

Introduction to Green Growth Indicators

To achieve sustainable development of economic growth and balanced environment and ecology, the Organization for Economic Cooperation and Development (OECD) proposed the Green Growth Indicators (GGI) that integrate the economy, environment, society, technology, and development in 2011 and recommended the selection of related indicators from the SEEA accounts.

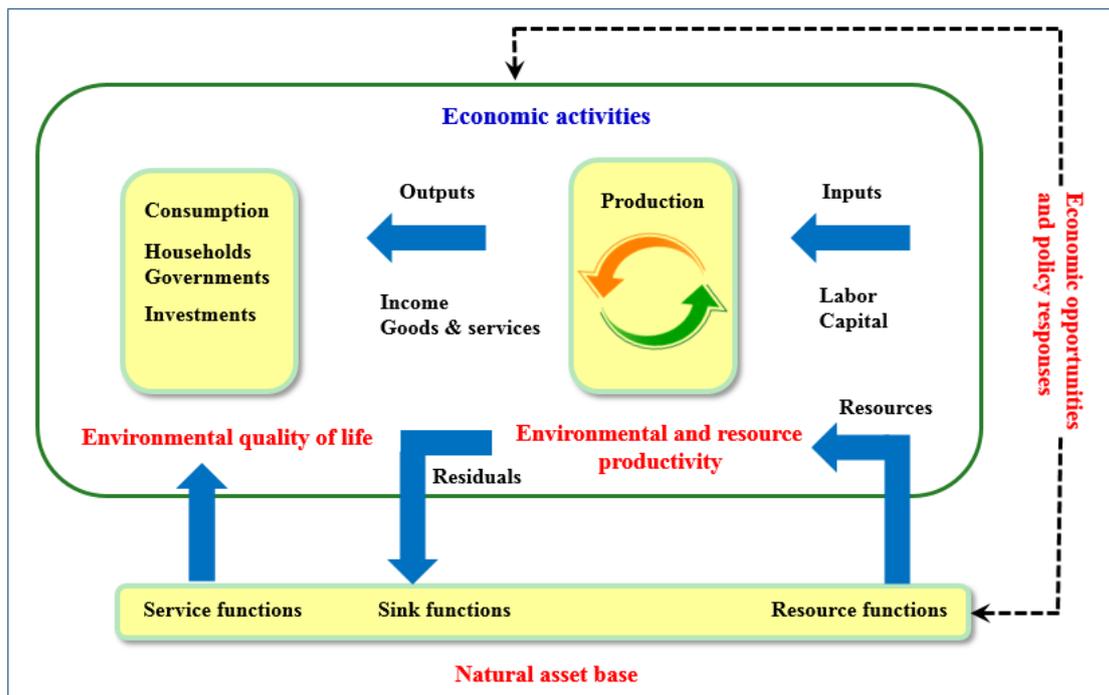
I . Introduction to Green Growth Indicators

Green growth indicators refer to the connections between "growth" and "green". In addition to extending the concept of "productivity" in traditional economic growth theories, they also include the concept that the capital stocks for sustainable development are not in a state of decline, meaning that the demand for the quality and quantity of natural resources must be satisfied as we pursue economic growth and development for the purpose of providing and sustaining environmental quality for the benefits of human living conditions.

The OECD's Green Growth Indicators framework includes four main themes, namely the environmental and resource productivity, natural asset base, environmental quality of life, and economic opportunities and policy responses. The first theme environmental and resource productivity refers to the efficient of using natural assets for production. The main purpose is to observe the usage efficiency of the environment and natural resources. However, economic development will be difficult to sustain if natural resources are depleted and it is difficult to find alternative resources. Therefore, the second theme is focused on the foundation of natural resources to reflect the fluctuation on the foundation of assets to result in risks on growth. The integrity of these assets must be sustained for sustainable growth. The third theme is the living environment quality which shows the derived costs or economic losses due to the depletion of natural assets, and reflects the impact of the environment on human living standards. The fourth theme involves economic opportunities and policy responses that use policies to respond to green growth issues to verify the efficiency of green growth policies.

Overall, the environmental and resource productivity refer to the relationship between "production" and "natural resources" in economic activities. The environment living standards refer to the relationship between "consumption" and "natural resources" in economic activities. The economic opportunities and policy responses refer to the relationship built on the foundations of economic activities and natural resources.

Green Growth Indicators framework



II. Connection between Green Growth Indicators and SEEA

In the "Green Growth Indicators 2014" report, the OECD described the core SEEA framework as a multi-purpose statistical structure. The structure can be used to describe interactions between the economy and the environment as well as the changes in environmental asset reserves. It also meets the concepts, definitions, classifications, and accounting principles of the System of National Accounts (SNA). So, with related SEEA accounts, relevant indicators can be selected to observe the productivity of the environment and resources, environmental assets and their functions in the economy, activities and tools relevant to the environment, and their functions in the economy.

Overview of selected indicator types and relevant SEEA accounts

Topic or issue	Indicator examples	Examples of relevant SEEA accounts
Environmental efficiency	<ul style="list-style-type: none"> ♦Carbon productivity and air emission intensities ♦Waste generation intensities ♦Nutrient balance intensities 	<ul style="list-style-type: none"> ♦Physical flow accounts for water ♦Physical flow accounts for materials: product flows, air emissions (including greenhouse gases), pollutant emissions to water
Resource efficiency	<ul style="list-style-type: none"> ♦Energy productivity ♦Material productivity ♦Water productivity 	<ul style="list-style-type: none"> ♦Physical flow accounts for materials: solid waste accounts, economy-wide material flow accounts. ♦Physical flow accounts for water ♦Physical flow accounts for energy
Natural assets	<ul style="list-style-type: none"> ♦Intensity of use of natural resource stocks, relating resource extraction to available stocks: water, minerals, energy, timber, fish ♦Index of natural resources ♦Land use and cover changes ♦Soil productivity 	<p>Asset accounts for:</p> <ul style="list-style-type: none"> ♦Water resources ♦Mineral and energy resources; timber resources; aquatic resources ♦Land and soil resources <p>SEEA experimental ecosystem accounts</p>
Environmentally-related activities and instruments	<ul style="list-style-type: none"> ♦Share of environment-related activities in the economy: output, investments, trade, employment. ♦Level and composition of environmental expenditure ♦Environment related tax rate and revenue structure ♦Environment-related support measures, e.g. fossil fuel subsidies 	<ul style="list-style-type: none"> ♦Environmental activity accounts and statistics: environmental protection and resource management expenditure, environmental goods and services ♦Accounts for other transactions related to the environment: payments, transfers