CRITERIA FOR SUSTAINABLE URBAN COMMUNITIES AND CITIES IN VIETNAM

FRIEDRICH EBERT STIFTUNG

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List of Abbreviations

ADB	Asian Development Bank
BLI	Better Life Index
C&E	Center for Development of Community Initiative and Environment
FES	Friedrich-Ebert-Stiftung
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
LGBT	Lesbian, Gay, Bisexual and Transgender
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
RFCS	Reference Framework for Sustainable Cities
SDG	Sustainable Development Goal
SMEs	Small- and medium-sized enterprises
UN	United Nations
IDI	In-depth Interview

Acknowledgements

This report presents findings of the study on Criteria for Sustainable Urban Communities and Cities in Vietnam by the Center for Development of Community Initiative and Environment (C&E). The research was supported and guided by Friedrich-Ebert-Stiftung (FES) Vietnam.

The report was informed by quantitative surveys and in-depth interviews, with written suggestions from officials, experts, and non-profit workers in the fields of Planning and Investment, Transportation, Urban Planning and Construction, Science and Technology, Industry and Trade. Key research team members included Dang Thi Anh Nguyet, Vu Van Tuan, Le Anh Tuan, Huynh Thi Lieu Hoa, Bui Thi Thanh Thuy, Vu Dang Hoang and Tran Thi Kim Hoan, who contributed to the research design, data collection and analysis.

There were 60 respondents to the survey questionnaires and 38 participants in in-depth interviews. All participants are warmly thanked for committing their precious time to share their important reflections, information and insights into the topic of sustainability of cities in Vietnam.

We thank all individuals and organisations who contributed to the research and look forward to continuing this fruitful cooperation in our future efforts to promote and support the sustainability of cities and communities in Vietnam.

Finally, the research team warmly acknowledges the role of Friedrich-Ebert-Stiftung Vietnam in providing the financial and technical support essential to realising this important study and report.

Executive Summary

This study, supported and guided by Friedrich-Ebert-Stiftung (FES) Vietnam, set out to develop a set of inclusive criteria for sustainable urban communities and cities in Vietnam. During May and June 2021, the research team implemented a desk study of exemplary global cases of sustainable urban communities and cities and Vietnam's relevant legal framework. These efforts resulted in a proposal of criteria for sustainable urban communities and cities in Vietnam. These criteria drew on the European Framework for Sustainable Cities (Reference Framework for Sustainable Cities, 2019). This framework embraces Goal 11 of the 17 Sustainable Development Goals (SDGs) to promote urban sustainability by the United Nations General Assembly (2015). It includes five key dimensions (spatial, governance, social, economic and environmental), plus 16 criteria which will be further detailed in this report. The framework has been widely, flexibly and effectively used across the world.

From August to September 2021, the research team conducted a survey in three selected cities of the capital Hanoi, Danang in central Vietnam and Can Tho in the Mekong Delta to test the applicability of the proposed criteria and assess the sustainability of these sites. Surveys were conducted using both virtue communication tools such as Zoom, Google Meet, and Zalo and face-to-face meetings. The research team used a semi-structured questionnaire for residents and interview guides with open-ended questions for experts and officials to gather their observations and opinions about urban sustainability. A total of 60 residents and 38 experts and officials participated in the survey. Quantitative survey data were statistically analysed, while qualitative data were analysed using thematic analysis.

The survey showed that Hanoi was the least sustainable of the three cities with the environmental, spatial and economic dimensions being rated below 50 percent of the measuring scale. As such, the capital requires work on these dimensions to emerge as a sustainable city. Can Tho and Danang were more sustainable with all dimensions receiving above or well-above the 50 percent of the measuring scale. They provided good examples of sustainable cities in Vietnam. This evaluation, however, should be considered with caution given the limited representativeness of the survey.

The survey revealed disparities for vulnerable and disadvantaged groups across the five dimensions of sustainable cities. While the State and cities offer limited provisions and support to these groups, there was much room for improvement. In general, survey respondents appeared to accept such shortcomings and inequalities as part of their circumstances.

The survey findings confirmed the applicability of the proposed criteria in Vietnamese settings. They allowed for the measurement of urban sustainability with low costs and limited resources involved. Moreover, they permitted comparisons across cities to allow lessons to be learnt and areas that required more work to achieve sustainability.

It is important to note that the survey findings revealed that the criteria employed new and unfamiliar concepts to the majority of respondents, such as green growth and circular economy. An inability to grasp these concepts, new in a Vietnamese context, resulted in respondents delivering vague answers that could not be accurately evaluated. To overcome this hurdle in future surveys, the relevant criteria should be elaborated using more familiar concepts. Besides, capacity building is needed so the residents understand, support and monitor such criteria.

The survey showed specific issues that the criteria did not cover, such as corruption, but had attracted much attention from the Vietnamese population. Gender equity and solutions to disparities that face vulnerable and disadvantaged groups also need more attention as they are essential for sustainable development. These should be included as part of the criteria in future surveys.

The development of criteria for sustainable urban communities and cities in Vietnam should be a continuing process given the rapidly and dynamically changing conditions and fast development pace that Vietnamese cities have been experiencing. Further and regular surveys are necessary to gain an understanding of the sustainability of the three cities and other urban centres in Vietnam. These surveys should have larger sample sizes and use more representative sampling methods to ensure better representativeness. This would inform policy-makers, the authorities and residents in their actions towards sustainability.

In parallel with criteria development, pilot models of sustainable urban communities and cities with participation of the public equipped with knowledge

and capacity to contribute to the five dimensions are recommended. The criteria and these models should be documented and advocated for replication in local and national development policies.

1. Introduction

The term "sustainable communities" in essence refers to communities which are planned, built or modified to promote sustainability with a focus on environmental and economic sustainability, urban infrastructure, social equity and municipal government. The term is sometimes used synonymously with "green cities," "eco-communities," "livable cities" or "sustainable cities." At times, the term "ecodistrict" or "the economic/ecological district" or "the eco^2 district" are used to highlight the importance of the economy and ecology (Suzuki et al., 2010).

The concept of sustainable communities has gradually become popular and been promoted around the world in close connection with the trend of sustainable development as addressing environmental and energy issues becomes more urgent. It has a great influence on urban growth and the quality of people's lives at national and global levels. To underline its importance in the global development agenda, Sustainable Development Goal (SDG) 11 is Sustainable Cities and Communities (United Nations General Assembly, 2015).

There are numerous examples of sustainable communities globally, such as Saint Michael's Sustainable Community in Costa Rica, the Euclid Corridor in Cleveland, Greenville in South Carolina's Westside, and Seattle's South Lake Union Neighborhood in the United States, and La Caserne de Bonne in Grenoble City, France. Britain employed the Sustainable Communities Plan as a regional development plan which targeted the south-east of England. This £38 billion plan identifies four key growth areas for development and regeneration: the Thames Gateway, Ashford, Kent, London-Stansted-Cambridge-Peterborough and Milton Keynes/South Midlands (ODPM, 2003). Some states in the United States passed legislation on sustainable communities, such as the 2010 Sustainable Communities Act by the State of Maryland and the 2008 Sustainable Communities and Climate Protection Act by the State of California.

During the past two decades, Vietnam has experienced rapid economic growth which increased its Gross Domestic Product (GDP) per capita by 2.7-fold between 2002 and 2018 (World Bank, 2021). However, the growth – characterised by rapid industrialisation and corresponding urbanisation – has been exerting tremendous ecological and social impacts. The urbanisation process prioritises infrastructure development over ecological and social aspects. In key policy documents of the Communist Party and National Assembly of Vietnam such as the 6th to 13th National Party Congress Resolutions and the National Assembly Resolution on Five-Year Socio-Economic Development Plans (2006-2010, 2011-2015, 2016-2020, and 2021-2025) fast economic development focused on the GDP growth rate is prioritised over sustainability. Consequently, many cities in Vietnam are facing ecological and social problems, ranging from landslides in Nha Trang to air pollution in Hanoi and Ho Chi Minh City to unwanted relocation of local communities (ADB, 2013; Chu, 2018). This situation calls for a locally-specific concept for sustainable communities and cities in Vietnam.

1.1 Rationale

Cities, urban forms or dense human settlements have long been associated with environmental pollution, social problems and other issues (Jabareen, 2006). In today's society, city dwellers face multiple stressors from life, work and study along with social disconnectedness and isolation. Rapid urban population, economic and social growth resulted in overcrowded infrastructure and living environments with more social disparities and environmental degradation (National Research Council, 2002).

As changes threaten people's well-being, demands heighten for a sustainable or liveable society with an improved quality of life, health care and education and maintenance of both the traditional and modern lifestyles and cultures. This has not only been a key focus of scientists and policy-makers. With social democratic movements and ideas, people are increasingly demanding a voice and an active role in decision-making for their communities (National Research Council, 2002).

Goal 11 of the 17 SDGs of the United Nations is to "make cities and human settlements inclusive, safe, resilient and sustainable" (United Nations General Assembly, 2015, p.18-19). The goal has coined the term Sustainable Cities and Communities and its contents cover 10 dimensions: housing and basic services, transport, planning, heritage, disaster management, environmental pollution management, green and public spaces, national and regional development planning, climate change and sustainable and resilient buildings (United Nations

General Assembly, 2015).

The contents set out in this goal point to the need for inclusive criteria for sustainable urban communities/cities of each country to reflect these contents as well as the characteristics of the respective country. In Germany, for example, LAGS 21 has been working to connect the European Sustainable Development Framework and Agenda 2030. The Framework has seven principles: 1) long-term vision of development, operation and organisation by strategic smart objectives (ideas), 2) high-level commitment, political administration level, 3) horizontal integration of economic environment and social environment (synergy, trades) to harmonise with possible trade-offs among inter-ministerial bodies or corporation-integration, 4) vertical integration in line with priority and implementation activities of other governments, (State, Federal, European level) to narrow into urban level, 5) participation of different stakeholders: formalised process, transparent, clear approach and pathway, 6) implementation: capacity building, formulating vision, realisation of the strategy, resources in the long run, institutional and 7) monitoring and evaluation (M. Schmidt, personal communication, July 26, 2021).

With the aim of developing sustainable strategies to translate the Agenda 2030 into practice at municipality level, LAGS 21 used participatory approaches. It facilitated intensive discussions and discourse at municipal level to influence policy-making. It encourages coordination and communication between the core team in the municipal administration, organised civil society, all relevant stakeholders, businesses, academia and non-governmental organisations (NGOs) holistically to identify trade-offs and synergies. The exchange of ideas and discussions between stakeholders of different sectors/areas aims at a win-win situation for economic and social development. It also supports planning mutual strategies with stakeholders and a combination of bottom-up and top-down approaches. This helps to create jobs, link specific needs and demands, and consult local stakeholders to implement specific approaches in visible and legitimate ways (M. Schmidt, personal communication, July 26, 2021).

Polls have been held in various municipalities in Germany to gather people's opinions about different parts of sustainable development, the climate crisis and Paris Accords. These polls assessed demands and ideas. For example, households have been asked about the mobility situation in their city and what they need to achieve sustainable development. In general, respondents were supportive of these efforts (M. Schmidt, personal communication, July 26, 2021).

In contemporary Vietnam, a national policy and legislative framework has developed a comprehensive criteria for urban liveability referencing global and national criteria, SDGs and Agenda 2030 (see Section 3 for more details). None of which, however, is applicable in practice. This is due to the absence of a comprehensive data collection system which requires participation of and contributions from all State agencies across all levels and extensive technical and financial resources. Furthermore, there is a lack of contributions from local government level and the general public to development these criteria, raising questions of relevance and interest when these criteria are to be implemented.

This situation calls for the development of an inclusive concept for sustainable or liveable urban communities and cities as well as develop and apply a set of criteria in Vietnam. This criteria should be capable of measuring the liveability of urban communities and cities, while allowing simple, cost-effective data collection and analysis. It should reflect general sustainable development trends as shown by Agenda 2030 and other international and national documents as well as be relevant to and reflect local-level interests.

1.2 Research objectives

The overall objective of this research is to explore and propose an inclusive concept for sustainable communities and cities (based on perspectives of communities, authorities, experts) to reflect the context and needs of Vietnam.

With the support of Friedrich-Ebert-Stiftung (FES), the following research activities were implemented to meet these objectives:

1/ A desk study of exemplary cases of sustainable urban communities/cities from selected countries.

2/ A review of Vietnam's current legal framework for sustainable urban communities/cities.

3/ A questionnaire survey of communities, authorities and experts in three selected cities of Hanoi, Danang and Can Tho.

4/ Development of criteria for sustainable urban communities/cities for Vietnam.

2. Key Concepts and Scope of Study

This section reviews the key concepts of this study including community, urban area/city, sustainable urban community/city and its scope.

2.1 Urban Area/ City

There have been diverse definitions of urban area/city across regions and between countries. Criteria used to define cities include administrative function, economic function, population size and density as well as urban characteristics, with these criteria changing over time (UN Habitat, n.d.). Given that the definitions are location and time-based, this study applied current Vietnamese criteria to define an urban area/city.

The Ministry of Science and Technology's Vietnam Standard Department in 2018 defined an urban area as having a high density of population and mainly operating in a non-agricultural economy. It is a political, administrative and economic centre or a cultural or specialised centre. It has a role in promoting the socio-economic development of a country, territory or locality. It includes an inner area and suburbs.

Vietnam's urban classification system sets out the following basic criteria for an administrative unit to be urban with some exceptions: 1) an urban function (or being a centre), 2) a population of 4,000 people or more, 3) required population density[1] in the inner area, 4) at least 65 percent of the total number of labourers in the inner area being non-agricultural, 5) required urban infrastructure system, and architecture and urban landscape in place.

There can be different types of administrative units which could be as big as a city or as small as a district, a ward or a town (Vietnam National Assembly Standing Committee, 2016).

2.2 Community

A community is a group of people who might have diverse characteristics, but are connected by "social ties, share common perspectives, and engage in joint action in geographical locations or settings" (MacQueen et al., 2001, p.1929) or by "assigned responsibilities, activities and relationships" (Vietnamese Standard Department, 2018, p.12).

In this study, an "urban community" means residents or population in an urban unit, such as a district, ward, commune, town or city. Hence, the general term 'urban community/city' is used. In such a community, residents are tied together by various relationships. There are family and kinship relationship, neighbourhood, culture, ethnic and religious links, organisation links such as with a school, work, church, and with the authorities. Such relationships carry with them assigned responsibilities and share perspectives and enable joint actions or activities. Of particular importance, the residents have their rights and duties in their relationship with the town/ city not only as part of being a law-abiding citizen, but also part of their everyday living in the community. They have a sense of place and belonging to the neighbourhood and the town/city. They share understandings about the community with history, common language, values and norms, identity, goals, opinions and concerns. They share common interests such as safety and support. They take joint actions such as socialisation, volunteering, information exchanges, work and study.

2.3 Sustainable Urban Community/City

The term 'sustainable urban community' combines 'urban' 'community' and 'sustainable'. Similarly, the term 'sustainable city' is a combination of 'sustainable' and 'city' and can be used synonymously with 'Green Cities', 'Eco – Communities', 'Sustainable Cities', or 'ecological cum economic city/urban area' (Suzuki et al., 2010).

Sustainability or sustainable development have been widely used among politicians and local, national and international policy-makers and in NGOs since the late 1980s. The term took roots in environmental concerns and expanded to social and other concerns over economic causes. Changes are needed from the current capitalist structures, conditions and practices which are inherently destructive (Wright and Nyberg, 2015) towards ones meeting "the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987, p. 43). For present generations, the aims include environmental preservation, quality of life, justice and equity and solutions to social issues such as discrimina-

[1]A measurement of population per unit area

tion, poverty, and unemployment (Barbosa et al., 2014).

A 'sustainable urban community/city', therefore has the goal of sustainability and the process for the urban community/city to attain such a goal. Within this community, people relate, share opinions and beliefs and work together for sustainable changes for their localities. Such a process is multi-faceted, encompassing economic, social, environmental, cultural, political and other dimensions (Bossel, 1998). Its various aims reflect the diverse interests, concerns and interpretation of sustainability of stakeholders. Accordingly, there might be conflicts and struggles to be managed for sustainability to be achieved (Barbosa et al., 2014). In contrast with existing cities/urban areas which have been found increasingly unsustainable with multiple environmental and social issues (Jabareen, 2006), a sustainable urban community/city would include solutions to these issues and sustainable development in various aspects of an urban area/city.

Globally, many cities have demonstrated that they have met or been making attempts towards sustainable development, such as sustainable education, energy, buildings, transportation, water, and environmental management (see Sodiq et al., 2019, for example). Exemplary cases are reviewed in Section 3 of this report.

As previously mentioned, Goal 11 of the 17 SDGs on sustainable communities and cities sets out targets which range from housing, transport, planning to sustainable buildings. These targets emphasise meeting the needs of all residents, while giving special attention to vulnerable and disadvantaged groups, participation, and support to least developed countries (United Nations General Assembly, 2015). Besides SDGs, some frameworks have been established to measure urban sustainability (see Section 3 for details). These frameworks include comprehensive criteria which provide guidance and enable evaluation and comparison within and across countries and over time. They are used as referencing materials to develop the inclusive set of criteria for sustainable urban communities/cities in Vietnam in this study.

2.4 Scope of Study

In this study, the project team's scope was:

1/ The object of the study is sustainable urban communities/cities, in which the term "community" means a geographical community, that is the population in an administrative unit in a Vietnamese urban area, such as a city or district. The term "urban area" or "city" means an administrative urban unit, such as a city or district.

2/ The residential communities of three cities in Vietnam, namely Hanoi, Danang and Can Tho (see Figure 2), were selected to be data collection sites in the process of developing a set of criteria for sustainable urban communities/cities.

Hanoi is the capital of Vietnam. Located in the northwest of the Red River Delta, the city covers 3,358.6 km^2 with a population of 8.05 million as of 2019. It ranks first in terms of area and second in terms of population among all cities in the country. Services is the leading economics sector (62.8 percent), followed by industries and construction (23.7 percent), while agriculture, forestry and aquaculture and fisheries account for 2.2 percent of the city's Gross Regional Domestic Product (GRDP) (Vietnam General Statistics Office, 2019).

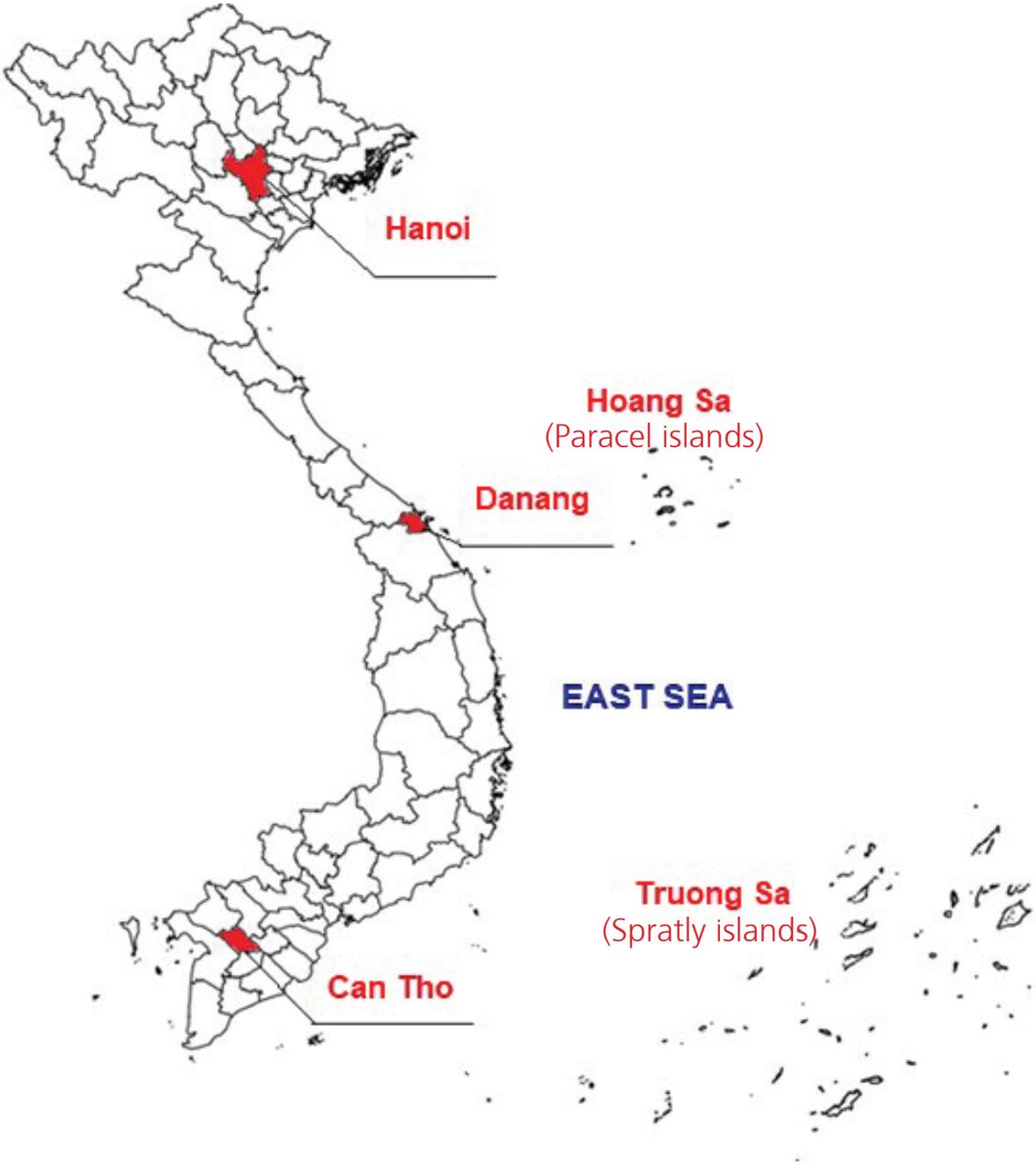
Danang is at the centre of the South Central Coast. It borders the East Sea and connects the north and south. The city area is 1,284.9 km^2 with a population of 1.13 million as of 2019. It has a fast-growing economy with an annual growth rate of 8.1 percent during 2016-2020. Tourism leads the economy with services accounting for 64.3 percent, followed by industries and construction (22.4 percent) of 2019 GRDP. The city has experienced rapid urbanisation and associated changes in infrastructure and landscape. It was assessed as having high competitiveness, good human development, governance and information technology potential to lead the region (Vietnam General Statistics Office, 2020).

Can Tho is located along the west bank of the Hau River, part of Mekong River, in the south. It has a total land area of 1,439.2 km² and a population of 1.24 million as of 2019. It is considered the most developed city and the centre of Mekong Delta. Services lead the economy (48.0 percent), followed by industries and construction (35.9 percent) and agriculture, forestry and aquaculture and fisheries (9.2 percent) of the city's GRDP (Vietnam General Statistics Office, 2019).

The three cities were selected because they represent the northern, central and southern regions of the country and each has unique historical, economic, social, environmental, cultural, and political features. These cities, therefore, provide good testing grounds for the proposed criteria for sustainable urban communities/cities if they are applicable and effective in different contexts and conditions.

Figure 1. Research sites

Source: Illustrated by Le Anh Tuan



3. Existing Sustainable Development Indicators

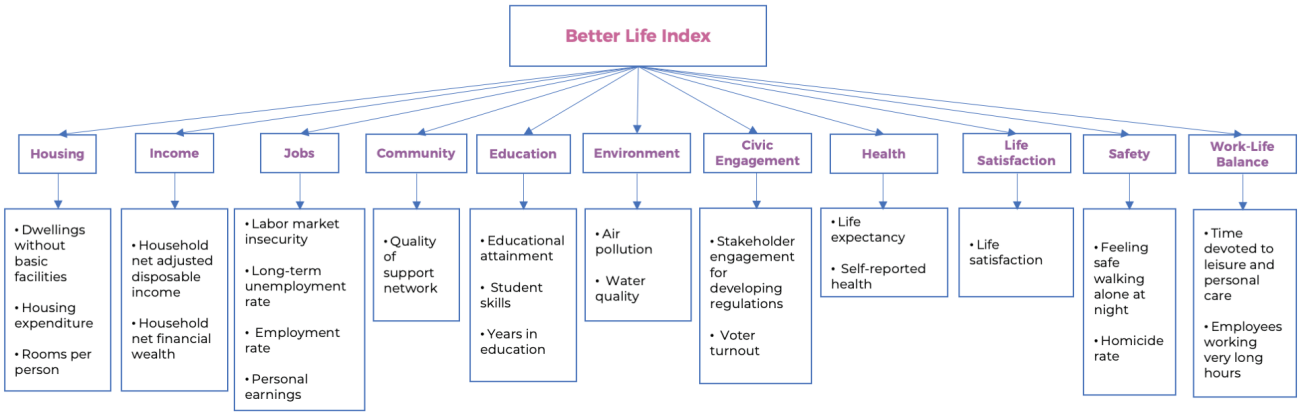
This section reviews selected sustainable development criteria and indicators and their applications using Goal 11 of the SDGs as the baseline. This is to determine if they could be used to develop an inclusive set of criteria for sustainable urban communities/cities in Vietnam. They are Better Life Index (OECD, n.d.), Sustainable City Index (Arcadis, 2016), European Reference Framework for Sustainable Cities (RFCS, 2019) and Vietnamese Standards on Sustainable Urban Community/City (Vietnam Standard Department, 2018). Each of these criteria and indicators have been developed and applied to guide, evaluate and compare sustainable urban communities/cities in different parts of the world and in Vietnam. The selection of the first three indices was based on some reviews and recommendations for potential usage of the said criteria and indicators (see Keese, 2018; Saiu, 2017; Onnom et. al. 2018, for example). The selection of the Vietnamese Standards is due to their current application in Vietnam.

3.1 OECD Better Life Index

The OECD Better Life Index (BLI) provides international measurements on well-being with 11 dimensions of income and wealth, jobs and earnings, housing, health, work-life balance, education, community, civic engagement, environment, safety and subjective well-being. Each dimension has indicators, of which there are a total of 24 to allow for the collection of data for evaluations and comparisons (OECD, n.d.). The index aims to gain more understanding into drivers of people's well-being and provide guidance to policy-making (Koronakos et al., 2018).

Figure 2. OECD Better Life Index

Source: Koronakos et al., 2018, p.123



Given this aim, the index focuses on housing and basic services, environmental pollution management of Goal 11 of the 17 SDGs. It, however, fails to cover other dimensions, such as transport, planning, heritage, disaster management, green and public spaces, national and regional development planning, climate change and sustainable and resilient buildings of SDG Goal 11.

A unique feature of BLI is an interactive website (https://www.oecdbetterlifeindex.org/) in seven languages (English, French, Italian, German, Portuguese, Russian, and Spanish) that allows users to set preferences for their well-being by giving weights (from 0 to 5) to the 11 dimensions indicators, while providing inputs to the data set via a background questionnaire. The website also provides measurements of indicators at country and individual levels and maps them with the individual preferences. Measurements at country level are aggregated relying on available statistics of countries. As of 2021, the Better Life Index has been applied to 37 OECD countries and four partner countries and the websites have more than 100,000 users (OECD, n.d.).

3.2 Sustainable City Index

The Sustainable Cities Index consists of three main indexes to assess the sustainability of a city. The People Index measures social performance, including quality of life. The Planet Index captures environmental factors and includes indices related to renewable energy, pollution

control and greenhouse gas emissions. The Profit Index assesses business environment and economic performance. The number of indicators has varied between years, with the latest report in 2018 having 31 indicators (Acardis, 2018). Data is mostly gathered from publicly available and credible databases and sources such as the World Bank, United Nations, and OECD to compile the index. For each indicator, cities are ranked in a relative percentage scale between the lowest ranked (0 percent) and the highest ranked (100 percent) cities. These indicators are then weighted and the average rank for a city was calculated per each sub-index. The overall rank was the average of the rankings in three sub-indices. Hanoi, the only city in Vietnam to feature in the Arcadis 2018 Report, ranked 98th out of 100 cities.

The 2018 Sustainable Cities Index covers diverse aspects of city sustainability. It, however, does not include dimensions of SDG Goal 11, such as housing and basic services, planning, heritage, climate change and sustainable and resilient buildings. It relies solely on existing databases and sources from states and organisations, so it is influenced with official views and omits the voices of the public as a key stakeholder in sustainable development.

Table 1. Arcadis Sustainable Cities Index 2018

PEOPLE INDEX	PLANET INDEX	PROFIT INDEX
Education	Environmental exposure	Transport infrastructure
Health	Green spaces	Economic development
Demographics	Energy	Ease of doing business
Income inequality	Air pollution	Tourism
Affordability	Greenhouse gas emissions	Connectivity
Work-life balance	Waste management	Employment
Crime	Drinking water and sanitation	University technology
Access to public transport services	Bicycle sanitation	
Transport applications and digital capabilities	Electric vehicle incentives	
Cultural offerings	Negative emissions technologies	
Cost of broadband	Carbon capture and storage	
Digital public services (property tax)	Natural disaster monitoring	
Wi-Fi availability		

3.3 European Reference Framework for Sustainable Cities

RFSC identifies the five dimensions of spatial, governance, social and cultural, economic and environment for a sustainable city. This framework has 30 objectives for sustainable cities, covering everything from supporting green growth to preserving and promoting heritage. The framework includes all dimensions set in Goal 11 of the 17 SDGs, while expanding on areas that are specific to city development, such as planning or cultural and leisure opportunities. It supports "the design, implementation and monitoring of urban development strategies and projects" towards sustainability (Reference Framework for Sustainable Cities, 2019, p.7).

Table 2. European Reference Framework for Sustainable Cities

DIMENSIONS	INDICATORS
SPATIAL	Develop sustainable urban planning and land use Ensure spatial equity Encourage territorial resilience Preserve and enhance architectural, cultural, and urban heritage Promote high quality and functionality of public spaces and living environment Develop alternative and sustainable mobility
GOVERNANCE	Ensure integrated territorial strategy Foster sustainable administration financial city management Implement a process for assessment and continuous improvement Increase citizen's participation Strengthen governance in partnership Facilitate capacity building and networking
SOCIAL	Ensure social inclusion Ensure social and intergenerational equity Build up a supply of housing for everyone Protect and promote health and well-being Improve inclusive education and training Promote culture and leisure opportunities
ECONOMIC	Stimulate green growth and circular economy Promote innovation and smart cities Ensure connectivity Develop employment and a resilient local economy Encourage sustainable production and consumption Foster cooperation and innovative partnerships
ENVIRONMENTAL	Mitigate climate change Protect, restore and enhance biodiversity and ecosystems Reduce pollution Adapt to climate change Manage natural materials resources sustainably and prevent waste Protect, preserve and manage water resources

The framework has been widely and flexibly used across the world as cities could select dimensions/indicators to apply at their discretion. It has proven effective for urban planning and programming with multiple stakeholders to identify sustainable priorities, ways to implement them and monitor them (Winter, 2018). It is also useful for initial assessments, progress-tracking, identifying areas that need improvement and inter-agency coordination (Van Dijken et al., 2012).

3.4 Vietnamese Standards for Sustainable Urban Communities and Cities

In 2018, Vietnam developed a set of three National Standards on Sustainable Development for communities based on ISO documents with the same codes. These standards are TCVN 37101:2018 on Management System for Sustainable Development, TCVN 37120:2018 on Indicators for City Services and Quality of Life and TCVN 37151:2018 on Smart community infrastructures - Principles and requirements for performance metrics. As shown by their name, these standards establish requirements for management systems for sustainable development, indicators on urban services and quality of life and performance metrics for smart community infrastructure (Vietnam Standard Department, 2018a, 2018b, 2018c).

Standards TCVN 37101:2018 identifies six sustainability goals: participation, environmental conservation and improvement, resilience, responsible use of natural resources, social connections and well-being. It suggests ways to incorporate these goals into 15 dimensions of management, including: 1) governance, 2) empowerment, 3) commitment, 4) education and capacity building, 5) innovation, 6) creativity and research, 7) health and community-based care, 8) community culture and identity, 9) unity and mutual support, 10) economy and sustainable production and consumption, 11) living and working environment, 12) safety and security, 13) community infrastructure, 14) mobility, and 15) biodiversity services and ecosystems. Besides, the standards look at leadership, planning, support, implementation, evaluation and improvement (Vietnam Standard Department, 2018a).

Standards TCVN 37151:2018 does not provide any particular metrics, but presents principles on ways to identify and develop performance measurements for community structures (Vietnam Standard Department, 2018b).

Standards TCVN 37120:2018 includes 17 indicator groups which are economics, education, energy, environmental, financial, fire and emergency, governance, health, entertainment, security, living environment, solid waste, telecommunication and innovation, transport, urban planning, wastewater, water and hygiene (Appendix A) and five basic indicator groups of people, housing, economic, governance, geography and climate (Appendix B) (Vietnam Standard Department, 2018c).

The three standards cover most dimensions and elaborate on some dimensions of Goal 11 of the 17 SDGs, such as basic services and management. The heritage and climate change dimensions are excluded. Besides, the standards are comprehensive and onerous to implement. Given too many indicators and requirements, huge amounts of resources, time and funds are required for their implementation. There are also many obstacles to efficient monitoring and evaluation. Indeed, as part of the overall sustainable development framework which consists of the Orientated Strategy for Sustainable Development in Vietnam, also called Vietnam's Agenda 21 (Government of Vietnam, 2004) and other policy documents that the authorities have released in Vietnam, the standards have not been implemented and evaluated in full since their issuance.

To briefly summarise, the reviewed criteria/indices/standards highlight economic growth, environmental and resource protection, and socio-institutional factors. Aside from the RFSC, the other three types of criteria and indicators have not fully covered the 10 dimensions of SDG Goal 11. The indices/standards have their own requirements for data collection and calculations of rankings/scores and usually significant efforts are required unless a comprehensive data collection system is available from the State and agencies. Furthermore, their usage would be mainly for national and international level, such as comparisons and policy-making, but not at lower levels such as city/town/district/ward.

4. Proposed Criteria for Sustainable Communities and Cities

As previously stated, the RFSC responds well to Goal 11 of the SDGs and allows flexible adaptation for measurements and facilitation of sustainability for urban communities/cities (Winter, 2018). This study, therefore, adopted the framework with consideration given to Vietnam's settings. Indicators were selected based on the criteria of measurability, simple, cost-effective data collection and analysis, and acceptability to key stakeholders, including local and State authorities and leaders.

A set of criteria with numerous indicators would reflect the true state of sustainable development, but require significant human resources, time and funds as well as encounter potential obstacles in surveys, data collection and analysis. In contrast, too few and too simple criteria will reduce the accuracy and validity of measurement. Given this is an initial, exploratory study with time and funding constraints, the study team drew from each of five main dimensions of sustainability in the RFSC sub-criteria which fitted Vietnam's conditions (see Figure 3 and Table 3). It was assumed that these five dimensions were equally important. There was no consideration of weighting factors for each dimension, as well as the criteria in these dimensions.

Figure 3. Study's selected criteria for sustainable urban communities

Source: compilation by author Le Anh Tuan

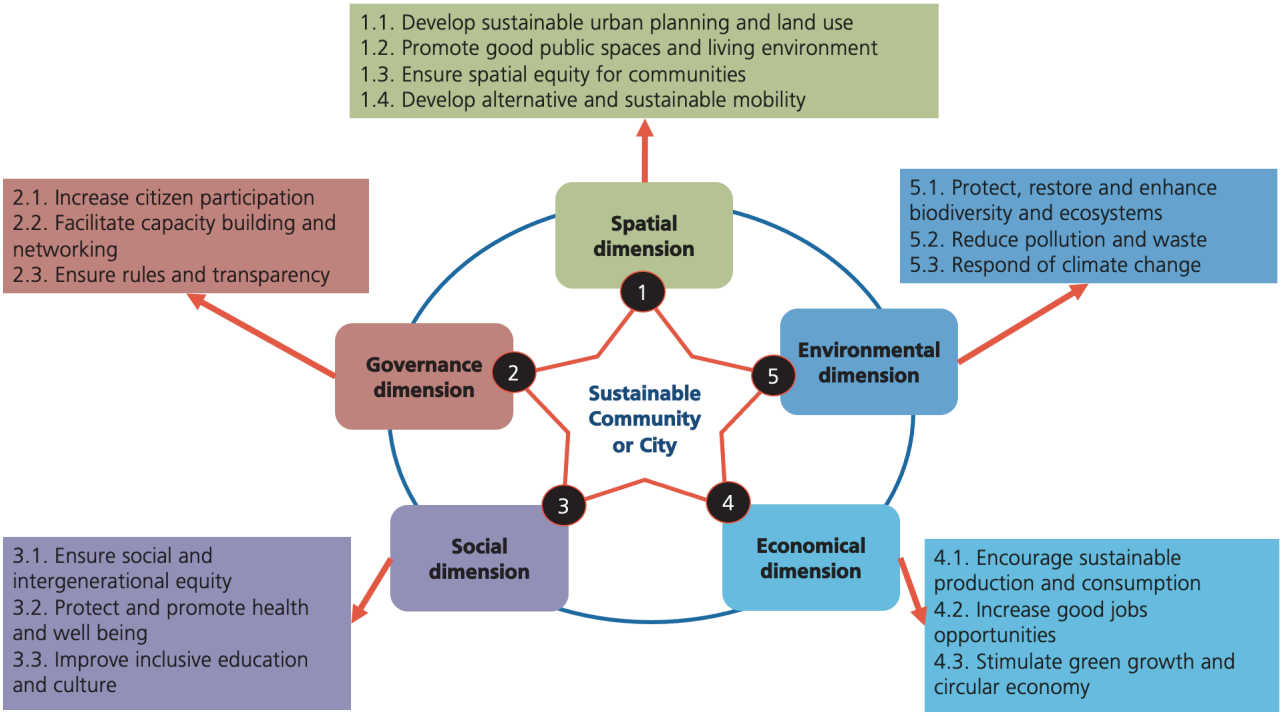


Table 3. Study criteria for sustainable communities and cities

DIMENSIONS	CRITERIA
1. SPATIAL DIMENSION	1.1. Develop sustainable urban planning and land use 1.2. Promote good public spaces and living environment 1.3. Ensure spatial equity for community 1.4. Develop alternative and sustainable mobility
2. GOVERNANCE DIMENSION	2.1. Increase citizen participation 2.2. Facilitate capacity building and networking 2.3. Ensure rules and transparency
3. SOCIAL DIMENSION	3.1. Ensure social and intergenerational equity 3.2. Protect and promote health and well-being 3.3. Improve inclusive education and culture
4. ECONOMIC DIMENSION	4.1. Encourage sustainable production and consumption 4.2. Increase good jobs opportunities 4.3. Stimulate green growth and circular economy
5. ENVIRONMENTAL DIMENSION	5.1. Protect, restore and enhance biodiversity and ecosystems 5.2. Reduce pollution and waste 5.3. Respond to climate change

5. Exemplary Cases of Sustainable Urban Communities and Cities

This section reviews exemplary cases of sustainable urban communities and cities that could illustrate the proposed criteria and draw learnings for sustainable development of urban communities and cities in Vietnam. Accordingly, for each dimension and its proposed criteria, one or some selected case(s) is presented. These selected cases are exemplary, but not necessarily optimal. Future updates and more case reviews are necessary if the learnings and subsequent lessons are to be applied to Vietnam.

5.1 Spatial Dimension

Curitiba city, capital of the southern Brazilian state of Parana in Brazil, is a showcase for spatial sustainability which has been used to transform the city towards sustainability in governance, economic, social and environmental aspects (UNESCO, n.d.). Its sustainable urban planning and land use has received contributions from planning experts. Land development permits, land acquisition for rights of way and social housing, designating road functions and a well-designed public transportation network have helped to efficiently control and define the city's spatial growth and urban land-use patterns (Suzuki et al., 2010).

Good public spaces and living environments have been promoted with high-density commercial and residential development directed along strategic axes. Flood-prone land was turned into parks with natural flood control measures. Regulations were enforced on reserved forests, the ratio of land to forest or trees in private land development projects and industrial parks and compensation for landowners for urban planting. All of these created more green, safe public spaces (Suzuki et al., 2010).

Spatial equity for the community was made possible as the city encouraged the poor to obtain jobs and to promote an inclusive community. It provided training, facilities and land for local business development. It acquired private land and provided it with long-term loans for the poor to settle with water and electricity offered and encouraged their ownership. It provided social or affordable housing in the relatively cheap suburbs and encouraged a mix of income groups so that the neighbourhoods became inclusive. City services are decentralised and distributed equally throughout the city to allow equal access to all (Suzuki et al., 2010).

Alternative and sustainable mobility has been provided thanks to an integrated public transportation system. Curitiba has a bus rapid transit with low run time, low cost, high frequency and convenience and city-wide coverage. The system is enabled by user fees, distance-based contracts between the city and private bus companies, and a □at-rate "social" fare to support the poor. Buses are relatively new (under 10 years of age), well maintained, and less polluting. This bus system serves all urban areas and industrial parks where polluting industries were not permitted and many employees at industrial parks live nearby and commute by bicycle. Bus ridership has reached 45 percent. This means less traffic congestion, reduced fuel consumption and enhanced air quality (Suzuki et al., 2010).

5.2 Governance Dimension

Bonn city in Germany is a good example of sustainable governance. To ensure citizen participation, excellent engagement is made with the public, including the education system. In 2019 alone, more than a half of the city's primary schools participated in its Climate Change Ambassador initiative. The city involves partners and stakeholders in participatory urban planning both to ensure broad-based support and to link all dimensions of sustainability, while preventing social issues from becoming worse or entrenched (e.g. housing, long-term unemployment) (City of Bonn, n.d.).

Capacity building and networking are demonstrated in the city's work with the education and training system, which helps raise awareness of the SDGs and shapes habits and lifestyles, such as sustainable mobility and consumption by future citizens. The city has also provided a platform and incentives, such as R&D grants, for businesses to connect and contribute to the SDGs. It is now a growing a hub of small- and medium-sized enterprises (SMEs) focusing on sustainability as part of their core business along with social entrepreneurship (City of Bonn, n.d.).

Brisbane city in Queensland, Australia is another showcase of sustainable governance. The city actively engag-

es residents and businesses, offering them sustainable solutions to city issues and incentives to implement them. They include urban gardening, rainwater harvesting, use of solar hot water systems and energy audits and monitoring and connection to green power or renewable energy from government-accredited sources (Brisbane City Council as cited by Suzuki et al., 2010). As a result, public sector electricity usage and greenhouse gas emissions have decreased.

In terms of rules and transparency, Brisbane has developed guidelines that promote sustainability in development projects, including urban construction and spatial design to ensure energy efficiency and good circulation (Brisbane City Council as cited by Suzuki et al., 2010). It undertook measures for water conservation, including restrictions with penalties for overuse and subsidising rainwater tanks (for example, see Brisbane City Council as cited by Suzuki et al., 2010).

5.3 Social Dimension

Helsinki city offers an excellent example for social sustainability. Being the capital of Finland, the country ranks highest by OECD Better Life Index in terms of well-being among 40 countries including 38 OECD nations and three key partners of Brazil, Russia and South Africa, the city is well known for promotion of diversity and inclusion, a high level of social equity, health and well-being, and inclusive education and culture.

Social and inter-generational equity have been promoted through the implementation of equality legislation on gender equality and non-discrimination since 2004 in the city's services and its commitment to human rights. Gender, equality and environmental considerations have also been embedded in the city's human resource policies and decision-making. The city promoted diversity in the workplace by actively recruiting, training, managing, developing and rewarding personnel from diverse ages, ethnicities, languages, immigration backgrounds and cultures. It offers flexible work arrangements, including work remotely if applicable, with different types of leave to suit people of different age groups or with different commitments and needs, such as childcare, study, and disability. Its age-conscious wellness campaign helps to promote inter-generational solidarity (Helsinki, n.d.).

Health and well-being are supported with good or satisfactory air quality thanks to the city's traffic management, communication intensification, park and ride expansion, and free public transport (Helsinki, n.d.). The city's successful housing policy reduces homelessness, provides healthy, affordable housing for residents and enables better integration and connection. This policy gives priority to housing and applies practical land policies and social mixes where owner-occupied, private-rental, social-rental and tenant ownership houses are mixed with no difference in external appearance. A State agency provides funding for social housing via grants and loan guarantees, monitors quality and costs, promotes excellence and innovation and provides information for the housing industry (Pittini, 2017). The health care system is reasonably effective to support the needs of residents (OECD/European Observatory on Health Systems and Policies, 2017).

Inclusive education and culture for people with special needs and vulnerable and marginalised groups have been promoted with legislation that endorses the right to education and to inclusive education and "Education for all" policies and practices. Finland provides free education for all and compulsory education for all children residing permanently. Children are entitled to be enrolled in a neighbourhood school, a special needs school or be educated outside the comprehensive school. At school, students' right to support is acknowledged and responded to with a suitable level of support. There are also learners' well-being services (Kesälahti & Väyrynen, 2013).

5.4 Economic Dimension

Munich city in Germany offers a good example for economic sustainability. The city's waste management system and its recycling store (Halle 2) helped to promote sustainable production and consumption, job opportunities, green growth and a circular economy.

Halle 2 is firmly established and fully funded by waste collection fees from households in the city. With the waste management system allowing maximum waste collection, Halle 2 cooperates with local social enterprises to use their expertise in recycling and create employment and training opportunities. It works with educational and community organisations on awareness-raising and provides job opportunities and training at social enterprises for special target groups, including youth and long-term unemployed people. It also runs Saturday auctions. At Halle 2, people can learn to repair items, buy repaired items from a social enterprise that provides vocational training for the young unemployed, have coffee or view upcycled products or arts made from waste. Halle 2 has high ratings for quality of goods and services and makes steady profits from recycling (Urban Sustainability Exchange, n.d.).

5.5 Environmental Dimension

Singapore is a good case for work on biodiversity and ecosystems. The city State started its work on biodiversity and ecosystems in 1992 with the Singapore Green Plan, followed by the National Biodiversity Strategy and Action Plan in 2009. The National Parks Board is in charge of natural conservation. Besides its activities on genetic diversity protection, it works with relevant authorities to integrate biodiversity consideration into development projects. Thanks to these efforts, the city optimises its land use to allow 47 percent of its limited 710 km^2 land area for green spaces and natural areas. While the city's managed habitats consist of a large population of non-native species, its natural sites have rich biodiversity and are well-maintained (Secretariat of Convention on Biological Diversity, n.d.).

Kamikatsu town of Tokushima Prefecture in Japan is a great example for pollution and waste reduction. Its residents sorted and recycled 81 percent of all their waste in 2016. Work on this achievement started in 2003 with the zero-waste initiative to deal with the high level of pollution caused by waste burning and dumping practices at the time. The population demonstrated great commitments and high awareness and changed habits toward supporting zero-waste (McCurry, 2020).

Berlin in Germany presents a good example for climate change adaptation. The city adopted the 2016 Berlin Energy Turnaround Act and Berlin Energy and Climate Programme 2030 which set out sectoral projects, strategies and measures for adaptation. Briefly, climate adaptation is integrated in different areas from culture and education to health, supplies, utilities and services, environment, construction, waste management, industries, traffic and tourism. A broad range of measures are applied from rainwater management, soil protection and monitoring, early warning systems, creation of green and open spaces, restocking and restructuring of wood land to upgrade school buildings and inclusion of climate adaptation into the curriculum (Digital Monitoring and Information System of the Berlin Energy and Climate Protection Programme, n.d.).

6. Survey Design and Implementation

The research team developed a semi-structured questionnaire for residents and interview guides with open-ended questions for experts and officials. Both instruments asked for opinions and observations from respondents about how their urban communities and cities met these criteria and how they could work towards improving on these criteria. The semi-structured questionnaire consisted of multiple-choice questions, which used the five-point Likert scale for evaluation (Javaras, 2004) and are included in the appendices of this report.

Table 4. Five-point Likert scale

Point	(1)	(2)	(3)	(4)	(5)
Symbols	☹☹	☹	😑	🙂	🙂🙂
Agreement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Satisfaction	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied
Difficulty	Very difficult	Difficult	Manageable	Easy	Very easy
Preference	Strongly dislike	Dislike	Neutral	Like	Strongly like
Safety	Very unsafe	Unsafe	Manageable	Safe	Very safe

The surveys were conducted from August 7th to September 22nd, 2021. For residential surveys, the project team selected Bac Tu Liem and Nam Tu Liem districts in Hanoi, Sontra district in Danang, and Binhthuy and Ninhkieu districts in Can Tho. A total of 60 residents participated in the study, in which each city accounted for 20 participants. The participants were recruited through community-based organisations, universities and non-governmental organisations connected to the Centre for Development of Community Initiative and Environment. Interviewers obtained witnessed verbal informed consent before proceeding. No personal identifiers were recorded or linked to transcripts. In-depth interviews (IDIs) were conducted in private locations with only the interviewer and participant present. The residents participating in the survey were selected to provide a wide range of ages and occupations. The demographic characteristics of survey respondents are presented in Table 5. The female/male respondent ratio was close to one, allowing even representation of gender in the survey. Respondents came from across a broad age range. More than 90 percent have attained secondary or higher education levels and 85 percent have job earnings as their main income sources, while the remainder depended on family or social support.

Figure 4. Hanoi map and survey sites

Source: Wikitravel, n.d.

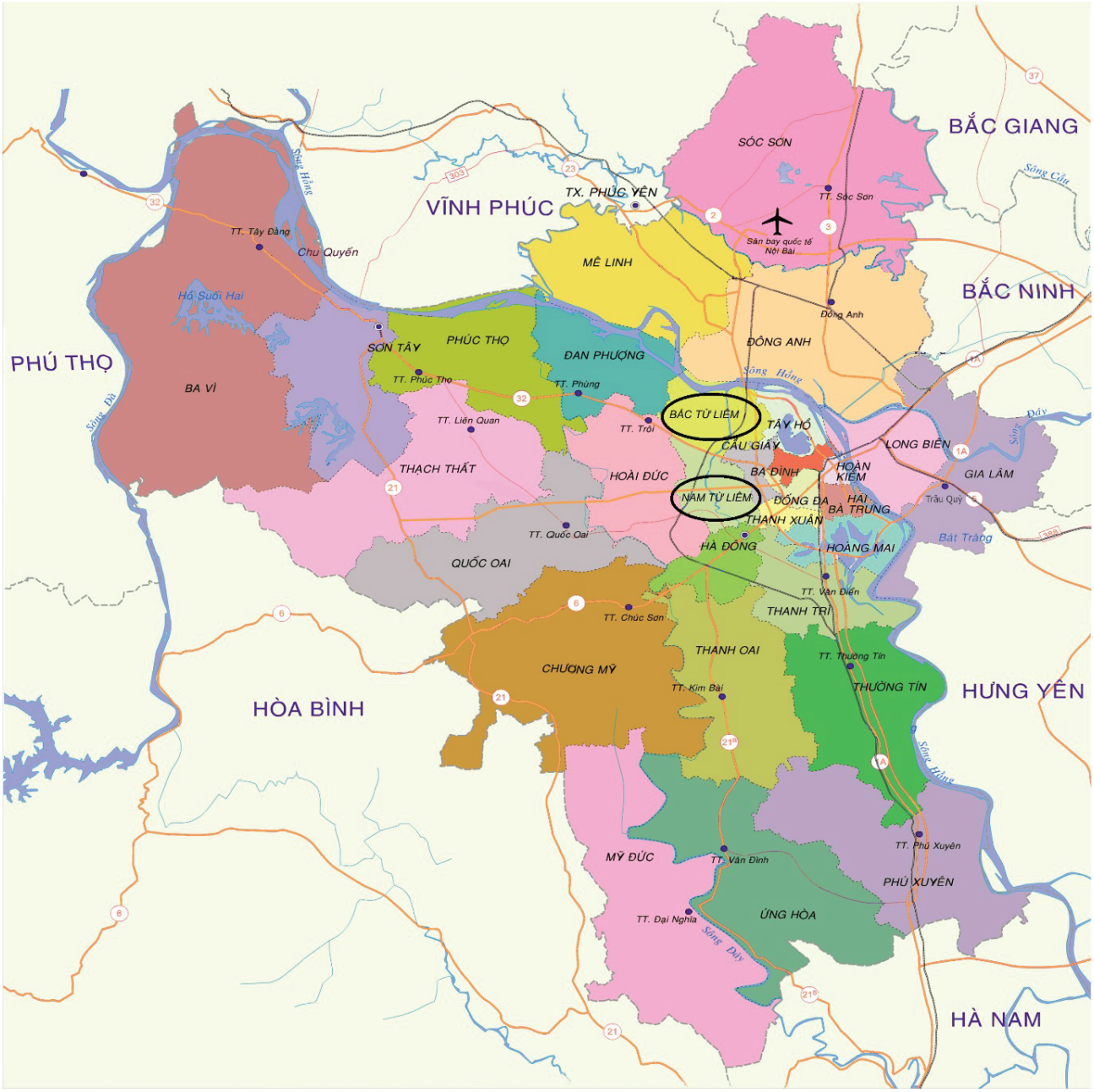


Figure 5. Danang map and survey sites

Source: Dia oc thong thai, n.d.b

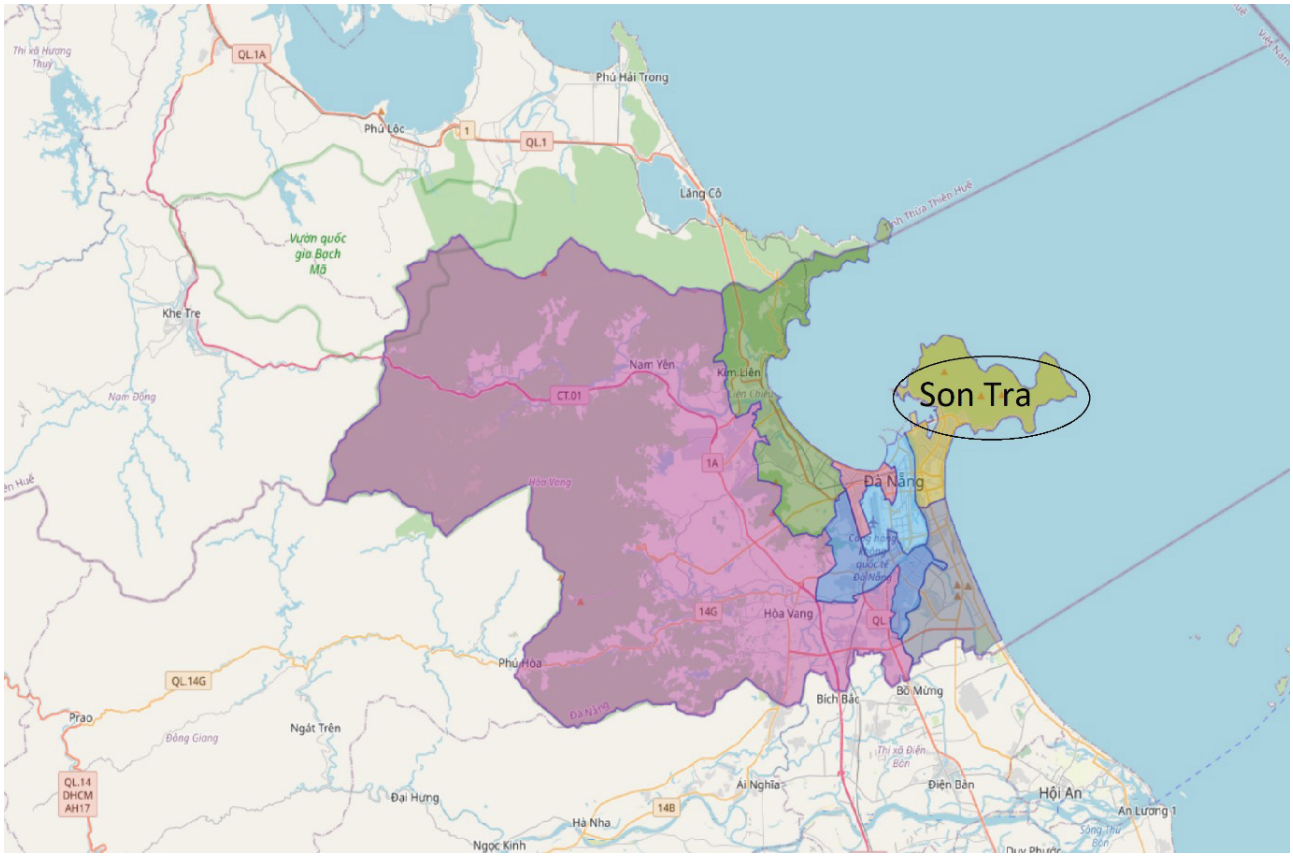
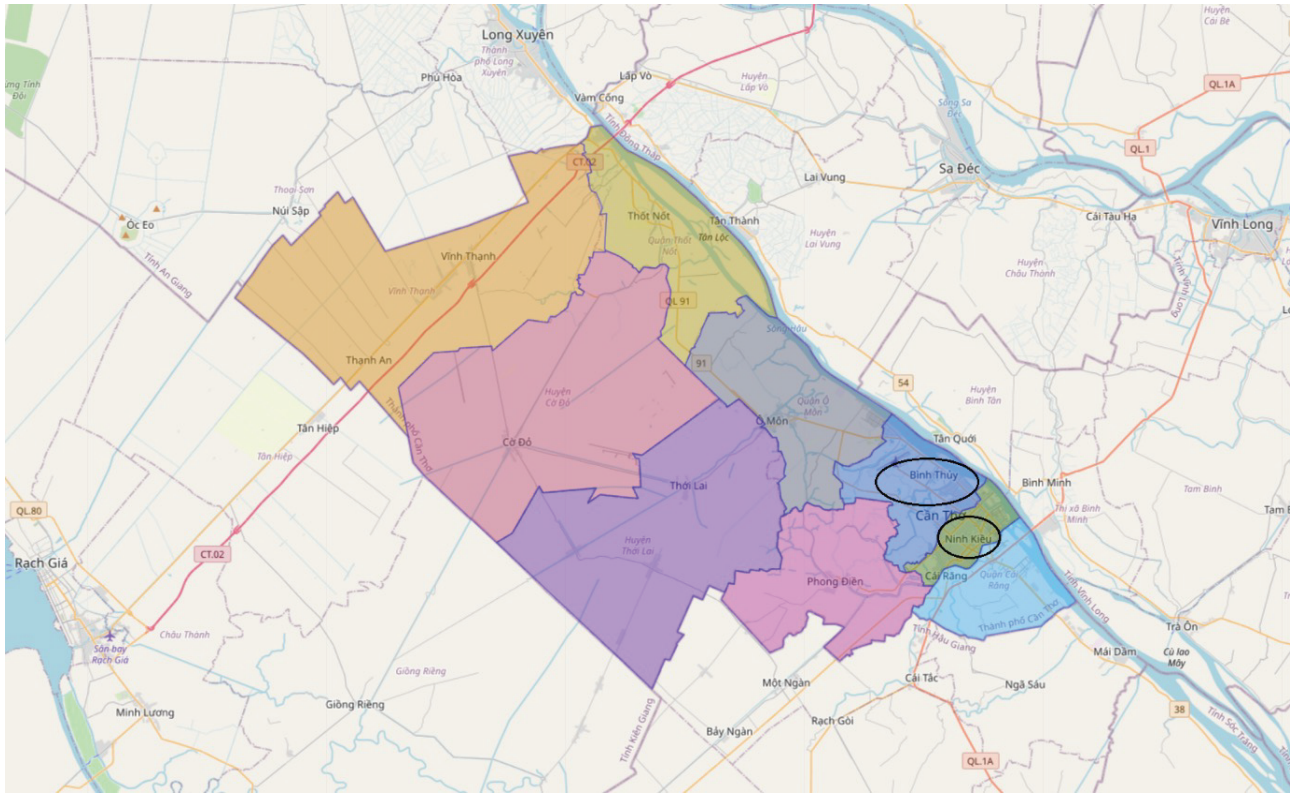


Figure 6. Can Tho map and survey sites

Source: Dia oc thong thai, n.d.b



The project team invited and conducted in-depth interviews with 38 experts and State officials. In Hanoi, 17 experts and officials took part in in-depth interviews, with respondents from the Ministry of Planning and Investment, Ministry of Health, Ministry of Construction, Ministry of Science and Technology, Ministry of Industry and Trade and the Ministry of Natural Resources and Environment. They included city and district-level officials as well as representatives from NGOs and research institutes. In Danang, 13 experts and officials were interviewed from city departments, district units, research institutes, NGOs, universities and colleges. In Can Tho, eight participants featured in in-depth interviews, including two officials from the Water Resource Department, a province inspector from the Provincial Inspectorate and one technical/ administrative officer, both are from Can Tho Department of Construction, three university lecturers from FPT University and Can Tho University, and a researcher from an international aid agency.

Table 5. Residential survey respondents (percentage)

Character	Hanoi (n=20)	Danang (n=20)	Can Tho (n=20)	Total (n=60)
Male	40.0	55.0	40.0	45.0
Female	60.0	45.0	55.0	51.7
Other sex	0.0	0.0	5.0	3.3
Under 35 years old	55.0	15.0	50.0	40.0
Between 35-50 years old	25.0	45.0	15.0	28.3
Over 50 years old	20.0	40.0	35.0	31.7
Illiterate/ primary education	0.0	0.0	10.0	3.3
Intermediate education	5.0	0.0	5.0	3.3
Secondary education	5.0	15.0	35.0	18.3
College/vocational training	5.0	15.0	15.0	11.7
Under/graduate education	85.0	70.0	35.0	63.3
Job earning	95.0	75.0	85.0	85.0
Family income	5.0	5.0	0.0	3.3
Family support	0.0	5.0	5.0	3.3
Social support	0.0	15.0	10.0	8.3

Data collection faced numerous challenges. Firstly, given the COVID-19 pandemic, Vietnam imposed lockdown measures for the three cities, making it difficult to approach respondents and conduct face-to-face interviews. In many cases, the project team opted to use mail and email correspondence and telephone interviews. Focus group discussions were not conducted. Many planned interviews were cancelled because State officials and experts were busy with tasks related to the pandemic. As such, the number of respondents was reduced significantly. Therefore, the survey findings do not represent opinions and observations of a wider cross-section of the population.

7. Findings

7.1 Hanoi Respondents' Comments and Evaluation

Spatial Dimension

Urban planning was viewed as inconsistent and varied as a result of executive leadership changes at the city and district levels, which normally occurs after election cycles. The city's high population density means its inhabitants have outgrown the pace of infrastructure development. Degraded public utilities and lack of public spaces are a major source of concern.

"There are too many urban quarters, while there are too few green areas. Too many traffic issues." (Resident, Nam Tu Liem)

Given the insufficient infrastructure development, high-income groups can afford good housing with access to quality utilities such as fitness centres, green and safe public spaces. Low-income groups have low access to affordable housing with nearby public utilities such as schools, health care and green spaces due to high housing prices. They often end up in slums, overcrowded and unsafe areas where vulnerable groups such as women, children and the elderly might suffer even more.

"Salary and wage earners cannot even afford low price housing with limited utilities." (Resident, Hanoi)

Motor vehicles have been a major source of air pollution and road works have been slow to keep pace with rapid urbanisation. Traffic jams are common along with traffic accidents given the growth in population and vehicles. Also, no policies to promote green transportation or invest in safe transport for people with disabilities have been implemented.

"In Hanoi, urbanisation occurred without proper planning and concerted efforts. Housing expansion left no room for roads. The average land ratio for transportation/housing is only 2 percent. This leads to traffic jams, pollution and lack of green spaces." (Officer, Hanoi)

"Regarding urban traffic, it is difficult now and will be extremely difficult in the coming years, because of such density between vehicles and roads at the moment in urban areas like in Hanoi, there is no easy solution for public vehicles(sic). Because for public vehicles to operate, they must have enough space to move. If the state wants to invest, the only way is to do it above and below ground, and while Ho Chi Minh City is failing spectacularly on this, Hanoi can only claim a B minus." (Officer, Hanoi)

"Regarding urban planning, the idea is very good, but the reality is not as good. Real estate prices are very high, and there is a lack of buffer space and green space. The 2011 urban plan of Hanoi has many things that doesn't meet the sustainability criteria. In implementation, there are also many failures in reaching targets. The plan may be right, but the implementation doesn't follow it." (Officer, Hanoi)

Some voiced concerns over issues such as illegal construction.

"The nearby building is four or five stories higher [than what is permitted] but nothing is done. People complained, but the local authorities still allowed this to happen." (Resident, Hanoi)

Most respondents predicted that these spatial issues might not be resolved and could worsen as the city's population continued to grow.

Hanoi from above
Photo by Vu Dang Hoang and colleague

Governance Dimension

Awareness-raising was found to be well implemented via communication channels with good examples from public health and safe traffic campaigns. However, these campaigns target selected groups and leave out some others.

“ Some activities encourage women, old people, or people with disabilities to participate. I am not invited and I do not participate.” (Resident, Hanoi)

“ There has been many discussions on citizen participation, but up to this point, people’s participation is limited in Hanoi. It’s not because people doesn’t have knowledge, but the way the problem is presented makes them feel like they don’t have to participate. If the handling of people’s engagement is changed, people can still be mobilised. In some provinces, citizen participation is a lot better than in Hanoi. This problem is only getting better than in the past, but very slowly. There is no clear regulations on who is responsible for handling the people’s complaints, how it will be processed and how long the process go. People are also more conscious, but not very effective.” (Officer, Hanoi)

Information technology and local information networks facilitate communication of rules, policies and information from the government to citizens. However, issues remain such as barriers to contacting executive officials at municipality level and city or State officials. The same also occurs when they try to access people’s representatives. There are also barriers in implementation of rules and information verification. Vulnerable groups, especially people with low income, disabilities and migrant workers from other provinces face multiple barriers and red-tape in accessing social support programmes. For example, some programmes require people to have disability certification or to register for temporary residence. Respondents said this would require much time, effort and expenses.

Responses were diverse in terms of community groups’ participation in decision-making processes. While they agreed that authorities gathered opinions from the community, some thought that residents did not have the awareness to do so. Others thought that the authorities only take these opinions for the sake of formality, while others believe that voting rights are the only tools available.

“ The State respects the right of the people to be the owners of the country, all groups are equal.” (Resident, Hanoi)

In general, people believe that the governance dimension will get better in the future.

“ It is difficult to change in the next 5-10 years, but the 10-year, things will change, because the pressure on the public will become greater on topics like spatial and environment, so people will demand that their voice be better heard. The tools for citizen participation will be stronger, social networks and newspapers will make it easier to speak up (Officer, Hanoi)

Social Dimension

Residents acknowledged authorities’ support of vulnerable groups, gender equity and preferential treatment for those with acute needs, such as lower requirements for university admission, social support for the poor and elderly. However, many disparities remain.

“ Things are gradually improving, though not up to expectations.” (Resident, Hanoi)

“ There are centres to support people in need and the elderly, but maltreatment of child beggars can still be seen daily.” (Resident, Hanoi)

All residents receive healthcare, including regular health checks and vaccinations, via low-cost health insurance and public health services provided by the State. However, the healthcare payment rate is insufficient, so many people face out-of-pocket expenses. This leaves low-income groups more disadvantaged in terms of healthcare. Besides, the public health services have not made sufficient health promotion and protection efforts. Respondents had diverse opinions on culture and education, considering these are macro areas which are difficult to evaluate.

Survey participants expressed concern about insufficient services and support for vulnerable disadvantaged groups, which meant inequalities persisted and grew in many areas. For example, high-income quintiles can afford more diverse and holistic education and training activities and pay for private lessons, which can result in academic achievements and job-seeking advantages. Some raised concerns over tuition fees, poor training programme quality, support for students and exam cheating, violence and corruption. Many saw much room for development in equality and equity for Hanoians, especially vulnerable groups, but some felt inequalities were inevitable in the current settings.

A corner in Dang Dung street
Photo by Vu Dang Hoang

Governance Dimension

Awareness-raising was found to be well implemented via communication channels with good examples from public health and safe traffic campaigns. However, these campaigns target selected groups and leave out some others.

Economic Dimension

Respondents thought sustainable production and consumption were key environment-related factors. Many highlighted production and consumption waste, while few mentioned sustainable use and development of resources. Residents acknowledged some good practices, such as reducing plastic packaging. Many thought production was not sustainability-focussed and environmental pollution prevention measures were insufficient. Some considered incentives for sustainable production to be superficial.

“ Production emits many toxic substances to the environment without any control.” (Resident, Hanoi)

“ Only large corporations care about sustainability. Small establishments are not sustainable. I am not clear if there are tax cuts for production and consumption?” (Resident, Hanoi)

Some recognised that organisations and agencies have started to reduce waste, for example buying larger plastic water bottles. But, they admitted it was hard to change consumption behaviours, such as use of plastic shopping bags without having alternatives.

Many respondents thought low-skilled jobs were accessible, in contrast to high-skilled ones, hence it was necessary to create jobs for many levels and types of workers. Currently, there are gaps between training, workers’ expectations and the market, with education and training failing to respond to market conditions. Besides, the labour market is neither sustainable nor responsive to risks and disasters, such as the COVID-19 pandemic.

“ Services such as tourism and hospitality are unsustainable during the pandemic and the unemployment rate of this sector is very high. People are not protected.” (Resident, Hanoi)

Some residents could give examples of what they perceived as green growth and circular economy, such as recycling activities, producing eco-bricks from plastic waste and other waste materials, the garden-pond-livestock model, organic farms, environment-friendly construction works such as conglomerate Vingroup’s condominiums [Its residential complexes are located in expensive areas in major cities and usually consist of penthouses, town houses and villas and target affluent customers (Nikkei Asia, 2021)]. The Yenso urban complex in Hanoi is another example provided by respondents. [The plan for this urban complex was approved in mid-2020 to include a greenery public park with cultural and entertaining functions and a large water space of Yenso Lake and diverse housing types including commercial, resettlement and social housing (Vietnambiz, 2020).] It is noted, however, that there were many social and environmental issues associated with these urban development projects, for example issues of land use and damage to the natural environment which might be unknown or ignored by respondents.

Environmental Dimension

Comments focussed on environmental protection and increased urban greenery areas. Some respondents thought the city had made few efforts in the realm of conservation, in contrast to good environmental campaigns such as from museums and classes for students.

Hanoi has some of the world’s worst air pollution (Nguyen, 2020) and the city authorities have tried to move polluting factories out of the city centre. Information about polluting enterprises is communicated widely via TV and radio. With the high population density, residential waste volumes are high and pose many obstacles to environmental management. Many respondents, however, thought pollution and waste had been greatly reduced.

Respondents showed little awareness of any city plans to respond to climate change.

To Lich river
Photo by Vu Dang Hoang

7.2 Danang Respondents' Comments and Evaluation

Spatial Dimension

Many participants considered Danang's urban planning to have improved in terms of infrastructure and utility development to serve tourism and services compared to five to 10 years ago. The urban landscape has been enhanced with more trees, a clean environment and much community space. These steps forward include free access to parks and public spaces being developed for every district and commune. The city runs subsidised bus routes to serve the public with further support to low-income and disadvantaged groups, such as people with disabilities and students.

> Compared to 10 years ago, Danang has paid more attention to sustainable land use planning and urban development as evident in limiting private vehicles, developing public transport, increasing the coverage of the public transport network for easy access by people within a distance of 500m-800m from their residential places, increasing the ratio of roadwork area/urban construction area to 15-20 percent and investing in building apartments and social housing for low-income people." (Officer, Danang)

Danang is a Class I city in Vietnam's urban classification system and is believed to be well planned with a consistent system of infrastructure and architecture.

> Danang is a national Class I city of Vietnam and is considered to be well planned, to have a relatively synchronous technical infrastructure system and a fairly consistent and spacious urban architecture." (Officer, Danang)

> Son Tra district has a clear urban development orientation, clear sub-divisions of riverside areas, coastal areas, hilly and urban areas." (Officer, Danang)

Since 1997, Danang has adopted a policy to attract human resources from other regions to serve its development. Many industrial parks have attracted migrant workers who settled in apartment compounds developed for them.

Meanwhile, many respondents commented that the city did not have a master plan, land use was ineffective given the many unused and bare areas, while there was no land fund for communities. While transportation is convenient, public transport is limited and most people use private vehicles.

Respondents advised that old housing areas often had a high housing density with a blended population of public servants, small traders and poor labourers. While transport and utilities options are convenient, they reported insufficient green spaces and overcrowded houses.

> (A land lot is) 4×15-20m, the green ratio is too low, affecting the residents' health. A family of many generations [often] shares a house. [They] are prone to inter-generational conflicts." (Officer, Danang)

The city has invested in housing developments for residents and planned to develop apartment areas for low-income groups and single mothers. It also has policies to ensure residents have accommodation and employment, so those most disadvantaged do not slip between the cracks. However, these policies face many issues, with high house prices, limited supply of houses and high volumes of migrants from the central and Central Highlands regions dynamic features. Low-incomes mean disadvantaged groups continue to have limited access to housing, services and social welfare.

> Social housing projects and new residential areas have also been invested and built. However, as the city is the socio-economic centre of the region, immigration is increasing, [causing] land prices to rocket in recent years, making it more difficult for the poor and disadvantaged groups to get stable housing." (Expert, Danang)

> Social housing projects for disadvantaged groups face many issues." (Expert, Danang)

Danang's Dragon bridge
Photo by Doan Minh Sang, Huynh Thi Lieu Hoa and Danang team

Governance Dimension

Participants evaluated that the capacities of authorities and public participants have clearly improved. Public servants have been recruited with transparency and suitable criteria. Rules and regulations are more accessible, feasible and transparent for residents through information channels, social networks, television and radio. Danang is recognised a leader in e-government. The smart city orientation and application of technologies in governance – such as the hotline 1022, webpages and social networks – have increased performance quality and interactions between authorities and residents. Face-to-face contact and opportunities for corruption have been greatly reduced.

“ The quality of civil servants has been increasingly improved. [The authorities] regularly run training courses to improve skills and professional qualifications.” (Resident, Danang)

Public participation and contributions are encouraged along with information access. People with internet access can easily access information via the city's website, in contrast to those without access which creates a digital divide.

“ All citizens can access information, policies and all levels of government easily, in many different ways.” (Resident, Danang)

“ The city still needs to consider the participation of disadvantaged groups [people with disabilities, near-poor groups and poor households who do not have access to information and smartphones].” (Expert, Danang)

Many respondents advised that residents have not been actively involved in decisions that effect their lives, which are still made in a top-down fashion by leaders at all levels. This applies especially for the poor and disadvantaged groups, such as people with disabilities, women and the elderly.

“ Many activities are superficial and have little relevance to residents' lives. Social organisations such as the Women's Union and professional associations have not effectively operated to present and protect the interests of their members.” (Expert, Danang)

Social Dimension

Many participants thought that factors in the social dimension have improved greatly. The city implemented many policies to promote social justice, support the poor and improve social welfare. Still, respondents pointed out the need to reduce social disparities between the poor and wealthy, with few cultural and spiritual institutions to serve the community.

“ To ensure social justice, the city has provided forms of support to poor and near-poor households and the elderly.” (Resident, Danang)

The city's health care system, which provides high-quality services, was commended – as was its inclusive education, including its guaranteed education equality and tuition support policy. Migrants enjoy the same access as local residents to public utilities, including health care, education and other social welfare policies.

“ There are policies to provide payment for tuition fees, electricity bills, health insurance and other support for this group.” (Resident, Danang)

People with disabilities are cared for by their families or by sponsored social care facilities, but still need more attention.

Economic Dimension

Most respondents considered Danang's economy to have rapidly grown since a decade ago, with the tourism, services and marine sectors the key investment focuses. Respondents' answers suggested that industrial development, tourism and services incorporated sustainability but application of sustainable and circular economic models is limited and ineffective.

Respondents perceived the city's citizens as enjoying higher living standards, with more jobs available, yet job requirements and labour skills often did not match. Graduates compete hard for suitable professional jobs,

while manual labour positions are readily available.

“ Finding an ideal or appropriate professional job is very difficult. [Many] must accept jobs which do not fit their expertise and strengths.” (Resident, Danang)

Photo by Doan Minh Sang, Huynh Thi Lieu Hoa and Danang team

Environmental Dimension

Many respondents viewed Danang as having an impressive environment, with diverse nature and rich in landscapes and wildlife. The city has made great efforts in environmental protection to make it green and livable and not trade it for economic development, with trees and urban landscapes commonly commented on. Rubbish collection is well-managed and pollution and discharges have been greatly reduced on streets. Some pointed out that Danang had implemented many regulations to protect marine, mountain and forest biodiversity with the protected area in Son Tra being a great example. Still, according to some respondents, the ecosystem was vulnerable without self-border corridors and the ecological recovery rate was slow. There have been cases of illegal exploitation of the ecosystem affecting the quality of the environment and natural ecology.

“ Illegal exploitation of forests and seafood continues, affecting the sustainable development of the ecosystem.” (Resident, Danang).

Respondents rated the city’s action plan to adapt to climate change as “good”, but gave limited opinions that focused on the mitigation of storms, floods and natural disasters which annually hit central Vietnam.

“ All levels and sectors have developed plans to respond to climate change in different scenarios and with different options.” (Resident, Danang)

7.3 Can Tho Respondents’ Comments and Evaluation

Spatial Dimension

In general, respondents were satisfied with the spatial dimension factors, but suggested better planning, infrastructure and utilities – such as more public spaces and green areas as well as better alternative means of public transport and commuting.

“ Public space is quite good [with green parks, wide roads]. Communities, including disadvantaged groups, can easily access public spaces. Public transport infrastructure has also begun to make new breakthroughs to enable disadvantaged people to move and work safely, and to reduce travel times to make work more efficient.” (Respondent, Can Tho)

“ Urban planning is still fragmented, without synchronisation. Some people cut garden land to sell, then the land is upgraded to urban land, creating urban areas.” (Respondent, Can Tho)

Access to affordable housing with good utilities is scarce for low-income groups. They often end up renting houses or buying semi-permanent houses without good utilities due to high costs and few policies to support this group with housing.

“ Most low-income groups can only rent. If they have a house, it is a level 4 house, without access to good facilities.” (Resident, Can Tho)

“ The cost of housing in places with adequate, nearby facilities is often very high, making it difficult for low-income people to buy.” (Resident, Can Tho)

“ I haven’t seen many preferential policies for low-income people to buy houses with green spaces and good playgrounds.” (Resident, Can Tho)

As with Hanoi, Can Tho’s urban development planning has failed to account for spatial access for people with disabilities and the elderly, as reported by respondents.

Can Tho from above
Photo by Le Anh Tuan and Can Tho team

Governance Dimension

Respondents advised they had stable access to authorities' announcements and policies via online and social networks, but have limited knowledge of governance and political-administrative relations. Respondents pointed out that the city authorities needed to meet today's contextual challenges, for example to develop sustainable urban criteria and issue land title certificates.

> Urban authorities need to develop sustainable urban development criteria to be achieved." (Respondent, Can Tho)

> New urban areas have not yet completed their drainage systems. Many households have not yet been granted ownership certificates." (Respondent, Can Tho)

> The city is operated under the provincial government system. It is not proactive to adapt to current and future shocks and pressures." (Respondent, Can Tho)

> The city is not well planned and urban governance capacity does not keep up with development trends and requirements." (Respondent, Can Tho)

Social Dimension

Most respondents thought that social dimension factors as well as current laws and regulations were acceptable, with attention given to disadvantaged groups who could rent or rent-to-buy cheap houses with low-interest home loans. Despite the many immigrants from rural areas, limited employment opportunities are concentrated in industrial parks and food services. People's awareness of environmental and health issues is patchy. Many people, including officials working at State agencies, have little knowledge about waste and plastics issues and would need training to raise awareness as commented by the following respondent.

> The level of understanding about environmental and health issues is uneven. People in general are not aware of environmental protection and have no knowledge about waste, plastic bags, even those who work in government agencies. So there needs to be training courses to raise awareness." (Respondent, Can Tho)

Respondents and experts acknowledged that the state's social healthcare programme provided basic health security for vulnerable groups, including the elderly, migrant unskilled workers, people with disabilities, LGBT or sex workers. Many food and clothe aid programmes, most of which were initiated and run by individuals and charity groups, have stable operations. Training and employment assistance to people with disabilities is rare and usually ineffective. Other social security programmes are scarce.

Photo by Le Anh Tuan and Can Tho team

Economic Dimension

Respondents did not engage much on the issue of circularity and sustainability in the economy. Of all the participants, only a handful thoroughly explained their experiences on the circular economic activities and sustainability in consumption. Many, however, showed great interest in employment issues, but found it too challenging to find a job.

> Investment in Can Tho is still slow, so there are not many job opportunities. Even with newly-opened universities, it is difficult to attract talent. People opt to go to Ho Chi Minh City to work or run a business." (Respondent, Can Tho)

Some commented that Can Tho had good agriculture,

but there was insufficient processing and logistics. The city had not made use of its eco-environment to develop tourism, cleaner production and a circular economy.

“ Sustainable production and consumption are difficult for all.” (Respondent, Can Tho)

Photo by Le Anh Tuan and Can Tho team

Environmental Dimension

Respondents thought pollution was insignificant due to its favourable natural environment. However, some observed environmental degradation such as the loss of greenery, water bodies and biodiversity. Urban spaces were viewed as crowded and polluted by some, while public transport was less than optimal for children, the elderly and people with disabilities. Risks of flooding and pollution of water, air and traffic congestion were apparent. In response, respondents said it was necessary to plant more trees and improve rubbish collection in neighbourhoods. In contrast, some said authorities had given considerable attention to environmental issues and biodiversity.

“ The issues of environment and biodiversity have recently received considerable attention from the government. The city has invested in an urban solid waste treatment plant to improve the urban environment. It also attends to biodiversity conservation. It has issued laws banning fishing by electricity and wild animal hunting.” (Respondent, Can Tho)

“ I wish that the amount of waste would be reduced and the city has a cleaner, greener and more beautiful environment in the coming years.” (Respondent, Can Tho)

7.4 Residents’ Ratings of 16 Criteria in Five Dimensions

The results of the residential survey were statistically analysed. Based on the number of respondents who scored each criteria using the five-point Likert scale with one being the lowest/worst and five being the highest/best, the average score on this five-point scale is determined by the formula:

$$M_c = \frac{\sum_5^{i=1} (m_i \times n_i)}{\sum_5^{i=1} n_i}$$

In which, M_c - Average score for each criterion of each dimension

m_i - Score on Likert scale, m = 1, 2, 3, 4 and 5

n_i - The number of people selected, corresponding to the mi point.

The mean score for each dimension is calculated as the average of the component criterion scores, assuming no weighting for the criteria.

The results for Hanoi, Danang and Can Tho are shown in the following two figures.

Figure 7. Mean score for each dimension in Hanoi, Danang and Can Tho in comparison

Source: Author's compilation

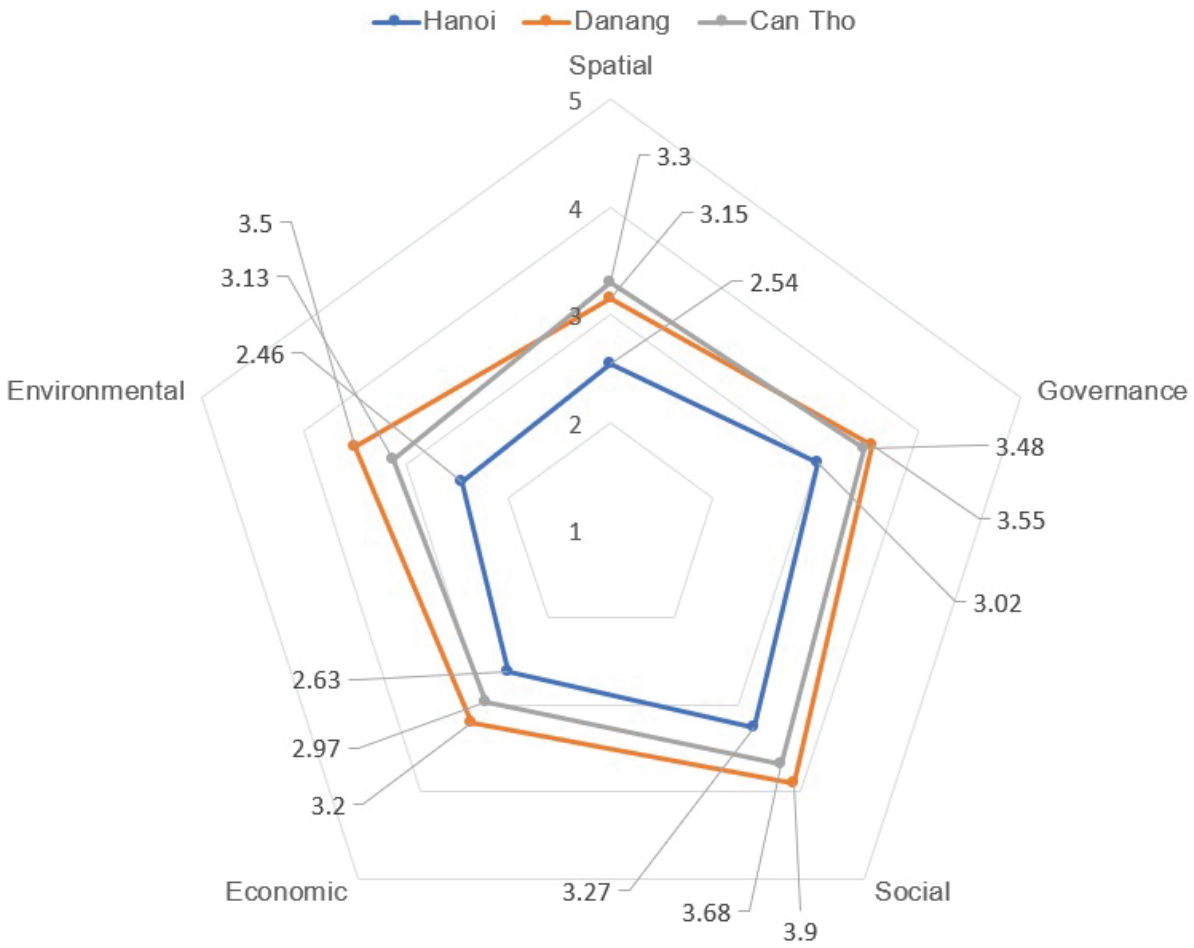
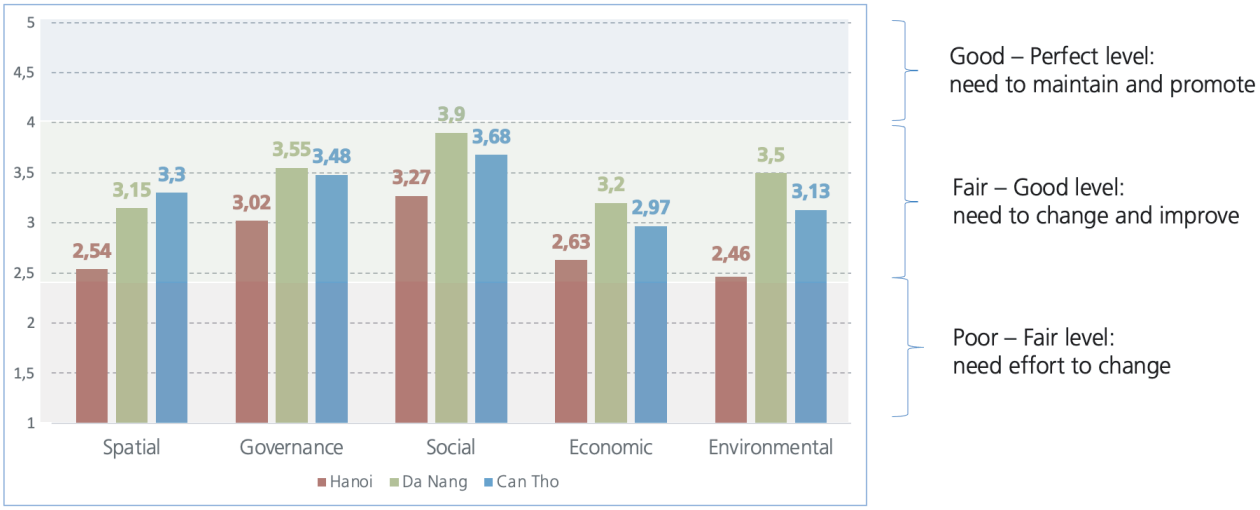


Figure 8. Mean score for each dimension in Hanoi, Danang and Can Tho

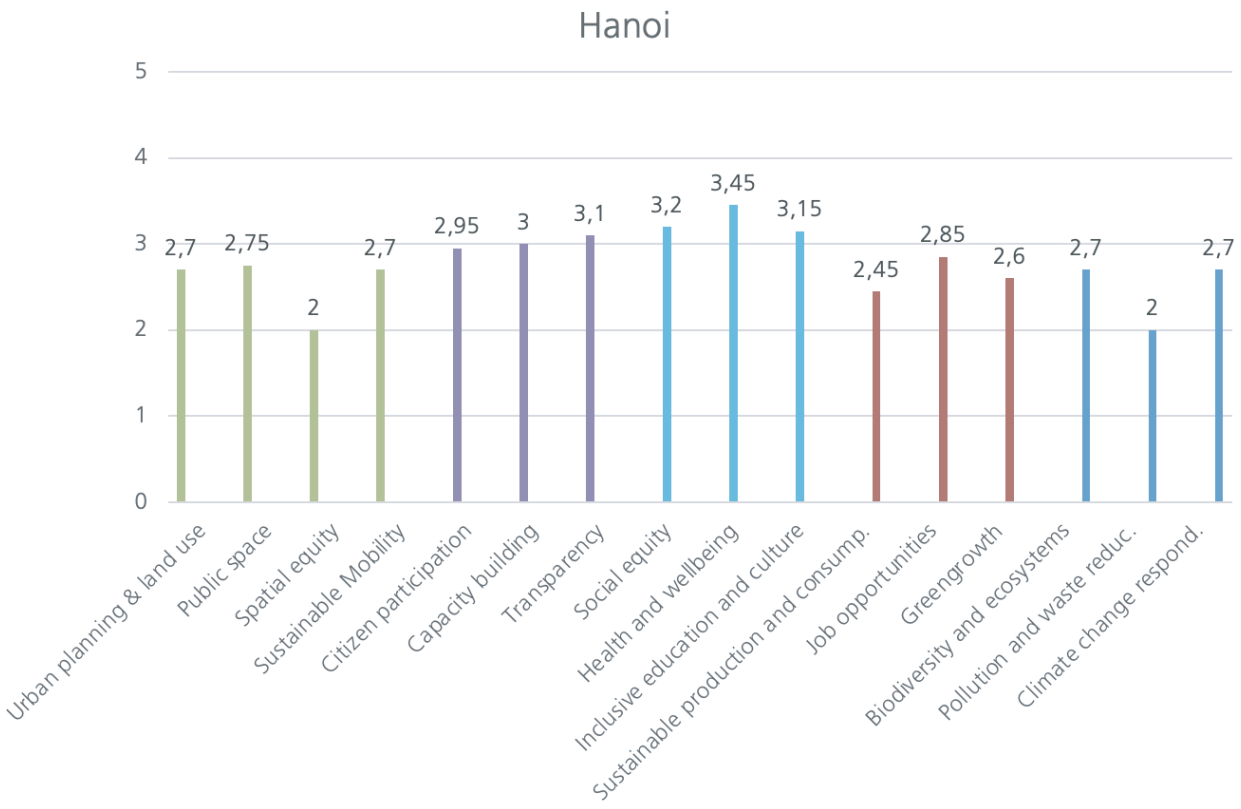
Source: Author's compilation



Hanoi

Figure 9. Mean score for each criterion in Hanoi

Source: Author's compilation

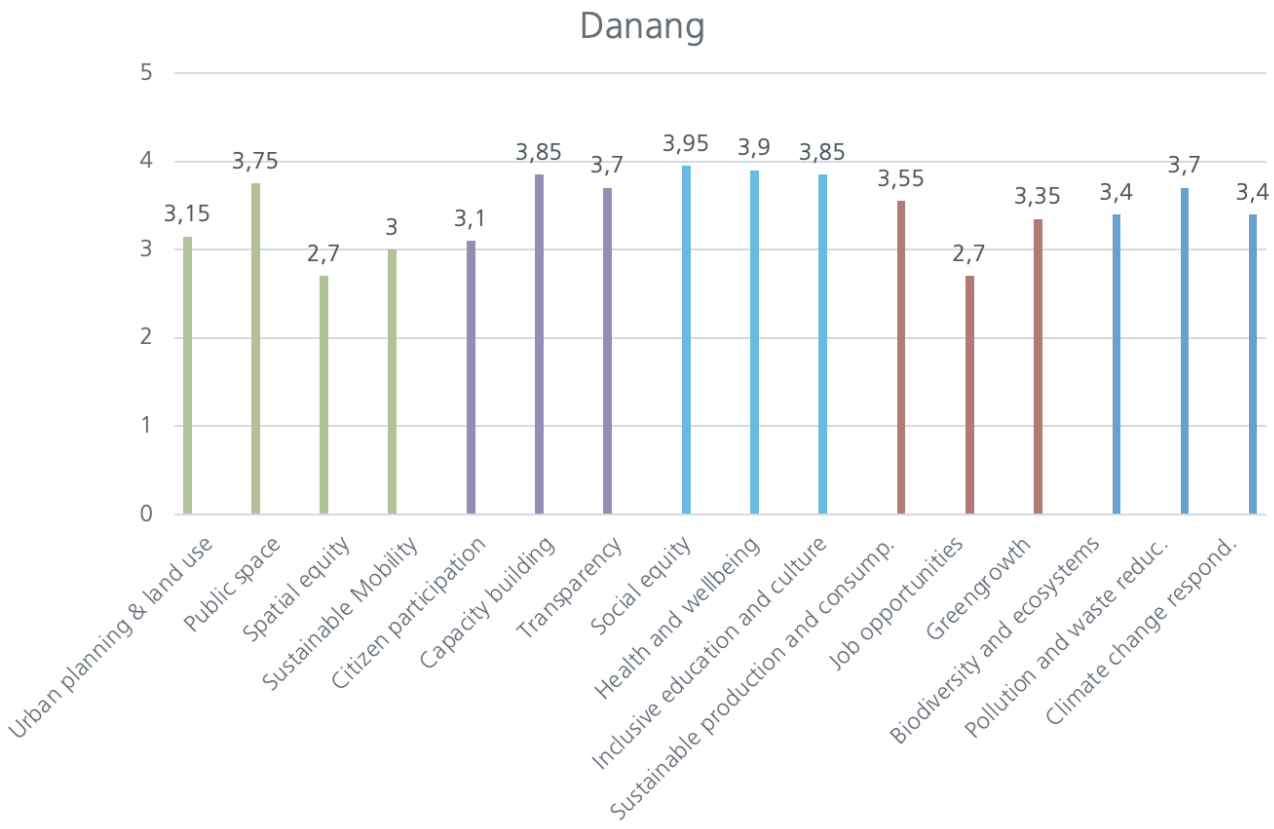


In Hanoi, the environmental dimension received a below-average score with relatively negative ratings. For example, 35 percent of respondents thought that biodiversity conservation was poorly implemented and 60 percent rated it "reasonable". The spatial dimension had scores close to the average, with around 40 percent of respondents suggested Hanoi's planning was not sustainable and 85 percent thought low-income groups faced difficulties accessing affordable housing with nearby utilities such as schools, health care and green spaces. The economic dimension also had close to average scores with around 55 percent of respondents rating incentives for sustainable production and consumption to be very poor or poor and 45 percent considered it difficult to find good employment. The governance dimension was rated more positively. Particularly, between 50-80 percent of respondents gave reasonable and good ratings to related criteria, including public participation in governance, capacity building and networking as well as rules and transparency. The social dimension also received positive ratings with more than 80 percent of respondents considering inter-generational equity, health promotion and protection, inclusive education and culture to be reasonable and good. Accordingly, public spaces, environment and economy were viewed as not quite sustainable, while society has reasonably sustainable levels of social justice, health protection, health care, education and culture.

Danang

Figure 10. Mean score for each criterion in Danang

Source: Author's compilation

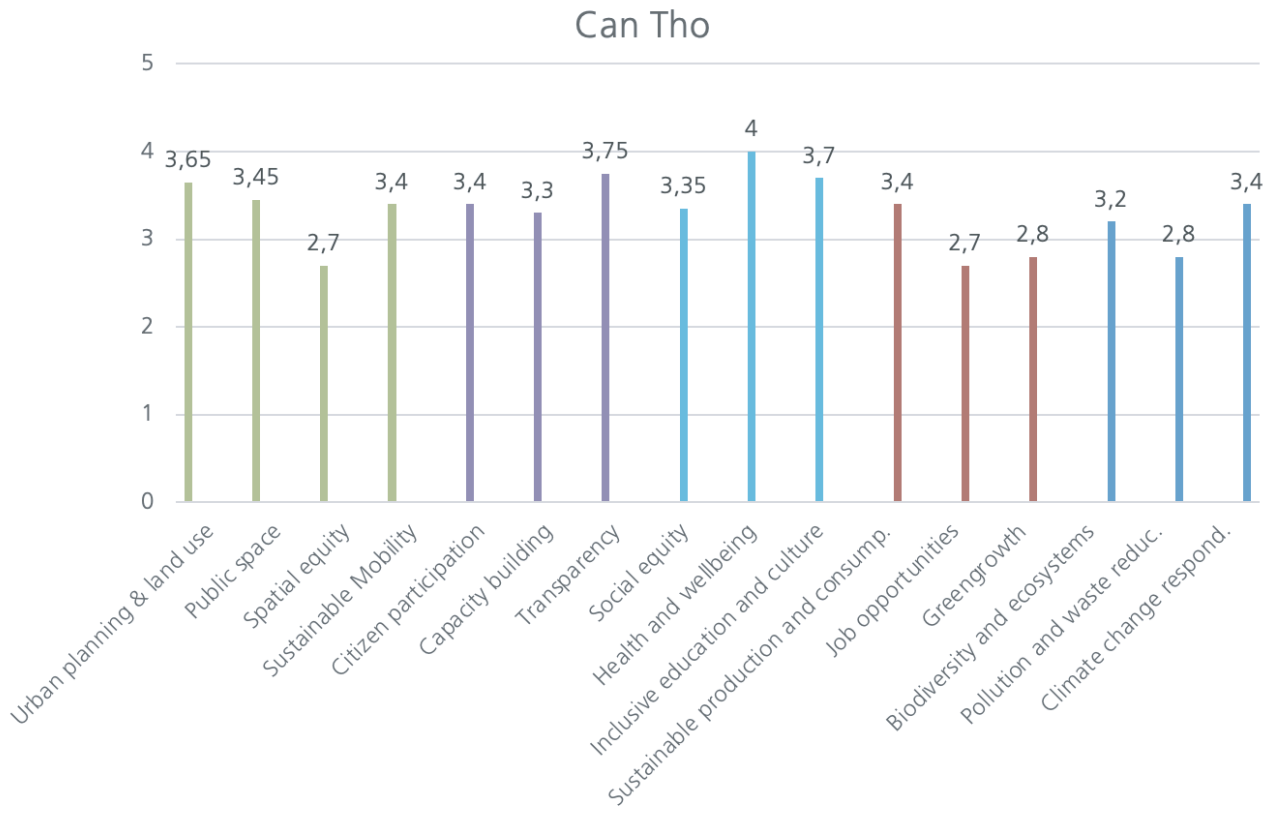


In Danang, the spatial dimension received an above 50 percent score with all respondents rating urban planning, public spaces, living environment to be acceptable, good or very good. The exception was that the low-income group's access to social services and support was assessed to be limited by 45 percent of respondents. All other dimensions including governance, economic, social and environmental dimensions were well-above 50 percent score. The governance dimension also received good scores for public participation, capacity and networking and rule and transparency from 70-85 percent of respondents. All rated the social and economic dimensions as reasonable or satisfactory. More than 90 percent of respondents thought that inter-generational and social equity were ensured, particularly for poor, disadvantaged and vulnerable groups. Similar percentages had reasonable to good ratings for biodiversity work and city climate change action plans. Some 75-80 percent of respondents thought the city had a good healthcare system and inclusive education and culture. However, 45 percent of respondents reported it was difficult to find a job. Accordingly, Danang achieved reasonable to medium sustainable levels in all five dimensions.

Can Tho

Figure 11. Mean score for each criterion in Can Tho

Source: Author's compilation



In Can Tho, the economic dimension received an above-average score of 2.97. All other dimensions including spatial, governance, social and environmental were well-above average with positive ratings. Most respondents were satisfied with their current urban planning and governance. Respondents gave the highest ratings for the social criteria with mean scores of 3.68. Can Tho, therefore, also had reasonable to medium sustainable levels in all five dimensions.

Table 6. Responses in percentage

Ratings	Hanoi (n=20)	Danang (n=20)	Can Tho (n=20)	Total (n=60)
Urban planning and land use				
Very unsustainable	5.0	0.0	0.0	1.7
Unsustainable	40.0	0.0	0.0	13.3
Acceptable	35.0	85.0	45.0	55
Sustainable	20.0	15.0	45.0	26.7
Very sustainable	0.0	0.0	10.0	3.3
Public space and living environment				
Very poor	5.0	0.0	0.0	1.7
Poor	25.0	0.0	10.0	11.7
Acceptable	60.0	30.0	50.0	46.7
Good	10.0	65.0	25.0	33.3
Very good	0.0	5.0	15.0	6.7
Low-income group's access to affordable housing with close utilities				
Very limited	25.0	0.0	15.0	13.3
Limited	60.0	45.0	35.0	46.7
Acceptable	5.0	40.0	25.0	23.3
Easy	10.0	15.0	15.0	13.3
Very easy	0.0	0.0	10.0	3.3
Alternative and sustainable mobility				
Very unsustainable	10.0	0.0	0.0	3.4
Unsustainable	20.0	15.8	5.0	13.6
Acceptable	65.0	68.4	55.0	62.7
Sustainable	0.0	15.8	35.0	17.0
Very sustainable	5.0	0.0	5.0	3.4
Citizen participation				
Very poor	10.5	0.0	0.0	3.4
Poor	21.1	15.0	5.0	13.6
Acceptable	36.8	65.0	55.0	52.5
Good	26.3	15.0	35.0	25.4
Very good	5.3	5.0	5.0	5.1
Capacity building and networking				
Very poor	5.3	0.0	0.0	1.7
Poor	21.1	0.0	15.0	11.9
Acceptable	47.4	15.0	40.0	33.9
Good	21.1	85.0	45.0	50.9
Very good	5.3	0.0	0.0	1.7

Ratings	Hanoi (n=20)	Danang (n=20)	Can Tho (n=20)	Total (n=60)
Rules and transparency				
Very poor	0.0	0.0	0.0	0.0
Poor	20.0	10.0	0.0	10.0
Acceptable	50.0	15.0	40.0	35.0
Good	30.0	70.0	45.0	48.3
Very good	0.0	5.0	15.0	6.7
Social and inter-generational equity				
Very poor	5.0	0.0	0.0	1.7
Poor	5.0	5.0	20.0	10.0
Acceptable	55.0	0.0	35.0	30.0
Good	35.0	90.0	35.0	53.3
Very good	0.0	5.0	10.0	5.0
Health and well-being				
Very poor	5.0	0.0	0.0	1.7
Poor	0.0	0.0	5.0	1.7
Acceptable	50.0	15.0	20.0	28.3
Good	35.0	80.0	45.0	53.3
Very good	10.0	5.0	30.0	15.0
Inclusive education and culture				
Very poor	5.0	0.0	0.0	1.7
Poor	20.0	0.0	10.0	10.0
Acceptable	35.0	20.0	25.0	26.7
Good	35.0	75.0	50.0	53.3
Very good	5.0	5.0	15.0	8.3
Sustainable production and consumption				
Very poor	10.0	0.0	0.0	3.3
Poor	45.0	10.0	10.0	21.7
Acceptable	35.0	30.0	45.0	36.7
Good	10.0	55.0	40.0	35.0
Very good	0.0	5.0	5.0	3.3
Good job opportunities				
Very scarce	5.0	0.0	10.0	5.0
Scarce	35.0	40.0	35.0	36.7
Acceptable	35.0	50.0	35.0	40.0
Many	20.0	10.0	15.0	15.0
A lot	5.0	0.0	5.0	3.3

Ratings	Hanoi (n=20)	Danang (n=20)	Can Tho (n=20)	Total (n=60)
Green growth and circular economy				
None	10	0	0	3.3
Rare	25	20	35	26.7
Some	60	25	50	45.0
Many	5	55	15	25.0
A lot	0.0	0.0	0.0	0.0
Protection, restoration and enhancement of biodiversity and ecosystems				
Very poor	0.0	0.0	0.0	0.0
Poor	35	10	20	21.7
Acceptable	60	40	40	46.7
Good	5	50	40	31.7
Very good	0.0	0.0	0.0	0.0
Pollution and waste reduction				
Very little	25.0	0.0	5.0	10.0
Little	55.0	5.0	40.0	33.3
Reasonable	15.0	20.0	30.0	21.7
Much	5.0	75.0	20.0	33.3
A lot	0.0	0.0	5	1.7
Response to climate change				
Very poor	10.0	0.0	0.0	3.3
Poor	25.0	10.0	10.0	15.0
Acceptable	55.0	40.0	45.0	46.7
Good	5.0	50.0	40.0	31.7
Very good	5.0	0.0	5.0	3.3

8. Discussion and Recommendations

What worked well?

Findings from field data collection confirmed that the proposed criteria, for use by stakeholders to measure sustainability in Vietnam, effectively measured sustainability in the three selected study sites thanks to its suitable design and sufficient resources. The design involved a simple survey which asked respondents common questions based on the proposed criteria. This survey, which encompassed all areas of sustainability, was cost- and resource-efficient and effectively rolled out in a short period of time despite the social distancing conditions resulting from the COVID-19 pandemic in Vietnam. The use of the five-point Likert scale to measure respondents' evaluations allowed quantification of subjective and discrete information, turning it into measurable and comparable values. This facilitated the statistical data processing and analysis.

Most content in the set of criteria were common knowledge in the localities. As local people have knowledge and practical observations about the related issues, they could provide ratings based on the criteria. Therefore, this criteria could be measured by semi-structured surveys, in-depth interviews or group discussions. In-depth interviews allowed for the gathering of diverse opinions, bringing many perspectives from community groups by age, occupation and education. At the same time, expert comments delivered important information to help the research team and form an overall picture of participants' views and perceptions on spatial, governance, social, economic, and environmental dimensions of the selected cities.

Findings from the responders from three sites also allowed for comparisons to determine good areas for lessons and areas for improvement. For example, Hanoi ranked the lowest of the three cities with much work for improvement in the five dimensions. Danang ranked the highest in the governance, social, economic and environment dimensions, while Can Tho topped the list in the spatial dimension. They are good examples of sustainable development in these aspects.

What did not work well?

Local residents were unfamiliar with some criteria such as green growth, circular economy, biodiversity restoration and climate change due to local geographical, economic, social and other conditions. Some were not cognizant of the respective content, while others may not be interested or have no information about them. This made it challenging for residents to evaluate these criteria. Therefore, the response rate may be low or comments did not focus on the main contents of the criteria.

One example was Hanoi relocating production facilities from the centre to industrial parks and production zones in suburban areas. As a result, many of the Hanoians did not understand whether production activities in their city were sustainable or circular. They have no first-hand information on production activities with their knowledge gathered from coverage in newspapers, radio and the mass media.

Many participants were not aware of the circular economy or green growth. Some could give examples of circular economic models, such as waste recycling, with only a few mentioning economic models that used "resources in a continuing, long, renewable cycle." Some gave examples of environment-friendly practices in enterprises as part of green growth. However, few (i.e. environmental experts) had an ability to evaluate if these practices were green or not and were able to evaluate green growth at macro level.

Another example is that Hanoi is located in the Red River Delta region, far from the sea and experiences few extreme weather events. The city's policies on climate change are not well-known. People know policies more relevant to their daily lives, for example the banning of straw burning or use of honeycomb charcoal due to being major sources of air pollution.

As such, the set of criteria used for this study did not address all residential concerns. Specifically, many surveyed people criticised public service quality and the conduct of public servants in administration, education, and healthcare. This shows they care about anti-corruption, which was not included in the proposed criteria. The proposed criteria aim to be inclusive, with topics that are unfamiliar to residents such as inequality for vulnerable groups, which are challenging for residents to answer. More educational efforts would be needed to raise awareness of the population.

Many responses from officials and experts were generic and subjective and did not offer many insights into the

raised issues given State censure practices. Some government officials tended to give limited answers and stated that their answers were personal, not representative of a State agency. Residents provided clearer responses, but lacked suggestions for resolutions. For sensitive issues, such as citizen participation and rule and transparency, participants in general tended to give neutral or relatively positive ratings but provided negative comments.

The small number of participants meant a holistic evaluation of each city's sustainability was not possible. As respondents live in different neighbourhoods, their assessments tended to focus on the respective areas where they lived. Most respondents appeared to accept the current urban situation with a cautious level of satisfaction. Residents tended to be more satisfied than State officials who gave lower ratings.

The project team gathered limited data and few legal documents relevant to the proposed criteria. Therefore, evaluation of the proposed criteria relied mainly on the survey responses and interviews, with little evidence from secondary data sources for triangulation.

What could be different?

Further work on the proposed criteria

The criteria could be further elaborated into specific indices for more effective and accurate measurement. For example, the spatial dimension should include more detailed criteria about spatial equity for different vulnerable and disadvantaged groups such as the elderly, people with disabilities, migrants, the poor, women, children, LGBT, ethnic minorities and others.

The economic dimension could include work, income and dynamics in the transformation of production, business and services. The environmental dimension could include trees, water sources, waste and responses to climate change issues and natural disasters. The governance dimension could include anti-corruption, while the social dimension could encompass inclusion, participation and capacity of the above-mentioned vulnerable and disadvantaged groups.

The project team proposes that a gender indicator should be quantified and systematically integrated in at least the social and governance dimensions. At this moment, local authorities at the research sites tackle women/gender issues from a needs-based, rather than a rights-based approach. Moreover, women are often merged into disadvantaged groups (elderly and the poor). Therefore, the research team proposes to apply a proactive human right-based approach to gender issues in proposing and implementing sustainable community criteria. For example, at least 30 percent of participants to community activities, education and capacity building are female. Ideally, gender should be an integral part of the criteria, while being mindful that too many criteria will increase the cost, time and human resources to evaluate.

Overall, the study's findings are for reference and need further improvement given its low representativeness. Furthermore, this set of criteria covers a wide range of issues, hence a much larger sample size and better sampling method are necessary to ensure the representativeness of information on all issues. In the case of a research design using expert opinions, a master questionnaire with all criteria will not be effective in gathering information, as each expert is usually only proficient in a few areas of expertise. Hence, government agencies and experts require more specific questions. Questions should use simple, common terms so that respondents can understand and be able to provide answers.

Further work for the study sites

Findings from Hanoi show that its residents were critical of progress in the spatial and environmental dimensions. Given the limited land fund and fast urbanisation process in Hanoi, there are many land-use issues which are associated with spatial disparities. The rich enjoy good housing, infrastructure and amenities, while the poor cannot afford housing and must live in low-standard, overcrowded accommodation with low-quality infrastructure and amenities. There are many associated issues such as traffic jams, air and water pollution and waste management. The economic dimension also received much attention, particularly work and income for young people given the high living costs in this city. While the social dimension rated better, respondents gave negative comments on residents' participation and raised concerns over public service quality. For improvements, support from the international community is needed in terms of research, interventions and advocacy. Besides, given the lack of participation and interests from residents, empowering citizens for better participation and change is needed.

Findings from Danang suggest the city is in a good sustainable position and provided good examples in all dimensions, except the spatial dimension. The city could continue to maintain and further develop sustainability with its current orientation. For the spatial dimension, respondents recommended more careful and better urban land planning to fully realise the potential of good land and ensure optimal city planning.

Findings from Can Tho show this city did well and was relatively even in the five dimensions with scores ranging between 3.20 and 3.90 out of 5. Can Tho, therefore, provided good examples for a sustainable city. The city could continue to maintain and further develop sustainability with its current orientation.

Findings revealed disparities for vulnerable and disadvantaged groups, including the poor, elderly and people with disabilities such as inequal access to living space, public utilities, education and official information at all three study sites. For example, the poor often resided in overcrowded, sub-standard housing far from hospitals, public parks, open spaces and fitness facilities, often without devices and access to the internet to be updated with official information.

In response, authorities were reported to take limited action, such as providing support and preferential treatment, lower requirements for university admission, income support for the poor and elderly and discounted bus fares for people with disabilities and students. People with disabilities are often cared for by their families or social care facilities with limited services. Danang builds apartment compounds to accommodate migrant industrial park workers. This city also has some social housing projects for low-income groups, but these projects faced many issues. Hanoi and Can Tho were reported not to have specific policies to help vulnerable groups gain better spaces in the city, including better housing and better access to public utilities. Furthermore, survey respondents appeared to accept these inequalities as part of their circumstances. These areas, thus, require many more efforts if sustainability is to be achieved.

9. Conclusions

This study proposed and tested an inclusive concept for sustainable communities/cities in Vietnam and a set of criteria drawing from the proven RFSC in the cities of Hanoi, Danang and Can Tho. It proved that the proposed criteria could be conveniently and reliably applied to measure city sustainability in Vietnamese settings. The application requires simple, low-cost residential semi-structured questionnaire surveys and in-depth interviews with experts and officials.

Findings allow for the evaluation of the three cities' sustainability in the five dimensions. Hanoi was in the lower-mid range of sustainability and has work to do on all five dimensions to become sustainable. Danang and Can Tho were at the high-mid range of sustainability and need to maintain the current direction. They provided good examples for sustainable development for other cities in Vietnam. Danang could work more on spatial dimension, while Can Tho could work more on the economic dimension. All three cities should work on reducing disparities and promoting equity for vulnerable and disadvantaged groups, particularly in the spatial, governance and social dimensions. More specifically, the study proposes that gender should be quantified and systematically integrated, at least, in social and governance dimensions. Gender should be implemented from human rights-based, rather than need-based approach.

The study shows that the proposed criteria needs to be more detailed and specific. There should be a larger sample size and a more representative sampling method to ensure better representativeness. Further and regular surveys are necessary to gain understanding of the sustainability of the three cities and others in Vietnam. This would inform policy-makers, authorities and the residents in their actions towards sustainability.

In parallel with criteria development, pilot models of sustainable urban communities and cities with participation from the public equipped with knowledge and capacity to contribute to the five dimensions are recommended. The criteria and these models should be documented and advocated for replication in local and national development policies.

NEXT STEPS

Based on the study's findings and its recommendations, C&E has identified three steps for future action to promote sustainability in urban communities/cities in Vietnam:

- Build pilot models of sustainable urban communities and cities with participation from residents who need to be equipped with knowledge and capacity to contribute to the spatial, governance, social, economic and environmental dimensions.
- Documentation of the models and criteria of sustainable urban communities and cities as a basis for replication.
- Advocacy for the model and criteria of sustainable urban communities and cities in local and national development policies. This includes selection of advocacy issues/expected changes using the criteria/indicators for sustainable urban communities and cities.

The following activities will be implemented for the above steps:

- Develop a set of criteria/indicators which serve as an implementation guidance and a monitoring tool for the five dimensions.
- Publish results of implementation and monitoring to promote public participation in the implementation and monitoring process.

These activities will have the following expected outputs or results:

- Public awareness and skills for implementing and monitoring indicators in the region to be improved.
- Criteria/indicators to be collected and published.
- The set of indicators/criteria to be referred to and used by relevant departments and levels such as Department of Natural Resources and Environment, Provincial People's Committees and others.

The indicators of success are:

- Criteria/indicators are collected, agreed and announced.

- Criteria/indicators are implemented and monitored by the community and referenced and used by government agencies accordingly.

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ANNEX 1: Survey Questionaire for Residents

QUESTIONNAIRE SURVEY FORM 1
ASSESSMENT OF SUSTAINABLE COMMUNITY / CITY

SAMPLE CODE	NAME OF INTERVIEWER	INTERVIEW DATE
		____/____/2021

Objectives of the study

This study aims to explore and propose an inclusive concept for city-dwelling communities (county-level) related to the sustainability index for Hanoi, Danang and Can Tho in Vietnam.

Purpose of the survey

This survey is to provide a basis for the Research Team to better understand the current state of urban development, its limitations and expectations of residents and officials according to five main dimensions of spatial urban planning, city governance, social stability, economic development and quality of the living environment.

Regulations and contact

This survey complies with ethical principles of objective science and humanity, based entirely on the willingness and voluntary knowledge of the residents being interviewed. You have the right to refuse to answer questions if you feel it is not appropriate or you do not understand. We will not disclose any information that could help to identify respondents and their personal opinions expressed in this survey.

If you have questions regarding your participation in this study, please contact:
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Website: https://ce-center.org.vn/
Facebook: https://www.facebook.com/Ce.center.vn/
Thank you very much for your participation.

GENERAL INFORMATION (Information marked with * is required)

0.1 Name of interviewee *: _____ Sex*: ☐Male ☐Female Age: _____

Address: No._____ Street _____ Ward_____

County/District _____ City_____

Phone: _____ E-mail: _____

0.2 Main occupation *: _____

Secondary occupation: _____ Main source of income:

☐From profession, daily work

☐From family income (crops, house rental, land, bank savings, etc.)

☐From help of family members, relatives

☐Social aids/unstable income sources

☐Other, please list: _____

0.3 Education level: Illiterate / Beginner – Primary (Grade 1 to Grade 5)

☐Middle School (grades 6 to 9) ☐High School (grades 10 to 12)

☐Vocational Intermediate - College ☐Undergraduate and graduate

The following questions ask about your observation of the county in the last five years.

1. GENERAL COMMENTS ON SPATIAL DIMENSION

1.1 How do you think sustainable has our city development planning and reasonable land use?

Point	(1)	(2)	(3)	(4)	(5)
	Very unsustainable	Unsustainable	Neutral	Sustainable	Very sustainable
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

1.2 How do you see the development of public space and good living environment of this city?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

1.3 How do you find that can the low-income groups access affordable housing with acceptable prices, adequate neighbourhood amenities including quality schools, health services, green spaces, sports grounds?

Point	(1)	(2)	(3)	(4)	(5)
	Very limited	Limited	Average	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

1.4 How do you see the sustainable development of our transport/ mobility?

Point	(1)	(2)	(3)	(4)	(5)
	Very unsustainable	Unsustainable	Neutral	Sustainable	Very sustainable
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

2. GENERAL COMMENTS ON GOVERNANCE DIMENSION

2.1 Do you think there are different political, social, religious and ethnic groups involved in the city authorities' decision-making?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

2.2 How well, do you think, the city government has facilitated capacity building and connectivity between the community and urban residents?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

2.3 How do you rate the transparency of the city's legislation and information?

Point	(1)	(2)	(3)	(4)	(5)
	Very limited	Limited	Average	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

3. GENERAL COMMENTS ON SOCIAL DIMENSION

3.1. How do you think, our city has an ensured social and intergenerational equity, particularly the poor, disadvantaged and vulnerable?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

3.2 How do you think health and well-being are protected and promoted for the city inhabitants?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

3.3 How would you rate the education and culture that has included among different groups, especially the poor, disadvantaged and vulnerable?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

4. GENERAL COMMENTS ON ECONOMICAL DIMENSION

4.1 Do you think sustainable production and consumption2 are encouraged in the city?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

4.2 Do you find workers can easily to find reasonable jobs?

Point	(1)	(2)	(3)	(4)	(5)
	Very difficult	Difficult	Manageable	Easy	Very easy
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

[2] Sustainable production includes efficient use of resources, prevention and minimisation of waste, and methods that are not harmful to the environment.

4.3 Do you see models of green growth[3] and circular economy[4] in our city?

Point	(1)	(2)	(3)	(4)	(5)
	Very rate	Rate	Any	Some	Very much
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

5. GENERAL COMMENTS ON ENVIRONMENTAL DIMENSION

5.1 Do you find how well are biodiversity and ecosystems protected, restored and enhanced in our city?

Point	(1)	(2)	(3)	(4)	(5)
	Very poorly	Poorly	Neutral	Well	Very well
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

5.2 Do you think how much are pollution and waste reduced in our city?

Point	(1)	(2)	(3)	(4)	(5)
	None - Very little	Little	Average	Much	Very much
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

[3]Green growth is growth that is environmentally sustainable.
[4]Circular economy is economy that use resources in a continuing cycle of long use, recover and regenerate.

5.3 Do you recognise that how good are the city's action plans to response of climate change?

Point	(1)	(2)	(3)	(4)	(5)
	Very bad	Bad	Average	Good	Very good
Selection	☐	☐	☐	☐	☐

Your personal option (if any): _____

_____

INTERVIEWER'S NOTES (if any):

ANNEX 2: Survey Questionaire for Expert and State Officials

QUESTIONNAIRE SURVEY FORM 2
SUSTAINABLE URBAN COMMUNITY/ CITY ASSESSMENT

SAMPLE CODE	NAME OF INTERVIEWER	INTERVIEW DATE
		____/____/2021

Objectives of the study

This study aims to explore and propose an inclusive concept for city-dwelling communities (county-level) related to the sustainability index for Hanoi, Danang and Can Tho in Vietnam.

Purpose of the survey

This survey is to provide a basis for the Research Team to better understand the current state of urban development, its limitations and expectations of residents and officials according to five main dimensions of economic development, quality of the living environment, social stability, governance and material resources.

Regulations and contact

This survey complies with ethical principles of objective science and humanity, based entirely on the willingness and voluntary knowledge of the residents being interviewed. You have the right to refuse to answer questions if you feel it is not appropriate or you do not understand. We will not disclose any information that could help to identify respondents and their personal opinions expressed in this survey.

If you have questions regarding your participation in this study, please contact:
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Website: https://ce-center.org.vn/
Facebook: https://www.facebook.com/Ce.center.vn/
Thank you very much for your participation.

1. GENERAL INFORMATION (Information marked with * is required)

1.1 Name of interviewee *: _____ ☐Male ☐Female Age: _____

Address: No._____ Street _____ Ward_____

County/District _____City_____

Phone: _____ E-mail: _____

1.2 Name of the working agency *: _____

Position *:

☐Administrative Officer ☐Technical staff

☐Researcher ☐University Lecturer

☐Head/Deputy Officers of Departments ☐Officers in charge of Trade Unions/ Social Asso./ Party's

☐Other positions, please list: _____

1.3 Highest degree/ qualification:

☐Intermediate – College; ☐Undergraduate /Master ☐Doctorate

1.4 Professional qualifications _____

2. OPEN-ENDED QUESTIONS

1.1 Please briefly introduce your understanding on the urban Spatial dimension of the city you are living and working, including sustainable urban planning and land use, public spaces and living environment, spatial equity for community, including access to adequate housing and amenities for the poor and disadvantaged groups as well as alternative development and sustainable mobility in the District in the last five years, comparisons with other years (over 5-10 years) and the general governmental management prospects in the next 5-10 years.

_____

_____

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_____

In general, please evaluate the current level of the Spatial dimension in your locality:

Point	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Very difficult	Difficult	Manageable	Easy	Very easy
Selection	☐	☐	☐	☐	☐

If possible, please provide statistics and reports on local economic development, including:

_____

_____

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_____

2.2 Please briefly introduce your understanding on the current urban Governance dimension of the city you are living and working, including citizen participation, capacity building and networking and legal rules and information transparency in the District in the last 5 years, comparisons with other years (over 5- 10 years) earlier and the prospect of improving overall governmental management in the next 5-10 years.

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In general, please evaluate the current level of the Spatial dimension in your locality:

Point	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied
Selection	☐	☐	☐	☐	☐

If possible, please provide statistics and reports on Governance dimension, including:

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2.3 Please give an overview your understanding on the urban Social dimension of the city you are living and working, including social ensure and intergenerational equity, health and well-being protection and promotion, and inclusive education and culture improvement in the District in the last 5 years, comparisons with other years (over 5-10 years) before and the prospect of strengthening general social stability in the next 5-10 years.

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In general, please evaluate the current level of the Spatial dimension in your locality:

Point	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied
Selection	☐	☐	☐	☐	☐

If possible, please provide statistics and reports related to the social dimension, including:

_____
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2.4 Please briefly introduce your understanding on the urban Economical dimension of the city you are living and working, including sustainable production and consumption, good jobs opportunities and green growth and circular economy in the District in the last 5 years, comparisons with other years (5-10 years) before and the prospect of general Economical dimension in the next 5-10 years.

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In general, please evaluate the current level of the Spatial dimension in your locality:

Point	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Difficulty	Very difficult	Difficult	Manageable	Easy	Very easy
Selection	☐	☐	☐	☐	☐

If possible, please provide statistics and reports on Economical dimension, including:

_____
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2.5 Please evaluate the urban Environmental dimension of the city you are living and working, including biodiversity and ecosystems protection, restoration and enhancement in the District in the last five years, comparisons with other years (over 5-10 years) earlier and expectations for environmental improvement in the next 5-10 years.

_____
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Overall, how do you evaluate the current level of hardness with Environmental dimension in your locality:

Point	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
	Very bad	Bad	Manageable	Good	Very good
Selection	☐	☐	☐	☐	☐

If possible, please provide environment related statistics and reports, including:

_____
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INTERVIEWER'S NOTES (if any):

About the author

Center for Development of Community Initiative and Environment (C&E) is a Non-Profit organization working on supporting local communities, community-based organizations, and civil society organizations in locally sustainable initiatives and promote ecological sustainability, social equity and justice.

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