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Filling data gaps by integrating Natural capital accounts in the SDGs

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Abstract

Statistics Netherlands works on both the SDGs and the Natural capital accounts (NKR). The possibilities to integrate indicators from the NKR in the SDGs are explored to fill possible data gaps.

Statistics Netherlands made an inventory of the NKR-data and conducted an analyses about the overlap between international monitoring frameworks such as the System of Environmental Economic Accounting and the SDGs. This led to two new indicators and a total of five NKR indicators which are used to monitor well-being and the SDGs.

There are however differences between the frameworks which bring some challenges.

First of all, the interpretation. The SDG indicators have a clear first-order effect and puts humans at the center. It is important for reporting that it can be explained how the indicator contributes to or detracts from achieving the SDGs. Therefore, indicators have a clear positive or negative effect on human well-being. Ecosystem services within NKR, on the other hand, look at the use of services by humans within a given year. As a result, ecosystem services may decline because supply decreases (e.g. less capacity of ecosystems for air filtration) or because demand decreases (e.g. cleaner air). Subsequently, ecosystem services do not have a clear first-order effect for well-being, and are therefore less suitable for monitoring well-being following the current framework of the SDGs. Additionally, physical and monetary valuation of ecosystem services are less suitable within the SDGs framework, because more use of an ecosystem service is not necessarily better for well-being.

Filling data gaps is challenging, because there are different definitions and methods used by different frameworks. As an example, for monitoring 'forest', there is the EU Green Deal Dashboard (LUCAS), SDG Portal (UNSTATS), NKR, FAO-FRA and others that use different methods and definitions. These inconsistencies make it challenging to fill data gaps according to the SDG methods and definitions.

I. THE NATURAL CAPITAL ACCOUNT

1. Nature and economy are interconnected. The Natural capital account (NKR) provide insight into this relationship. The NKR are in line with the methods, concepts and definitions of the national accounts (System of National Accounts: SNA) and the environmental accounts (System of Environmental-Economic Accounting: SEEA). In 2021, the international guidelines of the SEEA EA were adopted as a statistical standard by the UN, European Commission, OECD, World Bank and other organisations. Standards are also being developed at European level. Eurostat is working on a legal obligation for EU countries to draw up the NKR. This method provides insight into the extent and quality of ecosystems and the ecosystem services they provide within the accounting system.

II. LOOKED AT FROM A DIFFERENT PERSPECTIVE

2. When monitoring well-being and the SDGs, the focus is from a human perspective. Meaning that it describes the state of well-being on 'here and now', 'later' and 'elsewhere' from individuals, households, breadwinners, employees, pupils, etc., depending on the statistical information on a theme.

3. When measuring the SDGs for the Netherlands it concerns all people living in the Netherlands. The indicators are made on the basis of different standards, each of which uses its own demarcation. There are therefore differences in the populations that underlie the indicators when measuring the SDGs in the Netherlands, although these differences are usually small.

4. It could be difficult to interpret indicators, because the phenomena are intertwined in a complex manner. The SDG indicators have a clear first-order effect meaning that it only looks at direct effects, without steps in between, that can be linked to a development. For example, individual consumption could have a direct, first order, effect for the consumer. However, the indirect, second order, effect is that more consumption could lead to negative effects such as environmental pollution, obesity and CO2 emissions in the Netherlands or elsewhere.

5. Ecosystem services within NKR, on the other hand, look at the use of services by humans within a given year. As a result, ecosystem services may decline because supply decreases (e.g. less capacity of ecosystems for air filtration) or because demand decreases (e.g. cleaner air). Subsequently, ecosystem services do not have a clear first-order effect for well-being, and are therefore less suitable for monitoring well-being following the current framework of de SDGs.

6. Looking at the NKR, the extent and quality of the ecosystem together determine for and to what extent the ecosystem service can be provided. For example, for both biodiversity and water recreation it is important to have clean surface water. A better quality of an ecosystem usually leads to an increase in the ecosystem service. However, the delivery of an increased ecosystem service is not always better. This makes it different than measuring the SDGs. An example of this is that more air pollution from particulate matter also leads to an increase in the ecosystem service of filtering vegetation. This is because the existing vegetation captures more particulate matter particles at higher concentrations. As a result, the vegetation provides a greater ecosystem service.

III. INTEGRATING SDGS AND NATURAL CAPITAL

7. NKR indicators are used to fill data gaps in the SDG monitoring. First, an inventory was made of the available NKR-data and an analyses was done about the overlap between the System of Environmental

Economic Accounting and the SDGs. This year, two new indicators were made and led to a total of five NKR indicators which are used to monitor well-being and the SDGs. The new indicators are "Nature- and forest areas on land" and "Green spaces in built-up areas". The first as a replacement for an existing indicator with insufficient recent data available, the second as a supplement. Previously, "Green-blue space, excluding conventional farming", "Surface water with sufficient chemical quality" and "Surface water with good biological quality" were already included in the SDG monitoring. Hopefully in the future it will be possible to retrieve more data from the NKR to use for monitoring the SDGs.

8. Recently a pilot study has been conducted to look into a core indicator of ecosystem quality (KEK) and the Gross Ecosystem Product (GEP). Ecosystem quality refers to the health and resilience of an ecosystem, determined by the state of biodiversity, the quality of the environment, and the ability to maintain natural processes. The KEK aims to provide a summary overview of the quality of nature in the Netherlands. The concept of ecosystem quality is essential, because the use of natural resources directly affects the state of nature.

9. The KEK could play a role in supporting policy decisions and monitoring the SDGs, in particular, SDG 14 "Life below water" and SDG 15 "Life on land". The SDGs require a specific approach for various goals, with the indicators being drawn up according to strict guidelines. A core indicator on ecosystem quality provides a clear and coherent picture of the ecological health of our planet. This is essential for informing both policymakers and the public about the urgency and nature of environmental issues.

10. The underlying quality indicators should be unambiguous in indicating a 'good' or 'bad' state of ecosystems. This remains challenging and therefore it cannot be used in SDG monitoring yet, because the indicators for the SDGs either show if it contributes to or detracts from achieving the SDGs. Therefore, for the creation of an indicator it should have a clear positive or negative effect on human well-being. It could be challenging to find the right values to be able to say if the indicator is moving towards the goal. An example would be offered victim support. Should it be higher, because then more people are supported and more people knew how to get the support? Or lower because then less people needed it?

11. Additionally, the complexity of the method should be limited to ensure broad accessibility and usability. Statistics Netherlands will explore this further in the future.

12. Furthermore, it is important to consider the relative importance of different ecosystems. For example, threatened or critical ecosystems could be given a higher weighting. This ensures that the core indicator not only provides an overall picture of ecosystem quality, but also focuses attention on the most urgent issues. A first step to bring this further is to look at which ecosystems to include. This can be explored by the help of International Union for Conservation of Nature (IUCN) categories and Natura2000 information.

13. The GEP deals with the same difficulty needing to show either a positive or negative development. An increase in the GEP can indicate a more intensive use of nature. This could be positive for the quality of life here and now, because nature contributes more to our material prosperity, health, leisure activities, etc. However, a more intensive use of nature is not always sustainable in the long term, and therefore not positive for the SDGs. For example: increased fishing, wood extraction or recreation in nature can lead to depletion of natural resources and degradation of ecosystems. In addition, it is debatable whether the dependence on nature can be seen as positive or negative.

14. Another point is that an increase in GEP means a higher value of ecosystem services. The question is if this is because nature is valued more or because nature is becoming scarcer and therefore the price is rising.

15. More intensive use and therefore value of nature is not always positive. The service 'Capture of particulate matter' illustrates this well. The more is captured, the greater the ecosystem service and the higher the valuation. More particulate matter is captured, because there is more particulate matter in the air. Therefore, less capture of particulate matter and a smaller service is desired.

16. Currently, the GEP is still in development. The GEP as an indicator becomes more useful if the indicator is approached and presented differently. The GEP can be indicated as the socio-economic use value of nature and therefore ties in with SDG 8 "Decent work and economic growth". For SDG 8 it is positive if the socio-economic use value of nature increases. In this way the GEP becomes more useful for communicating about the SDGs.

IV. CHALLENGES

17. The different frameworks used to measure sustainability bring some challenges. This will be explained by the example of the ecosystem service 'pollination'. Around four-fifth of the world's food crops, production depends on pollination by animals, particularly insects such as wild bees. Without the presence and activity of these pollinators, production of these crops would be considerably lower. Ecosystems, such as horticulture farming or urban green, provide nesting and food supplies for wild pollinators to varying degrees. Pollination is defined as the avoided loss of crop production due to pollination by wild pollinators. The contribution of the local landscape to the production of pollination-dependent crops is determined for the service. An important note is that honeybees do not depend on ecosystems for nesting and are therefore not included in the indicator measurement for the NKR. For the NKR it is important to make this distinction, however, for measuring the SDGs this does not matter. For the SDGs, using this method would be an underestimate.

18. Additionally, physical and monetary valuation of ecosystem services are less suitable within the SDGs framework, because more use of an ecosystem service is not necessarily better for well-being. For example, an ecosystem service is walking in the forest. However, the environmental pressure increases as the number of strolls increase and this tipping point makes it a less suitable indicator for measuring the SDGs.

19. Lastly, filling data gaps is challenging, because there are different definitions and methods used by different frameworks. An example is how we define a forest and the various methods used to monitor a forest. Different definitions can be found by the EU Green Deal Dashboard (LUCAS), SDG Portal (UNSTATS), NKR and FAO-FRA. These inconsistencies make it challenging to fill data gaps according to the SDG methods and definitions. Additionally, the various definitions about the same phenomena make it confusing for users to know what to use. What can be done to accelerate progress in closing the SDG data gaps is by bringing these methods together and create an international framework. By working together more closely one common language can be made and this can support and increase the usability.

V. WORKING TOGETHER

20. Taking these challenges into account, it would be interesting to know how other countries are dealing with these challenges and how to move forward on filling data gaps to measure SDGs.

21. Building bridges between various domains can stimulate to learn from each other's best practices. Sharing knowledge and knowing more about the data availability can support reaching the SDGs. The SDGs and well-being are well-known concepts in policy and interest in the concepts is still increasing. Statistics Netherlands would like to maintain this attention and also aims to use it to draw attention to other important statistics, even if they are less easy to interpret. The data can be used as input for the political debate and support decision-making.

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