**NATURAL CAPITAL COALITION**

# Data use in natural capital assessments

Assessing challenges and identifying solutions

**Summary Report**

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**UN** **WCMC**
**environment** **40 years**

# Foreword by
## Mark Gough, Executive Director, Natural Capital Coalition

Virtually everyone who has undertaken a capitals assessment has raised data as a significant challenge. But they all mean slightly different things – hence the need for this project.

Through a collaborative process we now have consensus on a way to categorize the challenges. Putting them into manageable buckets. We have also been able to identify potential solutions, quick wins, and actions we can take forward together as a community or integrate into other activities.

Importantly, the project has confirmed that the most significant challenge with natural capital data is one of flow. Information is not flowing effectively between the different people involved. It is a problem underpinned by four main barriers: access, infrastructure, quality and capacity.

Ultimately, as we have found in all of our collaborative activities, this comes down to a need for better communication. Therefore our next steps will be to convene those involved to build mutual understanding and co-create solutions.

As with all projects carried out on behalf of the Coalition, the Data Information Flow project aims to be truly collaborative. If you would like to hear more or become involved then please do contact info@naturalcapitalcoalition.org.

# Summary

Barriers and challenges exist that cause inefficient flows of natural capital data and information to support decision-making processes. This negatively affects those seeking to manage their impacts and dependencies on natural capital.

Working with businesses, the UN Environment World Conservation Monitoring Centre (UNEP-WCMC), on behalf of the Natural Capital Coalition, is delivering the 'Data Information Flow' project to address this. The project aims to define businesses' natural capital data needs, assess the extent to which existing data meet these needs, and identify the barriers limiting data use and some potential solutions for overcoming them. This report sets out the results of phase 1 of the project.

## The Natural Capital data ecosystem

**The data ecosystem is complex,** with many stakeholder groups (see Figure 1) and component parts, and with data sourced and derived from a diverse range of internal and external sources. This was demonstrated by Jaguar Land Rover who had to call upon 1.3 million pieces of data to produce their natural capital valuation[1].
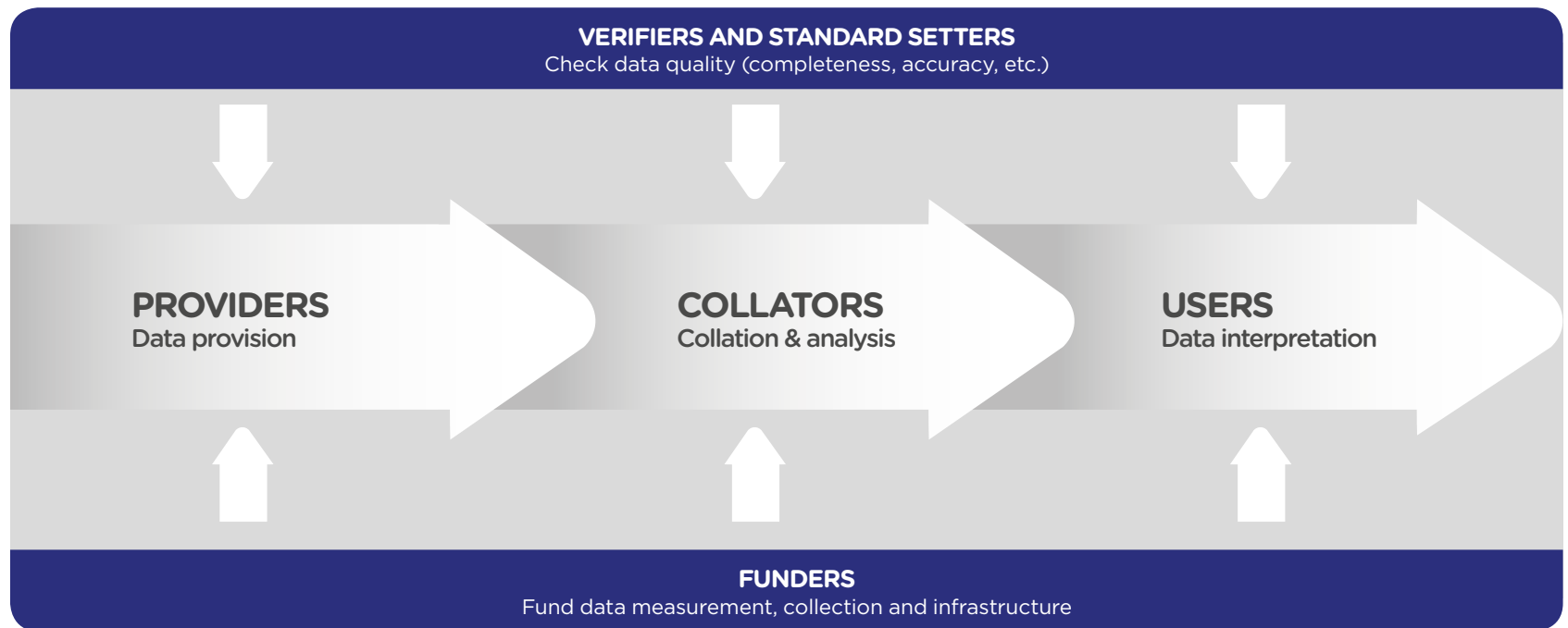
[1] Ellison, I. 2018. Jaguar Land Rover: Natural Capital Assessment – What Next? ENDS Natural Capital Conference, 27th June, London



**VERIFIERS AND STANDARD SETTERS**
Check data quality (completeness, accuracy, etc.)

**PROVIDERS**
Data provision

**COLLATORS**
Collation & analysis

**USERS**
Data interpretation

**FUNDERS**
Fund data measurement, collection and infrastructure

**Figure 1**
Simplified schematic of the natural capital data ecosystem.

Data providers will vary significantly in terms of their ability to ensure data quality and accessibility. Many of them will be producing data for specific uses that vary greatly to the purposes required by companies undertaking natural capital assessments. Similarly, data needs will vary from user to user. The decision that the data is intended to inform will significantly impact on the quality and nature of data required.

## Within the data ecosystem there are four elements that influence robust data:

### Accessibility

the ability of users to find and use data

### Infrastructure

the data assets and the organizations that produce, supply, and manage them, and supporting guidance materials

### Quality

the quality of data is essential in establishing its reliability for use and supporting decision-making processes

### Capacity

the ability of stakeholders throughout the data ecosystem to be able to call upon and use data (including technical and financial capacity)

Identifying and framing data challenges under these elements creates opportunities to devise response options and potential solutions to data blockages in natural capital assessment and decision-making processes.

## Data use in natural capital assessments

A survey of members of the Natural Capital Coalition's network with an interest in data (120 responses received) showed the following:

**Natural capital data needs to meet a number of criteria to be useful to business**. For example: it must be in accessible formats; licensed suitably for commercial use, and without prohibitive associated costs; available over appropriate time periods to support decision-making needs and to demonstrate trends over time; at the appropriate and relevant spatial scale (e.g. local/regional rather than global); sourced from credible providers; quality assured and backed up by a credible standard/methodology; and, with clearly stated limitations.

**A complex array of data types, sources and guidance are being used to inform decision-making** in relation to a range of natural capital issues. The data used spans a large number of issues, but also a range of data types (measured, modeled, proxy, qualitative, quantitative, estimated, and monetary).
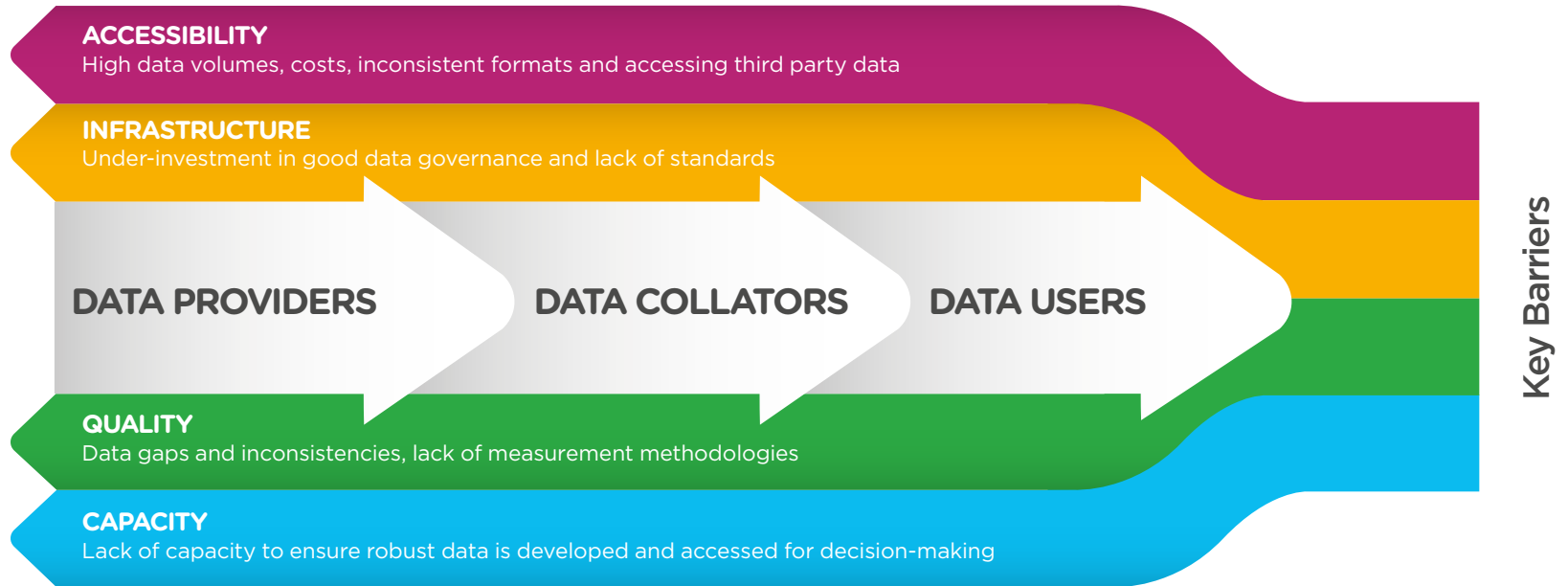
**The nature of data used varies across different natural capital issues.** Assessment of some natural capital types is disproportionately reliant on the use of qualitative data, e.g. for biodiversity and marine ecosystems. Monetary data is not well used.

**Assurance over data quality is limited,** although those issues that are governed by well-developed regulations have higher levels of assurance.

**There is no single 'go to' guidance resource to support data use in natural capital assessments.** Significant data-related guidance is available (see 'Review of guidance on data standards, management, and quality'). However, it is in multiple locations and is also of varying accessibility in terms of technical content/readability.

**Notable data gaps exist.** Gaps reported by survey respondents include: spatial data at the site level, temporal data at relevant scales, valuation coefficients, data on biodiversity and key dependencies, pressures and drivers of change, and corporate-wide data across global operations and value chains.

# Unlocking data challenges in natural capital assessments

**Key Barriers**

**ACCESSIBILITY**
High data volumes, costs, inconsistent formats and accessing third party data

**INFRASTRUCTURE**
Under-investment in good data governance and lack of standards

**DATA PROVIDERS** → **DATA COLLATORS** → **DATA USERS**

**QUALITY**
Data gaps and inconsistencies, lack of measurement methodologies

**CAPACITY**
Lack of capacity to ensure robust data is developed and accessed for decision-making

## Potential Solutions

|  | ACCESSIBILITY | INFRASTRUCTURE | QUALITY | CAPACITY |
|---|---|---|---|---|
| **Process** | • Plan for delays and costs relating to data access<br>• Investigate pathways to robust open access data | • Use of new technologies/ software, and bespoke and automated systems<br>• Investment in data governance (institutions, technologies, personnel) | • Use of internal and external assurance<br>• Modeling and proxies<br>• Use of established methods to determine impact of uncertainty<br>• Invest in filling key data gaps | • Engagement of finance/audit professionals in assessments<br>• Capacity building and training throughout the data ecosystem<br>• Members of the data ecosystem linked to enable better understanding and response to needs<br>• Integrate data considerations into all Natural Capital Coalition projects |
| **Guidance** | • Searchable data directory of key datasets<br>• Reference lists of key data sources<br>• Guidance on gap filling using technology | • Data lexicon/ontology with standard terms and definitions<br>• Guidance on key data issues – addressing gaps, ethics, licensing, good data management practice | • Guidance on data quality and verification<br>• Data measurement methodologies | • Case studies on data gathering, analysis and interpretation<br>• Checklist of data characteristics for data filtering |

**Figure 2**
The key barriers and potential solutions identified through the Data Information Flow project.

## Accessibility

There are inherent challenges associated with the volume, complexity, and nature of data required for natural capital assessments. Factors affecting access include limitations and disincentives placed on the sharing of data, costs or licensing restrictions, incompatibility of datasets, and 'dark' data that have not been digitized, uploaded, or otherwise made available. Although a number of data platforms collating relevant natural capital data exist, few have been brought together with the needs of a corporate natural capital assessment explicitly addressed.

**Potential solutions:**

Quick wins:

- Companies plan for delays and costs associated with data access

Long term actions:

- Searchable directory of key datasets (or guidance that directs data users to existing directories that meet their needs – a comprehensive review of the available data was beyond the scope of this phase of the project), reference lists of key data sources, and guidance on how to deal with data uncertainty – building on existing databases/data platforms where these meet the needs of the private sector

- Investigate how key datasets that are not currently readily accessible could be made open access, exploring incentive mechanisms that could increase the accessibility of data, and engage in existing data accessibility initiatives to ensure the needs of companies regarding natural capital data are addressed

## Infrastructure

Weak governance through poor or inconsistent data management, a lack of systems or strategies, and a lack of policies or standards may negatively impact data quality and use.

**Potential solutions:**

Quick wins:

- Existing guidance is listed within the Natural Capital Protocol Toolkit on the new MIT Shift platform[1]

Long term actions:

- Guidance on data use in natural capital assessments is required to agree a standard set of terms and definitions for data, address data gaps, identify or develop consistent methodologies, identify sources of data, and to provide confidence in the quality of data

- Support to key data providers to ensure good data governance is implemented; and sustainable, robust data infrastructure is in place

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[1]  https://shift.tools/

## Quality

Data gaps, either in terms of relevant and applicable spatial and temporal scales, subject matter, or within datasets, result in incomplete assessments. Such gaps can result in extrapolation, estimation, and use of external frameworks to provide proxies. Data is of higher quality for some assets than others. These factors introduce uncertainty into assessments, undermining uptake and use.

**Potential solutions:**

Quick wins:

- Use of internal financial assurance capacity and principles by corporate sustainability teams to improve data quality, and accessing existing guidance on dealing with uncertainty in decision-making/modeling and use of proxies, for example

Long term actions:

- Guidance for companies undertaking natural capital assessments focused on data quality (modeling, proxies, dealing with uncertainty)
- Work through the 'Combining Forces' project2 to fill data gaps of mutual interest to government and the private sector, and support the development of new measurement methodologies

## Capacity

There is a lack of capacity regarding the use of data in natural capital assessments in several key areas: the identification and resolution of data issues, delivery of fit-for-purpose data for decision-making, dealing with uncertainty and gaps, and understanding the implications.

**Potential solutions:**

Quick wins:

- Close engagement with finance teams to build the capacity of sustainability teams to handle data in natural capital assessments; and, a checklist of data characteristics that could enable sustainability teams to filter available data

Long term actions:

- Publish case studies, and design the data directory and guidance resources set out above, by bringing together key elements of the data ecosystem
- Integrate the findings of this report into all Natural Capital Coalition projects that have a data need

[2] https://naturalcapitalcoalition.org/projects/combining-forces-on-natural-capital/

# Next Steps

The Data Information Flow project brought the natural capital community together to build consensus on the barriers disrupting the flow of information through the data ecosystem. As a result we now have a framework to categorize and address these challenges. This section outlines our next steps and the actions we can take forward as a community.

## Quick wins for companies

As well as the quick wins we have outlined, the report also sets out three case studies to illustrate some of the approaches businesses are taking to overcome data challenges. A further output includes guidance that can be drawn on when undertaking a natural capital assessment.

## What's next?

Building on this first phase, data considerations and potential solutions will be integrated into all of the Coalition's ongoing projects and capacity building activities. Central to this will be convening actors from across the data ecosystem to improve communication and co-create solutions. In particular the Coalition's Natural Capital Regional Platforms provide an excellent opportunity to bring together different stakeholder groups around common issues.

The Coalition's Combining Forces project will also work to develop data case studies and share examples of best practice. Through identifying and facilitating these case studies, strategies to address specific challenges can also be explored. These areas could include incentives for data sharing, harmonizing measurement methodologies, and testing how technology can be used to reduce error and fill data gaps.

## These actions can be facilitated by the following outputs:

- Collaborative development of a data lexicon. This lexicon will agree terms and definitions, building consistency from providers through to users.

- A data checklist, including key data characteristics that users should look for to help them filter available data for their own needs. This can be integrated into the Coalition's ongoing projects, with the addition of more specific advice for particular sectors or relevant issues.

- Making existing data guidance and key datasets as accessible as possible. This can be achieved through integration into the MIT Shift platform – the new home of the Natural Capital Protocol Toolkit.

We look forward to working with you to improve the flow of data to information across the system.