Module 5
Measuring Progress towards a Green Economy

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Overview of Module 5

Module 5 presents indicators which can be used to track progress towards social, economic and environmental outcomes of a green economy and links green economy indicators to the Millennium Development Goal (MDG) post-2015 targets.

Objectives of Module 5

The objectives of Module 5 are to:

- Examine which green economy indicators are appropriate for the Caribbean in general as wells as for individual countries in the region.
- Discuss how green economy indicators can be linked to MDG post-2015 targets.

Measuring Progress toward a Green Economy

There is general consensus that the main indicators of economic performance, such as growth in Gross Domestic Product are inadequate to measure the green economy. These economic indicators need to be adjusted to account for pollution, resource depletion, declining ecosystem services, and the distributional consequences of natural capital loss to the poor.

Ideally, changes in stocks of natural capital would be evaluated in monetary terms and incorporated into national accounts. This is being pursued in the ongoing development of the System of Environmental and Economic Accounting (SEEA) by the UN Statistical Division, and the World Bank's adjusted net national savings methods (World Bank, 2006). The wider use of such measures would provide a better indication of the real level and viability of growth in income and employment.

CASE STUDY

The United Nations System of Environmental-Economic Accounting (SEEA) sets the statistical standards for collecting and integrating economic and environmental data for analysis of the green economy and sustainability.

The SEEA does not propose any single headline indicator; rather it offers a multi-purpose system - with many different analytical applications - that generates a range of indicators. The SEEA provides an agreed system for components, such as material flow accounts, input-output tables, as well as land and water use accounts, all of which provide the basis for measuring indicators such as energy and resource use at sectoral and economy-wide scales. The SEEA also provides a framework to integrate information from different sources and the basis on which consistent indicators comparable across countries and over time can be derived and disseminated. (UNEP, 2012)

Important advances have been made in the field of indicators for sustainable development over the last two decades. Appropriate indicators at both a macroeconomic level and a sectoral level will be essential to informing and guiding a transition to a green economy.

Green Economy Indicators

There are three principal areas for green economy indicators

Indicators of Economic Transformation

A green economy is first and foremost about transforming the way economies grow. Currently, growth is typically generated from investments in high emission, heavily polluting, waste generating, resource intensive, and ecosystem damaging activities. A

green economy requires investments to shift towards low carbon, clean, waste minimizing, resource efficient, and ecosystem enhancing activities. The key indicators of economic transformation, therefore, include the shift in investments (for example increase in investments in renewable energy) and, over time, the consequent growth of environmentally friendly or environmentally enhancing goods and services and related jobs (as discussed in Module 3). The contribution of green products and services can be measured using indicators such as value added ($/year) and employment (jobs). See Table 5.

Table 5: Examples of policy interventions and related indicators

Policy	Indicators
Green investment	R&D investment (% of GDP) Investment in green goods and services ($/year)
Fiscal reform	Fossil fuel, water and fishery subsidies ($ or %) Fossil fuel taxation ($ or %) Renewable energy incentive ($ or %)
Pricing	Carbon price ($/tonne) Value of biodiversity ($/ha of forestland) Value of ecosystem services (e.g. water provision)
Green procurement	Expenditure in sustainable procurement ($/year and %) CO_2 and material productivity of government operations (tonne/$)
Training	Training expenditure ($/year and % of GDP) Number of people trained (persons/year)

Indicators of Resource Efficiency and Environmental Health

A major key to the achievement of, and benefit from economic transformation is improved resource efficiency. Principal indicators include those on the use of materials, energy, water, land, changes to ecosystems, generation of waste, and emissions of hazardous substances related to economic activities. See Table 6.

Table 6: Examples of environmental issues and related indicators

Environmental Issue	Indicators
Climate change	Carbon emissions (tonnes/year) Renewable energy (share of power supply) (%) Energy consumption per capita (Btu/person)
Ecosystem management	Forestland (ha) Water stress (%) Land and marine conservation area (ha)
Resource efficiency	Energy productivity (Btu/$) Material productivity (tonne/$) Water productivity ($m^3$/$)

	CO_2 productivity (tonne/$)
Chemicals and waste management	Waste collection (%) Waste recycling and reuse (%) Waste generation (tonne/year) or landfill area (ha)
Total natural wealth	Value of natural resource stocks ($) Net annual value addition/removal ($/year)

Indicators of Progress and Well-being

A green economy can contribute to societal progress and human well-being in two ways:

- by redirecting investments towards green goods and services
- by redirecting investments towards the strengthening of human and social capital

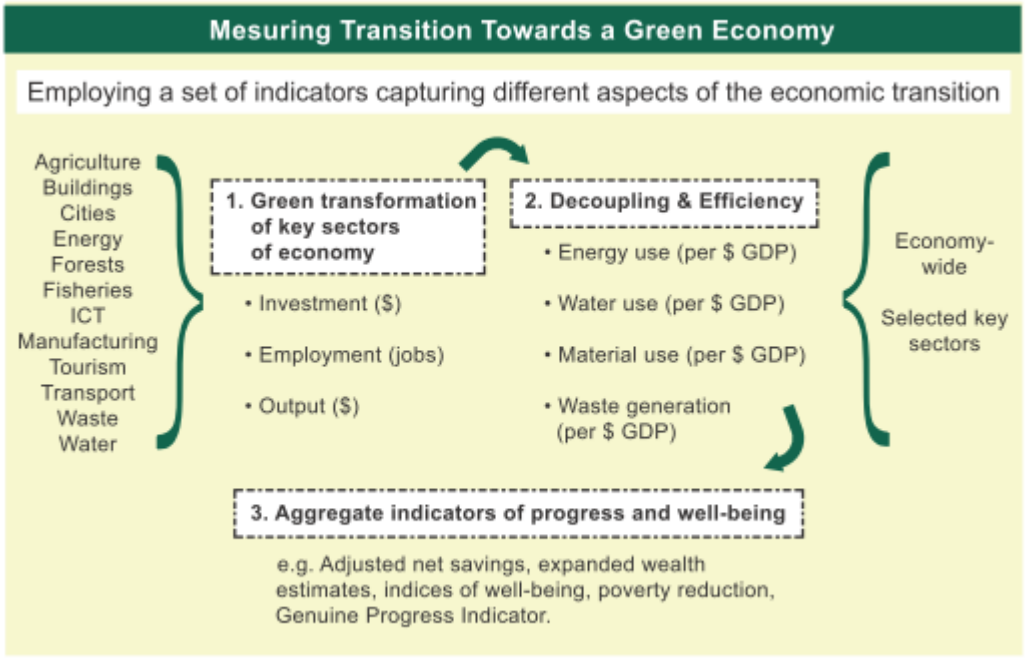
Some of the indicators of progress and well-being include the extent to which basic human needs are fulfilled, the level of education achieved, health status of the population, and the availability of, and access by the poor to social safety nets. A number of these are covered by the Millennium Development Goals (MDGs). See Table 7.

Table 7: Examples of well-being and equity indicators

Well-being and Equity Area	Indicators
Employment	Construction (person, %) Operation and management (person, %) Income generated ($/year) Gini coefficient/index[12]
Access to resources	Access to modern energy (%) Access to water (%) Access to sanitation (%) Access to health care (%)
Health	Level of harmful chemicals in drinking water (g/litre) Number of people hospitalized due to air pollution Road traffic fatalities per 100,000 inhabitants

[12] The Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality (World Bank: http://data.worldbank.org/indicator/SI.POV.GINI). There are no data available for the Caribbean.

Figure 4 demonstrates how these groups of indicators are related to each other. Investments in key sectors of the green economy, together with policy reforms, should contribute to decoupling economic growth from resource use and environmental impacts.



Source: UNEP – Green Economy Initiative

Figure 4: Indicators to Measure Progress toward a Green Economy

Such improvements can be related to key macroeconomic indicators, such as GDP, Human Development Index (HDI), poverty rates, and can even lead to refined measures, such as adjusted net domestic product taking into account depreciation of natural capital.

Data Needs and Capacity Building

The development of a framework for green economy indicators poses an important challenge: the needs and capacities of different countries in collecting and evaluating the required data and developing appropriate indicators.

Technical assistance and capacity building will be required in order to address the special needs of certain countries and to support the development of the necessary information systems. Developing and implementing basic monitoring and data collection systems, be it statistical or based on remote sensing or other techniques, is essential. Improved access to information and communication technologies (ICTs) by most countries in the past decade has provided a unique platform and window of opportunity to initiate concrete actions in this respect.

Most countries use different approaches and data classification systems when defining and evaluating the impact of economic activities on the environment. In all areas (e.g. production, consumption, material flows) there is a significant opportunity to improve data and information by regularly providing more analysis and better data in an internationally consistent format. This would make it much easier to monitor progress, make cross-country and cross-sector analyses, and identify in more detail the economic drivers that are responsible for impacts and the factors that determine the success of policies.

Comprehensive and harmonized data across countries and sectors are often not available. However, there are various international harmonized databases providing pieces of the overall picture, such as the International Energy Agency (IEA)'s energy database, the Food and Agriculture Organization of the United Nations (FAO) databases on land use, water use and agricultural production, and the United Nations Framework Convention on Climate Change (UNFCCC) greenhouse gas emission inventories (UNEP, 2012).

Green Economy Indicators and the Post-2015 Development Framework

The Millennium Development Goals set in 2010 constituted a blueprint agreed to by all the world's countries and all the world's leading development institutions to move toward sustainable development. The eight goals ranged from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education by 2015.

At Rio+20, government leaders stressed the need for a transformative post-2015 development agenda to eradicate poverty and hunger and promote sustained and inclusive economic growth. The conference declaration included a proposal to replace the MDGs, due to expire in 2015, with a broader set of globally agreed sustainable development goals.

This proposal to establish a process for governments to define and commit to sustainable development goals will help to provide a focus for discussion on transition to a green economy.

> "The Millennium Development Goals have been the greatest anti-poverty push in history. New partnerships have been established. New actors have been engaged. Now we must finish the job."
>
> *- Secretary General Ban Ki-moon at MDG Advocacy Group meeting, 2014*

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