

## ***For discussion on determining methods for NC accounting***

Conducting a Natural Capital Assessment demonstrates the key linkages between priority sector activities and the status and trends of natural capital in a planning unit. This helps to inform decision-making that supports long-term sustainable and inclusive economic growth; in turn, generating green jobs, reducing poverty and addressing ecological scarcity and environmental risks.

### **Methods of accounting**

There are several methods of accounting which aim to address the issue of sustainability. These are: large and eclectic dashboards; composite indices; indices focusing on over-consumption; adjusted economic indicators.

#### **Large and eclectic dashboards**

These dashboards bring together a number of indicators that are directly and indirectly related to the durability of socio-economic progress. One example of this is the Eurostat Sustainable Development Indicators, which is a list of over 100 indicators used to monitor the EU Sustainable Development Strategy. The criticism associated with these dashboards is that a large number of indicators risks muddling a clear message about sustainability that resonates with policy makers or citizens. In response, there has been a greater tendency to select headline indicators that “track central elements of green growth and [are] representative of a broader set of green growth issues.”

#### **Composite indices**

Composite indices normalize and aggregate various data into a single number.<sup>1</sup> For example, the Human Development Index, Osberg and Sharpe’s Index of Economic Well-Being, the Changing Wealth of Nations, or the Environmental Sustainability Index, which ranks countries based on an assessment of 76 variables covering 5 domains. It is often instructive to examine the separate dimensions of these indices. However, they may present a skewed view of countries’ contributions to environmental problems and make problematic, normative assumptions about the values of certain variables.

#### **Adjusted GDPs**

Adjusted gross domestic product, or green GDP, systematically corrects conventional GDP by taking into account aspects of a country’s production of goods and services (e.g. environmental degradation and natural resource depletion) that would not otherwise be included in the indicator, but are relevant to sustainability.

#### **Indices focusing on overconsumption**

Indicators that fall in this category conceive of sustainability with respect to consumption levels and investment in natural resources. Examples include adjusted net savings (ANS) and ecological footprint accounts. ANS is calculated as the change in total wealth over a given time period, while ecological footprint assessments determine how much of the regenerative capacity of the biosphere is required to maintain the consumption habits of a defined population. The explicit emphasis on sustainability makes these indices useful; however computing them by country fails to capture the global nature of sustainability.

## **Monetary or physical indicators**

All sustainability indicators can be grouped broadly into two types. Specifically, they will be calculated in monetary terms, using one or more valuation techniques, or in physical terms. It is more likely for monetary indicators to be expressed as flows, and physical indicators as stocks.

## **Global initiatives**

General commitment by the international community to support the development of natural capital accounting was motivated early on by the Brundtland Report in 1987 and the 1992 Rio Summit. At the Summit in particular, Agenda 21 – in which Chapter 40 called for signatories to develop quantitative information regarding their activities – was adopted.

## **System of environmental-economic accounting**

In September 1992, the Commission on the Environment of the Organization of American States (OAS) Permanent Council held a Seminar on Natural Resource and Environmental Accounts for Development Policy. Many of the country participants expressed interest in developing accounting capacities for natural resources. A proposal was made at that time to create a program to coordinate and strengthen the efforts of countries and institutions undertaking such initiatives.

The development of the first system of environmental-economic accounting (SEEA) in 1993 (SEEA-1993) was a major step towards establishing standards around integrating the environment into national accounts, and subsequently, environmentally-adjusting or “greening” macroeconomic indicators such as GDP. While the SEEA-2003 and subsequent revisions being undertaken for 2013 have expanded the range of analyses within the framework, the purpose of the SEEA has remained the same. It is an accounting framework that records the stocks and flows that are relevant to both the environment and the economy. Its Central Framework comprises three main accounts that can be integrated with the existing United Nations System of National Accounts (SNA), and each focuses on a different aspect of the interaction between the economy and the environment: physical flow accounts; functional accounts for environmental transactions; and asset accounts in physical and monetary terms.

The latest version of the SEEA (Q3, 2012) has two other parts, aside from the Central Framework: SEEA Experimental Ecosystem Accounts and SEEA Extensions. The Experimental Ecosystem Accounts, specifically, introduces an accounting framework for ecosystems, despite the fact that many of its relevant stocks and flows are centered on non-market assets. While some of the measurement concepts involved in the accounting process are still evolving, it is possible that the eventual valuation of ecosystems and their depletion could be included in the calculations of environmentally-adjusted macroeconomic indicators. This has implications for future policy, since the emphasis on certain projects or activities undertaken by governments will likely change, depending on how the above-mentioned measurements impact their respective accounts, and subsequent environmental adjustments to certain indicators.

The London Group on Environmental Accounting and the UN Committee of Experts on Environmental-Economic Accounting are two groups, created in 1994 and 2005 respectively, to assist in the development of the SEEA and its implementation. As well, the Work-

ing Group on Environmental Auditing, a subgroup of the International Organization of Supreme Audit Institutions, is working to improve auditing standards related to environmental issues.

### **Wealth Accounting and Ecosystem Partnership Services**

The ability of developing countries to build their natural capital account capacities is being improved significantly through the Wealth Accounting and Ecosystem Partnership Services (WAVES), by encouraging the development of relevant measurement frameworks. WAVES is global partnership that was inaugurated in October 2010 by World Bank President Robert Zoellick at the Convention on Biological Diversity COP-10 meeting in Japan.<sup>[12]</sup> It aims to promote sustainable development by encouraging the inclusion of natural capital measurements in national accounts. Several projects have been initiated in developing countries such as Botswana, Colombia and Madagascar with a view to improving their capacity to implement the SEEA, in collaboration with UNEP, the UNDP, the United Nations Statistical Commission, and the financial support of NGOs and the governments of Australia, Canada, France, Japan, Norway and the United States.

### **Ecological footprint accounts**

Alternately, there have been many attempts to move away from integrated accounts, and towards novel sustainability indices or statistics. Ecological footprint accounts, developed by Monfreda et al. (2004) and since 2007, the Global Footprint Network, or the proposal for nine planetary boundaries within which humans can safely operate, by Rockström et al., are projects which advocate for new approaches to global sustainability.

### **Inclusive Wealth Index**

The UN International Human Dimensions Programme has created an inclusive sustainability indicator, the Inclusive Wealth Index (IWI), which measures the productive bases of an economy: produced, natural and human capital, and based on these three assessments, calculates the trajectory of a country's wealth. The calculation of natural capital in the IWI is based on the shadow value of an economy's natural capital assets.

A similar conceptual direction was taken by the Commission on the Measurement of Economic Performance and Social Progress, under the direction of economists Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi, at the behest of former French President Nicholas Sarkozy, in 2008. The authors concluded that a pragmatic measure of sustainability would combine an indicator based on the extended wealth approach, and a small dashboard of physical indicators.

While they have different theoretical underpinnings, what these approaches have in common with each other is a fundamental recognition of the limitations of traditional indicators in measuring economic performance and social progress, and the importance of sustainability in the long-run.

### **Beyond GDP**

There have been several initiatives organized at the regional level that seek to move away from traditional GDP as the major indicator of wealth and well-being. The first of these is Beyond GDP, an initiative started by the EU in 2007 to develop highly aggregated environmental and social indicators and extend the national accounts to environmental and

social issues. In May 2010, the Summit for Sustainability in Africa was held in Gaborone, Botswana. It also brought together regional leaders to discuss sustainable development planning, and in particular, to commit to a set of goals on fully accounting for natural capital, and integrating it into national planning, reporting and policies.

### **Economics of ecosystems and biodiversity**

Four publications were presented at the CBD COP-10 by The Economics of Ecosystems and Biodiversity (TEEB) initiative: TEEB Ecological and Economic Foundations, TEEB in National and International Policy Making, TEEB in Local and Regional Policy, and TEEB in Business and Enterprise. These, along with an Interim Report released at the CBD COP-9 in Bonn, Germany, represent a comprehensive analysis of the economic value of biodiversity, and the consequences it holds for different levels of public and private policy analysis. TEEB also seeks to systematize the role of corporations, under the TEEB for Business Coalition (2012), by formulating standards and assessing externalities. Since natural capital accounting requires the identification of replenishment activities as well as environmental degradation, the inclusion of corporations into the valuation process is key.

### **Natural Capital Declaration**

In June 2012, the Rio+20 conference “marked a watershed in the world wide interest on Natural Capital Accounting.” The Natural Capital Declaration (NCD), a commitment by CEOs in the financial sector to embed ESG considerations in management and investment activities, was revealed prior to the conference. As well, the World Bank started the WAVES 50:50 Initiative to analyze the progress and next steps required for improving efforts to account for natural capital and enhance countries’ sustainable decision-making capabilities. At the time of the conference, 62 countries, 90 corporations, and 17 civil society members had signed on to the campaign.