

# Mapping the EU and international landscape for Nature Based Solutions

Research, policy, projects and business



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## Summary

As the recognition of the potential Nature Based Solutions (NBS) grows, so too does the need for a robust evidence base and business case across contexts. Centered in addressing societal challenges while yielding human well-being and biodiversity benefits, the term NBS acts as an umbrella term that encompasses a variety of different approaches and therefore sectors. This means that if NBS are to deliver on their predicted potential, such as providing over a third of our climate change mitigation needs and clean safe drinking water to the 1.4 billion people, decision-makers will require tools to communicate, promote and invest in interventions and policy. Currently the tools available are usually sector specific due to a lack of meta-analyses of the research, policy, projects and market-based resources available. With Europe producing much of these resources, the region is a fertile foundation point to analyse the state of the NBS landscape worldwide.

The six impact pathways which drive the NetworkNature project all rely upon a scientifically robust analysis of the evidence base available on NBS in Europe and how that relates to the global research and innovation landscape. NetworkNature, funded by the European Commission under the Horizon 2020 programme, is a resource for the NBS community, creating opportunities for local, regional and international cooperation to maximise the impact and spread of NBS. The Horizon 2020 projects complementary to NBS, as well as other EU projects, are producing continuous knowledge, experience, tools and services for which NetworkNature is perfectly placed through its role in the task forces, to collect, analyse and promote the meta-analyses of NBS resources.

From 2020 to 2021, NetworkNature mapped research, policy, projects and market-based tools, collating information on the stakeholders involved and topics covered. In parallel, relevant international resources were also identified. And while a key goal of this study is to inform a research gap analysis for NBS, some preliminary conclusions could be found from the resources mapped. Additionally, as this is the first mapping of this scale to be performed (other mappings have been limited in sector, region and resource type), the methodology of mapping is in itself a reportable result.

Due to the different types of resources, three separate mappings of global academia and projects, policy and market based tools were undertaken and then combined. In this report each has its own respective chapter where the specific methodologies and results have been expanded upon.



# 1. International research, policy and business landscape

## Background:

In pursuit of implementing cost-effective NBS, collaborations and partnerships between nations and regions will be imperative, both in terms of lessons learnt, data and monitoring. The EU boasts an impressive NBS research community which itself builds upon numerous international linkages. For example the urban forest solution based project, [CLEARING HOUSE](#), builds its lessons learnt and pilots partnering European and Chinese cities. The international research landscape was mapped both to put the EU research landscape into global context as well as to provide a representative data base to share with the NBS research community on the NetworkNature platform.

## Methodology

Different methodologies were used for the different components of the international mapping as listed here:

Mapping component	Types of resources included:	Mapping approach
Research	Research groups, projects, tools, papers and resources	Key search terms were applied to research databases such as google scholar and elsevier to identify relevant research articles. The authors affiliations, as well as further key word searches on google, were used to identify further research groups, projects, tools and compendiums. In addition, International projects identified in a different resource component were checked for similar resource compendiums and deliverables.
Policy	EU strategies, guidance, evaluation and briefs	Key search terms with policy additions were applied to google to identify policy resources. Journal articles relevant to policy identified in the research mapping added to the list of policy especially some international examples.
Business	Case studies, guidance and tools	Key search terms with business additions were applied to google to identify policy resources. Journal articles relevant to business identified in the research mapping added to the list. H2020 projects identified in a different resource component were checked for business deliverables.

## Research specific methodology

Due to the multi-sectoral nature of NBS as well as the fact that much research into NBS aligned approaches is not necessarily labeled as NBS, a slightly different methodology was necessitated in comparison to the EU mapping criteria methodology. Instead of criteria, a list of keywords was decided upon to search for research publications, groups, networks, partnerships, datasets, compendium and other resources. The keywords used were:

- Types of NBS defined by Eggermont et al, 2015<sup>1</sup>
- Approaches under the NBS umbrella identified by IUCN, 2016<sup>2</sup>
- Societal challenges from the IUCN Global Standard for Nature-based Solutions<sup>3</sup>

## Policy specific methodology

Aside from desk research, ICLEI ES contacted the NBS project board and inquired whether the members of the NBS project board could circulate a form (GDPR complaint) to collect links to essential NBS related documents available publicly. These links were then included in the consolidation document.

## Business specific methodology

The approach to find the information related to business followed three steps:

- Search for existing materials
- Verify whether materials are suitable for the database
- Tag the materials with characteristics and keywords so they are easily searchable within the database

We searched for existing material in the following sources:

- H2020
- Life+ and Interreg programmes
- open information on the internet and namely listed by google-scholar
- list of relevant materials by members of Task Force 3
- catalogue of references developed by other granted EU-NBS-Projects

The keywords for the search were developed in sub-task 3.1.4. It was then verified whether the search results were indeed related to NBS. Those which were suitable were tagged with the following information: ID, Name, open link for consultation, responsible entity, related funding, scope, key themes, audience, status, project, contacts.

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<sup>1</sup> Eggermont et al (2015). *Nature-based Solutions: New Influence for Environmental Management and Research in Europe*. <https://doi.org/10.14512/gaia.24.4.9>

<sup>2</sup> Cohen-Shacham, E., Walters, G., Janzen, C. and Maginnis, S. (eds.) (2016). *Nature-based Solutions to address global societal challenges*. Gland, Switzerland: IUCN. xiii + 97pp.  
<http://dx.doi.org/10.2305/IUCN.CH.2016.13.en>

<sup>3</sup> IUCN (2020). *Global Standard for Nature-based Solutions. A user-friendly framework for the verification, design and scaling up of NbS*. First edition. <https://doi.org/10.2305/IUCN.CH.2020.08.en>

## **Limitations**

While cataloguing about 700 resources in the first phase of the mapping, it is by no means exhaustive. The interdisciplinary nature of NBS, necessitating the inclusion of varied databases and key words, means an exhaustive representation is not possible within the realms of NetworkNature. The mapped resources represent a significant subset of the NBS landscape and so preliminary findings can be made as well as informing future works and the continued growth of this repository

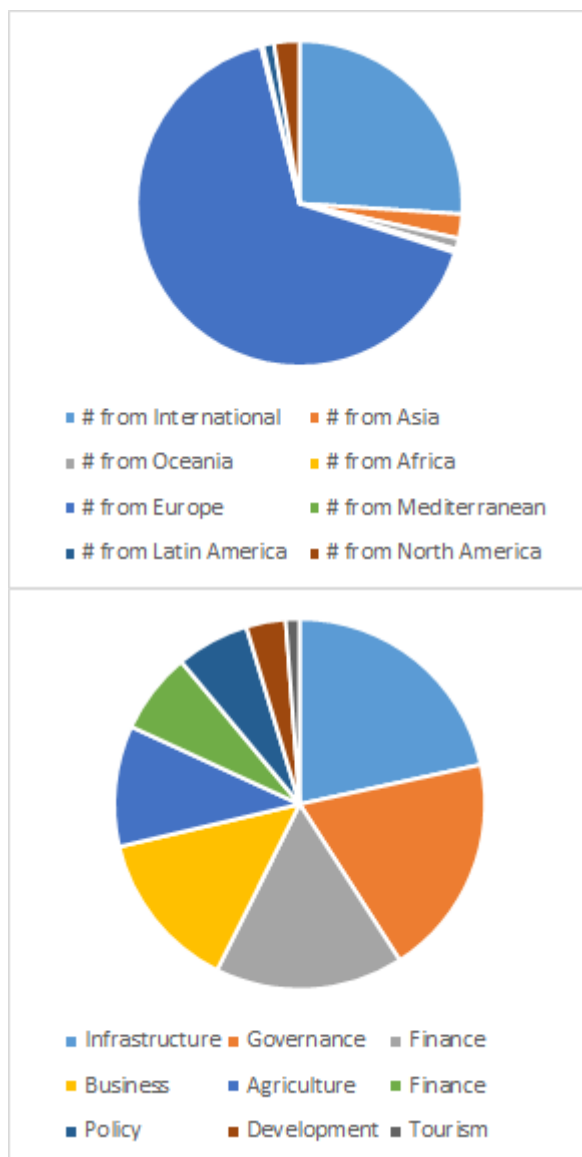
Additionally, this mapping has been done in the first 12 months of the project NetworkNature. This means only sources available and freely open to any organisation at that time have been considered. Restricted materials have not been able to be considered. Additionally, while resources in other languages have been included in the mapping, because the methodologies rested upon English language keywords, most of the mapping is English language resources.

The recommendation, and intended use within the tasks of NetworkNature, is for this mapping to be shared, used and built upon by the stakeholders of NBS globally.

## 2. Analysis and results

From the resources that were mapped it was possible to draw some conclusions on the geographic, stakeholder and context aspects of the NBS landscape. It is already worth noting that considerable more resources were found to be available in regards to research rather than policy and business.

Resources were tagged with their region of origin (in the case of Research this was the origin of the lead author) including the tag “International” when the resources originated from



an international partnership or organisation.

Most resources originate from European or International sources. This is also the case overall as well as within Research, Policy and Business resources. Regardless of the percentage originating from a region, a great diversity of countries are contributing to the NBS landscape mapping, 70 in total.

Specifically within the bound of Europe, most resources originated from the UK, followed by Spain and Germany although specifically in research, the Netherlands are also a strong contender. The methodology shows how NBS projects, primarily those from the EU, were used to access and collate further resources.

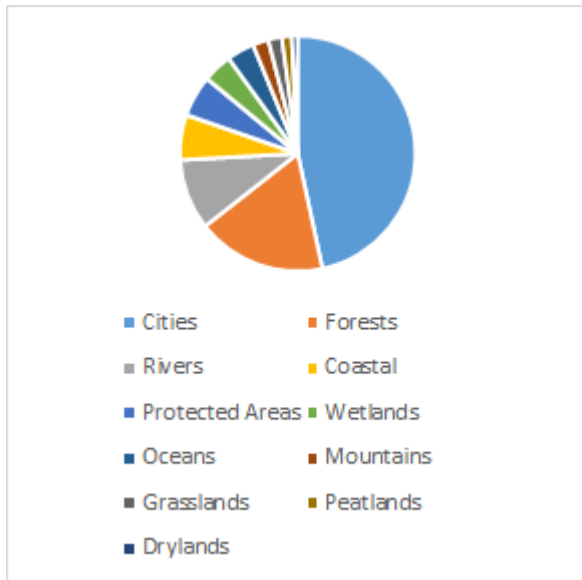
This likely contributed somewhat to the European representation in the resources however is not likely the only reason. To get an accurate depiction of the intervention landscape, further consultation will be required to identify international projects (the scoping studies from the [ADAPT project](#) in the Balkans are evident to how much work this might require).

Care was taken to monitor the sectors and stakeholders represented in the resources mapped to understand how well the keywords were working in mapping the landscape. A larger diversity of different stakeholder sectors are represented in the resource list. The private sector stakeholders alone include

agriculture, business, finance and tourism. There are resources also more available to the more governmental sector including policy, development and infrastructure. And while there are a considerable amount of resources available on governance, sectors not represented

are more civil society, migration and local communities. One large gap identified was a lack of resources aimed at the general public.

In terms of societal challenges, climate change is easily the most represented challenge in this mapping. This includes both adaptation and mitigation although over there were four



times more resources identified for adaptation rather than mitigation. Considerable resources available for DRR and human health however lacking for water security and economic and social development. Perhaps somewhat concerning is the lack of resources in regards to food security although many of the resources linked to agriculture address food security as an additional benefit, focusing instead on economic and social development. In regards to disaster risk reduction, the majority of resources for DRR are not hazard specific. Of those that were noted for focusing on a specific hazard/s, more were identified for droughts. Resources were also identified for landslides, floods, fires, heat waves and storms.

A clear trend was also noted in terms for ecosystem-specific resources: the most represented ecosystem in the resources is cities (or urban ecosystems). This was followed by river and forest ecosystems. This might represent the geographic coverage of Europe as well as the expertise of the European research/policy/business community Least represented were mountains, grasslands, peatlands and drylands which are often claimed to have a lack of funding and acknowledgement of their role in carbon mitigation.

In regards to the type of NBS action represented in the resource mapping, the most mentioned NBS action is sustainable use and management followed by restoration. Protection (or conservation) is less represented.

### 3. Future use

This mapping is used to inform the research gap analysis and factsheets being developed as part of the NetworkNature project. The resources identified are uploaded to the NetworkNature online platform to enable stakeholders to efficiently access and analyse relevant NBS resources. The NetworkNature team will continue updating the NBS Knowledge database with emerging resources until the end of the project.