Towards Social-Ecological Transformation in Viet Nam

Building the Urban Future: Participation, Housing and Transportation

Mirjam Le & Ngo Tho Hung

FRIEDRICH EBERT STIFTUNG

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December 2021

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List of Abbreviations

ADB	Asian Development Bank
CO_2	Carbon Dioxide
GDP	Gross Domestic Product
GCF	Green Climate Fund
GHG	Greenhouse Gas
GSO	General Statistics Office of Viet Nam
HCMC	Ho Chi Minh City
ILO	International Labour Organization
LGBTQ	Transgender and gay people
MOC	Ministry of Construction
MPI	Ministry of Planning and Investment
NGO	Non-Governmental Organisation
PPP	Public-Private Partnerships
SDG	Sustainable Development Goal
SME	Small- and Medium-sized Enterprises
USD	United States Dollar
VND	Viet Nam Dong
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VOC	Volatile Organic Compounds
WB	World Bank
WHO	World Health Organization

PREFACE

Along with the global and regional trend, Vietnam has seen its urban centers grow rapidly over the past decades. According to the UN, by 2050 60 percent of the Vietnamese population will live in cities, thereby shaping how most of its population will live and work. The question is how this transition can be managed in a socially inclusive and ecologically sustainable way. Cities contribute a high share of greenhouse gas emissions due their accumulation of people, resources and economic activities. Vietnam is also highly vulnerable to the impacts of climate change so that many cities along the coastline will need to develop and plan for the future in a climate-responsive way, seeking solutions to adapt to rising sea levels and more frequent floods. This alone will be no easy task.

But cities also play a key role in mitigating climate change and limiting global warming to 1,5°C as agreed in the Paris Agreement by cutting down their greenhouse gas emissions. The transport, energy as well as the booming construction sector play a crucial role in this regard.

By engaging with its citizens, cities can become laboratories for change and thereby drive a social- ecological transformation forward that will leave no one behind and improve quality of life without harming the planet.

Against this background, the Regional Climate and Energy project in Asia of the Friedrich-Ebert-Stiftung published a report on the social-ecological transformations in cities in Asia in 2020 written by Diane Archer and Charrlotte Adelina. The study at hand about cities in Vietnam falls under this working line and attempts to bring the discussion down to the national level. What are current challenges and trends and what can stakeholders at the city level do to contribute to sustainable urban development?

FES and its partners aim to further promote a social-ecological transformation in cities and provide a platform for dialogue and exchange within Vietnam and across the region.

We extend our sincere gratitude to Dr. Le Mirjam and Dr. Ngo Tho Hung, the authors of this paper toward social-ecological transformation in Vietnam, for their thorough research as well as Diane Archer for her peer review and comments. We hope that it contributes to a fruitful discussion and provides valuable insights for future initiatives.

Claudia Ehing

Regional Project Climate and Energy in Asia of the Friedrich-Ebert-Stiftung in Vietnam

EXECUTIVE SUMMARY

While economic success has rapidly transformed Viet Nam into a middle-income country over the last two decades, it now faces new challenges. Urbanisation and climate change are putting increased pressure on urban infrastructure. As the resulting social and ecological issues are interconnected, the social-ecological transformation of Viet Nam's cities provides a pathway to cope with these challenges.

i. Urbanisation in Viet Nam

In 2019, the urban population in Viet Nam accounted for 34.4 per cent of the national population with an annual growth rate of 2.64 per cent in the last decade (GSO, 2020c). Migration from rural to urban areas was the major driver of this growth. To accommodate the rising urban population, the government and private investors developed peri-urban land into new urban areas and industrial zones. This has resulted in the commodification of urban land, persistent social inequality and increasing gentrification. The construction of urban infrastructure, housing and industry also reduces the availability of green space in cities. While the Vietnamese economy is becoming more urban based, insufficient urban infrastructure combined with high levels of pollution limit economic productivity and harm human health.

ii. Urbanisation and Climate Change Impacts

Urban development drives climate change in Viet Nam and amplifies its effect on the urban population by pushing increasing numbers of the rural population into urban areas. This is intensifying pressure on already inadequate urban infrastructure. The expansion of the built environment increases soil sealing, which increases flood risks and creates local heat waves. At the same time, urban development increases energy consumption. Together with traffic, construction sites and the industrial sector, this contributes to CO_2 and fine particle emissions. Damage, due to extreme weather events caused by climate change, raises the maintenance costs of infrastructure. Furthermore, the drop in surface and groundwater due to climate change, overexploitation and pollution reduces urban water supply. Lower water flows in upland streams will also affect energy production from hydropower. Implementing the Sustainable Development Goals (SDGs), particularly SDG 11, is part of Viet Nam's urban development strategy to tackle these challenges. However, investment in infrastructure and overall coordination needs to improve.

iii. Pathways to Socio-ecological Transformations: Participation, Housing and Transport

Social participation is important to create social cohesion in cities. However, Viet Nam provides few formal tools to facilitate participation in urban development. Informal practices exist at the grassroots level and could be used to support social-ecological transformations. Housing is a key element to make cities inclusive, safe, resilient and sustainable. The Government of Viet Nam aims to provide housing for low-income households, but is yet to implement this goal. Social housing is underfunded and of low quality. Consequently, it is vulnerable to climate change effects – putting residents at risk. Transportation within cities is another major challenge for Viet Nam. Existing road infrastructure is not adequate and public transport is insufficient, lacks investment and is of low quality. To guarantee safe, sustainable and equal access to transport in Viet Nam, more investment in public transport is needed.

iv. Recommendations

Social-ecological transformation based on the SDGs offers a pathway to mitigate climate change risks and create a socially and ecologically just urban society. To support this process, national and local government, urban planners and practitioners as well as civil society actors need to cooperate to reframe the discourse on the urban future in Viet Nam. To reduce commuting and strengthen social cohesion, urban services need to be decentralised to better integrate peri-urban areas. Finally, there is a need to open space for cooperative participation for citizens to strengthen social cohesion. This will offer a pathway to a more socially just and ecological urban future for Viet Nam and its citizens.

This report was commissioned by Friedrich-Ebert-Stiftung in Viet Nam and written by Ngo Tho Hung from Academy of Managers for Construction and Cities (AMC) Viet Nam and Mirjam Le from the University of Passau.

CHAPTER 1: INTRODUCTION

1.1. Towards the Social-ecological Transformation of Viet Nam's cities

A growing number of cities around the world, especially those in developing countries with poor communities, are facing increasingly severe impacts of climate change, natural disasters and extreme weather events. These effects are often combined with existing problems facing vulnerable groups that make the situation even more acute with unpredictable consequences. Urban resilience is the capacity of cities to function, so that the people living and working in them – particularly the poor and vulnerable – survive and thrive no matter what stresses or shocks they encounter (ADB, 2014).

Climate Change in Viet Nam[1]

Viet Nam ranked among the top 10 countries most vulnerable and likely to be most affected by climate change

- At least 50 million people will be exposed, potentially up to 75% of its population
- By 2050, climate change will reduce national income by up to 3.5%

Sea level rise up to 65 to 100 cm until the end of the 21st century

- Over last two decades, sea level already rose 3mm per year on average
- Mekong and Red River Delta as well as major cities as most vulnerable regions
- Loss of arable land (Red River Delta: up to 1,666.7 km2 of land (11,2%) flooded by 2100 and Mekong River Delta up to 15,116 km2 of land (37,8%) flooded)
- Negative impact on food security due to reduced agricultural productivity

Temperature and Rainfall:

- Annual average temperature increased by about 0.5 to 0.7 degree Celsius, particularly in the Northern climate zones over past five decades
- By 2050 temperature increase between 1 and 2 degree Celsius
- Over past five decades, average annual rainfall decreased by 2%, particularly in the Northern climate zones

Increasing frequency of extreme weather events, including typhoons, tropical storms and droughts:

- Declining groundwater and surface water levels leading to salt water intrusion up to 56 miles from the sea due to droughts
- Increase in frequency of high-intensity typhoons
- Heavy rain and landslides in the Northern Mountainous Region
- Increase in frequency and intensity of droughts and heat waves

With two large delta regions, a long coastline and two potential megacities in the next decades, Viet Nam will have to invest heavily in climate change mitigation, including a reduction in greenhouse gas (GHG) emissions and environmental protection. Sea level rises, the increase in extreme weather events, droughts and salinisation of groundwater pose political, social and economic challenges to Viet Nam and its cities. As the agricultural heartland of Viet Nam, the Mekong Delta, is under intense pressure with the loss of arable land an acute danger, this will intensify rural-urban migration movements. Extreme rain, flooding and heatwaves make everyday life for urban dwellers difficult. Moreover, marginalised and low-income groups reside in urban areas more prone to flooding. Their living conditions exacerbate health hazards. This makes these groups even more vulnerable due to climate change and urbanisation. Thus, increasing social inequality poses a challenge for urban planners and policy-makers in Viet Nam who aim to increase urban resilience and improve existing infrastructure (DiGregorio, Tran, Garschagen and Tyler 2016: 12-14; Climate Analytics, 2019:3-5).

1 (based on Tatarski 2018)

With rapid urban population growth amid looming climate change threats, Viet Nam not only needs to find ways to reduce its carbon emissions, but also to address social issues of social inequality, housing and transport as well as ecological risks of flooding, heat waves and extreme weather events. The correlation between climate change and urbanisation and its social and ecological impacts on urban areas, demand a dynamic transformation process. It is necessary to address these social and ecological issues alongside each other. In this report, thus, the term "social-ecological transformations" is used, as defined by Laurent (2020) to refer to these "societal processes of change that address social and ecological issues alongside each other, rather than in opposition to each other." (Archer and Adelina 2020) "Social-ecological transformations" offer a pathway that perceives social and ecological issues as interconnected and not opposite. In Viet Nam, today, most processes of change are still defined and approached as insular and thus are addressed without taking other interconnected issues into account. The concept of social-ecological transformation offers an alternative for Vietnamese policy-makers, advisors, and urban planners to aim for a more holistic approach. "Sustainable urban development requires proper planning for emission reductions, environmental protection, building resilience and especially social justice as a core component of all actions. To achieve these goals, we must follow an inclusive and accessible pathway." (Archer and Adelina 2020:1) Instead of conceiving social and ecological measures as trade-offs where the implementation of ecological policies by default threatens social justice, the implementation of these policies can also lead to synergies and new opportunities of participation and integration. To achieve this, four areas need to be considered: (i) improved transport between residential areas and locations of employment, leisure activities and government services, with associated impacts on environmental pollution and human health, (ii) redressing inequalities in the distribution of ecological benefits and risks and social assistance for ecological transformations to increase social and ecological justice, (iii) improving human well-being and integrating well-being indicators into public policies and (iv) bettering the urban energy metabolism and adaptation to climate change (Archer, Adelina 2020:1; Laurent 2020). These perspectives on social ecological transformations resonates with the SDGs which aim to improve the global social, ecological and economic well-being and are already part of Viet Nam's development process. Particularly SDG 11 offers a framework for urban development, including participation, transport and housing in cities. Its implementation with a holistic approach of social-ecological transformations could thus provide a socially and ecologically just urban future which provides climate change resilience, increased human well-being with an adequate urban infrastructure and a fair distribution of environmental risks to all citizens.

1.2 Aims of the report

To create a socially just and sustainable urban future in Viet Nam, it is necessary for urban planners, policy-makers and urban citizens to come together and rethink patterns of urban development. As many of the challenges of the future cannot be solved without taking the complex network of social interactions and ecological issues into account, social-ecological transformations offer the opportunity to take into account these complex interfaces. This report aims to increase the understanding of the complex relations between urbanisation and climate change as well as social and ecological issues in urban areas in Viet Nam. Based on this understanding, the report offers recommendations for policy-makers, urban planners and practitioners and civil society actors on how to support the social-ecological transformation of Viet Nam's cities.

1.3 Methodology and organisation of the report

The report draws from a desk review of literature, including global policy frameworks, policy reports, academic literature and case study reports.

We use the Vietnamese definition of cities based on "Decree No. 42/2009/ND-CP of May 7, 2009: On the grading of urban centres" which defines measurable criteria for the development and categorisation of Vietnamese cities. Based on this decree, the smallest urban centres (grade V towns) have at least 4,000 inhabitants, at least 65 per cent of labour is non-agriculture and possess urban infrastructure and architecture.

This report is comprised of three sections: In Part 1, we analyse the main urbanisation processes in Viet Nam and the resulting challenges, with a specific focus on social and ecological factors. We also detail how these processes work as drivers of climate change that impact on Vietnamese cities, thus leading to a reinforcing processes between urbanisation and climate change. Part 2 demonstrates how social-ecological transformations might offer a pathway for future development. Taking the examples of participation as a cross-sector issue and the housing and transport sectors, we describe the current situation, challenges, developmental aims and opportunities for social-ecological transformation in Vietnamese cities. Part 3 concludes with recommendations to strengthen urban development based on social-ecological transformations, particularly social justice and a healthy environment to adapt to and mitigate the challenges posed by climate change.

CHAPTER 2: CLIMATE CHANGE IN THE URBAN AGE – IMPACTS AND CHALLENGES IN VIET NAM (CLIMATE CHANGE AND URBANISATION IN VIET NAM)

2.1 Main processes of urban development in Viet Nam and their social-ecological impacts

2.1.1 Urban population growth

Since the early 1990s, urban development has been one of the key major social and spatial transformation processes in Viet Nam. This process is underscored by a slowly growing urban population. Whereas the urban population accounts for 34.4 per cent of the national population, it is still comparatively low, Viet Nam's annual urban population growth rate of 2.64 per cent between 2009 and 2019[2] is still more than double the national average annual population growth rate (1.14 per cent) and nearly six-fold the figure in rural areas (0.43 per cent) over the same period (GSO, 2020c). Furthermore, when looking at the 11 cities with a population above 300,000 in 2018, their average annual population growth rate (3.83 per cent) during 2010-2020 exceeded the national average to concentrate a growing number of people in major cities (World Bank, 2020b). Rural-to-urban migration is a major driver of urbanisation in Viet Nam, especially in the southeast with HCMC, Binh Duong and Dong Nai provinces, Bac Ninh province northeast of Ha Noi and central Da Nang as the top five destinations.

Beyond the general increase in the urban population, the two major metropolitan regions – the southeast around HCMC and the northeast around Ha Noi – continue to grow and attract residents. With an official population of 8.6 million in 2020, HCMC remains the largest city and is on its way to be Viet Nam's first megacity. In the Red River Delta, Ha Noi implemented plans to integrate the surrounding provinces into its administrative unit increasing its size and population to 4.48 million. Other major urban hubs are Da Nang, Hai Phong – a major port city in the northeast and Can Tho – in the southern Mekong Delta, which together with Ha Noi and HCMC, are directly governed by the national government. However, beyond these major cities many secondary, provincial and smaller cities and towns play equally important roles as rural-urban interfaces, integrating their rural hinterland into the urban economy, driving development and supplying important administrative, health care and educational functions (Agergaard et al. 2019; Tacoli 1998). As the amount of people living in urban areas in Viet Nam will continue to increase, the Vietnamese Government must manage this growth, providing the infrastructure and housing needed as well as the economic development to support this population.

2.1.2 Policy planning

Generally, urban development in Viet Nam is based on the homogeneous, global urban image of modernity, sustainability, and technological advancement (Söderström, 2013). Based on a comprehensive framework of formal urban planning, State actors are the main developers of urban space. The aim is the regulation of the urbanisation process as well as urban development. The State defines a vision of urban areas under State control as civilised, clean and modern as prescribed in the Law on Urban Planning. The State defines measurable criteria to classify urban centres into cities, towns and townships depending on existing infrastructure, population numbers and economic activities (Decree No.42/2009/ND-CP of May 7, 2009: On the grading of urban centres). It also demands that the local administration and people`s committee formulates plans and mobilises resources for investment following the decree's criteria. Urban centres should aim to develop and successively move up the classification scale. The decree states that an "urban development programmme must aim to improve the quality of people's lives and make urban architecture and landscape civilised, modern and sustainable while preserving the cultural quintessence and traits of each urban centre," (Decree No.42/2009/ND-CP of May 7, 2009: On the grading of urban centres), with a strong focus on quantifiable development goals like infrastructure and population growth. Whereas Decree No.42/2009/ND-CP neither includes access to green public space nor addresses social integration, individual urban plans for each city normally will address these aspects. However, Decision No.04/2008/QD-BXD concerning the Vietnamese Building Code at least includes a number of urban services for residential areas, like places for cultural activities. The regulation of urban development, the provision of infrastructure for

2 From 2019-2020, the population growth rate in HCMC was 2.76 per cent and 2.77 per cent from 2018-2019 and that for Ha Noi during 2019-2020 was 4.6 per cent and 5.41 per cent from 2018-2019.

a growing population and the solving of new emerging problems like social inequality and climate change are the main motivators of urban planning processes and define major areas of investment. The whole urban planning process is centralised in a top-down approach, with few opportunities for participation as the people's committees and people's councils at different administrative levels steer the decision-making process (Shigehisa 2017).

2.1.3 Urban expansion in peri-urban areas and the commodification of urban space

To accommodate a growing urban population, most major cities see the development of peri-urban land in the periphery, often by private investors and developers. For many local administrations, the selling of land use rights to private investors for development provides a major source of income for scarce city budgets (World Bank 2020:106). The regulative and administrative framework of the Vietnamese State further incentivizes urban administrations to expand outward, leading to land speculation. This heightens tension concerning land rights issues and corruption, already a major area of State-society conflicts in Viet Nam (Kerkvliet 2014). The construction of new urban settlements, economic zones and shopping malls also reduces available land for traditional agricultural use and the existing rural population. A growing population in peri-urban settlements increases traffic due to commuting. Thus, the construction of new urban areas, including gated communities for the middle and upper class, by the private sector inevitably changes the landscape of Vietnamese cities (World Bank 2020a:106ff).

Land speculation and gentrification

Besides peri-urban developments, many cities also modernise their centres with private investments, for example in HCMC. This includes the replacement of historic housing in the centre with modern high rise glass and steel architecture. By 2014, already 56 per cent of French villas in District 3 were destroyed. To name some examples, in 2015 the historic Ba Son shipyard built in the 1790s by Emperor Gia Lon was destroyed, in 2016 the Tax Trade Centre – formerly the 1926 Grands Magasins Charner was demolished (Doling 2019 cited by Historic Viet Nam). These areas are often converted into office space, shopping malls, expensive boutiques, clubs and apartments for expats and the upper-middle class forming the backbone of an emerging central business district. This results in gentrification as the old, lower-income population cannot pay rent or buy apartments in these buildings. They are, thus, pushed out and into peri-urban areas where they might displace the existing rural population and accelerates a spatial segregation by income groups (Waibel, 2004).

Green Space

This modernisation of the built environment and urban expansion in peri-urban areas of living quarters in major Vietnamese cities accelerate the loss of green space and limits availability. Access to parks is particularly limited in HCMC with a park surface area per inhabitant of only 0.22sqm compared with Ha Noi (1.48sqm).[3] Furthermore, in HCMC residents in inner city districts planned before 1996 have a higher availability of green space than those in the periphery planned after 1996 (Hoang, Apparicio and Pham, 2019:2). However, peri-urban and new urban districts in HCMC still have higher amounts of water bodies, vegetation and bare land (Tham Thi Ngoc Han 1, Pham Khanh Hoa 1, Ha Bao Khoa 2 and Tran Thi Van 2018:3). In Ha Noi, from 2007-2017, construction work due to rapid urban development led to decreased urban green space from 10,601.16 hectares (36.45 per cent) to 2,299.86 hectares (7.91 per cent) and of water bodies from 12.02 to 7.16 per cent of urban space (Le, Cao and Tran, 2019: 5). From 2010-2015, 17 lakes in Ha Noi were filled, while only seven new ones were created (Centre for Environment and Community Research cited by Nhan Dan, 2018). The construction of housing and other infrastructure on flood plains and along riverbanks also exacerbates flooding. The run-off from rainwater increases flood damage and puts local residents at risk, especially residents of informal settlements and poorer residents as they are more likely to live in exposed areas, such as near riverbanks or in areas with insufficient infrastructure. Finally, this also leads to the loss of public space, important for recreational use and social cohesion in communities. New urban areas, constructed by large investment firms, often do not include public space in their development, as they are privately-owned and can thus be subjugated to private rules and regulations (Douglas 2009). This limits opportunities for participation. The reduction in public space due to its privatisation and commodification increases social inequalities as the access to space for recreational, economic or participatory activities is restricted depending on income. Green space and urban nature is important in the construction of urban identities.

3 To compare, on average, European cities provide around 18.2sqm of publicly accessible green space and 44 per cent of the urban population live within 300m of a public park (European Commission 2019).

2.1.4 Economic structures and social inequality

Overall, since the economic reform polices of "*Doi Moi*" in 1986, which paved the way towards a market economy, Viet Nam has achieved a remarkable reduction in multi-dimensional poverty (urban: 1.2 per cent, rural: 8.0 per cent and general: 5.7 per cent) (GSO, 2020: 863). However, at the same time, economic disparities have emerged in urban areas between rich and poor families where the richest 20 per cent earn around 7.2 times the income of the poorest 20 per cent (GSO, 2020:852). According to Rigg (2016), households of marginalised groups, like ethnic minorities, are trapped in poverty. Since 2014, the GINI index for urban areas only decreased from 38.7 to 37.4 per cent (GSO, 2020:857). Thus, a reduction in social inequalities needs to be a central aspect of every urban development strategy.

Viet Nam's labour market in general has a high level of female participation, with 79 per cent of women aged 15-64 years employed or looking for work (Preet 2019). Regarding entrepreneurship, Viet Nam performs relatively well on measurements of gender equality. Women own 25 per cent of Viet Nam's SMEs[4] and hold 17.6 per cent of board seats in companies (Greene 2017).[5] Women are also involved in the start-up scene to an even higher degree than men – 15.5 per cent of women compared to 11.6 per cent of men – out of the working population (Khanh Chi 2019, Preet 2019). However, despite women's level of education being slightly higher than men's, there exists a sizable gender gap in earnings with women on average earning VND 3 million (USD 1,302) less than men each year (around one month's income) in all sectors and working age groups (Chowdhury and al., 2018:1). Women tend to work in lower paid occupations and industries than men, especially the informal economy. Furthermore, more women are willing to take lower salaries in favour of jobs with better hours, leave and insurance. This is influenced by unequal distribution of household work as women spend 14 hours more per week on house and care work (Chowdhury and al., 2018:4).

For low-income households in peri-urban and urban areas, the informal sector serves as a major income source (Tran 2018). Nearly a quarter of all main occupations (23.5 per cent) are found in the informal sector, with manufacturing, trade and services key ones. On average, women are overrepresented in the informal sector, for example in HCMC in 2011, women represented 56 per cent of informal employment (compared to 42 per cent in formal employment) and earned 50 per cent less than men (Cling and al. 2011:20). From trading, to services like hairdressing, recycling and farming, the informal sector offers diverse employment and also provides important services for the urban population. This includes a convenient, localised access to a market with cheap and fresh produce, as well as to services. This strengthens social cohesion in neighbourhoods, often functions as semi-public space for interactions (i.e. sidewalk coffee shop) and reduces the need for commuting. However, employment in the informal sector is highly vulnerable to external shocks. The government often limits access to public space, an essential resource for informal employment, for example during the 2020-2021 Covid-19 pandemic lockdowns, thus reducing income in a sector without a social safety net (ILO 2020:7; UNICEF 2020). HCMC and Ha Noi are also home to a growing start-up and tech industry, which provides employment for a small educated middle class (Deshmukh 2020). However as the recent strikes of Grab drivers in Viet Nam show (Buckley 2020b), much of this industry is still based on labour exploitation and recreates social inequalities. Labour strikes and wage disputes are also the root cause of strikes in the peri-urban industrial sector (Sui and Chan, 2015; Kerkvliet, 2011). Better labour rights would support marginalised urban residents and increase their ability to participate in urban life.

Traffic and basic services

Economic development and social equality in urban areas are strongly affected by a lack of investment to meet infrastructure needs of a growing urban population. Low density road infrastructure increases traffic congestion, further intensified by narrow alleys in inner-city neighbourhoods and a huge number of privately-owned cars, motorbikes and a lack of public transport. Limited investment in basic infrastructure in urban areas – waste collection, wastewater treatment and public water supply – leads to increased pollution of the urban environment. In Ha Noi, 80 per cent of its wastewater is directly discharged into waterways, thus almost half of its population live in areas classified as heavily polluted (World Bank 2020a: 42). Furthermore, only a fourth of Ha Noi's area has a functioning sewage system leading to regular flooding due to rain and a lack of draining. This problem is exacerbated by the sealing of green space. This puts lower income residents at a disadvantage as they more often live in areas without sewage systems (World Bank 2019b:30). Availability of a public water supply and trust in the quality of tap water is also lacking. Households in peri-urban areas often have no or limited access to tap water. Furthermore, residents in peri-urban areas need to pay for construction work and pipes to connect to public water networks as the government only provides the main pipe system, thus presenting a financial barrier for

4 Southeast Asian average: 8 per cent
5 Global average 15 per cent, Australia 20.1 per cent, United States 14.2 per cent, Singapore 9.4 per cent and China 9.2 per cent.

poor households. The usage of rain and surface water is still common in these households, which constitutes not only a health risk, but also a burden for women as the main caretakers and poor households (World Bank 2019b).

2.2 Climate Change and Urban Development

Viet Nam is among the 10 most vulnerable countries to climate change, with up to 75 per cent of its population at risk. At the same time, rapid urbanisation and development act as further drivers of climate change (DiGregorio, Tran, Garschagen and Tyler 2016: 12). Urban development reinforces this process and will amplify the effects of climate change on its urban population. At the same time, climate change mitigation and green urban development are major guidelines for Viet Nam's urban policies, as seen in its commitments towards the SDGs.

Table 1. Relationship between Urban Development and Climate Change

Source: Author

	How urban development contributes to climate change	How climate change affects urban areas
Population	Increased demand for housing and transport infrastructure: ➢ Increase in soil sealing and emissions from transport and economic activities ➢ Increased energy consumption for cooling of houses ➢ Increased consumption of resources from rural and peri-urban areasfrom rural and peri-urban areas	Increase in population due to rural migrants from climate change impacts on rural areas Further marginalisation of migrants, especially women in low-income employment and high-risk living quarters Higher population health risks in increasingly densely populated areas
Transport	Increased traffic (motorbikes and cars), rising CO_2 emission from cities Increase in fine particles, decrease in air quality	Increased maintenance costs due to damage from extreme weather events caused by climate change Obstruction of transportation system due to flooding and damage
Construction and Housing	Rise in CO_2 emissions from construction work and materials Reduction in green spaces and loss of green coverage as well soil sealing create extreme microclimates with high temperatures due to loss of cooling function	Increased risk of flooding due to extreme weather events and soil sealing, particularly in low-income households living in high-risk areas Destruction of houses and infrastructure due to extreme weather events
Water supply	Overconsumption and pollution from urban areas	Lack of sufficient water supply for urban areas due to decreasing groundwater and surface water
Energy	Increased energy consumption in cities and demand for energy resources from hinterland, particularly hydropower ➢ Decrease in water resources ➢ Increase in CO2 emissions	Decreased water levels in rivers reduce energy production for urban areas, due to hydropower
Drainage	Reduction of groundwater due to soil sealing	Increased in flood risks and extreme weather events
Economy	Increased CO_2 emissions from industries	Loss of arable land and reduction of agricultural productivity (food supply)

2.2.1 Rural-urban migration

The ecological costs of urban development and the impact of climate change on land use and agriculture already drives the rural population into urban areas. In the last five years, all rural provinces lost population, while major cities like Ha Noi, HCMC and Da Nang recorded growth (GSO 2020:135-136). The population in southern Mekong Delta, the rice basket of Viet Nam, has decreased since 2015 with out-migration substantially outpacing in-migration, while HCMC and its surrounding areas are fast-growing (GSO, 2020:136).

Table 2. Population Changes in the Southeast region and Mekong Delta 2015-2019 (%)

Source: GSO 2020

		2015	2016	2017	2018	2019 (est,)
Mekong Delta	In-Migration	1.1	1.1	0.6	1.0	1.0
	Out-Migration	6.5	5.7	4.6	6.8	9.0
	Net-Migration	-5.5	-4.6	-4.0	-5.8	-8,0
Southeast region (HCMC)	In-Migration	12.8	10.8	7.9	11.8	16.1
	Out-Migration	3.1	2.4	2.4	1.9	1.5
	Net-Migration	9.7	8.4	5.5	9.9	14.6

In the future, the loss of arable land due to salination and rising sea levels, as well as typhoons and other extreme weather events will further push rural populations from their land into cities putting pressure on already insufficient infrastructure, housing and job markets (ADB 2020). Marginalised, landless rural workers will first be forced to migrate due to loss of agricultural employment opportunities. The impact on women will be stronger due to the feminisation of the agricultural sector. Furthermore, women who remain in rural areas will see an increasing workload, while those migrating will often earn less than men (UNESCO, na). In cities, rural migrants will be pushed into marginalised living quarters often in high-risk flooding zones along riverbanks, on flood plains or without a proper sewage system.

2.2.2 Urban consumption as climate change driver

Built environment

Soil sealing results from the reduction and lack of green space, together with a loss of green coverage like trees and the filling of water bodies for construction of houses, parking lots and streets. This includes the sealing of flood plains and embankments of riverbanks, worsening flooding. Soil sealing also creates extreme micro-climates in urban spaces with higher temperatures as the cooling functions of green foliage, water surfaces and the soil is lost. At the same time, the omnipresence of air conditioning to counter rising temperatures further increases energy consumption and thus CO_2 emissions. Finally, because the run-off from storm water can no longer trickle off, this negatively impacts groundwater levels in urban areas and reduces local water supplies.

Energy consumption

In the last decade, Viet Nam recorded increased energy consumption per capita (577.5 KgOE/person in 2014 to 652.2 KgOE/person in 2019) and in electricity consumption per capita from 1,535.1 Kwh/person in 2014 to an estimated 1,981.1 Kwh/person in 2019 (GSO, 2020:263). The construction of hydropower plants for mostly urban and industrial consumption decreases the flow of surface water in rural regions. This is accelerated by increasing demand. Some scenarios expect that by 2035, energy demand will be nearly 2.5 times higher than in 2015 (Energy Outlook Report, 2017:2).

Urban emission and air quality

Increasing construction work and industrialisation, often with low environmental standards on pollution including low fines and weak laws in urban and peri-urban areas, increase CO_2 emissions in Vietnamese cities. The rise of private, motorised traffic further

contributes to CO_2 emissions and fine particles in the air (GSO, 2020:713). From 2014-2019, CO_2 emissions per capita jumped from 1,960.5 Kg CO_2/person to 2,445.0 Kg CO_2/person (GSO, 2020:263). National annual 11 per cent growth in road traffic underscores this development.

Poor air quality in Vietnamese cities is also caused by elevated levels of fine particle matter, VOC, CO_2 and other pollutants. In recent years, Ha Noi and HCMC regularly exceed the WHO standards on air quality, for example in 2017 Ha Noi exceeded the WHO standard on 257 days and HCMC on 222 days (Nguyen and Blume 2017:11). In 2013, Viet Nam's total number of deaths from air pollution was estimated at 66,314 and 5.2 per cent of GDP was used in welfare costs linked to air pollution (WHO, 2016:102), with marginalised, low-income residents and women a major risk group.

Urban Resource Usage

Urban areas depend on agricultural production and resources from their peri-urban and rural hinterland as their ecological footprint surpasses their administrative area (Tacoli 1998:149). Construction materials are produced in rural areas, including gravel, sand and wood. Other resources are needed for urban industries, including rare metals. The environmental costs for production of these resources are transferred to rural regions, often in the Central Highlands where ethnic minorities live. Land in peri-urban areas is also used as landfills for urban waste and urban wastewater pollutes rural waterways. The production of food for urban areas often over consumes rural groundwater leading to salination.

2.2.3 Climate Change impacts on urban infrastructure

The impacts of climate change, sea level rise on infrastructure engineering included the impacts from sea level rise and storm surge, saline intrusion; variation of temperature, precipitation; frequency and intensity of extreme weather events (such as tropical depressions, storms, droughts, etc.).

Transport

Existing infrastructure in most Vietnamese cities is already insufficient for current urban populations. Traffic congestion is a daily norm in major cities as road usage for passenger and fraught transportation increased annually over the last decade (GSO, 2020: 713). Flooding during the rainy season, due to a lack of functioning sewage systems, exacerbates these problems. The increase in extreme weather events due to climate change will further intensify these issues. Investment in urban sewage systems for storm water is urgently needed to reduce flooding and increase safety for marginalised groups. Maintenance costs for existing infrastructure, like roads, will increase due to damage from heat and rain. The World Bank estimates that climate-related disruptions could cause damage of up to USD 1.9 million per day (Oh and Espinet 2019). In particular, about 10 per cent of the national railway system is at risk and when considering future climate change effects, this might rise to 20 per cent, disrupting the urban economy, major transport links and overall connectivity (Oh and Espinet 2019).

Water supply

Vietnamese households generally tend to mix different water sources (rain, well, tap, bottle and surface water). This helps mitigate shortages and improves access (World Bank 2019b:31). Therefore, 99.4 per cent of urban households have access to hygienic water sources, and most also have access to a central water supply system (GSO, 2020:821). However, decreased surface and ground water and pollution have negative impacts on water supply in cities. During the dry season, it is already common for many Vietnamese cities to cut access to water for urban households (World Bank 2019b:32). As climate change will exacerbate this problem, the threat to urban water supply will also intensify. Furthermore, many marginalised households are not included in statistics (some estimations almost double HCMC's population), including unregistered urban and informal settlement residents. They are more dependent on free water sources (rain, well or surface), thus their access might be severely restricted due to climate change in the future. Sea level rises also lead to salination of water sources preventing consumption and agricultural use, particularly for cities in delta regions. Low water tables due to frequent droughts in the dry season and decreasing precipitation aggravate this risk (World Bank 2019b:30ff).

Climate change Impact on Energy supply

Lower water flows in upland streams due to climate change will also affect energy production in hydropower-dependent Viet Nam, as 99 per cent of urban households use electricity. As energy consumption rises, production often falls short due to low water levels in the dry season and thus endangering energy supply to urban areas (Ho 2016, Dang 2020). To mitigate this threat and reduce emissions, the government is investing in renewable energies, mostly hydropower, to almost triple the output from approximately 58 billion kWh in 2015 to 186hwh in 2030 (Das 2020).

2.2.4 Urban planning and the Sustainable Development Goals in Viet Nam

(SDG 11) Make cities inclusive, safe, resilient and sustainable:

- By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
- By 2030, enhance inclusive and sustainable Urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
- Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

Climate change and urban development are closely related and often negatively interact. Urban development causes cities to be built and renovated a lot, leading to an increased risk of flooding during heavy rains, storms and high tides. In particular, the danger increases when the planning at all levels, including national, regional and urban areas, do not have content or has no updated risk calculation plans with the new characteristics of climate change and sea level rise; The infrastructure engineering systems of most Vietnam's urban areas are old, weak and inconsistent. The system of houses and public works, schools, hospitals, theaters, offices, industrial enterprises, dike systems, discharge gates... have been built and designed with standards based on outdate historical targets and frequencies have not been updated in time with the recent serious climate change increased.

With increasing risks from climate change and rapid urbanisation as a further driver, the SDGs could provide a framework for Viet Nam to address a sustainable urban future which takes social, ecological and economic needs into account and offers solutions to mitigate climate change threats. Climate change as well as the SDGs are integrated in most Vietnamese urban development plans, including the Law on Urban Planning and Master Plan Orientation for Viet Nam's Urban System Development to 2025 and Vision to 2050, the National Strategy on Climate Change and the Scheme of Urban Development in response to Climate Change during 2013-2020. The government is committed to improving climate change adaptation and mitigation especially in the framework of urban development (MPI, 2018). Due to this commitment, Viet Nam has an impressive track record in progress towards implementation of the SDGs. Compared with other emerging market economies, the country ranks in the top 25 per cent for the majority of the indicators (Baum, 2020). This commitment was underpinned by significant infrastructure investment to provide basic services in road access, education, water supply and health care to most citizens (Baum, 2020). Overall, the SDGs provide an underlying guideline for Viet Nam's urban policies and their implementation is an important political motivator. In the urban context, with regard to social-ecological transformations, Viet Nam prioritises SDG target 11.6, which aims to reduce the adverse per capita environmental impacts on cities, with attention to air quality and waste management by 2030 (Development Asia 2020). By putting climate change adaptation and mitigation at the centre of its urban development strategy, the government attempts to connect the social and ecological aspects of urbanisation and urban development. The SDGs provide targets and indicators on the economic, social and ecological aspects of urban development. They also recognise the interconnectedness between these different aspects.

However, in Viet Nam, instead of a holistic approach which focuses on social-ecological transformations, most urban policies favour technology and infrastructure solutions. Environmental targets are insufficiently coordinated with economic and social targets, thus reducing possible synergies between social and environmental targets (Development Asia 2020). The lack of social participation and newer discourses on shared economies and innovative forms of mobility limit the scope for synergies between social justice and climate change adaptation and mitigation in the existing national policy framework.

CHAPTER 3: SOCIAL - ECOLOGICAL TRANSFORMATIONS IN PRACTICE (PATHWAYS TO SOCIAL-ECOLOGICAL TRANSFORMATIONS IN VIET NAM: PARTICIPATION, HOUSING AND TRANSPORT)

3.1. Participation in Urban Space: Public Space, Protest and Cooperation

SDG Target 11.3:

By 2030, enhance inclusive and sustainable Urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries

The SDGs, especially SDG 11.3, offer a pathway towards the social-ecological transformation of Viet Nam's cities, combining social and ecological justice with improved human well-being and protection from environmental risks and climate change.

To reach this objective, urban development needs to take the social component of cities into account. This is best expressed by the opportunity for urban citizens to participate in decision-making as well as in the making and using of urban space as also proclaimed by SDG target 11.3. Social participation is important to maintain and create social cohesion in cities. Only if citizens participate in the creation and management of their urban space is social and ecological justice possible (Schmid 2012). Social participation is thus a cross-cutting issue for social-ecological transformations including social-ecological justice and human well-being, with a reduction in poverty and mitigation of environmental risks. Construction of a sustainable and socially-just infrastructure, including housing and transport as discussed below, needs to be embedded in structures which enable social participation. To enable social-ecological transformations, investment in policies and mechanisms is needed to allow for social and political participation. There already exists some informal ways of participation in Viet Nam (see below), however formal channels offered by the government are still lacking.

3.1.1. Political context of social participation in Viet Nam

Organised forms of participation

Organised forms of participation outside of State structures are limited in Viet Nam. Instead, the Vietnamese Fatherland Front, an umbrella for most mass organisations in Viet Nam, is the central organ for political participation beyond the Communist Party. Its member organisations – Workers' Union, Youth Union, and Women's Union – are the central means for participation. They also serve as forms of NGOs to help marginalised groups, like ethnic minorities or offer disaster relief. The Workers' Union is also a policy advisor. However, there are few official channels of communication to enable citizens to participate in policy decisions on urban development. Public engagement in urban planning is not politically established. However, some NGOs operate under government supervision, particularly concerning environmental conservation, climate change mitigation and social support for poor citizens. Overall, Viet Nam still limits public participation and thus the inclusion of local needs and interests into urban development decisions. Better social inclusion would increase social cohesion, as seen during the pandemic, and support urban development which takes local needs into account concerning housing, transport and recreational spaces (Norlund 2007).

Informal forms of social participation

Beyond these formal structures, there exists temporary or long-term informal local groups, like artists, farmers, faith-based and neighbourhood groups. Some of these loose networks use social media to cooperate and some are also politically active. Contrary to the technocratic policy approach, in everyday life, practices of participation can be found widely in Vietnamese cities. These practices already offer pathways to social-ecological transformations, particularly social and ecological justice and improved human well-being. They might also offer role models for the use of sustainable materials and practices, for example local recycling workers. At the moment, these practices are informal and not embedded into formal communication structures with the State. Instead they either use informal interactions or disengage from the State.

Using the concept of a mediation space (Koh 2006), Vietnamese citizens engage in negotiation with local State agents to gain advantages, support their interests and solve problems. The government on one hand tries to regulate these interactions, while at the same time uses them where they fill an urgent need and cannot be solved by government. The main examples are the informal sector, illegal land and construction sector. The informal sector provides employment and thus financial support for citizens which does not need government assistance. In the housing market, an illegal construction solves bureaucratic backlogs and lack of adequate and affordable housing for urban residents. In both cases, citizens negotiate with local officials who then ignore the infractions. While some forms of everyday participation are strongly rooted in social interaction, like urban gardening and community spaces, others open space for protest. Recently more cooperative forms of participation between State and citizens also emerged (Koh 2006, Norlund 2007).

3.1.2 Preconditions for successful participation: public space, protest and cooperation

Beyond policies and formal mechanisms, social participation also needs available public space, the opportunity to voice dissent and grow practices of cooperation. All can already be found in Viet Nam, but will need further support to become a wider factor to support social-ecological transformations in sectors, like transport and housing. Public support and participation are needed to successfully achieve a social-ecological transformation of the existing transport system in Viet Nam.

Public Space: Communal spaces, urban gardening and street art

At an individual level, participation in urban space takes the form of urban gardening in public space, sometimes as community gardens. In the context of social-ecological transformations, urban gardening fulfils a double function of providing food and recreation as well as participation in the production of the urban green space which provides environmental services to the city (Kurfürst, 2019). From street art and graffiti to small local community art centres, these provide similar spaces of interaction and participation for local communities. The most famous example was Zone 9 in Ha Noi, which opened in 2013 but was soon closed by city administration due to safety concerns. Since then, other community art centres and collectives developed in Ha Noi and HCMC (Ly 2014). In both cases of urban gardening and community art centres, a regulatory balance must be reached between the city administration and open spaces for participation without over-regulation. An interesting example regarding this cooperation of art and space is the "mural village" Tam Thanh in the peri-urban area of Tam Ky, Quang Nam province inaugurated in 2016. With city administration support, Vietnamese and South Korean artists painted the walls of local houses with colourful murals to promote the area as tourist destination and engage the local population (UN-HABITAT, 2016). Contrary to most tourism development which privatises local space, excludes local residents from access to transform the environment - often negatively, this project offered an economic perspective for local households mostly dependent on fishing and shrimp farming. Besides opening local homesteads for tourists, the project strengthened local community networks to increase human well-being and social justice as well as reduce poverty.

Dissent and communication: Urban protest movements

Urban space in Viet Nam also provides scope for political participation. From land rights conflicts to LGBTQ communities, cities are the main arena for vocalising rights. In recent years, major environmental protest movements also used cities as arenas for participation. The Ha Noi tree movement protest in 2015 is the most prominent local urban example. As the city administration started to cut old trees in the city centre to facilitate traffic flows, local residents successfully protested this policy (Geertman and Boudreau, 2018). Another example was widespread protests due to a 2016 marine life disaster, when at least 70 tonnes of dead fish were washed ashore along the central coast due to discharges of polluted water by the Formosa Plastics company. This led to widespread protests which reached a level of accountability from the government and the Taiwanese company, which paid USD 500 million in reparations (Morris-Jung and Pham 2017; Nguyen and Datzberger 2018). These examples of participation combined social and ecological grievances with a more ecological approach to political decision-making. These protests aimed to establish social and ecological justice, where environmental risks are not unequally distributed towards lower income groups and farmers. They also propagated narratives in support of green spaces and urban services, like trees, which increase the urban quality of life and play an important role in urban ecological services, with regard to air quality and micro-climates. Because environmental protection and climate change play important motivators for political participation for many urban residents, they also enable social-ecological transformations from below, as urban residents push for more social and ecological justice, a better urban quality of life and sustainable urban infrastructure.

Cooperation: Corona pandemic

From a public health perspective, the Covid-19 pandemic challenges urban development in new ways and highlighted the dynamic relationship between social and ecological transformations in Vietnamese cities. Ecologically, local lockdowns reduced air pollution in major cities with reduced commuter traffic. However infection fears in buses – even with safety protocols in place like hand sanitiser, temperature measurements and mandatory mask wearing – reduced their usage (Viet Nam Insider 2020). During the first outbreak in spring 2020, the government even ordered the suspension of public transport (Reuters 2020). Socially, this mainly affected poorer residents more dependent on public transport who had fewer alternatives. Furthermore, urban residents working in the informal sector lost income as use of public space was limited. They also had fewer financial resources to offset these loses and were partly forced to work during the pandemic, often in unsafe conditions. As factories and companies tried circumvent pandemic regulations or transfer economic costs to workers, localised strikes achieved a degree of accountability, reducing the economic burden for workers and enforcing safety measures (Buckley 2020a). Overall for participation, the pandemic had negative effects on access to public space. In response, the Vietnamese Government adopted a top-down communication approach. However, due to transparency, large parts of the Vietnamese population including in cities were willing to follow regulations on social distancing, lockdowns and wearing masks. The result was an emerging cooperative mode of participation between the State and citizens (Le and Nicolaisen 2021).

3.1.3 Mechanism to improve existing participation structures

To push towards social-ecological transformations, the central government needs to develop a long-term strategy for urban development based on a social consensus and equality to reduce stakeholder conflicts. This includes mechanisms to harmonize and coordinate the community interests to avoid conflicts of interest in the implementation process of urban development policies. To garantuee the integration of social and ecological justice, particularily better urban living qualities and the mitigation of climate change risks for marginalised urban citizens, participatory mechanism must be integrated into urban planning tools and policies. Besides current informal structures which foster social participation in urban everyday life, a formal framework needs to be established which gives a voice to urban citizens. To reach this goal and implement SDG target 11.3, the government particularly at city level should implement and improve channels of communication and interaction between the government and urban residents in the policy-making process for more effective participation. The current channels do not sufficiently enable urban resident to contribute to and participate in decision-making processes, including mass organizations and government institutions. Existing consultation mechanisms in public policies need to be better promoted and use to build community resilience. Local administration should promote programs to raise people's awareness of these existing consultation mechanisms to allow for local resident to participate more effectively.

Furthermore, public urban space needs to be preserved for all urban residents independent of social groups. Open space for interaction in local communities provides opportunities to increase local resilience and community cohesion. Participation remains a major tool to achieve a socially-just city. Furthermore, as Vietnamese citizens themselves are interested in environmental protection and conservation, this also offers tools to engage the public in the creation of a sustainable urban environment.

3.2. Social Housing as a Development Goal

SDG Target 11.1:

By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

Safe affordable housing for all citizens is recognised as a basic need to improve the well-being of urban residents. Availability of and access to housing facilitates access to employment, guarantees a minimum of social safety and protection from environmental risks, like extreme weather. However, the affordability of housing is limited by low-income households' scarce financial resources. Social housing policies offer these citizens access to houses at an affordable price. High-quality social housing creates a more socially-just urban society

and improves the well-being of residents. The provision of social housing by the government is part of the social-ecological transformation of urban development, with the government providing cheap housing stock alongside an ecological perspective in its policies. In the context of climate change, social housing policies offer an opportunity for the government to construct environmental-friendly housing that not only protects its residents, it also embraces a sustainable green future and reduces factors which might drive climate change. Globally, this is recognised in the SDGs, target 11.1, which the government is committed to achieve.

3.2.1. Context of social housing in Viet Nam

From the Government of Viet Nam's perspective, the "National Housing Development Strategy to 2020 with a Vision towards 2030" clearly states that housing development is a mutual task for the State, society and citizens. The strategy targets construction of 100 million square metres of floor area annually to 2020, with at least 20 per cent of flooring in urban housing projects to serve social assistance beneficiaries and low-income households. The social housing policy has been a social security priority for the Party and Government of Viet Nam since the 11th National Party Congress. However, current policies are mostly limited to promoting an increased supply of social housing rather than focusing on other important sustainability factors, such as the quality, materials and eco-friendly aspects of social housing in the context of climate change and natural disaster risk management.

Due to the average annual urban population growth rate of 2.64 per cent from 2009-2019, the demand for housing has increased significantly. This has resulted in a lack of housing in urban areas, especially for poor people. According to a Central Steering Committee for Housing and Real Estate Market report released in July 2020, 20 per cent of urban residents in Viet Nam could not afford to buy a house, 18 per cent of urban houses were classified as non-standard, and 22 per cent of Ha Noi's population lived in cramped environments with living areas not exceeding 3 square metres per person.[6] According to Decision No.2127/QD-TTg (30 November 2011) for the National Housing Development Strategy to 2020 and Vision to 2030, the proposed demand for social housing nationwide during 2011-2020 was about 440,000 apartments, but so far only 30 per cent has been constructed. To meet the housing demand of low-income people in urban areas and workers in industrial zones, the strategy sets the target to build 12.5 million square metres of social housing by 2020 for these groups. However, according to MoC statistics, social housing development has only met 34 per cent of the set target. During 2009-2020, the country has completed 207 low-income housing projects, including more than 85,810 houses with more than 4.29 million square metres of flooring and is currently implementing 220 projects, comprising 179,640 houses with more than 8.98 million square metres of flooring.

However, a large part of the urban population will still depend on social housing due to a low accumulation of capital. This results in an increasing demand for social housing, with prices 20-50 per cent below that of commercial rates. Thus, currently, housing in Viet Nam's cities has yet to achieve significant progress towards achievement of SDG target 11.1 nor can it guarantee socially-just availability. For many urban residents appropriate housing is still a luxury, even outside of informal slum settlements. A lack of social housing is particularly dire for migrant households, single parent families, people with disabilities and the elderly, who often have lower income and depend on government support or the informal sector. To address the resulting housing shortage, urban residents often ignore formal institutions and regulations. Instead, they engage in informal construction without permissions, including the transfer of land to build houses without permits and illegally expanding existing housing structures (Koh, 2006). However, this affects urban area planning as well as local residents' quality of life as it reduces the legibility of urban space, with streets and houses without names or numbers. Traffic flows can also be obstructed. This trend can also increase the density of the built environment, thus making inhabitants more vulnerable to natural disasters and disease. Furthermore, informal construction without permission often ignores building standards and thus may be unsafe in material and stability. This further decreases living quality and endangers urban residents, especially low-income households.

3.2.2. Major challenges in social housing

Institutional and financial Shortcomings

There are numerous reasons for delays in construction of sufficient social housing.

1/ A lack of coordination and planning in land use policies leads to limited land available for social housing projects. Furthermore, in some cases, unfavourable locations diminish people's interest in buying these houses.

2/ Relevant authorities have not paid sufficient attention to development of social housing, with the non-prioritisation of incentive mechanisms for

6 The National Housing Development Strategy to 2020 with a Vision towards 2030 stipulates that the average urban housing area is 26 sqm per person. As a minimum, the target set to be achieved is at least 6 sqm of floor space per person.

social housing developments to attract private sector investment. The bureaucratic process, including legal documents and administrative procedures – although already simplified – is still time-consuming and hampers private investment.

3/ Investors have not actively targeted small and affordable housing. Consequently, the limited capital channeled into social housing developments means many cannot proceed.

4/ Government-supported housing development programmes for low-income people and workers have struggled to access capital due to low social policy budget allocations. Meanwhile, capital sources to cover interest rates for credit organisations to provide loans for implementation of social housing policies have not been arranged. Finally, the housing support programme is not attractive to those working in the informal sector with insecure and irregular incomes as the government has shifted from non-refundable aid to low-rate bank loans (MoC, 2020).[7]

Quality Shortcomings

Institutional and financial shortcomings also affect the quality of social housing. Currently, there is no national technical standard specifically for social housing. Article 55, of the 2014 Housing Law, only stipulates that construction design is based on social housing floor area standards. Therefore, it can be understood that, apart from the area provisions, social houses should meet technical regulations and standards for housing in general. Because the profitability of social projects is not as high as commercial house projects, investors reduce construction costs by compromising quality. Investors also skimp on infrastructure services such as public spaces, lakes and green parks. Furthermore, they also focus on small-scale apartments ranging from 25-35sqm[8]. An apartments of this size for a family of three to four people places pressure on the surrounding infrastructure, utilities and services. Furthermore, the majority of social houses are built in sub-urban areas or near industrial zones. According to a 2019 MoC report, out of 207 social housing projects nationwide, 62 per cent were near industrial parks, the remainder built at locations far from administrative, commercial centres or in areas where transportation infrastructure is limited. Thus, urban periphery locations limit labour market and urban services access for residents, especially women, people with disabilities and the elderly. Furthermore, locations near industrial zones might be advantageous for workers, but also pose health risks for residents. Overall, development of social housing projects should be synchronised with urban infrastructure to facilitate equitable living opportunities in the urban periphery.

Social Housing and Climate Change Resilience

In addition to these institutional and financial shortcomings, the threat of climate change in Viet Nam also needs to be considered in the framework of social housing policies. Climate change affects urban development, industrial zones and housing developments, including social housing, with impacts dependent on each region and its topography. Coastal cities are mainly affected by typhoons and flooding, while mountainous areas face flash floods and landslides and the midlands and deltas encounter floods, typhoons and hail.

Impact from natural disasters

Due to poor quality social housing and peripheral locations in the urban landscape, social housing structures are more vulnerable to climate change impacts. Moreover, the use of low-quality construction materials and limited maintenance intensifies this problem. Increased rain, storms and flooding due to climate change might further degrade the quality of social housing. A lack of urban infrastructure, such as sewage systems and public space, reduces resilience and adaptability to climate change. High-density construction and inhabitants is another risk factor. Social housing projects are often located far from city centres, requiring residents to undergo a daily commute, resulting in increased CO_2 emissions. The lack of green space – resulting from developers economising space and construction costs with the selection of cheap, low-quality materials – also affects air quality and GHG emissions. Therefore, most social housing is not as sustainable as other types of housing in Viet Nam in weathering the impacts of climate change due to low-quality materials resulting in increased maintenance costs and future investment needs. There is a need for low-cost shelter aspects to be applied to social housing, specially for coastal areas. From 2017-2021, UNDP Viet Nam – with support from the GCF – explored this issue at five pilot provinces (Quang Binh, Quang Nam, Quang Ngai, Thanh Hoa and Thua Thien-Hue), while the MoC conducted a feasibility study to scale-up this work in all of Viet Nam's 28 coastal provinces[9]. However,

7 https://moc.gov.vn/tl/tin-tuc/63704/nha-o-xa-hoi-tai-viet-nam---goc-nhin-tu-cac-co-che-chinh-sach.aspx

8 Circular No.21/2019/ TT-BXD on the National Technical Standards on condominiums (QCVN 04: 2019/ BXD) specifies that the minimum area of an apartment should be at least 25 sqm for social housing projects, including low-income housing.

9 https://www.adaptation-undp.org/projects/improving-resilience-vulnerable-coastal-communities-climate-change-viet-nam: Building on ongoing social protection programmes related to housing for the poor and marginalised, the project will

climate-resilient social housing can avoid storm and flood damage if built with reasonably priced and higher quality local construction materials. To achieve resilient housing structures in disaster-prone areas, vulnerable building structures should be identified in urban areas and subsequently improvements made towards more resilient housing with increased capacity to cope with shocks (environmental, economic and social) over time. This includes taking an historical perspective on local climate risks as well community consultations on needs: a process rarely seen in Viet Nam (Tran 2014). Aside from the above-mentioned UNDP project that provided useful lessons, the MoC offers incentives and policies to facilitate the construction of resilient housing. The MoC proposes to extend implementation of the Prime Minister's Decision No.48/2015/QD-TTg that aiming to improving social housing for low-income groups. This will be applicable to 28 coastal provinces with adjusted mechanisms. They include beneficiaries will be based on Decision No.59/2015/QD-TTg (19 November 2015) by the Prime Minister deciding the promulgation of multidimensional poverty standards applicable to 2016-2020, establish non-refundable aid from the Government of Viet Nam and seek support from international donors, Viet Nam Bank for Social Policies to offer low interest loans and other intensives and policies applicable to facilitate the process.

Impact on social actors

Climate change not only strongly impacts social housing structures, it also affects residents. This is compounded by a heightened vulnerability due to limited financial resources and economic opportunities, which further diminishes their resilience, as described in Chapter 2. Generally social housing targets ethnic minorities, households with difficult living circumstances, in remote areas, with low incomes and the elderly, single parents and people with disabilities.

Due to a higher construction density, unsafe construction materials in social housing and illegal constructions, there are safety risks for residents, including health risks. Often, social housing is overpopulated with a high density of residents allowing for the spread of infectious diseases. Poor infrastructure for utilities and sanitation limits access to safe water and reduces hygiene. Lack of proper isolation and ventilation increases costs for utilities. This becomes especially relevant regarding future heat waves caused by climate change. Poor sewage systems and locations in at-risk areas increases flooding risks during rainy seasons and storms. As social housing is not equipped for climate change mitigation, it disproportionally affects marginalised groups. This risk will increase when climate change negatively impacts building structures, infrastructure and increases the frequency of extreme weather events.

Due to a lack of income and education, social housing residents also have fewer opportunities to participate in decision-making processes and the creation of their lived-in environment. Whereas participatory channels in Viet Nam are already restricted, they are even less accessible to poor households who might not have internet and social media, where public discourses are established. They have less financial means and time to collect information and participate in community activities as they often work long hours in the informal sector. Finally, they might lack the education, networks and time to participate in the political processes. As a consequence, social housing projects are seldom built following the needs of the intended residents as they are excluded from the planning processes.

However, a lack of information and participation also increases vulnerability with regard to climate change. Residents in social housing have limited capabilities for adaptation due to their socio-economic status, like job dependencies and lack of financial savings. They have limited information on risk assessments, early warning systems and appropriate modes of conduct in case of emergency. Finally, poor residents lack access to support networks in case of natural disasters beyond their own social strata.

3.2.3. Mechanism to prioritize social housing development towards social-ecological transformation in Viet Nam

Green, sustainable Housing

Currently, social as well as low- and medium-priced housing does not integrate sustainable green construction standards into regular MoC standards despite increasing demand of sustainable development. A green housing standard provides residents with more environmental friendly features with reasonable costs as it reduces electricity and water costs and helps apartments retain their asset values. According to MoC research, an EDGE-certified green building[10] saves 20 per cent of energy, water and materials use compared to corresponding local consumption standards (Funnell 2019). Green buildings also offer incentives for buyers and thus advantages for investors (Funnell 2019). While initial costs might be 1.5 per cent higher, low and middle-income households can save up to 40 per cent on their utilities bills, (Funnell 2019). Therefore, establishing EDGE-standards for social housing in

incorporate storm and flood resilient design features in 4,000 new houses, benefiting 20,000 poor and highly disaster-exposed people.

10 Excellence in Design for Greater Efficiencies (EDGE) is a green building certification system for emerging markets. EDGE, an innovation of International Finance Corporation (IFC) – a member of the World Bank Group, is active in 125 emerging markets, including Viet Nam. (https://edge.gbci.org/)

the future can lessen the economic burden on poor households. However, the long-term effects of green buildings cannot be converted into money. A reduction in GHG emissions and higher resource efficiency will have positive effects on the environment, reduce pollution and Viet Nam's contribution to climate change.

Legal advocacy: social housing policy development

An enhanced legal framework related to housing development, especially the development of social housing, is necessary to ensure optimal implementation to meet citizens' needs. To address inadequacies in service quality as well as prevent overloaded urban infrastructure (traffic, waste, drainage) and creation of "informal settlements", it is necessary for the government to enhance legal regulations on planning, design, services, construction quality, fire safety, landscape, environment and utilities. To limit the construction of small apartments, the government stipulates that only 25 per cent of all apartments in a social housing project can be sized between 25-45 square metres. To facilitate the implementation of social housing projects, administrative investment procedures should be streamlined for new housing programmes. It is necessary to support and create incentives on policy support and financial mechanisms for the investors, households and individuals to invest in infrastructures for social housing projects, including their surroundings. To facilitate these administrative processes and strengthen coordination of all actors, it would be beneficial to establish a coordinating agency between government, investors, citizens and related agencies. Finally, the government should ensure that social housing is also provided in central city locations, not just on the urban periphery, to avoid deepening inequalities from placing poorer households away from urban services and employment opportunities.

Financial mechanisms

To address the current lack of government funding, it is important to unlock access to capital for climate friendly social housing projects, including cultivating private investors. Moreover, it is also vital to amend and supplement regulations on housing and land property taxes to generate revenue for social housing projects. This includes financial legislation for medium- and long-term capital mobilisation for social housing developments on the basis of increasing concessional credit, while reducing State budget allocations. As the government and private sector are insufficiently strong enough individually to shoulder the burden of financing social housing projects, the promotion of public-private partnerships (PPP) is one key solution. To unlock PPP's potential, the government should implement investment incentive policies related to social housing to engage the private sectors. Finally, to improve access to housing financing, it is important to ensure more transparency by empowering residents, especially representatives of beneficiary groups to paticipate. The overall aim should be easy and sufficient access to social housing for vulnerable urban residents. Furthermore, an increase in funding and incentives for investors could also support higher quality constructions as well as green standards in social housing.

Land use management

The Housing Law 2014 stipulates that 20 per cent of land fund is reserved for construction of social housing. As such, people's committees of provinces and cities direct the formulation, appraisal and approval of land use planning, and supplement land funds to meet the needs of social housing developments. New urban areas and commercial housing development projects should also reserve 20 per cent of land for social housing. Decree 100/2015/ND-CP stipulates that investors in commercial housing projects with less than 10 hectares can choose one of three methods to follow the 20 per cent stipulation: i) reserve 20 per cent of land for construction of social houses in the project (Clause 1, Article 5), ii) transfer a housing fund equivalent to the value of the land fund of 20 per cent that is calculated according to the price of the land for which the investor performs obligations to the State, at the time of transfer for use as social housing (Clause 2, Article 5) or iii) pay in-cash equivalent to the land fund value of 20 per cent according to the land price for which the investor performs obligations to the State (Clause 2, Article 5).

This includes adjustments to planning in urban areas and industrial zones to ensure the allocation of sufficient land for social housing. The equitable allocation of resources to invest in essential infrastructure and measures to encourage communities and businesses to actively participate in social housing developments is necessary.

3.3. Transport and Mobility

SDG Target 11.2:

By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

Access to and availability of transport is a basic service in cities, also stated in SDG target 11.2. With growing expansion into peri-urban areas, commuting and travel distances are growing, raising questions of mobility and participation in urban life. Access to transport directly contributes to economic growth and equal access also reduces marginalisation and strengthens lower income groups. Mobility enables socially-just sustainable development as it provides access to education, health care, and job opportunities. It improves the exchanges of information and strengthens social cohesion and community participation. Women especially need safe access to transport to help achieve gender equality in Viet Nam. A socially-just and ecologically-friendly transport system opens a pathway to the social-ecological transformation of Viet Nam's cities and the realisation of SDG target 11.2.

3.3.1. Context of the Vietnamese transportation system

While mobility is a requisite for socio-economic and political participation in urban spaces, access to transport is not universal. Availability, cost, safety and status limit access to transport and pre-determine available choices. Generally, urban modes of transport in Viet Nam can be distinguished between non-motorised mobility, private mobility with cars or motorbikes, public transport, especially buses and finally vehicles for hire, such as taxis, motorbike taxis (licensed from Grab and Co, for example).

Privatized transport: Motorbikes and cars

The motorbike is the most common and widely used means of transport for the lower and middle strata of society. In Viet Nam, there are approximately 50 million registered motorcycles and nearly three million automobiles (United Nations 2018:6). A newspaper reported that in Ha Noi from 2010-2015, motorcycle ownership increased by 7.66 per cent to 5.045 million motorcycles and a 12.9 per cent rise in cars during the same time period (Nhan Dan, 2017). In higher income groups, car ownership is rapidly increasing regardless of high taxes and fees, this includes an import tax of 50 to 150 per cent (except for imports from ASEAN countries), a luxury tax of 40-60 per cent and a VAT payment of 10 per cent (VietNamNet Bridge 2018). Cars provide a convenient mode of transport that provide shelter from high temperatures and tropical rain, thus are perceived as modern desirable modes of transport. However, costs are prohibitive for low-income groups (Nhan Dan 2018). Generally, the access to privately-owned, motorised modes of transport is limited for women based on economic, cultural and social factors. In 2018, only 4-5 per cent of Vietnamese families owned a car leading to one of the lowest car ownership rates in Asia with 23 cars per 1,000 people (VOV, 2018)[11]. However, car ownership is aspired to by the growing urban middle class, particularly in HCMC and Ha Noi. Thus, the market is growing with 15 per cent of urban consumers planning to buy a car in 2017 (VOV, 2018). Still, car ownership is related to higher income and thus motorbikes remain the preferred means of transport for the middle class for the moment, as 74 per cent still use the motorbike for daily commute (Dtinews, 2018, Mortensen 2019). With regard to Vietnamese women and transport, unfortunately, there is a lack of data. However, older studies pointed out that while women also used motorbikes, they had a higher probability to walk or use public transport compared with men, especially in smaller cities and low-income households. For Ha Noi, a study from 2015 put these numbers at 31.4 per cent for female motorbike drivers verses 68.6 per cent for male drivers (Bray and Holyoak 2015:6). While the existing data does not represent newer developments, it might still be accurate for smaller cities and towns which are often more conservative compared with Ha Noi and HCMC. Sixty per cent of people walking in Viet Nam are women, but more than 70 per cent of people using a motorbike are male (ADB 2019:15). Women are responsible for most domestic travel, including transport of children and relatives. This means that particularly for women from low-income households without a second motorbike, they often walk for domestic chores, are dependent on a driver or use public transport which is time-consuming and thus limiting women's time for socio-economic activities.

11 Compared with 565 motorbikes per 1,000 people in 2016 (Dtinews; 2018)

Non-motorized means of transport

Non-motorised means of transport, such as cycling and walking, in contrast are the major modes of transport for lower social groups, women and students. For many in the informal sector, non-motorised means of transport are common (street vendors with pushcarts or baskets). While cheap to access, they are only used for short-distance travel and have underlying safety and health concerns. Neither the built urban transport infrastructure in Viet Nam nor its driving culture is supportive and conductive for active forms of transport as motorised forms of transport are prioritized and infrastructure for walking and biking is lacking. Walking is particularly difficult due to a lack of sidewalks that are used for parking, driving or trading. Safety concerns include bad air quality in major cities and the threat of accidents. Limitations in green and open spaces in cities further limits opportunities for active mobility (Hansen, 2016:37).

Public Transport and vehicles for rent

Public transport and vehicles for rent offer an alternative to private motorised mobility. They provide last-mile connections from a railway or bus station to the final destination and are an important corner stone of Vietnamese mobility. This segment provides mobility to those parts of the urban population which have no access to a motorbike, bicycle or car, for example the elderly or people with disabilities. Vehicles for rent have a long tradition in Viet Nam's cities (Mateo-Babiano 2015:9). After independence, the colonial rickshaw was slowly replaced by the motorbike taxi ("*xe om*"). In the last decade, large corporations have taken over some this sector which might lead to the slow disappearance of independent "*xe om*" drivers over time (Lampard 2021). Recent strikes by Grab drivers (and others) highlight the downside of this process which exploits drivers with little rights and low income (Turner and Ngo 2019; Buckley 2020b). Catering to a growing middle and upper-class as well as tourists and expats, taxis and cars with drivers are also part of this transportation segment.

Besides vehicles for rent, buses still provide the majority of Viet Nam's public transport in urban and rural areas for lower income groups, women and students. Buses connect small rural towns and villages with provincial cities as they offer daily commutes, which also allow for the transport of trading goods and small livestock. Buses offer socially equal access to mobility, with low costs. They connect inner city districts with peri-urban areas and are also used for regional travel. Private bus companies can offer nationwide destinations with a high standard, in contrast to public inner-city bus transport's lack of quality and convenience. Because quality, reliability and convenience can widely vary, public transport is viewed as low status. Furthermore, instances of harassment remain safety concerns for women (Nguyen DT and Yoshitaka 2018; Ng and Phung, 2015:9). The introduction of metro systems in Ha Noi and HCMC could change this perception and offer a timely, convenient and fast alternative to inconvenient road traffic. For HCMC, a nine-line metro system is planned. Line 1 has been under construction since 2012, with 2017 the original opening date. In April 2020 construction was 71 per cent finished and the end of 2021 targeted for completion. The other lines are still in the planning phase, with construction on Line 2 expected to start in 2021 (Clark 2020b). In Ha Noi, testing of its new metro Line 2A (Cat Linh-Ha Dong) started in December 2020, thus increasing hope for an opening in 2021 (Doan Loan 2020). Construction of metro Line 3 is under way, with nine metro and three monorail lines are planned (Clark 2020a).

3.3.2. Major transportation challenges

Gender and Access

Access to urban mobility in Viet Nam is not socially-just. Instead, access is based on financial means, gender and social status. Residents with low incomes, students, the elderly and women can often only access public transport with low-quality or non-motorised modes of transport. Access to mobility, especially the public bus system is also challenging for people with disabilities. Most buses have no disability-friendly entrance, often have steps and drivers are not always willing to completely stop for people to enter or leave, instead forcing them to jump off or into a moving vehicle. This curtails the ability of these groups to participate in public life as access to employment, education and health care is restricted. Particularly for women, who are often responsible for the transport of family members and household chores, it requires greater investments in time for daily travel. Furthermore, public transport poses dangers (ADB 2019:15). Besides exposure to fumes and road accidents, sexual harassment is a recurring risk for women and girls. According to a 2013 study by Plan International, more than 40 per cent of girls in Ha Noi had never or seldom felt safe using public transport.

Safety

Traffic in Viet Nam's large cities poses serious safety concerns. The quality of transport infrastructure is inadequate, often out-dated and damaged. Due to traffic congestion and low road density in Viet Nam, travel time is lost in traffic jams. Combined with hazardous driving practices – where bigger vehicles are prioritised and endanger smaller traffic participants like cyclists,

pedestrians or motorbike drivers – Viet Nam has one of the highest fatal road accident rates in Southeast Asia at 25 deaths per 100,000 inhabitants with motorbike drivers, pedestrians or cyclists at risk (Chaudhary 2018:19; WHO 2013:232). Mandatory wearing of helmets for motorcyclists was introduced over a decade ago. However, short trips are characterised by little or no helmet use, with poor quality helmets common (AIP Foundation and FIA Foundation, 2017). Driving under the influence of alcohol remains a long-term problem, increasing accident risks (Nhan TT et al. 2012).

Environmental Impact

Finally, from soil sealing for road construction to declining air quality, Viet Nam's transportation system has negative environmental impacts. Moreover, the widespread use of cars and motorbikes contributes to increasing CO_2 emissions. The transport sector accounts for 12.7 per cent of Viet Nam's total GHG emissions (Chaudhary 2018:19). Large daily numbers of vehicles and traffic participants increase CO_2 emissions, amplified in congestion. Infrastructure construction reduces green space and green coverage as old trees are cut to make way for roads and cars. This also affects urban micro-climates, reduces the well-being of urban citizens and increases health care costs[12].

3.3.3. Mechanism towards a social-ecological transformation of Viet Nam's transport system

A social-ecological transformation of Viet Nam's transport system is needed to guarantee equitable, safe and cheap access to mobility for all residents and limit transport's environmental and climate change impacts. Finally, existing infrastructure should be adapted to mitigate climate change effects on urban space and transport infrastructure, particularly reducing the flooding risk in urban streets due to a lack of sewage systems and increasing structural resilience for bridges and streets against damage from storms, heavy rain and heat.

Planning of a sustainable urban transport system

Overall, to develop a sustainable urban transport system, Viet Nam needs to rethink its approach towards urban planning and in particular, urban mobility. The motorised, car-centred city of the 20th century needs to make way for car-free cities based on shared and public mobility concepts. At the urban planning level, green sustainable development and mitigation of climate change are already taken into consideration. In Ha Noi, for example, the use of motorbikes will be banned from 2030 (Vo 2019). However, as long as car travel is not perceived negatively – congestion, air pollution and travel safety might persist. Public transport should be promoted by the central and local government as main means of future urban mobility. The local government needs to invest into the quality of public transport which should be safe, clean and reliable. This also includes concepts for stationary traffic: An improved connection between parking areas in the urban periphery and public transport would reduce the need to provide parking areas in the city center, opening space for alternative usage. High quality public transportations between residential areas, workplaces, recreational activities and government services wuld also reduce the need for travel. At least in Ha Noi and HCMC, a modern public transport system is taking shape, with metro and bus rapid transit systems (VOA News, 2020). However, due to financial constraints beyond major cities, investment in public transport remains scarce with secondary cities not plugged into networks. Beyond rethinking urban mobility, the lack of coordination between administrative actors and private partners also hampers efforts to implement a public transport system and could negatively affect integration of different transportation modes. Delays in construction of HCMC and Ha Noi metro lines illustrate this problem. Conflicts between Vietnamese authorities and Chinese contractors over contract details and required documentation, such as safety reports and payments, delayed finalization of metro Line 2A (Onishi 2020). In HCMC, red tape is also responsible for delays, including missing feedback on the revised design from the MoC (Saigon Times Daily 2019).

There is also a need for capacity building to establish effective managerial talent and encourage private entrepreneurs to offer innovative local solutions, particularly with opportunities regarding intelligent transport systems and IT solutions. For example, regarding last-mile connectivity, small-scale projects like the establishment of a rental system for electric motorbikes in Ha Noi in 2019 might present some options for upscaling (Shrestha and Kodukula 2019). Furthermore, a number of projects are investing in e-mobility, for example use of electric buses (Intelligent Transport 2019). Finally, ICT and smart traffic solutions should be used for intelligent traffic routing to improve traffic flows and reduce congestions in Vitenam's cities. There also needs to be investment in infrastructure to protect pedestrians and cyclists and make walking and cycling more accessible and convenient, with more pedestrian zones an option in cities.

12 The WHO estimated that 5.2 per cent of GDP was used in welfare costs linked to air pollution in 2013 (WHO, 2016:102), while data from the National Economics University Ha Noi in 2020 assumes the annual economic damage caused by air pollution equaled 4.45-5.64 per cent of Viet Nam's GDP (Kiet 2020). A study also suggested that in Ha Noi, residents spent up to USD 90 million on the treatment of respiratory diseases annually (Dat 2018).

Participation and just-access

Socially-just access to mobility needs to be at the forefront of social-ecological transformations of Viet Nam's cities. To build sustainable transport infrastructure the estimated annual investment needed is up to USD 25 billion (Diop, 2019). The public sector alone cannot provide these resources, thus it is turning to international donors and the private sector for investment support. Private-public partnerships, enabled by a supportive legal and regulatory framework and overarching PPP legislation, could help expand Viet Nam's infrastructure portfolio (Diop, 2019). However, implementation of PPP financing schemes must guarantee just access for all citizens impartial of their financial means. Existing infrastructure financed by build–operate–transfer (BOT) schemes is not only fraught with corruption, but due to its operational modality of paying for its usage, it is of little use for poorer citizens who opt for inferior roads and bridges to avoid costs. Currently, development of sustainable transportation is concentrated in Ha Noi and HCMC, which leads to a two-tier transportation system and increases social inequalities. Furthermore the responsibility for sustainable urban mobility cannot be solely on the shoulders of the lower and middle-class and their motorbikes. At the moment, the transformation process is based on expected behavioural changes in lower income groups, for example forgoing the use of motorbikes. Instead, higher income groups need to contribute financially and structurally. Public and shared modes of transport must be attractive for all residents to aim for car-free cities of the future. There is a need to re-evaluate the social prestige attributed to car ownership and the aspiration for de-motorised and citizen-focused cities.

As outlined above, to enable equal access to urban transport, infrastructure projects must cater to poorer residents. Many working in the informal sector as well as students and families depend on cheap mobility. Decision No.07/2019/NQ-HĐND is a step in the right direction, allowing the use of free public transport for the elderly, children under six years old, people with disabilities and people from poor households. At the same time, urban expansion in peri-urban areas increases the need to commute, making the decentralisation of public services in peri-urban areas necessary to improve accessibility. Participation of local residents to voice their needs and ideas can enhance these transportation systems. Technology might offer further opportunities. The use of intelligent transport systems has potential to improve urban traffic flows and reduce congestion in cities. It can also offer opportunities for the small, but thriving urban start-up scene and create new employment opportunities. The participation of a young, creative class of urbanites might not only support new innovative ideas, but also strengthen commitment and urban citizenship.

3.4. Land Use Planning regarding Housing, Transport and Climate Change Resilience

To support social-ecological transformations in housing and transport policies to increase climate change resilience and social-ecological justice in Viet Nam's cities, land use planning in cities must better incorporate social and ecological aspects. Currently, social housing is often located in the urban periphery, intensifying the marginalisation of poor and disadvantaged social groups. Furthermore, existing transport systems do not increase connectivity, but instead heavily rely on cars and motorbikes with detrimental environmental impacts. This often excludes low-income residents and women from participation in the urban landscape, as they are relegated to the urban periphery. It also reduces access to health care, education and employment. Public transport, which should provide better access to urban centres, is still unreliable from peri-urban zones. This underscores the process of gentrification and social stratification which excludes low-income residents from decision-making processes in cities. Finally, housing for low-income groups is often located in risk-prone locations along riverbanks and flood plains. Due to low quality, housing as well as public transport infrastructure have little climate change resilience.

To address this situation, land use planning needs to look at historical and projected data to better evaluate climate change risks. This also includes mapping of vulnerable populations. This data should feed future land use plans and necessary investment in protective infrastructure for risk mitigation. Furthermore, to decrease the need for commuting and better integrate lower income and marginalised residents – such as women and the elderly – into the urban landscape, it is necessary to decentralise urban services like health care, education and administration. There is also a need to link social housing, employment opportunities and transport infrastructure locally. Finally, public transport not only needs to increase connectivity and access for low-income groups, climate change resilience and environmental risks must be taken into account in the planning process by government authorities and urban planners.

A climate change-resilient transport system which provides access for all citizens will provide a building block for more socially and ecologically-just cities that will improve people's well-being, as well as protection from climate change and environmental risks and thus create a pathway to the social-ecological transformation of Viet Nam's cities.

CHAPTER 4: RECOMMENDATIONS

Viet Nam faces challenges and opportunities regarding the social-ecological transformation of its cities. To mitigate the effects of climate change and adapt to intensifying challenges, social and ecological transformation needs to be seen as interconnected. This leads to a number of recommendations how this holistic approach could be supported and implemented in Viet Nam.

Land use planning and management: decentralisation of urban services

Particularly in the context of housing and transport, there is a need to decentralise urban services and employment opportunities. As urbanisation further pushes urban expansion into peri-urban areas and the development of new urban areas – often developed by private investors, urban planning needs to reflect this trend. The combination of the local decentralisation of urban services and of the interconnected network of cities and towns might be best suited to generate synergies between a green and socially-just urbanisation process and thus provide a basis for real social-ecological transformation in Viet Nam.

Central government should aim to better integrate its national urban system with a focus on secondary cities – often the first point of arrival for rural migrants with potential to ease population pressures on metropolitan areas. This should also be represented in upcoming national urban master plan, decisions and regulations at national level. The national government is encouraged to invest more in secondary cities, particularly logistical connections for transportation, and formulate regulations for sustainable transport systems as well as resilient social housing projects to support low-income citizens for primary, but particularly secondary cities. It needs to create a framework of incentives to foster investment and commitment in implementation, including from the private sector. Finally, to overcome inequalities in the distribution of ecological benefits and risks and provide social support for ecological transformation to enhance social and ecological justice, the government should integrate welfare indicators into public policy and support institutions and actors for urban planning to have a long-term, sustainable view for community benefits.

Local government needs to formulate urban plans at local level to decentralise urban services for education, health care, employment and shopping and recreation. Currently, urban plans still cluster urban services and functions spatially together, forcing residents to commute. Investment in public transport at local level is needed to increase connectivity for low-income groups and reduce the environmental footprint of cities. Social housing projects should not be relegated to the urban periphery. Instead, they should be partially moved to city centres to counter gentrification, offer better job opportunities and increase social cohesion in cities. This follows a double strategy: (1) investment in new social housing for the disadvantaged and (2) investment in existing housing infrastructure including the renovation of existing housing areas, where possible instead of demolition and resettlement of residents

Local government must take environmental risks into account during the planning process. Furthermore, investment to improve urban energy conversion and climate change adaptation is needed.

Urban planners and practitioners must include open green spaces as well as other essential services, like health care and education, in every urban development project, particularly in new urban areas. This would reduce commuting, emissions from traffic and travel times, especially for women. Local services should also offer better opportunities for participation from the poor, people with disabilities and the elderly. Furthermore, resilient housing should be part of the legislative climate change mitigation strategy. Therefore, land use planning needs to look at historical and projected data to better evaluate climate change risks. This includes mapping of vulnerable populations. This data should feed future land use plans and necessary investment in protective infrastructure for risk mitigation. It also needs to be part of discourses on green urban development, including access to funding. In this context, it might also be helpful to look beyond Viet Nam for examples of urban decentralisation and implementation of green urban developments.

Civil society actors, like community organisers and the international community, can offer knowledge, best case examples and workshops to support the framing of urban development plans and regulations focused on social-ecological transformation.

Change the narrative on the urban future

Generally, Viet Nam has still a way to go from a conservative approach towards urban development which concentrates on technological, quantitative solutions and construction of infrastructure towards a more holistic approach. To integrate social-ecological transformation into the Vietnamese urbanisation process, the public discourse on urban development and cities of the future must change.

Central government should create a framework which enables the participation of urban residents in the urban development process. This participatory approach should allow the State and citizens to together define cities of the future. Furthermore, the government should aim to integrate sustainable green policies into its regulative framework for urban development, encompassing housing and transport. Furthermore, to support local policies, investment in a national communications campaign on climate change, environmental awareness and public transport should support local initiatives. Green resilient housing strategies must be included in these policies.

Local government needs to integrate platforms and channels of communication and information to engage the public in its overall approach towards urban development. Information on urban development should be disseminated and local residents should be able to communicate grievances and needs to the local administration to create a cooperative partnership built on transparency. This also demands improved transparency concerning urban decision-making, management and planning. Local information and image campaigns to improve public transport use are necessary. Finally, local development strategies must include more green policies, including concepts like a car-free city and resilient social housing. Public transport and social housing should be major investment at the local level. This includes a wide range of policies including a better link between private and public tansport and the use of ICT and smart solutions The public's buy-in, resulting from these campaigns, might increase its willingness for cooperation and take local needs and grievances into account, essential for social justice.

Urban planners and practitioners should engage with the urban public as well as international community to define cities of the future and the social-ecological transformation needed to get there. Whereas a focus on public transport for example is a good starting point, the discourse needs to move further including car-free cities, sustainable urban services, sustainable use of construction materials for housing and more. There is thus a need for investment in research, knowledge production and dissemination as well as increased transparency of information concerning urban development projects. At the level of individual projects, planners and practitioners need to integrate a participatory approach for local residents in the implementation process, like workshops, information campaigns and meetings with residents.

Civil society should play a major role in discourses on green urban development, including access to funding. Local knowledge can offer an alternative perspective on social-ecological transformations. There is a need for local research as cooperation with Vietnamese artists, private entrepreneurs, start-up founders and academia might not only increase local know-how and employment, but also increase opportunities for participation for local urbanites. Already today, local solutions are emerging on various fronts, such as the use of banana leaves for packaging in supermarkets and the use of bamboo for straws, while Vietnamese architects are experimenting with traditional materials to build climate-resilient houses.

Opening Space for cooperative participation

Communal public space is necessary, especially with regard to new migrants and poorer residents. Parks play a major role as recreational space where access is cheap and open to everyone. They enable participation in urban everyday life and also offer ecological benefits. Thus the maintenance of existing parks and the creation of new ones should be integrated in strategies for social-ecological transformations.

Central government needs to regulate the availability of open green space in urban areas, including new urban developments in peri-urban areas and social housing projects. This includes a maximum distance and minimum space per capita. There should be a mechanism to enforce these regulations.

Local government: Urban planning and development at local level needs to integrate and increase the green space available for urban residents, including in its urban plans. Sufficient parks need to be in close proximity of housing for recreational use, sport and social interactions. Trees and green coverage are central to improve air quality and local micro climates, thus protection of the green urban environment should be prioritised, including flood plains. Support for local initiatives on urban gardening and environmental conservation is necessary.

Beyond the availability of green public space, in light of increasing rural-urban migration, social cohesion projects and community-building should be supported, especially for marginalised groups, women and the elderly. While older urban neighbourhoods often provide a social network and community identity, this is not the case in new urban areas. Often private investors reduce public space in development projects and thus decreasing space for cooperation, interactions and community buildings. As such, it is essential to consciously counter these developments to enable urban citizens to participate in the creation of socially-just cities.

The local government should also promote the use of existing channels of communication to increase community participation. Where necessary, more effective channels should be established.

Urban planners and practitioners need to integrate open green spaces in all development projects, especially social housing as well as community spaces for meetings and interactions of residents. The integration of green space into urban landscape and construction projects needs to be more effective to attract urban users. Green space should be adapted to be more attractive and user friendly for local residents Furthermore, green coverage and natural habitats should be part of these projects. The aim should be to reduce soil sealing, flooding and increase natural cooling effects. Access to these green spaces for recreational activities should be open to the public.

Civil society should engage in the conservation of the natural urban environment, including the creation of green spaces where possible. Urban gardening as well as agriculture offer pathways to create these spaces. To increase social cohesion and better integrate marginalised residents, civil society actors can implement cultural and social projects for community building and as channels for communication and support. Furthermore, they could establish support networks for marginalised groups, not only in everyday life, but particularly to offer support during climate-change driven disasters.

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About the editors

Mirjam Le is a researcher and PhD student in Southeast Asian Studies at the University of Passau, Germany. Her PhD thesis focuses on small town urbanization and the production of urban space in Vietnam. Her research interests involve urbanization and state-society relation in Vietnam, especially processes of self-organization and citizenship.

Ngo Tho Hung is Deputy Director of Institute of Urban Development and Management (IUDM) – Academy of Managers for Construction and Cities (AMC) and Vice Director of SECO Project Management Unit (PMU) – AMC. He does research, develop programs, and implement training and retraining courses on urban management; consult, develop programs and projects related to urban management and development; linking with partners to provide technical assistance for urban development solutions.

Imprint

7 Ba Huyen Thanh Quan, Ba Dinh
Hanoi, Vietnam
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Responsible:
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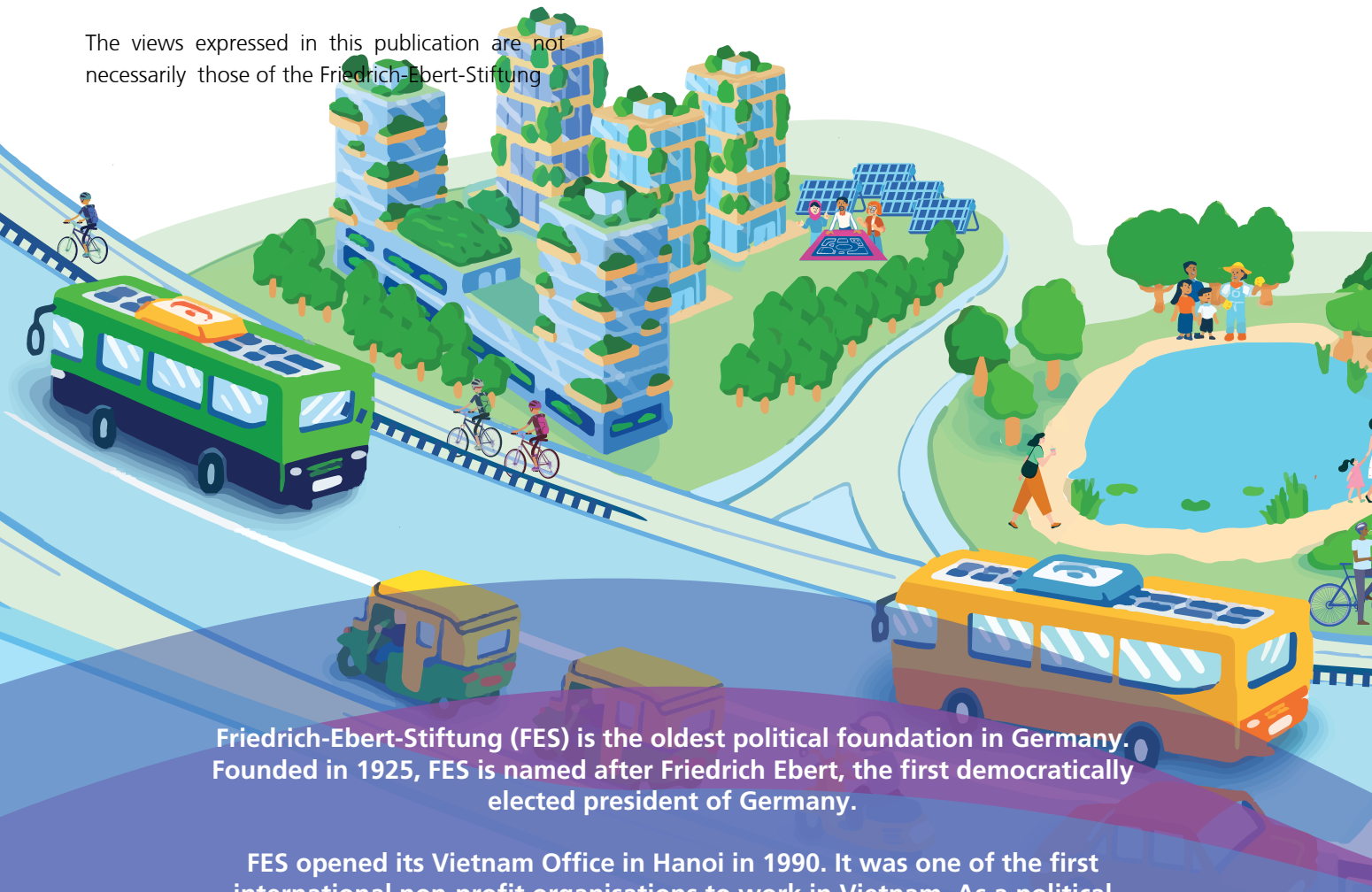

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