

Funding Ecosystem Restoration in Europe

A summary of trends and recommendations to inform practitioners, policymakers and funders







Cambridge Conservation Initiative



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A searchable database of all the projects analysed is available online at www.restorationfunders.com.

Restoring Europe

Ecosystem restoration has the potential to improve the health of the natural world whilst addressing societal and developmental issues. Restoring ecosystems can increase biodiversity, safeguard the ecosystem services on which people and nature depend, and contribute to climate change mitigation. Combined with ending further land degradation, ecosystem restoration could achieve 34% of the efforts necessary to keep global warming below 2°C (IPBES, 2018). However, over 75% of Earth's land area is currently degraded and, within Europe, an estimated 77% of ecosystems are degraded or deteriorating (IPBES, 2018). This is despite strengthening of environmental policies and increased funding from the European Union (EU) aimed at addressing environmental concerns in recent decades (EEA, 2019). As the continent has some of the most intensively used land- and seascapes (IPBES, 2018), there is a need for further action to improve ecosystem health in Europe.

2020 and beyond brings opportunities for significant scaling up of ecosystem restoration through several initiatives. The European Green Deal (2019) aims for the EU to become carbon neutral by 2050, an ambitious goal in which ecosystem restoration will play a key role, whilst the EU Biodiversity Strategy for 2030 (2020) aims to restore degraded ecosystems across the EU through its EU Nature Restoration Plan (EC, 2019). On a global scale, the UN Decade on Ecosystem Restoration (2021–2030) aims to prevent, halt and reverse the degradation of ecosystems worldwide. These ambitions present a tremendous opportunity to bring about transformational change. In order for them to be successful, decision

Ecosystem restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed (SER Primer, 2004).

making must consider current and past ecosystem restoration activities, the amount and focus of past and current funding, and the range of actors involved. Until now, this information was unavailable.

Why map funding for restoration?

In response to this information gap, UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and Fauna & Flora International (FFI), supported by the Endangered Landscapes Programme (ELP), conducted research and compiled a database of over 400 ecosystem restoration projects within Europe.

This report has been developed to accompany the database and contains high-level analysis of what was funded, where, by whom, how much, and for what purpose. Together they provide a much-needed tool for policy makers and practitioners that will:

- enable more informed decisions on prioritisation of funding and effort;
- provide a baseline against which future decisions and funding allocations can be measured; and
- enable practitioners to identify opportunities for funding and collaboration in relation to their own projects.

By improving understanding now, as significant new international commitments begin, there is an opportunity to ensure that ecosystem restoration in Europe is supported by a dynamic, enabling and aligned policy and funding environment.

A searchable database of all the projects analysed is available online at www.restorationfunders.com.

Data caveat: Whilst effort has been made to capture as many projects as possible in this research, data on funding commitments, particularly those from private sources, is not always in the public domain or easily accessible. It is therefore recognised that the underlying dataset is not exhaustive. To add a project to this dataset, please visit: www.restorationfunders.com.

Methodology: A desk-based study was carried out to gather funding data on ecosystem restoration projects within Europe. Europe was defined as the 51 countries, territories and independent states within Europe, as defined by the Endangered Landscapes Programme. Projects included were those that had a start date between 2010–2020. Ecosystems were defined using the IUCN Habitats Classification Scheme (IUCN, 2020). The underlying dataset and information collected can be found at www.restorationfunders.com.

Key findings

- During the last decade, more than €1.2 billion has been committed to over 400 projects, restoring over 11 million hectares of degraded ecosystems across Europe.
- To enable this, more than 200 funders from international bodies (most notably the European Commission), European governments, foundations and the private sector committed more than €847 million in primary funding, with a further €360 million committed as co-funding.
- Over 85% of the restoration projects focused on terrestrial ecosystems, totalling over €1 billion in project funding, with the majority of projects focusing on terrestrial forests, grasslands and wetlands.
- Over €138 million has been committed to restoring European seas, focusing primarily on coastal marine ecosystems.
- Biodiversity conservation was the focus for 8 out of 10 projects and received nearly 80% of the known funding. The aims of the remaining projects predominantly reflect climate change-related ambitions, such as mitigation and adaptation.





How much funding has been committed?



Between 2010 and 2020, a total of €1.247 billion was committed to 412 marine, freshwater and terrestrial European ecosystem restoration projects identified in this dataset. Projects covered a vast array of ecosystems and were implemented by a range of practitioners – from small-scale, locally-managed restoration sites, to multinational, multisectoral restoration projects.

Total funding (both primary funding and co-funding) ranged between €19,000 and €28.7 million per project, with an average of €3.1 million. Approximately 20% of the projects received fewer than €1 million, with a high proportion (45%) receiving between €1−3 million (Figure 1).



* Note: Data from 391 projects, for which funding information was available.

Figure 1: Percentage of restoration projects grouped by total project funding (€).

Who provides funding?

204 funders were identified for the 412 projects in this dataset. These were categorised as international bodies (such as funds managed by the European Commission), national governments, foundations (including any not-for-profit and non-governmental organisations) and the private sector (Figure 2). This main source of funding was considered 'primary funding' and accounted for two thirds of total project funding (€847.8 million). The remainder (€360.5 million) was secured by project partners as 'co-funding'.

International bodies committed the greatest amount of funding, totalling \in 646.6 million, followed by national governments (\in 122.6 million), the private sector (\in 34.1 million) and foundations (\in 30.8 million). All types of funder committed more funds towards terrestrial projects than marine (Figure 2).



Figure 2: Percentage and amount of funding committed by each type of funder for terrestrial, marine and all types of restoration projects.

The EU LIFE Programme is the EU's main funding instrument for environmental and climate projects and was the top funder for the restoration projects included in this analysis, funding 76% of the projects and accounting for 48% of all funding for restoration in Europe.

The duration and scale of restoration projects means it is common for there to be multiple funders and complex funding arrangements. For example, the marine restoration project 'Restoring marine ecosystem connectivity in south western Turkey' involves nine implementing partners and is supported by the Endangered Landscapes Programme (primary funder) and Whitley Fund for Nature, MERCES (EU Horizon 2020), the Arcadia Fund, The Prince Bernard Nature Fund and UNDP-GEF.

Details of all of the funders can be found online at www.restorationfunders.com.

Who receives funding and implements projects?

Across Europe, 1,315 organisations were involved in the implementation of the 412 projects identified. These organisations were categorised into six types (Figure 3).





Organisations receiving funding (recipients) were categorised into four types (Figure 4). Governments were the most frequent recipient of funding, managing 59% of funds for 47% of projects, followed by non-governmental organisations (NGOs), which received 29% of all funding for 34% of projects. Collectively, research institutes, private sector companies, international bodies and other recipients, received and managed the funding for fewer than 25% of projects. NGOs received more funding from foundations and private sector companies compared to other types of organisation, yet in absolute terms, all recipients received the highest amount of funding from international bodies and governments. Overall, departments of national governments received over 50% of funding committed by government funders, and received over €200 million more from international bodies than any other type of recipient.

Type of recipient	Source of funding and amount					
	Total funding recieved (€)	International body (€)	Government (€)	Foundation (€)	Private sector (€)	No. of projects
Government	473M	393.7M	60M	18.4M	1.9M	194
NGO	235.8M	175.3M	36.7M	22.6M	0	143
Research institute	60.8M	55.6M	3M	135,000	1.2M	51
Private sector	37.4M	22.2M	11.5M	0	762,000	13
International body	4.3M	4.3M	0	0	0	4
Other	5.1M	2.6M	1.4M	0	1.400	7

Figure 4: Amount of funding received by recipients from different types of funder, and total number of projects per recipient.





What is funding aiming to achieve?

It is important to understand the goals of restoration projects and the target end benefits. The restoration goals specified by projects, as well as the condition and health of ecosystems that projects were aiming to restore, were explored. Restoration projects do not only achieve singular benefits, however, and can achieve multiple benefits. In this research, the benefits projects themselves stated as their restoration goals were considered.

Ecosystem services are the benefits humans obtain from ecosystems (IPBES, 2020).

Restoration project goals

Ecosystem restoration offers a wide range of benefits ('ecosystem services') including biodiversity conservation, climate change mitigation and adaptation, tourism, regulating water and air guality, provisioning of food and raw materials, and improving human health and well-being. Despite restoration projects speaking to multiple environmental issues and providing multiple benefits, projects are usually undertaken for a particular benefit, such as biodiversity conservation or climate change mitigation. As part of this analysis, benefits clearly stated in the project goal were recorded in order to gain an understanding of funding priorities. If a project stated more than one goal, this was recorded.

Projects stated a wide range of goals, including preventing soil erosion, reducing the impact of extreme weather events and increasing recreation, well-being and tourism. However, the conservation of biodiversity was the most common goal, mentioned in over 80% of projects and receiving nearly 80% of funding (Figure 5). Nearly 20% of the projects mentioned climate change-related goals, receiving nearly a quarter of funding (24%). Of these, the majority (56%) sought to help ecosystems and people adapt and build resilience to climate-related impacts (adaptation), whilst the remainder (44%) sought to reduce or prevent emissions of greenhouse gases (mitigation), including carbon sequestration and storage. The proportion of marine and terrestrial projects that mentioned a climate change-related goal were almost identical, at 18% and 17%, respectively.



Restoration goal (as defined by the project)

* Note: Percentages do not add up to 100 due to some projects stating more than one goal.

Figure 5: Restoration goals by percentage of total projects and funding.



Ecosystem condition

Restoration can be undertaken to restore both degraded natural and modified ecosystems. Understanding where ecosystem condition is moving from and to is important for understanding the impact of restoration projects.

Just over 60% of funding was committed to projects aiming to restore degraded ecosystems to more functional natural ecosystems, with only 10.5% focusing on improving the health of modified ecosystems, such as increasing biodiversity on farmland or within city parks (Figure 6). However, Europe's semi-natural modified ecosystems, such as wood pastures and high nature value farmlands, offer many benefits, including high biodiversity (Stanners and Bourdeau, 1995). As such they too are important ecosystems for restoration.

Given Europe's increasing urbanisation and widespread agriculture, an increase in restoration projects that aim to increase the functionality of modified ecosystems, may be necessary in order to make any significant progress in protecting biodiversity and ecosystem functionality in Europe (Ockendon et al., 2018). Such efforts need to be supported by appropriate funding.

€774.9 million Restoring a degraded natural ecosystem to a functional/more intact natural ecosystem

€338.2 million Restoring a modified ecosystem to a natural ecosystem

€129.7 million Restoring a degraded modified ecosystem to a functional/more intact modified ecosystem

€5 million Multiple

Figure 6: The proportion of funding committed to projects working to restore degraded ecosystems to more functional natural or modified ecosystems.



Which ecosystems are being restored?

Ecosystem restoration projects were found to cover marine and terrestrial ecosystems, with some projects focusing on one ecosystem and others looking to restore many within the same landscape.

356 projects, €1.1	billion		45 projects, €138.3 million
Terrestrial	Mixed terrestrial and marine: 11 projects, €40.6 million		Marine

86% of funding was committed to projects restoring terrestrial ecosystems, compared to just 11% for marine ecosystems. This difference in funding is in contrast to the area of sea under the jurisdiction of EU member states being larger than their collective land area (EEA, 2019). The comparatively lower amount of funding cannot be explained by a lack of need for marine restoration; Europe's waters are some of the most heavily used in the world, with intensive fishing, aquaculture, plastic and nutrient pollution, shipping, densely populated coastal areas, oil drilling and mining, all exerting pressure on marine ecosystems (EEA, 2019).

Within marine ecosystems, coastal ecosystem restoration accounted for over half of projects identified (54%) including sand dunes, brackish and saline lagoons, sea cliffs and rocky offshore islands, coastal caves and coastal freshwater lakes (Figure 7). This higher proportion of funding towards coastal ecosystems compared to other marine ecosystems could reflect the degraded state of Europe's coastline; two thirds of European coastal ecosystems have an 'unfavourable' conservation status (EEA, 2010). However, the need for restoration in coastal areas should not detract from the need for restoration in other parts of the marine realm, particularly when the pressures and impacts upon the ocean are well recorded within Europe (EEA, 2015; IPBES, 2018).

Possible reasons for the comparatively lower funding for marine ecosystems could be explained by: a lower understanding of these marine ecosystems compared to the coast; technological limitations in accessing and carrying out restoration in these areas of the ocean, in turn making restoration activities more expensive, and less widespread interest in supporting restoration of these ecosystems due to fewer humans visiting them (Geist and Hawkins, 2016).

Ecosystem	% of projects	% of funding	Amount of funding (€)
Terrestrial			
12.7 million hectares			
Wetlands (inland)	34	37.5	465 million
Forest	11	6	77.9 million
Grassland	9.5	9	111.1 million
Marine			
802,000 hectares			
Coastal/supratidal	6	8	99.2 million
Multiple			
8.9 million hectares	21	24	304.3 million

Figure 7: Percentage of projects, funding and hectares, for the most-funded ecosystem types in each category. As classified by the IUCN ecosystem classification system (IUCN, 2020).

Caveat: these figures do not include projects restoring multiple ecosystems where the split in funding and hectares was unknown. For this reason, multiple ecosystems are classified separately. Additionally, information on hectares being restored was not available for all projects, so data on hectares in Figure 7 is not exhaustive.



Of the projects restoring terrestrial ecosystems, inland wetlands (such as rivers, bogs and peatlands) received the highest amount of funding, followed by temperate grasslands and forests (Figure 7). Inland wetlands are the most threatened ecosystems in Europe (Xu et al., 2019) so it is perhaps appropriate that they have received the highest amount of restoration funding.

Only 21% of projects sought to restore multiple ecosystems, which were predominantly forests and inland wetlands, and only 3% of projects were focussed on restoring both terrestrial and marine ecosystems (Figure 7). Greater consideration for alignment across land- and seascapes, supported by alignment of funding opportunities, ecosystems, and stakeholders, could enable multiple benefits, such as climate change adaptations, prevention of genetic isolation, and avoidance of habitat fragmentation.

To find out more about projects aiming to restore similar habitats to specific projects or locations, search the database online at www.restorationfunders.com.

Where is restoration taking place?

The restoration projects identified were implemented in 36 countries across Europe (Figure 8), covering more than 11.6 million hectares of land and sea. More than 85% of projects took place in a single country, representing 84% (€1 billion) of funding.



Figure 8: Funding received for ecosystem restoration across Europe.

Data caveat: Whilst effort has been made to capture as many projects as possible in this research, data on funding commitments, particularly those from private sources, is not always in the public domain or easily accessible. It is therefore recognised that the underlying dataset is not exhaustive. To add a project to this dataset, please visit: www.restorationfunders.com.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Multinational projects involved two countries on average per project. Such projects included those implemented in neighbouring countries as well as larger projects restoring a similar ecosystem across multiple locations.

During the 2010–2020 period of this dataset, the five countries with the highest number of restoration projects taking place were Italy, the UK, Spain, Germany and the Netherlands. In contrast, the five countries with the greatest area being restored were Sweden, Romania, Russia, Ukraine and Poland, likely due to their relatively larger territories.

The total value of funding for restoration projects largely aligns with the total number of projects being carried out, with projects in the UK, Germany, Sweden, the Netherlands and Spain receiving the most funding between 2010 and 2020.

To explore the dataset further, please visit www.restorationfunders.com.





How has funding changed over time?

Restoring ecosystems is an ongoing process and the length of time to reach the target status of the ecosystem can depend on the severity of degradation, the ecological characteristics of the species involved, the nature of the pressure that has caused the ecosystem to deteriorate, and the ambition of the project.

On average, €124.8 million was committed to 208 restoration projects each year since 2010.

Overall, there was a decrease in funding per year, from 2010 to 2019, with 63% of all funding committed to projects starting between 2010 and 2014, compared with 37% committed to projects starting between 2015 and 2019 (\in 781.1 million and \in 466.6 million, respectively, Figure 9). This trend is likely due to the high proportion of restoration projects supported by the EU, in particular following the increase in the LIFE+ budget in 2007–2013 to \in 2.1 billion, and again from 2014–2020 to \in 3.4 billion. (We note that there may be a delay between a project starting and information on that project being made available online. For this reason, the data included on the value of funding committed in 2019 is likely to be incomplete.)

The length of projects ranged between six months and 40 years, with an average of five years for terrestrial projects and four years for marine projects. Only seven projects had a time frame of over ten years, all of which were restoring terrestrial ecosystems. It is important to note that project 'duration' may refer to either grant or project lifetime, and the distinction between these at the project level was not always specified.



Figure 9: Restoration funding committed per year, between 2010 and 2019.





Opportunities identified

By understanding the flow of funding for ecosystem restoration during the past decade we can identify trends, gaps and opportunities to support coordinated decision making moving forward. As we move into 2021, marking the start of the UN Decade on Ecosystem Restoration and the EU Biodiversity Strategy for 2030, findings from this funding landscape analysis can help identify opportunities and priorities to support future resource allocation. Although non-exhaustive, this dataset helps us to identify potential opportunities and key considerations as we move forward.

Articulating the multiple benefits of restoration

Between 2010 and 2020, at least €1.247 billion was committed to 412 restoration projects across Europe. Whilst this is a considerable sum, the social, economic, and environmental benefits experienced by people and nature as a result of healthy ecosystems can vastly outweigh this. Within Europe, the estimated value of ecosystem services is €125 billion per year (Vallecillo et al., 2019); over one hundred times the funding identified within this dataset for ten years of restoration activities.

Despite this high return on investment, the funding needed to achieve current global biodiversity targets – such as the Convention on Biological Diversity (CBD) Aichi Biodiversity Targets – has been estimated to be an order of magnitude higher than was then available (McCarthy et al., 2012). As we enter 2021, with new restoration initiatives and increased ambition (including the European Green Deal, EU Biodiversity Strategy for 2030, UN Decade on Ecosystem Restoration and the pending CBD Post-2020 Global Biodiversity Framework), additional funding is needed if these new targets are to be reached.





This analysis has shown that, at present, 81% of projects that include restoration activities aim for biodiversity gains, and that these have secured 79% of the known funding. However, restoration for ecosystem functioning can yield a much wider range of benefits. There is an opportunity for restoration practitioners to articulate their activities as means to achieving multiple goals and so appeal to different funder priorities. There is similarly an opportunity for funders to recognise ecosystem restoration as a means of achieving diverse end results. In so doing, the variety of funders, value of funding, and range of actors aligning to the restoration agenda could dramatically increase, unlocking new resources to help achieve ambitious global and regional targets.

Involving multiple sectors and stakeholders

The opportunity to articulate multiple benefits goes hand-in-hand with the opportunity to engage a wider range of actors in restoration. Potential actors in restoration projects could include all those who benefit from the ecosystem services restored, enhanced, or safeguarded through restoration actions, from individual users to multinational organisations.

Articulating climate benefits

In order to meet its target of a carbon-neutral EU by 2050, the European Green Deal aims to turn political commitment into legal obligation and, in turn, generate investment in actions that will help meet this target. We would therefore expect EU member states to increase their funding of projects that contribute towards carbon neutrality. Between 2010 and 2020, just 19% of the projects identified stated climate change mitigation or adaptation as an intended result, securing 24% of known funding. There is therefore significant opportunity for ecosystem restoration practitioners to emphasise their contribution to achieving carbon-neutrality, and for climate finance flows to sustainably support ecosystem restoration.

Key considerations moving forward

A searchable database of all the projects analysed is available online at www.restorationfunders.com.

With 2021 marking the start of the UN Decade on Ecosystem Restoration, it is likely there will be increased opportunities for funding from international bodies, governments, foundations and the private sector. Though non-exhaustive, this analysis of over 400 projects identifies a number of key gaps, opportunities and priorities for consideration by policymakers, funders and practitioners, as follows:

- Increased understanding and promotion of the benefits to people and nature from restoring degraded ecosystems could provide access to a greater diversity of funding opportunities. Identifying and targeting wide-ranging priorities of different actors and funders can support the movement towards national, regional and global targets.
- Identifying over 1,000 partners and 200 donors, this analysis highlights the large and diverse range of actors within European ecosystem restoration. Opportunities for new partnerships, as well as continuing and expanding those already established, can unlock new funding opportunities on different scales. Practitioners and funders can explore the database to identify other actors working within similar ecosystems or regions, with the potential to contribute towards greater coordination of restoration efforts.
- Significant variations in funding for different ecosystems, regions and purposes, highlights the gaps and opportunities that could guide national and regional prioritisation of European ecosystem restoration. Recognising and addressing geographic and ecosystem biases in funding patterns can help inform future prioritisation and attract more funding for under-represented ecosystems and geographies, for example marine ecosystems. Understanding which ecosystems are receiving the most funding, and comparing with those that have the greatest restoration potential, can help to identify funding gaps.
- With only 15% of projects identified from the last decade being multinational, there are opportunities to improve regional coordination by exploring transboundary opportunities, as well as those considering the land-sea interface. Such coordinated efforts can contribute significantly towards regional goals and targets, such as the European Green Deal. Considering terrestrial and marine ecosystems within restoration prioritisation can provide greater benefits and improve alignment across restoration efforts.
- With 81% of projects referencing biodiversity conservation as a core goal, but fewer than 20% referencing climate change, there is a clear opportunity to increase recognition of, and action on, the significant role restored ecosystems have to play in climate mitigation and adaptation, across marine and terrestrial ecosystems.

- Recognising the increased interest and support for ecosystem restoration, the scale of funding allocations must match the pace and scope set by ambitious national, regional and global targets. Aligning policy priorities with sustainable funding avenues can enable continued efforts of ecosystem restoration at all scales. And as restoration efforts are scaled up and coordination is increased, projects that span multiple ecosystems and consider whole land- or seascapes will be important for maintaining ecosystem functionality and services, requiring a level of funding to match these ambitions.
- Despite ecosystem restoration being recognised as a long-term process, this analysis identified an average project length of between four and five years. Establishing supportive frameworks for long-term sustainable funding can increase the impact and efficiency of ecosystem restoration efforts.
- It is important to think about restoring semi-natural and modified ecosystems and agriculture, as well as degraded natural ecosystems, to enhance biodiversity and provide increased benefits to people and nature.
- As we move into the UN Decade on Ecosystem Restoration, continued collation and analysis of funding information for restoration efforts can help track trends over time, and improve decision making for future prioritisation.



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