [Warner et al., 2010](#) ], the social and economic consequences of relocation must be considered to obtain a full picture of the outcome resulting from relocation procedures. Furthermore, a case encountered during fieldwork in Binh Dai district highlights the need for the timeframe of relocation procedures to be coordinated with local planning. In Vang Quoi Dong, one interviewee reported having been relocated twice. First, some 10 years ago because erosion was threatening his house, and then a second time some three years ago when construction of the local dike began on the plot of land where he had been relocated. Aged in his fifties, this man was taking care of his mother and working as hired worker harvesting coconuts, while his wife and children were working in Ho Chi Minh City. At the time of the first relocation, he was thinking of buying the plot of land that had been allocated to him for 20 years. Instead he was relocated back to the shore, where erosion is still affecting housing. The mismatch between relocation planning and dike planning made it impossible for this household to make future plans. As they do not own any farming land, insufficient local income sources led most members of this household to migrate to Ho Chi Minh City. This situation caused the household to split up, in order to combine both caring for the older generation and seeking an income.

The different categories of adaptation strategies are shown in [Figure 2/7.5](#).

## 2.3 Migration and vulnerability, the limits to adaptation

### Multidimensional vulnerability at destination

Migration might appear to migrants themselves and their relatives as a solution to escape insecurity, including exposure to environmental conditions. However, low-skilled migrants with limited economic and social capital are likely to face multidimensional vulnerability in the city as well, at legal, economic, social and environmental levels. They encounter harsh working conditions in urban areas and industrial parks, such as short-term working contracts, verbal-agreement jobs, difficult labor tasks, long work schedules and extra shifts. The cost of renting accommodation, plus the costs of living, can contribute to relative financial vulnerability. This can lead to precarious housing conditions in urban areas, that migrants nonetheless put up with in order to save as much money as possible. The savings are often sent back to their relatives in their hometown, and – in some cases – the distance can lead to social isolation in the city. People who might have benefitted from public social and financial aid in their hometown (through poor people status, loans, cattle or loving homes) can find themselves helpless without this support.

This vulnerability was particularly visible during 2021, notably during the lockdown, with massive dismissals in the industrial sector and constraints in the informal sector imposed by social distancing measures. In September 2021, after the reopening of Ho Chi Minh City, we observed chaotic flows of migrants returning to their hometowns, unemployed and having depleted their savings.



[ Figure 2/7.4 ] A house built by a migrant couple in their forties in Vinh Loi commune, Thanh Tri district, Soc Trang province, using the savings from their work in a factory in Dong Nai province, and borrowed money from relatives. The house is complete, but the couple plans to continue migrating for few more years to pay back their debt and build up a small capital, in order to open a small business in Vinh Loi. They choose to rent out their 3,000 m<sup>2</sup> of farmland instead of farming it as the land surface is small.

Photo credit: ©Clara Jullien - 17/06/2022

### Long-term temporary migration

In addition, the land market in urban areas, in particular Ho Chi Minh City, makes it very challenging for most workers to access land ownership in the city. In that context, migrants often intend to return to their hometown later in life, sometimes after decades, notably at retirement age [Figure 2/7.4]. A common

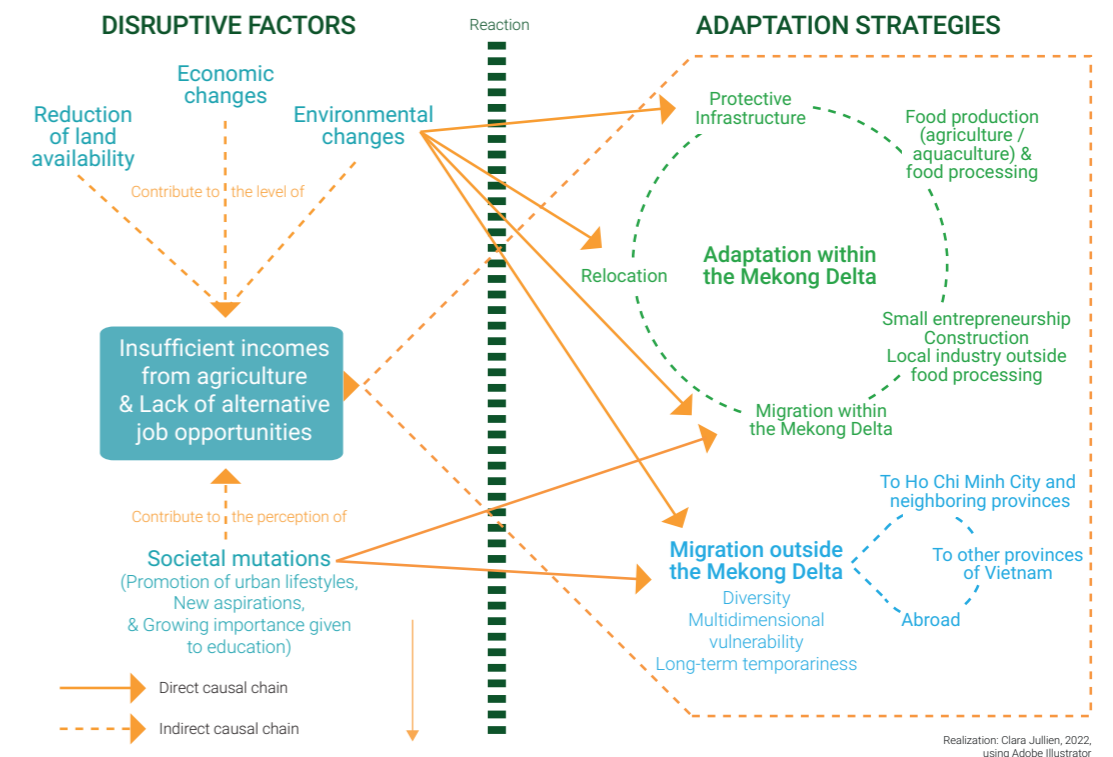
pattern seems to be to migrate at a young age until their physical condition no longer meets the requirements for working in the city. This particularly applies to the industrial and the construction sectors, which chiefly employ young people. In fact, in many cases, migration should be interpreted as a long-term temporary move rather than a permanent one. In expectation of their return – and as a safety

net – rural migrants keep their land in their hometown. The land is often maintained and cultivated by other family members in their absence. In many cases, the land will only be transmitted once the young members who migrated come back to the hometown. The plan is for them to resettle on their plot of land and to cultivate it at least for their own food supply. However, complications may interfere with this plan in the near future. The potential problem of decreased farm land area mentioned earlier could lead to a lack of land to come back to. At the same time, the impacts

of environmental change may alter the conditions of the land and make it unsuitable for farming. Therefore, land availability and environmental change call the durability of this fallback solution into question, and make the effectiveness of these adaptation strategies uncertain. These changes in environmental conditions could contribute to redefining migration timelines and inter-generational relationships.

The key points of this analysis are summarized in the following figure [Figure 2/7.5]:

[ Figure 2/7.5 ] Out-migration from the Mekong Delta as a response to direct and indirect impacts of environmental and socio-economic changes



Realization: Clara Jullien, 2022, using Adobe Illustrator

■ This schema does not concern student migration and marriage migration.

### 3. Conclusion and recommendations

In the context of Southern Viet Nam, rural-to-urban migration and environmental change are two concomitant dynamics, with one main intersection point being the mutation of the farming sector in the Mekong Delta. While climate change puts increasing pressure on the Delta's conditions for agriculture, social transformations and modern economic orientations lead the rural population towards urban areas and industrial zones. These migrations may take place over relatively long distances to reach Ho Chi Minh City, Binh Duong province or Dong Nai province. They may also simply cover a few kilometers, to join the closest industrial park or food processing factory. Young migrants today have a wider range of choices compared to their parents, who might have migrated 20 or 30 years ago. But they are also left with dilemmas, with one foot in the city and one foot in their hometown. They aspire to achieve a different lifestyle and embrace a certain vision of modernity in contrast with their rural origins, but above all they seek stability and financial security when the local agriculture sector is seen as insufficient. Fieldwork reveals how standards are changing, in particular in terms of education, which contributes to younger generations turning their backs on farming. However, it also reveals insecurity and financial hardship for some of the households relying on agriculture as their main source of income in the Mekong Delta. The factors behind these economic difficulties are various; among them, changing environmental conditions are making adaptations a necessity. For households who can rely on financial and social capital alongside technical knowledge, these changes might be relatively easy to implement, and could even-

tually lead to significant increases in earnings – in some cases of conversion to shrimp farming, for example. But for others, the uncertainty generated by environmental change adds to uncertainty on the agriculture market. Migration can be interpreted as an attempt to cope with and reduce this uncertainty. The fieldwork studies conducted in both the Mekong Delta and Ho Chi Minh City shed light on both sides of migration, from the departure area to the destination area. Several critical points stand out, where uncertainty may turn into insecurity:

**1]** First, there is a need to raise awareness among farmers concerning the possible environmental scenarios for the Mekong Delta in the medium- or long-term future. Indeed, one major source of uncertainty is linked to the confrontation of the temporality of climate change with the temporality of the migration decision-making process. The migration decision is made within a projected timeframe of a few years to several decades (when planning to resettle back in the hometown for retirement). However, the evolution of climate in the hometown does not seem to be taken into consideration by migrants or their families in that timeframe. The changes observed in the environment through their impacts on harvests (loss of harvests due to drought or flood, salinization and alum saturation of water) are not necessarily perceived as a long-term and inexorable phenomenon. Instead, adaptations are implemented locally on a short-term basis, by households with limited resources. Therefore, communication on climate change aimed at the local population must clarify the different timelines of environmental changes – and of the adaptations implemented – in order for households to be able to construct informed adaptation strategies, whether they involve migration or not.

**2]** Second, as it is already being implemented, it is necessary to continue promoting the development of alternative sectors of employment and professional training within the Mekong Delta, in parallel to the agriculture and aquaculture sectors (see development plans of the Mekong region, and chapter 2 of the present report). These alternative options are meant to increase minimum incomes and employment stability. This concerns young people, but also older generations. Indeed, in the current situation people over 40 in rural areas of the Mekong Delta could face difficulties in finding off-farm income sources, as the major sectors of industry and construction are not easily accessible to them. Therefore, the development of alternative sectors of employment must be inclusive of all ages, especially since it is becoming more challenging for younger generations to take care of their parents after retirement. These sectors must themselves be protected from climate and environmental impacts.

**3]** Third, it seems necessary to develop support policies targeting rural migrants from the Mekong Delta and other regions, to ensure safe access to jobs, housing, public schooling, public health care and social security in Ho Chi Minh City and surrounding industrial provinces. Since the contexts of migrations are very diverse, some migrants may face no difficulty at all in meeting their basic needs in the city, especially as transportation and residential registration conditions now facilitate migration. Nevertheless, capital-poor households find themselves in critical situations in the city, working in unsafe and unfair conditions, sheltering in insecure situations, sometimes crippled by debts. Dedicated public structures to accompany migration, other than monitoring temporary residential registrations, could help in preventing migrants

from entering downward spirals. The already existing associations of people from the same hometowns in Ho Chi Minh City could orientate migrants towards public support structures.

**4]** Fourth, livelihood support policies should also be maintained and reinforced in rural departure areas, especially targeting landless farmers in the Mekong Delta. Indeed, households deprived of farm land appear to be particularly vulnerable in the face of environmental and economic shocks. Farm land can guarantee subsistence food supply, a mortgage, loan or legacy. Without land – or if the area of land is critically small – households are more sensitive to any changes, as they rely on hired work.

**5]** Finally, in connection to the topic of land, relocation planning must prioritize access to job and social networks, while ensuring coherence with other long-term planning. It must grant access to a suitable job market for relocated people, and prevent mismatch between job offers and job demand for the relocated population. In addition, relocation procedures should pay careful attention to preserving the social networks of relocated populations, as they play a key part in household strategies to rebuild livelihoods, reestablish balance and achieve a sense of belonging in the relocation site. Such considerations should help prevent the departure of relocated people, either by returning to their location of origin or migrating elsewhere.

As of today, the link between climate change and migration is still difficult to identify clearly, as it is enmeshed with other economic and social transformations. Nevertheless, with the projected increase in the impacts of climate change on the Mekong Delta, the farming sector, and the direct safety of the Delta's in-

habitants, the environment is likely to play a growing role in migration decisions. Therefore, providing safe conditions for migration on multiple spatial scales (short and long distances) and time scales (commuting, circular,

temporary and permanent migrations) is crucial in ensuring successful adaptations that effectively allow households to reduce their vulnerability and reduce uncertainty.

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