

# Measuring sustainable economic development: international experience and lessons for Vietnam

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**Abstract:** *The article examines practical experience in building indicators to measure sustainable economic development by international organizations based on three prominent approaches including the OECD's green growth model approach, the World Bank's progress approach to the implementation of the sustainable development goals (SDGs), and the BCG's welfare approach. While these sets of indicators all link economic factor to social and environmental issues, they have distinct approaches depending on the economic development goals that each organization aims at. The research results help to generalize the fundamental commonality in building a framework and indicators for measuring sustainable economic development and draw some lessons learnt in building a set of sustainable economic development indicators for Vietnam in a new context.*

**Keywords:** Economic Development, Sustainable Economic Development, Measurement

## Introduction

Sustainable development is a concept that has been discussed since the 1980s. Until now, this concept is still a topic that grabs the attention of researchers, especially, in measuring sustainable development. The abstraction in the nature of this concept is part of the reason why it is difficult to quantify sustainable development. Therefore, the common approach of researchers in measuring sustainability is to apply the sustainability triangle

model and try to ensure a balance among the economic, social, and environmental factors in measuring sustainability through representative indicators.

Despite emphasizing the economic factor in the sustainability triangle model, 'sustainability' needs to be understood to take into account both social and environmental issues in the measurement of sustainable economic development. During decades of reform and development, Vietnam has consistently

associated economic development with social issues, reflected in relevant guidelines and documents of the Party, State and Government. Economic development always goes hand-in-hand with social development, ultimately aiming at the well-being of the nation and its people. Environment issues were discussed relatively late when the Law on Environmental Protection was first issued in 1993. After nearly 2 decades, the issues of sustainable development, green growth and response to climate change were finally legalized, which officially integrates economic, social and environmental issues in national development goals.

To clarify the rationale and approach to building sustainable economic development indicators, the article explores international experiences on approaches and frameworks to provide measurement indicators relevant to sustainable economic development from different perspectives and goals.

### **1. The green growth model approach**

Green growth, in the view of the Organization for Economic Cooperation and Development (OECD) (2011a), means “fostering economic growth and development while ensuring that natural assets<sup>1</sup> continue to provide the resources and environmental services on which our well-being relies. To do this, it must catalyze investment and innovation which will underpin sustained growth and give rise to new economic opportunities”.

<sup>1</sup> Natural assets are different from natural resources: natural resources become natural assets when people have rights to access their benefits on the basis of democratic principles, in which all individuals have equal rights to access clean air, fresh water, and shared resources (Boyce, 2001).

The approach through measuring green growth focuses on the production and consumption sectors of the economy, showing interaction relationship between the economy and the natural assets through intervention policies.

Green growth is therefore seen as a way to realize economic growth and development while ensuring environmental concerns, biodiversity, and sustainable use of natural resources (OECD, 2011b). Green growth policies will help overcome environmental risks through new investment resources. These are the breakthrough changes in using resources and creating new resources for growth and development. In other words, green growth is a way to ensure sustainable economic development.

The OECD Green Growth Indicators aim to monitor the progress to realize four goals, including: (1) a low-carbon economy and efficient use of resources; (2) maintaining natural assets; (3) improving human life quality; and (4) applying appropriate policies to realize green economic growth opportunities (OECD, 2017; Table 1).

These themes are linked to the OECD’s view of sustainable economic development in the form of greening the economy and ensuring a resource base for current and future development. The first three themes reflect the sustainable triangle model, and together with the fourth theme they aim to ensure a balance between the current use/consumption and creating opportunities for continued growth in the future. This also reflects an aspect in the OECD’s view of sustainability, which states that development must be equitable to future generations.

Table 1. OECD's green growth indicators

| Group/ Theme   | Indicators  |
|--|---|
| <b><i>The socio-economic context and characteristics of growth</i></b>       |   |
| <i>Economic growth, productivity and competitiveness</i>                     | GDP growth and structure, labor productivity, relative importance of trade (exports + imports)/ GDP, consumer price index (CPI), prices [of food, crude oil, minerals, ores and metals) |
| <i>Labor market, education and income</i>                                    | Labor force participation, unemployment rate, population growth, life expectancy, income inequality, educational attainment   |
| <b><i>(i) The environmental and resource productivity of the economy</i></b> |   |
| <i>Carbon and energy productivity</i>  | CO <sub>2</sub> productivity, energy productivity, share of renewable energy sources  |
| <i>Resource productivity</i>   | Material productivity (non-energy), water productivity, environmentally adjusted multifactor productivity   |
| <b><i>(ii) The natural asset base</i></b>                                    |   |
| <i>Natural resource stocks</i>   | Index of natural resources (in monetary terms)  |
| <i>Renewable stocks</i>  | Freshwater, forest, and fish resources  |
| <i>Non-renewable stocks</i>  | Minerals  |
| <i>Biodiversity and ecosystems</i>   | Land, soil, and wildlife resources  |
| <b><i>(iii) The environmental dimensions of quality of life</i></b>          |   |
| <i>Environmental health and risks</i>  | Environmentally induced health problems, exposure to natural or industrial risks and related economic losses  |
| <i>Environmental services and amenities</i>                                  | Access to sewage treatment and drinking water   |
| <i>Technology and innovation</i>   | Research and development (R&D) expenditure related to renewable energy/ environmental technology, Patents of importance to green growth   |
| <i>International financial flows</i>   | Official development aid (ODA), carbon market financing, foreign direct investment (FDI)  |
| <i>Prices and transfers</i>  | Environmentally related taxation and subsidies, energy pricing  |
| <i>Regulations and management approaches</i>                                 | To be developed   |
| <i>Training and skill development</i>  |   |

Source: OCED (2017).

The OECD's approach to monitoring the progress of green growth focuses on the production and consumption of the economy. This approach displays the interactions between the economy, natural asset base, and intervening policies.

The economy is considered from input, production, output to consumption. Input includes labor, capital, and production resources (energy and raw materials). These factors play a vital role in output growth, especially natural asset capital. Many countries achieve economic growth yet suffer tremendous environmental consequences due to overexploitation of natural assets. Construction works along with urbanization also have enormous

impact on the rate of land cover, leading to fragmentation and loss of habitat. These issues, collectively known as the foundation of natural assets, pose a major impact on the habitat quality of human other species. The economy and natural asset base are interrelated with respect to policy responses and economic opportunities. The socio-economic context and growth characteristics together with natural asset base promote economic, social, and environmental development policies and create new economic opportunities. The policies that are planned and implemented also have an impact on the economy and natural asset base in both positive and negative directions. As a result, the balance

to be obtained is green economic growth, promoting investment and innovation to set the foundation for sustainable growth and create new economic opportunities.

## 2. Measurement based on sustainable development approach

Measuring economic development is one of six themes under the World Bank's Development Indicators (WB). These indicators are developed based on monitoring the progress of the national sustainable development goals, in which global development and ending poverty are emphasized, with data collected by time series over 50 years. These indicators measure economic development, improvement in lives, progress to sustainable development, support for vulnerable populations, and reducing gender disparities.

Although the indicators aim at sustainable development, the set of the WB's economic development indicators represents only one theme in the six themes. Other themes include: (i) poverty and shared prosperity, (ii) people, (iii) environment, (iv) states and markets, (v) global links. This means that

the WB's economic development indicators need to be incorporated with those of other themes to get an overall picture and assess the level of sustainable development of a country more comprehensively.

The economic development indicators target two millennium goals, namely the 8th goal of promoting sustainable employment and economic growth, and the 2nd goal of promoting consumption and sustainable production. Mainly aiming at measuring economic development, the indicators are developed to quantify the level of development in the five aspects, including: (1) size of the economy; (2) ending poverty and improving lives; (3) promoting sustainability; (4) strengthening partnership; and (5) women and development. 9 indicators measure the size of the economy; 11 indicators are related to ending poverty and improving lives; 12 indicators are used to measure sustainability promotion; 7 indicators are used for strengthening partnership; and 10 indicators are to measure women and development. Each sub-indicator are presented in Table 2.

**Table 2. WB's economic development indicators**

| <b>View</b>                                      | <b>Indicators</b>   |
|--|---|
| <b><i>Size of the economy</i></b>                | Population; Surface area; Population density, Gross National Income (GNI); GNI per capita; Purchasing power parity GNI (PPP); PPP GNI per capita (PPP); GDP growth rate; GDP per capita growth rate   |
| <b><i>Ending poverty and improving lives</i></b> | International poverty line; Prevalence of child malnutrition; Maternal mortality ratio; Under-five mortality rate; Incidence of HIV, ages 15-49; Incidence of tuberculosis; Mortality caused by road traffic injury; Primary completion; Percentage of male family workers; Percentage of female family workers; Labor productivity   |
| <b><i>Promoting sustainability</i></b>           | People using safely managed drinking water services; People using safely managed sanitation services; Access to electricity; Renewable energy consumption; Expenditures for R&D; Urban population living in slums; Ambient PM2.5 air pollution; Adjusted net savings; CO <sub>2</sub> emissions; Nationally protected terrestrial and marine areas; Intentional homicides; Internet use |
| <b><i>Strengthening partnership</i></b>          | ODA, Least developed countries' access to high-income markets; Support to agriculture (% of GDP)  |

|                              |  |
|------------------------------|--|
| <b>Women and development</b> | Life expectancy at birth (male & female); Women who were first married by age 18; Account ownership at a financial institution or with a mobile money-service provider, male; Account ownership at a financial institution or with a mobile money-service provider, female; Wage and salary male workers; Wage and salary female workers; Firms with female participation in ownership; Female share of employment in senior and middle management; Women in parliaments; Women Business and Law Index Score |
|------------------------------|--|

Source: WB Databases on economic development indicators, <http://wdi.worldbank.org/table>

Despite focusing on one economic measurement, the WB development indicators quite comprehensively reflect socio-economic issues, consumption, and ensuring the balance of natural resources, while showing a certain degree of improvement (or no improvement) in people’s well-being.

**3. Measurement based on the economic welfare approach**

**3.1. The economic welfare indicators**

The International Monetary Fund (IMF) (2020) called for a more people-focused approach to statistics on economic performance and prioritized economic welfare, in which concerns about inequality, environmental impact, and effects of digitalization must be put at the top of the measurement. Well-being includes intangible aspects that cannot be traded in markets, such as happiness, trust and biodiversity. Economic welfare is the part of well-being that deals with current and lifetime consumption and the resources that enable consumption (income, wealth, etc.). In other words, measuring economic welfare must be based on both current and sustainable consumption.

Current consumption considers the utility generated by market, near-market, and non-market goods and services. Meanwhile, sustainable consumption considers the stream of consumption that will be attainable in the future, bringing into play net saving, wealth, and certain effects of environmental degradation (e.g. reducing

life expectancy). Sustainable consumption is measured by real net disposable income. Net disposable income represents the resources used for current consumption or saving, taking into account depreciation, and taxes and transfers.

In the current digitalization economy, the measurement of economic welfare becomes even more challenging as many digital products are free (except for the time cost of viewing advertisements and intangible cost of surrendering one’s personal data). Other products enable consumers to do things that they previously could not do. In such cases, it is difficult to measure the welfare gains.

The IMF’s economic welfare indicators were developed to measure aspects that are often overlooked in the mere calculation of GDP-related indicators (Table 3). GDP encompasses market and near-market production by governments, non-profit organizations, and households<sup>1</sup>. Economic welfare consists of non-market production like unpaid housework or volunteer work. Therefore, inequality and the distribution of household economic welfare are also aspects of the aggregate economic welfare of a population.

<sup>1</sup> Near-market production by households includes housing used by owners, and goods produced and consumed by households. Households’ solar power is also considered a near-market product while solar panels in the national account are considered a fixed asset.

Table 3. IMF's economic welfare indicators

| Aspect   | Indicators   |
|--|--|
| <b>Real income</b>                               |  |
| <i>Total economy</i>                             | Domestic income; National income; Disposable income    |
| <i>Households</i>                                | Balance of primary incomes; Disposable income          |
| <i>Households, with social transfers in-kind</i> | Adjusted disposable income                             |
| <b>Real final consumption</b>                    |  |
| <i>Households</i>                                | Final consumption expenditures                         |
| <i>Households, with social transfers in-kind</i> | Actual final consumption                               |
| <b>Prices/ Deflators</b>                         |  |
| <i>Total economy</i>                             | Deflator for gross domestic final expenditure          |
| <i>Households</i>                                | Final consumption expenditures deflator                |
| <i>Households, with social transfers in-kind</i> | Actual final consumption deflator                      |
| <b>Wealth</b>                                    |  |
| <i>Total economy</i>                             | Nonfinancial assets; International investment position |
| <i>Households</i>                                | Assets, Liabilities, Net worth                         |

Nguồn: IMF (2020: 12).

The positive and negative effects of digital economy on well-being in general and economic welfare in particular are further examples of the need to consider well-being. The gains of digitalization and economic welfare are more frequently discussed whereas the negative effects of the internet on personal well-being such as happiness, health, hate crimes, and social cohesion are often neglected. Privacy costs of collection of personal data also needs to be considered in an analysis of digital economy and economic welfare.

The analytic framework of economic welfare reveals that indicators for measurement of economic welfare are already in the System of National Accounts (SNA) and a part of the general well-being. In addition to the welfare indicators in the SNA, complementary additional indicators comprise distribution of disposable income, consumption, wealth; access to financial services; household non-market production and time use, together with

effects of digitalization on these items; natural capital, depletion, environmental sustainability; and human capital.

### 3.2. Wealth-to-well-being coefficient

The sustainable economic development assessment (SEDA) has been issued annually by the Boston Consulting Group (BCG) since 2012. SEDA is considered a coefficient to measure economic development sustainability, thereby revealing countries that could effectively convert economic wealth into well-being. Promoting the well-being of citizens is the primary goal of each nation and government. In practice, however, decision makers often view this goal as competing with economic growth. The BCG's 2018 SEDA illustrated that these two goals could concurrently exist. Countries that were better at converting wealth into well-being tended to have faster economic growth and be more resilient – recovering more quickly from crisis. The balanced approach of growth and well-being is the main notion of the BCG in sustainable

economic development. As a result, pursuing the twin objectives of growth and well-being should be the aim of long-term development strategies.

SEDA is considered a relatively objective measure, combining data on outcomes with quasi-objective data derived from surveys and expert assessments. It does not include purely subjective perception measures, such as those used in the World Happiness Report. However, the results disclosed an overall positive correlation between scores from the World Happiness Report and SEDA scores.

SEDA is designed to measure well-being and assess how effectively countries convert economic wealth into well-being, also called wealth-to-well-being coefficient. This coefficient helps to plot national SEDA scores against GNI per capita. Countries with wealth-to-well-being coefficient of

1.0 are generating well-being in line with what would be expected given their income level. Countries that have a coefficient greater than 1.0 deliver higher levels of well-being than would be expected given their GINI levels, while those below 1.0 deliver lower levels of well-being than would be expected.

SEDA defines well-being on the basis of 10 dimensions grouped into 3 categories, including economics, investments, and sustainability. Scores in the 10 dimensions are weighted differently (2, 1, and 0.5), which are then aggregated into an overall score for each country. This score helps assess a country's performance relative to either the entire universe countries in the data set or to individual peers or groups. SEDA's dimensions also provide a framework for reviewing priorities for remedial action.

**Table 4: BCG's SEDA Indicators**

| <b>Dimensions</b>   | <b>Indicators</b>   |
|---|---|
| <b><i>Economics</i></b><br>( <i>Income, Economic stability, Employment</i> )                | GDP per capita, purchasing power parity; Inflation, average consumer price; Inflation-rate volatility; GDP growth volatility; Unemployment rate; Employment rate, population aged 15-64   |
| <b><i>Investments</i></b><br>( <i>Health, Education, Infrastructure</i> )                   | Life expectancy at birth; Mortality rate, under age 5; Prevalence of HIV; Incidence of tuberculosis; Prevalence of undernourishment; Population obesity; Immunization, diphtheria, pertussis, and tetanus; Immunization, measles; Number of physicians, number of hospital beds (per 1,000 people); School enrolment, tertiary; School life expectancy, primary to tertiary; Pupil-teacher ratio, primary; Average of math and science scores; Internet users (per 1,000 people); Mobile phone subscriptions (per 100 people); Quality of roads network; Percentage of population with access to improved water source; Percentage of population with access to improved sanitation facilities; Quality of electricity supply |
| <b><i>Sustainability</i></b><br>( <i>Equality, Civil society, Governance, Environment</i> ) | Gini index; Inequality in education; Inequality in life expectancy; Civic activism; Interpersonal safety and trust; Intergroup cohesion; Gender equality; Control of corruption; Rule of law; Political stability and absence of violence and terrorism; Voice and accountability; Property rights index; Air quality index; Carbon dioxide intensity; Terrestrial and marine protected areas; Electricity generation from renewable sources, excluding hydro   |

Source: BCG (2018: 23-24)

SEDA's measure of well-being is based on three categories: (i) *Economics* comprises 3 dimensions of income, economic stability, and employment that include 6 indicators; (ii) *Investments* comprises health, education, and infrastructure (21 indicators); and (iii) *Sustainability* comprises equality, civil society, governance, and environment (16 indicators) (Table 4).

#### 4. Conclusion and lessons for Vietnam

Through different sets of indicators developed by international organizations such as the OECD, the WB, the IMF and the BCG, one common feature that is easy to spot is that development indicators primarily focus on the economic aspect while inclusive of quantifiable social and environmental dimensions. However, the approach used for developing the indicator sets is different, depending on the measurement purpose of each indicator set. Therefore, social and environmental issues, particularly people's well-being, are integrated to varying degrees in terms of both the number of indicators and their relevance.

The OECD green growth indicators are meticulously designed to measure important aspects, enabling progress monitoring. The purpose of this indicator set is to measure the greening degree in economic growth, it focuses on the "triangle" relationship, interplaying among economic activities, natural asset base, and people's lives. Policy responses to adjust and balance the interaction among the three factors mentioned above are drawn out from the relationship. In addition, the green growth indicators focus on current issues and the greening degree of the economy. Therefore, the comparative aspects between

the present and the past have not been clearly shown to better identify the level of progress and greening of the economy. If the quality of life is considered the ultimate goal of economic development, citizens' well-being is yet to be emphasized in this set of indicators, except for some aspects related to the quality of human living environment.

The WB economic development indicators are approached in the direction of monitoring the progress of implementing the Sustainable Development Goals (SDGs). This is a highly aggregated set of indicators, in terms of both measurement and the spread of data over time, applied to annual measurement and comparable across countries. Sustainability in the WB's set of indicators is emphasized through the aspects of sustainable growth, decent employment, promotion of sustainable consumption and production. These indicators also represent the WB's ongoing and permanent goal of ending poverty and improving lives, in which gender issues and the role of women are concerned, with 20% of the total indicator numbers. This set of indicators include basic statistical indicators that countries can collect data easily.

Sharing one common objective of measuring the well-being, the BCG and the IMF applied totally different approaches to develop their indicators. While the BCG provides indicators for different population groups, the IMF's indicators are more concerned with households. Compared with the BCG's indicators, those developed by the IMF focus more on measuring financial flows and cash flows, a typical feature of this institution, exhibiting another outlook

on economic development efficiency and well-being from a financial and monetary perspective. Furthermore, the IMF emphasizes that economic welfare is only a part of well-being, hence other aspects such as health, education, environment and ecology are not included in the set of economic welfare indicators.

The approach employed by the BCG is more inclusive as it measures the overall well-being, which is the goal that economic development must ultimately achieve.

Despite the differences, the sets of indicators above mentioned present the typical features of the institutions that develop them. This can be further explained by some lessons set below:

*Firstly*, the approach and purpose of building a set of indicators must be clearly defined before developing the indicators. Conceptual connotations such as economic development, sustainability, and well-being or welfare must be well defined beforehand. This step plays a pivotal role in designing the content and aspects to focus on, from which the measurement indicators can be detailed.

*Secondly*, resources and feasibility in measurement are the fundamental factors for developing indicators in accordance with the set goals. It is obvious that no institution could have a solid foundation and large resources like the WB to produce such a wide-ranging set of indicators. Member countries of the OECD are at high level of development; therefore, their statistical systems could provide the basis for a large number of different sets of indicators that are feasible in terms of data and measurement methods. The BCG's indicators are built

on the basis of data of the WB, the IMF, and other large databases. This shows that the BCG has considered resources and feasibility, which is a suitable choice for this organization's competence. However, it does not mean SEDA is neither original nor valid. SEDA has received a sheer amount of positive feedback and appreciation for its simplicity and ease of understanding while ensuring the measurement of economic welfare.

*Thirdly*, the integration of non-economic indicator groups should be considered. The above-presented sets of indicators differ in the extent to which health, education, environmental and other aspects are integrated. Since the set of indicators measuring Vietnam's sustainable economic development will be developed concurrently with other sets of indicators, aiming at the common goal of national well-being, the integration with which aspects and to what extent (specifying component indicators) must be scrutinized given the allowable resources to limit overlapping between sets of indicators for national well-being.

Finally, the international experience shows that efforts to measure sustainable economic development have been made by many institutions. The development of a separate set of indicators for Vietnam is not impossible if it takes advantages of and inherits the experiences of these institutions, especially when taking in account the feasibility of data and measurement methods. The indicators are meaningful for monitoring and evaluating sustainable economic development as Vietnam has become a middle-income country □

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