Measuring progress 2 - Towards Achieving the Environmental Dimension of the SDGs

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Background

In March 2019, UN Environment launched a report called *'Measuring Progress Towards monitoring the environmental dimension of the SDGs' (1)*, which analysed the state of the environmental dimensions of sustainable development based on the Sustainable Development Goal (SDG) indicators. This report highlighted the strengths of the SDGs in having raised the profile of the environmental dimension of development and providing a framework to monitor it.

Moving forward, UN Environment are preparing the second iteration of the *Measuring Progress* report which will be presented at the 2021 UN Environment Assembly. This report will investigate the relationship between policy frameworks and progress towards achieving the SDG targets, indicating areas where more effort is needed to achieve the environmental dimension of the 2030 Agenda. The analysis presented here forms the backbone of this second *Measuring Progress* report.

Aims

A data-driven approach to providing policy advice to countries on how to turn Nature-based Solutions into positive environmental impacts. This will be achieved by identifying those countries that are performing well in terms of translating Nature-based Solutions into environmental improvements, investigated using the SDG indicator framework, and learning from the policy contexts that has enabled success.

Methods

- Global analysis using the SDG indicators, sub-indicators and their underlying data to investigate potential relationships between Nature-based Solutions (NbS) and the state of the environment.
- Using evidence presented in the IPBES Global Assessment *(2)* we identify potential relationships between NbS and the environment that can be investigated using the SDG indicator framework.
- Using correlation analysis to test relationships between pairs of NbS and environmental indicators, controlling for national GDP, population and region.
- Comparing national data to identify countries that appear to be outliers/high achievers in terms of their NbS and environmental indicators.

Policy assessment

Using this data driven approach we are identifying outlier countries for policy assessment with experts. These countries appear to be outperforming others in terms of the relationship between their SDG indicators on NbS and the state of the environment.

For example, we find that the United Kingdom has conserved the greatest 'proportion of plant genetic resources' (sub-indicator of **2.5.1**) and is one of the few countries that has decreased the 'extinction risk of agricultural species' (**2.5.2**) (Fig 1). With experts we will explore the national policies that may explain this and other outlier results.

Western Europe and Others Group 2000-2018

United Kingdom of Great Britain and Northern Ireland

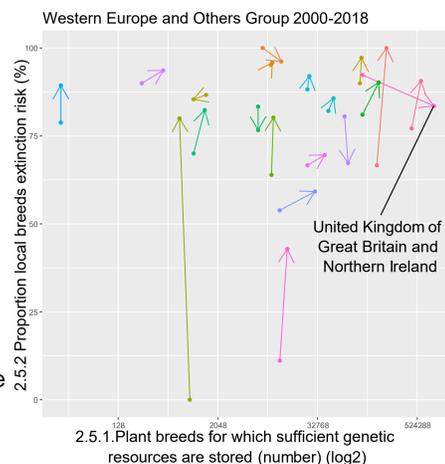2.5.1.Plant breeds for which sufficient genetic resources are stored (number) (log2)

Fig 1. Data for SDG indicator 2.5.2 and sub-indicator 2.5.1. Arrows indicate the data for the start and end (arrowhead) of the monitoring period.

Results

- 69 potential relationships between SDG indicators related to NbS and indicators related to the state of the environment.
- 16 pairs of indicators had sufficient data to be statistically tested.
- We find nine significant relationships between SDG indicators related to NbS and the state of the environment (Fig 2).

Many SDG indicators are aggregated from underlying sub-indicators. In some cases the models of these sub-indicators were significant but with both positive and negative correlation coefficients, which we refer to as 'Mixed'.

11 SGD indicators across five Goals that measure the state of the environment
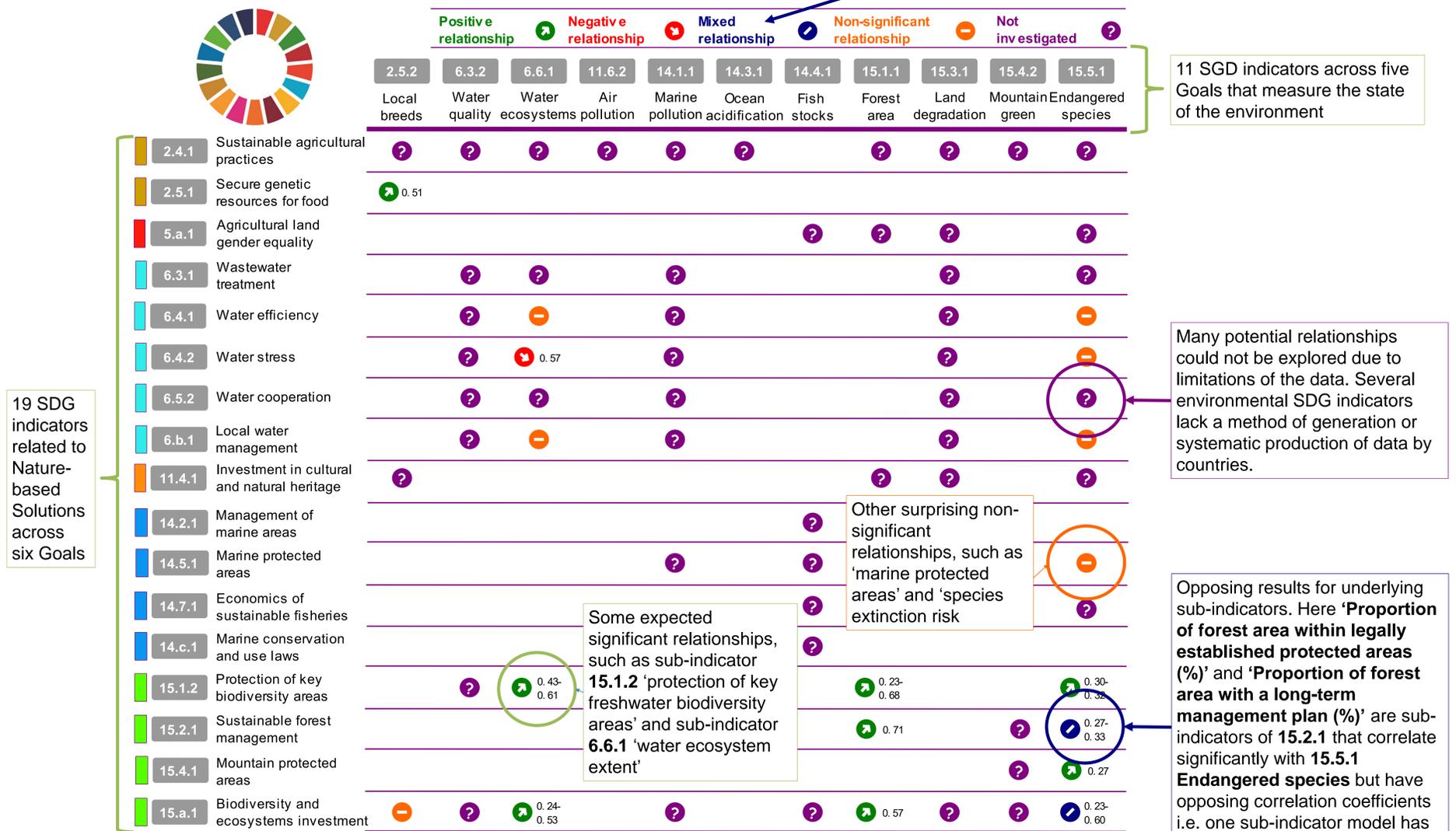
19 SDG indicators related to Nature-based Solutions across six Goals

Many potential relationships could not be explored due to limitations of the data. Several environmental SDG indicators lack a method of generation or systematic production of data by countries.

Other surprising non-significant relationships, such as 'marine protected areas' and 'species extinction risk

Some expected significant relationships, such as sub-indicator 15.1.2 'protection of key freshwater biodiversity areas' and sub-indicator 6.6.1 'water ecosystem extent'

Opposing results for underlying sub-indicators. Here **'Proportion of forest area within legally established protected areas (%)'** and **'Proportion of forest area with a long-term management plan (%)'** are sub-indicators of **15.2.1** that correlate significantly with **15.5.1 Endangered species** but have opposing correlation coefficients i.e. one sub-indicator model has a positive coefficient while the other has a negative coefficient.

Fig 2. Correlations between SDG indicators and their sub-indicators. Blank cells denote indicator pairs which were not tested either due to a lack of data or lack of evidence for potential relationships between indicators. R_2 model values are provided alongside symbols denoting significant relationships. 'Mixed relationship' denotes indicator pairs where models of their sub-indicators produced both positive and negative significant results. 'Not investigated' denotes synergies that could not be investigated due to a lack of data for one or both indicators.

Output

- Data-driven expert policy review of countries that are successfully turning Nature-based Solutions into positive environmental impact.
- Report to be presented at the 2021 UN Environment Assembly.

References

(1) UN Environment (2019) *Measuring Progress: Towards Achieving the Environmental Dimension of the SDGs*. UN Environment: Nairobi, Kenya
(2) IPBES (2019) *Global Assessment*. IPBES Secretariat: Bonn, Germany

Collaborator:

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