

## **A protocol for identifying and recording information about international cases of using Natural Capital in policy-making**

13<sup>th</sup> September 2022

This document provides a search protocol suitable for identifying a range of examples of NC being used or integrated into policy-making practices in countries outside of the UK.

This research is part of the project JHI-D5-3, WP1, a project funded by the Scottish Government RESAS Strategic Research Programme (SRP) 2022-27. This protocol or plan represents completion of Milestone 1.1, due month 6= “*Mapping protocol agreed, to identify and describe international cases of policy using NC*”). This plan will guide our search work for the remainder of 2022 and throughout 2023. (By July 2023 we must produce M1.3 = *Milestone, Preliminary results of review of policy cases available for comment*, and the work ends by January 2024 with D1.1 = *Deliverable, Report of systematic map of international uses of natural capital in policy processes*.)

This plan been drafted by Kerry Waylen, building on the Hutton project team’s discussions, previous plans and initial scoping searches by colleagues, during which they explored how and where we might find examples of NC in policy-making.

Note that some future decision-points are highlighted, when choices must be made depending on what we find. At that point, this document will be annotated or updated, to reflect these choices. This flexibility in approach partially reflects our decision to deviate from a strict ‘systematic map’ approach as originally specified in the project concept. Please contact us if you would like to know how our work is developing; or occasionally updates will be posted on our project website <https://www.hutton.ac.uk/research/projects/galvanising-change-natural-capital>

If any reader would like to mention or build on this methodology then you are very welcome, but we would appreciate this document being cited; and we would love to know about your work! We share this document in line with our commitment to open science and in the spirit of transparency and collaboration: please do not copy or re-use our ideas without acknowledgement.

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## General Research questions (RQs)

The overall aim of this WP is to understand the international range of practices for ensuring policy-making and innovative finance initiatives reflect and value natural capital. Hutton are responsible for Activity 1 (this international review) and Activity 3 (a follow up indepth probe of selected cases, i.e using interviews)<sup>1</sup>. The following list of draft RQs apply to Hutton's work; activity 1 is expected to produce answers to RQs 1-3, whilst activity 3 will produce more insight on RQs 4 and 5.

1. What are the range and geographic location of existing policy practices working with NC?
2. Which policy domains and types tend to reference NC? What are the gaps?
3. Are any specific tools, approaches or points identified as allowing consideration of natural capital by and for policy processes?
4. What specific consequences or advantages are identified for policy processes more closely working with, or for, NC?
5. What evidence is there about how NC and related thinking is influencing policies or evidence collected in support of policy processes?

## Background: Insights from scoping searches during summer 2022

- An open search with "natural capital" and "policy" in the academic and grey literature (e.g. via google scholar) would produce thousands of search returns of which very few are actually relevant; the conclusion of many reports and papers allude to implications for policy but without any tangible connection to or influence on policy.
- Our target is identifying public policy processes that already include consideration of natural capital, somehow. Our approach will likely also produce more sources that more speculatively discuss (i) Policies that could/ should include natural capital approach and/or (ii) Policy deficits/ needs re: natural capital (what is missing/ recommendations to strengthen policies) and/or (iii) Recommendations for Tools and approaches that could support natural capital approaches in policies but that have not yet been applied<sup>2</sup>. These are not the primary focus of this search, (though relevant to our whole project). We have found that using search strings that include "in policy" as opposed to "policy" can massively reduce the number of search returns and helps to identify cases where NC has actually been considered for use in policy, versus sources speculating about the policy implications of NC.
- Much of what is relevant is in the grey literature e.g. NGO and consultancy reports, not in the academic literature.
- Searching for ESS as well as Natural Capital is relevant, and approaches often use and/or cite both terms, although ESS is mentioned far more of the former than the latter.
- The scoping search also suggested some unevenness in where in the world cases are reported, though did not reach a definitive conclusion on this.
- Health and natural resource related policies were most often found as relevant, but purposeful searching suggests other domains that may be relevant include: land use policy/ Natural resource management policy (e.g. forestry/ marine/ fisheries/ coastal/agriculture; urban planning; waste management; conservation/ biodiversity strategy; Disaster risk reduction; Green growth/ wellbeing; Energy; Minerals).

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<sup>1</sup> Task 2 is a Review of International uses of Innovative finance, running in parallel with this review. This is delivered by SRUC – contact Alistair McVittie [Alistair.mcvittie@hutton.ac.uk](mailto:Alistair.mcvittie@hutton.ac.uk) for more information about this.

<sup>2</sup> See for example

[https://wwfeu.awsassets.panda.org/downloads/191220\\_wwf\\_fr\\_natural\\_capital\\_tools\\_overview\\_english\\_.pdf](https://wwfeu.awsassets.panda.org/downloads/191220_wwf_fr_natural_capital_tools_overview_english_.pdf)

## Overview of proposed method for 2022-23

The original contract states we will use a systematic mapping process (which broadly looks like the figure 1, on the next page). However, based on our scoping work, we believe such an approach would produce very many search returns, of which very few will actually be relevant.

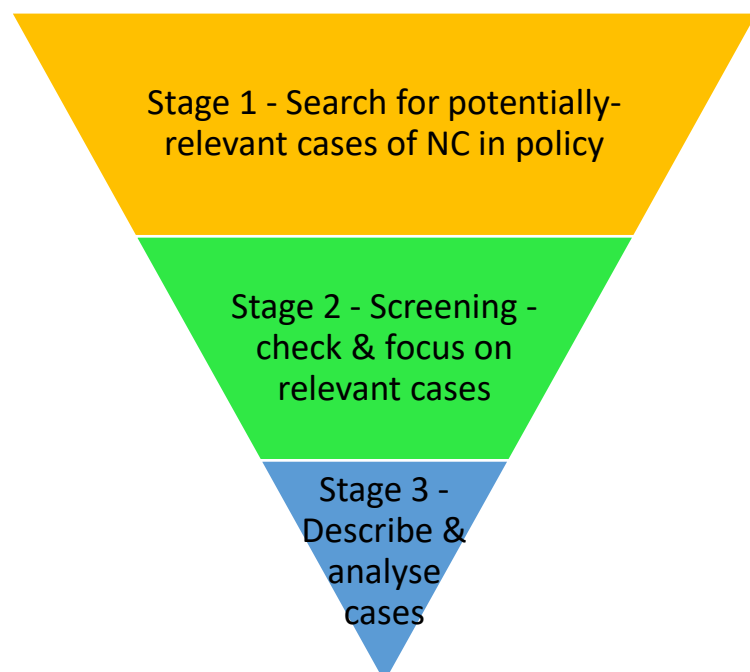
<b>Set up</b>	<ul style="list-style-type: none"> <li>• Agree scope and questions and stakeholder dialogue (SG NC team)</li> <li>• Scoping</li> <li>• Develop protocol including search strategy</li> </ul>
<b>STAGE 1: Searching and gathering</b>	<ul style="list-style-type: none"> <li>• Use search database/ platforms to identify documents</li> </ul>
<b>STAGE 2 Rapid appraisal to screen literature</b>	<ul style="list-style-type: none"> <li>• Rapid appraisal using predefined inclusion/ exclusion criteria</li> <li>• Develop evidence database/log (chain of evidence/ open science)</li> </ul>
<b>STAGE 3: Organising and coding</b>	<ul style="list-style-type: none"> <li>• Organising evidence (e.g. using ENDNOTE and NVIVO software)</li> <li>• Coding documents and sections of text (informed by research questions)</li> </ul>
<b>STAGE 4: Analysis and critical appraisal</b>	<ul style="list-style-type: none"> <li>• Analysis and critical appraisal</li> <li>• Identify trends, gaps, implications for policy/ practice, implications for future research</li> </ul>
<b>STAGE 5: Communicate outcomes</b>	<ul style="list-style-type: none"> <li>• Description of findings (narrative and visualisations)</li> <li>• Produce report on process and outcomes of int review of lit</li> <li>• Publish and share review with supplementary info (evidence log)</li> </ul>

Figure 1 Overview of a strict systematic mapping process

Therefore, we instead plan a search strategy to find potentially-relevant cases, which includes but goes beyond the systematic mapping method (see figure 1). We will review a limited number of search returns (e.g. first 10 pages) arising from using a fixed search string– searching in Google Scholar and Web of Science, using a search string which basically combines variants of “Natural Capital” or “Ecosystem Services” together with the phrase “in policy” (“in policy” seems to produce a smaller number of search returns, that will hopefully be more likely to be relevant). In parallel, we will conduct complementary purposeful searches for examples mentioned within international processes and discussions about using Natural Capital – such as UN WAVES. We will document what we search and how examples are found, but this means our search process will deviate from the strict systematic map method. These searches for information comprise ‘stage 1’ of the detailed methodology below.

After these searches are completed, we will need to take decisions about what to focus on further. The choices will depend on the quantity of potentially-relevant cases, and the quality and languages of material we have to work with; the method here is therefore not yet fixed, but factors to take into account are listed in stage 2.

Lastly, once we have a final dataset of cases of using NC, we will describe as much as possible about them from the source material that we can find – this is referred to as stage 3 below.



## Search Method Stage 1: Finding potentially-relevant cases

### 1. Search string

- Basic search string
  - *'natural capital' AND "in policy"*
  - *'ecosystem services' AND "in policy"* (excl. previous search results).
- Languages: We will search in English and Spanish.
  - We will also make 'bonus' checks for additional cases using team languages or Italian, Czech and Swedish.

### 2. Databases and locations to search

- A. Approach conforming with systematic map methodology
  - **Google scholar** with search personalisation removed. Review only titles and abstracts of first 10 pages of returns.
  - **Web of Science**
- B. Searching in English within the following **institutional sites and initiatives**, that we expect to have commissioned NC-related work; and then follow up searches to 'trace' and find more information on cases that I mention
  - WAVES (Wealth Accounting and the Valuation of Ecosystem Services) <https://www.wavespartnership.org/>
  - OPPLA, the EU knowledge marketplace "where the latest thinking on natural capital, ecosystem services and nature-based solutions is brought together". <https://oppla.eu/>
  - UN SEEA, System of Environmental Economic Accounting and related EU INCA <https://seea.un.org/> and <https://ecosystem-accounts.jrc.ec.europa.eu/>
  - PBL Netherland Environmental Assessment Agency <https://www.pbl.nl>
  - OECD [www.oecd.org](http://www.oecd.org)
  - WORLD BANK [www.worldbank.org](http://www.worldbank.org)
  - EUROSTAT <https://ec.europa.eu/eurostat>
  - European Environment Agency (EEA) [www.eea.europa.eu](http://www.eea.europa.eu)
  - [This list to be added to during autumn/winter 2022 if additional sites are identified]
- C. Searching in Spanish using Approach A. to see if additional sources are identified as relevant; and searching any Spanish-language institutional e.g. from south-american development fora [any specific sites searched to be added during autumn/winter 22].

### 3. What should be recorded as potentially-relevant?

1. An empirical example of a real-life policy process where NC has in some way been discussed and considered, potentially but not necessarily supported and represented by specific tools, datasets, or valuations. We anticipate some sources may be ‘tool-centric’ i.e. focused on presenting a tool and then a specific application of it with policy; if this application has been initiated or considered then it is relevant to this review. However, we exclude tools, approaches or frameworks that show no sign of being developed with, considered by or used by policy-makers in national or regional government and agencies.

**What counts as part of a policy process?  
Content within or directly informing public policy making processes, and accompanying or resulting documents, including;**

- Policies
- Frameworks
- Strategies/ strategic plans
- Action plans
- Position statements
- Regulations (But NOT legal documents such as Acts??)
- Reports of policy team processes within academic or grey literature
- Policy Guidance

2. Policy process could be at a national or regional level (ranging from sub-national administrations to local governments and municipalities).<sup>3</sup>

- For cases identified by systematic searching, this is appraised based on title and abstracts or summaries (or page 1 of document, where there is no summary). For cases mentioned within original source documents, potential relevance is based on the description within the original source.

### 4. Information to record

- Each team member to keep a memo in the shared WP1 folder, documenting their search process updated for each day of work.
- Potentially-relevant cases will be logged within a shared excel database, 1 row per case. Cases already found during scoping or other work will also be added to this excel list, with a clear note explaining how they were first identified. For each case, different columns will capture information on
  - Name/title of case
  - Source(s) of further information, if known, for each case
  - The reason why it was originally added to the excel sheet e.g. the database or site searched within, and also the version of the language and search string used, by which the case was identified.
- The total number of potentially-relevant cases produced at the end of this phase will be reported and recorded by the project team.

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<sup>3</sup> I.e. we exclude processes that are (1) Transboundary (e.g. Mekong commission/ European Commission/ Gaborone declaration on sustainability in Africa), or (2) Inter/Supranational (e.g. OECD/ UN/ World Bank/ IMF/ Global Environment Facility)

## Search Method Stage 2: Screening - Deciding what cases to include

### 5. Information to use

- For all potentially-relevant cases, seek at least one full source document (e.g. report, journal paper). Use the full content of that source in order to appraise against the screening criteria below.

[If at this point we find source material mainly in non-team languages, will have to introduce a an additional boundary point here, as we won't be able to translate hundreds of documents.]

- If no further information can be found to describe a case, we will record this, so the total list of cases rejected due to lack of information will be reportable.

### 6. Screening criteria

- **These criteria will be discussed when method part 1 is complete– the choices will depend on the quantity and quality of material we are working with**
- Potential criteria/options
  - a) Confirmation of above criteria i.e. #1 (case of policy process attempting to use NC) and #2 (policy process at national or regional level).
  - b) Location. Anywhere globally, or limit to Global North? Global North is arguably offers more scope for transferability to Scotland, but many cases of innovation arise in and from Global South.
  - c) Language. Our search is based in English and Spanish, but may sometimes point us towards original source material that is not available in English. We have some budget that could be used to pay for translation of documents, but whether and when this is feasible and useful will depend on the material that we are confronted with. If there were to be 100s of documents in different languages, we will need to arbitrate and choose some priorities.
- There will be a second person check on 10% of those excluded (or at least, a minimum of 10 cases early in the screening process), to ensure consistency and reliability in screening decisions.

### 7. Information to record

- Individual memos will again be updated – recording which set of potentially-relevant cases have been screened, any reflections during the process.
- All sources to be saved in endnote with corresponding citations in the excel database of cases.
- The total number of cases passing through screening will be recorded.

## Search Method Stage 3: Describing the relevant cases

Once all screening has been completed, describe each case as far as possible using the criteria below (see heading #5). Each criteria is a free text column in the excel database.

### 8. Information to use, and to record

- Use additional google or WoS searches to exhaustively check for more information about each case, do not be confined to just the original source.
  - These sources should again be saved into the project endnote, and recorded in a column for 'additional sources consulted' in the spreadsheet.
- When recording summary notes under each criteria, record the basis of each statement and any the source of any quotes copied in e.g. "NC was discussed in 2018, based on column 1 page 2 of Turnip (2020)".

### 9. Criteria used to describe each selected case

Criteria will be added as columns into the spreadsheet capturing the database of cases.

10% of these/or at least a sample of early cases should be cross-coded to promote consistency and reliability across the team; and to identify if these criteria need refinement (probably!).

#### (0) Summary information

(0a) Our summary name of policy process

(0b) Original & primary source used

(0c) Any secondary sources consulted

(1) geographic location (e.g. country/region name),

(2) policy level (e.g. national/regional),

(3) policy domain (e.g. agriculture, transport, water...),

(4) stage or part(s) of policy development, implementation or appraisal process in which NC is used including

(4a) year(s) of introduction

(4b) duration of use,

(5) Terminology or concepts used

(5a) exact terms used (ESS or NC) and note of if/how they were conflated or connected

(5b) other terms or tools used and connected with NC

(6) tools or approaches used to represent or promote consideration of NC, including

(6.a) summary of how NC was presented: accounting, indicators, raw data

(6.b.) whether quantification or qualitative information was used

(6.c.) source of any data or information used to represent NC and

(6.d.) natural assets, habitats or ecosystem services represented,

(7) note any appraisal of the consequences of using these tools or considering NC.

### 10. Analysis of information

This will partially depend on the size of the dataset and the quality and extent of information available in the literature.

- Information on what is visible from the different search strategies and screening results as recorded earlier, is important finding in itself.
- Pivot-tables in excel can help to 'eyeball' the final dataset. Importing this into SPSS can help to produce simple descriptive statistics – e.g. to report number of cases per countries - and perform any meaningful cross-tabulations (e.g. policy area x policy domain).
- Import into Nvivo and carry out very simple thematic analysis e.g. to categorise a mixture of tools reported, or aspects of ecosystem services focused on.

**Memo on likely biases arising from this approach – to record and reflect on**

Access to source material documents will vary according to:

- 1) Online presence - The ability to access material online varies over time and by country/region.
- 2) Type of public content being generated – In some areas there has been a shift in some areas of public policy away from lengthy detailed strategies towards 'frameworks' that are more high level and may 'age' better. Additionally, different countries vary in their commitments to transparency, whilst perceived sensitivity of some processes or requirements for confidentiality mean some types of subject matter go unreported.
- 3) Language bias – inevitably biased to English-publishing countries and those of other primary search languages. Regional initiatives are perhaps less likely to be translated into these +/-reported online.