SHORT OVERVIEW OF GLOBAL SUSTAINABLE DEVELOPMENT INDICATORS

Codrin PAVELIUC OLARIU
Postdoctoral researcher, "Gembloux Agro Bio Tech", University of Liege, Gembloux, Belgium,
codrin.po@gmail.com

Philippe BURNY
Scientific Attachér, Walloon Center for Agricultural Research, Gembloux, Belgium, burny@cra.wallonie.be

ABSTRACT
In this paper, a bibliographical review of current sustainable development indicators used at regional and global level is presented. This review was undertaken as part of an analysis on the status quo on how to measure sustainable development and the ways to quantify results regarding set goals. Its purpose is to establish if the results of the actions taken in order to achieve the targets of the Millennium Development Goals (MDG) and those that will be taken in order to reach the target of the Sustainable Development Goals (SDG).
KEY WORDS
Sustainable development, indicator, feasibility, status quo

INTRODUCTION

The Brundtland Commission Report (WCED, 1987) defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". While this definition introduces both a time (present and future) and a spatial dimension, the latter is linked to "meeting the needs" of the present generation without endangering the capacity of future generations to meet their own needs by having the same rights, responsibilities, access to goods, services and opportunities as the same one.

The objective of this paper is to realize an analyse of the development of current measurement options of sustainable development available at global level while also stressing the importance of having a harmonized set of global standards. The paper is constructed on the temporal and spatial dimensions of sustainable development, working on the guidelines of creating and using "Sustainable Development Indicators" of the United Nations (2001) and the Joint UNECE/Eurostat/OECD Taskforce (2013).

1. DIMENSIONS OF SUSTAINABLE DEVELOPMENT

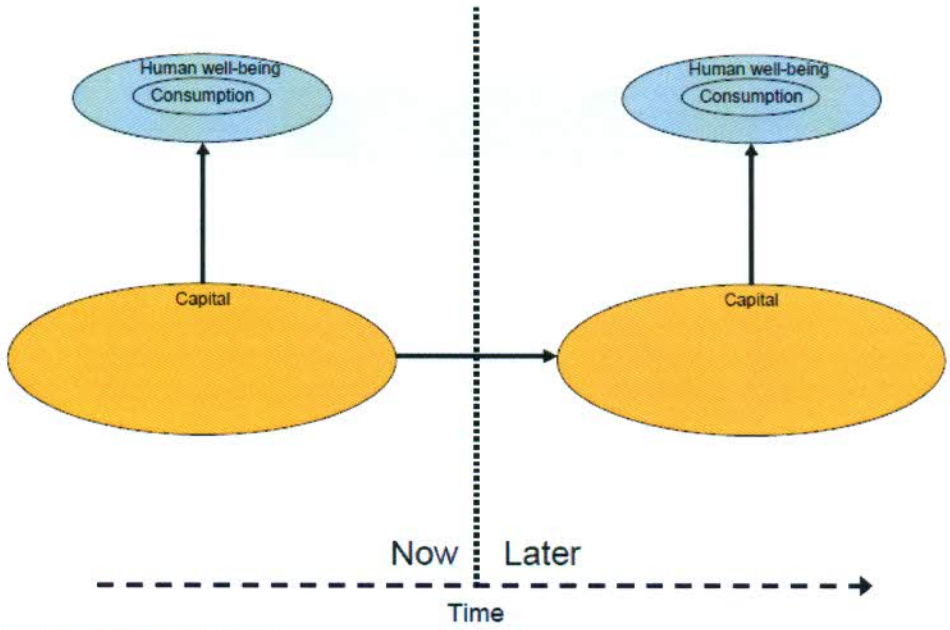
According to Pawlowski (2007) there are "three generally recognized dimensions of sustainable development: ecological, social and economic". These dimensions have been the basis of measurement of sustainable development in the pre-MDG era, allowing for simple data collection regarding objectives proposed and reached in terms of socio-economic sustainability.

The development of the Millennium Development Goals has allowed the introduction of the temporal and spatial dimensions that put an emphasis on the human well-being created through the interaction of several factors in time across multiple locations.

1.1. The Temporal dimension of sustainable development

While the definitions of sustainable development previous to the elaboration of the MDG`s presented it as a static process without showing if curernt human well-being can be maintained in the future, by introducing the temporal dimension in the discussion we can measure the potential of the sustainable development process of ensuring at least the same level of prosperity. Taking into account both the "now" and the "later" when discussing the impact of sustainable development shows us that through the same production process, different capital stocks lead to the production of both goods and services that are consumed by people and which can generate human well being. "The capital stocks that are transferred to future generations will enable them to satisfy their demands and sustain their levels of human well-being" (UNECE/Eurostat/OECD Taskforce, 2013). Through this intergenerational transfer process, there are also set different levels of needs and demands which may change subjectively to the development process.

As it can be seen in Figure 1, the impact of the temporal dimension in the sustainable development process is given by the intervention of the capital stocks on the levels of consumption, more specifically we must ensure that at least we produce "later" the same amount of goods and services consumed "now" by one person in order to ensure human well-being.



(Source: UNECE/Eurostat/OECD Taskforce, 2013)

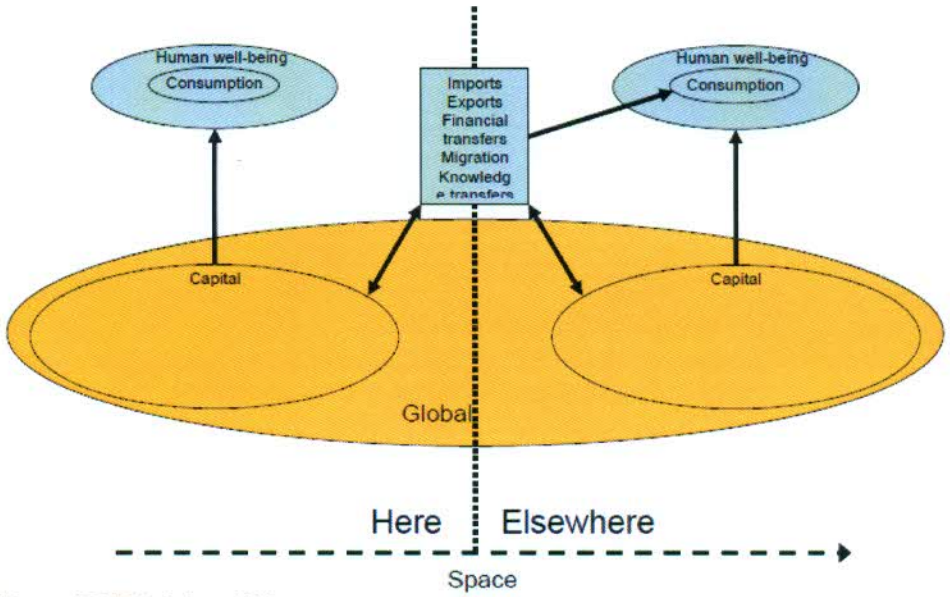
Figure 1. **Sustainable development: "Now" versus "Later"**

1.2. The Spatial dimension of sustainable development

The Spatial dimension is also presented in the Brundtland (1987) defintion of sustainable through its approach to capital. It analyses the impact of transboundary operations and tries to assess the potential influence that each country has over the process of ensuring another country's human well-being. While in building up its human well-being a country can use its own resource, it can also import the resources it lacks, offering in return resources that it has in abundance.

Thus, high attention must be given to international transfers of different types of capitals (especially financial and/or stocks) and, "in particular, on how economic activities in one country impact the natural capital available in other countries or globally" (UNECE/Eurostat/OECD Taskforce, 2013). This impact can be seen through the impact of both imports and exports, the transfer of knowledge from one country to another, but also through unconventional flows such as migration of highly qualified personnel (the so-called "brain drain" or "brain gain" phenomenon).

Figure 2 emphasizes the role of space in sustainable development by pointing out the importance of international flows of labour, goods and capital in reducing or enhancing human well-being of people living in different countries.



(Source: UNECE/Eurostat/OECD Taskforce, 2013)

Figure 2. **Sustainable development: "Here" versus "Elsewhere"**

2. MEASURING SUSTAINABLE DEVELOPMENT

The measurement of sustainable development can be divided into two periods. One is a pre-Brundtland era and includes economic composite indicators for the measurement of human well-being.

This period has its roots in a strong environmental movement from the 1950s and 1960s that tried to respond to the increasing concerns regarding the impact of economic production on the environment. Carson (1962), Hardin (1968) and Ehrlich (1968) set the tone for an increased criticism on standard macroeconomic indicators such as the GDP, which didn't include environmental or other external effects. The academic world also turned its attention on the "limits of growth", principle coined by Thomas Malthus in the "Principle of Population" (1798) that says that "a population could never grow indefinitely because the area of agricultural land is fixed and will therefore only be able to produce a fixed amount of food". Very important in sustainable development, the limits of growth have been further studied and introduced into several reports such as the 1972 Report of the Club of Rome which presented a Malthusian confrontation of limited resources on one side and of a growing population on the other side (Meadows et al., 1972).

In the 1970s, several initiatives (Nordhaus and Tobin, 1973; Hueting, 1974) were aimed at correcting national account aggregates for environmental and other non-markets factors. But, despite the efforts, most of the early products and reports were very much academic products and did not draw the attention of statistical and policy circles.

The second period for the measurement of sustainable development is a so-called "post-Brundtland" era. It followed the publication of the Report of the United Nations' World Commission on Environment and Development (WCED) "*Our Common Future*" in 1987. Better known as the Brundtland Report, after the chairperson of the WCED Gro Harlem Brundtland, the report was important for defining sustainable development with a scope beyond environmental concerns, including social aspects at both national and international levels.

In the post-Brundtland era, major breakthroughs were made in the conceptualization of sustainable development indicators. While, in the early 1990s, the United Nations established the Commission on Sustainable Development (CSD) which presented its first set of sustainable development indicators in 1993, from the mid-1990s many national statistical offices became involved in the measurement of sustainable development. Examples can be found in the United Kingdom, Norway, Canada, Switzerland, Germany among many other countries.

From the end of the 1990s, many international organizations such as the European Union, World Bank, OECD launched large scaled projects to measure sustainable development or societal progress in the face of development challenges.

While the post-Brundtland era introduced us to a fast development of SDI's, following the 1992 Earth Summit in Rio de Janeiro, the measurement of sustainable development progressed in three directions: *composite indicators, indicator sets* and *satellite accounts*. These have been used lately both at national and international levels in the process of harmonising the measuring sustainable development.

3. INDICATORS FOR THE MILLENNIUM DEVELOPMENT GOALS

The challenges brought by the Millennium Declaration (2000) consisted both in solving great societal crisis, but also in quantifying these and the results of the actions taken by countries. While the harmonisation process of sustainable development indicators was still in progress, specific MDGs Indicators were developed in order to address the challenges that it brought.

In Table 1, the official indicators for MDG Goal 8 (Develop a global partnership for development) are exemplified. Goal 8 includes both indicators for macro and microeconomic measurements being considered one of the most relevant to follow. It also allows to measure the impact of sustainable development on its temporal and spatial dimensions due to the transboundary impact that the "Official Development Assistance" (ODA) might have.

Table 1. **Official list of MDG Indicators for Goal 8**

Millennium Development Goals (MDGs)	
Goals and Targets (from the Millennium Declaration)	**Indicators for monitoring progress**
Goal 8: Develop a global partnership for development	
Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Includes a commitment to good governance, development and poverty reduction – both nationally and internationally Target 8.B: Address the special needs of the least developed countries Includes: tariff and quota free access for the least	*Some of the indicators listed below are monitored separately for the least developed countries (LDCs), Africa, landlocked developing countries and small island developing States.* Official development assistance (ODA) 8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income 8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe

developed countries' exports; enhanced programme of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction Target 8.C: Address the special needs of landlocked developing countries and small island developing States (through the Programme of Action for the Sustainable Development of Small Island Developing States and the outcome of the twenty-second special session of the General Assembly) Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	water and sanitation) 8.3 Proportion of bilateral official development assistance of OECD/DAC donors that is untied 8.4 ODA received in landlocked developing countries as a proportion of their gross national incomes 8.5 ODA received in small island developing States as a proportion of their gross national incomes Market access 8.6 Proportion of total developed country imports (by value and excluding arms) from developing countries and least developed countries, admitted free of duty 8.7 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries 8.8 Agricultural support estimate for OECD countries as a percentage of their gross domestic product 8.9 Proportion of ODA provided to help build trade capacity Debt sustainability 8.10 Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative) 8.11 Debt relief committed under HIPC and MDRI Initiatives 8.12 Debt service as a percentage of exports of goods and services
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	8.13 Proportion of population with access to affordable essential drugs on a sustainable basis
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	8.14 Fixed telephone lines per 100 inhabitants 8.15 Mobile cellular subscriptions per 100 inhabitants 8.16 Internet users per 100 inhabitants

(Source: United Nations Millennium Declaration, 2000)

Due to national and transboundary impacts specificities, the indicators for MDG Goal 8 have been adapted to work under particular national and regional conditions. The measurement techniques that have been used to gather data are also country specific and not completely harmonised.

CONCLUSION

The measurement of sustainable development was first launched into discussion with debate of the "limits of growth" of Malthus (1798). From the 1950s when the first academia began to question whether or not the macroeconomic measures are able enough to cover environmental and social impacts on the society, sustainable development indicators have seen a fast paced growth. With the participation of all stakeholder groups impacted, several sets of indicators have been created in the past 50 years and lately a harmonization process has been noticed. Although national and regional specificities might stand in the way of this process, great steps have been taken towards the creation of a unique set of indicators through the establishing, through the Millennium Declaration in 2000, of the Millennium Development Goals.

The MDG`s have been, since then, implemented and evaluated in the 189 signatory states. In the post-2015 period, the MDG`s will be replaced by the Sustainable Development Goals (SDG`s) that will put a bigger pressure on the harmonization process, towards the creation of a single set of indicators.

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