

**ACTION PROGRAM  
ENVIRONMENT GREEN GROWTH IN VIETNAM  
2015**

*Urban Green Growth Index Report*

December 2015

Compiled for the Ministry of Construction

## **ABBREVIATIONS**

ACVN Association of Vietnamese Cities  
Asian Development Bank ADB  
AGCI Asian Green City Index  
BAU Conventional scenario  
The Belgian Development Agency BTC  
CC Climate change  
DANIDA Danish International Development Agency  
EIU Research agency of The Economist magazine  
ESI Environmental Sustainability Index  
GGAP Green Growth Action Plan  
GGBP Green Growth Best Practices  
GCI Green City Index  
GDP Gross domestic product  
GGGI Global Green Growth Institute  
GHG Greenhouse gas  
Gini Gini index  
GIZ German Organization for International Cooperation  
GG Green Growth  
GGBP Green Growth Best Practices  
GoV Government of Vietnam  
GRDP Regional gross domestic product  
GSO General Statistics Office  
HCMC Ho Chi Minh City  
HDI Human Development Index  
ICEM International Center for Environmental Management  
ISET Institute for Environmental and Social Transformation  
IT Information Technology  
JICA Japan International Cooperation Agency  
KOICA Korea International Cooperation Agency

MACC curve marginal costs reduce development waste

MARD Ministry of Agriculture and Rural Development

M&E Monitoring and Evaluation

MOC Ministry of Construction

MOET Ministry of Education and Training

MOF Ministry of Finance

MOIT Ministry of Industry and Trade

MPI Ministry of Planning and Investment

MONRE Ministry of Natural Resources and Environment

MOT Ministry of Transport

NGGAP National Green Growth Action Plan

NGO Non-governmental organization

NUDP National Urban Development Plan

NSS Index of National Statistical System

Official Development Assistance ODA

OECD Organization for Economic Cooperation and  
Development

PM Prime Minister ( Vietnam )

Public Private Partnership PPP

PGGAP Provincial Green Growth Action Plan

Quantitative QT

QL Qualitative

R&D Research and development

SQA Assessment carried Condition (Report)

UCS Urban Classification System

UGGI Urban Green Growth Index

UNDP United Nations Development Program

UNEP United Nations Environment Program

USAID United States Agency for International Development

USD US Dollar

VGGS Vietnam Green Growth Strategy

VN Vietnam VND Dong (Vietnamese Dong)

## TABLE OF CONTENTS

<b>ABBREVIATIONS</b> .....	
.....	<b>3</b>
<b>EXECUTIVE SUMMARY</b> .....	
.....	<b>7</b>
<b>INTRODUCTION</b> .....	
.....	<b>9</b>
<b>1 CONTEXT OF GREEN URBAN APPLICATION IN VIETNAM</b> .....	<b>11</b>
<b>1.1. GREEN URBAN APPLICATION OVERVIEW</b> .....	<b>11</b>
<b>1.2. SUBJECTS</b> .....	
.....	<b>13</b>
<b>2. CHARACTERISTICS OF THE GREEN GROWTH INDICATOR</b> .....	<b>14</b>
2 . 1 WHAT IS GREEN GROWTH INDICATOR ? .....	<b>14</b>
2 . 2 WHAT IS THE PURPOSE ? .....	
.....	<b>14</b>
2 . 3 HOW TO USE THE INDICATOR ? .....	
.....	<b>15</b>
<b>3. OVERVIEW OF BEST INTERNATIONAL PRACTICES</b> .....	<b>16</b>
3. 1 INTRODUCTION .....	
.....	<b>16</b>
3. 2 OVERVIEW OF BEST PRACTICES AND VIETNAM GREEN GROWTH STRATEGY .....	<b>16</b>
3. 3 international practice BEST .....	
.....	<b>17</b>
3.3.1 <i>OECD</i> .....	
... ..	<b>17</b>
3.3.2 <i>Outside OECD - Asia's approach to indicator development</i> .....	<b>19</b>
3.3.3 <i>Initiative Best Practices for Green Growth</i> .....	
.....	<b>20</b>

<b>3.4 CONCLUSION .....</b>	<b>23</b>
<b>4. GREEN URBAN INDICATOR CONSTRUCTION FRAMEWORK VIETNAM .....</b>	<b>24</b>
4.1 INTRODUCTION .....	24
4.2 BACKGROUND .....	24
4.2.1 Challenge # 1 .....	24
4.2.2 Challenge # 2 .....	25
4.3 BLUE GROWTH URBAN URBAN: CONCEPTS .....	26
4.3.1 Introduction .....	26
4.3.2 Purpose .....	27
4.3.3 Contents .....	27
<b>5. GREEN URBAN GROWTH INDICATOR PROPOSED FOR VIETNAM .....</b>	<b>32</b>
5.1 BUILDING ITEM FRAMEWORK AND ISSUES GROUP .....	32
<i>Introduction - The desire to build indicators .....</i>	<i>32</i>
5.2 BUILDING A CRITERIA FRAMEWORK AND GROUPS OF GREEN URBAN GROWTH FOR VIETNAM .....	32
5.2.1 <i>Communication best international practices .....</i>	<i>33</i>
5.2.2 <i>The model of urban growth towards the green Vietnam .....</i>	<i>33</i>
5.2.3 <i>The approach to the problem and the target group .....</i>	<i>33</i>
5.2.4 <i>Correlation between topic groups in local planning .....</i>	<i>34</i>
5.2.5 <i>Issue Subgroups .....</i>	<i>34</i>
5.2.6 <i>Recommended criteria .....</i>	<i>35</i>

5.2.7	<i>Conclusion on the development of indicators</i>	39
5.3	CONSULTATION PROCESS AND COMPLETE GREEN GROWTH URBAN FRAMEWORK	40
5.4	MECHANISM OF APPLYING GREEN GROWTH INDICATORS IN THE GREEN GROWTH INDICATOR	41
5.5	MONITORING AND EVALUATION: CONCEPTS	41
5.5.1	<i>Purpose monitoring &amp; evaluation</i>	41
5.5.2	<i>The role of monitoring and evaluation</i>	41
5.5.3	<i>Scope of monitoring &amp; evaluation</i>	42
5.6	FORWARD ORIENTATION	42
5.6.1	<i>System Classification Vietnam Urban</i>	43
5.6.2	<i>The overall construction plan</i>	43
5.6.3	<i>Conclusion</i>	43
<b>6.</b>	<b>RECOMMENDATION</b>	<b>44</b>
6.1	CONCEPTS FOR DEVELOPING GREEN GROWTH URBAN ACTION PLAN 'Second Generation'	44
6.1.1	<i>Background</i>	44
6.1.2	<i>Recommended model of urban growth towards green</i>	44
6.1.3	<i>Recommendations</i>	44
6.2	THE CONCEPT OF MONITORING AND EVALUATION	45
6.2.1	<i>Basic contents of the monitoring and evaluation</i>	45

6.2.2	<i>The targets urban green growth</i> .....	45
6.2.3	<i>Steps for monitoring &amp; evaluation :</i> .....	45
6. 3	<b>EXAMPLE OF URBAN GROWTH INITIATIVES GREEN</b> .....	45
	<b>CONCLUSION</b> .....	47
	<b>APPENDIX 1. BACKGROUND OF THE GREEN URBAN GROWTH INDICATOR FOR VIETNAM</b> .....	49
	DOMESTIC CONTEXT .....	49
	KEY DOCUMENTS .....	49
	CONFERENCES RELATED TO THE CONCEPT “GREEN URBAN” .....	54
	PROVINCES, CITIES AND TOWNS .....	54
	STATUS .....	56
	<b>APPENDIX 2. ASIAN GREEN URBAN INDICATORS</b> .....	58
	BUILDING INDICATOR .....	58
	EIU'S GREEN URBAN INDICATOR CONSTRUCTION EXPERIENCE FOR HANOI .....	62

## SUMMARY

Vietnam has established a comprehensive administrative framework to promote green urban development to achieve a sustainable future based on the Green Growth Strategy . Initially, the study mainly focused on environmental indicators in the context of "green cities". However, in 2012, the Ministry of Construction has issued a set of indicators of urban green, while 15 indicators directly related to urban development . The Ministry of Construction has proposed key features of a green city , together with an overview of a green city appropriate to the Vietnamese context. Recently , the Ministry of Construction has recognized the need to expand the concept of "green town", is not confined within the environment, which should better suit the needs of planning and development of urban areas , copper the concept of a **green growth city** , which is a city that is not only environmentally sustainable, but also achieves its economic, social and institutional goals on the basis of adopting and implementing initiatives. ants and urban green growth concept .

The administrative management framework for the development and implementation of green urban / green growth activities and initiatives includes Decrees and Decisions, outlining the direction for the assignment of responsibilities between the central and local levels, and with policies and targets to guide the green growth process . However, the stakeholders acknowledged that there are still many difficulties that need to be resolved in the implementation process if the future of green growth is to be achieved in Vietnam .

To achieve this goal, the Report proposes to adopt a green growth urban management model, incorporating all the different steps in the journey towards a green growth future . This model ( also known as the “ Model towards green growth cities ” is, in fact, a “ toolkit ” for urban planners and managers ) that proposes an urban set of indicators. Green growth is ubiquitous with every step in the journey - from the guide to identifying local green growth 'opportunities' to applying the 'Urban Green Growth Index' across the country .

The Urban Green Growth Index proposed in this Report is to measure and manage the progress made in integrating concepts, actions and initiatives into all aspects of management. and spatial planning of the cities and cities in the Viet Nam Urban Classification. The overall index for the country is currently considered an important element in the green growth process because, in addition to measuring



and managing this process, the index also allows a locality to compare the results of they are with similar municipalities in the country or in the region .

A review of international best practices in the green growth index development process shows that the gradual approach is most suitable for Vietnam. This is because the current lack of data collection and analysis is likely to have a negative impact on the construction of the database needed, and the resources needed to build and analyze the data. The operation of such an indicator is very narrow at both the central and local level . This is evident in the Asian Green City Index published by The Economist ( EIU ) Research Agency ( EIU ) in 2011, which shows that lack of data has prevented Ho Chi Minh City from being included. Index above . Furthermore , the data collected for Hanoi City ( instead of Ho Chi Minh City in the Index ) is mainly obtained from informal sources .

An Overview of the Construction Context The Urban Green Growth Index in Vietnam also reveals difficulties related to the availability and reliability of the statistics. However, it must also be seen that the Provincial Competitiveness Index conducted by the Vietnam Chamber of Commerce and Industry has addressed these problems well, so the lessons learned from it can also be applied. Other Indicators - for example, the Urban Green Growth Index in this Report .

During the implementation of this project, the stakeholders realized that the development of a Green Growth Urban Index requires a long process . It is recognized, however, that a key component of any indicator is a set of indicators that describe the urban features needed for a city / town to use it towards a green growth future.

Therefore, the implementation of the "Green Growth Strategy" and related action plans in Vietnam for the period 2016 - 2020 should focus on building the Urban Green Growth Target Set . Another aspect is equally important is the ability to measure the indicators this - decisive factor in the suitability of targets for the journey towards the future green growth of each city or town .

The green growth urban targets state the green growth conditions that must be achieved through effective urban spatial planning and management, with a focus on green growth . To this end, the project addresses the needs and requirements of urban managers and planners at the local level when identifying green growth

urban actions and initiatives, as well as necessary for implementation (ie, the contents of the “Models for Urban Green Growth ”).

The identification of indicators of urban green growth is a complex process, it should be discussed extensively in order to ensure conformity, as conditions precedent in all spatial planning and subdivision planning , and as results - progress can be measured and documented in an Indicator . There are currently nine (or maybe 10) indicators that are either under construction or have been completed in Viet Nam with regard to urban areas .

In the context of the proposed Urban Green Growth Index, by definition, includes both economic, social and institutional goals as well as environmental sustainability, and is therefore aimed at addressing critical needs. In terms of economic growth and environmental sustainability, the main groups of topics as a basis for building the indicators will include :

- Economic sustainability
- Environmentally sustainable
- Social inclusion
- Institutional responsiveness

Below are nine sub-groups and finally propose about 40 indicators to be considered and evaluated in more detail .

These indicators , where possible and appropriate, will be measured quantitatively. However, given the difficulties in defining initial benchmarks, qualitative methods can be used in the early stages of green growth implementation in cities. This will allow the indicators to play their role in building green growth credibility for the locality in their journey towards a green growth future .

A fundamental requirement to develop and operate an Urban Green Growth Index is a monitoring and evaluation mechanism . Tracking involves systematically collecting and analyzing data based on activities and targets set out in the plan during the implementation of green growth initiatives. When monitoring, the data will be used in line with a set of indicators related to urban green growth . An assessment will be made to compare actual results and impacts with the strategic plan (or master plan) across different implementation phases . Such a mechanism needs to be implemented in all the different phases of the journey towards green

growth - from identifying local green growth “opportunities” to operating the Urban Growth Index. green on a national scale.

Four more initiatives have been identified to help achieve future green growth for cities in Vietnam :

1. The idea of developing 'second generation' green growth urban action plans ;
2. The idea of t pig M & E
3. Implementation options and supporting framework
4. Examples of urban green growth initiatives

## INTRODUCTION

"Sustainable Development Strategy for Vietnam in 2011-2020," 1 has set the following objectives : " development of sustainable urban " on the basis " *to step by step build a complete Vietnamese urban system developed according to the urban network model; have suitable, synchronous and modern technical and social infrastructure; have good urban environment and quality of life; has an advanced urban architecture, rich in identity; preserve and promote traditional cultural values suitable to each stage of national development. Urban development is stable and sustainable, on the basis of appropriate spatial organization; rationally use natural resources, land, save energy; environmental protection, ecological balance "*

In addition , the Vietnam Green Growth Strategy (VGGS) 2 has identified the mission of sustainable urbanization . The goal is : " *by 2020, urban centers will achieve the average or higher level of the green urban index system, with a reasonable scale, to avoid overpopulation of the environment and economic infrastructure. -social "*. For basic urban infrastructure , it is necessary to ensure : " *housing, transportation, energy, water supply, drainage and waste treatment ensure accessibility for all people with acceptable quality, VND time to reduce costs due to pollution, traffic congestion "*. The strategy also proposed adding a number of requirements : developing green urban areas , urban ecology and green buildings .

In 1992, the World Summit on the Environment affirmed the importance of sustainability indicators in helping countries formulate policies related to sustainable development . Therefore , many countries around the world have built their own green urban targets in a green urban 'Index', helping cities measure the progress of meeting their green urban goals, and at the same time bases for their results comparison with similar municipalities in the country or in the region .

As of December 2015, there are about 10 such indicators in Vietnam - either completed or under construction, with a variety of themes tailored to the individual purposes of each indicator. In general, all of these indicators are based on the concept of "green cities", with particular emphasis on environmental goals (eg EIU's Asian Green City Index) 3 .

However, this "Urban Green Growth Index" report specifically emphasizes " **green growth** " with the aim of defining a set of indicators to guide all spatial plans (to be future cities and towns at all urban levels) towards green growth .

The difference between the "green city" and the "green growth" city is :

- **A green city** is an environmentally friendly city
- **A green growth city** , or a city that implements **green growth** urban concepts and initiatives, is a city that not only achieves environmental sustainability but also its economic, social and physical goals. processing .

During the preparation of this “Urban Green Growth Index” Report, the consultant team also conducted a “situation assessment” to determine the extent of application and incorporate the concepts of “green growth” into the investment planning process of the Ministry of Planning and Investment and the spatial planning process of the Ministry of Construction at both central and local levels . This assessment, together with the result of the 'Green Growth Urban Assessment Report' , has helped prepare the context and basis for the preparation of the “Urban Green Growth Index” Report , which also serves as the The main factor leading to the conclusion of the consultant group is that the development of a comprehensive urban green growth index is not practical and is not really necessary at this time in Vietnam . The above conclusion was also reinforced through comments and comments from experts from the Department of Urban Development, the Ministry of Construction, along with other domestic experts at the Consultation Workshop of the project in the city. Thai Nguyen, November 2015.

1 Strategy for Sustainable Development for the period 2011-2020

2 National Green Growth Strategy

3 Asia Green City Index - EIU

The development of an Urban Green Growth Index for Vietnam is a long-term project because it completely depends on the relevance and quality of the indicators , and on the large number of participants. cities and towns. Because of such reasons , the main contents of this study was to review all the indicators of urban "green" is (ie a preliminary list), and then define and test these targets fit urban green growth in all four dimensions as outlined above (ie

shortlist) .It should be noted that these indicators will be reevaluated and refinished in the process of applying to cities and towns of all types of cities in the Viet Nam Urban Classification 4 ,in accordance with Advances in monitoring & evaluation methods, data collection and analysis .

## **1 BACKGROUND TO THE APPLICATION OF GREEN URBAN IN VIETNAM**

As stated in the Introduction of this Report, initially, initiatives focused on the “green” aspect of cities in Vietnam, with emphasis on environmental factors. This has led to the overarching term "*green city*" to describe such initiatives. These green urban initiatives will be addressed in the following sections .

In 2012, the Ministry of Construction issued Circular No. 05/2012 / TT-BXD , dated 10.10.2012 on the statistical indicators in the construction sector,

reflecting the status and achievements in different fields of industry: construction; Urban Development; architectural planning, construction; urban infrastructure, industrial parks , economic zones, high-tech zones ; housing and real estate markets ; construction materials . There are a total of 33 indicators, including 15 indicators related to urban development as follows :

1. Number of towns ;
2. The rate of urbanization ;
3. The coverage rate of the urban detailed planning ;
4. The planning rate for new rural construction ;
5. Area of urban land ;
6. Urban development investment projects ;
7. Total water supply capacity ;
8. Water loss and loss rate ;
9. Proportion of urban population to be provided with clean water ;
10. Per capita water supply level ;
11. Total capacity of wastewater treatment ;
12. The rate of wastewater from production, business and service establishments is treated up to set standards ;
13. Proportion of urban population enjoying water drainage services ;
14. The rate of collected and treated solid waste has met the respective national technical regulations ;
15. Ratio of urban centers, industrial parks, export processing zones, industrial clusters that treat solid wastes and wastewater up to the respective national standards or technical regulations ).

Of these 15 urban development indicators, there are two indicators close to the green urban indicators used by the EIU 5 : 1) the rate of water loss and loss ; and 2) per capita water supply .

## **1.1. GREEN URBAN APPLICATION OVERVIEW**

The implementation of Circular 05/2012 / TT-BXD of the Ministry of Construction has promoted the concept of **green cities** in general, that is, cities that satisfy the three criteria outlined in the Circular, specifically : (1 ) sustainable cities , high standards of living , (2) eco-urban, and (3) smart cities, to varying degrees, depending on specific local conditions .

1) **Urban Sustainability** means that the development goal towards the right needs to be equal between economic growth and environmental sustainability; ensure appropriate and sustainable living standards in urban areas. Urban living standards are a broad concept that covers many different aspects, for example: household size, number of kindergartens, incidence of illness or injury; target level per capita; rate of land used per capita; septic toilets, etc... .

2) '**Eco-urban**' means a city that satisfies 7 criteria :  
i) green space ; ii) green buildings ; iii) green traffic ; iv) green industry ; v) quality of green urban environment ; vi) preservation of natural landscapes, historical and cultural works; vii) communities living in harmony with the environment, as follows:

5 As above . Asia Green City Index

- i. '*Green spaces*': include trees on streets, parks, green corridors, green belts, eco-urban areas, high-tech agriculture, green landscape axes, and baom areas with bile low construction level, no skyscrapers, urban planning generals to ecology [ quoted TS. Luu Duc Hai , Vice Chairman of Vietnam Association for Urban Development Planning, in Construction newspaper ]. According to the green standard , each person must have at least 10m<sup>2</sup> trees because green trees play a very important role in “regulating” the city. According to a researcher, plants have the ability to absorb 50% of radioactive dust; absorb toxic dust discharged from production activities and discharged by people .
- ii. '*Green building*': applying advanced technology, low-carbon technologies such as solar energy, LED technology, high technology in wastewater treatment systems and bicycle sharing .
- iii. *iii*). '*Green transport*': urban planning and building a sustainable transport system; developing public transport, using urban clean transport such as bicycles or electric cars; gradually tightening environmental standards; building a monitoring system to control emissions from vehicles .
- iv. '*Green industry*': manufacturing activities still operate normally from heavy industry to light industry. However, the authorities will assess



the environmental impact from the beginning of the planning process. Without ensuring the environment issue, businesses will not be licensed, otherwise businesses that meet environmental standards will be supported by the government .

- v. *'The quality of the urban environment Green'*: use of energy efficient and clean energy, emissions of carbon dioxide (CO<sub>2</sub>) low , the waste will be collected and processed hygienic, ensure clean water, low-rise buildings (cover the roof with grass and trees for insulation) . Green urban environment is a very broad concept, including land, water and air environment. Therefore, this concept intersects with many other concepts, so it will be more difficult to concretize by quantitative criteria . The argument of this report is that the green environment content needs to be separated into two: green air quality and water quality .
- vi. *'Preservation of natural landscapes, historical and cultural works'*: harmony of artificial ecosystems (urban ecosystems) with natural ecosystems.
- vii. *'Community living in harmony with the environment'*: living in harmony with the environment, protecting and conserving the environment .

3) **Smart city** means a city that combines urban space with information technology.

**The meaning and purpose of a green city** : The benefits that green cities bring to the lives of the people are not in question. Green cities help reduce 'greenhouse gas' and pollution emissions. Green cities ensure quality living environment, health and comfort for the people. It is a sustainable urban development, ensuring a better and more equal standard of living. Eco-urban ensures a balance between man and nature. Smart Cities help managers and residents handle jobs by using information technology systems from one center. Smart cities ensure people's lives become easier, have a safer and more comfortable living environment [ <http://kienviet.net/tag/do-thi-xanh> . *Develop green city in Viet Nam* , Kien Viet, June 27, 2012].

In Vietnam, legal documents, standards and regulations also state “green aspects of urban development, including water and trees. Specifically, Article 33 of the Law on Urban Planning stating trees, the water and courtyard garden is the essential content of the design of urban. Section 2, Article 58 of the Law on 'principles for the management of urban space, architecture and landscape' states that the permission of the authorities is required in the event of any activity that may affect the affect trees .

See Appendix 1 for more details on green growth related activities in Vietnam .  
" Context of Urban Green Growth Index for Vietnam " .

Around the world, a number of countries have successfully built green / eco-urban areas, for example Curitiba (Brazil), Qingdao Beihai ( China ), Singapore, Stockholm ( Sweden ), Freiburg ( Germany ), Alexandria , Virginia ( United States ). Japan has a number of well-known eco-cities such as Kawasaki, Kitakyushu, and these cities are striving to become international ecological capitals. The Chinese government also has invested in building the city East Tan ( Shanghai ) from the land of swamps, located in Chongqing to become an ecological urban model, do not emit CO 2 - the first urban like that in the world. Singapore is supporting ecological urban construction of Tianjin Sino [<http://www.ashui.com/mag/chuyenmuc/quy-hoach-do-thi/9463-quy-hoach-phat-trien-by-exam-green> ] .

## 1.2. THE CHAIRS

The over-emphasis on green urban development in urban planning and development in Vietnam faces many obstacles. This is also the main issue that many experts raised at the workshop "greener cities" held by the National University on December 16-17, 2010, in Hanoi . Common obstacles include : poor technical and social infrastructure ; serious environmental pollution in many places ; large population ; planning expertise is weak and lacking. A specific example presented at the workshop is “Hanoi Urban System Development Strategy to 2020 with a vision to 2030” without any “ orientation ” to green urban development .

## 2. THE CHARACTERISTICS OF THE GREEN GROWTH INDICATOR

The purpose of this Chapter is to give an overview of the contents and purposes of the Green Growth Index proposed for Vietnam, to integrate green growth concepts into all the different aspects of planning and spatial management for cities and towns at all levels in the Viet Nam Urban Classification. It should be noted that these features are generally common with both the “green city” index and the “green growth” index. The difference between these two indicators is

mainly reflected in the indicators selected to suit the main goals of each Indicator .

## 2 . 1 WHAT IS GREEN GROWTH INDICATOR ?

The purpose of the “ Green Growth Index ” is to allow urban governments to measure progress toward their green growth goals, and to compare those results with similar cities in the country or in the country. area. Key contents related to the development and maintenance of such an index include :

Raw data : all qualitative and quantitative information that can be gathered in areas of interest ;

Statistical data : all data collected periodically by the General Statistics Office or related agencies , or statistics collected through surveys, censuses, etc... ;

Indicators : information is calculated from statistics showing the orientation or some change in state of things .

Set of indicators : indicators are grouped into sets according to related criteria .

Index : is a general measure at the highest level, calculated from the set of indicators. Each index has its own calculation method, and is usually expressed as the abstract value changes, not imply the physical units such as weight, volume, area, etc ... .

Green growth index : is the selection of indicators of a target group, also known as green growth indicators, to reflect the economic, environmental, social and institutional goals of a location. Phuong, has an interaction relationship in many angles. From the selected green growth indicators and the collected data, an indicator will be calculated to simplify the complex credit of the single-digit performance system, but still reflect the nature of growth. blue; Important information is reflected in the index, which can be used by policymakers .

## 2 . 2 WHAT IS THE PURPOSE ?

The development of a Green Growth Index has the following purposes :

- □ *Addressing urban development problems in Vietnam* : for example - lack of accountability of pressing urban problems ; weak urban policy , lack of policy inspection and evaluation system .
- □ *Increased understanding of green growth* : Green growth indices measure real results associated with green growth implementation, including environmental sustainability . Green growth indices can provide information on trends, and can identify green growth patterns. That index can also identify suitable contents for implementing green growth policy, and help to better understand the current state of green growth .
- □ *Supporting decision making* : Green Growth Indices can support decision-making in a transparent, systematic, comprehensive and timely manner. This index identifies the current state of economic, environmental, social, and institutional green growth, thus helping urban management go 'green'. The Green Growth Index is used to define urban development standards and indicators.
- □ *Orientation* : " direction " is a combination of monitoring & evaluation, to clarify findings through inspection and examination. Such orientation will take place throughout the implementation. As a result, relevant aspects of green growth will be identified, developed and used to get feedback on progress made in a locality's green growth journey .
- □ *Conflict resolution and consensus building* : Green growth indices help to gain a common voice when discussing and identifying similarities and differences. It can also show the pros and cons of policies and what are weaknesses in the implementation of policies for economic development and urban environmental sustainability .

### 2.3 HOW TO USE THE INDICATOR ?

Green growth indices are often categorized by performance and effort .

- ✓ □ □ □ □ □ □ □ □ □ □ □ □ *Index* : Green growth index is calculated from performance indicators and the results of efforts towards green growth standards - a measure of implementation quality in urban management .

- ✓ □ *Effort Index* : Green growth index is synthesized from indicators that represent the efforts to measure the quality of future policy implementation .

### 3. OVERVIEW OF BEST INTERNATIONAL PRACTICES

#### 3.1 INTRODUCTION

At the core of any green growth strategy are efforts to assess and accumulate knowledge and understanding of economic potential, the environment and social progress achieved through policies and initiatives. green at both central and local levels. For example, knowledge and insights will help determine how the use of energy and water in cities like Tra Vinh or Thai Nguyen is linked to economic activities, and possibly related to economic activities. how policy tools are tailored for co-benefits, for example by increasing employment. Understanding knowledge gaps and making comparisons or benchmarks will help all levels of government in Vietnam and other stakeholders identify the right starting point for possible future intervention. hybrid .

The problem related to the development of a Vietnam Green Growth Urban Index is how in the journey towards green growth can international comparable datasets be used to obtain can calibrate his progress. However, green growth in an urban context is still a 'journey' and therefore for Vietnam, as proposed in this Report, it is prudent to adopt a two-stage approach to finding the actual and appropriate measurement criteria. In Phase 1, 'realistic and relevant' means a 'Temporary Green Growth Index' that can be effectively measured between comparable cities, then moves on to Phase 2 allows Vietnam to perfect and implement more comprehensive and internationally comparable methods .

In the context of a need for caution when applying such a gradual approach towards Vietnam, it is important to understand in the world how this trend is happening, especially best practices relating to Green Growth Index development . In order to do so, first of all, it is necessary to grasp the context of the Green Growth Strategy with its vision and objectives, and consider the overall visions and goals that can be moved to how to turn into specific priorities and targets in the policy way. Second, it is important to understand what other countries do through the active efforts of the OECD. Third, the context of

experiences in the Asia Green Urban Index, and fourth, as seen from the Green Growth Best Practices Initiative (GGBP). It is the review of the Green Growth Best Practices Initiative that will help the Government of Vietnam customize and adopt a more efficient progressive approach, as proposed in this Report .

This approach, if promoted by a reputable international organization, will help provide a tighter framework that not only helps the Government but also helps other key stakeholders who are unilaterally real. present a number of green growth initiatives in Vietnamese cities .

### **3. 2 OVERVIEW OF BEST PRACTICES AND GREEN GROWTH STRATEGY IN VIETNAM**

In order to understand the Urban Green Growth Index, it is first necessary to know how specific targets are set, and how to turn the general vision into a concrete strategy - the stage. the second in the Vietnam Green Growth Urban Environmental Action Project. In general terms, indicators can include the overall performance of an economy such as increase in employment and economic output. However, up to now, the indicators have focused mainly on environmental management, focusing on energy, water, and waste, while focusing on urban areas such as transportation and urban planning .

The core content of the Green Growth Strategy is greenhouse gas reduction, rated by the Green Growth Best Practices Program as a powerful demonstration of the approach to using specific indicators to create a look. The 'defining indicators' in the case of Vietnam leads to no need for additional baseline scenarios or references. This is a suitable approach because in Vietnam defining baselines is a very difficult task due to the lack of data and the relatively rudimentary data collection methods .

- □ The targets for reducing greenhouse gas intensity by 8-10% for the period 2011-2020 in the Green Growth Strategy correspond to reducing the average energy consumption by GDP by 1-1.5% per year .
  
- □ Greening industrial production targets in the Green Growth Strategy, in which 50% of technology applied will be green technology and 42-45% of GDP will be formed through advanced technology and green technology. . In

addition, investment in environmental protection and natural resource enrichment will reach about 3-4% of GDP.

- □ Regarding the third pillar, green lifestyle - a content very consistent with the Green Growth Index - by 2020 60% of urban centers of grade III and 40% of urban areas of grade IV-V and villages will comply with technical standards and regulations for waste collection and treatment systems. For public transport, this will reach 35-45% and about half of cities will comply with green urban standards . 6

The current challenge is how can the GoV's so-called "urban sustainability" goals and actions can be turned into concrete indicators, potentially measured by qualitative and qualitative methods. amount .

### 3.3 BEST INTERNATIONAL PRACTICES

As the urban population will continue to increase in the coming time, the need to measure and monitor progress becomes more and more urgent. This is particularly urgent in Asia because, according to United Nations Population Program projections, by 2026 half of Asia's population will be in cities. Cities remain at the center of the 'global green growth' agenda. There are many studies being conducted around the world, so it is necessary to summarize some activities related to setting the indicators as well as metrics and indicators to help better understand the transition process. to green growth .

This summary will help to better understand international best practices from OECD and non-OECD countries .

#### 3.3.1 OECD

The OECD has actively participated in global efforts to promote green growth. With the 34 Ministers' declarations issued in June 2009, the OECD launched a comprehensive program with a multi-sectoral and intergovernmental approach, involving more than 25 OECD committees in workshops. Comment. As a result, the OECD's Green Growth Strategy was introduced in May 2011 7 . Cities are core to the above agenda, and at the third annual OECD Urban Roundtable, mayors and ministers from 21 cities and 34 countries. OECD Green City Program 8 . “The four cross-cutting issues that underpin this Program and research programs are:

- □ *Concepts and Goals* - How can green growth be defined in an urban context? Which green growth scenarios will be identified, and which scenario will be selected to deliver the most desired results ?
- □ *Policy, best practices and policy rigor* . What policy instruments and activities under the Program are likely to bring the most successful green growth to cities? How can we ensure the coherence of policies to promote the overall strength and the ability to complement each other ?
- □ *Measurement* . What economic and environmental indicators can show co-benefits and the degree of complementarity between economic and environmental policies ?
- □ *Obstacles with development* . What are the institutional, legal and financial barriers that might interfere with the implementation of green growth strategies ? “ 9

6 International Green Growth Best Practices GGGI Report, p. 68

7 Cities and green growth ; Conceptual framework . tr. 8

8 As above p. 9

9 As above p. 9

One of the core content of the Program is measurement and monitoring - an effort to assess economic and environmental complementarity at the local level, and to determine, if that happens. How far green policies have contributed to economic and environmental results. In other words, what are the knowledge gaps that need to be filled and how can the methodological difficulties related to data collection can be overcome, especially at the local level ?

Monitoring progress in the OECD countries requires data-based indicators to be incorporated into the conceptual framework. The OECD developed a conceptual framework and initially selected a set of 120 indicators through an input-output model, that is, economic inputs are transformed into economic outputs, and divided into four. The group has a close relationship as follows:



**□ □ Environmental efficiency and resource productivity in production and consumption**

□ □ **Natural resources** include renewable and non-renewable resources, biodiversity and ecosystems

□ □ **Environmental aspects of life** reflect the direct environmental impacts of the environment on people's lives .

□ □ **Policy solutions and economic opportunities** that can be used to improve policy effectiveness in implementing green growth in the most impactful places . ten

These four groups of indicators are reinforced by broader indicators that describe the socio-economic context and characteristics of growth . As a result, twenty indicators are defined according to policy relevance, analytical and metrological capacity, and arranged to reflect the organizational structure of the metrological framework. The specific OECD targets are as follows 11 .

Main target	Theme
Socio-economic context and characteristics of growth	
Economic growth: productivity and competitiveness	<ul style="list-style-type: none"> <li>□ □ Economic growth and structure</li> <li>□ Productivity, trade, inflation and commodity prices</li> </ul>
Labor market, education and income	<ul style="list-style-type: none"> <li>□ □ Labor market: employment / unemployment</li> <li>□ Demographic and social trends in income and education</li> </ul>
Environmental efficiency and resource productivity	
Carbon and energy efficiency	□ □ CO 2 productivity , energy efficiency
Resource productivity	<ul style="list-style-type: none"> <li>□ □ Material productivity</li> <li>□ □ Non-energy materials, waste and nutrients</li> <li>□ □ Water productivity</li> </ul>
Multi-factor productivity	□ □ Multi-factor, including environmental services

Natural resources	
Resources are renewable	<input type="checkbox"/> <input type="checkbox"/> Fresh water resources <input type="checkbox"/> <input type="checkbox"/> Forest resources <input type="checkbox"/> <input type="checkbox"/> Fishery resources
Resources cannot be regenerated	<input type="checkbox"/> <input type="checkbox"/> Minerals <input type="checkbox"/> <input type="checkbox"/> Land <input type="checkbox"/> <input type="checkbox"/> Land resources <input type="checkbox"/> <input type="checkbox"/> Wild flora and fauna

10 GGBP Report p. sixty seven  
11 OECD Report p. 105

Main target	Theme
Environmental quality of life	
Health and environmental risks	<input type="checkbox"/> Health problems caused by the environment and associated costs <input type="checkbox"/> Risk of natural or industrial disaster and related economic damage
Environmental services and amenities	<input type="checkbox"/> Wastewater and drinking water treatment
Economic opportunities and policy solutions	
Technology and innovation	<input type="checkbox"/> <input type="checkbox"/> Ratio of R&D with green growth <input type="checkbox"/> <input type="checkbox"/> Patent to Green Growth Rate <input type="checkbox"/> <input type="checkbox"/> Innovation related to the environment
Environmental goods and services	<input type="checkbox"/> <input type="checkbox"/> Production of environmental goods and services
International finance	<input type="checkbox"/> <input type="checkbox"/> Ratio of international finance with green growth
Price and transfer	<input type="checkbox"/> <input type="checkbox"/> Taxes related to the environment <input type="checkbox"/> <input type="checkbox"/> Energy prices <input type="checkbox"/> <input type="checkbox"/> Water rates and refunds
Skills development and training, management methods	<input type="checkbox"/> <input type="checkbox"/> Targets will be customized

In addition to this comprehensive OECD program, other initiatives have also been implemented and are summarized below :

- **The European Framework of Reference for Sustainable Cities** - an online tool to promote the 33 proposed key indicators, divided into four groups: economy, society, environment and governance. The goal of this toolkit is to give European cities the flexibility to choose indicators and customize them to suit their particular circumstances .
- □ **The Global Urban Indicators Framework** aims to help cities track performance and quality of life through a framework that facilitates the collection of indicators that are consistent and comparable across cities . These indicators have 22 items, divided into two main groups: 'urban services' and 'quality of life'.
- □ **Global sustainable urban development developed** by the White House Commission on Urban Affairs (United States). The program aims to measure progress made in US cities with three dimensions of sustainable urban development - **social welfare , economic opportunity , and environmental quality** .

### *3. 3. 2 Outside of OECD - Asia's approach to index development*

It is impossible to separate Asia's future from the way Asia's urbanization transition is managed. Such integration is important, not just for Asia, because it has huge world implications . " According to ADB, rural-urban migration is currently taking place in Asia at an 'unprecedented' scale in human history ." 12 As highlighted in the Global Green Growth Urban Index - the share of Asians living in urban areas has increased from 32% in 1990 to 42% in 2010. By 2026 , it is expected that of the United Nations, this rate will increase to 50%.

### ***Asia Green City Index***

At the regional level, the Asian Green City Index (AGCI) is the most prominent urban assessment. It is a derivative of a study initiated by EIU with funding from Siemens . The main content focuses on the environmental performance assessment of the 22 municipalities that are the

capitals or the headquarters centers of many independently selected large enterprises based on their size and importance. .

12 Same as above . Asia Green City Index p. 8

The only Vietnamese city that was selected was Hanoi because Ho Chi Minh City was not included in the Most recent Index in 2011 due to a “ significant lack of information and data ”.

The most important observation from the EIU study focused solely on the environment .

- □ This indicator determines the performance of the 22 urban centers compared to eight groups environmental issues separately: the energy and CO<sub>2</sub>, land and buildings , transport, waste, water, sanitation, quality air quantity and environmental governance .
- □ □ □ □ □ index draws from research results of some of the best practice projects in the region - solar installations in Osaka , on solar installations in Bangkok and Mumbai , using energy. efficiency and savings in Shanghai , and green space allocation and waste management in Hanoi .
- □ The study applied a total of 29 indicators, including qualitative and quantitative assessments, to calculate scores for groups using the weighting according to the importance of each group .
- □ Data rigorous assessment methods were used in all eight environmental groups. The report notes availability and quality problems. The data are then processed so that there are comparisons between different industries .
- □ Finally, the Report summarizes the findings and findings for each city .

Validity of the Report is not a summary of the main findings. While useful, it is not surprising to assert that high-income cities like Singapore have higher environmental ratings than poorer cities like Karachi. The value of the report is reflected in a clear baseline, established on the basis of transparency and

consistency of historical data, thereby enhancing the ability to evaluate results based on key **construction and implementation. books** . Hence, the comparison is also interesting, but less meaningful than an in-depth assessment of why the results improve or go down, and what role the policy implementation plays in improvement such as so .

In summary, the availability and accuracy of input data remains a weak link in the transparent and dynamic approach to environmental performance benchmarking .

## Conclusion

:

- □ The Asian Green Cities Index approach has immediate value for special cities in the Viet Nam Urban Classification System. This has been demonstrated by research in Hanoi, and depending on the availability of data, it can be confirmed that Danang or Hai Phong can and should apply the rigor of this study. For other Category I - V cities, it may be necessary to complete the categories, values and weights for 'temporary comparison' through the proposed Green Growth Urban Index for Viet Nam .
- □ It is necessary to further expand the focus of the Index, not just stop at environmental efficiency. This will help ensure greater confidence in managing the scale and extent of the problems associated with the impact of urbanization in Asian cities and countries .

Since this is an example of a green city index that is very relevant for Vietnam, the Asian Green City Index is described in more detail in **Appendix 2** of this report .

### *3. 3. 3 Green Growth Best Practices Initiative*

In 2012-13 GGGI launched an ambitious " International Green Growth Best Practices " (GGBP) initiative that aims to accelerate learning and provide essential information when designing Green growth program through analysis of experiences already in the field of green growth. This analysis was conducted on a large scale, with the participation of 75 authors, focusing on lessons learned from about 60 different programs around the world.

The report focuses on nine elements that are organically interrelated, frequently used by governments for green growth analysis, planning, implementation, and tracking .

In order to promote the development of the Vietnam Green Growth Urban Index - phases 1 and 2 focusing on 'best practices' on green growth, a number of relevant takeaways should be considered. The above initiative .

- □ **Institutionalization** - The International Green Growth Best Practices Initiative has affirmed the importance of integrating green growth plans into well-governed institutions. In fact, the Government of Vietnam in a sense has ensured the necessary coordination among relevant ministries / sectors on green growth development and implementation 'across government' as a whole. . This issue needs to be better understood, however, it should be used as a quantitative indicator for green growth governance . One of the examples outlined in the International Green Growth Best Practices Report was initiatives that were implemented in Columbia with the participation of various ministries / sectors involved in mitigation and adaptation. Climate Change.
- □ **Defined vision, baseline and goals** - as outlined in the introduction , Vietnam has done a great job in this area with the Prime Minister's direct guidance and has clear targets. These targets now need to be translated into Green Growth Indicators and their values can be practically quantified. Other examples of Green Growth Best Practices include greenhouse gas targets in Mexico, greenhouse gases in Indonesia and 12th five-year planning (FYP) and coming five-year plan. No.13. As such, only urban green growth can help consideration of a qualitative assessment criteria for vision, or baseline initiated by the city .
- □ **Evaluate the benefits of communication** - needs to be a group or at least a metric. This is an opportunity to identify the potential for green growth based on the local context and priorities. Identification, problem-raising and communication need to be expressed in both qualitative and quantitative perspectives. Communication can also help determine how the media can be

managed. South Korea is an example outlined in the Green Growth Best Practices Report .

- □ **Prioritize and analyze green growth actions** - Once itineraries have been identified based on experiences and lessons learned from the Interim Green Growth Urban Index, methods and approaches to evaluate the The green growth plan will become more consistent and coherent, especially for the urbanization process in Vietnam. Options in this context describe technology, behavior, techniques, actions or measures that improve economic, social and environmental outcomes relative to the present state of affairs . 13

To consider how to turn green growth outcomes priorities into a measurable Urban Green Growth Index, it is important to understand that 'adoption' should not be confused with the policy instrument used to reach that goal. Take Thai Nguyen city as an example. Introducing a rapid bus system was one option - setting fuel standards for the city was again a policy tool. From an Indicator development perspective, the possibility of developing a prioritization plan and process is an “item” where the Indicator will likely align the selected methods for prioritization, and These indicators will be selected using a rigorous method, capable of quantitative assessment .

Best practice would be the methods adopted in the Belgian Government-funded Baseline and Sector Priority Study under the Vietnam Green Growth Strategy. There are many other examples too, such as the UK's Carbon Reduction Plan and Mexico 's Low Carbon Plan .

- □ **Regional itinerary and roadmap development** - Along with the above mentioned sector priorities and options and communications, it is important to turn itinerary and planning into specific city 'roadmaps'. Clear evidence for stakeholders, especially the community, on direction and progress, showing a mix of green growth actions

13 As above . tr. 107

( socio-economic results ). There are many examples of best practice illustrating how this message can be valued and valued - EU Roadmap to

transform a low carbon economy by 2050, or in India - Integrated energy plans in rural areas .

- □ **Policy development and implementation** - This recognizes the importance of measuring Vietnam's effectiveness in formulating comprehensive and coherent policies at both central, sub-national and city levels. City related to green growth . It should be added here - there is a lot of work to be done to enact effective policies, both for the economy and for selected industries, for a particular region or town. These policies need a modern method of propagation. There are many examples available now, including Thailand's energy policy, Singapore's 2012 Green Plan, and China's low-carbon cities . Measurement must be specific, encompass both qualitative and quantitative .
- □ **Raising investment capital** - When the inflow of ODA to Vietnam decreases as bilateral and multilateral donors divert funding away from middle-income countries such as Vietnam, investment inflows from private sector to alternative is becoming increasingly apparent .

The private sector has capital (global financial reserves confirm this), however, they themselves need effective investment - capital is tied to managing risk. There is a need to mitigate risks from investment opportunities through a favorable investment climate with clear, long-term market signals, on the basis of a quantifiable and dynamic policy and legal corridor .

In addition, risk mitigation requires a commitment from the government, such as proactive concessional loan programs or government guaranteed loans (through combined financing frameworks ).

More on this, as it is a key feature of any Green Growth Urban Index - the groups and indicators have to be clear - it must be a quantifiable good, weigh, measure and measure . There are many examples of green economies, from high-efficiency housing in Germany to Bangladeshi Infrastructure Development Company, which subsidizes solar systems.

- □ **Promoting public-private partnerships** - Coupled with capital mobilization and investment is the ability to assess and facilitate public-private partnerships . Enabling ' cooperation ' - to become ' collaborating ' - to become ' business partnerships ', whether in aquaculture research and development or wealth management natural resources in Tra Vinh, or a large-scale public-private partnership project related to waste management infrastructure in Thai Nguyen.



There are many innovative examples of public-private partnerships, for example the Kenya Climate Innovation Center . Promoting public-private partnerships is a derivative of policy, of building a shared vision. Both of them can be measured qualitatively and quantitatively :

- □ **Capacity Building** - Skills and competency development is an integral core of sustainable green growth. There is no need to elaborate in this Report, as the skills analysis process affirms that a strategic approach is essential at all levels, from central, regional to local. All activities should be capable of energy using qualitative and quantitative methods .
- □ **Monitoring & evaluation** - The core of a Green Growth Index tracking system; Indexing and reporting are key components that are integral to achieving dynamic and sustainable green growth. Through an introduction to the above practices, follow-up and evaluation are related to strengthening institutional commitment and accountability. The aim is to improve transparency and stakeholder engagement. For Vietnam, the most important is monitoring & evaluation to help define a clear function and mandate in the context of a top-down, top-down, and bottom-up policy formulation. Monitoring & evaluation is very important to local governments, especially municipalities .

As has been suggested, a progressive, two-step process should be developed when developing the Urban Green Growth Index . The temporary green growth urban index will help with reporting on the indicators and help cities

In Vietnam there is a basis for comparison with other cities in the same ranking category. This first step is significant - allowing for an international comparison, especially on environmental management, to be further integrated with the phase 2 content of the approach .

There are many good examples of M&E - however, is it necessary to look for examples outside of Vietnam ? Probably not because there is now a Green Growth Strategy, has a baseline, and has clear greenhouse gas targets as well as some prominent urban goals . Monitoring & evaluation needs to be a standard method to ensure the effectiveness of the Vietnam Green Growth Strategy .

### 3.4 CONCLUSION

' **International best practices** ' synthesize valuable experiences in implementing green growth, with many concrete examples that help Vietnam learn from and commit to a sustainable green growth journey. . In particular, many of the approaches under the International Green Growth Best Practices Initiative **provide the guidance and flexibility needed to customize into an approach that is consistent with the Urban Growth Index. green growth** . Many of the examples / practices listed above present an opportunity to incorporate environmental content from the Asian Green City Index into a more customized Green Growth Urban Index framework. in response to the concerns of the Ministry of Construction in terms of implementation, as well as the planning and investment concerns of the Ministry of Planning and Investment .

## 4. GREEN INDICATOR CONSTRUCTION FRAMEWORK VIETNAM

### 4.1 INTRODUCTION

Starting point for this project : “ Vietnam *Green Growth* Strategy (VGGS)” and the Global Green Growth Strategy , both of which emphasize social and economic aspects beyond traditional concerns. on environment and climate change , and strengthening of the common urban ancillary factors ( eg, planting trees, green spaces, etc. ) that are often the basis of the ' green city ' index. ”.

The relevance of this holistic approach to the green growth index for Vietnam outlined in a recent World Bank report on green growth in Vietnam 14 is as follows :

*“ Green growth strategies have emerged over the past few years as a solution to the risks of development and climate change while continuing to increase investment and change. new creation . Green growth in general refers to environmentally sustainable economic growth. In fact, this is a strategy that allows developing countries to achieve economic growth while minimizing environmental degradation ”.*

## 4.2 BACKG ROUND

### 4.2

#### . 1 Challenge # 1.

There are currently about 9 or 10 green indicators under construction in Vietnam. Some of these indicators are intended to assist in the formulation of the sector master plan, for example the Construction Master Plan of the Ministry of Construction . This is an important initiative and encourage the integration of green growth interventions into an indispensable component in the process of planning the whole of the industry . However, ministries are governed by decrees and documents governing their activities related to activities in which they may participate; for example, Decision 2623 defines the mandate of the Ministry of Construction to address the issues of 'urbanization' and 'climate change', which means that they cannot participate in activities. is beyond the scope of the above activities .

Therefore, in the short term (and in the medium term), it may not be possible to effectively implement the Green Growth Strategy due to the limitations and limitations, for example, posed with the management of urbanization. authority of the Ministry of Construction ? It is proposed, however, that the Urban Green Growth Index should be the final component in a system that specifically focuses on implementing the Green Growth Strategy objectives on the basis of encouraging adoption of This goal enters all aspects of urban planning and development . To achieve that goal, the integration of indicators applied by ministries and sectors into the Vietnam Green Growth Index should be encouraged .

However, past experience in Vietnam shows that cities / towns may not want to participate in an indicator system because :

- Lack of legal framework forcing their governments to periodically collect and analyze data within the framework of the M&E system.
- Lack of reliable data sources needed to do monitoring & evaluation
- Lack of specialized skills to conduct monitoring & evaluation
- Lack of technical resources for effective M&E

□□Lack of understanding of importance of benchmarking (other than meeting assigned targets )

14 Vietnam's Urban Growth : An Overview of the Strategy . World Bank . March 2015 ( page 21)

In this regard, the World Bank 15 report states :

*" Monitoring and evaluation efforts through the collection of data collection : Condition [ poor ] ... about the quality and accessibility of data is a common problem, often occurring phenomenon databases inaccurate and inconsistent data . The data is unreliable makes it difficult to fully track and evaluate general development progress and efforts . Building a mechanism to collect and allow other government agencies to have access to government data could be of significant help in accelerating urbanization .*

#### *4.2.2 Challenge # 2.*

The Green Growth Strategy is a very comprehensive and ambitious document that clearly shows all processes and activities that need to be implemented across the country to achieve 'sustainable urbanization' (by 2050 ).

However, in reality, limited resources (technical and financial) and over-centralized administrative apparatus will lead to the serious impact of the implementation of this Strategy, in the short term and in the future. medium term in cities and towns in all urban categories . However, recognizing that governments at all such urban levels have an obligation to promote green growth (i.e. all forms of 'environmentally sustainable economic growth') following the Growth Strategy. Green growth, approved by the Prime Minister on September 25 , 2012, needs to define a clear roadmap, gradually integrating green growth initiatives into all the different phases of spatial planning and urban management

is getting tighter and tighter as a city / town is raised in the ranks of the Vietnamese Urban Classification .

In order to do so, it is required that all investment projects be designed and implemented on the basis of compliance with measures to ensure environmental impacts, resilience to climate change, and use sustainable use of physical, economic and social resources . In order to evaluate the effectiveness of the above mentioned control and review measures, there is a need to have a monitoring and evaluation process in both the development and implementation of investment projects, together with an overall assessment of the government How effective the local green growth goals are. This can be done on the basis of measuring local overall green growth performance against a set of indicators, and comparing / ranking the results achieved with similar localities in a single indicator. urban green growth .

That means there are four main activities that all municipalities must undertake in implementing the Green Growth Strategy :

- Comprehensive and realistic green growth action plans ;
- Encourage investment projects to be designed and implemented in accordance with standards for environmental impact control, review of climate change resilience, and sustainable use of physical, economic and society ;
  - Implementing regular and continuous monitoring and evaluation program for all investment projects ;
- Regularly participate in the Green Growth Index related to periodic (annual ???) assessment of local green growth achievements on the basis of comparing results with similar provinces in the Index .

Ultimately, the realization of the goals outlined in the Green Growth Strategy requires a commitment to develop and implement effective green growth action plans for all identified cities and towns. in the Urban Classification, develop and apply a standard monitoring & evaluation system to measure and evaluate progress made in the implementation of action plans , and rank by compare with similar cities and towns on a reference basis with the Green Growth Index (GGI). With the aim of focusing on the progress of a city or town to rise to a higher level in the Urban Classification System, from here on out, this process is

is " **The model towards urban green growth in Vietnam** ", has the following characteristics :

- □ Comprehensive coverage, to suit a wide variety of applications ,
- □ Flexible , to match the many contexts related to each type of city in the Urban Classification System

The appropriate way to force cities and towns to participate in the "green growth" movement in line with the Vietnam Green Growth Strategy is the urban classification scheme. This mechanism needs to be extended to acknowledge the standardized set of green growth indicators to suit each type of city in the Urban Classification .

After all, the 'incentive' of a city or town to strive for recognition of “green growth” achievements must be based on the requirement that one of the determining factors for a city or town Communes that rise higher in the Urban Classification System are **subject to** the minimum criteria for “green cities” at that higher level .

### 4.3 GREEN GROWTH URBAN MODEL : CONCEPTS

#### 4.3.1 *Introduction*

It is becoming increasingly clear that in Vietnam today (as of the end of 2015), there is too much emphasis on building a “green city” index (similar to the “Chau Green City Index”). Asia ”, as outlined in Section 3.3.2 and Appendix 2 of this Report ), allows a city / town to measure the progress it is making on green growth. The operation of such an indicator requires a standardized set of indicators in order to effectively measure progress made, and to be able to rank when compared to similar cities in the same category. index .

The development of an urban green growth index is an important goal; however, its relevance to Vietnam at the end of 2015 is still limited due to lack of, or quality of data. still very weak, unable to measure efficiency, as outlined in the recently published World Bank report 16 “Urban Growth in Vietnam : An Overview of Strategy ”.

It is recognized, however, that the core content of any indicator is a set of indicators that describe the urban features needed by a city / town to help them follow. green growth roadmap . Therefore, it is proposed that the implementation of the Green Growth Strategy and corresponding action plans for the period 2016-2020 should focus on building a standardized set of urban green growth indicators. These indicators will be operated in tandem with the Vietnam Urban Classification, where the lower the “compliance”, the lower the city / town lies in the Urban Classification .

In the first phase, the application of these indicators to urban spatial planning and management in Vietnam requires a clear description and definition of the “provisional / preliminary” Green Growth Urban Index. "In order to be able to test and improve it to suit the Vietnamese circumstances . The definition and definition of such a preliminary set of indicators is the goal of this project, “Urban Green Growth Urban Environmental Action - Stage 1”, and from now on it is called the “Indicator urban green growth ”as detailed in Chapter 5 . The next phases should focus on measuring progress and on what types of data are needed as a basis for measurement. When metrological technology is available and suitable for application in all types of cities, a national index will be developed that allows cities and towns to determine their progress on a comparative basis. compared with the progress of other similar cities .

However, it is more important to realize that , if the indicators are not measurable , it will certainly not be appropriate to quantify the progress of a city or town on its path to growth. blue.

16 World Bank, Vietnam Green Growth City - Strategy Overview . January 2015

The Green Growth Urban Index shows that green growth goals should be achieved through effective urban management and spatial planning, with a focus on green growth . Over time, as urban managers gain more technical resources, a more sophisticated approach can be applied to green growth spatial planning processes, including measuring pressure progress. The benefits of the National

Green Growth Urban Index will be achieved . What is needed is a unified platform to enable the gradual implementation of green growth initiatives , from the initial commitment of cities and towns to green growth, to the successful implementation of the Strategy. National green growth . The common ground in this roadmap is the set of urban green growth indicators, and the common foundation is **the Proposed Green Growth Urbanization Model** .

#### *4.3.2 Purpose*

The proposed Green Growth Urbanization Model aims to enable a city or town, regardless of its location in the Urban Classification System, to commit to governance processes. Urban management and spatial planning are needed to achieve the future of green growth . This model encourages a city / town to gradually move from its current state to the point where all urban investment and development contribute to the future of green growth, and there is progress. such can be measured using a Standard Indicator, consistent with the requirements of the Green Growth Strategy and respective Action Plans .

The platform has five components and is initially based on the locality (components 1 and 2) and gradually evolves to become a common Urban Green Growth Index for the country . Components 1 and 2 outline the actions and local programs that must be taken in the transition from the status quo to a green growth future. Components 3, 4 and 5 are mechanisms to be enacted at the central level to facilitate that transition.

#### *4.3.3 Content*

Components of the proposed Green Growth Urbanization Model for Viet Nam include :

1. Assessment of urban green growth profiles
2. An action plan for green growth with an effective monitoring & evaluation system ;
3. A preliminary set of green growth criteria and indicators ( ie a preliminary list of indicators );
4. Vietnam's green growth urban index incorporates sub-indicators relevant to each type of urban area in the Urban Classification System ;
5. National M&E system for the regular implementation and maintenance of the Viet Nam Green Growth Urban Index .



Details of each component are as follows :

## 1. Urban Green Growth Assessment

This component is the mandate of city governments. The development of a locality's "green growth urban profile" is intended to define the baseline or the starting point of the journey towards a suitable "green city" position in the category of their city in the System. Urban Classification System ; it is a statement of the green urban achievement of a city at a particular time .

Profiling is based on SWOT analysis ( Strengths, Weaknesses, Opportunities and Threats ) of all green growth ( and inaction ) activities and actions and may include the following :

- Identify and evaluate existing activities related to a locally relevant green growth city
  
- Analysis of current and future urban development plans, including description of green growth components, if any ;
  - Identify all of the environmental challenges currently facing the city .
  
- Identify all current green growth achievements and successes .
  
- Identify locally relevant key stakeholders in green growth : including government agencies, research institutes, the private sector, international organizations, and parallel donors. bilateral and multilateral, etc.... .
  
- Assessment of all green growth urban activities conducted by bilateral and multilateral donors that may be locally relevant (including other localities in Vietnam )

The preparation of the Profile should initially consider the (preliminary) set of indicators that have been identified as the basis for the Urban Green Growth Index . These indicators will provide a framework for conducting SWTO analysis, and help to focus SWOT analysis on issues relevant to spatial planning and urban management .

In addition, such initial focus on urban green growth indicators is also a first step to familiarize yourself with the Index, helping to understand the purpose and operational requirements of the indicators, and the role of the indicators in measuring "green growth" results and the need for monitoring and evaluation. Initially, these indicators will be primarily descriptive (i.e. preliminary indicators), however, as the progress measurement method has improved, more attention should be paid to monitoring & evaluation, and finally develop a standardized Indicator.

The purpose of the "Green Growth Urban Profile" is not to account for a locality's "green city" status at a given time, but to **identify** all issues that need to be addressed. deal to :

- progress on the roadmap towards a green city
- rise to a higher rank in the Urban Classification
- Prepare the Green Growth Action Plan
- Integrating green growth criteria into the process of developing locally appropriate Master Plans.

The local establishment 'Profile urban green growth' will help them create a **reputation for green growth** at the same time commits to follow the Model towards a green growth urban area.

Integrating green growth criteria into all urban management and spatial planning activities within the mandate of the Ministry of Construction will be a difficult process due to limited resources (including resources). technical and financial), and due to too centralized management structure. However, with the Green Growth Strategy approved by the Prime Minister, all levels of urban governments in Vietnam have an obligation to promote green growth (i.e. all forms of 'growth economic sustainability), it is necessary to devise a roadmap to gradually integrate green growth initiatives into all the different aspects of spatial planning and urban management.

To this end, the following activities should be undertaken :

- It is imperative that prior to the preparation / modification of any Urban Master Plan and Subdivision Plans, the municipal government shall include in the Terms of Assignment a requirement for the Contractor to prepare / upgrade the Lake urban green growth and provides a checklist of all the policy requirements that need to be incorporated in the Master Plan . The checklist will be used as a monitoring & evaluation tool to check the Master Plan's compliance with green growth requirements .
- If a locality develops a Green Growth Action Plan and does not first develop a Green Growth Urban Profile, it will not make sense because of the Urban Growth Profile.

blue. Therefore, the preparation (or updating) of a Green Growth Urban Profile should be a mandatory prerequisite before the Green Growth Action Plan is formulated .

- Before any donor participates in supporting any locality proposed by the Ministry of Construction in implementing green growth, that locality must first build its reputation for green growth by urban green growth Profile.

## **2. Green Growth Urban Action Plan with an effective monitoring & evaluation system**

This component is the responsibility of the municipalities. The purpose of the Green Growth Action Plan (UGGAP) developed by all levels of urban governments is clearly stated in the Green Growth Strategy and the National Green Growth Action Plan . However, so far, only a very small number of such Green Growth Action Plans have been prepared and approved. That means that the central guidance on how to develop and implement the Green Growth Urban Action Plan is still insufficient . The proposed Green Growth Urbanization Model aims to address this gap through a common platform, enabling cities to move toward a green growth future . Under this Model , the Green Growth Urban Action Plan is a key urban planning tool for the local to achieve. green growth future . In order to achieve this goal, it is proposed to strengthen guidelines on the development of the Green Growth Urban Action Plan with the following characteristics considered necessary to achieve future growth. green :

- □ The above Green Growth Urban Profiling will provide the framework and direction for the development of action plans and associated programs .
- □ Acknowledging that the Green Growth Urban Action Plan is not a 'static' tool for urban management and spatial planning, but is continually being refined and expanded to keep pace with progress. in urban planning and management, keeping up with technological progress in measuring the implementation of green growth initiatives .
- □ Recognizing that , under normal circumstances , the more limited resources available to municipalities to implement the action plans, the lower the local position in the Urban Classification System. Therefore, it will be difficult to apply standards when implementing greener growth initiatives .
- □ A monitoring & evaluation system is required to evaluate progress on the green growth pathway , on a comparison with the baseline identified in the initial evaluation of the Profile. urban green growth .
  - □ Recognize that urban green growth will be the foundation of the monitoring & evaluation system.

To achieve this goal , the first requirement is to develop a green growth action plan template for the development of 'second generation' action plans, focusing more on achieving results. needed to be recognized as a green growth locality as well as to measure and evaluate “actions” .

In addition , the government's role is still not clearly defined at urban levels : “ Encourage investment proposals designed and implemented in accordance with environmental impact control standards, considering resilience climate change resilience, and sustainable use of physical, economic and social resources ” are an important element of second generation green growth action plans and need further review . To achieve this goal, the Green Growth Urban Environmental Action Project needs to carry out an inventory of potential “green growth investments” initiatives that are relevant to the local implementation of the Urban Growth Toward Green growth in Vietnam. This activity may also be of interest to the Urban Development Department / Ministry of Construction as it is related to their functions in organizing and approving construction master plans, and is of interest to localities in Green growth action planning program .

### **3. Preliminary set of criteria and targets for green growth**

This component is under the responsibility of the central government, especially the Ministry of Construction, as the roadmap towards green growth depends on the spatial planning activities and programs under the authority of the Ministry of Construction .

As outlined in Chapter 2 of the Report, the main content of any indicator is the “set of indicators that describe the urban features needed to help a city / town move towards a future green growth.”. Furthermore, as outlined in Section 5.1 below of the Report , understanding the context of the development of groups and the framework of indicators to be applied to cities in Vietnam is a complex process that requires There is research to ensure the accuracy and reliability of the data as the foundation for the development of the Vietnam Green Growth Urban Index . In the immediate future, a set of “preliminary” indicators is proposed, based on the four groups of topics identified in this Section ... This preliminary set of indicators is the main output of the “Urban Environmental Action Project. Green growth - Phase 1 ”, because that is the core content of all 5 components of the proposed Green Growth Urban Green Growth Model .

For cities that have chosen the Green Growth Urban Development Model to assess the Green Growth Urban Profile as well as to prepare and implement the Green Growth Urban Action Plan , the “preliminary targets” of the ministry. The standardized indicators will act as a starting point, identifying the current state of green growth in the locality, followed by a baseline for monitoring urban green growth . As the indicator set is more complete and issued by the Ministry of Construction, cities / towns will use and will include all Green Growth Urban Profiles and Green Growth Urban Action Plans ( new or updated) .

### **4. Vietnam's green growth urban index incorporates relevant indicators into each type of urban area in the Vietnam Urban Classification System**

This component is under the responsibility of the central government, especially the Ministry of Construction . The preliminary set of indicators is intended to be the initial basis for Vietnamese experts to make a more detailed assessment with the ultimate goal of standardizing urban green growth indicators that will be governmental at all levels of urban areas. in the Urban Classification System

used . It is expected that this standardized set of standards will be more complete :

- □ Recognizing that the resources available to urban governments at all levels in the implementation of green growth initiatives vary, depending on their type of city, so the metrics need to be adjusted accordingly. with this fact ;
- □ there will be additional sub-indicators for localities when their socio-economic development goals require a more specific assessment, for example those that are promoting tourism development, or are encourage specific industrial production activities ;
- □ integrates a comprehensive and dynamic data collection and analysis process, ensuring data neutrality and reliability
- □ apply to multiple cities / towns in the Urban Classification so that each locality can identify progress on their green growth pathway on a comparable basis. self .

In addition , the “Vietnam Urban Green Growth Index” requires a commitment of long-term funding to operate and maintain the index . Each indicator is an on-going process to be able to play its role as a benchmarking tool by using up-to-date data to reflect the reality of each relevant locality . If such figures are not regularly updated, the significance of the Indicator will be lost .

## **5. Monitoring & Evaluation System for Urban Green Growth Index Vietnam**

Monitoring & evaluation is a very important content in the green growth future planning process at two levels :

a) central ( Ministry of Construction ) - overall tasks :

- □ operate and regularly maintain the Vietnam Green Growth Urban Index as a measure of progress towards green growth futures in cities and towns at all levels of the System Urban classification ;
- □ revise, supplement and update the standard parameters to measure progress achieved at each level of the Urban Classification;
- □ guide all cities and towns on the construction and operation of the monitoring & evaluation system associated with their Green Growth Urban Action Plan .

b) locality ( all cities and towns covered by the Urban Classification ) - mandate :

- compile and evaluate the primary data needed to build the National Green Growth Urban Index consistent with standard parameters at the national level ;
- assessing the progress in implementing their green growth initiatives, examining the compliance of Master Plans with the green growth requirements outlined in the master planning phase .

## 5. GREEN URBAN GROWTH INDICATORS FOR VIETNAM

### 5.1 CONSTRUCTION OF INDICATOR FRAMEWORK AND ISSUES GROUP

*Introduction - Desire to build targets .*

A lot of the content in this Report has mentioned the need to be careful when analyzing the context in the process of building groups of topics and indicators. While such analysis should not be omitted, up to this point in the Report, perhaps it is necessary to consider the nine *ambitions* in a general *context* as to how they relate to each other :

1. The indicators need to harmonize experiences and lessons learned in the past and in the current period. However, the orientation here is "green growth", so it is necessary to focus on the future .
2. Indicators need to carefully consider 'best practices' for green growth in the appropriate aspects of the desire to have the flexibility needed to adopt green growth design and processes. at both central and local levels .
3. The indicators that need to recognize the fact that the State budget source, especially the ODA capital through bilateral and multilateral aid, is decreasing day by day . Indicators should reflect the need to shift towards attracting new sources of funding, through strategic urban planning, in close coordination with public-private partnerships - by combining sustainable sources of funding. firm .
4. Indicators must recognize the need to define and measure commitments towards the green growth agenda in a broader sense - greater emphasis on social equity and economic autonomy .

5. Targets should focus on 'climate change adaptation' as an important element of green growth - promoting the expertise and experience of third-party project managers the other three .
6. These indicators should be simple and acknowledge that partnership in Vietnam is a very complex top-down model. Complicated is the decision-making process at both central and local levels. The same complexity is also repeated in the current index development context, with a total of 9 indices in existence in Vietnam today .
7. The indicators need to acknowledge that Vietnam has a lot of cultural and historical characteristics, making it complicated to compare with other Asian cities, so at this point - it is not has many values. From this conclusion it can be seen that learning the examples of successful green growth in urban environments of other countries and hoping to exert a meaningful educational effect on the one hand, but on the other hand also exist. Resources a lot of deployment-related issues .
8. The targets must promote the orientations of the Vietnam Green Growth Strategy, because the goal is to implement 66 Green Growth Action Plan from an urban development perspective . When implementing these orientations, it should be noted that the current targets stem from Decisions of the National Assembly, Decrees issued by the Prime Minister on green growth, and policies and laws. other .

## 5.2 BUILDING THE FRAMEWORK DIRECTIVE OBJECTIVES AND GROUPS OF PROBLEM URBAN GREEN FOR GROWTH CAPITAL VIETNAM

In interpreting the above context and directions, it is clear that the process of building problem groups and indicators is dynamic and intuitive from a research and consultation perspective . This process can be summarized as follows :

### 5.2.1 *International best practices*

Green growth on an urban scale is a matter of coherent logic, the report states. This approach has been recognized in the Report of the OECD " The urban and green growth ", as follows

*“ Green growth does not happen in an abstract context, but is a site-specific phenomenon; and from a certain perspective, this is a*



*phenomenon that takes place in a specific area with specific conditions and unique advantages. As centers of innovation, an important link on the green growth agenda, cities account for a very large share of a country's GDP, not only promoting their own development, but a larger area ” 17*

This study associated with the “ Urban Green Growth Index ” has examined the following:

- “ Asian Green City Index ” comes from a study conducted by the EIU and by
  - Sponsored by Siemens ;
  - Green Growth Best Practices - Lessons Learned from National Practice 2014 - GGGI
  - OECD - Cities and green growth ; Conceptual Framework 2011
  - European Framework of Reference for Sustainable Cities 2011
  - Global Sustainable Urban Development Indicators . Report of the United States

All of the above reports have deeply analyzed and provided best practices for setting the 'Green Growth' indicators . In particular , the experience and approach drawn from the EIU Asian Green City Index (highly cited), from a comparative perspective, is an excellent model - especially for the implementation of best environmental practices . An obvious benefit of green growth best practices is the opportunity to select and customize values for metrics to suit the needs of urbanization in Vietnam .

### *5.2.2 The model towards urban green growth in Vietnam*

Based on the above international best practice, and through dialogues with key stakeholders, it can be seen that Vietnam has the opportunity to customize its green growth agenda as after:

- Develop a progressive approach based on a 'Model towards green growth cities', allowing Vietnam to compare cities through a set of indicators relevant to their level of development and identity Vietnamese culture .
- The development of a set of indicators as an '**aggregate of metrics**' can be flexibly applied to existing frameworks such as the Urban Classification .

### *5.2.3 Approach for groups of problems and indicators*

Therefore, the set of indicators is closely linked with essential policy processes for urban development and green growth . A consistent and phased approach is suitable for indicator / indicators development. These approaches are as follows :

17 OECD - Cities and green growth; Conceptual Framework 2011. p. 18

This report outlines the main groups of topics in the indicator development framework . These themes are tied to the main pillars of : green growth , environmental management , economic sustainability and social inclusion . From these four groups of topics, the main contents will be specified :

The main theme of the Green Growth Strategy

Urban Green Growth Index Key Themes

#### *5.2.4 Correlation between topic groups in local planning*

The success of the Urban Green Growth Index (UGGI) will depend on how easily these indicators will be incorporated into the Green Growth Strategy goals while being connected to the local priority. During the development of this index, urban green growth content groups derived from these thematic groups were adjusted with the aim of promoting end-to-end through locally appropriate management plans, including target results

The National Green Growth Action Plan and Provincial Green Growth Action Plans under the Vietnam Green Growth Strategy set out a number of groups of activities to guide the implementation of green growth goals. country. These activities are the basis for ministries / sectors, provinces and cities to build projects, source capital, and develop the economy on a green growth path. Consequently, when municipalities measure their progress against the

Green Growth Action Plans, that will allow the necessary monitoring & evaluation to demonstrate success and attract additional funding for expansion. urban green growth .

#### 5.2.5 *Subgroups of the problem*

The following thematic groups and sub-groups have been identified to play a critical role in both the Green Growth and Urban Development Action Plan :

##### □□ Theme group 1: Environmental Sustainability

- Sub-Group : Clean, Renewable Energy ( NGGAP group: 6)
- Sub-Group : Energy Efficiency ( NGGAP Working Groups: 3 & 4)
- Sub-Group : Green and Sustainable Urban Development ( Working group in NGGAP: 11)

##### □□ Theme group 2: Economic development

- Sub-Group : Green and sustainable urban development (Working group in NGGAP: 11)
- Sub-Group : Use natural resources efficiently and green economy ( Working group in NGGAP: 8)
- Sub-Group : Green Growth Enterprises ( NGGAP group: 10)

##### □□ Theme group 3: Social inclusion

- Sub-Group : Economic restructuring towards green growth ( Group of activities in NGGAP: 7)
- Sub-Group : Promoting green vitality ( Working group in NGGAP: 12)

##### □□ Theme group 4: Institutional responsiveness

- Sub-Group : Green growth implementation institutions and policies ( NGGAP group: 1)

— Sub-Group : Implement the Green Growth Action Plan and small-scale green growth models ( Working group in NGGAP: 2)

5.2.6 Proposed targets

These prerequisite metrics need to be drawn from the “Potential Indicator Set” and **will initially be measured quantitatively** . This indicator has three sources of reference.

- □ Category (problem)
- □ National Green Growth Action Plan activities : - includes a relationship with the 3 "strategic tasks" and 12 "groups of activities" respectively, linked to 66 activities of the Action Plan. green growth .
  - □ Indicator - has determined the measures and values to be measured.

All indicators have quantitative measures as the basis for measuring green growth .

**Table 1. Potential green growth urban targets**

#	Problem group	GGAP Working Group	Targets
1	<b>E1. Environmentally sustainable</b>	Low carbon growth 6. Renewable energy	The rate of renewable energy % of total consumption
2		Low carbon growth 3, 4 - Using energy	Energy consumption / GDP
3			Energy intensity ( per person )
4			Grid connection
5			CO <sub>2</sub> per person (ug / m <sup>3</sup> )
6			CO <sub>2</sub> / GDP

		economically and effectively	
7		Green production 11. Green & sustainable urban development	Daily PM10 / PM2.5 concentration
8			Population density ( person / km 2 )
9		Green lifestyle Encourage the construction of green buildings	Green space (m2 / person )
ten			Area of space worth living
11			Number of green buildings to be classified

#	Problem group	GGAP Working Group	Targets
twelfth			Public transportation network / per capita (km / person )
13		Green lifestyle 11. Green and sustainable urban development	Urban vulnerability index

14	<b>E2. Economic sustainability</b>	Green production 8- Efficient use of natural resources and green economy	Number of households flooded each year
15			Water consumption per capita ( liter / person / day )
16			Water consumption ( liters / day ) per unit of GDP
17			Water recycling per capita
18			Proportion of treated wastewater (%)
19			Waste per capita (kg / person / day )
20			Proportion of solid waste collected and treated appropriately (%)
21			Proportion of households with clean water (%)
22			Ratio % of the population have access to sanitation
23			Green production 10. Green growth enterprises
24	Number of green jobs created each year		
25	The share of the high-tech industry / GDP		
26	<b>SI. Integrate in society</b>	Economic restructuring towards green growth	Income per capita ( million VND / year )
27			The rate of poor households
28		Green lifestyle 12. Promote green lifestyles	Proportion of households with permanent houses (%)
29			Number of community forums per year
30			Mobile phone coverage (phone per

			capita ?)
thirty first			Number of internet connections / 100 citizen
32	IR. Institutional responsiveness	Green growth institutions and policies	Master urban planning
34			Climate change action plan
35			Disaster risk reduction plan
36			Policy implementation of VGGAP or PGGAP
37			2 - Implement Green Growth Action Plan ( GGAP ) & pilot small-scale green growth models
38	Green growth investment forums		
39	Training programs and capacity building for green growth building programs		
40	Monitor & evaluate green growth		

This report presents analysis and conclusions regarding urban green growth in the Vietnamese context . Most of the analysis and the conclusions in the table below have clearly shown that .



The analysis is based on:

1. the composition of the ICEM group balances Vietnam's urban management expertise with the international green growth experience ;
2. The analysis of international best practices on green growth and the related base confirmed no concrete frameworks such principles to apply in the country ;
3. representatives of ministries and agencies at the Consultation Workshop in Thai Nguyen as well as the quantitative baseline / directional affirmation and focus on investment / green growth economy; and
4. The above issue subgroups - in particular, activities under the Green Growth Action Plan, which aim to facilitate the strategic planning process through action by institutions .

The table below illustrates the conclusions, confirming that the gradual approach is the right direction suitable for the local Vietnamese context .

**Table 2. Urban Green Growth Potential and Orientation Indicators of Vietnam**

#	Problem group	Targets	Orientation
---	---------------	---------	-------------

first	<b>E1. Environmentally sustainable</b>	The rate of renewable energy% of total consumption	<i>The National Green Growth Strategy , the National Green Growth Action Plan (NGGAP) , the National Climate Change Response Strategy , the Climate Change Mitigation Action to the National Conditions and the Expenditure Curve margin fee reduction (Ministry of Planning and Investment - UNDP ); Analysis of the energy sector in 2013 and the National Power Development Plan; Vietnam Renewable Energy Development Strategy; Decision 2068 November 2015</i>
2		Energy consumption / GDP	<i>Green Growth Strategy 2011; National Green Growth Action Plan 2013 and National Climate Change Response Strategy 2011 . Report on UNFCC of the Ministry of Natural Resources and Environment 2014</i>
3		Energy intensity (per person)	<i>Green Growth Strategy 2011 and National Green Growth Action Plan 2013 and National Climate Change Response Strategy 2011 . Report on UNFCC of the Ministry of Natural Resources and Environment 2014</i>
4		Grid connection	<i>National electricity development planning</i>

5		CO <sub>2</sub> per person (ug / m <sup>3</sup> )	<i>Green Growth Strategy 2011 and National Green Growth Action Plan 2013 and National Strategy to Respond to Climate Change 2011 . Report on UNFCC of the Ministry of Natural Resources and Environment 2014</i>
6		CO <sub>2</sub> / GDP	<i>Green Growth Strategy 2011 and National Green Growth Action Plan 2013 and National Climate Change Strategy 2011. UNFCC Report of the Ministry of Natural Resources and Environment 2014</i>
7		Daily PM10 / PM2.5 concentration	<i>Ministry of Natural Resources and Environment - Environmental status report 2007 ; Center for Environmental Monitoring (CEM) General Statistics Office: Socio-Economic Statistics 2009</i>

#	Problem group	Tar gets	Orientati on
8		Population density (person	<i>General Statistics Office of Vietnam - World Bank Green</i>

		/ km2)	<i>Growth Strategy</i>
9		Green space (m2 / person)	<i>Vietnam Construction Standards ( TCXDVN ) 362: 2005 Vietnam Construction Code ( QCXDVN ) 01 2008 / BXD</i>
ten		Living space area worth living (m2 / person )	<i>Vietnam Construction Standards (TCXDVN) 362: 2005 Vietnam Construction Code (QCXDVN) 01 2008 / BXD</i>
11		Number of green buildings to be classified	<i>Green Growth Strategy . Green Growth Action Plan, National Green Building Council Guidelines, Law on Energy Efficiency and Conservation</i>
twelfth		Public transportation network / per capita (km / person)	<i>Green Growth Strategy</i>
13		Urban vulnerability index	<i>UNFCC, National Target Program to Respond to Climate Change, Strategy for Natural Disaster Prevention and Mitigation to 2020. UN-habitat and ISET Asia Foundation</i>
14		Number of households flooded each year	<i>Will survey</i>

15	E2. Economic sustainability	Water consumption per capita (liter / person / day)	<p><i>Decision 1929 / Q đ - TTg dated 20/11/2009 approving the development orientation of water supply for urban areas and industrial zones up to 2025 and vision to 2050.</i></p> <p><i>Circular 34 / Ministry of Construction determines per capita water consumption for water system design</i></p>
16		Water consumption (liters / day) per unit of GDP	<p><i>Decision 1929 / QĐ-TTg dated 20/11/2009 approving the orientation of water supply development for urban areas and industrial zones up to 2025 and a vision to 2050.</i></p> <p><i>Circular 34 / Ministry of Construction determines per capita water consumption for water system design</i></p>
17		Water recycling per capita	<i>Will survey</i>
18			<p><i>Green Growth Strategy (60% of Grade III cities will have wastewater collection and treatment systems that meet the respective standards and standards )</i></p> <p><i>Target</i> <i>No. 29, Decision 432 / QĐ-TTg dated April 12,</i></p>

		Proportion of treated wastewater (%)	<p>2012</p> <p><i>Circular 34 / Ministry of Construction defines the minimum proportion of wastewater treated for different types of urban areas in the National Urban Classification System</i></p>
--	--	--------------------------------------	--

#	Problem group	Targets	Orientation
19		Waste per capita (kg / person / day)	<i>Project on environmental sanitation for coastal cities .</i>
20		Proportion of solid waste collected and treated appropriately (%)	<i>Project on environmental sanitation for coastal cities .</i>
21		Proportion of households with clean water	<p><i>Green Growth Strategy</i></p> <p><i>Decision 1659 / QD-TTg approving the national urban development program 2012-2020 the targets on % of population with access to clean water</i></p> <p><i>Decision 2157 / QD-</i></p>

		(%)	<i>TTg approves the set of indicators for monitoring and evaluating local sustainable development</i>
22		Percentage of population has access to sanitation	<i>Public Investment Law / Plan</i>
23		The number of jobs requires higher education	<i>Socio-Economic Development Plan 2016-20 et Ministry of Education and Training</i>
24		Number of green jobs created each year	<i>Green Growth Strategy</i>
25		The share of the high-tech industry / GDP	<i>Socio-Economic Development Plan 2016-20 et Ministry of Education and Training</i>
26		Income per capita (million VND / year)	<i>Socio-Economic Development Plan 2016-20 et Ministry of Education and Training</i>
27	<b>SI. Integrate in society</b>	The rate of poor households	<i>Socio-Economic Development Plan 2016-20 et Ministry of Education and Training</i>
28		Proportion of households with permanent houses (%)	<i>Circular 34 ( Indicator 2 in the subgroup 5: proportion of solid houses ( very solid, fairly solid, semi-solid in urban areas )</i>
29		Number of community	<i>Will survey</i>

		forums per year	
30		Mobile phone coverage (phone per capita?)	<i>Growth Competitiveness Index - Market Survey</i>
thirt y first		Number of internet connections / 100 citizen	<i>Growth Competitiveness Index - Market Survey</i>
32	IR. Institutional responsiveness	Master urban planning	<i>Green Growth Strategy Ministry of Construction</i>
34		Climate change action plan	<i>The environmental resources</i>
35		Disaster risk reduction plan	<i>Ministry of Construction - ISSET Ministry of Natural Resources and Environment</i>
36		Implementation policy VGGAP or PGGAP	<i>Green Growth Strategy - Green Growth Action Plan</i>
37		Green growth investment (e.g., environmental taxes)	<i>Green Growth Strategy - Action Plan for Green Growth - Strategies, Decree public-private cooperation, Guide green growth investments of the Ministry of Planning and Investment</i>
38		Green growth investment forums	<i>Will survey</i>
39		Training programs and capacity building for green growth	<i>Green Growth Strategy Green Growth Action Plan</i>
40		Monitor & evaluate green growth	<i>Green Growth Strategy</i>

### 5.2.7 Conclusion on setting targets



This proposed “List of Potential Green Growth Urban Indicators” means the application of the Ministry of Construction's “*who, what and how*” methodology, which is already in use. used in the Consultation Workshop. Specifically:

**What** - The green growth urban targets are increasingly moving towards green growth cities, acknowledging the important role of the Ministry of Construction in the implementation of not only the Green Growth Strategy and the Action Plan. urban green growth in the country, but also in the process of implementing the ministry's mandate on urbanization and overall planning orientation. The indicators examined, whether a preliminary list of indicators or the proposed Urban Green Growth Index, recognize broad socio-economic and environmental problems that are hindering. Vietnam's roadmap towards green growth. This is done on the basis of affirming the basic plans and policies, for example, the Urban Clean Energy Management Plan, as a baseline or benchmark to which progress can be assessed. It is also the framework for applying key metrics of clean energy and greenhouse gas emissions reduction - especially the fundraising process. This concept remains neutral from the perspective of whether the Urban Green Growth Indicators are incorporated into the Urban Classification System. Obviously, this issue is purely on the interpretation of the Ministry of Construction .

**How** - The indicators outlined in this Report outline the implementation roadmap based on interpretation of decisions approving the Green Growth Strategy and Urban Growth Action Plan. green attached. This content is also supplemented by specialized opinions of the National Assembly. The role of the Ministry of Construction has been affirmed in the National Green Growth Urban Action Plan, judging from the director of overall urban planning, Green City Index innovation and Urban Action Plans. green growth at the local level .

**Who** - It is assumed that MOC will promote the implementation of urban green growth targets through its activities at the central and local levels. This is also based on the assumption that the planning, monitoring & evaluation will take place mainly in the cities .

### 5.3 CONSULTATION PROCESS AND COMPLETE GREEN GROWTH URBAN FRAMEWORK

The reporting process, as one of a number of green growth urban initiatives, has the ability to coordinate MOC activities with local agencies. These agencies, with their urban planning mandate, will play a crucial role in the development of green growth strategies. Reporting, especially the development of the indicators framework, is likely to have better results with earlier participation of all stakeholders. Once involved, however, the Ministry of Construction updated their views and vision.

The core of this consultation process is the Consultation Workshop held in Thai Nguyen City in November 2015. The workshop is an opportunity to define the tasks associated with the setting of indicators. This content takes into account the urban planning context, as well as key groups of topics related to Economic Sustainability, Environmental Sustainability, Social Inclusion and Institutional Resilience through Group discussion session at the workshop.

Representatives from various ministries / sectors were involved, including the Ministry of Construction (Urban Development Department), the National Institute of Urban and Rural Planning, NGOs, communities, universities and Three cities were selected: Tra Vinh, Dien Ban and Thai Nguyen.

The consultation workshop gained a lot of different perspectives on the meaning of green growth - some well-grounded, but some not properly understood. However, five main subject groups have been raised, in favor of the revised 'approach' with the Urban Green Growth Index :

- □ The urban green growth model continues to be a multistage approach based on learning international best practices with logical steps. GGGI considers the proposed two-stage approach to the National Green Growth Urban Strategy.
- □ Any stage in the first place must also use the simplified norms based on benchmarks or baselines methods, can be evaluated by the method of *quantitative*

- □ Recognizing that, in order to develop a strong framework for the indicators, it is necessary to develop thematic groups and indicators with the responsibility assigned in the Green Growth Strategy and the Green Growth Action Plan. country ;
- □ On the basis of the Green Growth Strategy, more emphasis should be placed on incentive and measurement level ready for economic sustainability, by creating a favorable environment for investment in green growth, and
  - □ Simplifying measurement will be the key to success in implementation .

## 5.4 MECHANISM FOR THE APPLICATION OF THE GREEN GROWTH INDICATOR URBAN IN THE GREEN GROWTH MODEL

Urban Green Growth Indicators are *the main contents* related to the promulgation and gradual application of green growth criteria in all aspects of urban planning and urban management in Vietnam, and with the requirements of the Green Growth Strategy and respective Action Plans . Indicators municipality specify the issues to be addressed in all construction planning overall ( ratio 1; 10 000) and the detailed planning / zoning ( ratio 1; 2000) is for all localities in the Vietnam Urban Classification System. The issue of monitoring & evaluation to measure the implementation of localities has also been raised . In the long term, as more localities adopt and implement the Green Growth Urban Growth Model, effective processes will be developed to measure their performance. With a sufficiently large number of participating cities, it is possible to develop a national green growth urban index that can measure and compare performance across provinces .

In addition, these green growth urban targets will be described in all other components of the proposed Green Growth Urbanization Model for Viet Nam to ensure uniform implementation across the country. . First of all, the creation of a “Urban Green Growth Profile” will be the starting point for achieving the future of green growth after the approval of the Urban Green Growth Model. This will help familiarize yourself with green growth concepts and outcomes, gradually achieved by improvements in green space planning and urban management, and see green growth as the foundation for urban development .

## 5.5 TRACKING AND EVALUATION: CONCEPTS

### 5.5.1 Purpose of monitoring & evaluation

Monitoring means systematically gathering and analyzing information based on planned activities and targets set in the implementation of green growth urban initiatives. The data are collected in coordination with the set of indicators related to green growth measurement. An assessment will be made to compare the actual results and impacts with the issued strategic plan (or master plan) over the various stages of implementation .

In general, the purposes of monitoring & reviews are :

- Review progress achieved ;
- Identify problems that arise in planning and / or implementation ;
- Adjust to “make a difference” .
- Help identify problems and causes ;
- Proposing solutions to solve problems ;
- Review assumptions and strategies ;

#### *5. 5. 2 The role of monitoring & evaluation*

Monitoring & evaluation of the green growth urban planning process is important for many reasons :

- Allows for continuous and systematic assessment of progress toward green growth urban goals and strategic goals, while helping to meet the accountability requirement .
- Provide timely and quality information to track green growth urban indicators as outlined in the “Policy Outcome Matrix” .
- Provide *managers with* information to make urban green growth decisions .
- Enhance* capacity for monitoring and evaluation for the implementation and management of green growth urban processes so that information can be collected, analyzed and used effectively, from which make a decision .
- Provide *key stakeholders* with information and feedback on program planning, management and evaluation of action plan outcomes in urban green growth .

- □ As a basis for identifying and sharing difficulties and challenges to propose remedial solutions, successful lessons and best practices to improve the efficiency of urban green growth .

### 5. 5. 3 *Scope of monitoring & evaluation*

Monitoring & evaluation takes place at two separate levels, but with a close relationship:

- □ Tracking focuses on activities and outputs .
- □ Evaluation focuses on the results and their impact .

But both monitoring and evaluation are based on urban green growth indicators . However, there are other differences between monitoring & review :

- i. Follow :
  - □ Accept the design as it is ;
  - □ Measure progress ;
  - □ Focus on inputs and outputs ;
  - □ Concern for performance ;
  - □ Continuity .
- ii. Reviews :
  - □ Concern for efficiency ;
  - □ Draw conclusions and assessments ;
  - □ Becoming a milestone in the project cycle ;
  - □ Review project design and approach ;
  - □ Continuing the bases of the project .

However, it is important to emphasize the importance of follow-up. Green Growth Urban Action Plans need to be monitored to ensure the use of quality inputs, processes and implementation mechanisms in place to deliver outcomes and impacts such as expected. Many factors, including ineffective policies, sudden economic upheavals and ineffective strategies can also negatively affect progress toward green growth urban goals - if the data is not being tracked effectively .

## **5.6 ORIENTATION IN THE NEXT TIME**

**The urban green growth orientation in Vietnam in the coming time will depend on the resources provided to the government at all levels of the city .** Resource allocation to achieve green growth urban areas will encourage localities to adopt the Model towards Green Growth Cities, with a focus on integrating national and local Green Growth Action Plans. Phuong. The benefits of index of urban green growth Vietnam has achieved or not depends on whether there is a sufficient number of local gathering necessary data based tracking system & their reviews about Design Plan Green growth action. Without a large enough number of participating localities, it would be impossible

Vietnam Green Growth Urban Index .A conducive framework for the implementation of the Model towards Green Growth Cities, as the basis to meet the requirements of implementing the directions in the Green Growth Strategy and the National Green Growth Action Plan. This may be related to two types of documents under the authority of the Ministry of Construction: the Urban Classification System, and Decrees governing the formulation of Construction Master Plans :

#### *5. 6. 1 Vietnam urban classification system*

**The Urban Classification System is an effective tool for urban management in the spatial planning system .** This system sets out the standards that the locality must meet in order to be classified as a higher city in the System. In the context when localities rise to a higher urban category if they closely apply green growth indicators , it makes sense to incorporate green growth into existing standards. Therefore, the Government needs to amend and supplement the Urban Classification System to incorporate the requirements for compliance with green growth targets into each type of city in the system, in coordination with the goals of the Growth Strategy. blue. Finally, there is a need to encourage recognition of a city or town's green growth achievements in light of its compliance with the higher urban green growth minimum standards .

#### *5. 6. 2 The construction plan overall*

**The formulation of the Construction Master Plan ( scale 1:10 000) and the Subdivision Plans ( scale 1: 2000) are the main spatial planning tools**

**being administered by the government at all levels of the Division. Current urban type in use** . Therefore, the Ministry of Construction may issue a Circular applicable to governments at all levels of such urban areas, specifying the Terms of Affairs (TOR) for the preparation / amendment of Master Plans. a provision requires consultants to prepare / update the Green Growth City Profile and provide a checklist of all the policy requirements that need to be incorporated into the Master Plan. This checklist will be used as a monitoring & evaluation tool to check how far the Master Plan meets green growth requirements .

### *5. 6. 3 Conclusion*

Each plan has its own focus, and ideally should be implemented together. In the short term, however, the proposal is interested in expanding the content of the Master Construction Plans to refer to the Green Growth Urban Profiles, and in the long run, when the Urban Index increases. When green growth is completed, it is considered to integrate into the Urban Classification System .

## **6. REQUEST**

### **6.1 CONCEPTS FOR DEVELOPING GREEN GROWTH URBAN ACTION PLAN 'SECOND GENERATION'**

#### *6. first . 1 Background*

The basic requirement for the construction and operation of the National Green Growth Urban Index is to have a sufficient number of participating localities (i.e. cities and towns), to conduct urban spatial planning. The city focuses on achieving the future of green growth, while at the same time collecting the necessary data through an efficiency monitoring & evaluation process in line with green growth urban indicators .

The future green growth urban planning is implemented at two levels : 1) central ( MOC ), and 2) local ( all cities and towns in the Urban Classification System). market). The coordination between the two levels will be an important determinant of success . Currently, the Ministry of Construction - through the Urban Development Department - is actively developing indicators related to green growth urban areas, paving the way for the development of a standardized

set of indicators and an Urban Index. Vietnam green growth . At the local level, the action framework established under the National Green Growth Strategy and the National Green Growth Action Plan requires all cities and towns to develop a “Green Growth Action Plan”. is consistent with the criteria identified in the National Green Growth Strategy and the National Green Growth Action Plan . However, so far ( November 2015) only very few Green Growth Action Plans have been developed .

### *6. first . 2 Proposed Model towards urban green growth*

The aim of the Green Growth Urban Green Growth Model is to create a unified platform that enables localities to progressively move towards a green growth future on a five-step basis as outlined in Section 4.3. 3 of this Report .

The underlying philosophy of this Model is the "gradual" (step-by-step) approach because most localities lack resources and have many different priorities, making it difficult for them to commit to following war. Long-term strategy is characteristic of the future of urban green growth . However, defining a clear path to green growth, appropriate to local circumstances from the outset, will facilitate implementation, and ensure that a priority for the future is maintained. green growth. This goal can be achieved on the basis of the following criteria :

1. Recognize that the Urban Classification takes into account the differences in urban characteristics of each of the different categories within the system. The difference in size also applies to localities when defining the baseline before the commencement of green growth urban areas, whereby the lower the cities the lower the green growth criteria. less strict . However, when a locality rises to a higher urban category, they will have to adhere to stricter standards . This requires developing sub-indicators appropriate for each type of city in the Urban Classification System.
2. The starting point for a locality towards a green growth future (i.e. the first step) is to develop a Green Growth Urban Profile as outlined in Section 4.3.3 (1) above , as this is is the basis for building the framework and terms of reference for the Green Growth Action Plan . This requires a form of local instructions for the preparation steps .

### *6. first . 3 Recommendations*

The main content of the Model towards a green growth urban area is the Green Growth Action Plan. The criteria for developing the Green Growth Action Plan



have been extensively described in the Green Growth Strategy and the National Green Growth Action Plan. However, localities still need additional support to plan that . This is why it is necessary to have Guidelines for the formulation of “Second Generation” Green Growth Action Plans, recognizing variation in size between localities as well as limited resources for implementation. Green growth action plans as well as recommendations .

In addition , the “Second Generation” Work Plan must be designed and integrated with an ongoing and effective monitoring & evaluation process .

## 6.2 CONCEPT OF TRACKING & EVALUATION

### *6.2.1 Basic content of monitoring & reviews*

Monitoring & evaluation aims to answer the following questions, based on urban green growth indicators :

1. Has implementation through programs and projects been making progress as planned ?  
If so, have such strategic activities delivered the expected results ?
2. Evaluate how much has been achieved against the plan, to find a realization of the results achieved ;
3. To answer these questions, it is first necessary to design a monitoring & evaluation system that focuses specifically on urban green growth metrics. The design of a monitoring & evaluation system is the logical framing process to measure if sustainable results are desired and lessons learned are drawn from .

### *6.2.2 The indicators of urban green growth*

The set of green growth urban indicators as defined in the M&E framework because the most common method of assessment is based on urban green growth targets . These targets are essential data to answer fundamental questions about urban green growth, for example :

1. How will people's lives be affected ? ( now and in the future ) ;

2. How is the ecosystem affected ? ( now and in the future );
3. How will natural resources be affected ? Impact on quality of life and the environment ?
4. How do people affect the ecosystem ?
5. What impact do economic changes and policy solutions have ?

### *6.2.3 Steps for monitoring & evaluation :*

**Step 1:** Identify green growth targets. Outlined in the National Green Growth Strategy and the Green Growth Action Plan for ministries, sectors and localities.

**Step 2:** Identify green growth tracking content. Outlined in the National Green Growth Strategy and the Green Growth Action Plan for ministries, sectors and localities.

**Step 3:** Develop a set of indicators / targets for green growth monitoring. There are different views on green growth tracking indicators.

**Step 4:** Calculate based on selected green growth monitoring indicators. The method of calculating the criteria should ensure the completeness of information. It is necessary to consider building new targets.

**Step 5:** Evaluate the calculation results according to the identified content and monitoring criteria

**Step 6:** Adjust green growth monitoring targets, content, targets / indicators to suit local conditions

## **6.3 EXAMPLES OF GREEN GROWTH URBAN AMENITIES**

One of the difficulties facing urban managers at most urban levels in Vietnam is the lack of information about the true implications of the “urban green growth initiative” that can be applied to their town or town . This is an important content to convince urban leaders about the concept of green growth urban areas, and shows that a useful tool for urban managers can be a set of urban initiatives. The typical green growth market outlines the steps that need to be taken in the implementation process . The purpose of such a collection of initiatives is to equip urban managers with concrete examples of the potential benefits that can be achieved if committed to the future of green and real growth. shows steps to achieve that goal .

Those steps can include ( but don't stop at ) the following :

**Step 1 :** Identify 'green growth opportunities' in the green growth urban profile .

**Step 2 :** Discuss in detail “ that opportunity ” in the Green Growth Action Plan process as well as the concept of the green growth initiative along with the implementation process, including clear statements of results need to be achieved and monitoring & evaluation mechanisms .

**Step 3 :** City / town authorities approve green growth initiative and assign tasks to relevant agencies to implement

**Step 4:** Track & evaluate ( and report ) the implementation process

This set of typical green growth urban initiatives needs to be comprehensive and flexible enough to attract the attention of city leaders and stakeholders in their own cities and towns. all levels in the Urban Classification . The ultimate goal is to increase the number of locations that are committed to the future of green growth and contribute to the attainment of a sufficiently large number required to operate the Urban Green Growth Index across the country .

## **CONCLUDE**

The concept of “urban green growth” as stated by the World Bank in its recently published report... “ *in fact , [ green growth ] is a strategy to allow developing countries to increase. economic growth while minimizing environmental degradation ”* , is very suitable for application in Vietnam because this concept is about achieving economic growth but environmentally sustainable .

The necessary legal and administrative framework for achieving the future of green growth in Vietnam is in place, on the basis of the approval and implementation of the Green Growth Strategy and the National Green Growth Action Plan. However, in reality, there is still a lot to be done to turn words into

actions and translate into results. The economic model focuses on top-down management and, in theory, allows for the smooth implementation of urban policy initiatives at all levels of the urban system . However, in practice, this approach places too much emphasis on the central role of state management and does not devote sufficient resources to implement it at the local level .

With regard to the introduction of green growth urban concepts, it is understandable to focus on this activity at the central level (i.e. the Ministry of Construction with urban management responsibility) because there is a need for development mechanisms. implementing the National Green Growth Strategy and the National Green Growth Action Plan, to facilitate green growth urban activities at the local level .

The core of this mechanism, and at the heart of most of today's “green growth” activities, is the Urban Green Growth Index, which assesses progress towards achieving the green growth future on a large scale. country, and allow localities to compare their results with similar localities . The operating requirement of the Green Growth Urban Index is to have a large number of participating localities committed to the future of green growth and actively contribute to the operation of the Urban Green Growth Index for country. The development of such an Indicator is the fundamental goal of this project. However, the fact that the current lack and weakness of the data collection and analysis process means that there are no basic conditions to “measure” the urban green growth progress at Exactly needed .

However, it is clear that **the green growth urban indicators** as the basis for the measurement will be an important element of each step in the roadmap towards green growth at both the central and urban levels, and It is also the thread that connects the steps together in the path. Doing this will allow a priority shift to the content of the indicators and the application of the indicators at each step in the implementation of green growth concepts.

Doing so also recognizes the importance of government at all urban levels in the country, and shows the need for a gradual, step-by-step approach to ultimately achieve the future of growth. green for cities in the Urban Classification System. That means the following four core activities should be implemented at all urban levels in the implementation of the Green Growth Strategy :

- □ Comprehensive and realistic green growth action plans, based on identification and detailed assessment of local green growth achievements ;

- Encourage investment proposals to be designed and implemented in accordance with environmental impact control standards, considering climate change resilience, and sustainable use of natural resources, social and economic ;
  - Implementing a regular monitoring & evaluation program for all investment projects ;
- Continuous operation of the Urban Green Growth Index at a national scale relating to regular assessment of green growth achievements of cities and towns on the basis of comparing results with similar cities is in the Index .

The key is to understand the holistic, holistic picture and use a progressive, step-by-step approach at all urban levels. This process requires two types of interdependent activities to take place at the same time :

- At central level : issue necessary spatial planning tools to integrate green growth urban concepts into all phases of spatial planning and urban management.
- At local level : application of spatial planning tools to facilitate green growth investment proposals in line with approved green growth action plans

Finally, there should be a mechanism that addresses both these types of activities and focuses on actual implementation. To achieve this goal, we propose the “Model towards green growth urban areas”. In fact, it is a toolkit for urban planners and managers to achieve a green growth future at every step of the path towards green growth. It is becoming increasingly clear to the consultant team that the future green growth success of Vietnam's cities and towns depends on actions taken at the local level, and if not. With a sufficient number of participating cities, the Urban Green Growth Index does not mean much. Likewise, if localities do not provide sufficient data on their activities, this Indicator will not be effective .

Therefore, our main conclusion is that currently in Vietnam, more attention needs to be paid to integrating green growth concepts into all urban governance levels to complement ongoing activities. declared at the central level.

## **APPENDIX 1. BACKGROUND OF THE GREEN GROWTH URBAN INDICATOR FOR VIETNAM**

### **BACKGROUND IN THE COUNTRY**

Currently, Vietnam does not have a unified concept of “green growth”. In practice, however, to manage urban areas, Vietnam needs to have a clear view of green development, green criteria, and green standards to integrate green growth initiatives into construction planning, urban design and infrastructure, especially transport, water supply, drainage, wastewater treatment, energy supply, telecommunications, education, health, culture and green urban architectures. In particular, urban development poses a threat to natural habitats due to indiscriminate discharge of waste, especially solid waste and wastewater. According to statistics, 80-85% of the current urban areas use unhygienic landfills and lead to serious environmental pollution. Cities, especially Hanoi and Ho Chi Minh City, are facing many problems such as lack of basic infrastructure, flooding, traffic congestion and challenges related to environmental degradation and change. climate, etc... .

The above evidence suggests that a unified concept of green growth needs to be rapidly established to govern all socio-economic, environmental and institutional activities. Therefore, the first task when building a green growth index is to systematize and synthesize concepts related to green growth, to form a unified concept of green growth, as a scientific basis. for the green growth index discussion. To this end, as outlined in the Report's Introduction, the heart of this study is to review all the “green” growth urban indicators (ie pre-listing), and identifying and testing growth-appropriate indicators in all four dimensions above (ie shortlist) - “ *environmental sustainability, as well as economic, social and institutional goals* ”.

### **KEY DOCUMENTS**

The Green Growth Index development framework is established on the basis of reference to the following main documents :

**GGGI strategic plan for the period 2015 - 2020**

**The GGGI Strategic Plan 2015 - 2020** defines green growth as follows ( pp. 14-15):

*“ Towards a definition of green growth*

- Focusing on economic growth as the driving force behind welfare improvements and poverty reduction .*
- Include economic and political factors, considering the effective role of institutions and non-state actors ( eg, business and civil society ).*
- Have a specific context . There is no best green growth pathway in all economic, environmental and social dimensions, but green growth recognizes a coherent, interoperable relationship between these aspects .*
- Recognizing the value of natural resources, enhancing resilience, inclusion in society and equality ”*

It is important that we use this concept as the basis for all our activities and outputs related to the “Phase 1 Urban Green Growth Urban Environmental Action” project.

## **Vietnam Green Growth Strategy**

### **General goals :**

Green growth strategy has been approved by the Prime Minister in Decision 1393 / QDD-TTg dated 25/9 / 2012. As a tool to achieve economies of low-carbon and resource enrichment

18 Accelerate the transition to a New Growth Model . Global Green Growth Institute , 2015 ( p. 15)

Natural resources, green growth will become the main direction in sustainable economic development; reducing greenhouse gas emissions and increasing the ability to absorb greenhouse gases. All of these factors will gradually become important indicators in socio-economic development .

### **Specific goals :**

- □ Restructuring economy and perfecting economic institutions on the basis of green development of existing industries and encouraging economic sectors to use energy and natural resources efficiently with added value. higher ;
- □ Conduct research and increase the application of advanced technologies to use natural resources more efficiently, reduce the intensity of greenhouse gas emissions and contribute actively to respond to climate change ;
- □ Improving people's living standards, creating environmentally friendly lifestyles on the basis of job creation from green industries, agriculture and services; investing in natural resources; and green infrastructure development .

### **GDP growth targets and GHG emissions reduction**

The Vietnam Green Growth Strategy has outlined the following targets for economic growth and greenhouse gas emission reduction :

#### □ □ By 2020 :

- To double GDP per capita compared to 2010
- Reduce energy consumption per unit of GDP by 1.5 - 2% per year
- Reduce the intensity of greenhouse gas emissions per unit of GDP by 8-10% or double this indicator with international support.

#### □ □ By 2030 :

- Reduce total greenhouse gas emissions at least 1% per year without international assistance, and 2% with international support .
- Addressing environmental degradation and improve natural resources while strengthening the accessibility and use of green technologies .

#### □ □ By 2050 , Vietnam integrates green economic development.

**Important tasks :** ( as determined by the Ministry of Planning and Investment )

- □ Processes s eat green production and recovery of natural resources .



- Reducing greenhouse gas emissions intensity ( per unit of GDP) and boosting the use of book energy, renewable energy .
- □ Promote green lifestyles and sustainable consumption .

**The main challenge :**

Source : " Presentation to the G20 Development Working Group - workshop on green growth in social inclusion " - Ministry of Planning and Investment and Ministry of Finance, Moscow, July 2013.

- □ Moving from building to implementing the strategy :
  - □ Developing provincial and sector target setting mechanisms requires tools / mechanisms
    - □ Criteria for green growth programs / projects .
- □ Evaluation of investment requirements
  - □ Capital sources ( domestic - foreign )
  - □ Evaluate which market mechanism is appropriate
  - □ Promote private sector participation
- □ Strengthen coordination among development partners :
  - □ A coordination mechanism has been developed, but it needs to be implemented
  - □ Development partners have similar approaches that hinder coordination
- □ Limited understanding at the local level.
- □ Despite the great potential for mutual benefits, initial investment costs are still very large for the private sector, so new capital mobilization mechanisms are needed .

- □ Financial uncertainty for climate change and a green climate fund undermine medium to long term commitments .

## **Urban Classification System**

The Urban Classification System is a solid basis for the application of a suitable green growth indicator system for each type of city in this system . See Section 6.4.6 of this report for details to learn more about the potential Green Growth Indicators that can be applied .

### **Legal corridor**

The current Urban Classification System is regulated in Decree 42/2009 / ND-CP, replacing Decree 72/2001 / ND-CP and Circular 34/2009 / TT-BXD. This Circular has been issued by the Ministry of Construction to guide in detail the implementation of Decree 42/2009 / ND-CP .

According to Circular 34 , an area called an “urban” when it meets the requirements is “ a high density residential area and mainly operates in the non-agricultural economic sector, It is a political, administrative, economic, cultural or professional center, playing a role in promoting the socio-economic development of a country or a territory ”. However, many peri-urban areas ( areas within the urban belt ) are still classified as “rural ” although they are increasingly becoming an important part of the city and have urban features such as mentioned above and according to the criteria used in the newly issued Law on Urban Planning ( Ministry of Construction 2009).

### **Criteria to become urban**

Decree 42/2009 / ND-CP outlines 6 groups of criteria for classifying urban and rural areas. Circular 34/2009 / TT-BXD details 6 groups of indicators . The most important targets in the Decree are :

- □ Functions of an urban center : Is an integrated or specialized center, national, inter-provincial, provincial, district-level, or a regional center in the province; plays a role in promoting socio-economic development of the country or a certain territory
  - □ The minimum urban population size must reach 4 thousand people or more

- □ Population density is consistent with the size, nature and characteristics of each type of urban area and is calculated within the inner city, inner city and built-up quarter of the town . This means that each type of city requires a different population density and is only counted within the inner city and inner city of the entire urban area ( including urban and rural areas ).
- □ Percentage of non-agricultural workers calculated within the inner city, inner city boundaries, and in concentrated construction areas must be at least 65% of the total number of employees.
- □ System of urban infrastructure works including social infrastructure system and technical infrastructure system :
  - □ For inner-city areas, inner cities must be constructed synchronously and complete according to each type of urban center .
  - □ For suburban and suburban areas, it is necessary to invest in the synchronous construction of the infrastructure network and ensure the requirements of environmental protection and sustainable urban development.
- □ Architecture, urban landscape: the construction of urban development must comply with the approved urban architecture management regulations, with model urban areas, civilized urban streets, and public spaces. community in service of the spiritual life of urban residents; has a typical architectural complex or works and is suitable for the environment and natural landscape .

### **Criteria to be upgraded in the Urban Classification System**

The local leaders considered the urban classification a key factor in their tenure . The higher the urban type, the higher the status and the more resources it will bring . Motivations for leaders to strive for a higher urban ( or at least becoming urban center ) type of city include :

- □ Cities are considered as hubs to promote economic growth, thereby promoting economic development. The urban population is characterized by a high population density, better-trained labor, and basic conditions for the development of industries and services. The higher the urban type, the more it is considered a "certificate" to attract investors to do business ;

- □ A higher urban rating is often associated with a higher mobilization of capital investment. This investment capital includes both the state budget and the investment of the business sector ;
- □ Cities gradually meet the criteria needed to be classified as a higher city. If a city does not meet all of the criteria in a certain type of city, the motivation to achieve the remaining criteria is even stronger. This process will enable them to move up from a low-grade city to a higher-tier city ;
- □ A higher urban rating is often tied to being promoted in the administrative system. Each administrative level (province, district, and commune) has a higher degree of autonomy than the lower administrative units .

### **National Green Growth Urban Action Plan**

The Green Growth Urban Action Plan has been approved by the Government of Vietnam in accordance with Decision 403 dated 20/3/2014 of the Prime Minister, detailing the activities related to green growth cities will be implemented in the period 2014-2020. Seven policy actions ( from 54. 60) and 11 operations were performed . It should be noted that the five green growth urban policy directions in the Green Growth Strategy have been concretized into 7 actions and further detailed into 14 activities in the period 2013-2020.

Action 54 - related to urban planning / master planning

- □ Review and revise urban master plans and develop urban innovation plans according to sustainable standards
  - □ Review and adjust overall urban planning towards a sustainable city ;
- □ Ensure that cities achieve medium and above average Green Growth Index by 2020
- □ Guide the development of pilot action plans for urban green growth in some tourist cities (Hoi An, Sa Pa, Hue, Vung Tau, Da Lat) and disseminate experiences .

Actions 55, 57 & 58 - related to urban technical infrastructure development

- □ Select and construct a number of severely degraded old cities to improve the quality of housing, energy, transportation, water supply, drainage and environmental landscape .
- □ Issue policies to promote green technologies in building materials and manufacturing construction equipment .

- □ Enhance the application of Vietnamese construction standards (TCXDVN) on "works using energy economically and efficiently" for 100% of new or renovated projects according to this regulation .
- □ Strengthen monitoring and management of works on economical and efficient use of energy .
- □ Strengthen propaganda about the application of "green buildings" to use energy economically and efficiently in public buildings and businesses .

Action 56 - deals with the development of green cities, eco-urban areas and green buildings

- □ Develop systems of urban architecture and planning standards, use green materials and environmentally-friendly construction methods, save energy, reduce greenhouse gas emissions, and develop apply appropriate technology for urban waste.
- □ Enacting regulations on the mandatory use of green building solutions for real estate companies, new commercial buildings, and rehabilitation of existing neighborhoods in urban areas .

Action 59 - related to urban traffic

- □ Renovate and invest in the development of urban transport systems in centrally-run cities to achieve the average level of developed countries in the region .

Action 60 - involving green urban landscapes

- □ Allocating public land to increase water surface and green spaces in urban areas to reach specified levels .
- □ Promulgating civilized lifestyle standards, conserving natural resources, and environmentally friendly lifestyles.

### **National Urban Development Plan**

The National Urban Development Plan for the period 2012-2020 was approved by the Prime Minister in Decision 1659 / QDD-TTg dated November 7, 2012. Accordingly , 45% of Vietnam's population will live in urban areas by 2020. By 2020 the urban system will include two special cities, 312 urban

centers of grade I-IV and about 620 urban centers. Category V. This plan sets out a number of policy solutions to achieve the set objectives, including policies related to institutions, overall urban planning, awareness raising, human development. finance and science and technology . Among them, only a few policy solutions are directly related to urban green growth, namely :

- a. Conducting research on green urban development to ensure rapid and sustainable urbanization; implementing the Green Growth Strategy ;
- b. Implement policies to promote new, advanced, and environmentally friendly building materials using new technologies in the development of quality houses; preferential housing price for low-income people .
- c. Research on energy saving solutions / measures in residential, office and service buildings .

### **National statistical system**

Decision 43/2010 / QD-TTg dated June 2 , 2010 of the Prime Minister identified the national statistical indicators. A total of 35 indicators, of which 5 are economic and environmental indicators related to green growth monitoring & evaluation, namely :

1. Consumption and increase / decrease in energy consumption relative to GDP ;
2. GDP per capita ( in VND and USD );
3. The concentration of a number of toxic substances in the air ;
4. Number of days, the concentration of hazardous substances in the air exceeds the permitted standards ;
  
5. Greenhouse gas emissions per capita . However, these indicators are not organized according to urban planning and development functions, and therefore are inconsistent with indicators required to develop a green growth index .

### **CONFERENCES RELATED TO THE CONCEPTS "GREEN URBAN"**

Although so far there is no unified concept of “green growth” in Vietnam, the general concept of 'green cities' has been known. In many different seminars,

researchers have raised many problems and phenomena related to the idea of green city in general .

At the conference " Urban greener " by the National University held on 16-17 / 12/2010, in Hanoi, Pham Ngoc Dang, chairman of the M, O the Construction Vietnam has launched 7 Group Home green urban projects and received the consent of the majority of scholars, namely : (1) green space , (2) green buildings ; (3) green traffic ; (4) green industry ; (5) green urban environmental quality ; (6) preserving natural landscapes, cultural and historical works ; (7) the community lives in harmony with the environment .

At the international conference " Green-Smart Urban Planning and Development Vietnam " by Vietnam Urban Planning Association in collaboration with Korean Institute of Human Settlement and JUNGDO UIT Group Inc. ( Korea ) held on July 11, 2013, former Deputy Minister of Construction Tran Ngoc Chinh said that the concept of a green city is not simply a city with lots of green trees, but a friendly sustainable city. for people, save energy, and achieve the seven contents that Mr. Pham Ngoc Dang mentioned above : green space; green building; green traffic; green industry; green urban environment quality; preserving natural landscapes, cultural and historical works; the community lives in harmony with the environment .

## **PROVINCES, CITIES AND Towns Provincial Statistical System**

Circular 02/2011 / TTBKHDT, dated 10/1/2011 of the Ministry of Planning and Investment, issued the local statistical indicators . There are a total of 144 provincial indicators, including 5 indicators close to the green city requirements, for example : (1). GDP per capita ( in VND, USD ); (2). rate of urban and industrial zones , export processing zones and industrial clusters with wastewater and solid waste treatment plants ; (3). Percentage of hazardous waste is treated in accordance with standards and regulations ; (4). The proportion of production wastewater is treated in accordance with the respective standards and regulations ; (5). The proportion of solid waste is treated in accordance with the respective standards and regulations .

However, some of the aforementioned indicators are not classified according to the urban categories in the Urban Classification 19 . Since the cities are under the jurisdiction of the provinces and some are directly under the central government, the figures reflect the urban realities inaccurate .

## Experience in developing Provincial Competitiveness Index (PCI)

So far in Vietnam, there is no set of indicators and indicators for green growth. However, in recent years, many indicators have been formulated with the support of international organizations, for example, the Department of Urban Development (Ministry of Construction) in accordance with the UN-Habitat Construction Only number of Prosperous Cities ; The Strategic and Environmental Policy Institute (Ministry of Natural Resources and Environment) collaborates with the Hans Seidel Foundation to develop a local environmental sustainability index; Chamber of Industry and Commerce Vietnam (VCCI) matching USAID has developed a set of indicators and Provincial Competitiveness Index (PCI), etc ... . Among the indicators that have been and are being developed, the Provincial Competitiveness Index is considered to be the most successful. Below is the experience in developing the Provincial Competitiveness Index in Vietnam [Dau Anh Tuan, VCCI] :

- a) The concept, role, position and person in charge must be clearly defined

### 19 Urban Classification System

PCI is the Provincial Competitiveness Index. The PCI measures the quality of real economic management in the locality, not the level of development. The quality of management depends on the policies under the authority of the local government. Policy must originate from local good practice, not theory; through the assessment of the businesses operating in the area , not the province's plans, policies or plans. The PCI makes a relatively fair comparison of provinces with different levels of development .

The PCI meets the requirements to address development problems in Vietnam, including :



- i. lack of accountability ;
- ii. service quality and public policy are low due to lack of consultation and feedback from businesses and people ;
- iii. decentralization but lack of tools for monitoring, capacity building and implementation of assessment indicators ;
- iv. Inadequate attention is paid to the household economy while giving preference to foreign-invested enterprises and state-owned enterprises .

PCI is the result of cooperation between VCCI and USAID, implemented since 2005. In the period 2005-2012, the Project Competitiveness Initiative Vietnam (USAID / VCCI) was implemented . VCCI has been directly managing this project since 2013 with the support of experts, including VCCI experts and international experts, along with the participation and technical assistance of Vietnamese experts from research institutes, universities, central and local ministries / sectors, international organizations, business associations and independent consultants .

#### b) Soft data collection

Data to build the index are gathered from a variety of sources. The main sources are 'soft data' collected through surveys, using an objective survey approach to random sampling techniques .

- The survey questionnaire includes background information about businesses and their assessment of local economic management. The questions are tailored to the Vietnamese context ;
- Surveys are conducted both in person and by mail. Direct survey has the advantage of a high response rate but the disadvantages are large costs, information is not guaranteed, and respondents are less open. Therefore, interviewing skills and personal traits are of paramount importance. Mail survey has the disadvantage of low response rates ;
- Select a random sample based on a numbered list of businesses locally. Stratified random sampling is to ensure a uniform level of distribution , so that it is possible to group businesses by type, area of activity and years of operation, and then define the contact information to send. postal questionnaires with proportions of distribution criteria are interrelated. Firms are selected randomly according to a certain percentage in each group in the province, then randomized. The value of random numbers was associated with the firms surveyed. Samples focusing on large cities should be avoided. Need to allocate according to the proportion of enterprises in the provinces .

c) Collect hard data and build sub-indices

Hard data helps to limit the so-called "benchmark of comparison" , due to limited understanding of the situation in different localities, making comparisons at different stages and not an ideal reference model. . Data collection from officially published sources is also very good and is combined with the enterprise survey to calculate the final indicator . After collecting the relevant hard data, only those that reflect the results of local economic management are retained .

The main source of hard data includes : (1) Comprehensive enterprise survey by the General Statistics Office ; (2) Data from the Ministry of Natural Resources and Environment ; (3) Data from the Ministry of Industry and Trade ; (4) Data of the Supreme People's Court ; (5) Data of the Ministry of Education and Training ; (6) figures from the Ministry of Labor, Invalids and Social Affairs ; (7) data are collected from provinces .

Sub-indicators are built into many different groups, based on specific economic management theories and policies of Vietnam. All are grouped into 10 sub-indicators .

d) Diagnose and standardize scores and weights

The diagnosis ensures that if similar surveys with other businesses are performed, the results of the index will remain unchanged. The selection of indicators with statistical value is to perform such examination and diagnosis. It is necessary to ensure that the meaning of the rating matches the standard deviation .

After selecting the indicators and sub-indicators, scores will be standardized on a 10-point scale for the sub-indicators. Standardization is performed by the following formula :

-  $Minimum$  ]

$Score_{Province i}$

in which :

$$= 9 \times \frac{i}{[Maximum - Minimum]}$$

- Score Province: province's target score i
- Province i : target value of province i;
- Minimum: minimum target value in the deployment phase ;
- Maximum: maximum target value in the deployment stage ;

The weighting for each sub-index to create the final index will be based on the impact of these sub-indices on the target (number of firms or size of capital invested) .

## REALITY

### Typical sets of indicators

Some typical sets of indicators are currently under construction :

- □ Sustainable Development Monitoring & Evaluation Indicators ;
- □ urban monitoring indicators ;
- □ urban consumption indicators ;
- □ urban environmental quality indicators ;
- □ Sustainable Urban Environment Index ;
- □ urban indicators worth living ;
- □ Urban resilience indicator

For a complete list of indicators and indicators that have been completed or are being developed in Vietnam, see Section 6.3.6 below .

### **Profile of Vietnamese cities**

In 2012, the Association of Cities of Vietnam cooperated with UN-Habitat to implement a project titled " Building a monitoring system for Vietnam's urban index ". The project developed the Viet Nam Urban Index and collected data in the economic, social, environmental and urban management sectors. Data collected from municipalities is an important source of information for the preparation of the "Vietnam City Profile" report. This report presents an overview of the developments of each city, including: history of the city, administrative features, land, population, economic, cultural, and infrastructure workforce. environment. The report has documented 78 cities out of 770 cities in Vietnam. However, very few figures in the "Profile of Vietnamese cities" are closely related to the indicators that have the potential to build a green growth index .

### **Overview of potential green growth indicators**

When identifying green growth theme groups and indicators, the following should be noted :

- □ Economic indicators are often given a lot of attention from the beginning, so the number of these indicators is often higher than that of other subject groups. However, like in many other developing countries , in Vietnam, the level of consistency among indicators has not been paid much attention; Therefore, to complete the statistical system, statistics need to be collected from many different sources and processed in combination .
- □ Social indicators : have been paid attention to , but their accuracy is not high because there are many different understandings of these concepts. In annual statistical yearbooks, the number of social indicators is often less than economic indicators, but the number of these indicators has been expanded on the basis of people's living standard censuses. Therefore, before comparing, it is necessary to analyze and define clearly the properties of these indicators .
- □ Environmental indicators : There are very few quantitative indicators and cannot be qualitatively calculated .

The Vietnamese statistical system pays little attention to these indicators because the environment was not the topic that was integrated into the

system in the first place . Environmental data are often collected through small-scale surveys, studies and sample measurements of some pollution parameters in several urban centers, industrial zones, etc. Therefore, there are very few environmental indicators with sufficient data for a sufficiently long time .

### **Weak risks in Vietnam Green Growth Index**

In general , the weaknesses in the Vietnam Green Growth Index can be found in the following points :

- □ The green growth indicator set has not been officially integrated into the current statistical system of Vietnam. In addition to the General Statistics Office, many other agencies also collect green growth statistics, or analyze green growth indicators related to the sector in which they are in charge. That leads to the fact that there are many statistics on an indicator. As a result, it is difficult to check the accuracy, quality and consistency of these figures .
- □ Several green growth targets have been developed through censuses, so it is not possible to meet the requirement for continuity over time (eg, the living standard census is conducted every two years. times )
- □ Central and local socio-economic statistics (provinces and cities) are incompatible, and statistical data on green growth indicators is no exception .

## **APPENDIX 2. ASIA GREEN URBAN INDICATORS**

### **BUILDING INDICATORS**

**Number of indicators in one set :** The Asian Green City Index 20 measures and measures the environmental performance of 22 major Asian cities, as well as a commitment to mitigate their environmental impact in the future. . The selection of these cities depends on many factors such as their size and importance . Data availability is an important factor in the selection process. This index had to exclude some cities in the first place due to the lack of available data, for example, Ho Chi Minh City for such reasons .

**Methodology** : has been developed by EIU in cooperation with Siemens, based on the practices drawn from the Green Cities Index of many other regions . To apply to Asia , the structure of this indicator has been adjusted to accommodate the changes in data quality and availability , as well as the region-specific environmental challenges . An independent international team of sustainable urban development experts provide expertise and key responses in the development of the Asian Green City Index . Due to concerns that the data is not reliable or comparable enough to support the Index's detailed ranking results, the Asian Green City Index is presented in five groups corresponding to the score. medium .

**Subject groups** : The Asian Green City Index is scored in all eight groups of issues : energy and CO<sub>2</sub>, land use and buildings , transport, waste, water, sanitation, air quality, and environmental governance, blunt with 29 specific targets . 14 indicators are quantitative and measure the performance of a city, such as the rate of water loss or the degree of waste discharged by a city . The remaining 15 qualitative indicators assess policies and plans, for example a city's commitment to reduce the impact of energy consumption on the environment, green standards for state construction projects, Reduce traffic congestion or recycle waste .

**Data collection** : the EIU team of experts gathered data from April to June 2010. Data were collected from official sources that are publicly available, wherever possible, for example, from the company. central or regional statistical offices, local governments , local public utilities, municipal or regional environmental agencies, and environment ministries. Data for the two years 2008-2009 are collected , but if not available then data for the previous years will be collected .

The availability and reliability of data in these Asian cities is much more limited than in other regions . The Index had to use the most recent available data for each city, even if it could lead to a situation in some cases, due to the cities' ability to collect and publish data rapidly. There are differences, so the points of comparison are sometimes separated by several years . In the event of a data gaps , the EIU will make an estimate based on national averages or other available data.

The EIU did its best to collect the most recent data, including examining the quantitative data with the cities' environmental agencies . EIU also liaises with data providers in the event of some data

uncertainty . To calculate points for each group , in each group, there are basic criteria, with the same weight when aggregating. The scores are then converted back on a scale from 0 to 100. To calculate an Overall Index score , the EIU assigns 8 weights to each group of scores to ensure that no group is more important than the others . Basically, the Index is the result of aggregating the scores of the groups, on a scale of 100. The same weight of each group reflects the responses of the expert group .

20 EIU - Asian Green City Index

## **Figure 1: Summary of urban green growth indicators** ( source : EIU)

Finally , cities are ranked in one of five tiers, by category and by overall score . Tiers are determined based on the mean and are defined using the standard deviation - a statistical term representing the range around the mean, accounting for two thirds of the value . The tiers are defined as follows :

1. Good : Score 1.5 times higher standard deviation of the mean
2. Above average : Score as high as 0.5 to 1.5 times the standard deviation of the mean
3. Average : Score from 0.5 times standard deviation below the mean and 0.5 times the standard deviation above the mean
4. Under average : Score between 0.5 and 1.5 times the standard deviation below the mean
5. Weak : Score 1.5 times higher than standard deviation below mean .

**Urban clusters** : For a more in-depth analysis of urban trends, the 22 cities in the Index have been clustered into several groups, according to population size, area, income, population density and temperature, Specifically :

1. Population : " small population ", under 5 million people ; " Average population ", from 5 - 10 million people ; and " populous " over 10 million people .
2. Area : " small area ", administrative area less than 1,000 km<sup>2</sup> ; " Medium area ", the administrative area from 1,000 km<sup>2</sup> to 5,000 km<sup>2</sup> ; and " large area ", the administrative area of 5,000 km<sup>2</sup> or more .
3. Income : " low income ", with per capita income less than US \$ 10,000; " Middle income ", with per capita income between US \$ 10,000 and US \$ 25,000; and " high income ", with per capita income over US \$ 25,000.
4. Population density : " low density ", with a population of less than 5,000 people / km<sup>2</sup> ; " Average density ", with a population of between 5,000 people / km<sup>2</sup> and 10,000 people / km<sup>2</sup> ; and " high density ", with a population of 10,000 people / km<sup>2</sup> or more .



5. Temperature : " low temperature ", with average temperatures below 16 C<sup>0</sup>; " Average temperature ", with an average temperature of 16 C<sup>0</sup> to 25 C<sup>0</sup>; and " high temperature ", with average temperatures above 25 C<sup>0</sup>.

**Table 4. Asian Green City Indicators**

<b>The me</b>	<b>Targets</b>	<b>Categ ory</b>	<b>Weig ht</b>	<b>Desc ription</b>	<b>Meth od</b>
1. Ener gy and CO <sub>2</sub>	1. CO <sub>2</sub> emiss ions per capita	Quantitativ e	25%	Each city's total annual CO <sub>2</sub> emissions come from total energy consumption, in tons per capita	Estimate m in-max
	2. Energy consumption per unit of GDP	Quantitativ e	25%	Total annual energy consumed by the city , calculatedmega-joules per unit of GDP ( thousand US \$, current price ).	Min-max
	3. Clean energy policy	Qualitative	25%	Measure the city's effort to reduce carbon emissions from energy consumption	Scored by the EIU expert on a scale of 0-10
	4. Action plan to respond to climate change	Qualitative	25%	Measure the strategy of a city to tackle the factors that are driving its climate change	Scored by the EIU expert on a scale of 0-10
	5. Green space per capita	Quantitativ e	25%	Total all parks, public recreation areas, green corridor, waterway conservation and other	0 - max; stan dard maximum 100m <sup>2</sup> per

2. Use of land and structures				areas where people can access , per m <sup>2</sup> / people .	person to avoid anomalous values (outliers)
	6. Population density	Quantitative	25%	Population density , calculated by number of people / km <sup>2</sup>	Min-max; standard maximum 100m <sup>2</sup> per person to handle the differences in definition of territory
	7. Ecotourism policy	Qualitative	25%	Measure a city 's effort to reduce the environmental impact of buildings	Scored by the EIU expert on a scale of 0-10
	8. Land use policy	Qualitative	25%	Measure a city's efforts to reduce the environmental and ecological impacts of urban development	Scored by the EIU expert on a scale of 0-10
3. Traffic	9. Preeminent public transport network	Quantitative	33%	The total length of the network including all preeminent types of public transport, e.g. BRT, metro , light rail and metro , measured by the area of the city ( in km / km <sup>2</sup> ).	0 - max; standard maximum 0.3km / km <sup>2</sup> to avoid outliers

	10. Policy for large-volume urban transport	Qualitative	33%	Measure a city 's efforts to build an alternative mass transit system for private vehicles	Scored by the EIU expert on a scale of 0-10 .
	11. Policy to minimize traffic congestion	Qualitative	33%	Measure a city's effort to reduce traffic congestion .	Scored by the EIU expert on a scale of 0-10
4. Waste	12. Proportion of waste collected and disposed of appropriately	Quantitative	25%	Proportion of waste collected and disposed of appropriately in sanitary landfills, or in landfills, or in approved recycling facilities . Calculated according to the total amount of waste discharged in the city .	Min-max.
	13. Waste per capita	Quantitative	25%	The total amount of waste in a city, including waste that is not officially collected and disposed of , is in kg per capita .	0 -max

The me	Targets	Cat ego ry	Wei ght	D e s c r i p	Method
--------	---------	------------	---------	---------------	--------

				Indicator	
	14. Waste collection and treatment policy	Qualitative	25%	Measure a city's effort to improve or sustainably improve its waste collection and treatment system to minimize its impact on the environment	Scored by the EIU expert on a scale of 0-10
	15. Waste recycling and reuse policy	Qualitative	25%	Measure a city's effort to reduce, recycle and reuse waste	Scored by the EIU expert on a scale of 0-10
5. Water	16. Water consumption per capita	Quantitative	25%	Total daily water consumption of the city, in liters / person .	Calculated according to the ceiling level of 500 liters / person and the floor level of 100 liters / person / day .
	17. Losses in the water system	Quantitative	25%	Proportion of water lost during transportation from supplier to end consumer , excluding illegally harvested water or on-site leaks, as measured by total water supplied	0 - max; ceiling level 45% to avoid outliers

	18. Water quality policy	Qualitative	25%	Measure a city's policy to improve the quality of surface water and drinking water .	Scored by the EIU expert on a scale of 0-10 .
	19. Sustainable water policy	Qualitative	25%	Measuring a city's effort to manage water effectively .	Scored by the EIU expert on a scale of 0-10 .
6. Sanitation	10. The people have access to improved sanitation	Quantitative	33%	Proportion of residents directly connected to the drainage system, or with access to improved on-site treatment sites, eg septic tanks and improved non-public toilets . This figure does not include public toilets or drainage systems and other shared facilities .	0-max; ceiling level 20% to avoid outliers .
	21. Proportion of treated wastewater	Quantitative	33%	The proportion of municipal wastewater collected and treated is at least basic level .	0-max; ceiling level 10% to avoid outliers
	22. Sanitation policy	Qualitative	33%	Measure a city's effort to reduce pollution with the right sanitation	Scored by the EIU expert on a scale of 0-10 .

7. Air quality	23. Nitrogen dioxide (NO <sub>2</sub> ) concentration	Quantitative	25%	Average daily concentration of NO <sub>2</sub> .	Calculated according to the floor level 40ug / m <sup>3</sup> (EIU calculated according to the WHO criteria) and the ceiling 80ug / m <sup>3</sup> to avoid outliers
	24. Concentration sulphur dioxide (SO <sub>2</sub> )	Quantitative	25%	Average daily SO <sub>2</sub> concentration.	Calculated according to 10ug / m <sup>3</sup> floor level (EIU calculated according to WHO targets) and ceiling 50ug / m <sup>3</sup> to avoid outliers
	25. Concentration of suspended matter	Quantitative	25%	Average daily PM10 concentration	Calculated at a floor level of 20ug / m <sup>3</sup> (according to WHO targets)

Theme	Targets	Category	Weight	Description	Method
					and a floor level of 200ug / m <sup>3</sup> to avoid outliers
	26. Clean air policy	Qualitative	25%	Measure a city's effort to reduce air pollution	Scored by the EIU expert on a scale of 0-10 .
8. Environ	27. Environmental Management	Qualitative	33%	Measure the city's environmental monitoring level .	Scored by the EIU expert on a

mental governance					scale of 0-10 .
	28. Environ mental monitoring	Qualitative	33%	Measure city efforts to monitor environmental performance .	Scored by the EIU expert on a scale of 0-10 .
	29. People's participation	Qualitative	33%	Measure the city's efforts to engage citizens in environmental decision-making.	Scored by the EIU expert on a scale of 0-10 .

There are a total of 29 indicators , of which 14 are quantitative and 15 are qualitative . Quantitative indicators are gathered from a variety of sources . The qualitative indicators are calculated by the EIU experts [ Asia Green City Index (2011)]

## EIU'S GREEN URBAN INDICATOR CONSTRUCTION EXPERIENCE FOR HANOI

The EIU has developed green growth indices for many cities around the world with relatively similar methods, groups of themes and number of indicators . Therefore, this report concedes the Green Growth Urban Index that EIU has developed for Hanoi in 2011 [ Asian Green City Index (2011)].

*(first). The base indicators state the source of the data :*

- Total population ( million people ) 6.5
- Administrative area (km 2 ) 3,344.6
- GDP per capita ( current prices ) (US \$) 1,739.6
- Population density ( person / km 2 ) 1,935.1



□ □ Temperature ( 24- hour average , yearly ) (° C) 24.0

Source : Data used for  
Hanoi

Hanoi, the 1,000-year-old capital and one of the five centrally-run cities of Vietnam, is located in the North along the Red River . Hanoi tripled in August 2008, when a neighboring province along with several other districts and communes was merged , with a population of about 8% out of a total of 86 million people . However, with a population of 6 , 5 million people, still ranks behind Hanoi, Ho Chi Minh City in the south of the population size and economic importance .

The city's economy has grown rapidly in the past decade, accounting for about 13% of Vietnam's GDP . Compared to other cities in the Asian Green City Index , Hanoi has a per capita income below average, at US \$ 1,700. Hanoi is ranked above the overall average in the Index .

Hanoi's best results show energy and CO<sub>2</sub>, air quality and waste with average ratings . Special strengths in these groups include relatively low estimated CO<sub>2</sub> emissions, high proportion of electricity generated from hydropower plants, and the city's efforts to enact and maintain standards. air pollution . Hanoi is ranked below average in traffic and water problems, mainly due to the lack of fast buses and the high rate of water loss . The city still has to work hard in areas such as land use and buildings, and sanitation and environmental governance that are currently below average .

### **Table 5: Quantitative indicators: Hanoi**

95.0

282.0

Sources : (1), (2) and (3) EIU estimates . (4) Training School for International Cooperation and Development , Hiroshima University . (6) and (7) Hanoi Environmental Sustainability Sub-Department . (8) GMSARN International Conference on Sustainable Development . (9) Asian Development Bank . (10) and (11) Hanoi Irrigation University . (12), (13) and (14) Clean Air Initiative .

**Energy and CO<sub>2</sub>** : Hanoi is ranked on average in terms of energy and CO<sub>2</sub> , in which the CO<sub>2</sub> emissions result is very positive . At 1.9 tons / person / year , according to estimates based on 2007 data , Hanoi's CO<sub>2</sub> emissions are much lower than the average of 4.6 tons in the Index . The results for CO<sub>2</sub> emissions may reflect the fact that there is no heavy industry within the boundaries of the city, and also show that the use of renewable energy is increasing, accounting for 20% of total energy consumption of the city. city . In particular, the city uses hydroelectric power, which accounts for 43% of the city's total electricity - the highest percentage of the use of hydroelectric plants among the cities included in the Index . The result is even more impressive as electricity accounts for nearly half of the total energy consumption of Hanoi . In contrast, Hanoi lost points due to its relatively high energy consumption relative to its economic efficiency . With 9.5 megajoules per US \$ unit of GDP, another figure estimated by 2007 data , Hanoi is higher than the average of the Index ( 6 megajoules ) . Hanoi also loses points in the Index due to relatively weak climate change response policies . For example, Hanoi has not conducted a baseline assessment of greenhouse gas emissions, and has not followed up .

However , Hanoi has joined international treaties to reduce greenhouse gas emissions and is a member of the C40 group , a group of cities committed to

responding to climate change . In addition , the central government has actively promoted economical and efficient use of energy ( see “ green initiatives ” below ).

**Land use and buildings :** Hanoi is ranked very low, below average in terms of land and building use , a result reflecting the rather thin population density of Hanoi - 1,900 people / km<sup>2</sup> compared to the results the Index's 8,200 people / km<sup>2</sup> average - and the city's relatively few green spaces . With an area of 11 m<sup>2</sup> / person , this figure is much lower than the average result of 39 m<sup>2</sup> / person of the Index . In addition, Hanoi was deducted points for weakness in policy. In particular, the city authorities have not yet issued and enforced a set of eco-efficiency codes for buildings, and the city has not yet applied green standards for public buildings .

However, the city has actively promoted propaganda on economical and efficient use of energy in buildings. Hanoi is scored in the Index on policies to protect green space and other environmentally sensitive areas, as well as policies to limit indiscriminate urbanization . In Vietnam there are already planning standards, including the expansion of parks and green spaces, helping to add more green spaces to Hanoi. To be granted a building permit, new urban areas must be designed to a standard of three to four square meters of parks and gardens / residents .

**Traffic :** Hanoi ranks below average in terms of traffic, mainly due to its lack of an excellent transport network (in this Index, which is defined as a transport system that transports large numbers of passengers quickly according to private lane, for example, subway, express bus or subway ). That partly explains why the city's main means of transport is still motorbikes, while the city has not yet done a good job integrating mass urban transport pricing. This may not come as a surprise as the new city has tripled in size. However, progress has been made in other policy areas . City authorities are encouraging the use of greener forms of transport and have taken some steps to reduce emissions from high volume public transport . There are also many solutions being implemented to reduce traffic congestion, including toll collection, pedestrian zone, and transit parking system .

**Waste :** Hanoi ranked on average in terms of waste topics. Hanoi is doing relatively well in terms of the rate of waste per capita, with 282 kg / year compared with an average of 375 kg in the Index . Authorities appropriately collect and dispose of 95% of the waste , compared with an average of 83% of 22 cities , the highest percentage among similar low-income cities in the Index ( per

capita income below US \$ 10,000). The city's waste policies are still relatively weak . Hanoi is one of two cities in the Index that have not yet enforced and monitored the standards for hazardous industrial waste . Hanoi also does not have an on-site collection service for recycling domestic waste .

**Country** : Hanoi ranks below average in terms of water topic . The average daily water consumption is 53 liters / person , much lower than the average of 278 liters in the Index . However, the Hanoi data is estimated from 2006 household water consumption data , so the amount of water used in industry is not included . Lack of supply can also be a factor explaining the relatively low rate of water use in Hanoi . However, the city's water supply improved in 2008 when the water pipeline from Song Da started supplying water to 50,000 households in Hanoi in the southwest of the city , but concerns remain about the ability to meet the demand is increasing. Water loss is an issue in Hanoi, where 45% of the city's water supply is lost due to a leak of pipes, one of the highest rates in the Index . This figure is based on Asian Development Bank 2003 data, including water supplied but not paid for .

**Sanitation** : Hanoi ranked weak in terms of sanitation. It is estimated that only 40% of Hanoi's population has access to sanitation, much lower than the average 70% of the Index, despite the Hanoi data, due to a lack of available data, only reflects the amount connected to the drainage system. The stormwater and wastewater drainage systems in Hanoi are over 50 years old, and are not enough to meet the needs of the city's current population . In addition, the city policies are generally weaker than the other cities in the Index. For example, Hanoi is the only city in the Index that does not have a plan or a set of rules to promote environmentally sustainable services .

**Air quality** : Hanoi ranks average in terms of air quality. Although concentrations of active SO<sub>2</sub> and suspended matter in Hanoi equivalent to the average value of the index, but the level of emissions of NO<sub>2</sub> cities is relatively low - 20 micrograms / m<sup>3</sup> compared with the average figure 47 micrograms / m<sup>3</sup> of the Index . All emission figures of Hanoi taken from 2004, but the reason there are positive results of NO<sub>2</sub> is due to the amount of cars is still relatively low . Hanoi has relatively good scores in the policy areas, after the enactment of air quality regulations, for the measurement of air pollutants, although lower scores are associated with improved reception. public awareness about air pollution .

**Environmental governance** : Hanoi is classified as weak in terms of environmental governance, mainly because of its weak policies on environmental monitoring and management . The city has an environment department, but citizens and other stakeholders are only limited in decision-making related to projects with a large environmental impact. However, the city scores absolute points for a concentrated contact point related to environmental performance .

