



# HERCULES

## The landscape approach:

### Recommendations towards landscape-centred policies

On:

- Landscape labelling
- Landscape stewardship
- Landscape resilience to climate change





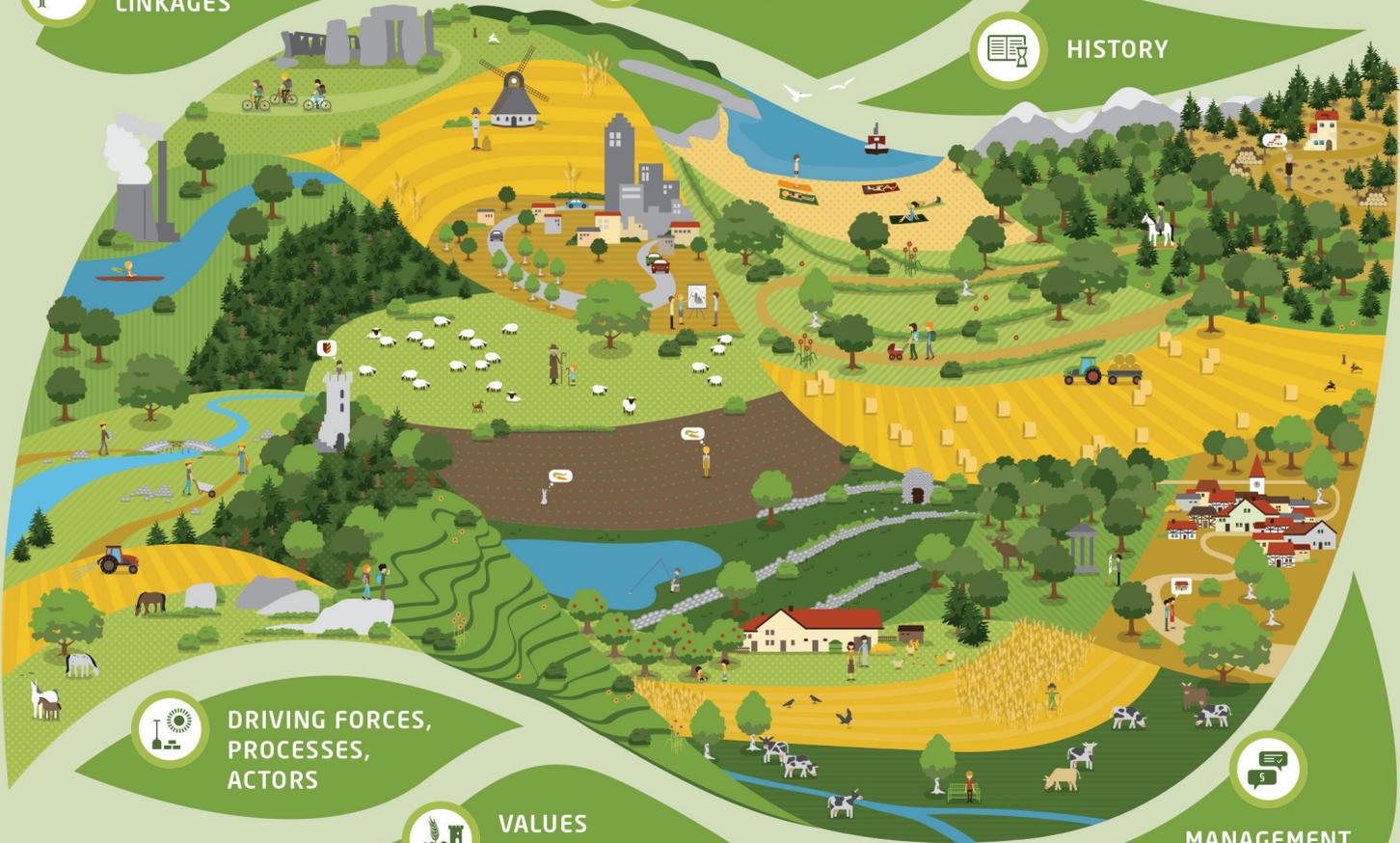
**SOCIAL-ECOLOGICAL LINKAGES**



**STRUCTURE AND LAND USE INTENSITY**



**HISTORY**



**DRIVING FORCES, PROCESSES, ACTORS**



**VALUES AND MEANING**



**MANAGEMENT**

# Foreword

The HERCULES Project was a collaboration of 13 partners from European universities, SMEs, NGOs and research institutes to develop a holistic approach, incorporating diverse stakeholder perspectives, in order to address landscape change. While the European Landscape Convention (ELC) has attracted attention from the sciences, policy makers and the general public to the nature of cultural landscapes, more needs to be done to implement it.

This document sets out the landscape approach towards policy-making advocated by the consortium and makes specific recommendations related to:

- Landscape labelling
- Landscape stewardship
- Landscape resilience to climate change

These policy recommendations are based on the outcomes of the research and the interactions with local stakeholders undertaken by the HERCULES Project.

For more information on the HERCULES Project, please visit:  
[www.hercules-landscapes.eu](http://www.hercules-landscapes.eu)

# The landscape approach

As a European project, HERCULES based its approach on the definition of landscape within the European Landscape Convention (ELC): “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. At the heart of the ELC therefore is the premise that *all* places - be they natural, rural, urban and marine - are cultural landscapes, and they are inherently dynamic. Thus the ELC does not discriminate between or among landscapes of different value, and affords equal status to ‘ordinary landscapes’ and ‘designated landscapes’ alike.

## The European Landscape Convention

As a key element of individual and social well-being and quality of life, landscape plays an important part in human fulfilment and in reinforcement of European identity. It has an important public interest role in the cultural, ecological, environmental and social fields and constitutes a resource favourable to economic activities, particularly tourism.

Unfortunately, developments in areas including agriculture, forestry, industrial activity, infrastructure, tourism, and at a more general level, changes in the world economy, have often damaged landscapes, reducing or even obliterating their distinctiveness. The ELC is about engaging and involving people in landscape and the process of landscape change. The Convention establishes the general legal principles by which national policies on landscape and international co-operation in the matter must be guided.

The ELC therefore represents a very different approach to older, well-established systems of evaluation such as the World Heritage Convention or Natura2000, covering areas of land designated nationally or regionally for a particular value (for example for their scenic, heritage or wildlife value). Under such systems, a cultural landscape is not *any* place that people have altered but specific places that demonstrate the highest achievements of human beings or are judged to have particular significance. It is a top-down, largely single-sector approach, driven by elites based on disciplinary expert advice but also marketing potential. Its primary tool is designation, which immediately implies undesignated areas.

“Landscape is a powerful, diverse and dynamic cultural resource for people in Europe. In many ways it sits at the heart of European culture as a key genre of literature, art, design and mass media. Whereas the environment is the inescapable physical setting for human existence, landscape, both urban and rural, offers more. It provides a concept of ‘place’ linked to community, an ability to transform perceptions of the world across physical and psychological borders, a frame for people’s lifestyles and identities (which in the past shaped nationhood but now contribute to emerging sub- and supra-national identities), and an interface (through concepts such as biodiversity) between people and nature.”

European Science Foundation in 2010

The HERCULES Project was also interested in heritage. Therefore, it is worth considering the concept of Cultural Landscapes as described within the World Heritage Convention (WHC). At least four different concepts of landscape can be disentangled here: one stems from garden history, where a landscape is a large designed landscape; another comes from historical geography and archaeology, to be a palimpsest of the past, judged on its historical transparency; a third comes from art history and could be a picture on a wall, or a film; and a fourth comes from ecology and is defined by the scale of an ecosystem.

## The World Heritage Convention

The Convention concerning the Protection of the World Cultural and Natural Heritage, an international agreement adopted by the General Conference of UNESCO in 1972, was founded on the premise that certain places on Earth are of outstanding universal value and as such should form part of the common heritage of humankind.

The nations or States Parties that adhere to the Convention (177 as of March 2004) have become part of an international community, united in a common mission to identify and safeguard our world's most outstanding natural and cultural heritage. Whilst fully respecting the national sovereignty, and without prejudice to property rights provided by national legislation, the States Parties to the Convention recognise that the protection of the World Heritage is the duty of the international community as a whole.

The Convention is profoundly original in that it links together in a single document the concept of nature conservation and the preservation of cultural sites. Cultural identity is strongly related to the natural environment in which it develops. Just as the creative works of humankind are often inspired by the beauty of their natural surroundings, some of the most spectacular natural sites bear the imprint of thousands of years of human activity. In order to ensure that the World Heritage List reflects the diversity of the world's outstanding cultural and natural sites, a Global Strategy for a Balanced and Representative World Heritage List was adopted by the World Heritage Committee in 1994. It encourages the nomination of sites in underrepresented parts of the world and especially in categories which are not yet fully represented on the List.

World Heritage Brochure (2014). UNESCO

## Why are we advocating a landscape approach in policy?

The concepts of landscape within the ELC and the WHC are very different and, in their systems of governance and designation, are not easy to reconcile. Much of current environmental governance arises from the application of 'administrative rationality', based on the application of expert advice by administrators. In contrast, the ELC approach is overtly participative, where policies are based on deliberation informed by experts as well as the knowledge and opinions of lay people, stakeholders and citizens.

We advocate such a participative, transdisciplinary i.e. *landscape* approach to governance because it avoids the pitfalls of single-sector or single-discipline approaches. These tend to produce solutions that are rapidly undermined by lack of wider acceptance, by developments within other aspects of landscapes or by unforeseen events. Therefore, sustainable solutions to the challenges arising in relation to the environments in which we live are more likely to flow from a landscape approach.

But before a wider constituency of stakeholders can participate, an appropriate landscape governance framework must be developed by governments and public authorities. This document aims to guide this process.

## A landscape approach to environmental governance

Environmental governance needs to be holistic, in the sense that it needs to take into account the biophysical environment, the human processes that co-produce it as well as the human well-being that depends on it. Considering these at a landscape scale helps to achieve solutions that are appropriate and sustainable in context. A transdisciplinary, landscape approach to governance avoids the pitfalls of single-sector or single-discipline approaches, which tend to produce solutions that are rapidly undermined by lack of wider acceptance by developments within other aspects of landscapes or by unforeseen events. Therefore, sustainable solutions to the challenges arising in relation to the environments in which we live are more likely to flow from a landscape approach.

### Good to know

- A prerequisite for being able to apply a landscape approach to environmental governance is the use of analysis and description methods that produce a rounded understanding of landscape. These must take into account as many facets as possible of the human/environment and people/land interaction, in city, suburb and countryside;
- Landscape character is an interpretation of the combination of all the features: experiences, activities, sensory responses; and beings (human and other) that make up 'landscape' as perceived by people.

Because this overview (as practised for example in the various forms of landscape characterisation methods) seeks to be holistic and comprehensive, it rises above other modes of assessment that might be based on sites, habitats or statistical data. Because it is subjective as well as objective in perspective, and thus potentially pluralistic and inclusive, it places cultural and human responses and solutions at the core of environmental governance;

- Character approaches – for example by recognising time-depth or ‘biography’ in the landscape and by emphasising the anthropomorphic nature of today’s environment – also emphasise that landscape is constantly changing. Indeed, landscape is itself a driver of environmental change, in two senses: the ELC sense that landscape is a human perception shaped by circumstance and culture, and guided by people’s aspirations, and in the sense that landscape is the spatial expression of society. In that second sense, landscape can be a mechanism for communities to reach collective views about the future. A landscape approach to environmental governance is therefore not necessarily, or even usually, protectionist; rather it enables participative management of change to effect the transition from past to future. In some situations, a landscape approach might champion environmental change;
- In order to ally with the Sustainable Development Goals (SDGs), substantial community input is necessary (at all the various stages of data analysis, preparation and assessment of options, and decisions),

because failure to secure this leads inexorably to lack of consent and thereby undermines the objectives of sustainable development. The importance of public participation in achieving and sustaining a landscape approach can no longer be downplayed.

### ✓ *Good to do*

---

- Make use of cost-effective and sustainable practices derived from interdisciplinary analyses of landscapes taken as a whole; and also of the co-design of effective social and environmental solutions to actual or potential landscape conflicts and problems;
- Harmonise EU policies affecting all land (urban, rural and marine) to avoid the ineffectiveness of policies that concentrate too narrowly on single sectors of economic land use, or that impact on sections of society too narrowly defined;
- Consider the landscape approach at every stage of the policy and decision-making process. This relates to the development of policy areas and tools that have a direct or indirect bearing on the natural and/or human factors of the landscape;
- Participation of citizens is key.

# Landscape labelling

## *Good to know*

- Landscape labelling is an approach to governance that promises to reward landscape managers for delivering a bundle of ecosystem goods and services that are provided and maintained at landscape level. It seeks to organise interaction processes, determine land use objectives, set standards, influence motivations, initiate or reduce conflicts, and resolve disputes among actors. Being in an early stage of innovation, landscape labelling is currently more of a vision than an established landscape governance model;
- Landscape labelling as an emergent governance approach combines aspects of integrated landscape management, geographic indication and payments for ecosystem services. Striving for multifunctionality, an integrated approach to landscape management promotes joint social, economic and environmental objectives in landscapes where productive land uses compete with environmental goals;
- A landscape approach acknowledges the interlinkages of different policy domains, administrative levels, impacts and outcomes and the trade-offs that emerge between human demands and the capacity of landscapes to satisfy them;

- Building on these visions and concepts, landscape labelling comprises three key characteristics: (1) as a guiding objective, landscape labels seek to promote multifunctional land uses that support a range of ecosystem functions and services at landscape level; (2) landscape labels are tied to a region. They aim at product differentiation of an entire landscape rather than of a particular product as a marketing tool; and (3) landscape labels are intended to provide financial incentives to landscape managers for sustainable land management practices, for example, conserve biodiversity and/or improve rural livelihood and human well-being.

### **A landscape label based on geographic indication: Iberian ham certification and dehesa management (Spain)**

The idea underlying geographic indication is that specific geographic locations (based on their biophysical landscape conditions and socio-cultural land management practices) yield certain product qualities that cannot be replicated elsewhere. Geographic indications are thus territorial market mechanisms for the creation of value chains. In Spain, three geographic indications are dedicated to jamón ibérico, an iconic product of the dehesa landscape. Dehesas are working landscapes in Spain and Portugal where livestock is raised on Mediterranean grasslands with scattered oak trees. Jamón ibérico is ham produced from an indigenous landrace (Iberian pig) that is partly fed with acorns from the oak woodlands. Markets for jamón ibérico and similar meat products are well developed in Spain, with a range of certification systems of livestock breeds and production systems existing.

## Les Saveurs du Grand Parc: A label valuing local food

The Grand Parc Miribel Jonage, governed by a joint association of 16 local communities, is a large urban park on an island on the outskirts of Lyon. The park includes wildlife protection zones for fauna and flora but 25% (500ha) of Grand Parc is farmland, of which more than 50% is organic. Partnership between the farmers and the association has led to the development of a highly successful label 'Les Saveurs du Grand Parc', which focuses on organic and local products.

The first product was locally-produced hemp oil, then came honey from local hives, followed by draft beer from the Dullion Brewery based on local cereal production. The label now also includes cheese from the Gargotière farm group, herbs from Lys-Sentielles, locally-milled organic flour from Moulin Marion and, since 2015, organic meat.

*The label is based on four quality objectives*

### 1. Protect the environment

The label is primarily a way to preserve drinking water and protect biodiversity. To qualify for the label, farmers must engage in environmental friendly practices.

### 2. Relocate the economy

Creating a local supply chain improves producers' income and guarantees fair prices for the consumer.

### 3. Enhance the territory

The farms must be less than 100 km from Grand Parc, thereby enhancing a sense of local identity.

## 4. Create links between producer and consumer

Direct selling links urban-dwellers and farmers through social and economic ties, while also enabling consumers and tourists alike to see and appreciate how the knowledge and skills of the producer and the quality of the food are part and parcel of the local cultural landscape.

### ✓ *Good to do*

- Expand focus from certifying single products, services and production processes to an entire landscape;
- Establish participatory processes and develop joint regional visions based on landscape labelling;
- Use landscape labelling to foster a dynamic debate on landscape character, including its functions, services and meanings, thus serving as a real world laboratory of change. It invites differently-motivated actors from multiple sectors and levels to explore each other's world, and enables constructive discourse on landscape development options and innovation potential;
- Integrate landscape labelling within existing policy instruments, strategies, existing procedures and standards such as geographic indication or organic agriculture;
- Create the political willingness to assign the landscape approach political priority and to provide supportive governance and policy conditions.

# Landscape stewardship

## Good to know

- The main ways in which landscape stewardship is understood as identified through 40 semi-structured interviews with land managers in South Devon, England;

| Environment   | Production   | Holistic  | Instrumental  |
|---|--|---|---|
| Looking after the land in an environmental way, looking after the environmental features, stewarding the environmental features for future generations, and taking care of the environment and putting into place measures that encourage wildlife. | To keep the land in good productive condition for future generations and to preserve traditional farming techniques. Stewardship was discussed in terms of maintaining the productivity of the land. | Respondents recognised the interactions, and sometimes the interdependencies, between ecological and production systems. They also highlighted the important role of maintaining or enhancing landscape diversity by supporting a patchwork of different land uses. | A formal government scheme to support environmental actions. Emphasis was placed on environmental agreements and farmers being paid to do something to support the natural environment. |

- Landscape values for each of the stewardship types (each interviewee was asked to name the three most important landscape values).

| Landscape Values - Property              | Environmental (N = 10) | Production (N = 6) | Holistic (N = 13) | Instrumental (N = 11) |
|--|------------------------|--------------------|-------------------|-----------------------|
|  | %                      | %                  | %                 | %                     |
| <b>Social relations</b>                  | 25.8                   | 22.2               | 20.0              | 26.3                  |
| <b>Quality, local food production</b>    | 22.6                   | 11.1               | 20.0              | 10.5                  |
| <b>Biodiversity</b>                      | 16.1                   | 0.0                | 17.5              | 26.3                  |
| <b>Cultural heritage</b>                 | 12.9                   | 11.1               | 20.0              | 10.5                  |
| <b>Recreation, tourism and lifestyle</b> | 9.7                    | 16.7               | 10.0              | 5.3                   |
| <b>Care for animals or land</b>          | 0.0                    | 22.2               | 7.5               | 15.8                  |
| <b>Aesthetic and inspiration</b>         | 12.9                   | 16.7               | 5.0               | 5.3                   |
| Totals                                   | 100.0                  | 100.0              | 100.0             | 100.0                 |

## ✔ *Good to do*

---

- Involve land managers and stakeholders in the enhancement of biodiversity and cultural diversity across Europe;
- Empower land managers to play an active role in identifying land management activities that can support the enhancement of values and deliver on numerous targets;
- Provide, when developing local environmental plans, effective and well-funded, independent facilitation to address the interests of multiple stakeholders, including land managers, municipalities, agriculture and conservation groups;
- Nest local environmental plans within catchment management plans to ensure that public and private benefits are adequately represented.



# Landscape resilience to climate change

## 📌 *Good to know*

- Climate change is largely caused by human activities (IPCC, 2015), primarily through greenhouse gas (GHG) emissions from fossil fuel burning but also from other activities such as transport, agriculture and land use changes;
- Atmospheric concentrations of greenhouse gasses have increased, causing Earth to warm. For instance, carbon dioxide concentrations have increased by about 40% since pre-industrial times, with most of the increase since the 1970s;
- Rainfall patterns will change across Europe. Annual precipitation is generally projected to increase in northern Europe and to decrease in southern Europe, leading to either increased growth rates and yields of plants and crops or a greater risk of drought, fire and desertification;
- The global groundwater recharge is expected to decrease, increasing the exposure of already vulnerable landscapes in Europe;
- Changes in river flows and run-off patterns are also of concern, both for maintaining base flows in dry periods and for increased flood risk in wet spells;
- Threats like salt-water intrusion and eutrophication should also be considered. The first is exacerbated by rising sea levels and the second is more frequent in periods of low rainfall. Some of the gases that cause climate change are also acidifying and eutrophying pollutants;
- Combined with global trade, climate change is likely to increase the threat from pests and diseases, which have important implications for plant protection and animal health;
- Although an increase in CO<sub>2</sub> on its own would enhance plant growth as it can increase plant photosynthesis, there is a general scientific expectation of a decline in yields and quality through an inhibition of nitrogen uptake due to changing climates (droughts, and increasing incidence of extreme events);
- Changes in climate will cause the migration of some new species within Europe, which are likely to extend their range northward but would also lead to losses for any at the edge of their range, changing landscapes dramatically;
- Changing landscapes linked to changing climate will impact on environmental, social, economic and cultural factors shaping those landscapes.

## Glacier melting and perceived landscape change

One of the study municipalities in the work package on short term landscape history of HERCULES is Lenk, located in the Swiss Alps. In Lenk, land cover change of the last 150 years has been analysed based on historical maps, and additional sources were used to determine the drivers of the landscape change found. The village Lenk is surrounded by high mountains and glaciers, which both are characteristic for this landscape. Most prominently, the Plaine Morte glacier is located in the southeast of the municipality. As other alpine glaciers, the glaciers of Lenk are shrinking. The map analysis shows the important reduction of glacier area. Melting of the glaciers is an ongoing process since the first analysed map from 1840 and it even became the dominant land cover change in the time steps 1968-1992 and 1992-2013.

The combination of different data sources as presented by the HERCULES project is a promising approach to analyse complex processes as landscape/land cover change.

Müller, M. & Bürgi M., 2015: Glacier melting and perceived landscape change. Hercules, Cultural Landscapes Blog, [http://www.hercules-landscapes.eu/blog.php?glacier\\_melting\\_and\\_perceived\\_landscape\\_change&id=49](http://www.hercules-landscapes.eu/blog.php?glacier_melting_and_perceived_landscape_change&id=49)

## Ice-roads

Milder winters and/or deeper snowfall reduce human access to cold landscapes through reduced access of ice roads (Hinzman et al., 2005; Prowse et al., 2011). Ice roads are common in Alaska, Canada, Russia, and Sweden, but also as river and lake crossings in Finland and the northern US states (National Research Council, 2013). In one of the HERCULES study landscapes, Vooremaa with the adjacent Kodavere parish in Estonia, these ice roads play an important role in human activities.

Hinzman, L. D., et al., 2005: Evidence and implications of recent climate change in Northern Alaska and other Arctic regions. *Climatic Change*, 72, 251-298. doi:10.1007/s10584-005-5352-2.

National Research Council, 2013: Committee on Understanding and Monitoring Abrupt Climate Change and Its Impacts, Board on Atmospheric Sciences and Climate, Division on Earth and Life Studies. *Abrupt Impacts of Climate Change: Anticipating Surprises*. National Academies Press, Dulles (USA), pp. 222

Prowse T., Alfredsen K., Beltaos S., et al., 2011: Effects of Changes in Arctic Lake and River Ice. *Ambio*. 40(Suppl 1):63-74. doi:10.1007/s13280-011-0217-6.

## ✓ *Good to do*

---

- Consider a global approach. Sustaining landscapes will require complementary adaptations in a whole set of sectors including agriculture, forestry, transport, built environment, recreational activities and energy systems, and should encourage greater integration and cooperation. Some climate change mitigation measures may have trade-offs, which need to be managed by designing appropriate mitigation measures that are suitable for local conditions;
- Assume a local approach. Because of the different trade-offs and large regional differences in mitigation and adaptation potential of different options, it is necessary to tailor policy measures to site specific conditions. Working at a landscape level implies an integrated landscape management system. Landowners and land managers must be encouraged to seek complementary solutions to common problems, including those arising from climate change;
- Enhance the provision of environmental goods and services. Thriving, dynamic landscapes are best placed to cope with climate change, not only through contributing to sequestration of carbon in soils and biomass, absorption of water through shelter belts of trees and hedgerows but also by providing habitats, biodiversity and other environmental benefits that contribute to the ability of the environment to accommodate change;
- By focusing on renewable biological resources, promote a sustainable bio-economy. Intensifying the sustainable production of renewable resources from land, fisheries and aquaculture and their conversion into food, feed, fibre bio-based products and bio-energy as well as related public goods contributes to the bio-economy;
- Foster innovation in, and knowledge of, sustainable landscape management, in order for lasting optimal land use that, will assist society in mitigating climate change;
- Invest in capacity building. For many, climate change is often perceived as far-away and difficult to comprehend, particularly as GHG emissions are invisible and other changes are apparent only at a global scale. Greater understanding of the holistic and interlinked nature of landscape, provided through education and training, will enable us to recognise, and take advantage of, the critical role of landscape in accommodating the impacts of climate change;
- Prioritise the involvement of consumers and citizens. Education, behavioural change, waste reduction and consumer choice are instruments by which the public can significantly contribute to the resilience of landscapes.

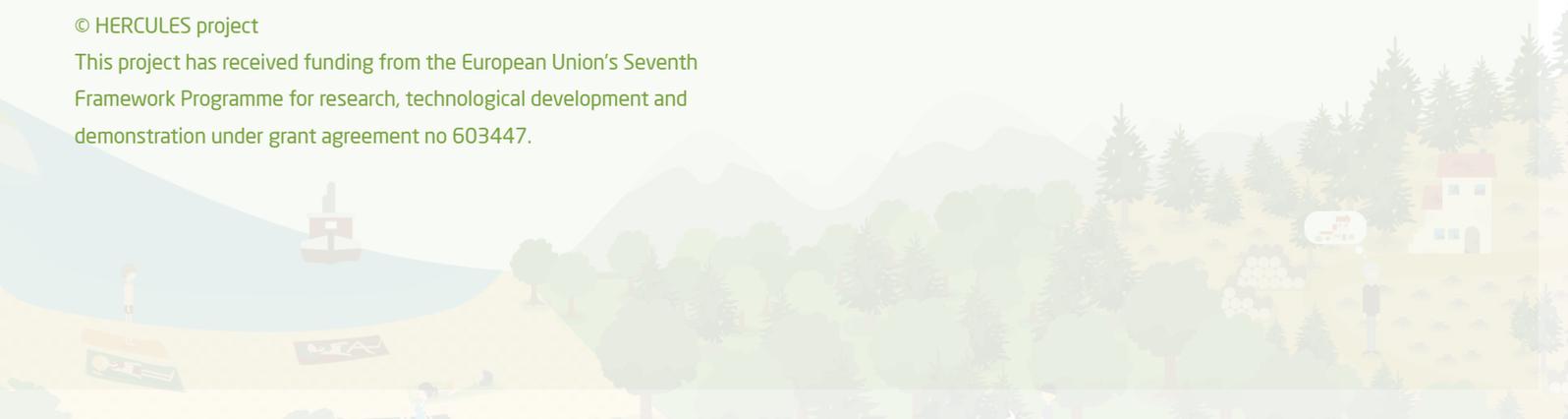
Partners:

**ALTICIME**



© HERCULES project

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 603447.



For more information on the HERCULES project contact:

Project coordinator

**Dr Tobias Plieninger**

University of Copenhagen / Humboldt-Universität zu Berlin

tobias.plieninger@ign.ku.dk

Project manager

**Kathrin Trommler**

Humboldt-Universität zu Berlin

kathrin.trommler@geo.hu-berlin.de

For more information on this document contact:

**Julianna Nagy**

European Landowners' Organization - ELO

julianna.nagy@elo.org

 [www.hercules-landscapes.eu](http://www.hercules-landscapes.eu)

 [www.facebook.com/HerculesLandscapes](https://www.facebook.com/HerculesLandscapes)

 [www.twitter.com/HerculesFP7](https://www.twitter.com/HerculesFP7)

