Taking inventory of natural resource indicators within the Sustainable Development Goals

The Sustainable Development Goals (SDGs) aim to guide our progress towards a more sustainable future. At the Consultative Group on International Agricultural Research (CGIAR), Dr Chris Dickens is working to identify the shortcomings of the SDGs in terms of protecting natural resources. Of 231 unique indicators, just 18 directly monitor the natural resources provided by land, water, air, and biodiversity. While moderately comprehensive, these indicators lack holistic approaches to monitoring ecosystems and biodiversity. Moreover, they suffer from a lack of country-level data. A pragmatic future approach would be the forging of bridges between the SDGs and other global programmes.

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The 17 Sustainable Development Goals (SDGs), laid out by the United Nations in 2015, are the world’s attempt to combat this issue. They provide a map to guide and measure our progress towards a more sustainable global future. Countries around the world have pledged their commitment to achieving these goals by 2030. However, despite climate and environmental change being the single greatest threat to mankind, the SDGs are heavily slanted towards social and economic development.

Through the Consultative Group on International Agricultural Research (CGIAR), Dr Chris Dickens (International Water Management Institute, IWMI) is working with WWF and Conservation International to identify the shortcomings of the SDGs in terms of natural resources. Together, they have interrogated the indicators that have been proposed to measure the state of all natural resources, and offer recommendations on critical course corrections before it is too late.

17 STEPS TO A SUSTAINABLE FUTURE


It has been argued that the SDGs are too vague, lacking in practical pathways for realising the sustainable development that they seek. Dickens argues that the indicators are a particular area of weakness, as in their current form they are deliberately non-prescriptive about their achievements. Luckily, the indicators are not set in stone; undergoing continual development, there is room for improvement.

NATURAL RESOURCE INDICATORS

Of the 231 unique indicators currently in use, just 18 (a mere 7.8%) directly monitor natural resources; a further 19 (8.2%) monitor progress. The concept behind the goals is to achieve sustainability by balancing triple pillars of environmental, social, and economic development. The 17 Goals are: 1) No Poverty, 2) Zero Hunger, 3) Good Health and Wellbeing, 4) Quality Education, 5) Gender Equality, 6) Clean Water and Sanitation, 7) Affordable and Clean Energy, 8) Decent Work and Economic Growth, 9) Industry, Innovation and Infrastructure, 10) Reducing Inequality, 11) Sustainable Cities and Communities, 12) Responsible Consumption and Production, 13) Climate Action, 14) Life Below Water, 15) Life On Land, 16) Peace, Justice, and Strong Institutions, and 17) Partnerships for the Goals.

Even when explicitly included, some indicators are poorly constrained and lack precision, making quantitative measurements a challenge. For example, there are no clear definitions of forest degradation or restoration, which can vary greatly from place to place. In other cases, indicators are so prescriptive as to be exclusionary; for example, stating that there is a direct correlation between green coverage of a mountain and its state of health ignores the fact that high altitude and desert mountains lack green cover while being perfectly healthy.

There are also substantial gaps in the indicators for monitoring water resources. While water quantity is considered through direct measures of water volume, discharge, and spatial extent across different landscapes and as groundwater, water quality is only somewhat covered. While many variables influence water quality, only five are...
specifically included (oxygen, nitrogen, phosphorus, salinity, pH). There are good reasons behind this decision – for example, choosing variables that are easy and cheap to measure, requiring only basic field equipment and skills that are globally available. However, by ignoring more comprehensive monitoring we risk overlooking serious threats to water. These include common pollutants like heavy metals and pesticides, but also emerging pollutants – natural or synthetic chemicals that are not routinely monitored but which pose a threat to human and/or ecosystem health. The main gaps come in the form of measurable variables that are not considered, for example, the volume of water in snow and ice, seasonal variation in water resources, and changes in river connectivity after dam development.

Dickens argues that linking the SDGs to the data and resources of the United Nations Intergovernmental Panel on Climate Change (IPCC) would be of great mutual benefit. The lack of biodiversity monitoring is arguably the greatest weakness of the SDGs. Some minimal measures are tangentially included within other indicators; for example, marine fish stocks are considered while freshwater and marine biodiversity are not. An indicator of marine eutrophication does require the evaluation of marine biodiversity, but no methodology is provided. Some indicators, once implemented, should be hard-linked to the SDG, such that one does not need to go looking for it.

Dickens argues that the indicators are too vague to be of use, but in others they are so specific that they become exclusionary. How do you find a balance between ‘goes too far and not far enough’?

There are two ways that collected data is not much use to global reporting of sustainable development. Firstly, global earth observation data is used but does not provide enough information to enable ground-level management of the resources (eg, SDG 6.6.1 relies on EO-data that is only useful for lakes and excludes many aquatic resources such as wetlands and rivers). Secondly, some countries do not have the resources or capacity to provide meaningful country-level data to the global SDGs. Both of these result in inadequate data to describe the global picture and also show that country-level capacity is not fit for purpose. ‘Far enough’ would be that point where the data collected is fit for purpose, ie, it indicates holistically the state of the natural resource in terms of sustainability. Inadequate data means that it is impossible to make this assessment.

How can you ensure that your research results will be considered by the powers that be? Is there an official mechanism for making suggestions on changes to the SDGs?

There is a global organisation called the IAEG that includes UN agencies and country representatives. It is their responsibility to evaluate all new data and to exclude or include any. There is thus always the opportunity to improve indicators, although the process is by necessity resistant to change as the SDG indicators should be stable and should not change too rapidly.