Green Infrastructure governance approaches in the Alpine Space

Status analysis in selected Alpine Metropolitan regions and case studies

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Abbreviations

EMM	Metropolitan Region of Munich
ESS	Ecosystem Services
EUSALP	EU Strategy for the Alpine Region
EUSALP AG7	Action Group 7 to develop ecological connectivity in the whole EUSALP territory
FIBL	Research Institute of Organic Agriculture
GAM	Metropolitan Region of Grenoble
GI	Green Infrastructure
GP area	Good practice area
GP example	Good practice example
HSWT	University of Applied Sciences Weihenstephan-Triesdorf (Hochschule Weihenstephan Triesdorf)
LUIGI	Project title “Linking Urban and Inner-Alpine Green Infrastructure”
MCM	Metropolitan City of Milan
MCTo	Metropolitan City of Turin
NUTS	Nomenclature of Territorial Units for Statistics
PP	Project partner
PTE	Foundation Pro Terra Engadine
RMB	Regional management Burgenland
SIR	Salzburg Institute for Regional Planning and Housing
SME	Small and Medium Enterprise
WP	Work Package

1 Introduction

1.1 What is LUIGI?

1.1.1 The frame

"Linking Urban and Inner-Alpine Green Infrastructure – Multifunctional Ecosystem Services for more liveable territories" (LUIGI) is a 33-months project funded by the European Union (EU) through the INTERREG Alpine Space (AS) programme. The project involves 14 partner institutions and 26 observers from six countries, namely Austria, France, Germany, Italy, Slovenia, and Switzerland.

1.1.2 Aim of the project

By recognising the pressures on Alpine ecosystems and the services they deliver to wider areas beyond mountain regions, the project aims to strengthen the link between mountain ecosystems and urban centres at the foot of the Alps, based on sound economic and social exchanges. It aims to recognise and valorise the joint benefits deriving from a Green Infrastructure (GI) network between mountain/rural and urban areas as well as their potential for sustainable economic development, based on natural capital and ecosystem services that participate in assuring higher quality of life and better urban environments to people living in urban centres.

1.1.3 Aim of WP3

The aim of WP3 is to synthesize the state of the art on GI governance, GI management practices in the LUIGI pilot regions by collecting good practice examples in respective regions (Activity 3.1); to analyse more deeply the GI governance mechanisms in selected case studies (Activity 3.2) as well as to set up a participatory, co-creative and co-productive knowledge transfer within the project partnership as well as among the stakeholders. Based on the previous knowledge, it also aims to set up a framework for transferring approaches to GI governance (Activity 3.4).

1.1.4 Objectives of Activity 3.1

The first activity aims to define the strategy for the selection of the LUIGI pilot regions, good practice (GP) areas and selected case studies. As a prioritisation strategy, a 2-step approach has been set up together with all project partners (PPs) by defining selection criteria.

To find transferable approaches between the Alpine countries, a status analysis on existing good practice (GP) as well as case study areas in the LUIGI pilot regions have been set up by WP3 leader.

In the same time, Activity 3.1 aims also to establish a shared understanding with all PPs on GI related terminologies being used related to WP3. For this issue, a glossary has been developed with feedback from all PPs.

1.2 Scope of this report

The first activity (Activity 3.1) will result in report DT3.1.1 to show-cast the potpourri of promising concepts across the Alpine countries. The scope of the first report DT3.1.1 covers three aspects:

I. Put the selected **pilot-regions** from the six participating Alpine countries on display, summarize their characteristics, that gave reasoning for selection as LUIGI pilot region;

II. Collection of the national status analysis of the selected **sub-regional good practice (GP) areas**. Therefore, a multi-criteria evaluation and prioritisation process will be developed and shortly outlined;

III. Extraction of **good practice areas**, bootstrapping on the variety of **GI governance approaches**. Therefore, a comparative case study analysis framework will be applied and shortly outlined.

Two main contributions from other LUIGI PPs are synthesized and included in the report: 1) the establishment of terms and procedures based on the bilateral meetings as well as 2) the evaluation of the questionnaire on good practice areas and examples.

1.2.1 Interrelations of this Deliverable to other Work Packages

This report serves as a base work to the output of D 3.2.1 from Activity 3.2 (WP3). Concerning GI governance in the Alpine countries, it is strongly related to D 1.2.1 Part A (WP1), introducing the GI-related EU and Alpine policy strategy.

In the questionnaire of GP areas and examples – presented in this report – also important aspects of WP4 (GI education) and WP2 (Economic benefits of GI) have been integrated. All input from PPs on these questions will be used in the further project outputs.

2 The regional governance framework for Green Infrastructure

2.1 The concept of Green Infrastructure (GI)

2.1.1 GI in the policy context

The EU Strategy for the Alpine Region (EUSALP) aims to "develop a strategically planned network of natural and semi-natural areas, including features in rural and urban areas which together – functionally interconnected – ensure diverse advantages for nature, as well as social benefits and economic prosperity for humans." to apply EU Strategy on Green Infrastructure and to develop "the Alps as an outstanding candidate for GI in Europe" (see Box 1), (EUSALP, 2020).

BOX 1: Specific Objectives of the Action Group 7 to strengthen, improve and restore biodiversity, as well as ecosystem services by Green Infrastructure

- To identify Alpine GI elements of transnational relevance, improve governance approaches and explore funding opportunities.
- To promote various benefits of GI as complementary solutions to Grey Infrastructure and bring GI onto the political agenda of the Alpine Region.
- To trigger tangible implementation initiatives and liaise with implementation partners from all relevant sectors to make GI visible and close gaps in the trans-European "matrix for life".
- To allow the benefits of ecological connectivity to emerge at ecosystem and societal dimensions, enhancing resilience to threats such as climate change.
- To develop solutions to halt biodiversity loss and address challenges such as missing connections between natural areas and homogeneous and impoverished lowlands.

The EU Strategy on Green Infrastructure has been adopted by the European Commission in 2013 to become part of the six main targets of the EU Biodiversity Strategy to 2020 (European Commission, 2011). It defines GI as "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services" (European Commission, 2013). It can be considered as a shift of paradigm in European nature conservation policies, extending the Natura2000 with focus of species and habitat conservation towards a more holistic approach to natural areas and other open spaces in urban and non-urban surroundings, taking into account a variety of society's demands, contributing to societal health, human well-being, and the green economy (c.f. Sundseth and Sylwester, 2009).

For promoters supporting EU level GI, like national and sub-national authorities amongst others, as well as the managing authorities of the relevant financing instruments the EU offers a guidance document, helping to identify EU-level GI projects (European Commission, 2019). Therefore, the following three cumulative criteria need to be fulfilled:

1) It should clearly contribute towards the conservation and/or enhancement of multiple ecosystem services at a significant scale.

2) It should contribute to improve the conservation status of species or habitats types covered by EU nature legislation (Directive 2009/147/EC and Directive 92/43/EEC) and the condition of the corresponding ecosystems.

3) It should be a with a view to upscale the necessary measures needed to halt biodiversity loss, a strategic approach should be fostered through projects that either are deployed at a scale that is significant and transcends administrative boundaries; or involve a minimum of two Member States (or a Member State and a neighbouring country); or implement a national GI strategy or a national restoration prioritisation framework.

2.1.2 Linking Inner-Alpine GI with urban areas and its context

GI can be planned at different spatial scales that are ideally nested into each other. This is in particular important, while effectively linking urban and inner-Alpine GI of transnational relevance as demanded by the EUSALP (see Box 1). The three guidance criteria mentioned above help to address the transnational and European dimension, such as the EU nature legislation and the strategic approach that goes beyond the local scale. In particular, the Natura 2000 network can be considered as an important backbone and linkage. Furthermore, some LUIGI pilot regions tangent to further transnational networks like the European Green Belt (EuroNatur Foundation, 2014) as well as the Alpine-Carpathian Corridor (Egger et al., 2012), which are also of relevance for EU level GI. In addition, a number of restoration prioritisation frameworks[1] and national GI strategies[2] may be considered at the national scale (see Lammerant et al., 2013, EC and EEA, 2020, EC, 2019, FOEN, 2020). The Austrian Biodiversity Strategy 2020+ from 2014 specifically targets to integrate biodiversity and ecosystem services in spatial planning. In France, GI is implemented in spatial planning through the green and blue network *"trame verte et bleue"*. In Germany, the Federal Green Infrastructure Concept from 2017 is of relevance. In Italy the 2014 Charter of Rome on Natural and Cultural Capital highlights the importance of GI for its natural, cultural, social and economic benefits and added it to EAFRD regional programs and related measures. Slovenia's 2030 development strategy, adopted in 2017, provides an appropriate framework and the 2050 spatial development strategy currently under preparation, is supposed to include a strategic national green infrastructure network of multifunctional spatial and landscape elements. In Switzerland GI is part of the biodiversity action plan, from 2017, aiming at the development of the ecological infrastructure until 2040.

[1] An overview of priorities for the restoration of ecosystems and their services in the EU is give (Lammerant et al. 2013)

[2] The Biodiversity Information System for Europe (BISE) by EC and EEA (2021) provides an overview on the activities on GI within the EU Member States, further insights by the 2nd Environment Implementation Review (EIR) by the EC (2019).

To finally link with the urban areas, the regional and local scale needs to be considered. Within the settlement, areas GI planning can be scaled down to the level of neighbourhoods and even sites, consisting of core and connecting elements (Pauleit et al., 2019). The basic framework of the urban GI consists of green and open spaces of citywide or regional importance. At the neighbourhood level, GI is dominated by local open space structures basic and composite elements, which for instance provide recreation for residents, sustainable mobility and/or as habitat for animals and plants. Finally, at the object level, GI elements may represent green in grey integrated GI, nature-based solutions such as aesthetically designed multifunctional rainwater management systems, providing habitat for animal and plants.

2.1.3 The conceptual understanding of GI

GI can be understood as interconnected networks of green spaces "that support native species, maintain natural ecological processes, sustain air and water resources and contribute to the health and quality of life" (Benedict and McMahon, 2006). GI emerged in the late 1990s in the United States as a spatial planning strategy to respond to uncontrolled urban growth (Benedict and McMahon, 2006, Walmsley, 2006) but its ideas are related to earlier concepts of urban planning and also to biodiversity conservation (Ahern, 2007, Wright, 2011). In the meanwhile, it evolved very dynamically on different scales, emphasizing different objectives social and economic values besides biodiversity conservation (e.g. Mell, 2017, Kambites and Owen, 2006, Tzoulas et al., 2007, Mell, 2010, Wright, 2011, Rouse and Bunster-Ossa, 2013, Sinnett et al., 2015).

GI is considered a promising approach for urban resilience and sustainable urban development (Lafortezza et al., 2013, Mell, 2017, Pauleit et al., 2017). Therefore, GI planning needs to aim at the following four main objectives (c.f. Hansen et al., 2017), (see Figure 1):

1) GI planning aims at **biodiversity conservation** (e.g. Müller et al., 2010, Elmqvist et al., 2013) which includes opportunities to interact with nature and to enhance stewardship of nature and ecological processes.
2) GI supports capacities to regulate urban climate, improve air quality and reduce storm water flooding, thus, **climate change adaptation** (e.g. Bowler et al., 2010, Demuzere et al., 2014, Liu et al., 2015).
3) GI planning promotes **green economy** development (e.g. Simpson and Zimmermann, 2013, Andersson et al., 2016), addresses human well-being and social equity, while reducing environmental risks and depletion of natural resources.
4) In addition, GI planning contributes to **social cohesion** (e.g. Thompson, 2002, Haase et al., 2017), while supporting the development of shared values, cooperations and interaction within the community.

Figure 1: Main aims and objectives and planning principles providing a fundamental basis for urban green infrastructure planning (Hansen et al., 2017, Rolf, 2020).

A number of planning principles are considered as important with connectivity and multifunctionality as two inherent key principles for the development of multifunctional networks of green spaces (Hansen et al., 2017). Connectivity planning aims to create green space networks in order to support functions and benefits that individual spaces cannot provide. Besides ecological connectivity, for dispersal of plants and animal, this furthermore includes social connectivity for better accessibility, recreation, as well as abiotic connectivity, for regulating water flow or climate functions. Multifunctionality as the second core principle aims at delivery of multiple ecosystem services with their explicit consideration to create synergies while reducing conflicts and trade-offs between different green space functions. Besides the two main principles the integration and coordination of urban green with grey infrastructure, multiscale planning, as well as the design of strategic, cooperative and socially inclusive planning processes (c.f. Benedict and McMahon, 2006, Kambites and Owen, 2006, Ahern, 2007, Pauleit et al., 2011).

Latter ones is strongly related to governance approaches. Social inclusive means to promote collaborative and participatory planning processes to discover and balance the interests of different stakeholders in order to reach a higher level of green space services and benefits (Hansen et al., 2017).

2.2 Green Infrastructure and Governance

2.2.1 Governance arrangements for GI planning

Approaches of environmental governance, as a subset of governance, has become a major concern to change decision-making processes towards sustainable development (e.g. Lemos and Agrawal, 2006, Newig and Fritsch, 2009, Tacconi, 2011, Armitage et al., 2012). It is strongly related to environmental stewardship as "actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to protect, care for or responsibly use the environment in pursuit of environmental and/or social outcomes in diverse social–ecological contexts" (Bennett et al., 2018). Evidence clearly suggest that governance strategies considering the perspectives of local ecosystem stewards are effective to safeguard biodiversity and ecosystem services (Kenward et al., 2011). Hence, a systematic way about the role of actors and their relation to driving forces on landscape change is considered as crucial and needs to be considered (Plieninger et al., 2016).

In urban contexts the involvement of citizens in green space governance has developed public participation in government and local government policy initiatives towards much more active citizenship in order to maximize the range of benefits of urban ecosystem services (van der Jagt et al., 2016). For GI planning, participatory governance concerns the arrangements in which different actors make decisions and manage green space networks at different levels (Ambrose-Oji et al., 2017). The arrangements comprise different mixes of actors, involving citizens, entrepreneurs, and NGOs, with or without the active involvement of government authorities and public agencies. These also vary in resources, in terms of time, money, skills, and other tangible and intangible assets (e.g. political and social relationships around those resources). In addition, these differ in ways how relationships and actions are managed (including legislations, regulations, social and cultural norms) as well as discourses (beliefs, values, objectives and other, motivations and main drivers of action). Thus, governance arrangements can be very diverse (ibid.). Based on an analysis of urban green space management across Europe, Buijs et al. (2016) developed a typology of innovative governance arrangements with relevance for GI planning (Table 1).

Table 1: Typology of different kinds of active citizenship approaches for GI governance focusing on innovative governance arrangements for urban green space management approaches

Governance model	Active citizenship approach	Description
Non-Government led approaches	Grassroots initiatives	Relatively small-scale initiatives, focused on a specific site, usually located on public or municipal land. Initiatives are normally started and maintained quite autonomously by local residents. Serve citizen and community objectives.
	Organisation initiated grassroots initiatives	NGOs or social enterprises mobilise active citizenship and community action. Usually conducted on public or municipal land, or on land with public access. There is power sharing between the organi-

		sation and citizens and there may be some coordination with municipalities. Serve citizen and community objectives. May serve strategic municipal objectives.
	Green Hubs	Experimental, creative coalitions of public and private organisations, social enterprises, businesses and citizens building networks and creating knowledge to develop UGI on public and private land that serves community and municipal objectives.
Co-governance	Co-governance	Partnerships between citizens or citizen organisations and municipalities with power being shared between those involved, usually located on municipal land and may involve additional public assets. Sites may be large as well as small. Serves municipal as well as citizen and community objectives.
	Green Barter	Businesses develop and/or maintain green space in exchange for a formalised right to use the values of those spaces for business purposes and profits. May involve small as well as medium sized sites. Serves municipal as well as business objectives. May serve community objectives.
Government led processes and co-management	Municipalities mobilising social capital	Municipality led initiatives which invite grassroots and individual citizens to participate in strategic or site level actions, which may be about consultation and information sharing, involvement in planning, or contributions to management and maintenance (i.e. place keeping) of green spaces. Primarily serves municipal objectives, but also serves community and citizen objectives.

Source: based on (Ambrose-Oji et al., 2017, Buijs et al., 2016)

2.2.2 From Government to Governance

In the 80s and 90s, according to Frahm and Martin (2009), basically two duelling paradigms were prevailing in European societies, which are called "government" and "the market". Since then, a change of paradigm took place, and the ways in which policy processes were organized and governed. The big divide between the two duelling paradigms was, whether government is in charge of market interventions in order to provide societal beneficiary goods and services due to "market failure" or on the contrary, relying on the "invisible hand" of the market, the consumers' choices and market competition will solve it. However, often governance was used to heal the battered image of government. However, in the governance paradigm, government is no longer the major actor, but is merely one of many actors. Governance is predicated upon a basic principle most clearly espoused by the Copenhagen Center by Sehested (2003) in Frahm and Martin (2009): *"No single actor, public or private, has the all-encompassing knowledge, overview, information, or resources to solve complex and diversified problems".*

In the meanwhile new arrangement of governance have been considered as an advancement to traditional governing mechanisms and lead to governance shifts in private, semi-private and public spheres at different levels, from local, across regional, national, transnational to global levels (van Kersbergen and van Waarden, 2004). Governance *"intends to include can be understood as the entire range of activities of citizens, elected representatives, and public professionals as they create and implement public policy in communities"* (Box, 1998). The variance of different types of governance arrangements can be classifies as illustrated in Figure 2.

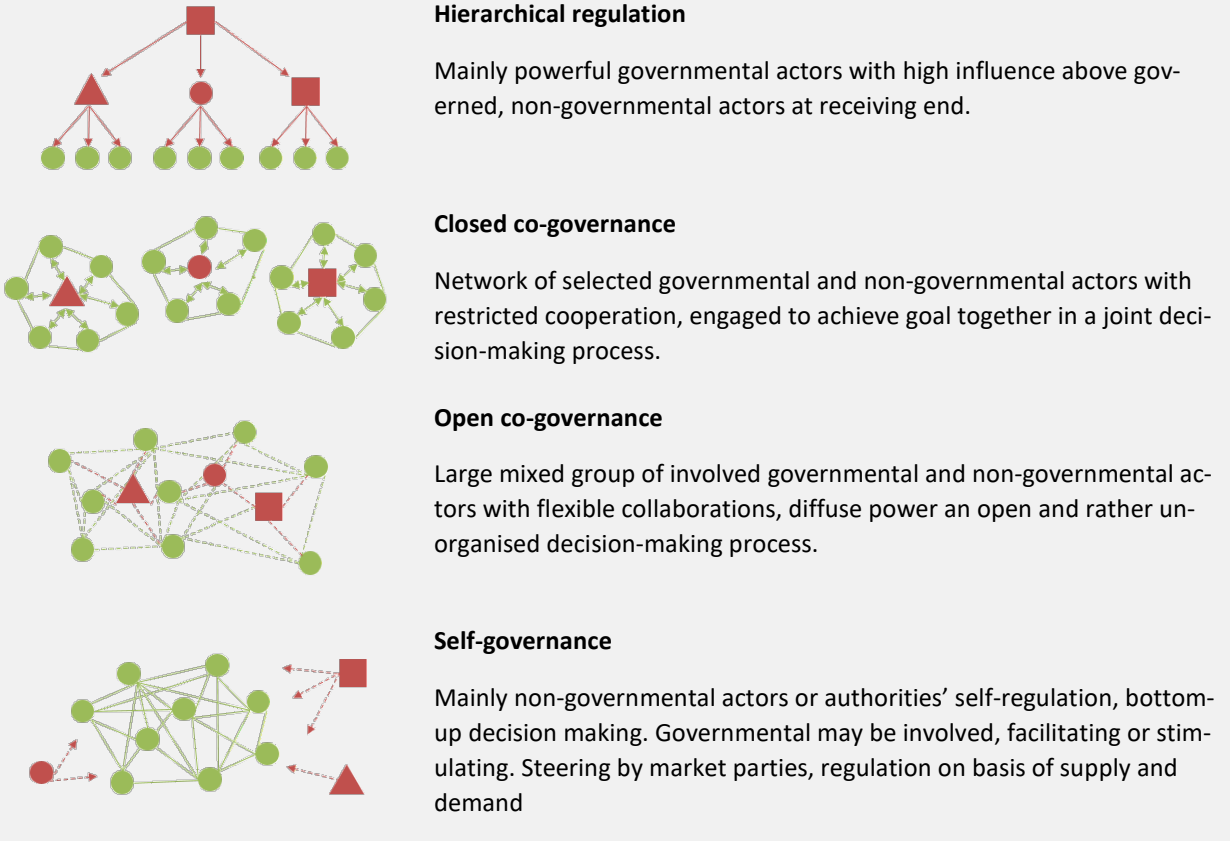


Figure 2: Four ideal-typical governance arrangements (Frahm and Martin, 2009)

The network structures in the governance paradigm are based on relationships, multifaceted through various actors, nonlinear and dynamic undergoing transformation. Such networks tend to be driven by information, expertise and resources rather than less by authority and organizational norms (Agranoff, 2003).

2.2.3 Governance in the context of land use systems and agricultural policies at different scales

This transformation from government to governance was also becoming a reality in the common agricultural policy (CAP). However, the acceptance of "governance" is until today continuing as the CAP traditionally relies heavily on the classical paradigms of "government" and "market". Since the communitarisation of agricultural policy in Europe in 1962, the governance system for land use in Europe has been shaped by European specifications and obligations. The national interests of the member states also play an important role. To illustrate these mechanisms, the political structures in force in for the Example of Germany is depicted in Figure 3. The European Union (EU) represented by the Commission and the Parliament, nation states (NUTS 1), regional districts (e.g. the Federal States in Germany or the Cantons in Switzerland, NUTS 2 or 3), county and municipality administration (NUTS 4), all face various intensities of the implementation of

Governance concepts and each having their own planning, coordination and monitoring instruments.

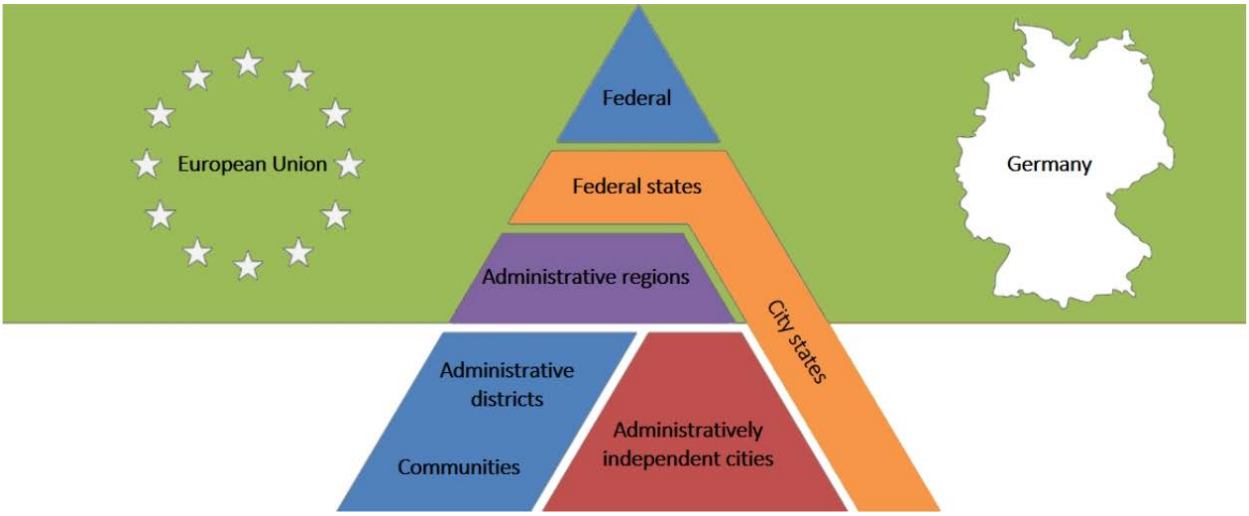


Figure 3: Structure of legal responsibilities in Europe exemplified for Germany

Differences in planning families (based on Nadin and Stead, 2008) such e.g. central government system and a classification in territorial government systems (based on Tosics, 2013) give a hint on the governance mechanisms in place in the PPs countries and LUIGI pilot regions.

According to Hogl et al. (2008) – as a representative of the regional governance approach – the coordination and monitoring tasks to be accomplished, that are a direct result from the different political levels, require a high degree of multi-level coordination (Figure 4).

Figure 4: The four axis of regional governance (Hogl et al., 2008)

Secondly, in the areas of responsibility of land use actors at each level, there is a strong overlap in responsibilities and competencies. Areas of responsibility that are affected by or affect the planning, establishment and maintenance of the agricultural land are – without claiming to be complete – nature and landscape conservation, the economy, infrastructure, municipalities, etc. The challenge of inter-sectoral coordination therefore arises from the different areas of competence, which is also a focus of the regional governance approach.

The third aspect is the special importance of regional networks, which are also essential for raising awareness and implementing innovations. Innovations in land use, for example, spread within the networks between farmers and their direct environment (Rogers and Van Den Ban, 1963). If there exist practical experience of innovative farmers, so-called pioneers, with concrete demonstration areas, it is to be expected that imitators will be found within these networks.

The fourth area that enjoys special status in the regional governance system is the general public, mostly laypersons in land use, but consumers of agricultural products and related provisioning or cultural ecosystem services (ES), such as recreation etc. Citizens in general, and residents or tourists in particular, can contribute to a greater appreciation of agricultural land use by reacting to changes in the landscape and participating in a social debate (keywords: image of a region, quality of live).

2.2.4 Understanding governance models

To understanding different models of governance for GI-planning, it is important to take the respective governance arrangements into considerations. According to Ambrose-Oji et al. (2017), governance can be considered as a tetrahedron, in which each the four corners represents different dimensions that are interwoven (Figure 5), whereas any change on one of the dimensions will affect other dimensions (Arts et al., 2006).

For instance, does a change of actors involved in the coalitions, may also alter availability and distribution of resources and power (Liefferink, 2006). The structure of a policy arrangement can be analysed along the four dimensions as in Figure 5.

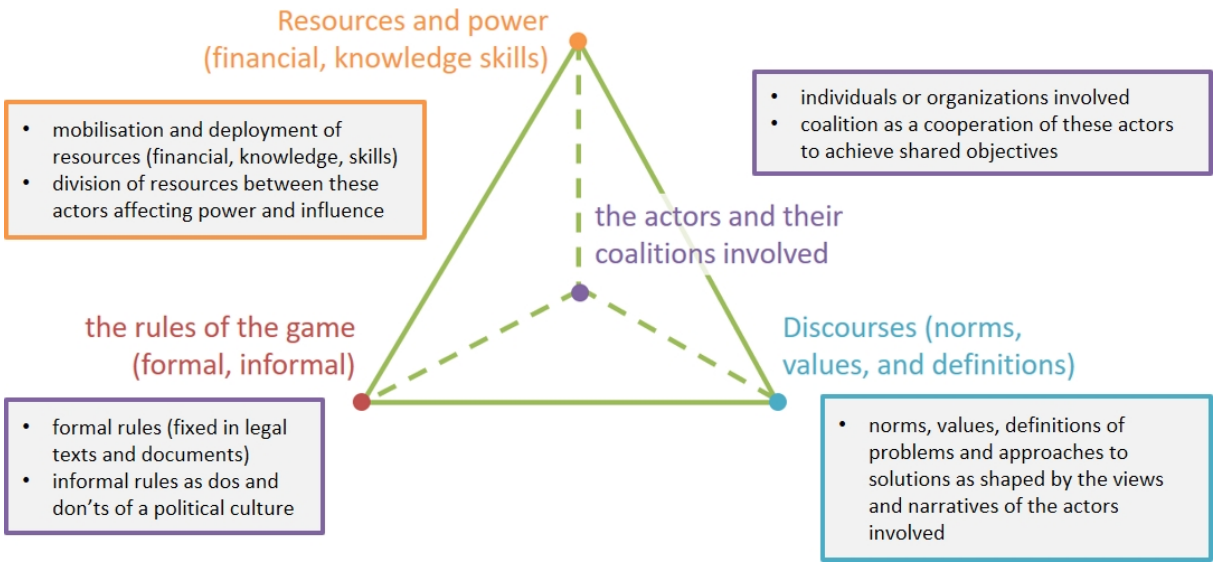


Figure 5: Tetrahedron of four different dimensions of governance

Box 2 summarizes a number of key questions need to be answered to understand the governance arrangement.

BOX 2: Key questions to understand the governance arrangement (Böcher and Töller, 2012, Blum, 2013, Dye, 1978, Arts, 2013, Haase, 2004).

- Who participates in the GI?
- Who is excluded?
- Who takes the decisions?
- Which resources are available and how controls them?
- What are the basic assumptions of the policy programme and what are the main assumptions?
- What are the legal frameworks and contents of the policy document?
- How do the different actors interpret them?

3 Methodology

3.1 General approach

3.1.1 Outline

This chapter shows the management and coordination related to the pilot regions, good practice (GP) areas and case study areas in following steps:

1. Overall approach of WP3
    a. Setting up a team of pilot coordinators
    b. Set up a prioritisation strategy
2. Selection of good practice (GP) areas and case studies in a two-step approach
    a. Collection of good practice areas & examples (Act 3.1 Status analysis)
    b. Selection of case studies (Activity 3.2. In-depth analysis)

Bilateral meetings and online workshops have been set up to interview the LUIGI observers and potential stakeholders.

3.1.2 Setting up the team of pilot coordinators

The appointed pilot coordinators of the LUIGI partner countries are responsible for the flow of information between WP3 lead and the respective project partners, observers, selected stakeholders (Figure 6). The pilot coordinators are in charge of the work process in the pilot regions.

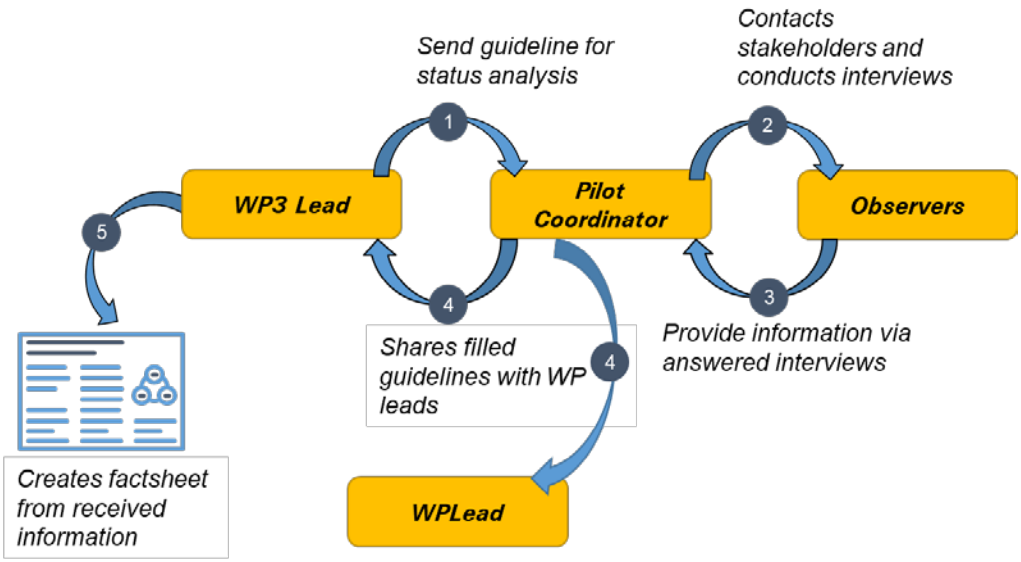


Figure 6: Flow of information between WP3 lead, pilot coordinators and observers

The general tasks of each pilot coordinator are:

- **Coordinating** the finalization of required **documentations** within WP3, including guideline, schemes, and models necessary.
- **Identification and description of pilot regions and good practice areas** in the partner countries;
- Identification and **mapping of** active and potentially relevant **stakeholders** within the pilot regions, engaging selected stakeholders and observers within the pilot regions and selected case studies.
- Coordination & collection of information according to the **questionnaire on GP area collection** by WP3 leader as part of the status analysis.
- In-depth analysis of case studies via (online) **interviews/face to face meetings/workshops**.
- Participation in LUIGI **workshops and seminars** within LUIGI, contributing to collection of lessons learnt, sharing results.
- **Collaborate with stakeholders** in the case studies, **engaging** them in developments of different products, mobilise them to take part in LUIGI events. Regular transfer of information to other WP leaders and respective project partners in the alpine country.

3.1.3 Strategy for the status, in-depth analysis and implementation

As an initial step in the initiation phase of the LUIGI project, the project consortium determined the pilot regions. For the further spatial selection, WP3 lead in cooperation with all project partners (PPs) and the Lead Partner (LP) set up a strategy for the selection of good practice (GP) areas and the case study areas. The flow of this procedure is depicted in Figure 7.

Filter 1 includes the 10 criteria as agreed with PPs for the selection of GP areas; Filter 2 includes the selection criteria for realization of the implementation activities in the selected case study areas. The Key Performance Indicators (KPI) ensure the monitoring and learning process with key learning outcomes.

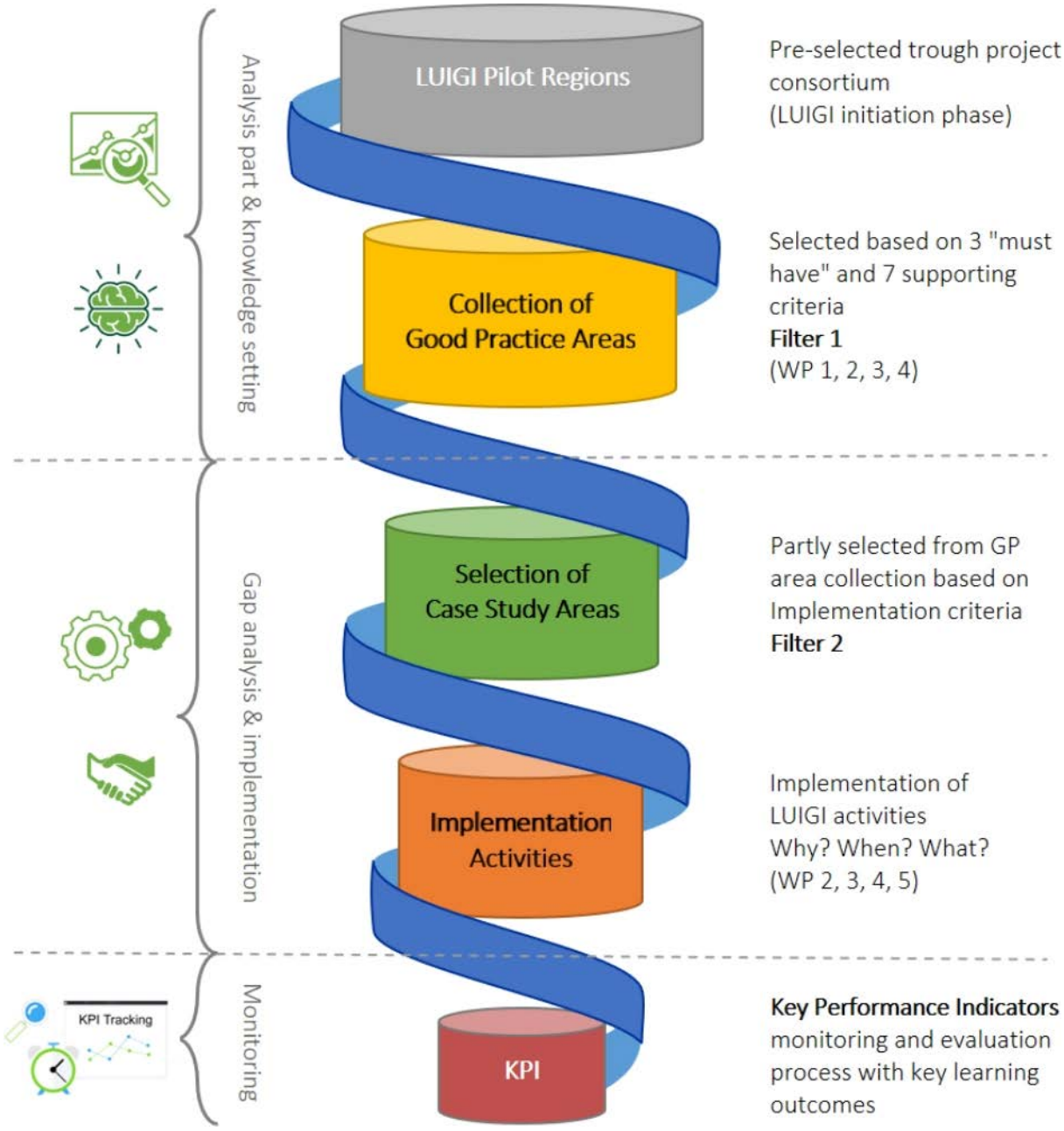


Figure 7: Strategy for status, in-depth analysis and implementation of LUIGI case studies in the progress of the LUIGI project

3.2 Selection of good practice areas

3.2.1 Procedure for the selection of good practice areas

The aim of the data collection on good practice (GP) areas was to identify possible regions for the assessment and implementation of GI-related projects in the Alpine Space. The hereby-generated

knowledge pool serves all partners in the LUIGI consortium to execute their specific research tasks.

To receive a list of possible GP areas and acquire the necessary background information to be analysed, a guideline for data acquisition has been developed by the WP3 leader that includes the selection criteria and main questions related to the GP area analysis. This guideline has been sent out beforehand for feedback to all LUIGI project partners and selected AG7 members. WP3 leader have synthesized all comments and suggestions what lead to the development of a qualitative questionnaire. Data is collected in spreadsheet format (see Annex B).

3.2.2 Criteria for the selection of good practice areas

The GP areas need to fulfil the three must-have criteria, marked with *, and can support the further seven “nice-to-have”-criteria:

1. *Addressing **characteristic** landscapes for the pre- and inner **Alpine** region
2. ***Economic relevance** (ability to mobilize financial resources) and market potential of products and services. Examples of marketing strategies and sales activities.
3. *Presence of GI supporting **biodiversity** and (or) **ecological connectivity.**
4. Existing **sustainable** practices and land management options for **food production.**
5. **Tree-based systems** supporting cultural landscape (traditional or innovative/adapted land-use practices).
6. Existence of **traditional land use forms** with cultural landscape elements.
7. Good example of GIs that serve as functional or spatial **connections** between **urban and rural areas**.
8. Applying **innovative planning, management, governance** solutions and communication strategies on GI.
9. Creating **social benefits** for the pilot region and its inhabitants (e.g. welfare, well-being, health, recreation etc.) and activating civic engagement.
10. **Existing educational** practices on GI, for creating and developing knowledge especially for practitioners in the value chain, citizens and regional experts, civic administrations and government representatives.

3.2.3 Structure of the questionnaire

The questionnaire covers nine topics that are elaborated in 23 questions (see Questionnaire in Annex 6.2):

- General information;
- Idea, History, Background;
- Geographical information on the GP area;
- Targeted key-Alpine GI and its relevance;
- Linkage to the LUIGI project;

- Stakeholders/beneficiaries from the targeted key Alpine GI;
- Contribution of the GP area to the must-have and nice-to-have criteria;
- Governance aspects and GP examples within the GP area;
- Additional information.

3.3 Selection of LUIGI case studies

3.3.1 Criteria for the selection of case studies

For the selection of case studies, the estimation of the PPs as well as the proposition of LUIGI stakeholders is needed. All case studies need to be geographically within the pilot regions of LUIGI. These areas are subject to a detailed analysis and subsequent showcase in a factsheet. A number of 1-3 areas per pilot region will be identified as case studies by the pilot coordinators.

The case studies will be accompanied throughout the LUIGI project duration and can directly benefit from consultation, preliminary analysis and recommendations. LUIGI partners will offer support in assessment and further development of existing activities in cooperation with project coordinators, organizations and local stakeholders. A major benefit to participants is the interaction with stakeholders and experts from other application areas.

The selection of the most suitable case study will be partly based on a ranking procedure that evaluates the good practice areas. Mainly, the following (preliminary) list of criteria applies, that represents Filter 2 presented in Figure 7:

- Suiting the needs and objectives of all LUIGI work packages;
- Genuine **interest in cooperation** with various LUIGI research-group, representatives, including regular participation in LUIGI activities, such as meetings and conferences;
- **Interest in evaluation**, feedback and **willingness to learn** from other GP areas;
- Availability of **information and documentation materials** on the background, the process, the goals and the (preliminary) results;
- Showing special **characteristic, innovative practices** or emphasized focus, that may be of additional or extraordinary interest within the selection;
- **Representation** of selected **targeted governance regimes** and policies, such as government initiative (i.e. politics), municipal initiatives, civic action (WP3);
- Covering a variety of governance mechanisms, such as ordinances, incentives, participation, protection, etc. (WP3);
- Areas with specific **challenges** concerning GI management that will be addressed by the LUIGI project.

The selection of the case studies is based on the fulfilment of the abovementioned criteria and will be chosen via the pilot coordinators. The selected case study will be the basis for the in-depth analysis, Activity 3.2.

3.4 Results of the prioritisation

In LUIGI, we focus on urban, rural and peri-urban regions, metropolitan regions. LUIGI pilot regions are pre-selected by the projects consortium' partners: two in Austria, one in Switzerland, one in Germany, two in France, three in Italy, and one in Slovenia. In total, 10 Pilot Areas are delineated on the overview map of the Alpine-Space area (Figure 8).

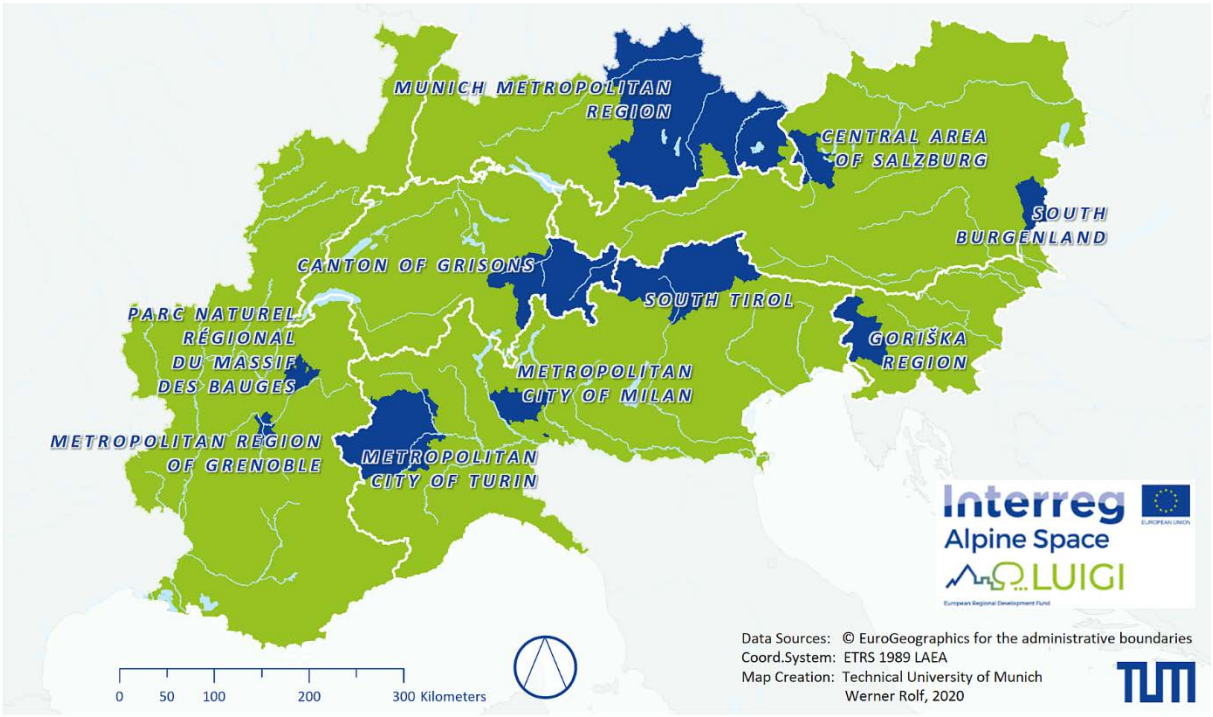


Figure 8: Location of the LUIGI pilot regions in the Alpine Space

In-depth analysis will focus on 37 good practice (GP) areas, between 3 and 10 GP in each pilot region. Implementation will take place primarily in the 19 case study areas. Figure 8 provides the attribution of case study areas, to the respective good practice areas within pilot regions, ordered alphabetically by country.

Table 2: Overview on the 10 LUIGI pilot regions with the respective good practice (GP) areas, case study areas as well as targeted key Alpine GI

Ctry.	PP	Pilot region	GP area	Case study (=implementation) area	Targeted key-Alpine GI
AT	SIR	Central area of Salzburg	City of Salzburg District Flachgau District Hallein-Tennengau	Tbd. in Central area of Salzburg	Orchard meadows

AT	RMB	South-Burgenland	District of Oberwart District of Güssing District of Jennersdorf	Naturpark Geschriebenstein/Írottkő Naturpark in der Weinidylle Naturpark Raab-Örség-Goričko	Orchard meadows
CH	PTE	Canton of Grisons	Lower Engadine Trin/Domleschg region Poschiavo region	Lower Engadine Trin/Domleschg region Poschiavo region	Orchard meadows, High-stem fruit trees, Hedges
DE	HSWT	Metropolitan Region of Munich (EMM)	District of Rosenheim Einöde St. Anton District of Munich District of Freising	District of Freising District of Munich District of Rosenheim	Orchard meadows, Fruit alleys
FR	ALPARC	Parc Naturel Régonal du Massif des Bauges	Pays de l'Albanais in the Park area - District of Grand Annecy	Zone Albanais Haute- Savoie in the Massif des Bauges Regional Nature Park	Orchard meadows
FR	GAM	Metropolitan Region of Grenoble	Vercors and Belledonne mountain massifs	Vercors and Belledonne mountain massifs	Dry grasslands, Hedgerow landscapes, Pollard trees
IT	EURAC	South-Tyrol	Bolzano Malles Stelvio Cyclelanes Network Longiaru – San Martino in Badia	Bolzano Malles	Multi-use urban park in riparian area, HNV farmland, Orchard meadows
IT	MCTo	Metropolitan City of Turin	Morenic Amphiteater of Ivrea Masterplan del Parco Agrario dellárea del Gioncheto	The "5 lakes of Ivrea"zone	Wetlands
IT	MCM	Metroplitan City of Milano	Lombard Park of the Ticino Valley North-eastern corridor of MCM, within Adda-Martesana "homogeneous area" Milan City Center – Santa Giulia area – Rural Park South Milan – Abbeys Road Boscoincittà Parco Nord Milano Cascina Nibai Ticino valley - Green bridge North-Milano - Lambro	Lombard Park of the Ticino Valley North-eastern corridor of MCM, within Adda-Martesana "homogeneous area" Milan City Center – Santa Giulia area – Rural Park South Milan – Abbeys Road	Regional & metropolitan parks, Protected areas (including Natura 2000), Blue infrastructures (i.e. canals, water meadows), Riparian buffers, HNV farmlands, Woodlands, Hedgerows, Rows of trees
SI	AIS	Goriška region	Goriška – Ajdovščina – Brje Goriška – Vipavska dolina Goriška – Ajdovščina Goriška – Southwest Goriška Goriška – Nova Gorica Goriška – Brda Goriška – Idrija-Cerkno region Goriška - Kojsko v Brdih	Goriška – Idrija-Cerkno region	Orchard meadows

4 The LUIGI pilot regions and case study areas

4.1 Central Area of Salzburg, Austria

4.1.1 Characterisation

The central area of Salzburg is located on the transition of the northern Alpine foothills and the western part of the northern “Kalkalpen” (Figure 9).

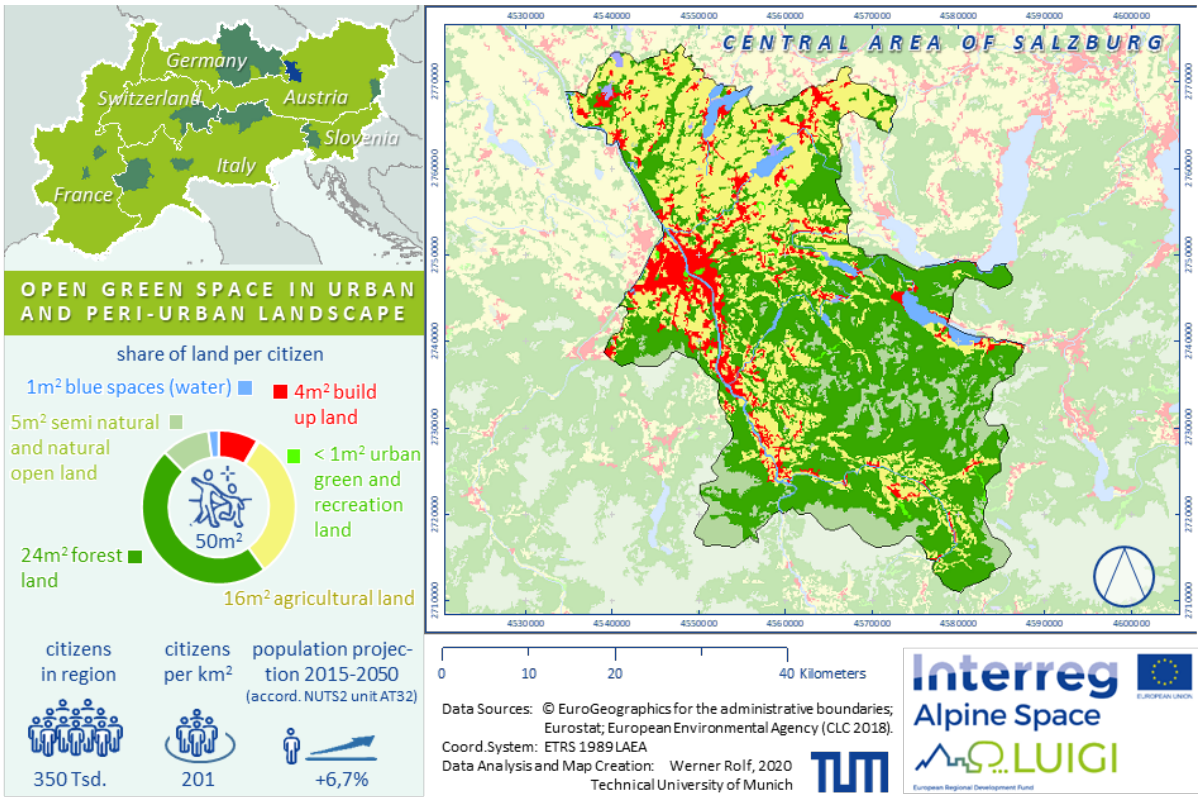


Figure 9: Characterisation and map overview of the pilot region Central Area of Salzburg

The landscape of the Central Area of Salzburg is quite diverse. The mountains and hills to Salzburg's south (Figure 10) contrast with the rolling plains to the north (Figure 11). The region is characterised by the well-connected recreation areas and residential areas. The “Untersberg” (1,982 m) is one of the closer by alpine peaks and is located less about 16 km from the city centre of Salzburg. The city of Salzburg lies on the northern edge of the Alps, divided by the Salzach River.

Figure 10: Characteristic view on the City of Salzburg divided by the Salzach river. The fortress is visible from afar in the centre of the city

Photo credit: (R. Krasser)

Figure 11: A near-natural remaining moor in the northeast of the city of Salzburg and the renatured Söllheimer Bach

Photo credit: (P. Vesely)

The population of the city area (centres and surroundings) is growing whereas this led to a decrease of population in more rural areas of Salzburg. The total population of the city of Salzburg increased from 147,947 inhabitants in 2008 to 152,180 inhabitants in 2016. Especially the northern part of Salzburg has increased in population (Table 3). About 96 % of the entire population growth of Salzburg happened in this area. As of 2021, the population is expected to slowly decrease. The social structure of the city area of Salzburg is characterized by the decrease of the birth rate and the increase of the life expectancy, which led to an aging society.

Table 3: Facts and figures on the pilot region Central Area of Salzburg

Country	Austria (AT)
Administration (number of districts/municipalities)	3 districts, 51 municipalities
Area (km^2)	1,738
Inhabitants	342,990
Pilot coordinator (institution)	SIR
Population change	+4,4 % (1995-2005)
Alpine Green Infrastructure in focus	Orchard meadows

The population growth led to structural problems of the areas of agglomeration, especially of the city of Salzburg. One of those problems was the increase of traffic, which had a noticeable impact on the environment. The impact of those developments led also to processes of suburbanisation and settlement pressure, which was also the result of the increased land use (urban sprawl of mainly single family-homes) and the use of secondary residences in alpine areas of tourism.

4.1.2 Situation of the Green Infrastructure in focus in the Central Area of Salzburg

Orchard meadows are among the most endangered land-use forms in Austria. In total, about 80 % of orchard meadows have been lost. According to Statistics Austria (2013) and the Austrian Working Group for the Promotion of Orchard cultivation and the conservation of fruit genetic resources (2013), it is estimated that 52,941 ha of orchards remained in 2010. At the present, there are no comprehensive current statistics on orchards in Austria.

Globalization, increasing price pressure as well as monopolization of agriculture are leading to a change in the use of orchard meadows (Drapela-Dhiflaoui, 2019). Thus, the labour-intense and low-yielding orchard meadows are often replaced by intensified agricultural systems using “high amounts” of fertilizers and pesticides. In addition, the abandonment of maintenance of orchards, land conversions for e.g. road construction lead to further loss of these areas (Waiss, 2020). Therefore, many of the approximately 3,000 fruit varieties present in Austria are now threatened in their existence – particularly endangered are old varieties, which are often regionally distributed only. Orchard meadows are therefore important for the conservation of genetic resources, for recreational purposes, serve as habitats for fauna and flora and many other ecosystem services and therefore need to be protected (Drapela-Dhiflaoui, 2019).

In Austria, nature conservation matters fall within the competence of the federal states. For this reason, the nature conservation offices of the provincial government offices are of particular importance. The departments of the federal states in charge of nature and landscape protection are the highest nature conservation authorities. The staff of the nature conservation departments carries out tasks in the field of nature conservation. Its varied tasks range from expert activities, designation and supervision of protected areas, awarding of subsidies to public relations work.

According to the Land Nature Conservation Act, the district administration authorities are nature conservation authorities of first instance. For example, they are responsible for the nature conservation approval procedure for numerous interventions in nature and landscape. Nature conservation in the province of Salzburg includes landscape protection, biotopes, caves, biodiversity and the preservation of natural habitats. The Salzburg Nature Conservation Act and the ordinances and decisions based on it serve to ensure the sustainable protection of our nature and landscape (termed “supreme nature conservation”).

In addition, the state is increasingly taking action within the framework of the private sector administration to protect and care for nature. The collection of nature conservation basics, the preparation of management and landscape management plans, renaturation projects, species conservation projects and awareness raising are just a few examples that make a significant contribution to the preservation or improvement of our livelihood. Many measures could not be implemented without the active assistance of landowners. The country therefore concludes contractual agreements with the landowners on the management of its land in accordance with nature conservation requirements (termed “contractual nature conservation”).

4.1.3 Governance and planning aspects

Relevant institutions responsible for selected GI governance

The form of the GI governance is a distinct multi-level system; this principle can be found in official administrations as well as in NGOs. Table 4 provides the overview on the relevant stakeholders.

Table 4: Collection of relevant institutions as important stakeholders in the pilot region Central Area of Salzburg

Type	Name of institution	Level
Government & administration	City of Salzburg	Local
Government & administration	Federal Ministry - Climate Action, Environment, Energy, Mobility, Innovation and Technology	National
Government & administration	Federal Ministry - Agriculture, Regions and Tourism	National
Association	Salzburg Regional Association for Fruit and Horticulture (Salzburger Landesverband für Obst- und Gartenbau)	Regional
Association	Austrian working group for the promotion of orchard cultivation and the conservation of fruit genetic resources (Österreichische Arbeitsgemeinschaft zur Förderung des Streuobstbaus und zur Erhaltung Obstgenetischer Ressourcen)	National
Association	National/district forestry services	National
Association	Chamber of Agriculture Salzburg	Regional
Nature Conservatio	Austrian Federal Forests (Österreichische Bundesforste)	National
Nature Conservation	WWF Austria	National
Nature Conservation	Naturschutzbund (Austrian League for Nature Conservation)	National
Nature Conservation	Blühendes Österreich	National
Nature Conservation	Umweltdachverband	National
Education	Rural Training Institute (Ländliches Fortbildungsinstitut)	National/ regional
Association	Landesumweltanwaltschaft	Regional
Government & administration	Province of Salzburg	Regional
Education	Haus der Natur	Regional

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 5 and classified in formal and informal instruments.

Table 5: Instruments and tools of GI governance in the pilot region Central Area of Salzburg

	National and regional level	Local level
Formal instruments	• Salzburg Nature Conservation Act • Soil Protection Act • State Development Program *(Landesentwicklungsprogramm Salzburg)* • Regional Program Salzburg and Surroundings *(Regionalprogramm Salzburg und Umgebung)* • Landscape Management Plan *(Landschaftspflegeplan; e.g. Protected Area Egelseen)* • Sectoral Program (Sachprogramm) • Federal sectoral planning (*Fachplanungen des Bundes*) • Zoning instruments (Natura 2000 protected areas, Nature reserve, Protected landscape area, Nature park, Biosphere park, European protected area, Protected green area, Natural Monument, Protected natural entity of local importance/local natural monument, Protected habitat, Protected plant area, Quiet area/quiet zone, Special protection area, National Parks) • Environmental Impact Assessment	• Land Use Plan *(Flächenwidmungsplan)* • Legally Binding Land Use Plan *(Bebauungsplan)* • City of Salzburg's Greenland Declaration • Spatial Development Concept *(Räumliches Entwicklungskonzept)*
Informal instruments	• Global Strategic Plan on Biodiversity 2011-2020 • Biodiversity Strategy for 2030 • Austrian Biodiversity Strategy 2020+ • Subsidy programmes on national/regional levels e.g. "Preservation and Development of cultural Landscape", "Measures for the preservation of Soil Health" • Agri-environmental Program ÖPUL • Salzburg Land Climate + Energy 2050 Strategy • Agenda 21 Salzburg • Austrian Spatial Development Concept (ÖREK) • Masterplan Kernregion Salzburg • Birds Directive • Fauna-Flora-Habitat Directive • Convention on the Protection of the Alps • Convention on Biological Diversity • Convention Concerning the Protection of the World Cultural and Natural Heritage • Convention on the Conservation of European wild flora and fauna and their natural habitats • Convention on Wetlands, especially as a • habitat for waterfowl and wading birds, of international importance	• Landscape Plans • Contracts and agreements, e.g. urban development contracts • Land purchase contracts • Mobility contracts • Development concepts for areas of high natural value *(Entwicklungskonzepte für Gebiete von hohem Naturwert)*

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

- Orchards in Austria (*Streuobst in Österreich – gemeinsam Vielfalt fördern und Inwertsetzung steigern*)
  - Umweltdachverband, Federal Ministry – Agriculture, Regions and Tourism (LE 14-20) and European Union
- 30 high-stem orchards until 2022 (*30 Hochstamm-Streuobstgärten bis 2022*)
  - Province of Salzburg – Nature and Environmental Protection, Trade; Chamber of Agriculture Salzburg; Salzburg Regional Association for Fruit and Horticulture
- Preservation and development of cultural landscapes (*Erhaltung und Entwicklung der Kulturlandschaft*)
  - Province of Salzburg
- Investments in agricultural production (*Investitionen in die Landwirtschaftliche Erzeugung-Investitionsförderung*)
  - Province of Salzburg – Agriculture, Soil Protection and Alpine Pastures
- Agri-environmental scheme ÖPUL (Austria´s programme for the promotion of an agriculture which is appropriate to the environment, extensive and protective of natural habitats)
  - Federal Government, Provinces, EU funds
- Salzburg nature conservation fund
  - Province of Salzburg
- Interreg Österreich-Bayern 2014-2020/ 2021-2027
- Interreg Österreich-Italien
- Interreg Central Europe-MaGIC Landscapes
  - Project ended 10/2020

4.1.4 Targeted approaches for the LUIGI project

- to raise awareness by showing up the value of orchards as key-GI with importance for the characteristic landscapes and also as a basis for tourism value chain;
- to strengthen existing platforms for the transfer of traditional knowledge on the maintenance of orchards;
- to establish new partnerships and better linkage between rural and urban areas – especially bring together stakeholders;
- to learn from other countries GI maintenance strategies;
- to make rural areas more attractive for the young generation and improve environmental education about these fragile ecosystems;
- to optimize local producer and marketing initiatives and to develop innovative product ideas and marketing strategies.

4.2 South Burgenland, Austria

4.2.1 Characterisation

South Burgenland is situated in the southeast of the federal state Burgenland, Austria. It consists of the districts Oberwart, Güssing and Jennersdorf (from north to south). The federal state Burgenland the federal state on the eastern edge of the Alps, in the border area of the alpine mountain landscapes in the west (Figure 12). The rivers Pinka, Strem, Lafnitz and the Raab in the very south flow through South Burgenland. All of these rivers flow first into the Raab and then into the Danube. These rivers all have their origin in the Alps. The South Burgenland is a hilly country; more precisely, we call it "Riedelland", which no longer has a share in the Alps. In geological terms, however, the Alps mark themselves with the Eisenberg (415 m) on the eastern border.

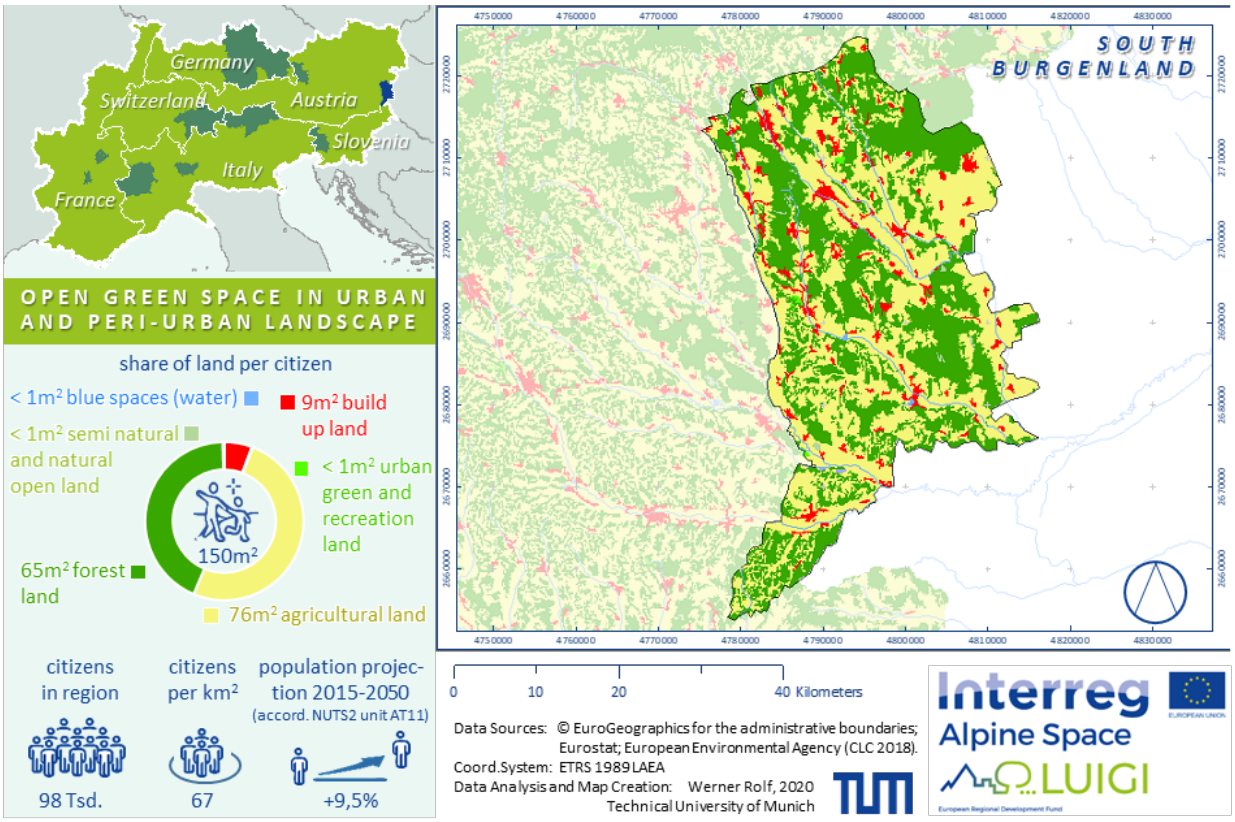


Figure 12: Characterisation and map overview of the pilot region South Burgenland, Austria

The district Oberwart, which is also a tourist region, is divided into the Bernsteiner and Günser mountains with the highest elevation (884 m) in the federal state. With the castles in Lockenhaus, Bernstein and Stadtschlaining, this region counts to a much wooded area. Further south, there is a beautifully structured hill country with many brooks and river areas with the town of Oberwart as an economic centre. In the Nature Park Geschriebenstein you can find the characteristic large, contiguous forest areas with extensive oak and hornbeam forests (Naturpark Geschriebenstein

Info-Center, 2021). On the south side of the Geschriebenstein you will find dry grasslands, vineyards and orchards. The district of Oberwart currently counts approx. 54,200 inhabitants.

Figure 13: Typical small village in South Burgenland with large orchard meadows

Photo credit: (RMB)

Figure 14: Scattered village with wineyards and orchard meadows in Rechnitz

Photo credit: (RMB)

With 2,433 hours of sunshine per year, the district of Güssing is the sunniest municipality in Burgenland. The landscape is a partial landscape of the north-south crossing between the Alps and the central Danube region. Here, the transition from the last foothills of the Alps to the wide Pannonian plain is gradually taking place. It is a transition not only between two natural landscapes, but also in all aspects of the cultural landscape. For centuries, Güssing has historically developed into the cultural and economic centre of South Burgenland thanks to its location and the seat of the aristocratic administration at Güssing Castle. Botanical rarities and idyllic scenery can be found in the Nature Park Weinidylle (Weinidylle Südburgenland, 2021). Gentle hills with well-kept vineyards are typical landscapes. The district of Güssing currently counts approx. 25,700 inhabitants (Table 6).

Table 6: Facts and figures on the pilot region South Burgenland

Country	Austria (AT)
Administration (number of districts/municipalities)	3 districts, 72 municipalities with 183 cadastral communities
Area (km^2)	1,481.4 (approx. 37 % are from Burgenland)
Inhabitants	98,000
Pilot coordinator (institution)	Regionalmanagement Burgenland GmbH (RMB)
Population change	slowly increasing (since 2010)
Alpine Green Infrastructure in focus	Orchard meadows

The region Jennersdorf in the southernmost corner of Burgenland presents itself with its natural character of a gently hilly landscape. Jennersdorf is bordered by Hungary in the east and Slovenia in the south. The valleys of the river Raab and its left tributary, the river Lafnitz, characterize the landscape, which both cross the district from west to east. The highest peak is the Stadelberg on the Slovenian border at 417 m. The only trilateral nature park in Europe is nestled between the

Lafnitz in the north, the Stadelberg on the Slovenian border in the south and the distinctive Raab riparian landscape. The small, gently rolling landscape is characterized by narrow, elongated fields, meadows and forests as well as vineyards and orchards, surrounded by remote farms and scattered villages (Figure 15). The district of Jennersdorf currently counts approx. 17,000 inhabitants.

4.2.2 Situation of the Green Infrastructure in focus in South Burgenland

Orchard meadows in the pilot region South Burgenland shape the traditional landscape that has existed like this for many decades. Orchards offer valuable assets such as biodiversity, habitat for plants and animals, quality of life and regional identity and it carries a big importance for agriculture.

Figure 15: Landscape in the Nature park Geschriebenstein with orchard meadows between the vineyards

Photo credit: (RMB)

Figure 16: Orchard meadows with over-aged trees showing mistletoe infestation

Photo credit: (RMB)

Orchard meadows are under constant threat in South Burgenland, as there are many challenges in this context:

- Aging trees/lack of young trees;
- Wrong fruit tree management, especially improper care for the old trees, lack of care for the young trees, wrong trim;
- Improper replanting and wrong plant-material: medium sized trees instead of high stem;
- Deficient maintenance of the undergrowth;
- Lack of utilization of the crop/abandonment/lawnmower care;
- Spread of diseases, e.g. the Pear decline-bacterium *Phytoplasma pyri*, rising mistletoe infestation (Figure 16);
- Lack of use concepts for the fruits.

This resulted in a continuing decline by 20 % over the last 10 years (2 % annually). For example, South Burgenland's orchard stock in 2014 was marked with 250,000 trees. Six years later in 2020, there was a loss from about 30,000 trees, which now leads to an orchard stock of approximately 220,000 trees in South Burgenland.

4.2.3 Governance and planning aspects

Relevant institutions responsible for selected GI governance

The form of the GI governance is a distinct multi-level system; this principle can be found in official administrations as well as in NGOs. Table 7 provides the overview on the relevant stakeholders.

Table 7: Collection of relevant institutions as important stakeholders in South Burgenland

Type	Name of institution	Level
Government & administration	Chamber of Agriculture	Regional
Government & administration	Office of the Burgenland Provincial Government – Agriculture Main Unit	Regional
Community Authorities	Office of the Department for Nature Conservation	Regional
Community Authorities	Chamber of Agriculture, District Office Güssing/Jennersdorf	Local
Community Authorities	Chamber of Agriculture, District Office Oberwart	Local
Association	Burgenland Nature Conservation Association	National
Nature Conservation	Nature Park Geschriebenstein	Local
Nature Conservation	Nature Park in der Weinidylle	Local
Nature Conservation	Nature Park Raab	Local
Association	Association „Wieseninitiative"	Regional
Government & administration	Federal Agency for Agriculture	National
Association	ARGE Streuobst	National
Association	Verein für regionale Gehölzvermehrung (Association for regional woody plant propagation)	National

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 8 and classified in formal and informal instruments.

Table 8: Instruments and tools of GI governance in the pilot region South Burgenland

	National and regional level	Local level
Formal instruments	• Burgenland Nature Conservation Act *(Burgenländisches Naturschutzgesetz)* • Burgenland Regional Planning Act	• Regional Development Concepts *(Regionale Entwicklungskonzepte)* • Land use plan *(Flächenwidmungsplan)*

	(Burgenländisches Raumordnungsgesetz) • State Development Plan *(Landesentwicklungsplan)*	• Management Plans 2030 of the Nature Parks *(Managementpläne 2030 der Naturparke)*
Informal instruments	• Austrian biodiversity strategy (*Österreichische Biodiversitätsstrategie*) • Bio-Land Burgenland strategy • Mapping of orchards in southern Burgenland *(Streuobstkartierung im Südburgenland)* • Burgenland climate and energy strategy (*Burgenländische Klima- und Energiestrategie*)	

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

1. **LAG Südburgenland PLUS**
2. **ELER – Programme Rural Development**
   "Vorhabensart 7.6.1 – Studien und Investitionen zur Erhaltung und Wiederherstellung natürlichen Erbes"
3. **ELER**
   "Vorhabensart 4.2.1 – Verarbeitung, Vermarktung und Entwicklung landwirtschaftlicher Erzeugnisse"
4. ***"Wissenstransfer und Informationsmaßnahmen in der Land- und Forstwirtschaft"***

4.2.4 Targeted approaches for the LUIGI project

- To reduce the decrease of orchards by replanting trees;
- To develop new products for example cider, dried fruits, etc.;
- New grants for the care of orchards;
- Founding of organic companies for common small-area management;
- Mechanization to facilitate management, i.e. Pruner, *"Obstraupe"* (Organic Tools, 2021);
- Finishing course for preservation of old sorts;
- School projects for improvement of species knowledge and processing the products „Classroom orchard meadow";
- Sponsorship for trees, orchard meadows, „Rent a Maschanzker".

4.2.5 Factsheet: Nature Park Geschriebenstein, District of Oberwart, Austria

Nature Park Geschriebenstein, District of Oberwart

Figure 17: Castle of Lockenhaus in the Nature Park Geschriebenstein

Photo credit: (RMB)

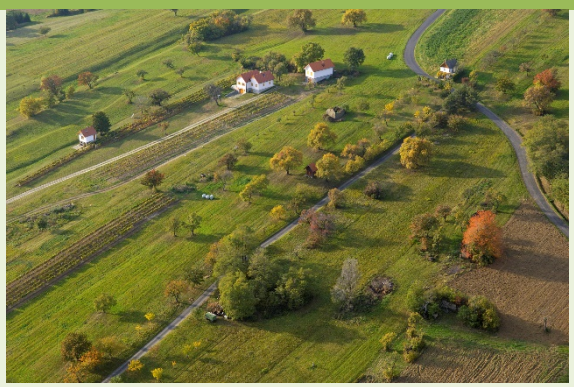


Figure 18: Vineyards and orchards in Rechnitz

Photo credit: (RMB)

Country: Austria **NUTS-region:** AT113	**Size:** 8,000 ha **Coordinator:** Engelbert Kenyeri
Current challenges	Valuation approaches for orchard meadows as well as cultivation of fallow land in the nature park. Need of building awareness for the value of orchard meadows.
Implementation activities	Conception and testing of innovative offers like corporate volunteering for (urban) companies or project days for (urban) schools for outlearning sessions in Orchard meadows; development or orchard tree adoption system

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☐ Peri-Urban ☒ Rural

Targeted key-alpine GI: Orchard meadows

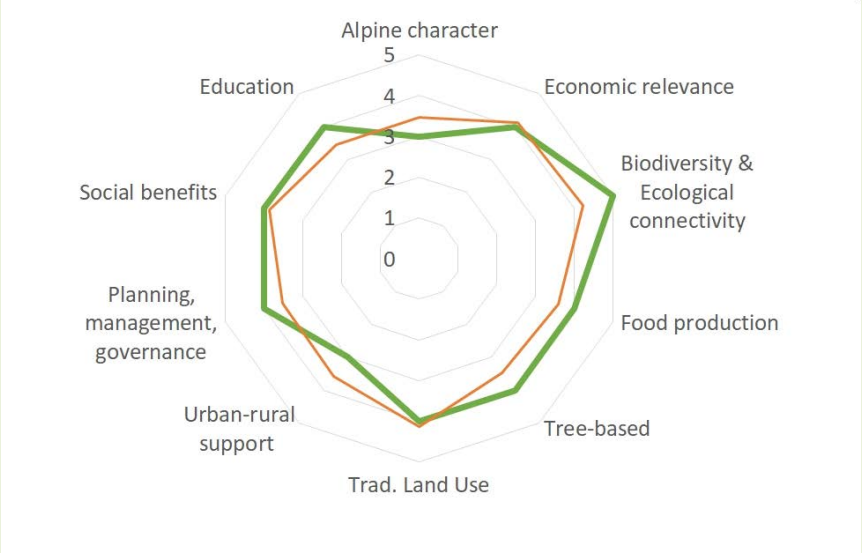
History/idea behind

The Nature Park Geschriebenstein/Írottkő is the first cross border nature park with an area covering both Hungary and Austria, which embraces the 848 m high Geschriebenstein, the highest spot in the vicinity – both for the Burgenland Region and the western part on Hungary. In Austria, the nature park is located in the centre of a larger unit, the Bernstein-Lockenhaus-Rechnitz nature conservation area, with the Austrian area stretching over an area of 8,400 ha. Extensive interconnected woodlands comprised of oak and hornbeam forests are typical of this region. The southern slopes of the Geschriebenstein hill are interspersed with arid meadows, vineyards and orchards. Owing to the diverse climatic impacts coming from the Alps and from the Pannonian region, the area has an equally diverse flora and fauna. One of the flagship species of the nature park is the hoopoe (*Upupa epos*).

Together with NGO Birdlife, the nature park is starting a new project to determine the use of space by the hoopoe in the nature park through mapping, colour rings and data collection. The implementation of the project takes place in close cooperation with the population and the nature park schools.

One problem in the nature park is the insufficient cultivation of the orchards and the lack of use of the fruits. The nature park therefore initiated a cooperation project with a tourism school in order to develop new products, like apricot sparkling wine, together with local producers.
In order to secure the management in the future, a joint organic farm will be established in the nature park.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity
As recreational highlight, the local/regional products, nature tourism as well as old crafts like basket weaving attract the own population as well as visitors from urban areas (here e.g. City of Vienna). However, the linear physical connection between urban and rural areas is missing. As symbolic connection, orchard trees adoption opportunities or company excursion offers in combination with volunteering activities in the nature park are innovative concepts to connect urban and rural areas.

Ecological connectivity
Numerous protected bat species such as small Horseshoe bat, pug bat, Bechstein bat, Little and Large mouse-eared bat and ciliated bat can be found here on the right nursery, interim and winter quarters in certain caves, abandoned Mining tunnels and old access such as Lockenhaus Castle (Figure 17).
The forests and traditional cultural landscape with roadsides, orchard meadows and hedges are an important feeding ground for many species. This is also an important habitat for endangered bird species such as the middle and gray woodpecker, Collar snapper, tree hawk, Honey buzzard, red-backed killer, woodlark and barn warbler.
Alluvial forests accompanying the stream as well as adjacent herbaceous vegetation and wet meadows offer ideal living conditions for amphibians, even for rare species like garlic script and Danube crested newt.
The Galgenberg near Rechnitz is the largest dry grassland of southern Burgenland, apart from its variety of warmth-loving plant species (e.g. *Pulsatilla grandis*); it is known for its biodiversity of butterfly species (approx. 900). Butterfly-like, Butterfly and moth species find in the dry meadows living conditions as otherwise only in distant places areas of southern and eastern Europe.

Social cohesion
Social cohesion of inhabitants of the nature park municipalities (e.g. annual volunteering days, nature park

Economic benefit
The nature park offers good basis to expand market for local and regional (eco) products: apricot, apples, wine, herbs, etc.

events, mobile juice extractor, pop-up market with regional products). Close cooperation with 7 nature park schools and 1 nature park kindergarten as well as cooperation with 3 partner schools outside the nature park area with innovative school projects and activities.		Further development of nature tourism (new, innovative offers) retrieves great potential for the area.
Involved stakeholders	☒ Local public authority: Nature Park association ☒ Regional public authority: Chamber of agriculture, district of Oberwart; school board ☐ Cantonal public authority: ☐ National public authority: ☒ Non-government organisations & Associations: Birdlife ☐ Community groups: ☐ Business partners / SME: ☒ Education and research on GI: Nature park Schools, teachers training college ☒ The public/inhabitants/visitors: visitors interested in nature, wine and regional products, Bird watcher	
Funding programmes being used	Interreg SI-AT, ELER, Interreg ATHU	
Relevant projects	**BANAP – Balance for Nature and People**	
Links / Home-pages / Literature	Naturpark Geschriebenstein Info-Center (2021)	

4.2.6 Factsheet: Nature Park in der Weinidylle, District of Güssing, Austria

Nature Park in der Weinidylle, District of Güssing

Figure 19: Traditional houses in the Kellerviertel Heiligenbrunn, Nature Park Weinidylle

Photo credit: (RMB)

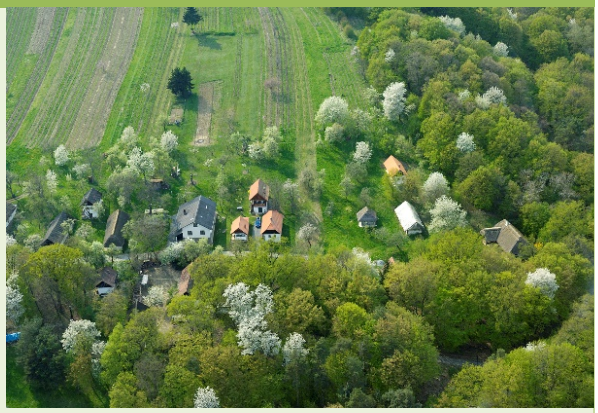


Figure 20: "Kellerstöckl" wine cellar apartments

Photo credit: (RMB)

Country: Austria **NUTS-region:** AT113	**Size:** 7,270 ha **Coordinator:** Johann Weber
Current challenges	Valuation approaches for orchard meadows as well as cultivation of fallow land in the nature park. Need of building awareness for the value of orchard meadows.
Implementation activities	Conception and testing of innovative offers like corporate volunteering for (urban) companies or project days for (urban) schools for outlearning sessions in Orchard meadows; development or orchard tree adoption system

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☐ Peri-Urban ☒ Rural

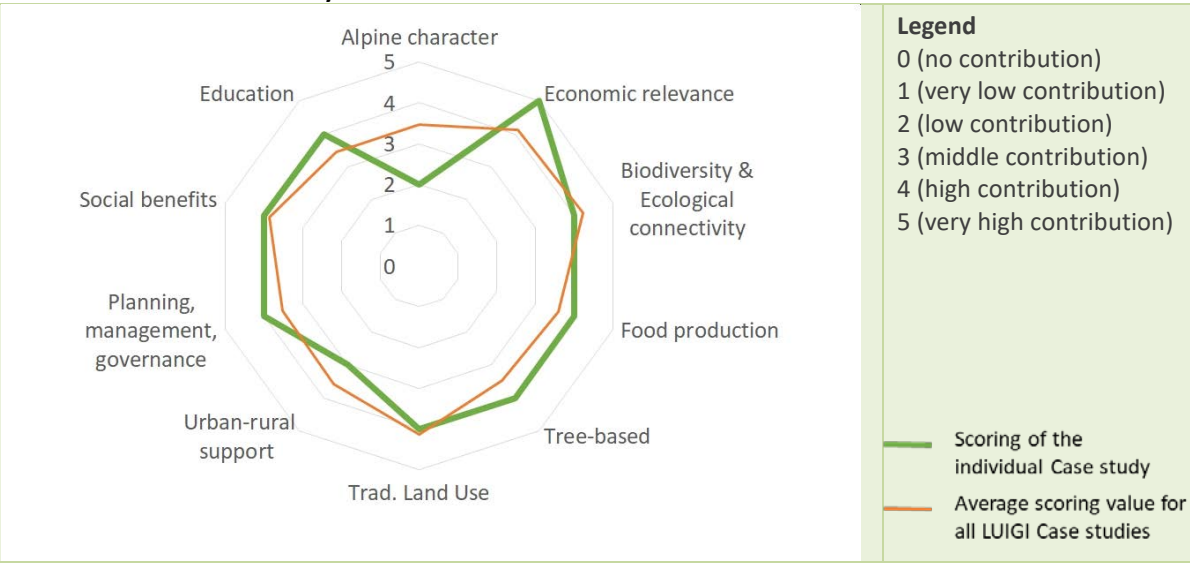
Targeted key-alpine GI: Orchard meadows (1,100 ha, approx. 95,000 trees)

History/idea behind

The Weinidylle Nature Park is a typical mosaic landscape that marks the transition between the hilly landscape east of the downstream valleys of the rivers Pinka and Strem, and the Pannonian plain (Weinidylle Südburgenland, 2021). Viniculture plays an essential role in the region, which is characterised by fragmented, small-scale vineyards. A specialty in this region are the many old wine cellars located directly in the vineyards. Now, these wine cellars are increasingly being renovated and converted into small accommodation providers. The landscape in the nature park is very small, and the sustainable conservation of the meadow areas is an increasing problem. The further overgrowing of abandoned vineyards, above all in steep positions and along wooded areas, must be prevented in order to preserve the variety of the landscape. That is why, Natura 2000 management, together with the nature park and the Elpons farmers family, has developed a grazing project with the old "Krainer stone sheep" breed **(ELPONS, 2020)**. The herd was built up via crowdfunding using a "sheep share". With the sheep share, the population can purchase a share of the herd. The buyers receive the money back for three consecutive years in the form of organic lamb packages with good interest rates. One idea for the next few years is the re-establishment of the vineyard peach,

which was once widespread in the landscape. The nature park together with schools and other various stakeholders will work on innovative product development and opportunities in the region.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity As recreational highlight, the local/regional products (mainly wine), nature tourism as well as wine cellar apartments attract visitors from urban areas (here e.g. Cities of Vienna, Graz, Hungary). However, the linear physical connection between urban and rural areas is missing. As symbolic connection, grapevine adoption opportunities or company excursion offers in combination with volunteering activities in the nature park are innovative concepts to connect urban and rural areas.	**Ecological connectivity** Characteristic for this area are oak-hornbeam forests and sessile oak forests on acidic soils as well as orchards with old fruit trees and meadows rich in flowers and species in the undergrowth. The extremely biodiverse wet meadows in particular along the river Strem count as well as the orchards in the Pinka-valley, Eisen- and Tschaterberg to the priority protection content in the area. The extensive mowing of the meadows leads to a high biodiversity in flora and fauna (plants, birds, insects, bats, and fish.
Social cohesion Social cohesion of inhabitants of the nature park municipalities (e.g. annual volunteering days, nature park events, mobile juice extractor, wine events). Close cooperation with six nature park schools and two nature park kindergartens as well as cooperation with a partner school outside the nature park area with innovative school projects and activities.	**Economic benefit** The nature park offers good basis to expand market for local and regional (eco) products: grapes, wine, peach, juice, etc. Further development of nature tourism in combination with wine cellar-apartments (new, innovative offers) retrieves great potential for the area.

Involved stakeholders	☒ Local public authority: Nature park association, communities ☐ Regional public authority: Chamber of agriculture, Tourism association; school board ☐ Cantonal public authority: ☐ National public authority: ☒ Non-government organisations & Associations: Nature conservation association, Association „Wieseninitiative", Association Weinidylle ☐ Community groups

	☒ Business partners / SME: Novasol – partner for the Kellerstöckl, Trummer Saftpresserei ☒ Education and research on GI: nature park schools, teachers training college ☒ The public/inhabitants/visitors: garden owner, Kellerstöckl owner, visitors interested in nature, wine and regional products
Funding programmes being used	Interreg AT-HU, Interreg SI-AT, ELER
Relevant projects	Weinidylle AT-HU Interreg SI-AT project „BANAP"
Links / Homepages / Literature	Weinidylle Südburgenland (2021)

4.2.7 Factsheet: Nature Park Raab, District of Jennersdorf, Austria

Nature Park Raab, District of Jennersdorf

Figure 21: Possibilities for canoe trips on river Raab, District of Jennersdorf

Photo credit: (RMB)

Figure 22: The fruit and nut collection machine „Obstraupe" in variety garden Kalch

Photo credit: (RMB)

Country: Austria **NUTS-region:** AT113	**Size:** 142 km^2 **Coordinator:** Franz Kern
Current challenges	Valuation approaches for orchard meadows as well as cultivation of fallow land in the nature park. Need of building awareness for the value of orchard meadows.
Implementation activities	Conception and testing of innovative offers like corporate volunteering for (urban) companies or project days for (urban) schools for outlearning sessions in orchard meadows; development or orchard tree adoption system

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

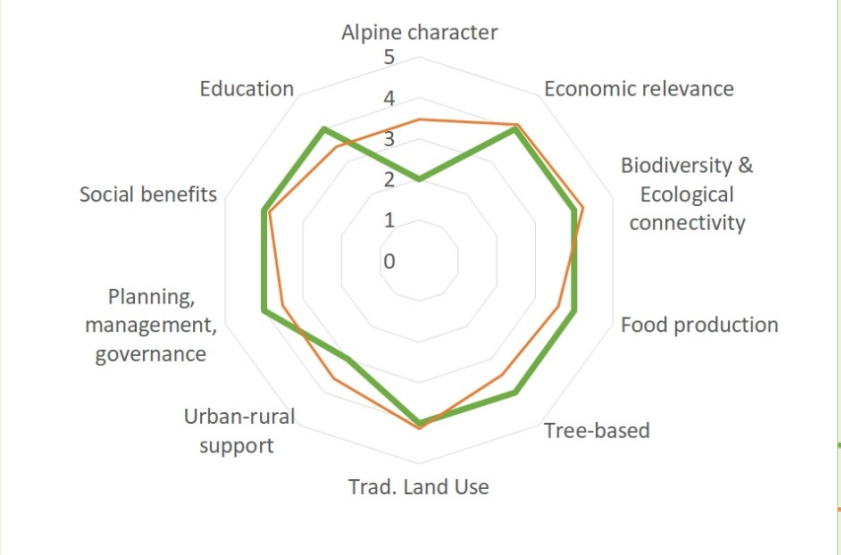
☐ City/Urban ☐ Peri-Urban ☒ Rural

Targeted key-alpine GI: Orchard meadows (650 ha, approx. 55,000 trees)

History/idea behind

The Raab nature park is located in the southernmost corner of Burgenland, bordered by the Lafnitz from the North and the Stadelberg – on the Slovenian border – from the South (Tourismusverband Jennersdorf, 2021). The nature park has diverse nature, landscape, languages as well as a variety of traditional food and drink specialities. The valley of the river Raab and the different facets of the hilly landscape add up a natural mosaic of woodlands, meadows and narrow fields, framed by hidden farms and scattered settlements. Being out of the way in terms of industry, nature in this region has been left nearly untouched. Expanding cultural landscapes – vineyards, orchards, meadows and fields – paint a colourful picture counterpointed by picturesque villages. Unique local values are introduced via educational trails (e.g. the old border, apple road etc.) and guided tours. The cultivation of orchards is of great importance in the nature park: they are living space for numerous plants and animals, shape the landscape of the region, and offer high value for nature tourism. Therefore, the conservation of old fruit varieties and orchards is an important task of the nature park.
A best practice example in the region is a huge fruit variety garden called *"Obstparadies"*. Here the nature park, together with the nature conservation association, has established a fruit variety conservation garden for Burgenland on a 1.6 ha orchard meadow. The system serves as the central fruit variety gene bank for Burgenland and contains 265 different old fruit varieties. An education trail with interactive stations leads through the variety garden. In addition, the *"Obstparadies"* has a seminar room for trainings and further education as well as a shop with exclusively gold-awarded fruit wines from all over Austria.
The fruit paradise has also a mobile fruit caterpillar, so called *"Obstraupe",* available since autumn 2020. Interested fruit tree owners and schools can rent this device to facilitate harvesting (Organic Tools, 2021).
The aim of the nature park is to continue awareness rising for the value of orchards and to invest in training and further education of involved actors. In the future, the nature park wants to work on the propagation of old fruit varieties together with nature park schools as well as on the development of new products with producers.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity

As recreational highlight, the local/regional products and nature tourism with special offers like canoe trips on river Raab attract visitors from urban areas (here e.g. Cities of Graz, Hungary). However, the linear physical connection between urban and rural areas is missing. As symbolic connection, fruit trees adoption opportunities or company excursion offers

Ecological connectivity

The landscapes of the nature park add to a diverse mosaic of woodlands, meadows and long, narrow fields. Valuable gallery forests flank some of the River Raab's winding stretches.
The common kingfisher nests by dead waters as well as clear watercourses flanked by high banks. Its plumage boasts beautiful colours. The otter is one of the best swimmers among land predators; it also hunts in the nature park. On the riverbanks, patches

in combination with volunteering activities in the nature park are innovative concepts to connect urban and rural areas.	of the once extensive alluvial forests have been preserved, sheltering various rare animal and plant species.
Social cohesion Social cohesion of inhabitants of the nature park municipalities (e.g. annual volunteering days, nature park events, mobile juice extractor, cross border events). Close cooperation with 5 nature park schools and 1 nature park kindergarten with innovative school projects and activities.	**Economic benefit** The nature park offers good basis to expand market for local and regional (eco) products: grapes, wine, peach, juice, etc. Preserving traditional fruit varieties is a key priority for locals. The Maschanzker apple is one of these; products made from these apples are specialities of the region. Further development of nature tourism in combination with cross-border canoe/hiking/biking tours (new, innovative offers) retrieves great potential for the area. Canoe trips on the Lafnitz and the River Raab are definitely top attractions – they provide an opportunity to explore the nature park from a unique perspective.

Involved stakeholders	☒ Local public authority: Naturparkverein Raab, Gemeinde Neuhaus am Klausenbach ☒ Regional public authority: Landwirtschaftskammer Burgenland, Bezirksreferat Güssing/Jennersdorf; school board ☐ Cantonal public authority: ☐ National public authority: ☒ Non-government organisations & Associations: Naturschutzbund Burgenland, ARGE Streuobst ☐ Community groups: ☐ Business partners / SME: ☒ Education and research on GI: Nature Park Schools, University of applied science Vienna; teachers training college ☒ The public/inhabitants/visitors: fruit tree owners, garden enthusiasts, visitors interested in nature
Funding programmes being used	ELER, Interreg SI-AT; Interreg ATHU
Relevant projects	Obstsortenerhaltungsgarten Interreg SIAT project „BANAP" Interreg ATHU project „3-Határlos"
Links / Homepages / Literature	Tourismusverband Jennersdorf (2021), Holler (2014), Land Burgenland (2020b), Land Burgenland (2020c), Land Burgenland (2020a), Organic Tools (2021)

4.3 Canton of Grisons, Switzerland

4.3.1 Characterisation

The Canton of Grisons (Graubünden) is located in the east of Switzerland (Figure 23). Grisons is the only trilingual canton in Switzerland. It is very diverse in economic, cultural and political terms. In terms of area, it is the largest canton, but with its 198,500 inhabitants, it is also the least densely populated canton. The population density is approximately 28 persons per km². The cantonal capital is Chur and it is one of the oldest cities in Switzerland with about 37,500 inhabitants. The three cantonal languages – German, Italian and Romansh – contribute to its cultural and linguistic diversity. 76 % of the population speak German, 14 % Romansh and 10 % Italian.

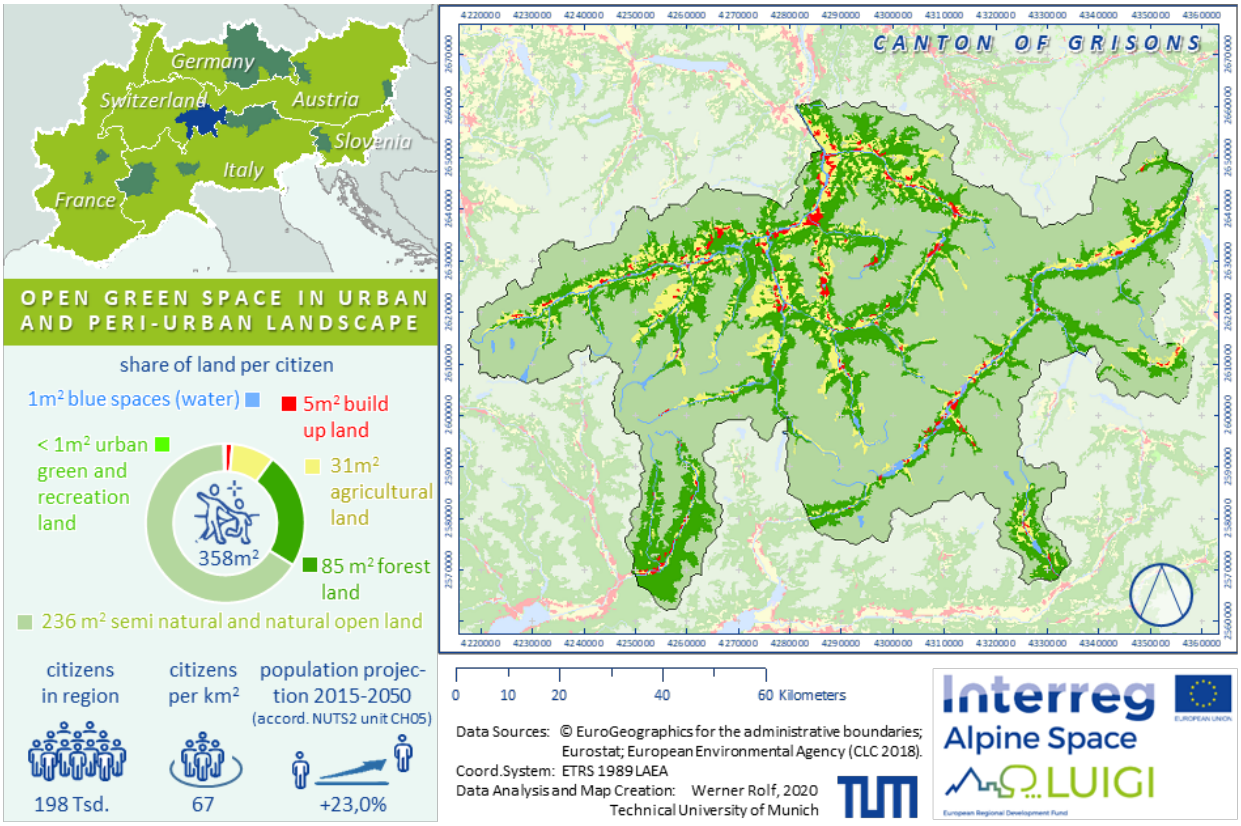


Figure 23: Characterisation and map overview of the pilot area Canton of Grisons

Canton Grisons is located in the middle of the Alps and has southern, inner and northern Alpine areas. Canton Grisons is very diverse in nature as each of the 11 regions is specific and not comparable to another (Table 9). In Grisons exist 615 lakes, over 900 mountain peaks and 150 valleys. Almost half of the inhabitants of Grisons live higher than 1,000 metres above sea level. The highest mountain, the Piz Bernina in the Engadine, is over 4,000 m high and the lowest point is 260 m.a.s.l, located in the area where Grisons borders the Canton Ticino.

Table 9: Facts and figures on the pilot area Canton of Grisons

Country	Switzerland
Administration (number of districts/municipalities)	11 regions, 105 municipalities
Area (km^2)	7,105
Inhabitants	198,379
Pilot coordinator (institution)	Fundaziun Pro Terra Engiadina
Population change	+7 % (1998-2018)
Alpine Green Infrastructure in focus	Orchard meadows, hedges

Source: (Amt für Wirtschaft und Tourismus, 2020, Foppa, 2020)

The different valleys characterise the charm of the Grisons mountain landscape. From those mountains, the waters flow into three seas: The Rhine flows into the North Sea at Rotterdam, the Inn joins the Danube into the Black Sea and the rivers from the Misox, Bergell, Puschlav and Val Müstair take their course into the Adriatic Sea.

4.3.2 Situation of the Green Infrastructure in focus in Canton of Grisons

High-stem orchards are a cultural asset in Grisons, created and maintained by farmers as well as by local citizens. In the mountainous Canton of Grison, they are a typical landscape element, with their spring flowers, fruit and autumn colours, especially in the lower-lying regions. Until after the turn of the century, these orchards were important fruit producing areas and whole trains full of fruit were exported abroad year after year. Grison fruit was also in demand as a delicacy among holidaymakers in the prominent health resorts. Today, only a small proportion of the raw products of the typical *"Bündner Nusstorte"* or *"Bündner Birnbrot"* come from Grison.

However, fruit trees are not uncommon in the higher-lying areas such as the Lower Engadine and Val Müstair, and in the southern valleys of Grisons such as in Valposchiavo and Bergell. Sweet Chestnut also play a role in the Canton as a typical nut tree.

In recent decades, the number of high-stem fruit trees throughout Switzerland has declined by around 70 % and Graubünden is no exception. In 1951, almost 300,000 high-stem fruit trees were counted in the canton, but today their number is estimated between 40,000 and 50,000.

The downward trend that began years ago has now been more or less halted. However, many high-stem orchards are no longer economically interesting today. The harvesting of high-stem fruit is time-consuming and not without danger. In order for the trees to produce a full yield, they must be pruned regularly. The trees are therefore either no longer maintained or felled entirely. This not only makes the landscape poorer, but also means that an old cultural asset is lost. A typical element of the rural cultural landscape is in danger of disappearing altogether.

Today, high-stem fruit growing is largely based on the idealism of the farmers or the local population. Orchards have been planted and tended over generations and new varieties adapted to the local climate have been bred. The number of fruit varieties in Switzerland is estimated at over 3,000. The apple contributes to this number with the approximately 1,000 known varieties. The determination of varieties is very complex. In the canton of Graubünden, around one hundred apple and forty pear varieties have been identified in the region of Domleschg alone to date. Each variety has its own characteristics and uniqueness, such as early or late ripening, adaptation to

higher altitudes or differences from other varieties in suitability for use as table, cooked, dried or cider fruit.

Traditional orchards are home to a large number of different varieties as well as numerous plants and animals that have their habitat here. If the meadow is cultivated extensively or with little intensity, numerous insects, including many beneficial insects, find their food. The abundance of insects attracts bats and birds, some of which are very rare. The Tree Pipit (*Anthus trivialis*), Redstart *(Phoenicurus phoenicurus)*, Green Woodpecker *(Picus viridis)*, Lesser Spotted Woodpecker *(Dryobates minor)*, Wryneck *(Jynx torquilla)* and Hoopoe *(Upupa epops)* are typical bird speciesliving in high-stem orchards.

Similar to the forest, orchards have a positive effect on local climatic conditions; they offer protection from strong winds and rainfall and prevent soil erosion on steep slopes and cultivated terraces. In summer, they provide pleasant shade for livestock and people, and enrich the landscape through their appearance.

Since the orchards were mostly planted near farms, they are now often located in the building zone. Due to the building activity, many fruit trees disappear every year. In agriculture, the trees are often an obstacle to mechanised cultivation. The value of trees as a production branch in agriculture is low in canton of Grison. Since 2014, however, high-stem fruit cultivation has received additional support by direct payments (landscape quality). Above all, new plantations receive adequate financial support. However, the maintenance and care of fruit trees is still not sufficiently supported.

4.3.3 Governance and planning aspects

Relevant institutions responsible for selected GI governance

The form of governance in canton Grisons is multi-level based. The different NGOs are working with the same principle, but in smaller NGOs single-level governance systems are also to be found. Table 10 provides the overview on relevant stakeholders.

Table 10: Collection of relevant institutions as important stakeholders in Canton of Grisons

Type	Name of institution	Level
Government & administration	Federal Office for Agriculture FOAG	national
Government & administration	Cantonal Office for Agriculture and Geoinformation	cantonal
Government & administration	Cantonal Office for Nature and Landscape	cantonal
Community Authorities	Regional Management Viamala	regional
Community Authorities	Regional Management Valposchiavo	regional
Community Authorities	Regional Management Engiadina Bassa Val Müstair	regional
Association	Hochstamm Schweiz	national

Government & administration	Cantonal Office for Agriculture and Geoinformation	cantonal
Government & administration	Cantonal Office for Nature and Landscape	cantonal
Association	FIBL	national
Association	Agridea	national
Association	Agroscope	national
Association	ProSpecieRara	national
Association	Slow Food Schweiz	national
Association	FRUCTUS	national
Association	Ausbildungs- und Beratungszentrum Plantahof	cantonal
Association	IG Obst Graubünden	regional
Association	Landschafts- und Obstbaumpflegeverein Trin	local
Association	Kulturlandschaft Domleschg	local
Association	Associazione Terra Nostra	regional
Association	Kulturlandschaft Domleschg	local
Association	Associazione Terra Nostra	regional
Association	Polo Poschiavo	regional
Association	Foundation Pro Terra Engiadina	regional
Nature Conservation	WWF Switzerland	national
Nature Conservation	Pro Natura	national
Nature Conservation	Stiftung Landschaftsschutz Schweiz	national
Nature Conservation	Vogelwarte Sempach	national

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 11 and classified in formal and informal instruments.

Table 11: Instruments and tools of GI governance in the pilot region Canton of Grisons

	National/cantonal/regional level	Local level
Formal instruments	• Sectoral planning Art. 13 RPG (national) • Regional planning (cantonal) • Regional planning (regional) • Subsidy programme on national level (DZV) • Biodiversity Strategy and Action plan (including GI) (national)	• Land use plan (*Flächen-nutzungsplan*) • Local planning (*Ortsplanung*)
Informal instruments	• Spatial concept Switzerland (national) • Spatial concept Grison (cantonal) • Spatial concept (regional) • Cantonal priority species programme • Agenda 2030 for sustainable regional development (regional) • Action plan biodiversity (regional) • Priority conservation areas (regional)	• Subsidy programmes on local level (community based)

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI (here orchard meadows)

Various support programmes are available for the care, development and new planting of high-stem fruit trees or the establishment of high-stem fruit gardens in the canton of Graubünden. They are differentiated into federal subsidy programmes for agriculture and subsidies, which are linked to nature conservation.

The possibilities for promoting high-stem fruit trees (orchards) in the canton of Grison depend on the national promotion instruments. The main support is provided through the Direct Payments Ordinance. This in part applies to landscape quality contributions and in part to biodiversity subsidies. The concepts required for this are implemented either regionally or at a smaller level.

Non-governmental funding opportunities are primarily submitted on a project basis to the Swiss Landscape Fund or NGOs such as the Swiss Foundation for Landscape Protection, WWF Switzerland and others.

4.3.4 Targeted approaches for the LUIGI project

By implementing the objectives of the LUIGI project, we want to achieve the following:

- Increasing the value of high-stem fruit trees and gardens as green infrastructure in both rural and urban areas;
- Raising awareness of the ecological, cultural and economic value of green infrastructure using a concrete example;
- Identifying ecosystem services of high-density orchards for the three dimensions of sustainability;
- Increasing the number of high-stem fruit trees in the pilot region;
- Creating partnerships and cooperation between rural and urban regions;
- Developing innovative value-added chains for new products from high-stem orchards;
- Exchanging knowledge between the actors of the participating Alpine countries;
- Furthering development of efficient management and care methods in high-stem orchards;
- Promoting the cross-linking elements for enhancing ecological connectivity in and outside the orchards.

4.3.5 Factsheet: Lower Engadine, Switzerland

Lower Engadine

Figure 24: Engiadina Bassa where the landscape of Ramosch is characterised by old field terraces, hedges and some orchard trees

Photo credit: (A. Abderhalden)

Figure 25: High-stem orchards provide a valuable habitat for honeybees, wild bees, other pollinators and many different birds, mammals etc.

Photo credit: (A. Abderhalden)

Country: Switzerland **NUTS-region:** CH056	**Size:** 42 km^2 **Coordinator:** Fundaziun Pro Terra Engiadina, Regiun Engiadina Bassa Val Müstair
Current challenges	• The majority of the orchards is in private gardens. • Small valley with a low number of inhabitants, but a high amount of tourism • GI are not a real known strategy • raise awareness for orchard meadows for farmers, schools and land owner
Implementation activities	• Creation of a Fruit Tree -Variety Garden focusing on old varieties from Pro Specie Rara. • Involvement of inhabitants for observing the ecological value (as ESS) of orchard meadows. • Creation of a new product from originally distributed orchards e.g. wild plums. • The ESS (ecological and economic) of orchard meadows are known and could be evaluated. • New products from the fruit trees contribute to the connection between urban and rural areas.

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☒ "It will create, attract investment/create new business or markets"

☒ Other - This good practice area is an important 'healthy-area' because of the 'healthy-tourism' is an important topic. The other contribution to LUIGI is to contribute that orchards seen as a GI is important for enhancing ecological connectivity

Region:

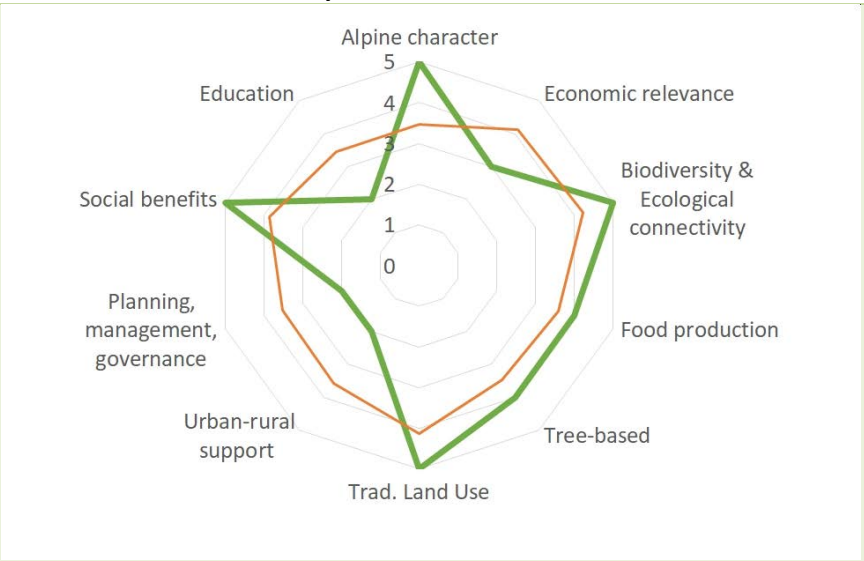
☐ City/Urban ☐ Peri-Urban ☒ Rural

Targeted key-alpine GI: high-stem fruit tree (*Bos-cha da frütta*), orchard meadow (*bröl*)

History/idea behind

As an Inner-Alpine region, the Lower Engadine is important for the preservation and promotion of orchards. Climatically adapted species occur in this region. Up to now, marketing has played a subordinate role. The ecological starting situation is very good. Farmers are interested in planting, maintaining and using more high-stem fruit trees if possible, in orchard meadows.
This is an important 'healthy-area' because of the 'healthy-tourism' is an important topic. The other contribution to LUIGI is to contribute that orchards seen as a GI is important for enhancing ecological connectivity

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity

Due to the Inner-Alpine location, a supply of products for the urban population is not possible. Nevertheless, special products from the orchards are being developed as high-quality products for the urban population. Furthermore, the orchards serve as an ecological and landscape scenery enhancement and thus contribute to socio-ecological appreciation.

Ecological connectivity

Orchards are valuable GI for ecological connectivity. Within the project, the enhancement of linking structures (if missing) is foreseen. Due to the rural environment, a large number of connecting structures are already in place.

Social cohesion

Education, social cohesion, recreation and health are the main positive social effects.

Economic benefit

Green economy (green jobs) is probably the main targeted key Alpine GI. New products from farmers or private orchard owners are sold on regional markets or in restaurants in the region.

Involved stakeholders

☒ Local public authority: community Scuol and Valsot
☒ Regional public authority Region Engiadina Bassa / Val Müstair (regional development)
☒ Cantonal public authority: Amt für Natur und Landschaft / Amt für Landwirtschaft und Geoinformation
☐ National public authority:
☒ Non-government organisations & Associations: Stiftung Landschaftsschutz Schweiz, WWF, Pro Natura, Schweizerische Vogelwarte Sempach.
☐ Community groups:
☒ Business partners / SME: Hateke and Butega, AlpinaVera, s-charnuz grischun
☒ Education and research on GI: Palottis Center, Plantahof
☒ The public/inhabitants/visitors:

Funding programmes being used	Funding programs for agriculture includes landscape quality subsidies. Funding from landscape protection foundations and cantonal offices (nature and landscape or agriculture).
Relevant projects	**Project name** MoVo INSCUNTRAR; Landschaftsqualitätsprojekt Region Engiadina Bassa Val Müstair Arinas, 2016, Agenda 2030.
Links / Homepages / Literature	Tourism Lower Engadine, Fundaziun Pro Terra Engiadina; Agenda 2030

4.3.6 Factsheet: Trin/Domleschg region, Switzerland

Trin/Domleschg region

Figure 26: Trin/Domleschg where the landscape is structured by castles, municipalities and GI as orchard meadows

Photo credit: (F. Andres

Figure 27: Trin/Domleschg near Trin in autumn – the colourful landscape is dominated by terrace fields, hedges, forests and single trees

Photo credit: (H. Herzog)

Country: Switzerland **NUTS-region:** CH056	**Size:** 225 km^2 **Coordinator:** PTE; Stiftung Kulturlandschaft Domleschg, Obstbaumverein Mittelbünden, Landschafts- und Obstbaumpflegeverein Trin
Current challenges	• A high interest in innovative products or value chains are existing but the seasonality of orchard products where mentioned as a challenge. • Effects of climate change as droughts are increasing. • The increasing intensification of agriculture leads to a loss of orchard meadows. • The knowledge for the production of typical products from the high-stem fruit is decreasing.
Implementation activities	• Reopen old drainage systems for irrigation of the orchard meadows. • Supplying schools with fruit from the region's high-stem orchards and implement school days for the promotion of orchard meadows and 'natural' fruits. • Installation of a fruit drying plant for the typical dried pears and other fruits and vegetables. **KPI (key performance indicator) ideas:** Participation of schools during the school days - fruit drying plant is established and works profitable.

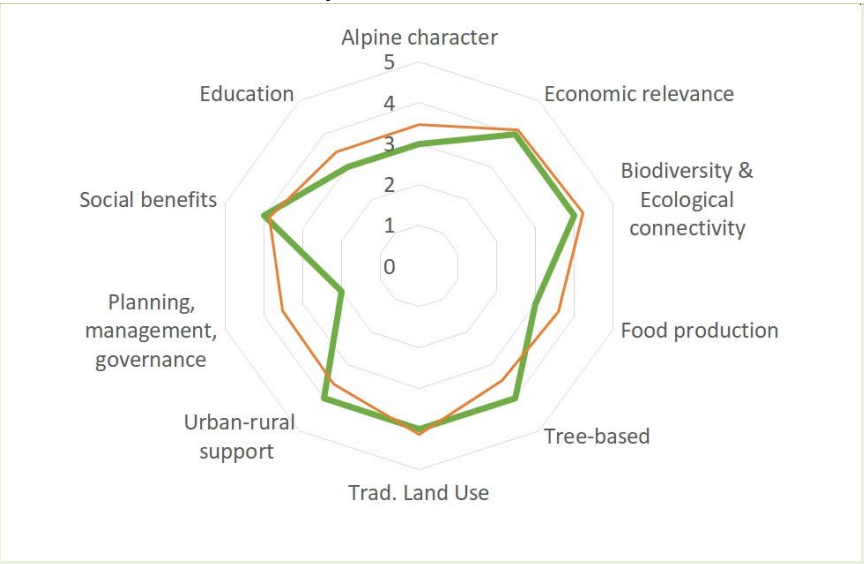
The case study contributes to LUIGI because:
☒ "We expect to find solutions to current challenges"
☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"
☒ "It will create, attract investment/create new business or markets"
☐ Other
Region:
☐ City/Urban ☒ Peri-Urban ☐ Rural

Targeted key-alpine GI: high-stem fruit tree (*Hochstammobstbaum*), orchard meadow (*Obstgarten*)

History/idea behind The Trin/Domleschg region is one of the most important fruit growing areas in the Canton of Grisons. The preservation and promotion of high-stem trees is already supported by various activities and is carried out in close cooperation with the Grisons Fruit Association. The project: Cultural Landscape

Domleschg, which has been running in the Domleschg since 1994, already has a lot of experience, also in the marketing of fruit-growing products. In Trin the landscape and high stem fruit association (LOVT) is active in the promotion of orchard meadows.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity
The connection between urban and rural is ensured by the function of the products of the orchard trees as food resource and food production. The proximity of the Trin / Domleschg region to the capital of the canton of Graubünden and the climatically favourable location for fruit growing puts food production in the foreground. Furthermore, the orchards serve as an ecological and landscape scenery enhancement and thus contribute to socio-ecological appreciation.

Ecological connectivity
Orchards are valuable GI for ecological connectivity. Within the project, the enhancement of linking structures (if missing) is foreseen. The fruit trees are situated around the villages. Ecological connectivity does not exist everywhere.

Social cohesion
Education, social cohesion, recreation are the main positive social effects. It is possible that also health could play a role

Economic benefit
Green economy (green jobs) is probably the main targeted economic benefit.

Involved stakeholders	☒Local public authority: Community Trin, Sils i.D., Domleschg ☒Regional public authority: Region of Viamala ☒Cantonal public authority: Amt für Natur und Landschaft / Amt für Landwirtschaft und Geoinformation ☐National public authority: ☒Non-government organisations & Associations: Stiftung Landschaftsschutz Schweiz, WWF, Pro Natura, Schweizerische Vogelwarte Sempach. ☐Community groups ☒Business partners / SME: Melioration, Viamala, AlpinaVera ☒Education and research on GI: Palottis Center, Plantahof ☒The public/inhabitants/visitors
Funding programmes being used	Kulturlandschaft Domleschg, Fonds and subsidies for agriculture includes landscape quality subsidies.
Relevant projects	Variety gardens and mapping of fruit trees: • Landscape Quality Project “Heinzenberg Domleschg” (Andres and Federspieler, 2016);

	• Landscape Quality Project “Region Imboden” (Kanton Graubünden, 2018); • Fruit tree inventory “Obstbauminventar Valendas” (Egger, 2020).
Links / Homepages / Literature	RegionVimala (2021), IG Obst Graubünden (2020), List of projects by the BLW (2020), LOVT, Kulturlandschaft Domleschg

4.3.7 Factsheet: Poschiavo region, Switzerland

Poschiavo region

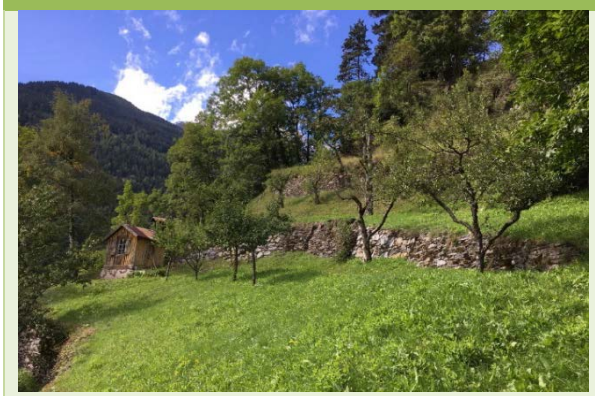


Figure 28: Valposchiavo with structured old field terraces with orchards meadows

Photo credit: (M. Menghini-Cortesi)

Figure 29: Chestnuts are widespread in Valposchiavo and were used in an existing project as the basis for a special product

Photo credit: (E. Bontognali)

Country: Switzerland **NUTS-region:** CH056	**Size:** 30.8 km^2 **Coordinator:** PTE; Polo Poschiavo and Assoziazione Terra Nostra
Current challenges	• Appreciation of orchard meadows is low and often related to land abandonment. • Knowledge of harvesting and maintenance of orchard meadows are decreasing.
Implementation activities	• Reproduce a special variety of the valley for creating a new product. • Use orchard trees as a GI in spatial planning. • Orchard meadow days for farmers, schools and inhabitants to highlight the ESS. **KPI (key performance indicator) ideas:** A new product is on the market and students have a higher knowledge about the ESS of orchard meadows.

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☒ "It will create, attract investment/create new business or markets"

☐ Other

Region:

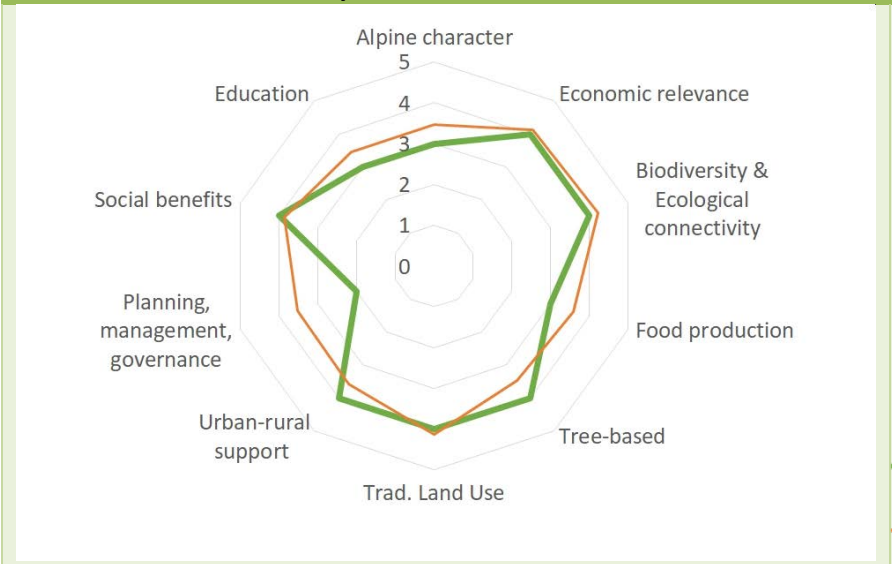
☐ City/Urban ☒ Peri-Urban ☐ Rural

Targeted key-alpine GI: high-stem fruit tree (Albero da frutto ad alto fusto), orchard meadow (frutteto)

History/idea behind

The Poschiavo region is a valley in the south of the Canton of Grisons where fruit growing has a long culture. The landscape here is also famous for its cultural diversity, such as the dry-stone cellars. Chestnut growing is also a long culture known by the population and outside the valley. In this region a lot of projects concerning the products has been carried out and that's also one of the points because this region was selected.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
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1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity Climatically the Poschiavo valley is very favourable for fruit growing. However, the products that are developed are rather small in scale. They should be processed and marketed mainly in the valley. However, the urban population should also be able to benefit from at least one product from the orchards of this region. Furthermore, the orchards serve as an ecological and landscape scenic enhancement and thus contribute to socio-ecological appreciation.	**Ecological connectivity** Orchards are valuable GI for ecological connectivity. Within the project the enhancement of linking structures (if missing) is foreseen. Due to the rural environment, a large number of connecting structures are already in place.
Social cohesion education, social cohesion, recreation are the main positive social effects. It is possible that also health could play a role	**Economic benefit** Green economy (green jobs) is the main targeted key Alpine GI. Landscape elements as dry-stone walls will be restored with local companies

Involved stakeholders	☒ Local public authority: Community Poschiavo, Brusio ☒ Regional public authority Regione Valposchiavo ☒ Cantonal public authority: Amt für Natur und Landschaft / Amt für Landwirtschaft und Geoinformation ☐ National public authority: ☒ Non-government organisations & Associations: Stiftung Landschaftsschutz Schweiz, WWF, Pro Natura, Schweizerische Vogelwarte Sempach. ☐ Community groups: ☒ Business partners / SME: polo poschiavo, AlpinaVera, 100 %local… ☒ Education and research on GI: Polo poschiavo, Palottis Center, Plantahof ☒ The public/inhabitants/visitors: .
Funding programmes being used	Funding from landscape foundations and cantonal offices (nature and landscape or agriculture). Ecological subsidies for agriculture and landscape quality subsidies.
Relevant projects	Landscape quality project of Valposchiavo; 100% Valposchiavo
Links / Homepages / Literature	Polo Poschiavo (2013), Flury and Giuliani (2014), Amt für Landwirtschaft und Geoinformation (2016), Cortesi (2016), Region Viamala (2021), Engadin St. Moritz Tourismus AG (2020), Fundazium Pro Terra Engiadina (2020), Kanton Graubünden (2016)

4.4 Munich Metropolitan Region, Germany

4.4.1 Characterisation

The European Metropolitan Region of Munich (EMM) is situated in the northern periphery of the Alpine Space, around 80 kilometres to the North of the Alps, in Bavaria, Germany (Figure 30). EMM covers an area of 26 thousand square kilometres (Table 12). Hilly areas covered by forests and a mix of arable land and grassland dominate its northern part. The flat areas are large fens that are today intensively used by agriculture due to groundwater availability (e.g. Freisinger and Dachauer Moos); smaller areas of heathland and moorland are relicts of the natural vegetation and are largely protected today. With increasing altitude and humidity towards the Alps, the share of arable land is decreasing and replaced by grassland and finally forest, where terrain and climate will not allow for agriculture. Large forested areas in the foothills of the Alps with a number of picturesque postglacial lakes (e.g. Lake Starnberg and Chiemsee) characterize the southern part of the EEM (Figure 32). This landscape within a day's driving distance serves as major focus area for tourism, leisure activities and recreation of the urban population.

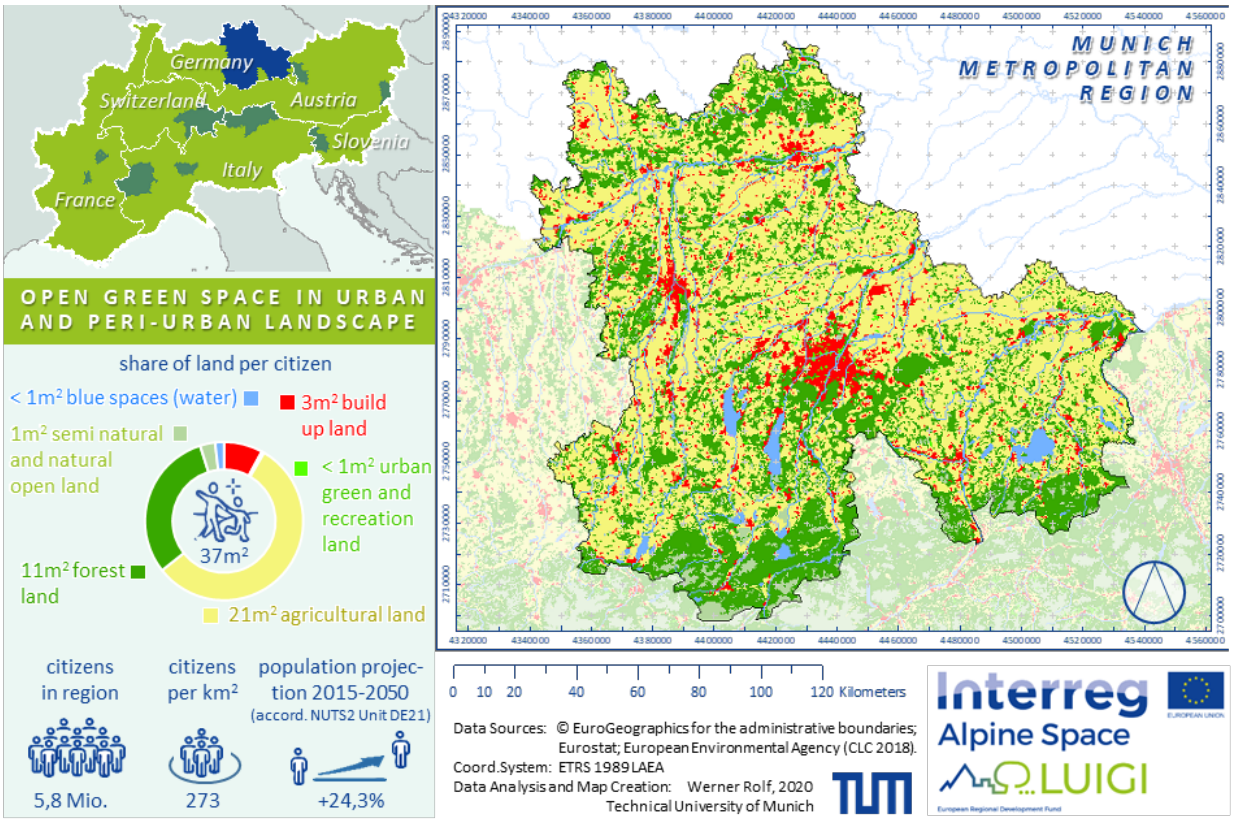


Figure 30: Characterisation and map overview of the pilot region Munich Metropolitan Region

Strong economic growth within the EMM, accelerating in the last years, lead to a constant inflow of people from other areas. A further population increase by 8 % is expected within the next 20 years (Bayerisches Landesamt für Statistik und Datenverarbeitung, 2020).

Figure 31: Isar river was redesigned to a semi-natural state to allow for nature recreation in the city of Munich

Photo credit: (Michael Nagy/LH München)

Figure 32: Panoramic view of the pre-alpine area with the Alps in the background, district of Rosenheim

Photo credit: (L. Schrapp)

Besides a high level of income and general satisfaction with the living situation, this increases pressure on the housing market and public infrastructure, but also on nature and environment. It affects the availability and quality of recreational areas and retreat within nature, both on the demand and the supply side. It affects the countryside as well locations right in the cities and towns. 3.5 million visitors are using the English garden each year, a large semi-natural city park along the Isar River in Munich (Figure 31).

Table 12: Facts and figures on the pilot region Munich Metropolitan Region

Country	Germany (DE)
Administration (number of districts/municipalities)	27 districts, around 40 municipalities and 6 independent towns
Area (km^2)	26,000
Inhabitants	6.12 mill.
Pilot coordinator (institution)	University of Applied Science Weihenstephan-Triesdorf (HSWT)
Population change	+19,8 % (1990-2015)
Alpine Green Infrastructure in focus	Orchard meadows, fruit alleys

Some of the conflicts arising between urban and rural population as well as between different interests such as environmental protection and recreation can be relieved by focusing on synergies and solutions acceptable to all parties.

4.4.2 Situation of Green Infrastructure in focus in the Munich Metropole Region

Orchard meadows are traditional agroforestry systems that form a characteristic and unique type of green infrastructure. These so-called "*Streuobstwiesen*", i.e. the combination of (high-stem) fruit trees and meadows, are under constant threat in Germany for various reasons. From the initial 1.5 million hectares of orchard meadows in Germany only around 300.000 ha remained,

mostly located in southern Germany (Figure 34). While many orchard meadows in mid-eastern Germany (e.g. in Thuringia) are abandoned today, the situation in Southern Germany is somewhat better. The disappearance of the orchard meadows was a result of the federal German agricultural policy of the 70s and 80s that offered money for each tree removed from the land (Hübner and Günzel, 2020).

Today the value of orchard meadows for biodiversity and tourism has been recognized and the policy changed towards a better protection and the offering of funding under various programmes, partly co-financed by the EU. However, the halt of destruction has not yet been achieved and the meadows continue to degenerate and finally to disappear (Figure 33). Today's main barriers are of economic nature, as the diverse fruits produced cannot compete with the demand of the citizens in the supermarkets with respect to appearance, size, and in particular the prize.

Figure 33: So-called "Streuobstwiesen", i.e. the combination of fruit trees and meadows are typical landscape features in the pre-alps. Many are degraded with over-aged and missing trees

Photo credit: (R. Hübner)

Figure 34: Orchard meadows are used for grazing, e.g. by cows and sheep part of the year, newly planted tree in the foreground, mature fruit and nut trees in the background

Photo credit: (L. Schrapp)

The situation of many orchard meadows is non-optimal and characterized by obsolescence of the trees without proper maintenance and pruning. Replanting of young trees is done too seldom, as these efforts are not seen necessary by the landowners. Low profitability, high labour input and unwillingness of farm successors to continue the use of orchards are common reasons for their decline. Often a perceived competition for land and the continuous expansion of the settlement areas is taking place on land that was formerly occupied by fruit orchard meadows. One can also testify, that the general public awareness regarding traditional agroforestry systems as well as on the urban/peri-urban dependencies in general is rather low.

4.4.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

The form of the GI governance in the EMM is a distinct multi-level governance system (Gantioler, 2018). The vertical structure of the administrative levels corresponds to territorial levels (national,

regional, local). This principle can be found in official administrations as well as in NGOs. Table 13 provides an overview of relevant stakeholders.

Table 13: Collection of relevant institutions as important stakeholders in the pilot region Munich Metropolitan Region

Type	Institution name	Level
Government & administration	Bavarian State Ministry of the Environment and Consumer Protection – Department 25	Regional
Government & administration	Bavarian State Research Centre for Agriculture (Lfl)	Regional
Government & administration	Bavarian State Ministry of Food, Agriculture and Forestry	Regional
Community Authorities	City of Munich – Department of city planning and building regulation	Local
Association	European Metropolitan Region of Munich e.V. association– Working Group Environment	Regional
Association	Land Care Associations (e.g. Land Care Association Rosenheim)	Regional
Nature Conservation	Friends of the Earth Bavaria (NABU)	Regional
Association	Hochstamm Deutschland e.V.	National
Association	German Agroforestry Association (DeFAF)	National

Formal and informal instruments

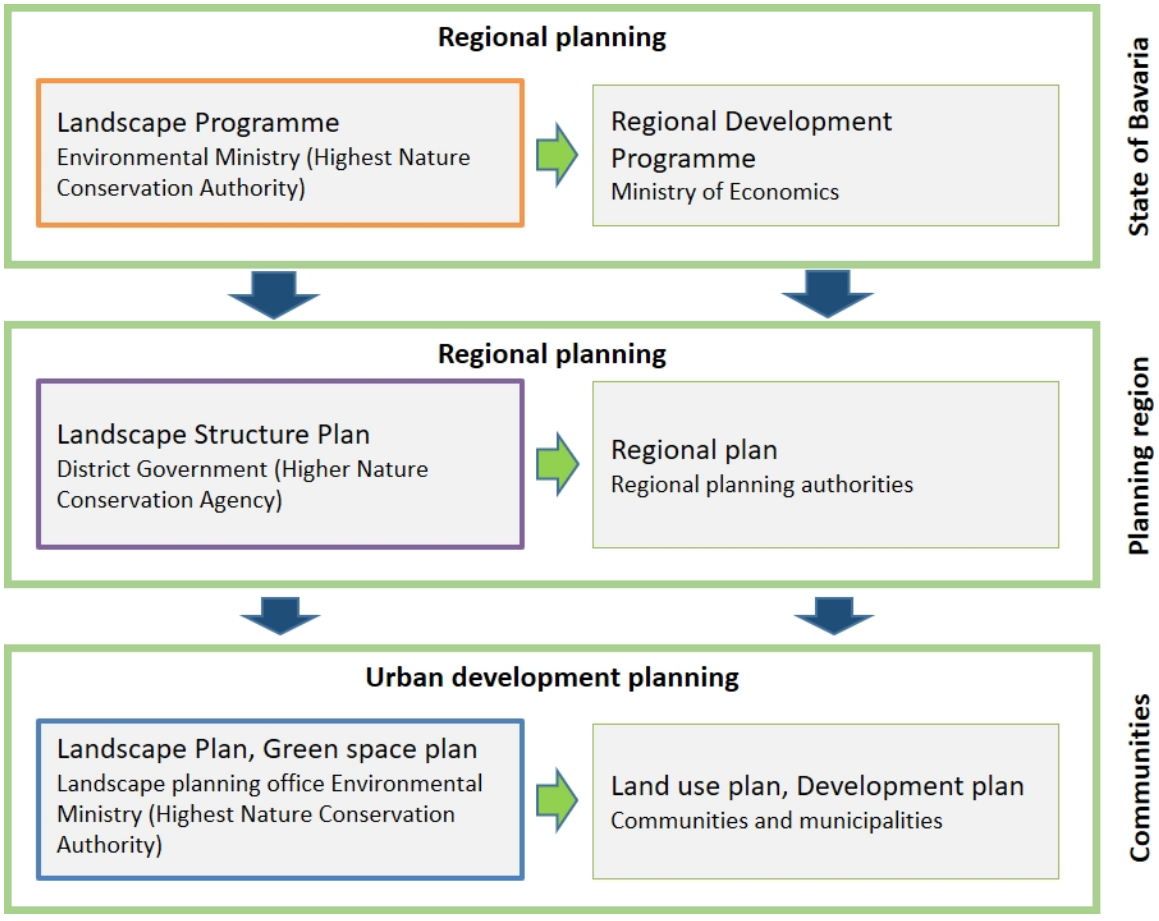
Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 14 and classified in formal and informal instruments.

Table 14: Instruments and tools of GI governance in the pilot region of EMM

	National and regional level	Local level
Formal instruments	• Bavarian Planning Act *(Bayerisches Landesplanungsgesetz BayLplG)* • Bavarian Nature Conservation Law *(Bayerisches Naturschutzgesetz BayNatSchG)* • Land Development programme and resulting Regional plan *(Landesentwicklungsplan LEP 2020, Regionalpläne München, Oberland, Südost-Oberbayern")* • *"Alpenplan"* (as part of the Land Development programme) • Landscape framework programme and resulting Landscape framework plan *(Landschaftsrahmenplan)* (integrated in Land Development programme resp. Regional Plan)	• Land use plan *(Flächennutzungsplan)* • Legally binding Land use Plan *(Bebauungsplan)*
Informal instruments	• Bavarian species and habitat protection Programme (ABSP)	• Landscape plans (integrated in land use plans)

	• National Species and habitat protection Programme 2030 • Bavarian Biodiversity Strategy • Climate Action 2050 *(Klimaschutz 2050)* • Subsidy programmes on national/regional levels (see below)	• Green Space plans *(Grünordnungsplan)* • Perspektive München – Strategic urban development concept • Long-term settlement development • Open Space 2030 • Green space planning Munich 2005 • Biodiversity offsetting concept (based on Environmental Impact Regulation) • Biotope Network Concept • Subsidy programmes on local levels

The scheme explains how the landscape planning as main GI instrument is integrated into the territorial planning system in Bavaria. The green arrows are symbolizing the integration of landscape planning instruments (left side) into spatial planning (right side). Each planning instrument provides targets for the subordinate level (blue arrow).



Source: own graphic after Bayerisches Landesamt für Umwelt (LfU) (2009)

Figure 35: Formal spatial planning instruments and integration of GI topics within the Bavarian planning system

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI (here: orchard meadows)

For the maintenance, development and new planting of orchard meadows within the EMM, a number of government support programs can be used, especially within the framework of nature conservation support and EU agri-environmental programs.

In particular, EMM has an active subsidiarity setting. It means, "Programmes set at the local level financially largely profit from federal financing, without substantial constraints and a certain level of flexibility. At the same time, it can also profit from strong regulatory power at the regional level, particularly where the regional government leaves municipalities a defined scope for manoeuvring regarding implementation measures" (Gantioler, 2018). The following list of funding programmes has been divided for the different stages of orchard maintenance, listed by LfL (2020):

1. Promotion of the creation of new orchards:
    a. Bavarian Landscape Management and Nature Park Guidelines (LNPR);
    b. Action "More green through rural development";
    c. Local or regional tree events;
    d. Measures to improve the biotope of the Bavarian State Hunting Association Funding for the conservation of orchards;
    e. Bavarian Cultural Landscape Programm - Bayerisches Kulturlandschaftsprogramm (KULAP);
    f. Bavarian contract-based nature conservation programme - Bayerisches Vertragsnaturschutzprogramm (VNP);
2. Promotion of the production, processing and marketing of orchards
    a. Campaign for orchards "Aktion Streuobst";
    b. EU training program;
    c. Individual farm investment promotion (Part A: Agricultural investment promotion program, Part B Diversification promotion);
    d. Processing and marketing of regional agricultural products (VuV program);
    e. Market structure promotion;
3. Promotion of orchard projects and other measures
    a. LEADER 2014-2020 Funding program to strengthen rural areas, Local Action Groups (LAG);
    b. Integrated Rural Development (ILE), Office for Rural Development;
    c. Bavarian Nature Conservation Fund;
    d. Bavarian Biodiversity Strategy "NaturVielfaltBayern";
    e. Cross-border cooperation / Interreg V A; Alpine Space Programme;
    f. Other: Life-Nature projects, large nature reserves.

4. Funding in the field of environmental education and adventure offers:
    a. Farm experience program;
    b. Orchard school weeks run by “Aktion Streuobst”.

4.4.4 Targeted approaches for the LUIGI project

- To raise awareness by showing up the value of orchards as key-GI with importance for the characteristic landscapes and also as a basis for tourism value chain;
- To establish a platform for the traditional knowledge-transfer about the maintenance of orchards;
- To establish new partnerships and better linkage between rural and urban areas – especially bring together stakeholders;
- To learn from other countries GI maintenance strategies;
- To make rural more attractive for the young generation and improve environmental education about these fragile ecosystems;
- Optimization of local producer and marketing initiatives, Development of innovative product ideas and marketing strategies.

4.4.5 Factsheet: Schafhof in the district of Freising, Germany

Schafhof – District of Freising

Figure 36: Heard of grazing sheep in the orchard meadows

Photo credit: (Matthias Maino)

Figure 37: Visitor information board in the meadow orchard Schafhof

Photo credit: (Linda Schrapp)

Country: Germany **NUTS-region:** DE21B	**Size:** 5 ha **Project management**: HSWT
Current challenges	1) To ecologically upgrade the area by making it visitor/child friendly; 2) Orchard maintenance in a long-term view 3) to raise the awareness about the meaning of orchard meadows for the urban residents, especially for school-children;
Implementation activities	**Ideas:** • Initiation of a "landscape school" for Primary schools from Freising and Munich; • Organisation of events, e.g. workshops, to promote local food production and raising awareness on ES of orchard meadows;

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create new businesses or markets and attract investments"

☐ "Other reasons" – please elaborate

Regional focus:

☐ City/Urban ☒ Peri-Urban ☒ Rural

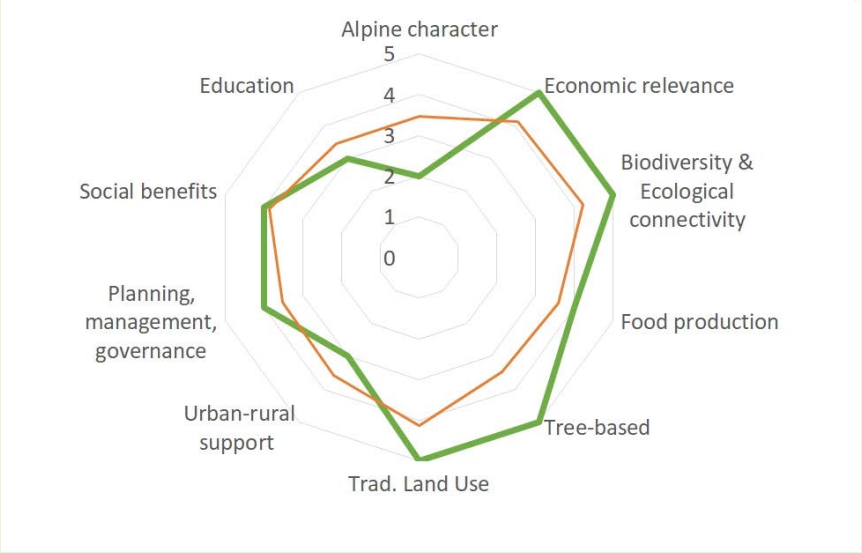
Targeted key-alpine GI: Orchard meadows

History/idea behind

In the city of Freising, there are three main traditional orchard meadows: 1) "Domberg" 2) Northern part of University of Applied Science (HSWT) area and 3) "Schafhof" (in EN "Sheep stable"). The Schafhof was built as a model farm in 1819/1820 on behalf of the Bavarian king Max I. Joseph as a stable for a herd of Merino sheep. For the establishment of the farm, about 50 hectares of forest were cleared in order to create pastureland ("Schleimbuckel" and "Diebswinkel"). The building was designed to accommodate 500 sheep. Famous agricultural scientist Max Schönleutner carried out substantial parts of his research at the Schafhof. In 1888, the sheep breeding was phased out, but until 1930, a mixed herd of cattle and sheep was kept. Sheep farming was maintained until the 1960s. After a long period of abandonment, the Schafhof was acquired and renovated by the district of Upper Bavaria in the early 90s. From 1994 on it was used as an agricultural museum on Bavaria's agriculture. The museum was a branch of the Bavarian National Museum but had to close down in 2002 due to a

lack of visitors. In 2005, the Schafhof was reopened as the "European art house of Upper Bavaria". The surrounding 5 ha agricultural land forms a traditional silvo-pastoral agroforestry system, called "Streuobst" and is under the care and maintenance of Land Care Association (LPV) Freising is being used for sheep grazing. The aim of a targeted grazing is to create a structural diversity that serves as a habitat for wild bees and other insects. The sheep are also essential for the transport of seeds. Leaving dead wood and clippings creates important natural structures, especially for wild bees and bumblebees. A regional juice company "Wolfra" processed 18 tons of apples harvested through the help of 20 volunteers. It is worth mentioning that it is the only apple juice in glass bottles from orchards in the district of Freising, which counteracts the production of plastic and is a recyclable deposit system. One of ideas and future intentions of the Land Care Association is to upgrade the environmental education by establishment of a "Landscape School" to actively involve children in the maintenance of the trees and increase nature awareness amongst them.

Contribution of the case study area to the must-have and nice-to-have criteria:



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Urban-rural connectivity
As recreational highlights, the local/regional products attract especially visitors from urban areas (here e.g. City of Freising/Munich) that makes the connection between urban and rural areas. However, the linear physical connection between urban and rural areas in form of orchard alleys is mostly still missing because of time and budget consuming maintenance. As symbolic connection, tree adoption opportunities (birth, wedding, baptism trees) are innovative concepts to connect urban and rural areas.

Ecological connectivity
Biodiversity of grasslands under the trees.
Genetic diversity of about 170 apple trees.
Flora and fauna diversity. Nesting and protection for birds (Green Woodpecker, songbirds); over 100 wild bee species and *Bombus sylvarum*.

Social cohesion
Social cohesion of inhabitants of Freising (e.g. annual "orchard day", fairy tale/story telling events, apple harvesting with families and children for the locals; Education: Cooperation with primary schools; orchard cutting and maintenance courses by a nearby agricultural college; two cultural landscape events are planned in 2020 to bring together consumers and farmers.

Economic benefit
18 t of apple harvested in 2018 from 170 apple trees;
Good basis to expand market for local and regional eco-products;
Ecological Farming-Certification of apple juice,
Pruning courses;
Liquors/fruit spirits to be sold from local providers.
Bee keeping location;

Stakeholders involved	☒ Local public authority: Land Care Association of Freising ☐ Regional public authority:

	☐ Cantonal public authority: ☐ National public authority: ☐ Non-government organisations & Associations: ☒ Community groups: Family-run businesses ☒ Business partners / SME: Wolfra Bayerische Natursaft Kelterei GmbH, Knollen & co e.V. ☒ Education and research on GI: HSWT, TUM, DEULA; Paul Gerhardt Primary School in Freising; Montessori School in Freising ☒ The public/inhabitants/visitors: Arts community, garden enthusiasts, International community gardeners
Funding programmes offered	• Bavarian Landscape Management and Nature Park Guidelines (LNPR) • Bavarian Cultural Landscape Programme ("Bayerisches Kulturlandschafts-programm" – KULAP) • Bavarian contract-based nature conservation programme ("Bayerisches Vertragsnaturschutzprogramm" – VNP) • Farm experience program • LEADER+ projects
Relevant projects	**Project name** "Securing of orchards in the middle Isar region through experienced and innovative marketing strategies Apple juice for the city of Freising and the ad-ministrative communities Preparation of a feasibility study in the Freising district"
Links / Home-pages / Literature	Land Care Association Freising (LPV, 2020) Schafhof Art House (Bezirk Oberbayern, 2020)

4.4.6 Factsheet: District of Rosenheim, Germany

District of Rosenheim

Figure 38: Orchard meadows with flowering annuals underneath

Photo credit: (L. Schrapp)

Figure 39: Grazing cows for milk production in between apple, cherry and pear trees in the pre-alpine are of Rosenheim

Photo credit: (L. Schrapp)

Country: Germany
NUTS-region: DE21K

Size: 1,439 km^2
Project management: District consultants for garden culture and land maintenance in the Rosenheim district office; Harald Lorenz, Roman Pröll

Current challenges

1) Preservation of old fruit varieties is difficult, as they are not recognized in Germany without pomological verification.
2) The varieties must be secured; otherwise, they will not survive the next 10 years. This is important for the breeding of future varieties because of the genetic diversity that has already been processed and stored for this purpose. The currently predominantly cultivated fruit crops are genetically impoverished and go back to only 5-6 varieties.
3) Fingerprinting costs approx. 40 € per sample.
4) Pomological expertise is not a training focus or is no longer taught. An estimated 100 varieties in the district are not recognized. There are some completely unknown varieties. If no official name has been determined, then this represents a major hurdle, these cannot be grown in any nursery for replanting or products such as a varietal brandy cannot be made with them.
5) To preserve the genetic diversity of the regional characteristics, six cultivar conservation gardens are to be created, each with one half and one high stem per variety. For two of these gardens, the planning and the selection of areas are more advanced. In a silvo-pastoral system, weed control through grazing with chickens is to be carried out experimentally.
6) General damage to the orchards that come back every year include:
   - Weather-related: cold snap, late frost, hail
   - Voles
   - Cattle eat the shoots off young trees. This requires individual tree protection; open to the outside with barbed wire in the upper area. Other grazing animals, especially Goats also peel older trees, especially when there is insufficient water supply.

	7) The referendum was rather counterproductive with regard to the topic of orchards; confidence in the farmers has been lost, but to restore this is a lengthy process. 8) Intensification of agriculture, large steel bar requires a minimum number of cattle, due to work there is little time to look after the trees. Today no longer a large family business, more like a couple business, so that there is no time left for fruit growing.
Implementation activities	• Implementation of educational courses on GI-management possible; • Participation of stakeholders from Rosenheim in LUIGI workshops;

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create new businesses or markets and attract investments"

☐ "Other reasons" – please elaborate

Regional focus: ☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Orchard meadows

History/idea behind

The district of Rosenheim is a quite a large district, which is why two district advisory offices have been set up, with the focus on orchards. Scattered fruit has a long tradition in the district. After the World War, it was the second and third mainstay for farmers. Fruit trees were planted to sell fruit. The farmers were able to bring their harvest to the market immediately in the autumn and the fruit was sold at a tremendous rate on the Munich markets. Commercial fruit trees developed a specialty for the Rosenheim area. Usually, however, they are orchards with a large variety of fruit, which were mainly used for self-sufficiency.

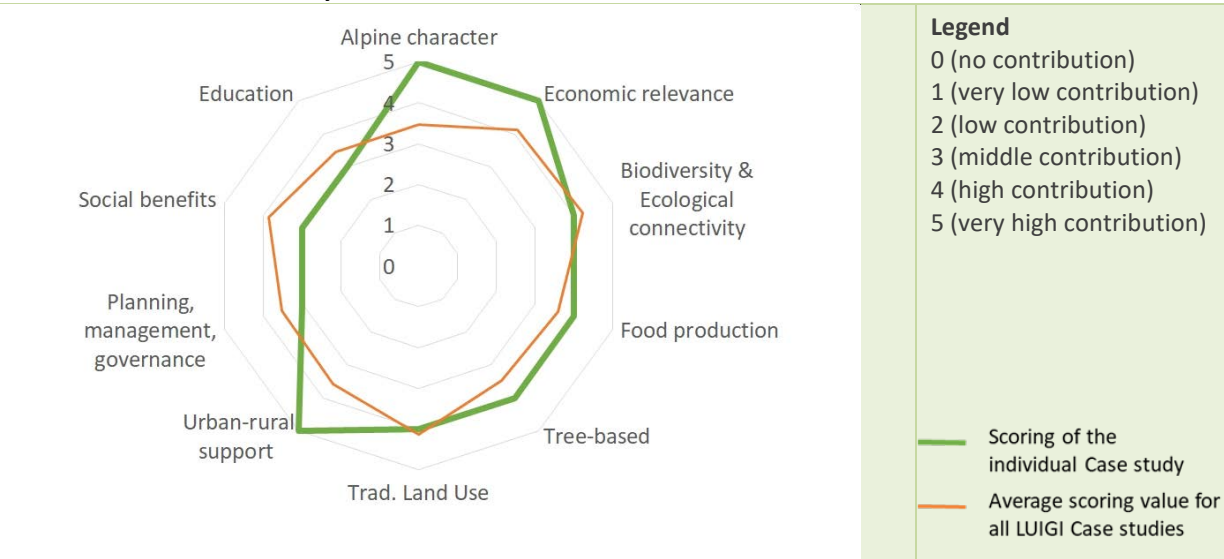
A specialty is the Bavarian Kletzenbrot, a fruit bread baked with various dried fruits, including pear

ORO set up (predecessor of Mr. Lorenz): Obstverwertungsgenossenschaft Rohrdorf, origin: table fruit, a lot of precipitation, focus is on juice fruit and partly fresh fruit.

1955-65: Cold snap at that time, tens of thousands of trees frozen to death, cleared, trees replanted. Those are the ones left today who are now 70 years old. Today mainly apple and pear trees are growing here. The cultivation of stone fruit (plum and cherry) is not anymore rentable, because of less harvest quantity (3-5 harvests in 10 years), as well as "monilia" and disease problems.

Today because of the intensification of agriculture, as well as minimization of large family businesses there is little time left for the care of orchards for fruits. Mainly businesses driven by local married couples are going on with limited resources.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity	**Ecological connectivity**

• With mountains in the background, the fruit trees are an aesthetic specialty. Apple blossom also attracts many visitors from the cities on weekends. • Cities memories of nature that are gladly used. Businesses and overnight stays well equipped. • Problem: Although cities have a longing for nature there, they are not willing to pay the amount the farmer needs. Often people shop at discounts. • Event: Every year in October apple market, 100,000 people visit the market. It is now an established event. The name "Apple Market" is still there e.g. in Nuremberg, Salzburg, and Innsbruck	Orchards that are extensively farmed have min. 40-50 species in an area that normally contains 5-6 species: birds, insects, bats that find shelter, cover and food.
Social cohesion • Apples, spirits and dried fruit are offered. Rural and urban populations. • At harvest time, a social meeting place for families and local residents • Cutting courses, activities organized by fruit and horticultural associations are a meeting point where certain exchange of experiences takes place.	**Economic benefit** • Marketing of spirits, as an annual harvest can be sold on this one event weekend; • ORO: Regional marketing concept up to Munich at most to offer regionally. Bad Feilnbach has been free of pesticide-use since 30 years. • Fruit juicers and horticultural associations are able to produce 100,000 litters of juice. • Half of the fruit in the juicer comes from locals, private individuals make approx. 50-60 % off. The trend seems to be going further in the direction of private production, as farmers tend to drop out for technical reasons. • There are holdings that can survive with 2-3 ha of orchards. • Holidays on the farm and farm shops are popular recreational concept offered by locals.

Stakeholders involved	☒ Local public authority: District of Rosenheim --> Garden culture and landscape maintenance; Nature Conservation Agency; District consultants for garden culture and land maintenance in the Rosenheim district office ☐ Regional public authority: ☐ Cantonal public authority: ☐ National public authority: ☐ Non-government organisations & Associations: ☒ Community groups: ORO – Fruit processing cooperative Rohrdorf ☒ Business partners / SME: Local tree nurseries ☐ Education and research on GI: ☒ The public/inhabitants/visitors: Local farmers, Visitors, Inhabitants of Rosenheim
Funding programmes being used	• Bavarian Landscape Management and Nature Park Guidelines (LNPR) • Bavarian Cultural Landscape Programme ("Bayerisches Kulturlandschaftsprogramm" – KULAP) • Bavarian contract-based nature conservation programme ("Bayerisches Vertragsnaturschutzprogramm" – VNP)
Relevant projects	**Project name** ApfelBirneBerge - Alte Obstsorten in den oberbayerischen Voralpenlandkreisen
Links / Homepages / Literature	Sutor and Stein (2017), Bichler-Öttl and Loferer (2020), Landratsamt Rosenheim (2019)

4.5 Parc Naturel Régonal du Massif des Bauges, France

4.5.1 Characterisation

The Massif des Bauges Regional Nature Park was created in 1995. In 2011, the park was also awarded the Geopark label. It includes 67 municipalities, 46 of which are in Savoie and 21 in Haute-Savoie, plus 6 gateway towns. In total, the park has 70.400 inhabitants and a surface area of 85,700 hectares (Table 15), in the Bauges massif, which stretches generally between Annecy to the north, Aix-les-Bains and Chambéry to the west and Albertville to the east, bordered to the south by the Isère valley (Figure 40). Les Bauges is a mid-mountain massif whose highest peaks (Arcalod, Trélod, and Pecloz) are concentrated in the east, revealing a softer relief in the west (Semnoz, Revard).

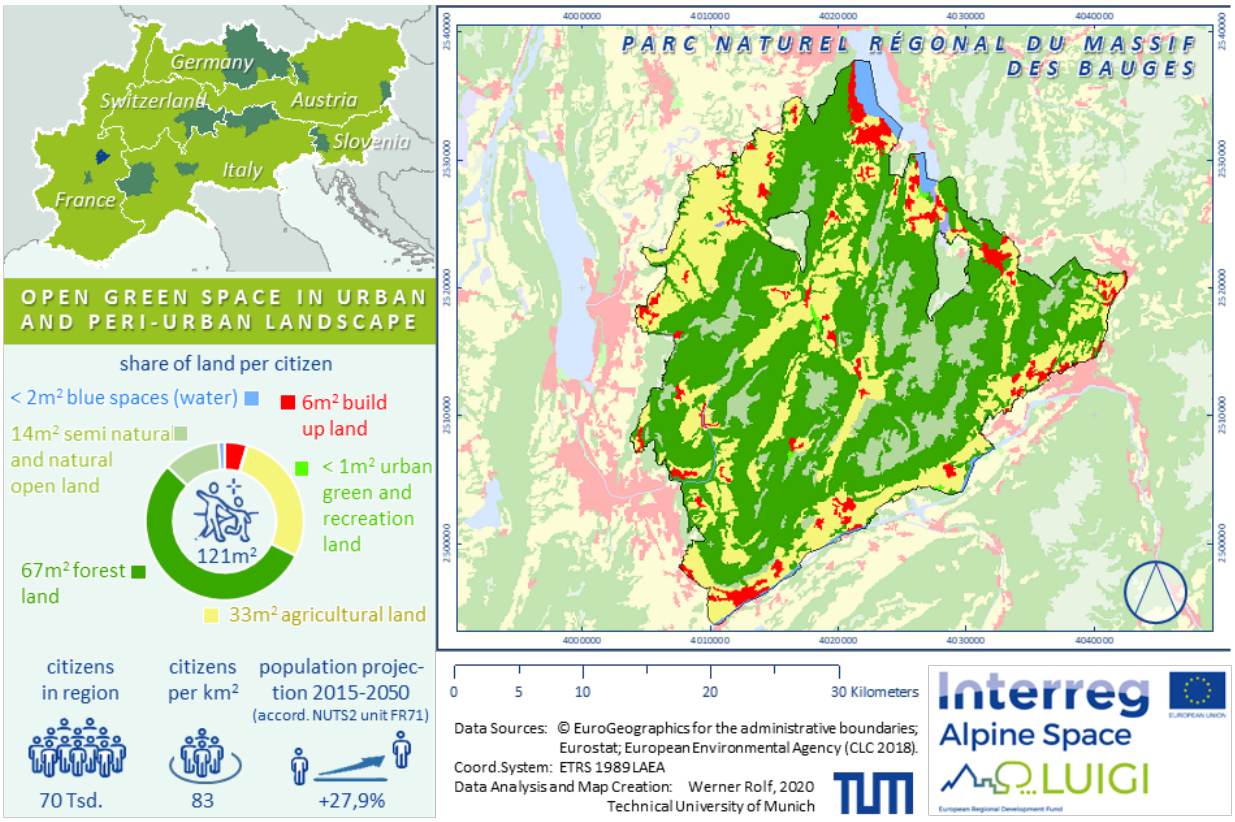


Figure 40: Characterisation and map overview of the pilot region Parc Naturel Régonal du Massif des Bauges

The Massif des Bauges Regional Nature Park is a mosaic of agricultural terroirs with areas dedicated to livestock farming, beekeeping and viticulture. Agriculture, tourism, the timber industry and a dense network of SMEs and SMIs are the main economic resources of the massif. Agriculture is divided into geographical sectors: in the east, the orchards of the high combs grow apples and pears. In the south, the vineyards located on the sunny slopes of the Combe de Savoie. In the centre are the areas dedicated to livestock farming.

Figure 41: Cultural landscape towards St. Offenge

Photo credit: (Martial Couderette)

Figure 42: Alpine orchard meadow in the Parc Naturel Régonal du Massif des Bauges

Photo credit: (Nadège David)

The farming profession is highly structured and structuring for the park thanks to the involvement of farmers in the collective such as the agricultural groups, cooperatives and farmers' associations of the Bauges Natural Park.

Table 15: Facts and figures on the pilot region Parc Naturel Régonal du Massif des Bauges

Country	France (FR)
Administration (number of districts/municipalities)	67 municipalities
Area (km^2)	857
Inhabitants	70.400
Pilot coordinator (institution)	ALPARC
Population change	+ 1,15 % (2006-2011)
Alpine Green Infrastructure in focus	Orchard meadows

4.5.2 Situation of Green Infrastructure in focus in Parc Naturel Régonal du Massif des Bauges

Since 1999, the Parc du Massif des Bauges has been working on the preservation of the area's fruit-growing heritage. Since then, this has given rise to numerous concrete actions in the field: pomological days, pruning and grafting courses, economic studies of the sector, enhancement of specific landscapes, local history and expertise, operations, etc. Via the project, “Let's plant the landscape” more than 5,000 trees of old or local varieties were sold since 2007 and several educational workshops and scientific studies have been conducted. A specific recognition exists for the territory IGP (*Indication Geographique Protegée*) Pommes et Poires de Savoie.

In 2009, the park supported the local inhabitants by acquiring a mobile tool to make, valorise and develop pasteurized apple juice so called *“Atelier mobile”*. The mobile tool, equipped with a crusher, a press and a pasteuriser, is actually managed by the association *“Croësons et Carmanules”* and travels throughout the Park, available for the inhabitants needs.

Orchards and orchards meadows of the Parc des Bauges Massif are considered as GI, they are linked to the outskirts of the villages and they present a rich and diversified flora and fauna. Orchards meadows have a remarkable landscape value: they are intimately linked to the living environment of the inhabitants of the park and they have a strong heritage and cultural value (diversity of local varieties, wealth of knowledge and expertise to maintain the orchards and to preserve/process the fruit).

The loss of expertise and agricultural lands, the reduced interest from the economical and productivity aspects and the development of town spatial planning are major causes of the decline of orchards in the park area. Preserving orchards and giving them a new impulse would provide benefits at different level, notably:

- Ecological: biodiversity and maintenance of specific eco-systems;
- Economic: local products and a quality chain of processed products in short-circuits, land to which added value is given back;
- Tourism: preserving typical landscapes;
- Education;
- Scientific: nature conservation and preservation.

In recent years, orchards have been experiencing a revival of interest from local farmers with new plantations and an increased valorisation of the fruits in the parks.

4.5.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

The Parks charter defines the cooperation within the Regional Nature Park. The charter of a Regional Nature Park is the contract that gives concrete expression to the protection and sustainable development project drawn up for its territory. After being submitted to a public enquiry, it is approved by the municipalities making up the Park's territory, the Region(s) and Departments concerned, and the socio-professional and associative partners. It sets the objectives to be achieved, the guidelines for the protection, enhancement and development of the Park, as well as the measures that enable it to implement them.

It ensures the coherence and coordination of the actions carried out on the Park's territory by the various public authorities. It is valid for 15 years. A procedure for revising the charter allows the Park to redefine its new project and renew its classification in the light of its actions. Regional Nature Parks are special in the management of their territories because they have adopted a major position on the protection and enhancement of heritage (nature, culture, landscape), (Table 16).

Table 16: Collection of relevant institutions as important stakeholders in Parc Naturel Régonal du Massif des Bauges

Type	Name of institution	Level
Government & administration	Nature Park Massif des Bauges	Regional
Government & administration	Two departments: Savoie and Haute-Savoie	Regional
Government & administration	Region Auvergne Rhône-Alpes	Regional
Association	Les Croqueurs de pommes	Regional/local
Association	Croësons et Carmaniules	Local
Community Authorities	Grand Annecy intermunicipality – including 34 municipalities	Local
Community Authorities	Grand Chambéry – including 38 municipalities	Local
Community Authorities	6 intercommunalities (*intercommunalités*)	local
Local Public Authority	CAUE 74	local
Nature Conservation	France Nature Environnement Savoie & Haute Savoie	Regional
Research	Institut des Sciences de l'Environnement & des Territoires d'Annecy	Regional

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 17 and classified in formal and informal instruments.

Table 17: Instruments and tools of GI governance in Parc Naturel Régonal du Massif des Bauges

	National and regional level	Local level
Formal instruments	• Park Charter (*Charte du Parc Naturel régional Massif des Bauges*) • Scheme of Territorial Coherence (*SCoT de Métropole Savoie*)	• PLUi Local urban plan at inter-municipal level • Different protected area status (*ZNIEF, Natura 2000, reserve de faune sauvage, …*)
Informal instruments	• Regional Scheme of Ecological Coherence (SRCE) • Subsidy programmes on national/regional levels	• Subsidy programmes on local levels

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

- 2008-2010: INTERREG Alcotra "*Vergers, Biodiversité et Jeunes Consommateurs*";
- Other funding from: Region Auvergne Rhône-Alpes, Departement Haute-Savoie in a program on planting orchards and Departement of Savoie.

At present, the local funding programmes supporting orchards meadow activities are:

- Grand Annecy intermunicipality programme: "*Contrat Espaces naturels Sensibles*" 2020-2025;
- Project from Grand Annecy intermunicipality, based on the participative territorial plan "90 goals for the territory", goal nr. 28 called "One inhabitant, one tree" which aim is to plant 250,000 trees by 2050 (species adapted to the climate change, fruit trees in the city, orchards, replacement of sick trees, etc.).

4.5.4 Targeted approaches for the LUIGI project

- To raise awareness by showing up the value of orchards as key-GI with importance for the characteristic landscapes and also as a basis for tourism value chain;
- To establish new partnerships and better linkage between rural and urban areas – especially bring together stakeholders;
- To learn from other countries GI maintenance strategies;
- To make rural more attractive for the young generation and improve environmental education about these fragile ecosystems;
- Optimization of local producer and marketing initiatives, Development of innovative product ideas and marketing strategies.

4.5.5 Factsheet: Parc Naturel Régonal du Massif des Bauges, France

Zone Albanais Haute- Savoie in the Massif des Bauges Regional Nature Park

Figure 43: **Landscape at Gruffy located in the Albanais territory in the Massif des Bauges Regional Nature Park**

Photo credit: (Silvia Ala)

Figure 44: **Training day on pruning fruit trees at Gruffy, Albanais territory in the Massif des Bauges Regional Nature Park**

Photo credit: (Silvia Ala)

Country: France **NUTS-region**: FRK28	**Size:** 350 km^2 for the whole Albanais region **Coordinator**: Mathilde Pantalacci, Silvia Ala
Current challenges	What are current challenges, we can address with LUIGI. In case you do not know the challenges, what is your idea of existing challenges?
Implementation activities	**Ideas:** • Practical training courses on pruning fruit trees for local inhabitants and students; • Educational activities on benefits from preserving orchard meadows (including economical, tourism, landscapes aspects); • Planting trees in the frame of the Grand Annecy plan involving students and schools; • Trainings for local authorities and landscape managers;

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☐ Peri-Urban ☒ Rural

Targeted key-alpine GI: Orchard meadows

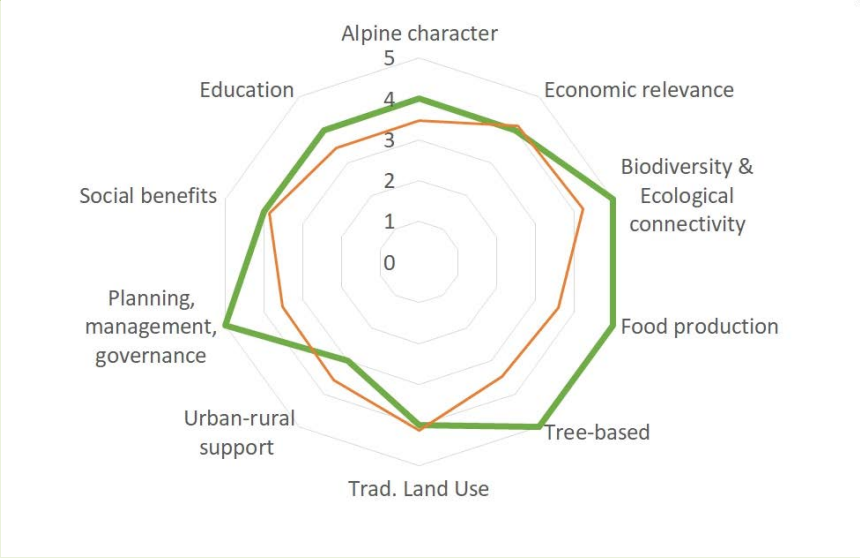
History/idea behind

The Albanais is a small Savoyard region situated between Lake Annecy and Lac du Bourget, at the entrance to the Parc naturel régional du Massif des Bauges. The whole area is located in the French departments of Savoie and Haute-Savoie, the case study focus only in the area situated in in the park territory within the department of Haute-Savoie. The landscape presents hills bordered to the west by the Rhone valley and to the east by the mountains Semnoz. The landscape is made up of an alternation of forests, agriculture crops, orchard meadows and small villages. This territory is under the attraction of two urbans areas: Annecy and Rumilly. Since 2008, the urban area of Annecy is rapidly increasing.

Since 1970, due to the intensive farming, orchards (apples, pears, cherries, prunes, etc.) have largely disappeared with the exception of surrounding Rumilly, where pears are cultivated on a relatively large scale. Since

mid-2000, a new interest on the benefits from traditional fruit trees has emerged among the inhabitants, particularly for the fruits transformation and juice production.
Since 2007, the Massif des Bauges nature park was involved in different projects on raising awareness and educational activities focusing on orchards meadows benefits, preservation of traditional fruit trees, trainings and educational activities on pruning fruit trees & valorisation of fruits. Actually, the parks work closely with the local authority Grand Annecy intermunicipality on the programme: *"Contrat Espaces naturels Sensibles"* 2020-2025, in which orchards meadow related activities are supported.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity
Municipalities are mainly rural with few "physical" connections with the urban area. Annecy is the main urban center. The local authority Grand Annecy is responsible for the spatial planning policies and activities in the area linked with the park.

Ecological connectivity
The programme *"Contrat Espaces naturels Sensibles"* 2020-2025, held by Grand Annecy intermunicipality defining the policy at department level concerning the management of the natural area includes aspects related on ecological connectivity. A specific topic and a consequent work on orchards meadow in the area within the frame of the French ecological connectivity approach "Trame verte bleu" is included.

Social cohesion
During the last years, the park settled several activities on the topic of orchards involving actively inhabitants. The "Atelier mobile, a tool to support local inhabitants for apple juice production, high involvement of local population. The association *"Creisen carmanule"* organise trainings on pruning trees regularly. Raising awareness activity
Several pedagogical orchards have been planted in the municipalities: one at Gruffy and more recently in 2020, Grand Annecy supported the settlement of a pedagogical orchard. 30 trees have been planted to educate students on the benefits of orchards. The parks promote and support educational activities on the topic working closely with schools as the project *"Le patrimoine agricole, d'hier, d'aujourd'hui et de demain"* (The agricultural heritage, of yesterday, today and for tomorrow), or a tool kit

Economic benefit
Orchards are mainly a secondary activity for farmers. Fruit production used mainly for transformation into juice. Recently, several small companies expressed their interest to install an economic activity based on apple juice production. In the municipality of Grufy there are several s apple juice producers.

on appel juice production is available for schools. Moreover, in the frame of a specific educational project the park support schools who require for an specific topic intervention on local heritage.	
Involved stakeholders	☒ Local public authority: Local municipalities and Grand Annecy intermunicipality ☐ Regional public authority: ☐ Cantonal public authority: ☐ National public authority ☒ Non-government organisations & Associations: Association Croësons et Carmanules;Association Les Croqueurs de pomme. ☐ Community groups: ☐ Business partners / SME: ☐ Education and research on GI: ☐ The public/inhabitants/visitors:
Funding programmes being used	LEADER program; EFRE (INTERREG); FEADER
Relevant projects	**Project name** "90 objectifs pour le territoire" Grand Annecy
Links / Homepages / Literature	Navarro and Pasquet (2003), Pasquet and Navarro-Pedreño (2005), Dutheil and Delmas (2013), Grand Annecy (2020)

4.6 Metropolitan Region of Grenoble, France

4.6.1 Characterisation

Grenoble-Alpes Métropole is an intercommunal organisation comprised of 49 municipalities, centred on the city of Grenoble. It is located in the Isère department, in the Auvergne-Rhône-Alpes Region, in the East of France (Figure 45). The Metropolitan Region of Grenoble is surrounded by three alpine mountain ranges – Chartreuse, Vercors and Belledonne – and is accessible by valleys located between the three mountains.

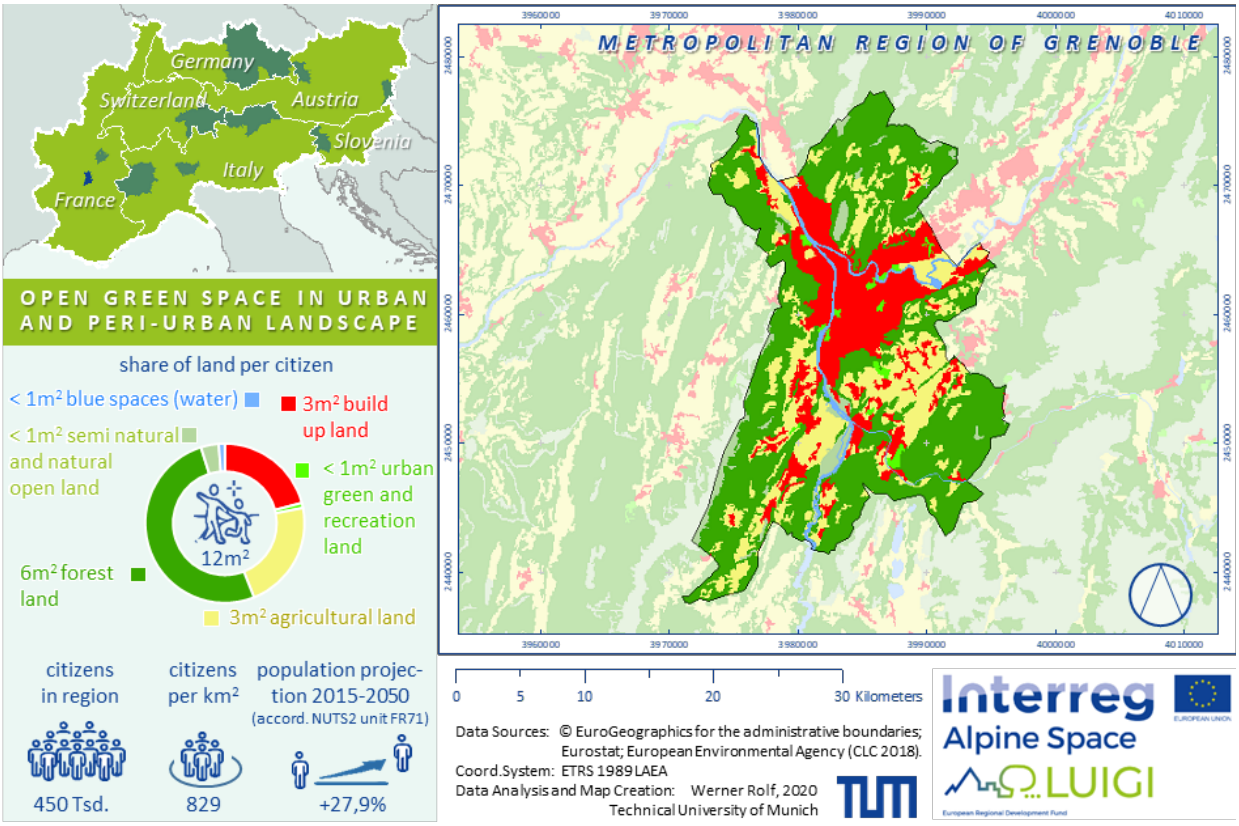


Figure 45: Characterisation and map overview of the pilot region Metropolitan Region of Grenoble

The Metropolitan Region of Grenoble is the second urban area of the Auvergne Rhône-Alpes Region and is home to about 450,000 inhabitants (Table 18).

The diverse population has an over proportional share of young people (<30 years) with a high level of education. The Metropole is the second largest center for research and innovation in France with a strong high-tech industry. The City of Grenoble has been selected as European Green Capital in 2022.

Table 18: Facts and figures on the pilot region on the Region Grenoble

Country	France (FR)
Administration (number of districts/municipalities)	49 municipalities
Area (km^2)	545
Inhabitants	450,000
Pilot coordinator (institution)	Metropolitan Area of Grenoble (GAM)
Population change	1999: 422,330, 2016: 443,123
Alpine Green Infrastructure in focus	Dry grasslands, GI elements in the agricultural landscape, peri-urban GI elements, GI elements linking mountains and valleys

4.6.2 Situation of the Green Infrastructure in focus in the Region of Grenoble

The dry grasslands of the territory constitute an interesting environment covering an area of approximately 576 ha (3.7 % of the territory). Today, agricultural practices have been abandoned on the dry hillsides of the Grenoble area, as the land is sloping and generally difficult to mechanise. There are two main continuous dry grasslands in the area: the hillsides between Vaulnaveys-le-Haut and Vizille and the dry grasslands of Connest in the communes of Notre-Dame-de-Commiers and Saint-Georges-de-Commiers. A long-term preservation of the agricultural dynamic on the dry grasslands is necessary to maintain these environments and the associated floristic and faunistic diversity, as well as their role in the displacement of southern species. The preservation of these open environments is a major ecological and landscape issue for the territory. These issues are also addressed by the „biological corridors-contract" fostering the maintenance of open environments and the restoration of dry grasslands that have been lost. Two further GI elements will be addressed in the project: hedgerows and pollarded willows.

4.6.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

The Institution of Grenoble Alpes Métropole was created in 2015. The decision making body is the Metropolitan Council (*Conseil Métropolitain*) composed by representatives from the 49 municipalities building the Metropolis. Grenoble-Alpes Métropole holds various responsibilities such as for public services, spatial planning, economic development, nature protection, mobility, etc.

The implementation of the local Green and Blue Infrastructure is mainly funded by the Auvergne-Rhône-Alpes Region via the Green and Blue Contract and coordinated by Grenoble Alpes Métropole. Many different actors are involved in the implementation of the actions such as hunting associations, nature protection NGOs, the Agricultural Chamber and various public services as well of course as the landowners and users (Table 19).

Table 19: Collection of relevant institutions as important stakeholders in the Region of Grenoble

Type	Name of institution	Level
Government & administration	Grenoble Alpes Métropole Département Isère	Local regional
Government & administration	Agricultural Chamber Isère	
Association	AURG	local
Association	Local Hunting Federation FDC38	
Community Authorities	Concerned municipalities	local
Nature Conservation	CEN Isère FNE Isère LPO Isère Gentiana	regional
Research	Université de Grenoble INRAE	
Community Authorities	Concerned municipalities	local

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 20 and classified in formal and informal instruments.

Table 20: Instruments and tools of GI governance in the Region of Grenoble

	National and regional level	Local level
Formal instruments	• Scheme of Territorial Coherence for the Large Grenoble Region *(Schéma de Cohérence Territoriale – SCoT – de la grande région de Grenoble)* • Regional Scheme on Spatial Planning, Sustainable Development and Equity of territories *(Schéma Régional d'Aménagement, de Développement Durable et d'Égalité des Territoires – SRADDET)*	• Local Spatial Planning Plan (*Plan Local d'Urbanisme Intercommunal – PLUi – Grenoble-Alpes métropole*) • Orientations for Spatial planning and programmation Biodiversity and Landscape *(Orientation d'Aménagement et de Programmation – OAP "Paysage et Biodiversité")* • *Inventory of wetlands (Inventaire "Zones humides")* • Inventory of dry grasslands (*Inventaire "pelouses sèches"*) • Perimeter of protection and valorisation of agricultural and periurban natural spaces *(Périmètre de protection et de mise en valeur des espaces agricoles et naturels périurbains – PAEN)*
Informal instruments	• Regional Scheme of Ecological Coherence (*Schéma Régional de Cohérence Ecologique – SRCE – Auvergne Rhône-Alpes*)	• Strategy for Biodiversity and Natural spaces (*Stratégie cadre biodiversité et espaces naturels 2017-2021*) • Green and Blue Contract (*Contrat Vert et Bleu -CVB)* • Green and Blue Infrastructure Mapping of the Grenoble Metropole Area (*Trame Verte et Bleue Grenoble Alpes Métropole*)

		• Biodiversity Observatory (*Observatoire de la Biodiversité Grenoble Alpes Metropole*) • Conservation plan for the little owl (*Athene noctua*), (*Plan de Conservation de la chouette Cheveche*)

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

- Green and Blue Contract *(Contrat Vert et Bleu CVB);*
- Agglomeration Contract *(Contrat d'Agglomeration);*
- Subsidies by Grenoble Alpes Metropole.

4.6.4 Targeted approaches for the LUIGI project

- To add a "economic" argumentation in the GI discussions;
- Highlight the ecosystem services provided by GI;
- Dissemination knowledge about biodiversity conservation and good practice techniques to all public administration services in particular to the technical service acting directly in the field. Specific training modules for these workers;
- Adopt coherent management measures on key green infrastructure areas independent from project/subsidy funding.

4.6.5 Factsheet: Metropolitan Region of Grenoble, France

Southern part of the metropolitan territory with the connection between the Vercors and Belledonne mountain massifs

Figure 46: The territory of Grenoble Alpes Métropole and the City of Grenoble, view from the South

Photo credit: (AURG)

Figure 47: Hornbeam pollard trees at the Champagnier plateau with mountain scenery in the background

Photo credit: (Yann Kohler)

Country: France **NUTS-region:** FRK24	**Size:** 545 km² **Coordinator**: Grenoble-Alpes Métropole
Current challenges	Maintenance and/or restoration of links between the major natural and agricultural areas, between the Belledonne and Vercors massifs. Preservation and conservation of agricultural land (dry grassland), conservation of hedgerow mosaic landscapes and pollard trees.
Implementation activities	Information and training session with farmers. Improve knowledge about specific local connectivity context. Analyse specific ESS provision by GI elements and develop business models for sustainable (subsidy free) management of GI elements.

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Dry grasslands, hedgerow landscapes, pollard trees

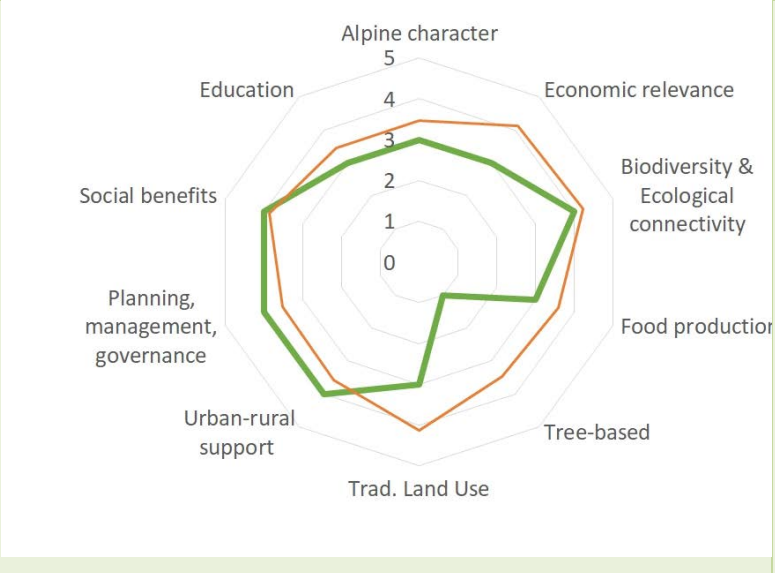
History/idea behind

The heart of the Champagnier plateau is predominantly agricultural, with a few large plots of corn and wheat, alternating with a garden countryside, composed of quickset hedges of ash and hornbeam, very representative of the mid-mountain bocage also found in the Trièves and Matheysine. It is characterised by a network of hedges and small groves, as well as meadows largely grazed by horses. The relatively large villages (more than 2000 inhabitants in Herbeys, more than 4000 in Jarrie) are adjacent to numerous hamlets.

Due to land consolidation actions and changes in land use many of the old hedgerows that structured the landscape in former time have disappeared. Current landscape and spatial planning documents have set the maintaining, and even restoring of the hedgerow mesh with presence of hedges, isolated trees, shrubby thickets, etc. as key objective.

The emblematic bird of the Champagnier plateau is the little owl (Athene noctua) which is linked to the hedge-row landscape and the hollow trees with cavities. The hedges of the plateau are ecological corridors for a large number of species (mammals, bats, insects).

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
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1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity The big urban center of Grenoble is nearby and the area, even if it appears quite rural, receives a lot of leisure pressure by citizens.	**Ecological connectivity** All actions contribute to preserve and restore the regional green and blue network and are therefore benefiting ecological connectivity.
Social cohesion Activities involving farmers and participatory activities bringing mostly citizens to work on conservation measures allow a better knowledge of agriculture and a better understanding of the interdependencies as well as the links to biodiversity.	**Economic benefit** Demonstrating that GI management can provide economic benefits is one of our challenges – creating innovating products and business ideas will help insure a long-term preservation of the GI with a sound economic model.

Involved stakeholders	☒Local public authority: Grenoble Alpes Métropole, Commune de Champagnier, Commune de Varces-Allières-et-Risset, Commune de Jarrie ☐ Regional public authority: ☐ Cantonal public authority: ☐ National public authority: ☒ Non-government organisations & Associations: Birdlife (LPO) Isère, France Nature Environement Isère, Gentiana, Hunting Federation Isère ☒ Community groups: GAEC du Thicaud ☐ Business partners / SME: ☐ Education and research on GI: ☒ The public/inhabitants/visitors:
Funding programmes being used	Green and Blue Contract
Relevant projects	Green and Blue Contract
Links / Homepages / Literature	(Grenoble-Alpes Métropole, 2015, Grenoble-Alpes Métropole, 2020), Aubert et al. (2019), Florian (2014)

4.7 Metropolitan City of Milano, Italy

4.7.1 Characterisation

The Metropolitan City of Milan is the third most populated area of Europe after London and Paris, with an area of 1.575 km², covering 133 municipalities with a population of over 3 Million. Very rich in infrastructures, it can be seen as a single huge urban area constantly growing and integrated. It is situated in the central-west part of Lombardy Region, in the northern part of the Po Valley and has a highly irrigated territory between the Ticino River on the West and the Adda River on the East, crossed by a rich network of rivers and canals (the rivers Olona, Lambro, Seveso, the Navigli network and several streams). In Italy, the Metropolitan City is the most similar area to the big developed regions of Europe, both for the variety of activities that take place in it and the level of welfare and economic standards reached.

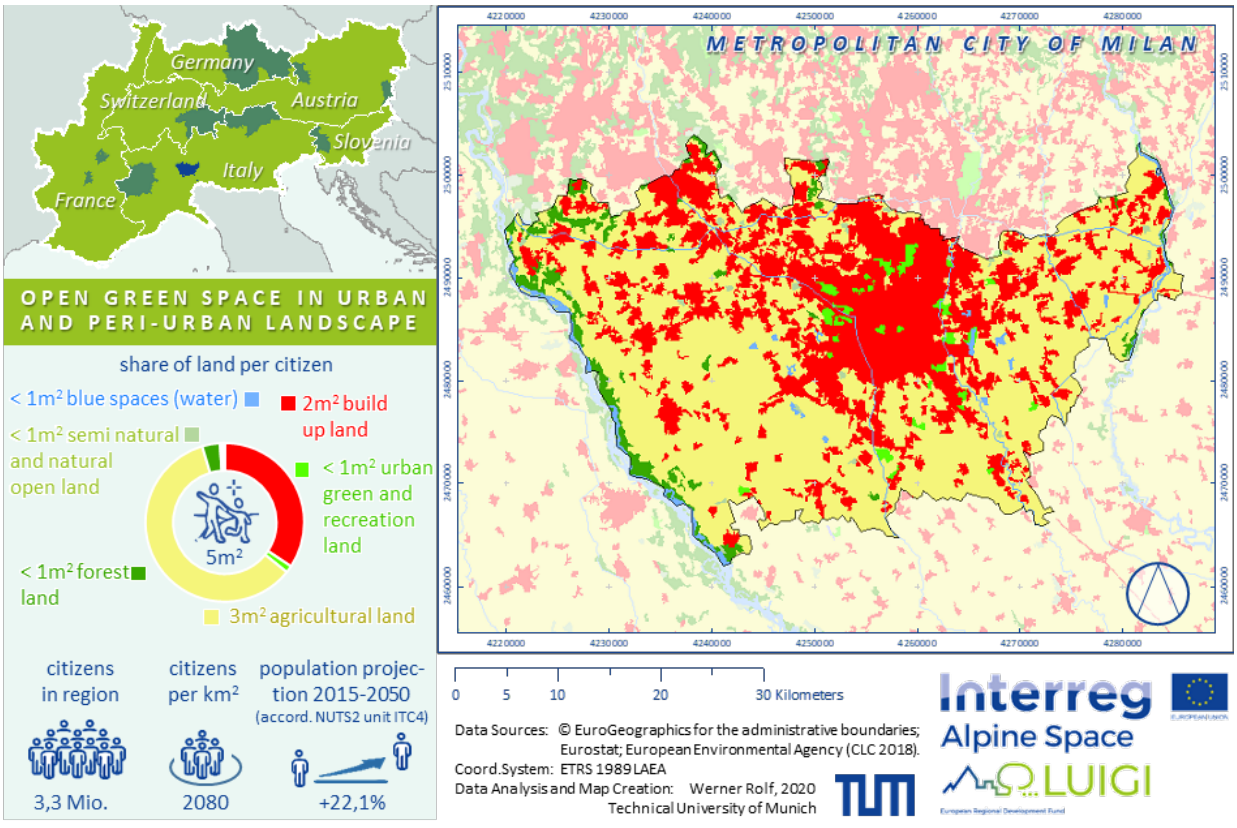


Figure 48: Characterisation and map overview of the pilot region Metropolitan City of Milano

The economy is mostly characterised by a dense network of small enterprises, along with a limited number of medium-big companies. The main sector is the Service sector (69 %). Key engine for the local economy is the creative industry, including design, fashion, copyright and patents, as well as finance, which has here its main headquarters, with the Italian Stock exchange based in Milan. The non-profit sector has a long history too, with almost 11,000 active institutions and 10 % of the national employees working in this sector. Finally, agriculture represents 2 % of the

local economy, playing an important role, mainly in the southern part of the pilot region and characterised by a high level of mechanisation and production.

Figure 49: Characteristic landscape of the Metropolitan City of Milano

Photo credit: (Città metropolitana di Milano, 2020)

Figure 50: Corn field typical in the rural area

Photo credit: (Città metropolitana di Milano, 2020)

The Metropolitan City of Milan, as other Metropolitan Cities of Italy (based on law 56/2014), is divided in "homogenous zones", areas characterised by specific geographical, demographic, historical, economical and institutional features. Seven zones allow to articulate activities and to promote a better integration of services provided by municipalities. Table 21 summarizes data relevant for the pilot region Metropolitan City of Milan.

Table 21: Facts and figures on the pilot region Metropolitan City of Milan

Country	Italy (IT)
Administration (number of districts/municipalities)	133 municipalities
Area (km^2)	1,575
Inhabitants	3,279,944
Pilot coordinator (institution)	Metropolitan City of Milan
Population change	+0.5 % (2018-2019: 15,657 additional residents, mainly within the City of Milan (12,509)
Alpine Green Infrastructure in focus	Regional & metropolitan parks, protected areas (including Natura 2000), blue infrastructures (i.e. canals, water meadows), riparian buffers, HNV farmlands, woodlands, hedgerows, rows of trees.

Source: ISTAT (2020) elaborated by Ufficio servizi statistici della Città metropolitana di Milano

4.7.2 Situation of the Green Infrastructure in focus in the Metropolitan City of Milano

In spite of the high level of urbanisation and infrastructures, due to a dense network of rivers and canals and a high agricultural vocation especially in the south, the Metropolitan City of Milan (MCM) is considered a Waterway region. Within the Interreg Europe Project SWARE – Sustainable

heritage management of Waterways Regions, now at its conclusion (Oct. 2020), MCM has implemented a significant action towards data collection, analysis, stakeholder engagement and training for the valorisation of the waterways as a driver for sustainable economic and social development, through sustainable tourism, mobility and new cultural and creative entrepreneurships. Thus, the key GI elements identified in the region are mainly rivers and canals, riparian buffers, hedgerows and rows of trees, HNV farms providing multifunctional services (educational activities, tourism, local food) and some important natural Parks, with the presence of woodlands, Natura 2000 sites and important provisions and rules towards sustainable agriculture and land management within their borders. Within the region, several examples of sustainable/local products labels exist as well as a great opportunity to create synergies between existing historical and touristic itineraries, sustainable transport ways (cycling, pedestrian and horse ways) and GIs for the overall sustainable development of the pilot region.

Figure 51: Idroscalo, an artificial lake outside Milan

Photo credit: (Città metropolitana di Milano, 2020)

Figure 52: Panperduto dam on Ticino river

Photo credit: (Città metropolitana di Milano, 2020)

The key challenges towards GI maintenance and management can be identified mainly with 1) the high degree of urbanisation and infrastructures, threatening the connectivity of GIs and their potential enhancement; 2) the complex planning and management framework, which is composed by a series of public and private actors depending on the local context often with contrasting interests, lacking dialogue and coordination; 3) the limited knowledge by public and private sectors around GIs, the important services they provide and their potential for the local economy. This limited knowledge leads to narrow-minded practices, such as the existence of strict rules on new activities in some parks, limiting the opportunities for economic valorisation of the GIs and ESs.

4.7.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

Specific laws do still not regulate Green Infrastructures and planning instruments in Italy, the general framework under which they fit is the territorial and landscape planning, which in Italy is a complex multi-level governance system. The key vertical structure, starting from the top, is made by the Regional administration and its Regional Territorial Plan, followed by the Metropolitan City level (previously called Province) down to the municipalities, setting provisions for urban planning and green spaces regulations. Each plan must be coherent with the upper level provisions and strategies. To this framework, additional governance bodies and their instruments exist for Regional Parks and protected areas, such as the Ticino Park, regulated by a consortium of public authorities, with its own Plan.

At institutional level, MCM main functions relevant for LUIGI can be summarized as follows:

a. **Adoption and annual update of a three-year strategic plan** of the metropolitan territory;

b. **General territorial planning for the coordination of the provincial territory, environment protection and valorisation**, including communication structures, service networks and infrastructures belonging to the competence of the metropolitan community, also setting constraints and objectives for the activity and exercise of the functions of the municipalities included in the metropolitan territory;

c. Structuring of coordinated systems for the management of public services;

d. **Planning of transport services, provincial road network management**, in coherence with regional networks also ensuring the compatibility and consistency of municipal urban planning in the metropolitan area; and as well as PUMS indications (a strategic planning tool, with a medium-long term time horizon, which aims to satisfy the mobility demand of people and businesses in the metropolitan area, improving the quality of life, following principles of integration and coordination with the sectorial, territorial and urban planning)

e. **Promotion and coordination of economic and social development**, also ensuring support for innovative economic and research activities consistent with the vocation of the metropolitan city as outlined in the strategic plan of the territory (a);

f. Promotion and coordination of the digitization systems in the metropolitan area.

In particular, Mr. Dario Parravicini – LUIGI Lead Partner representative – is the Head of MCM Area involved in Economic & Social Development, private transport and tourism. He also coordinates one of the key MCM project about the metropolitan “homogeneous areas”, which foresees active collaboration and exchange with the Infrastructure, Economic Development, Environment & Territorial Protection Areas.

Table 22: Collection of relevant institutions as important stakeholders in the Metropolitan City of Milano

Type	Name of institution	Level
Government & administration	Superintendence of Cultural Heritage *(Soprintendenza Beni culturali)* Lombardy Region Metropolitan City of Milan 133 Municipalities of the pilot region	National Regional Local Local
NGOs & Associations	Italia Nostra Onlus through the Centre for Urban Forestation (managing Bosco in città Project) Cultural Associations	Local
Community Authorities	Ecomuseum involved; Regional Authority for Agricultural and Forest Services ERSAF	Local Local
Nature Conservation	Northern Adda Park and Parco del Ticino Park management body (Consortium of the public authorities within the Park boarders): Parco Ticino PLIS (Local Park of supra-municipal interest)	Local Local
Infrastructure operators	Ferrovie Nord – the infrastructure manager of the network of regionally owned railways – which is currently planning in collaboration with LUIGI partner Fondazione Lombardia Ambiente (FLA), to set-up a massive afforestation activity along its main train trajectories: FLA and MCM are currently assessing the technical feasibility to join forces and create synergies to LUIGI activities within MCM pilot area. LPT – Local public Transport Agency	Regional Local
Consortia	The Water Reclamation Consortia involved in the management of the main blue infrastructure of Milan metropolitan area, i.e. the "Navigli" system. An important example is given by the *"Est Ticino Villoresi"*, which deals with the supply and protection of surface and groundwater, favouring all uses according to the priorities established by current regulations, and which takes all initiatives to support the development of agro-zootechnical and forestry production.	Local

Moreover, as important Stakeholders of the pilot regions, the following subjects have been identified:

- **Developers**, as new developments should contribute to GIs. Since even small interventions contribute to the overall success of GIs, developers should also engage with local communities.
- **Landowners**, who should ensure that GIs are well funded for ongoing management and maintenance. Public and private sector landowners and managers should therefore be involved in the planning and design of GIs, as their buy-in and expertise is vital to their long-term success.
- **Landscape professionals**, in their role of advisors of clients and decision-makers. They should raise awareness of how GIs can deliver multiple benefits at the same time.
- **Public and private actors/entrepreneurs** involved in services provision within or close to GIs (e.g. restaurant/hotel/holiday farm owners, bike rental and bike repair points, refer-

ence points for medical emergencies, local products producers and sellers). More in general, all the actors who make GIs centres of economic interest and can trigger public-private partnerships.

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 23 and classified in formal and informal instruments.

Table 23: Instruments and tools of GI governance in the Metropolitan City of Milano

	National and regional level	Local level
Formal instruments	**Plans** • Regional Territorial Plan *(including the landscape plan) and the* Regional Ecological Network • *General plan of regional protected areas (established by regional law n. 86 1983)* • (Regional Plan for Cycling mobility defining rules for the cycling network implementation) **Strategies and Regulations** • Law no. 221, December 28th 2015, Environmental Regulations to promote Green Economy Measures and for the Containment of Excessive use of Natural Resources (Articles 70 & 72) • Law no 10, 14/01/2013, Rules for the development of urban green spaces • National Biodiversity Strategy (2010) • Regional regulation of internal waters	• Strategic Metropolitan Plan, 2016-2018 • Metropolitan Territorial Plan (Approved in 2020) • Provincial Territorial Coordination Plan (PTCP) • Urban Sustainable Mobility Plan (PUMS) • Parks' Territorial Coordination Plans (PTC) (Ticino Park, Parco Agricolo Sud Milano & its Piano di Settore Agricolo • Natura 2000 sites' plans (sites within Parco Agricolo Sud, Parco Ticino) • Municipal Urban Plans (PGT) (for the City of Milan Milan PGT) • Urban Plan/Regulation for green spaces (*Piano o Regolamento del Verde urbano*)
Informal instruments	• Green infrastructures, ecosystems services and the green economy • Final Document, Ministry of Environment, *Edited by Sustainable Development Foundation,* March 26, 2014 • Regional Strategy for Adaptation to Climate Change, 2015, and its Regional Action Document • Regional Agreement for Sustainable Development (subscribed in Sept 2019) and the Regional Strategy for Sustainable Development (under elaboration?) • Good practices for the Regional Ecological Network & Tecniques and methods for the Network implementation, 2013	• Piani d'Area (intermediate strategic plans between the municipal and provincial level, voluntary, setting specific priorities, for ex. in relation to the Ecological network). • Nature4Cities H2020 project, aiming to develop a platform for Natural Based Solution (NBS) offering solutions and tools to promote decisions in territorial planning (MCM is a partner with 4 pilot sites) • Sustainable Energy and Climate Action Plans (SECAPs) • "Climate Change and territory" project, a feasibility study towards the development of a Climate Plan for the Metropolitan City of Milan

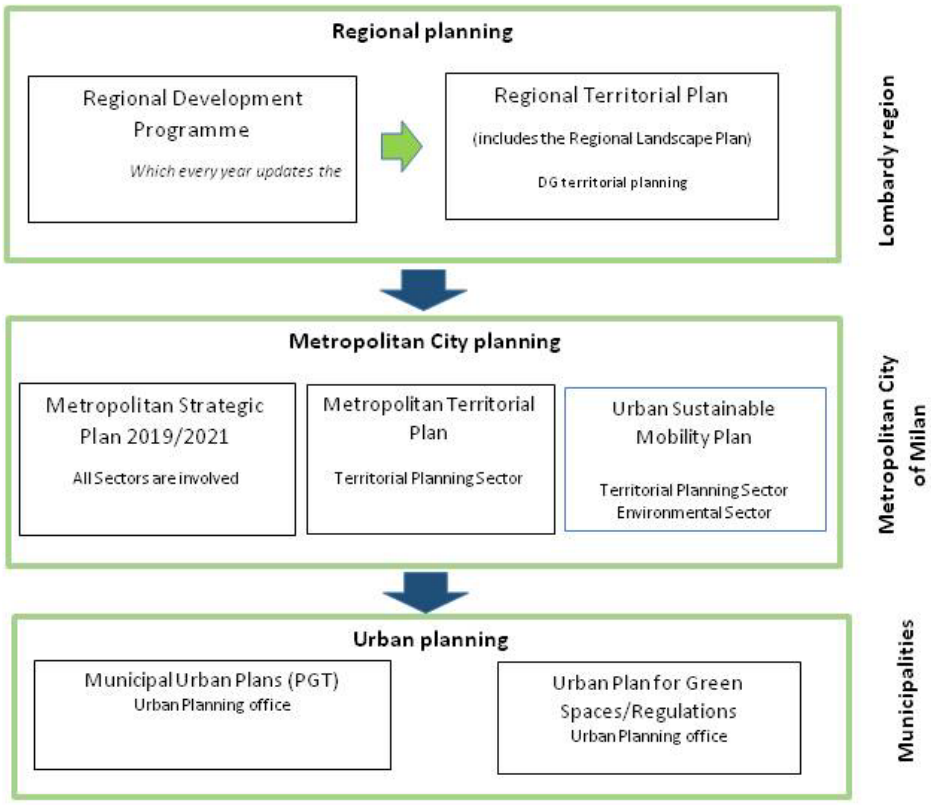


Figure 53: Flow diagram of the planning process in Italy

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

Funding for the enhancement and development of GIs can be mainly identified in EU funding, mainly ERDF (Interreg) as in the case of SWARE and LUIGI projects, or LIFE funding, as in the case of the LIFE METRO ADAPT project, which MCM is coordinating, aiming to build a joint governance for climate adaptation within the MCM territory specifically through Nature Based solutions.

Some funding by the Lombardy Region was granted in 2018 to land owners and operators for the valorisation of the Regional Ecological Network and enhancement of open spaces and GIs (Fondo Aree Verdi). Private foundations or NGOs may be also providing ad-hoc grants, an example is the "Terre di Città" project, i.e. a feasibility study for protection and valorisation of peri-urban rural areas of the Metropolitan City of Milan, completed in 2019 and funded by Fondazione Cariplo and the NGO Italia Nostra.

The Rural Development Plan provides funding for Agricultural operators and farmers and is managed by the Region. Finally, the National Climate Decree (national law no 141/2019) introduces funding for reforestation within metropolitan cities and soil protection actions by agricultural and forestry companies.

In this framework, the role of private sector funding can be quite important. A clear example is the "Forestami" project, which is ongoing and aims to plant 3 Million trees by 2030, to improve air quality, improve life quality and adapt to climate change. Promoted by MCM, the Municipality of Milan, Parco Nord Milano, Parco Agricolo Sud Milano, ERSAF and Fondazione Comunità Milano, based on the research of Politecnico di Milano University, Falck Foundation and Ferrovie dello Stato – Sistemi Urbani, fund it.

4.7.4 Targeted approaches for the LUIGI project

The overall objective of LUIGI is to evaluate, preserve and protect the elements of Green Infrastructure (GI), which can ensure a durable connectivity at ecological, economic and cultural level between rural and urban territories. The LUIGI project provides, at the same time, the social enrichment and added economic value for the goods and the services given by the disfavoured rural alpine zones to urban areas and metropolitan cities. Particularly, the project proposal has these specific objectives:

- to enhance the delivery of ecosystem services (ESS), linked to the local economy and culture;
- to involve and empower local decision makers and other stakeholders;
- to promote and stimulate the public and private investments in GI valorisation and maintenance.

Results are achieved by running tests & implementing actions in pilot-regions in six Alpine countries, where different GIs linking urban to mountain/rural areas are addressed. Within this framework and based on its roles and functions at institutional level, MCM aims to develop a comprehensive strategy/model for local GIs valorisation and maintenance, by setting up a unique "diffused" pilot area within its territory, encompassing three key selected implementation areas of environmental, social and economic relevance for the metropolitan area. In particular, MCM will work to address three crosscutting priorities, namely:

1) the **environmental relevance of GIs** and their key role in **biodiversity/micro-habitat protection**, in **ensuring ecological connectivity** and **improving overall environmental quality** of urban and peri-urban areas;
2) **the social benefits coming from valorisation and enhancement of GIs** for a better quality life of the citizens in the daily use of public transport infrastructures; so considering the green connection between the existing GIs and the main public transport routes (i.e. regional railways), between urban and rural areas, as a key pillar. Also referring to the intermodality connections, between cycle-pedestrian routes and other sustainable means of transport (i.e. soft/touristic navigation);
3) **the economic, cultural and touristic value**, as the GIs represent points of access for itineraries of high historical and cultural interest, reachable by sustainable mobility options, as described above, and a system of other services for a better touristic experience, able to

answer at safety, sports, recreation and restoration needs; also involving communities' representatives of the reach patrimony of local traditions;

In this way, MCM pilot activity will address all the three (environmental, social and economic) pillars of sustainability.

The "diffused" pilot area foresees the activation of a participatory process that will be established among key local actors, through the involvement of MCM departments (e.g. Economic development, Environment and Infrastructures) and relevant stakeholders identified in the three-implementation areas of MCM territory. Hence, the idea is to set-up permanent or temporary working tables of actors who will gather to discuss upon territorial criticalities/opportunities and use the most appropriate tools, approaches and knowledge developed within LUIGI technical WPs, especially in relation to training, stock exchange model and knowledge transfer to policy makers.

4.7.5 Factsheet: Lombard Park of the Ticino Valley, Italy

Lombard Park of the Ticino Valley

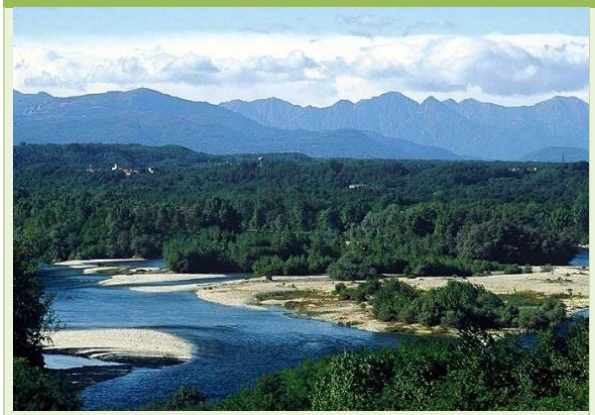


Figure 54: The wide open landscape of the Ticino valley

Photo credit: (Città metropolitana di Milano)

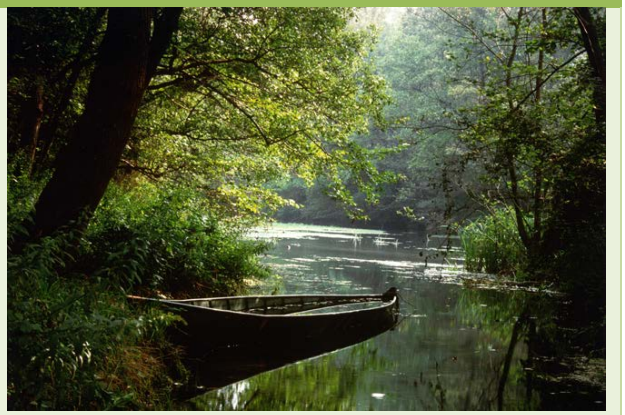


Figure 55: Riparian areas of the Ticino river – an important ecological corridor

Photo credit: (Città metropolitana di Milano)

Country: Italy **NUTS-region:** ITC4C	**Size:** 91.800 ha (20,500 ha as nature park) **Coordinator**: Management Board of the Ticino Valley Park
Current challenges	The Park is very close to highly urbanized areas and to one of the most important airport of Northern Italy (i.e. Malpensa airport). Hence, since its establishment, the Park has been striving to balance the needs for environmental protection with the social and economic aspirations of the numerous communities present in the area, which is one of the most densely populated in Italy. In addition, within the Park, the Ticino river gives life to a complex system of canals, the so-called "Navigli" system, stretching towards Milan city centre and beyond. Although the "Navigli" system with its network of towpaths represents a key opportunity for tourism and local economies, it suffers from a very complex coordination among the different actors involved in their use and maintenance.

Implementation activities	Stakeholders' engagement aimed at promoting initiatives, compatible with the Metropolitan Spatial Plan, and disseminating GIs and ESSs knowledge among local policy makers and professionals. **KPI (key performance indicator) ideas:** Valorise the environmental landscape unit, which are included in the MSP, considering evaluations with territorial stakeholders in a structure engagement view; moreover, we are going to analyse 3 areas: environmental, economic and socio-cultural. Promote training and educational modules implemented by innovative and specific tools.

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☒ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Natural park, agricultural areas, forests, riparian areas, canals

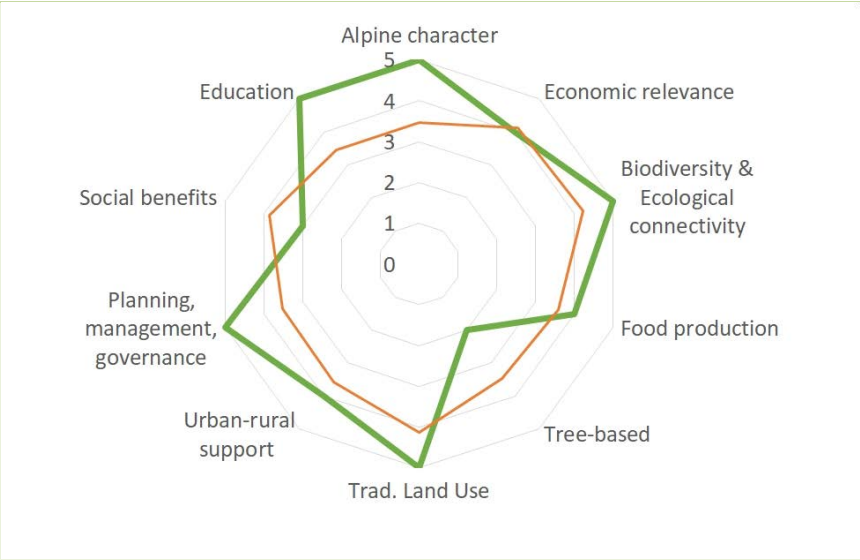
History/idea behind

The Ticino Valley is partly located in Switzerland and partly between Lombardy and Piedmont; in Italy it is protected, for the Lombard part, by the Lombard Park of the Ticino Valley, and for the Piedmont part by the Ticino Natural Park.

The homonymous river has a total length of 248 km, from the Novena Pass, in Switzerland, to the confluence with the Po river. The Ticino Valley obtained the recognition of being a Biosphere Reserve in 2002 under the UNESCO Man and Biosphere (MAB) Program. After a first extension recognized in 2014, in July 2018 the Ticino Val Grande Verbano Reserve was designated as a further extension of the Ticino Valley Reserve to the Swiss border. The Lombard Park of the Ticino valley has an area of approximately 91.800 hectares, of which approximately 20.500 protected in the Natural Park, and includes the entire administrative territory of the 47 Lombard municipalities located along the stretch of the Ticino river between Lake Maggiore and the Po river, in the provinces of Varese, Milan and Pavia. The territory of the Ticino Park is occupied for almost 55 % by agricultural areas, 22 % by forests, 20 % urbanized areas and 3 % hydrographic network.

The presence of a rich and varied set of ecosystems, in many cases well preserved, means that the Park has a biodiversity heritage that is unmatched in the Po Valley: Living species recorded so far: 6,235 (Animals: 3,264, Plants: 1,585, Mushrooms: 1,386.) This allowed the recognition in the Park of as many as 14 Special Conservation Zones (SACs) and 1 Special Protection Area (SPAs) pursuant to the Habitats and Birds Directives (Natura 2000 Network). The territory of the park is crossed by over 750 km of cycle-pedestrian paths, of which over 100 km along the towpaths of the canals. The Ticino Park is part of the General Plan of protected regional areas of natural and environmental interest, established with Regional Law 86/1983.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study

Average scoring value for all LUIGI Case studies

Urban-rural connectivity
The Lombard Park of the Ticino valley includes the entire administrative territory of the 47 Lombard municipalities located along the stretch of the Ticino river between Lake Maggiore and the Po river, in the provinces of Varese, Milan and Pavia. The territory of the Ticino Park is occupied for almost 20 % by urbanized areas and MCM is part of the Permanent Consultative Assembly of the Park.

Ecological connectivity
The Ticino Valley is an area of considerable interest for its naturalistic and conservation value, being in fact one of the few natural and semi-natural areas remained in the Po Valley. Inserting itself in a strongly anthropized context, it represents an ecological corridor of fundamental importance for various animal species, as evidenced, in the last decade, by the successful colonization of the territory by some of them (e.g. black woodpecker, European pine marten, wolf). These brief examples underline how the Ticino Valley constitutes an ecological corridor of great relevance from a wildlife point of view and, by promoting the phenomena of dispersion and formation of new populations, it contributes to a gene exchange between individuals of different populations, increasing their genetic variability, an element of crucial importance for the survival of a species in the long run.

Social cohesion
The Lombard Park of the Ticino valley organizes environmental education activities for primary/secondary and high schools, guided tours, and collaborates with local multifunctional farms and cooperatives for the organization of events and trainings. As regards the recreational aspect, the Park includes different paths of historic and cultural interest, and is crossed by over 750 km of cycle-pedestrian paths, of which over 100 km along the towpaths of the canals. Indeed, from the Ticino Park is possible to reach Milan city centre by following the *"Naviglio Grande"* towpath.

Economic benefit
There Possibility to valorise and enhance proximity and sustainable tourism, zero-km food/products from local multifunctional farms. With its system of cycle-pedestrian paths, it represents the gateway to several itineraries of cultural and historical interest.

Involved stakeholders	☒ Local public authority: 47 municipalities, 2 provinces and MCM ☒ Regional public authority: Lombardy Region ☐ Cantonal public authority: ☐ National public authority:

	☒ Non-government organisations & Associations: AIB (Fire prevention Service), GEV (Ecological guardians), PC (Civil protection) ☒ Community groups: ☒ Business partners / SME: Producers of the province Milano (Parco Ticino, 2021) ☐ Education and research on GI:. ☒ The public/inhabitants/visitors:
Funding programmes being used	LIFE Nature
Relevant projects	**Project name** LIFE Project "Ticino Biosource"
Links / Homepages / Literature	Ticino Nature Park The Sprout of Ticino

4.7.6 Factsheet: North Eastern Corridor of MCM within Adda Martesana, Italy

North-eastern corridor of MCM, within Adda-Martesana "homogeneous area"

Figure 56: Path along Adda/Martesana near Crespi d'Adda village

Photo credit: (Navigli lombardi site)

Figure 57: Melzi d'Eril Villa on Adda river at Vaprio d'Adda

Photo credit: (Navigli lombardi site)

Country: Italy **NUTS-region:** ITC4C	**Size:** 264 km^2 **Coordinator**: Metropolitan City of Milan
Current challenges	A working table established among Legambiente (Italian environmental association), Adda Nord Park, a local municipality and some local farmers highlighted some criticalities. In particular, main difficulties were found to be linked to the negative impacts caused by large infrastructures recently built (e.g. BRE.BE.MI). East-external ring road), and by those under construction; the critical issue related to milk price reduction, due to imports; the critical issue of land consumption, which has also transformed and eroded the agricultural areas to leave room for large industrial and commercial buildings. In addition, important initiatives have been carried out in this area in the last years: e.g. as the expansion of protected areas (e.g. with the entry of the Municipality of Segrate into the protected area "PLIS delle Cave"), and the enhancement of the Martesana canal, thanks to the establishment of the Eco-museum and the development of PLIS Martesana project. Nonetheless, existing initiatives and services offered by green and blue infrastructures in this area are not valorised and suffer from the lack of coordination among local stakeholders.
Implementation activities	Stakeholders engagement aimed at promoting initiatives, compatible with the Metropolitan Spatial Plan, and disseminating GIs and ESSs knowledge among local policy makers and professionals.) **KPI (key performance indicator) ideas:** Valorise the Environmental Landscape Unit, which are included in the MSP, considering evaluations with territorial stakeholders in a structure engagement view; moreover, we are going to analyse 3 areas: environmental, economic and socio-cultural. Promote training and educational modules implemented by innovative and specific tools.
The case study contributes to LUIGI because: ☒ "We expect to find solutions to current challenges" ☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas" ☒ "It will create, attract investment/create new business or markets"	

☐ Other
Region:
☐ City/Urban ☒ Peri-Urban ☐ Rural

Targeted key-alpine GI: Public (Rural Park North East, Alto Martesana, Adda Nord, Adda Sud, Rural Park South Milan) and private parks, canals, riparian areas, agricultural areas, hedgegrows.

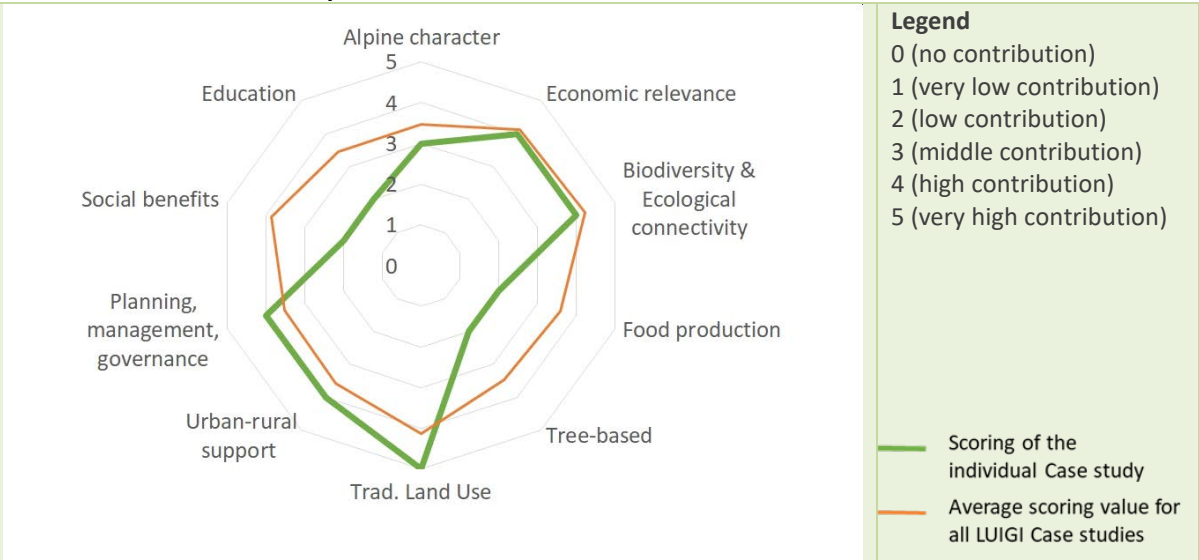
History/idea behind

The homogeneous area of Adda Martesana is a union of 28 municipalities, located in the north-eastern part of MCM, along Adda river and Martesana canal (Basiano, Bellinzago Lombardo, Bussero, Cambiago, Cassano d'Adda, Cernusco sul Naviglio, Cassina dé Pecchi, Carugate, Gorgonzola, Gessate, Grezzago, Inzago, Liscate, Masate, Melzo, Pessano con Bornago, Pioltello, Pozzo d'Adda, Pozzuolo Martesana, Rodano, Segrate, Settala, Trucazzano, Trezzano Rosa, Trezzo d'Adda, Vaprio d'Adda, Vignate, Vimodrone).

The Plan of this area aims to outline "an image of interpretative and design synthesis –the city park in the changing economy – which calls into question resources, strategies and pilot projects, defining the role of this area in the urban region by working on habitability of this territory ". The result of the operation is the definition of a hierarchical territorial structure strongly connected to the infrastructures and a model of conurbations for macrosystems characterized by different specificities and vocations. The structure is flanked by a system of interventions and development possibilities, disaggregated by area and by municipality, derived from the summation and coordination of the various projects that emerged in the complex phase of relations between the various subjects.

MCM has divided its territory into "homogenous zones", and the Adda Martesana is one of these. Main themes on which it is focusing its attention are: (1) green and blue infrastructures for a park-city, (2) economic development, training and jobs, (3) territorial planning, metropolitan welfare and urban regeneration, (3) territorial sustainability and parks, (4) infrastructure and mobility systems. Furthermore, MCM supports the role of the local Agricultural District (D.A.M.A.) also through the promotion of young and virtuous enterprises that deal with sustainable agricultural practices.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity

This area links the Adda river (eastern part of Milan, mainly rural) with the city of Milan through the Martesana canal.

As regards "well-being", "health" and "recreation", the Adda Martesana hosts cycle-pedestrian paths along Martesana towpaths and across its parks and fields. Concerning "civic engagement", this territory is now one of the "Homogenous Zones" of

Ecological connectivity

The Adda-Martesana territory represents an important agro-ecological corridor, as it includes important supra municipal and regional parks (i.e. Rural Parks North East, Alto Martesana, Adda Nord, Adda Sud, Rural Park South Milan). It is characterized by the presence of many farms and agricultural areas, which contribute to local biodiversity protection. The Adda-Martesana area has a high ecological relevance, as it

MCM, and the D.A.M.A. Agricultural District is contributing to activate a network among local municipalities and farms.	testifies to the traditions and social life of an ancient rural culture. Indeed, the subdivision of cultivated fields and land properties still partly follows the geometries of the Roman centuriations, although compromised and modified but visible at times. The vegetation is arranged in tree rows and hedgerows between the properties: the so-called *"Piantana Padana"*, from which wood and other secondary products were obtained.
Social cohesion Over time, the Martesana canal has constituted an identity element for the local population, which benefited from a consistent socio-economic development linked to the greater agricultural yield and the consequent high production of food, higher than local needs, thus creating an area of relative well-being. It was "an infrastructure" beneficial to the people of the area and has been a "development engine" for centuries and an important communication route for the exchange of goods and the transport of people, by barges pulled by horses along the canals. The towpaths, now transformed into comfortable cycling paths, are fundamental elements for the development of sustainable mobility. A few farms on the territory are also "educational farms" that contribute to social cohesion in the territory.	**Economic benefit** This territory can contribute to positive economic effects as it is characterized by the presence of numerous farms, about 150 (cereal cultivation 20 %, often combined to cattle breeding for milk production 40 %). In addition, it hosts several pedestrian and cycling paths of high cultural and historic interest crossing villas and their gardens, historical buildings, industrial archaeology examples, etc. Development of a network open to tourists, with farms able to implement agronomic interventions for the maintenance of the ecological network and at the same time able to obtain an alternative source of income.
Involved stakeholders	☒ Local public authority: All the Municipalities of the Adda Martesana Homogeneous Zone and MCM ☒ Regional public authority: Lombardy region ☐ Cantonal public authority: ☐ National public authority: ☒ Non-government organisations & Associations: Ecomuseo Adda Martesana, Fai (Italian Environment Foundation ☒ Community groups: ☒ Business partners / SME: D.A.M.A. (Distretto Agricolo Adda Martesana (D.A.M.A), 2020) ☒ Education and research on GI: Eco Museum Martesana (Ecomuseo del Martesana, 2020) ☒ The public/inhabitants/visitors:
Funding programmes being used	Cariplo Foundation and the municipalities of Cassano d'Adda, Pozzuolo Martesana, Trezzo sull'Adda, and the Adda Nord Park.
Relevant projects	**Project name** "Agricultural areas and biodiversity: agri-ecological corridors in the Adda Martesana territory"
Links / Homepages / Literature	Projects and Actions in Adda Martesana

4.7.7 Factsheet: Milan City Center – Santa Giulia area – Rural Park South Milan – Abbeys Road, Italy

Milan City Center – Santa Giulia area – Rural Park South Milan – Abbeys Road

Figure 58: Rural Park South Milan near Zibido San Giacomo village

Photo credit: (MCM)

Figure 59: Rural Park South Milan

Photo credit: (MCM)

Country: Italy **NUTS-region:** ITC4C	**Size:** 46,300 ha **Coordinator**: Metropolitan City of Milan
Current challenges	The Territorial Coordination Plan (PTC) regulating the Park imposes strict rules on new activities and does not leave much room for local entrepreneurs or new (agricultural) businesses that want to invest in the area. In the last 60 years, the heavy consumption of soil as well as the spread of monocultures have put Park biodiversity at risk. Nonetheless, some farms are attempting innovative forms of resistance to foster an agriculture attentive to the protection of biodiversity, with a strong connection to the local area and products. In a research paper about the criticalities and resources of the Rural Park, researchers highlighted the lack of a strategic and proactive vision in Park management, as the managing authority limits its power to the application of the various restrictions foreseen by the Territorial Coordination Plan (PTC). Finally, this area will provide a place for new facilities on the occasion of the Winter Olympic Games in 2026, requiring also new infrastructure to manage the great expected attendance at the events.
Implementation activities	Stakeholder's engagement aimed at promoting initiatives, compatible with the Metropolitan Spatial Plan, and disseminating GIs and ESSs knowledge among local policy makers and professionals. **KPI (key performance indicator) ideas:** Valorise the Environmental Landscape Unit, which are included in the MSP, considering evaluations with territorial stakeholders in a structure engagement view; moreover, we are going to analyse 3 areas: environmental, economic and socio-cultural. Promote training and educational modules implemented by innovative and specific tools.

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☒ "It will create, attract investment/create new business or markets"

☐ Other

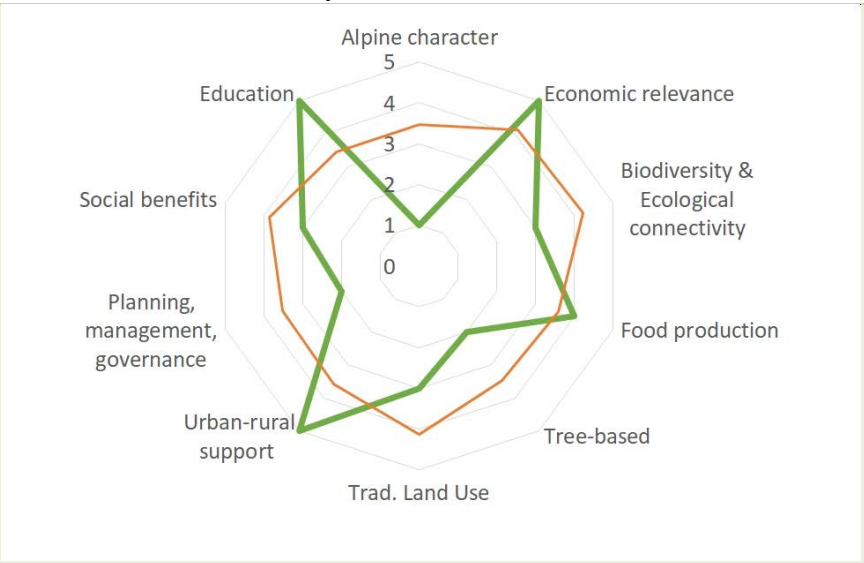
Region:
☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Agricultural areas, woods, monumental trees, water meadows, springs, rice fields, canals, ponds

History/idea behind

The Rural Park South Milan is a protected natural area in Lombardy, which encloses a large arched area between the district south of Milan and about 60 municipalities in the Metropolitan City of Milan. It was created in 1990 and it is managed by MCM with the aim of protecting and enhancing the agricultural economy of South Milan and protecting the environment and landscape, as well as making available to citizens a vast park and a great heritage of nature, history and culture.
Agriculture in the Park is strongly oriented towards the production of arable land that, with over 30,000 hectares, constitutes 87 % of the agricultural area of the Park. Woody crops (fruit trees and vines) are of marginal importance. The role of permanent meadows is also marginal, which in the past constituted the main source of food production for cattle. Today this use is given up to more productive forage crops that are more suitable for supporting the very high milk production of modern dairy production. However, it is a type of cultivation with low environmental impact and with a not negligible ecological value. The action of the park is aimed at the protection of this type of cultivation; in particular, of the "water meadows" which represent a typical crop of the lower Milan area and which are therefore important from a historical point of view.

Contribution of the case study area to the must-have and nice-to-have criteria:



Urban-rural connectivity
The Rural Park South Milan is a metropolitan "belt" park, which has direct links and connections with the neighbouring City of Milan.

Ecological connectivity
The Rural Park South Milan represents a unique environment in the landscape of metropolitan belt parks present in many other European cities. The park, in fact, has a strong agricultural vocation, with an evident prevalence of the cultivated areas over the naturalistic ones, but at the same time, it preserves areas in which stretches of the ancient wooded areas that covered the Po Valley in the past centuries have remained unchanged. It hosts a variety of plant and animal species typical of the different environments and some peculiarities that make the Agricultural Park a rare example of biodiversity "oasis".

Social cohesion
Some green areas of the Park can be visited independently, thanks to a good network of cycle paths

Economic benefit
The farms of the South Park offer typical products of the highest quality, processed according to tradition

and secondary roads. The territory of the park is dotted with items of great historical value, some of which can be freely visited. The Park is the gateway to the Abbeys Road, which stretches throughout the Park and reaching the Ticino Park. Sports lovers can practice running in the equipped green areas, horse riding, fishing in the lakes. The farms, some of which are active in historic farmhouses, are increasingly opening up to the public with direct sales and providing various types of services (environmental education, courses, catering, and accommodation). As regards "well-being", "health" and "recreation", the Park offers many itineraries crossing natural areas, places of historic and cultural interest, and farms. Concerning "civic engagement", the Park can already count on an active network of actors involved in the direct selling of local products. These are the so-called "purchasing groups" of citizens, such as the "fair-trade purchasing groups" (GAS) and the "popular purchasing groups" (GAP), etc. (groups of friends/relatives or larger associations).	and with artisanal methods, transformed on their own and offered for direct sale. Some of these farms are open to visits, sell the products of their work, organize courses of various kinds and welcome schools in educational activities. Presence of numerous farms (ca. 100), also "multifunctional", which offer high quality products that are sold directly to tourists and visitors thanks to the "direct sale" system and the organization of the so-called "earth market". Furthermore, the Park offers the possibility to organize guided tours and educational activities for kids and adults.
Involved stakeholders	☒Local public authority: MCM, Rural South Park Milan ☒Regional public authority: Lombardy Region ☐Cantonal public authority: ☐National public authority: ☒Non-government organizations & Associations: Associazione per il Parco Sud ☒Community groups: GAS (Ethical purchasing groups) ☒Business partners / SME: Agriturismo Cascina Forestina, Azienda Agricola Fratelli Rossi, Agriturismo Cascina Santa Brera ☐ Education and research on GI: ☒The public/inhabitants/visitors:
Funding programmes being used	Local/regional (Rural Park South Milan with Lombardy Region contributions)
Relevant projects	**Project name** "From parks to the Regional Ecological Network"
Links / Homepages / Literature	South Milan Agricultural Parc Natural areas of the South Milan Agricultural Park

4.8 South Tyrol, Italy

4.8.1 Characterisation

South Tyrol, also known as the Province of Bolzano/Bozen, is located in the central area of the Alpine Space Region, and its territory lies within the central and eastern areas of the Alpine bow. Notably, the Ortles mountain group and part of the Dolomites are found here. Most of the territory is mountainous and 37 % of the territory is above 2,000 m elevation. The majority of the population lives in settlements and cities located on the bottom and the slopes of the Venosta/Vinschgau, Adige/Etschal, Isarco/Eisack, and Pusteria/Pustertal valleys.

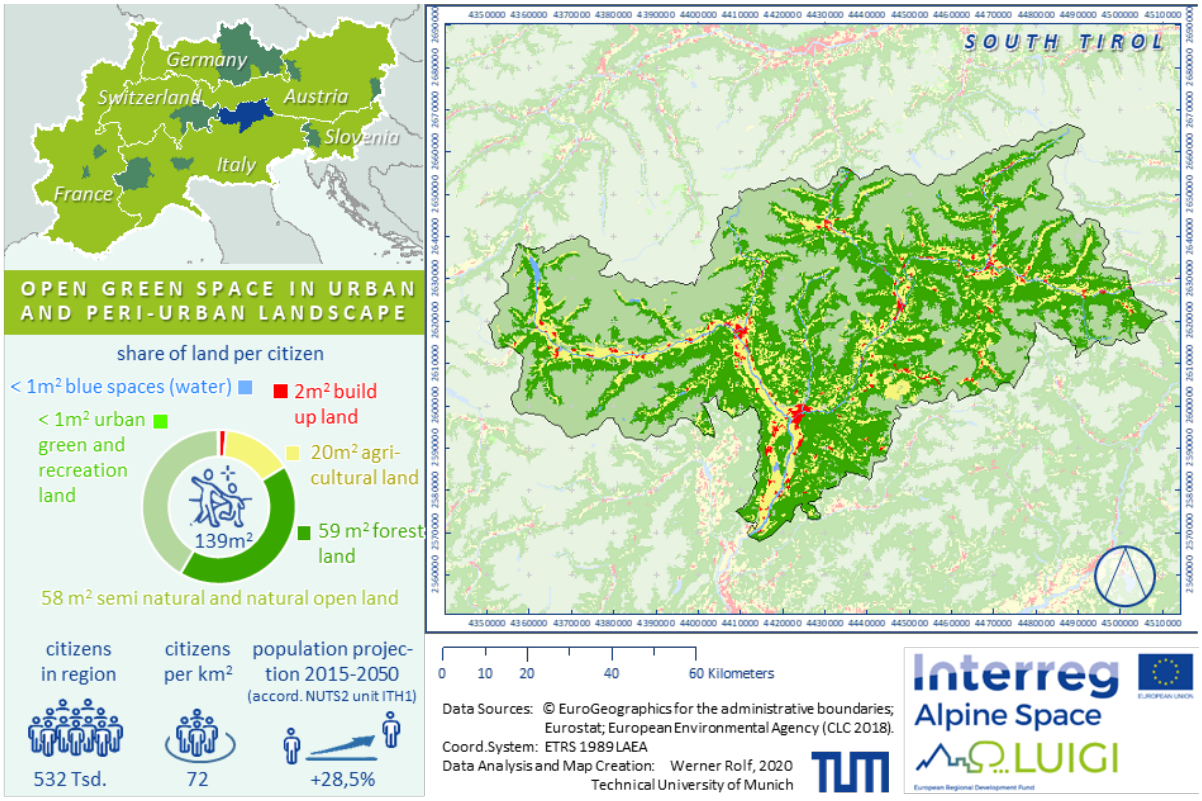


Figure 60: Characterisation and map overview of the pilot region South Tyrol

Due to the geographical location and the great differences in elevation, there are very different climate belts, ranging from sub-Mediterranean to nival, which has a strong impact on the diversity of the natural and cultural landscape. 47 % of the pilot region is covered by forest and 13 % by agricultural land, while high mountains and alpine pastures each cover 17 % of the province. Traditional land use types such as larch and orchard meadows, on the other hand, cover about 1% of the area, given that much of their former areas has been and is being lost due to their abandonment or intensification (Zoderer at al. 2016). The valley floors are used for intensive agricultural production and mostly covered by intensively used grasslands, apple plantation and vineyards. At higher elevations the landscape is dominated by forests and steep slopes with pastures

and meadows managed mainly for producing hay and cattle grazing. The good economic situation in South Tyrol is reflected by relatively high economic growth, accompanied by a low unemployment rate, a relatively homogeneous geographical distribution of jobs throughout the whole province and by a well-balanced relationship between the various economic sectors of handicraft, trade, tourism, industry, agriculture, professions, services and the public sector. Tourism is a very important component of the regional economy, as South Tyrol is a popular tourist destination all year round, with 30 million overnight stays and 7.5 million tourist arrivals. Several popular tourist destinations in South Tyrol are subject to strong anthropogenic pressures. An extensive network of hiking trails, ski areas and other tourist infrastructure often leads to human disturbance, and only some open and wild areas are left in the mountains. The ecosystem condition of most remote areas is frequently good, with large shares of HNV farmland. Valley floors are however very exploited, there is little natural habitat, and road and rail infrastructure are a big obstacle to species movement. Almost all the machinable agricultural area in South Tyrol is intensively used and despite being in line with EU directives and policies, intensive agriculture often has a negative impact on environmental quality.

Table 24: Facts and figures on the pilot region South Tyrol

Country	Italy (IT)
Administration (number of districts/municipalities)	116 municipalities
Area (km^2)	7,398
Inhabitants	532,080
Pilot coordinator (institution)	Eurac Research
Population change	+15 % (2001-2019)
Alpine Green Infrastructure in focus	Orchard meadows, urban/ peri-urban park, HNV farmland, hedgerows

Source: (ISTAT, 2020)

4.8.2 Situation of the Green Infrastructure in focus in South Tyrol

Orchard meadows or "*Streuobstwiesen"* are traditional extensive fruit tree plantations, today typically located next to farmstead and on the fringes of town and villages. These are characteristic landscape elements of high aesthetic and landscape value. They are composed of high-stem fruit trees (apples, pears, chestnuts) and a species rich grassland, also used as pasture or as a hay meadow. Ancient fruit varieties are often found in orchard meadows. Given the high cost of land in South Tyrol, they are threatened by being replaced by more profitable land uses such as more intensive fruit plantations or vineyards, in warmer areas, and by maize fields and intensive meadows in farmland of higher elevation. Compared to southern Germany and Switzerland, there are not many orchard meadows left. There is limited awareness of the environmental and cultural benefits of this land use, and orchard meadows are frequently not maintained properly or changed to other land use forms. If fruit production is maintained, single stem systems are substituted by high-density systems with dwarf-sized trees, and traditional varieties are substituted by modern ones.

4.8.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

South Tyrol is an autonomous Italian province; therefore, decisions are taken at the regional level more than in other Italian regions. The vertical structure of the administrative levels corresponds to territorial levels (national, regional, local). More details can be found in Table 25.

The Interreg Central Europe "MaGICLandscape" project has looked at GI governance in Italy with great detail. At national level there are a series of guidelines and regulations regarding i) the protection of nature, biodiversity, landscape, water, and soil, and ii) sustainable development and management of forestry, hunting and tourism. Each Region or autonomous province approves its land Management and urban planning legislation. For more details on such guidelines and regulations, see the Interreg Central Europe MaGICLandcsape output O. T1.1, from page 120 (John et al., 2019).

Table 25: Collection of relevant institutions as important stakeholders in South Tyrol

Type	Name of institution	Level
Government & administration	31. Agriculture department (*Dipartimento Agricoltura/ Abteilung Landwirtschaft*)	regional
Government & administration	Office for telecommunications and infrastructure	regional
Government & administration	Civil protection	regional
Government & administration	32. Forestry	regional
Government & administration	28. Natura, paesaggio e sviluppo del territorio./Natur, Landschaft und Raumentwicklung/ nature, lansdscape and rural development department	regional
Municipality consortium	Consortium of municipalities (*Gemeindeverband / Consorzio dei Comuni*)	regional
Farmers Association	Farmers association *(Südtiroler Bauernbund / Unione Agricoltori e Coltivatori Diretti Sudtirolesi)*	regional
Farmers association	Beratungsring and Bring – Farmers' cultivation consultancy and training	regional
Association	Bioland Since 1991, this private association aims to establish and foster a high biological and organic farming standard, through a certificate scheme that aims to increase soil fertility, animal wellbeing, an efficient use of resources and biodiversity.	regional
Business company	Pur Südtirol Multi-store business selling Local (South tyrol) products, many of which organic	regional
Business company	Red rooster *(Roter Hahn/ Gallo Rosso)* - brand within the Bauernbund for farm vacations and direct marketing of agricultural premium products)	regional
Business company	La Bottega dei Contadini A cooperative of Local farmers aiming to connect their product directly to their consumers. Short value chains to assure freshness and the "Val Venosta" quality	regional
Business company	Biosüdtirol - A cooperative of 250 farmers selling Organic apples in Italy and Beyond for the love of apples, nature and the people	regional

Nature Conservation	Association of Nature Conservation and Environmental Protection (*Dachverband für Natur- und Umweltschutz / Federazione Protezionisti Sud-tirolesi)*	regional
Research	Museum of Nature South Tyrol *(Biodiversity Monitoring South Tyrol- Eurac Research, Naturmuseum Südtirol/ Museo Scienze Naturali Alto Adige)*	regional

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 26 and classified in formal and informal instruments.

Table 26: Instruments and tools of GI governance in South Tyrol

	National and regional level	Local level
Formal instruments	• Code of Cultural Heritage and Landscape • Ratification and implementation of the European Landscape Convention (Florence) • Lanscape and territory/Teritorio e paesaggio/ Neues Landesgesetz Raum und Landschaft • Nature and landscape guidelines in South Tyrol • Landscape Plan/Piano paesaggistico/ Landschaftsplan • LEROP: Regional development and spatial planning scheme • General guidance	• Municipal development plans
Informal instruments	• Red rooster trademark – connecting tourists and farms meeting certain standards Gene Save Interreg project preserving and maintaining old varieties of grains, vegetables and apples.	Landscape planning instruments at the municipal level • Landscape Inventory • Green space plan • Cultural Landscape Programs • Landscape conservation plan

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

The main funding mechanism is the following: Incentives for the maintainance and care of the landscape *("Landschaftspflegeprämien"/ "Premi incentivanti per la cura ed il mantenimento del paesaggio").*

Through the provision of incentive prizes for landscape care, the Provincial Department of Nature, Landscape and Territory Development promotes the conservation of the traditional cultural landscape and the biodiversity of habitats of high ecological value. These cultural landscapes and habitats are important "refuge areas" for many endangered plant and animal species that enrich the

landscape. They are linked to ancient forms of traditional land management and can only be maintained through natural and extensive cultivation methods, avoiding intensification.

Landscaping premiums compensate farmers for the lower revenues that extensive cultivation brings. They also compensate for the additional costs deriving from particularly difficult management of highly sloping surfaces or with particular morphology or soil characteristics. The maintenance of meadows and fen meadows, mountain meadows rich in species, reeds, meadows and pastures with larch, chestnut woods and orchard meadows, peat bogs and alder groves and hedges is encouraged. Those who want to benefit from the prizes for landscaping must undertake to cultivate their land in order to maintain its ecological value, which can be measured on the basis of the variety of species present. Improvements, such as crop changes, levelling and drainage, and intensive cultivation with high use of fertilizers, frequent cutting of grass or intensive grazing must be avoided.

The following other funding mechanisms can be used for correlated activities and land uses:

- Seasonal nature protection service *("Saisonaler Naturschutzdienst", "Servizio stagionale protezione natura");*
- Contribution to association working on nature conservation and spatial development *("Beiträge für Jahresprogramme von Vereinen und anderen Organisationen im Bereich Natur, Landschaft und Raumentwicklung", "Contributi per l'esecuzione dei programmi annuali di associazioni ed altre organizzazioni nell'ambito natura, paesaggio e sviluppo del territorio");*
- Funding from the landscape fund *("Förderungen aus dem Landschaftsfonds", "Agevolazioni dal "fondo del paesaggio");*

Specific funding for orchard meadows:

- Incentives for the maintainance and care of the landscape: Orchard meadows *("Landschaftspflegeprämien"/ "Premi incentivanti per la cura ed il mantenimento del paesaggio");*

Others:

- For supporting the transformation and commercialization of (any kind of) agricultural product there is the following funding scheme ("*Verarbeitung und Vermarktung landw. Erzeugnisse pflanzlicher Herkunft Primärerzeuger*"/ *"Trasformazione e di commercializzazione dei prodotti agricoli di produzione vegetale- produttori primari");*

4.8.4 Targeted approaches for the LUIGI project

- To raise awareness by showing up the value of orchard meadows as key-GI with importance for the characteristic landscapes and also as a basis for tourism value chain;
- To show the multiple benefits and values of natural and semi natural landscapes

- To raise awareness on the role of hedgerows for connectivity and decreasing the “distance to nature”;
- To create and establish a learning module and workshop with local schools which can be maintained after the project end;
- To establish a partnership with the Biodiversity Monitoring South Tyrol and The Natural History Museum to raise awareness and support orchard meadows in the future;
- To show local authorities and planners the multi-functionality and ecological connectivity of the local landscape;
- To establish new partnerships, bringing together stakeholders;
- To learn from other countries GI maintenance strategies.

4.8.5 Factsheet: Comune di Bolzano, Italy

Comune di Bolzano

Figure 61: Cultural landscape in the peri urban area of Bolzano

Photo credit: (EURAC)

Figure 62: The riverbed of Talvera

Photo credit: (EURAC)

Country: Italy **NUTS-region:** ITH10	**Size:** 52 km^2 **Coordinator**: Supervisor of Territorial Planning and Development *(Responsabile Pianificazione e Sviluppo del Territorio)*
Current challenges	Making citizen aware of the ecological and connectivity function of the park, underlining the ecosystem services provided by the area
Implementation activities	Education training with school children in Bolzano (usually 12-16 years old); Stakeholder meetings for value chains WP2, Stakeholder meeting for testing business model-WP2 **KPI (key performance indicator) ideas:** Number of students participating, Preparation of learning module that can be carried out also after LUIGI ends by Eurac Junior, N of participants in meetings on Value chains-WP2, N participants in meeting on testing business model-WP2

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐"It will create, attract investment/create new business or markets"

☐Other

Region:

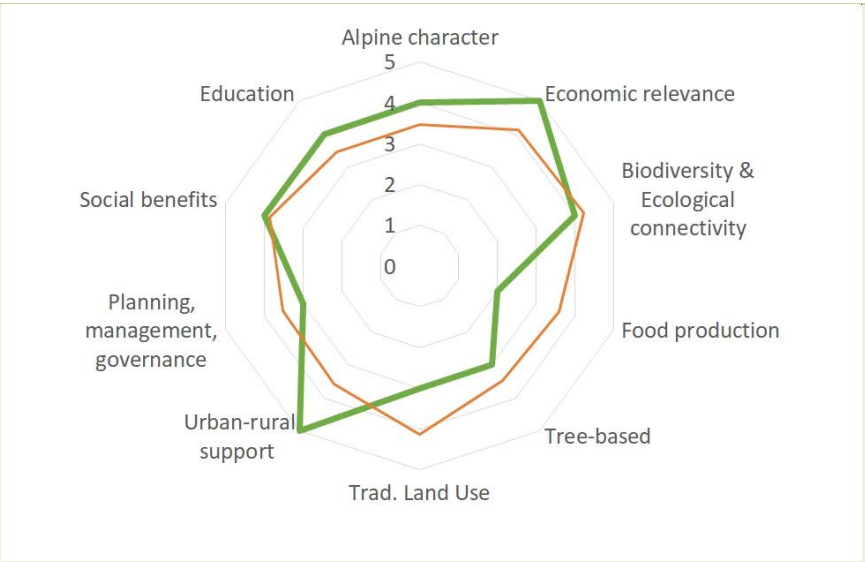
☒ City/Urban ☐ Peri-Urban ☐ Rural

Targeted key-alpine GI: Multi-use urban park in riparian area

History/idea behind

The idea of modifying the riverbed of river Talvera started to become popular after the tragic flooding of the city of Trento in Nov 1967. After battles to see the project come to action, the park developed in the 70s. the riverbed was modified without removing cobles and gravel, soil was put on the sides to sow grass and plant trees. Now it has a shaded promenade, ponds, benches, cycling path, playgrounds, football, basketball fields, tennis tables, ice skating ring, skateboard park, dog area, cafés.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study

Average scoring value for all LUIGI Case studies

Urban-rural connectivity The park is developed along both sides of river Talvera and stretches from the center of the city to its outskirts, where vineyards, fields, hills and mountains are present. The river flows from the mountains and, once it joins river Isarco and Adige near Bolzano, continues south to Trento and beyond. starting the walk in the park, one can go from the city center to the outskirts, towards Roncolo Castle and the Sarentino valley.	**Ecological connectivity** The vegetation of the park represents a permeable landscape and hosts several resident species. The riverside vegetation and the riverbeds provide continuous habitat that allow North/South species movements and dispersal through cities and landscape.
Social cohesion The park was designed to connect two neighbourhoods of the city, increase green space per capita, and create an opportunity for exchanges between the italian and the german-speaking community. It provides several sport opportunities with multiple exercise stations, football and basketball fields, ping pong, skate park etc. the cycling lane encourages low carbon transport and recreation opportunities, being connected to a big and long network of cycle lanes throughout the region. classes, concerts and activities are organized in the park.	**Economic benefit** There are bar and cafes, the Bolzano football club is based along the park, a flea market, concerts and classes are taken in the park. several bars, café and restaurants facing the park are attractive to consumers thanks to their location and views.
Involved stakeholders	☒Local public authority: Comune di Bolzano ☒Regional public authority: Nature and spatial planning division of the autonoumous province of Bolzano. ☐Cantonal public authority: ☐National public authority: . ☒Non-government organisations & Associations: Dachverband für Natur- und Umweltschutz. ☐Community groups: ☒Business partners / SME: Red rooster. ☒Education and research on GI: Eurac Junior, Bolzano schools ☒The public/inhabitants/visitors: school children.

Funding programmes being used	Green roofs South Bolzano, project financed by the Municipality of Bolzano and co-ordinated By EURAC, Institute for renewable energy.
Relevant projects	**Project name** … "tetti verdi per Bolzano Sud"
Links / Homepages / Literature	Prati del Talvera, City of Bozen Technical Environmental and Green Planning Service, City of Bozen (2020), Segalla (2014)

4.8.6 Factsheet: Venosta / Vinschgau Valley in South Tyrol, Italy

Val Venosta/ Vinschgau Valley in South Tyrol

Figure 63: Comune di Malles in the Venosta / Vinschgau valley

Photo credit: (www.suedtirolerland.it)

Figure 64: Malles from the surrounding mountains

Photo credit: (www.suedtirolerland.it)

Country: Italy **NUTS-region:** ITH10	**Size:** 250 km^2 **Coordinator**: Consortium of municipalities in the Venosta Valley

Current challenges	Negative externalities of intensive agriculture are becoming apparent, and some citizens have started a movement to ban pesticides in intensive apple orchards and promote organic and extensive farming. Still, many farmers rely on intensive agricultural practices and fear that they could lose the competitiveness of their product on the market. Making them aware of the positive effects of this on the environment and on the health of citizens is a major challenge. Several local initiatives support local extensive agricultural practices, highlighting the uniqueness of these products, such as the Pala pear, ancient grains etc.
Implementation activities	Activities are partly focused on the target area, partly extended to the whole province area: Awareness-raising activities in combination with a village festival tbd (if the coronavirus regulations in place allow it), A presentation/talk on the benefits of GI, maybe some citizen science activity, Flowering farmland competition for orchard meadows in South Tyrol, Data collection for biodiversity monitoring: birds, bats, butterflies, vascular plants, maybe bees, Creation of an "Orchard meadow initiative" with local stakeholders to carry out the awareness project after LUIGI in the whole pilot region. **KPI (key performance indicator) ideas:** Number of Participants at talk, Number of participants at orchard meadow competition, Completion of Biodiversity monitoring, Small report on biodiversity in Orchard meadows, Number of meeting regarding setting up of "orchard meadow initiative"

The case study contributes to LUIGI because:

☒ "We expect to find solutions to current challenges"

☐ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

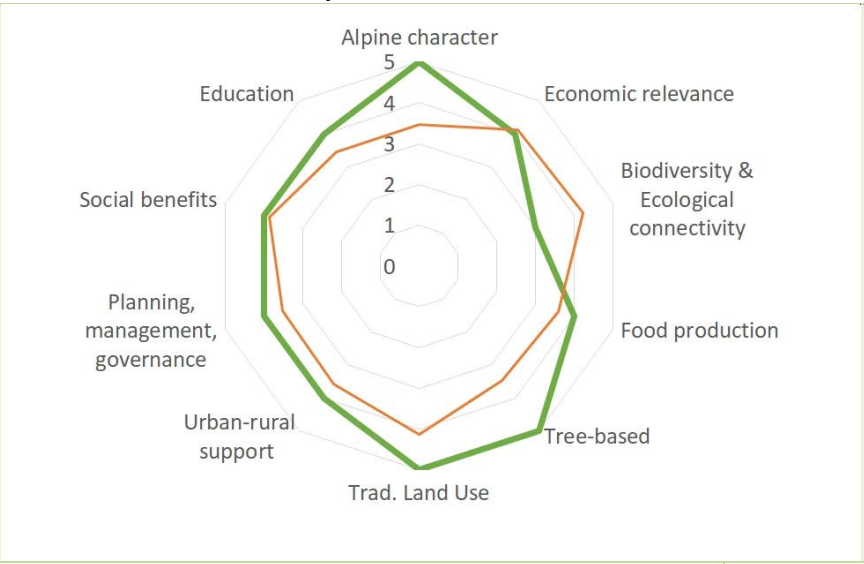
☐ City/Urban ☐ Peri-Urban ☐ Rural

Targeted key-alpine GI: HNV farmland, orchard meadows

History/idea behind

In the last decades there has been a rapid increase in conversion of extensive agriculture into intensive apple plantations, given the high price of the land and the competitiveness of the market. Now, negative externalities of intensive agriculture are becoming apparent, and some citizens have started a movement to ban pesticides in intensive apple orchards and promote organic and extensive farming.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend

0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study

Average scoring value for all LUIGI Case studies

Urban-rural connectivity

The area is characterized by an intensive presence of apple plantations that stretch along the Venosta valley. The orchard meadows are located in the valley floor halfway between the towns and the hills.

Ecological connectivity

Apple orchards are typically found at the border of the villages, often surrounded by natural vegetation neighbouring steeper lopes and mountain areas.

Social cohesion

The quest for banning pesticides in the area of Malles has created a movement of concerned local citizens and brought together supporters from around the world. At the same time, it has created some conflict among contrasting stakeholders. The local administration has launched a series of workshops and meetings for the local population to raise awareness about the serious damages caused by the intensive use of chemicals.

Economic benefit

Since we are going in the direction of a greener economy, more and more people care about a healthier diet and about the environment and are willing to pay more for organic products. Moreover, the good practice examples of Malles are likely to be taken as a model for other spots and could attract further investments.

Involved stakeholders	☒ Local public authority: Consortium of municipalities in the Venosta valley ☒ Regional public authority: nature and spatial planning division of the autonoumous province of Bolzano ☐ Cantonal public authority: ☐ National public authority: . ☒ Non-government organisations & Associations: Dachverband für Natur- und Umweltschutz ☒ Community groups: “No-pesticides in Malles” community group” ☐ Business partners / SME: ☐ Education and research on GI: ☒ The public/inhabitants/visitors:
Funding programmes being used	n.a.

Relevant projects	Only an informal movement led by citizen of Malles to ban pesticides in intensive orchards in the valley.
Links / Homepages / Literature	City of Mals (2020) Comune di Malles

4.9 Metropolitan City of Turin, Italy

4.9.1 Characterisation

The Metropolitan City of Turin (MCTo) (NUTS 3) is located in the northwest part of Italy being part of the Piedmont Region. The west sector of the alpine chain constitutes the border with southeast France (186 km border territory).

Morphogenetic processes and climatic-biological changes have shaped over the millennia a highly diversified territory, characterized by ridges, impluviums, valley bottom lines, terrace edges, contributing to the formation of three distinct macro systems: mountains (57 %), hills (15 %), and plains (28 %).

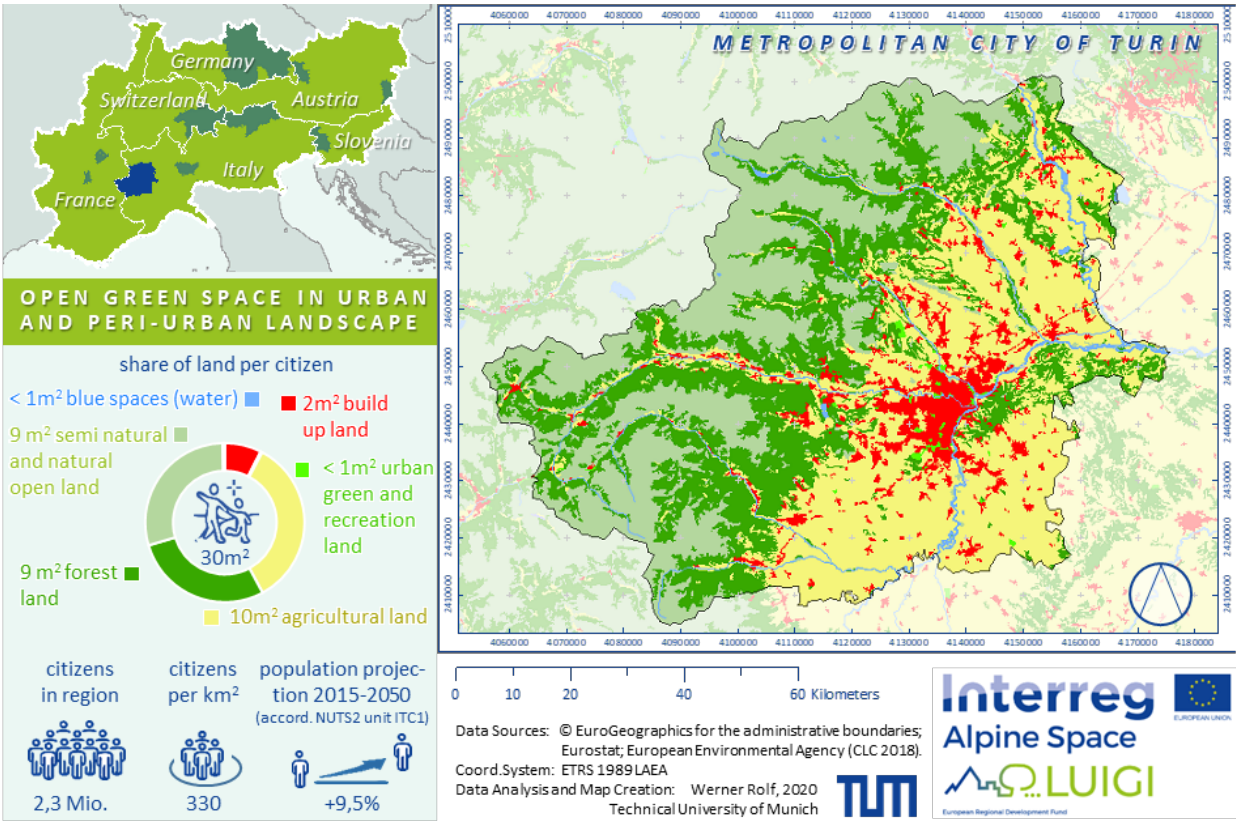


Figure 65: Characterisation and map overview of the pilot region Metropolitan City of Turin

The different geomorphological characteristics correspond to different levels of anthropization, detectable also by the demographic distribution, on the one hand with a strong concentration of activities in the direction of the plain and valley floors, on the other hand with sparse alpine settlements, less and less inhabited. The MCTo has a population of around 2,252,379 inhabitants from which 871,000 live in the city of Turin. The majority (74 %) of the resident population is concentrated in few larger municipalities located on the plains, while the hilly territories host around 20 % and the mountain only 6 % of the inhabitants.

Figure 66: Marentino and the Po hills

Photo credit: (Giuseppe D'Ambrosio)

Figure 67: Landscape of the city of Turin with the Alps chain on the back

Photo credit: (Fabrizio Longo)

Wooded land covers most of the mountainous area, where there is also a large portion of the territory occupied by unproductive land such as rocks, scree and glaciers while the remainder is devoted to sheep farming with major portions of land for pasture. The urbanized areas are mainly in the lowland areas. The massive increase of population started with the birth of the automobile factory FIAT at the beginning of the 20th century. This determined the transition from the predominantly agricultural land use to the predominantly industrial economy and produced a series of changes such as a significant increase of urbanization and infrastructure, a widespread degradation of existing agricultural landscapes, a progressive abandonment of hilly and mountainous land as well as the erosion of natural landscapes. The poor maintenance of the landscape triggered an ecological instability.

Table 27: Facts and figures on the pilot region Metropolitan City of Turin

Country	Italy (IT)
Administration (number of districts/municipalities)	312 municipalities
Area (km^2)	6,827
Inhabitants	2,252,379
Pilot coordinator (institution)	Città metropolitana di Torino
Population change	+4.02 % (2001-2019)
Alpine Green Infrastructure in focus	Ecological network, Ecosystem services payment

Source: (ISTAT, 2019)

4.9.2 Situation of the Green Infrastructure in the Metropolitan City of Turin

In the past decades, in the MCTo, as well as in the rest of Europe, the consumption of soil and the sealing of surfaces for urban purposes occurred in a massive way. This phenomenon caused not only a consistent and progressive reduction of the rural land, but also a significant loss in terms of biodiversity, ecological connectivity, landscape and land maintenance.

Figure 68: The Special Conservation Area "5 laghi di Ivrea" with the Pistono lake in the foreground

Photo credit: (unknown)

Figure 69: A view towards the Serra morenic hill from the Masino Castle

Photo credit: (Archivio MCTo)

Among the Territorial Coordinating Plan (2011) of the MCTo strategies, some were related to the following GI:

1) The promotion of a project of *provincial ecological network* to connect the more valuable and protected areas within the MCTo (parks, Natura 2000 sites) in a "network of provincial green areas" using river corridors;
2) The *protection of soil* as a means of agricultural and forestry production, as a determining factor of environmental balance, biodiversity and a unique and non-renewable resource. In particular, it was the peri-urban areas around the main urban settlements to be most compromised by the development of conurbations and the disorderly growth of the cities, with consequent mineralization and waterproofing of soils, fragmentation and insularization of the territory. These issues affected also the surrounding of the city of Ivrea and the "5 lakes of Ivrea" zone, where the crucial GI elements need to be a protected and valorised in order to preserve and increase the benefits they produce for the human well-being.

4.9.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

The form of the GI governance in the MCTo is a multi-level governance corresponding to the vertical structure of the administrative levels (national, regional, provincial, local).

Table 28: Collection of relevant institutions as important stakeholders in the Metropolitan City of Turin

Type	Name of institution	Level
Government & administration	Regione Piemonte – Department of Environment and Territory	regional

Government & administration	Città metropolitana di Torino – Department Environment and Department Territory	provincial
Community Authorities	Municipality of Ivrea	local
Association	Ecomuseum of the morainic amphitheatre of Ivrea	local
Association	Landscape Observatory for the Morainic Amphitheatre of Ivrea	local
Research	ISPRA – Institute for Environmental Protection and Research	national

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 29 and classified in formal and informal instruments.

Table 29: Instruments and tools of GI governance in the Metropolitan City of Turin

	National and regional level	Local level
Formal instruments	• The National Strategy for Biodiversity (2010) • Act 28th December 2015, no. 221 Environmental Regulations to promote Green Economy Measures and for the Containment of Excessive use of Natural Resources • Act of 14th January 2013, no. 10 Standards for the development of urban green spaces (OJ no. 27 of 1st February 2013). • Hydrogeological Plan of the River Po District (2001) • Regional Act of 29th June 2009, no. 19 "Unique Text about the Conservation of Natural Areas and Biodiversity" • Territorial Plan of the Piedmont Region (2011) • Regional Landscape Plan (2017) • Coordination Territorial Plan of the Province of Torino (2011) • Management Plans of the Natura 2000 sites	• Land use and urban plan *(Piani Regolatori Generali Comunali)* • Green urban areas Plan or Regulation *(Piano o Regolamento del Verde urbano)* • Rural land Regulation
Informal instruments	Project: The ecological network planning within the Ivrea Morainic Amphitheatre through a participative process that involved the local municipalities (Measure 3.2.3 of the Rural Development Plan 2007-2013) • Towards a system of territorial governance of the Ivrea Morainic Amphitheatre (Territorial strategy) • Eau Concert Project 1 and 2 (Interreg Alcotra Program): restore and protect transboundary aquatic ecosystems and enhance the ecosystem services provided within the Dora Baltea hydrographic basin	• Ecomuseo del Paesaggio: PanorAMI project - system of landscape descriptive tables

Figure 70 presents the regional, provincial and urban planning system of MCTo.

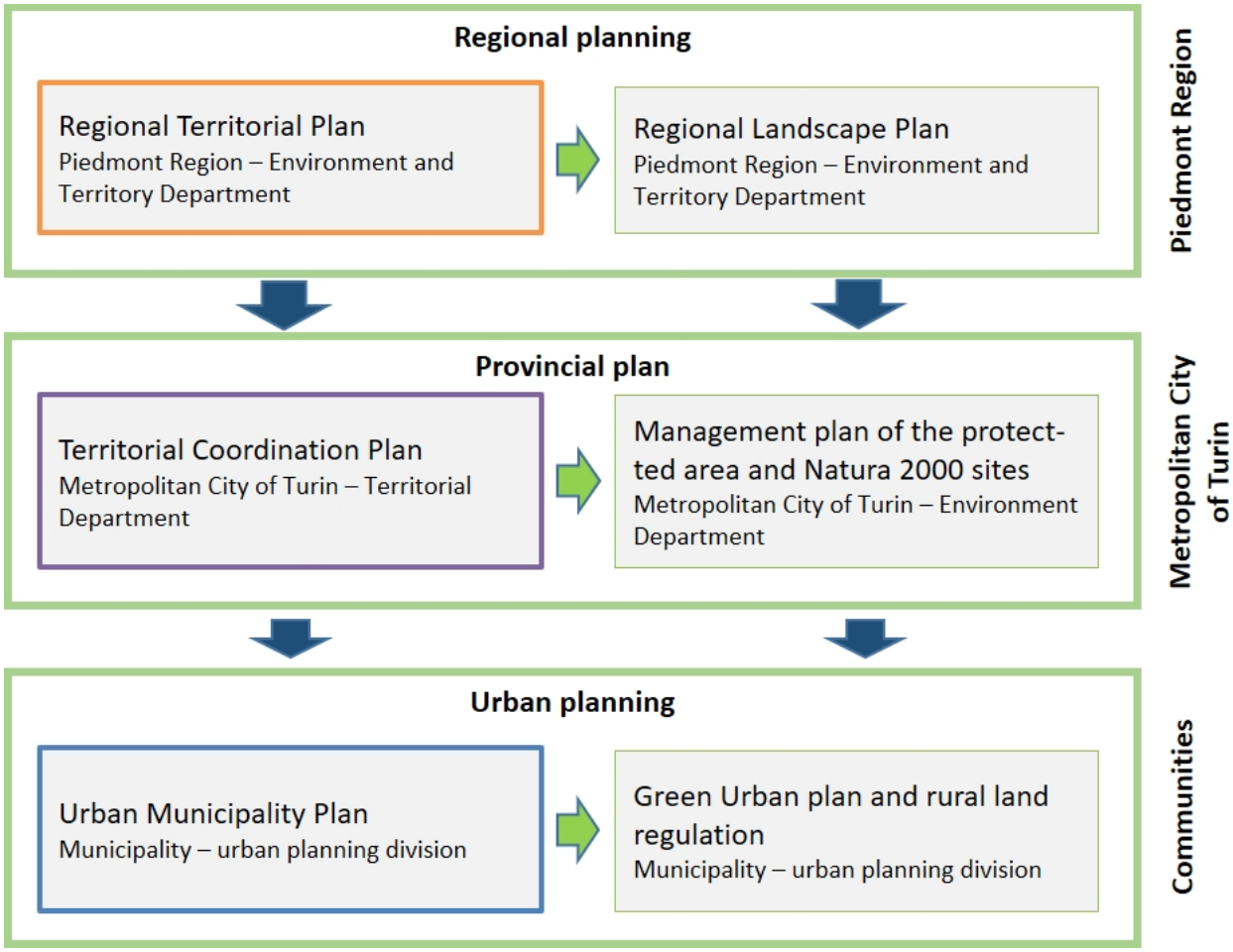


Figure 70: Spatial and landscape planning instruments with integration of GI topics within the Italian planning system

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

The protection, enhancement and growth of GI elements can be achieved through their inclusion and regulation within all levels of spatial planning. However, the implementation of concrete actions such as restoring interrupted ecological connectivity (e.g. edges and rows) or realizing environmental recovery of degraded areas, as well as promoting educational and dissemination activities in order to increase awareness in the population of benefits provided by GI needs funding.

In particular, MCTo´s main funding source for a better maintenance of GI are the ones coming from the European Regional Development Fund (ERDF) through activities carried out via project implementations. Another important source of funding are the resources of the Rural Development Plan.

Pursuant to the national law 141/2019 (National Climate Decree) funding is foreseen to finance reforestation projects within the metropolitan cities territory as well to encourage safety, soil maintenance and reforestation interventions implemented by agricultural and forestry companies.

Mosaico Verde, a national campaign promoted by AzzeroCO2 and Legambiente (environmental associations) funds projects of re-forestation or sustainable management of existing forests involving Public Bodies and Companies.

4.9.4 Targeted approaches for the LUIGI project

- To raise awareness of benefits provided by green and blue infrastructures elements;
- To evaluate ecosystem services provided by GI under biophysical and economic terms;
- To introduce a payment for the land owners that manage their lands in order to preserve and increase the provision of ecosystem services;
- To protect the GI elements and increase their presence, also in order to increase and ameliorate the ecological connectivity;
- To promote a more “sustainable” way to enjoy the natural areas by citizens and tourists;
- To establish a better relationship and exchange between rural and urban areas;
- To make natural and rural places more attractive for young generation and improve environmental education about the role and importance of GI.

4.9.5 Factsheet: Local ecological network Ivrea Morainic Amphitheatre (IMA), Italy

The Local Ecological Network project in the Ivrea Morainic Amphitheatre (IMA)

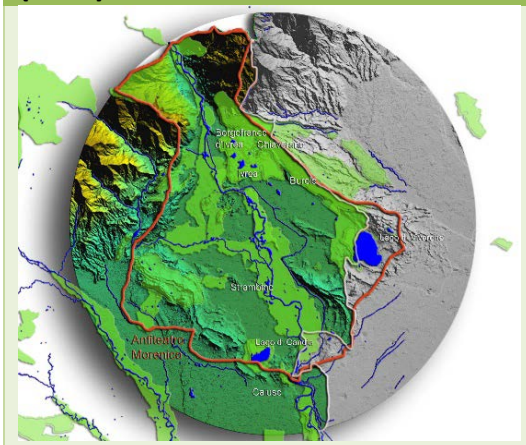


Figure 71: Morphology map about the Ivrea Morainic Amphitheatre

Photto credit: (MCTo – Natural System Department)

Figure 72: View on the Ivrea Morainic Amphitheatre

Photo credit: (MCTo photo archive)

Country: Italy **NUTS region**: ITC11	**Size:** 505 km^2 **Coordinator**: MCTo – Natural System Department
Current challenges	• To enhance protection of ecosystem services and ameliorate ecological connectivity; • To increase awareness of the society about the value and benefits that landscapes and environment provide;
Implementation activities	The idea is to implement a model for the payment for the ecosystem services provision to the land owners that adopt a sustainable management and improvement of the more important GI elements **KPI (key performance indicator) ideas:** Evaluation of ecosystem services within the area, both in biophysical and economic terms

The case study contributes to LUIGI because:

☐ "We expect to find solutions to current challenges"

☒ "It already serves as an innovative good practice example offering pathways for solutions in other areas"

☐ "It will create, attract investment/create new business or markets"

☐ Other

Region:

☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Wetlands

History/idea behind

Morainic slopes rounded by ridges, covered by forest surround a wide intramorenic agricultural plain crossed by the Dora Baltea river: this is the landscape of the Ivrea Morainic Amphitheatre (IMA). Located next to the alpine massif of Valle d'Aosta (NW Italy), IMA represents one of the most relevant sites of glacier origins in Europe. It extends over an area of ca. 530 km² generated by the erosion and accumulation action of the Balteo glacier.

The historical settlement system of the area gravitates on the city of Ivrea, along the Dora river. The settlement system can be distinguished in a series of traditional and new villages along the historical road network.

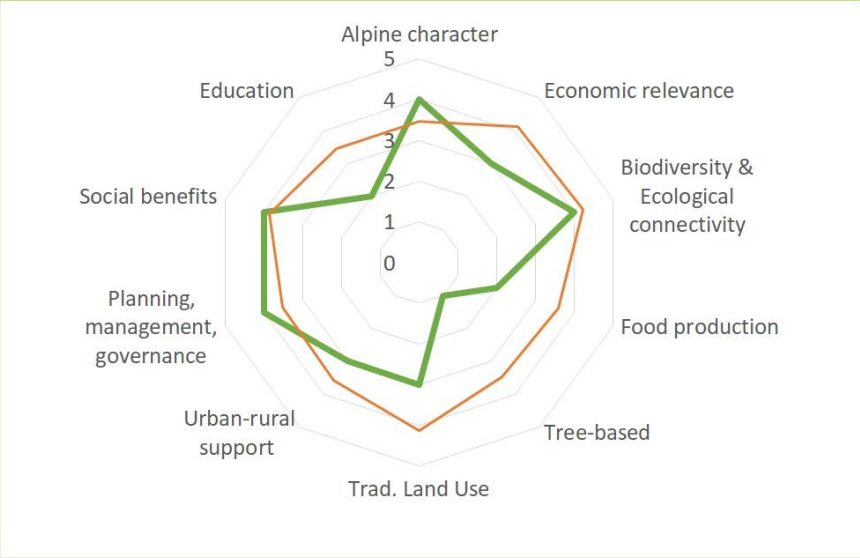
The original landscape structure has been largely modified by consistent phenomena of industrialization and infrastructure. The whole flat area preserves traces of a complex agricultural production system, linked to a network of irrigation canals while areas placed in a higher position, along the Serra morenic hill, have been cultivated for centuries to orchards and vineyards, giving the IMA a unique landscape character.

The cooperation of park authorities and local stakeholders (associations, citizens, etc.) in a participatory planning activity led to the identification and implementation of the local ecological network in order to save the connection between existing core areas: Dora Baltea river and sites of the Natura 2000 network.

From the ecological point of view, the most critical issues are related to the actual situation of the ecological network, characterized by protected areas of naturalistic interest, forests of great value, streams and watercourses and woody formations with weak interconnection to each other. Highways, roads and railway axes constitute the main insuperable limit for the fauna and cause a high fragmentation of the flat territory. Another issue is the burying of ponds and marshes leading to a decrease of the naturalistic interest of the area.

Furthermore, the low eco-compatibility of agricultural activities such as spreading of sewage, over usage of pesticides occure high environmental damages of the soil quality. The increasing soil consumption for the construction of new roads, residential and commercial buildings erase the traditional agricultural landscape.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
0 (no contribution)
1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity
As recreational highlights, this area attracts visitors from urban areas (City of Ivrea and its sourrounding). With its system of cycle-pedestrian paths, it represents the gateway to several itineraries of cultural and historical interest. However, a development of the connection between cycling and pedestrian paths should be provided to establish the basic infrastructure for a more sustainble and soft tourism.

Ecological connectivity
Once, the area has been one of the main corridors in Piedmont connecting the Po river with the Alps. Unfortunately, the linear physical ecological connection between urban and rural areas as well within rural land is mostly missing because of the high level of fragmentation. It should be recovered where possible by creating e.g. alleys or hedges and rows connecting the main natural core areas. This would lead to an increasing ecological value of the site.

Social cohesion
The presence of forests and morainic lakes, as well as the aesthetic landscapes makes this territory very attractive for health recreation. The rarity from a geological point of view makes it interesting also from a scientific and educational point of view. In addition, joint awareness activities are planned in schools, universities

Economic benefit
Obviously, some little economic benefit can come from the promotion of touristic developments. However, the main objective should be the introduction of a system for the „payment for ecosystem services"as a contribution to the landowners and farmers that manage the territory in a sustainble way that would

and with economic operators on the pollution risks of Chéran. However, social cohesion of inhabitants should be increased by organising local trips within the most value landscape and natural area, but also involving schools in educational visits to different habitats and natural ecosystems.	contribute to preserve and increase benefits deriving from ecosystem services.
Involved stakeholders	☒Local public authority: Municipalitties of Ivrea, Chiaverano, Borgifranco d'Pivrea, Montalto Dora, Cascinette di Ivrea ☒Regional public authority: Piedmont Region ☐Cantonal public authority: ☐National public authority: ☒Non-government organisations & Associations:Ecomuseo dell'anfiteatro morenico di Ivrea, Osservatorio del paesaggio dell'AMI ☐Community groups: ☐Business partners / SME: ☒Education and research on GI: ARPA, ENEA, Politecnico di Torino- DIST; Università di Torino – DISAFA, local Educational Institutes ☒The public/inhabitants/visitors
Funding programmes being used	• Rural Development Plan • FESR – Alcotra Programme • ERDF
Relevant projects	**Project name:** Project: The ecological network planning within the morenic amphiteater of Ivrea trought a participative process that involved the local municipalities (Measure 3.2.3 of the Rural development Plan 2007-2013; Eau Concert phase 1 and phase 2 (Interreg Alcotra program) – Concertation and actions for the enhancement of river ecosystems
Links / Homepages / Literature	The experimental activity of participatory elaboration of the provincial ecological network, Eau Concert 2, Gottero (2018), Minciardi et al. (2019), Salata et al. (2017)

4.10 Goriška Region, Slovenia

4.10.1 Characterisation

The Goriška region extends over the western part of Slovenia with the territory of 2,325 km^2 and 117,616 inhabitants (Figure 73). It is situated at the geographical crossroads of several regions: the Alpine, pre-Alpine, Karst-Dinaric and sub-Mediterranean. The region is composed of 13 municipalities, which are organised in four sub-regions: the Upper Soča Valley (Posočje), the territory of Idrijsko and Cerkljansko, the sub-region of Nova Gorica and the Upper Vipava Valley.

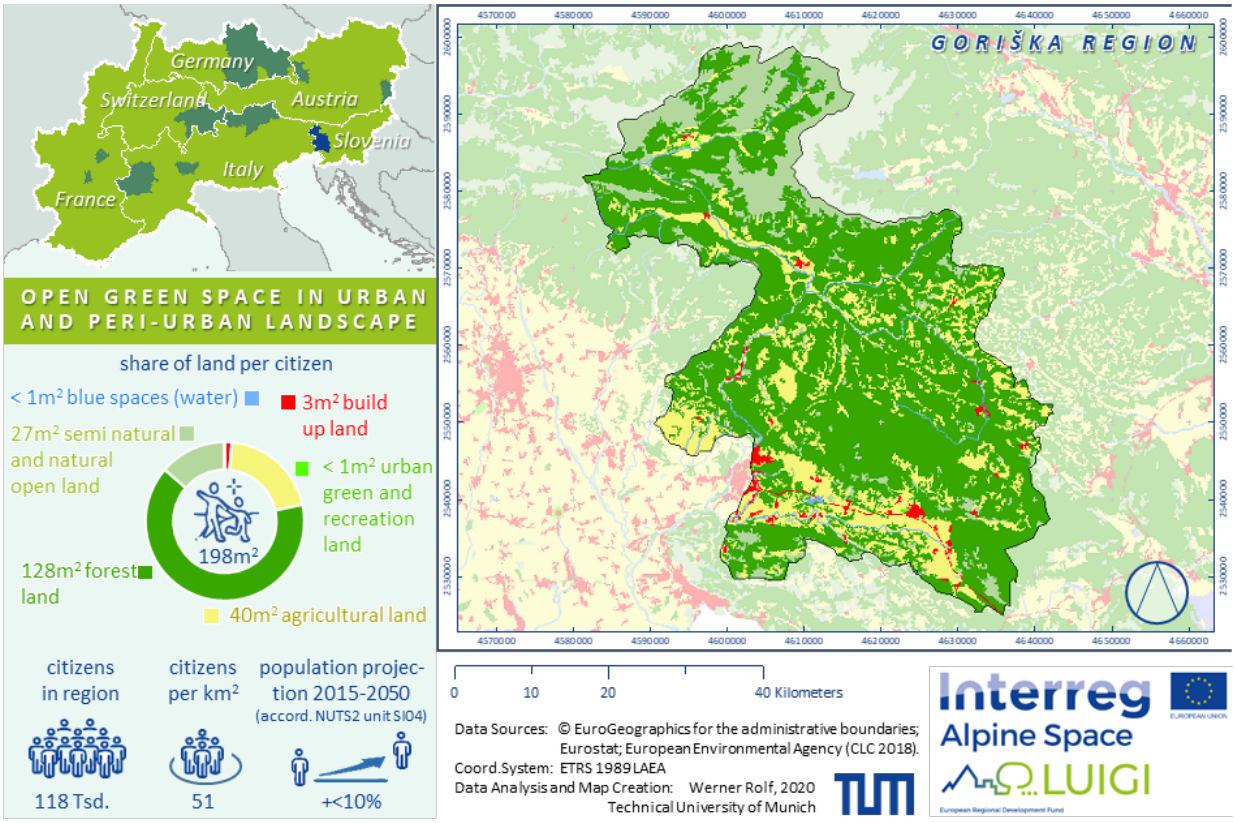


Figure 73: Characterisation and map overview of the pilot region Goriška Region

The Goriška region comprises the high mountains and hills of the Soča river basin. In the north are the Julian Alps around the deeply incised upper Soča Valley. The middle part comprises the rugged Idrija Mountains in the Idrijca river basin (the highest peak is Porezen, 1,630 m) extending southwards into the forested Trnovski gozd karst plateau at an altitude of 1,000-1,300 m and into the slightly lower Banjšice plateau. On their southern side, the plateaus fall away, in an escarpment over 1,000 m in height, into the fertile Vipava Valley along the Vipava river, the Gorica Plain along the Soča and the Goriška Brda hills along the Italian border.

Figure 74: Overview on the Idrija-Cerkno region

(Photo credit: ICRA)

Figure 75: Orchard meadow in Idrija-Cerkno region

(Photo credit: ICRA)

In the mountainous parts of the region, the majority of settlements and agricultural land is located in the narrow river valleys, with areas outside the valleys being sparsely settled due to the mountainous terrain. In contrast to the region's mountainous part, the south is densely settled. The population density in the region was 50.6 inhabitants per km^2, which ranks it among the regions with the lowest population density (SURS, 2019), (Table 30).

Table 30: Facts and figures on the pilot region Goriška region

Country	Slovenia (SI)
Administration (number of districts/municipalities)	13 municipalities
Area (km^2)	2,325
Inhabitants	117,616
Pilot coordinator (institution)	ICRA
Population change	-0,83 % (2008-2019)
Alpine Green Infrastructure in focus	orchard meadows

4.10.2 Situation of the Green Infrastructure in the Goriška Region

Orchard meadows are one of the most widespread agricultural land uses in Slovenia that gives a unique mark to our landscape. Orchard meadows in Slovenia are defined as extensive plantations of tall-trunk fruit trees, with the minimum tree density of 50 trees per ha and the largest one not exceeding 200 trees per ha. Additional to the fruit production, fruit-tree meadow orchards provide many other forms of services and are becoming an indispensable part of modern agricultural landscape. One of the most important measures for maintaining fruit-tree meadow orchards are grazing by livestock and mowing. Today, land use changes and lack of interest for their maintenance are the two main reasons threatening the existence of meadow orchard.

4.10.3 Governance and planning aspects

Forms of GI governance and relevant institutions responsible

The competences in the area of spatial planning in the Republic of Slovenia are divided between the State and the municipalities. The State is competent to: (1) determine the objectives of spatial development; (2) determine the policies and guidelines for spatial planning at all levels; (3) plan spatial arrangements of national significance; (4) supervise the legality of spatial planning at the municipal level. Municipalities are competent to: (1) determine the objectives and guidelines for spatial development at local level; (2) determine the land use and set the conditions for placing of spatial development; (3) plan spatial arrangements of local importance. Until today no regional planning level was established. Between national and local level there is no other formal structure in Slovenia (regional, provincial level).

Table 31: Collection of relevant institutions as important stakeholders in the Goriška Region

Type	Name of institution	Level
Government & administration	Ministry of the Environment and Spatial Planning, Spatial Planning Directorate	national
Government & administration	Ministry of Agriculture, Forestry and Food	national
Association	Fruit Growers Associations (Cerkno Idrija fruit Growers Association)	local
Nature Conservation	Institute of the Republic of Slovenia for Nature Conservation	national
Research	University of Nova Gorica	regional

Formal and informal instruments

Available tools and strategies, influencing the GI management on national, regional and local level are summarized in Table 32 and classified in formal and informal instruments.

Table 32: Instruments and tools of GI governance in the Goriška Region

	National and regional level	Local level
Formal instruments	• Spatial Development Strategy of Slovenia +Action Programme *(Strategija prostorskega razvoja slovenije & Akcijski program)* • Spatial Planning Act *(Zakon o urejanju prostora)* • Spatial Order of Slovenia *(Prostorski red Slovenije)* • Nature Conservation Act *(Zakon o ohranjanju narave)* • Environmental Protection Act *(Zakon o varstvu okolja)* • Waters act *(Zakon o vodah)* • Act on Forests *(Zakon o gozdovih)* • Agricultural Land Act *(Zakon o kmetijskih zemljiščih)* • Decree on special protection areas (Natura 2000) • Triglav National Park Act *(Zakon o Triglavskem narodnem parku)*	• Municipal Spatial Plan *(Občinski prostorski načrt)* • Municipal Detailed Spatial Plan *(Občinski podrobni prostorski načrt)* • Landscape park Southern Slopes of the Trnovo Forest • Upper Idrijca River Landscape Park

Informal instruments	• Concept of the Landscape Policy of Slovenia *(Koncept Krajinske politike Slovenije)* • Outstanding Landscapes of Slovenia *(Izjemne krajine Slovenije)*	

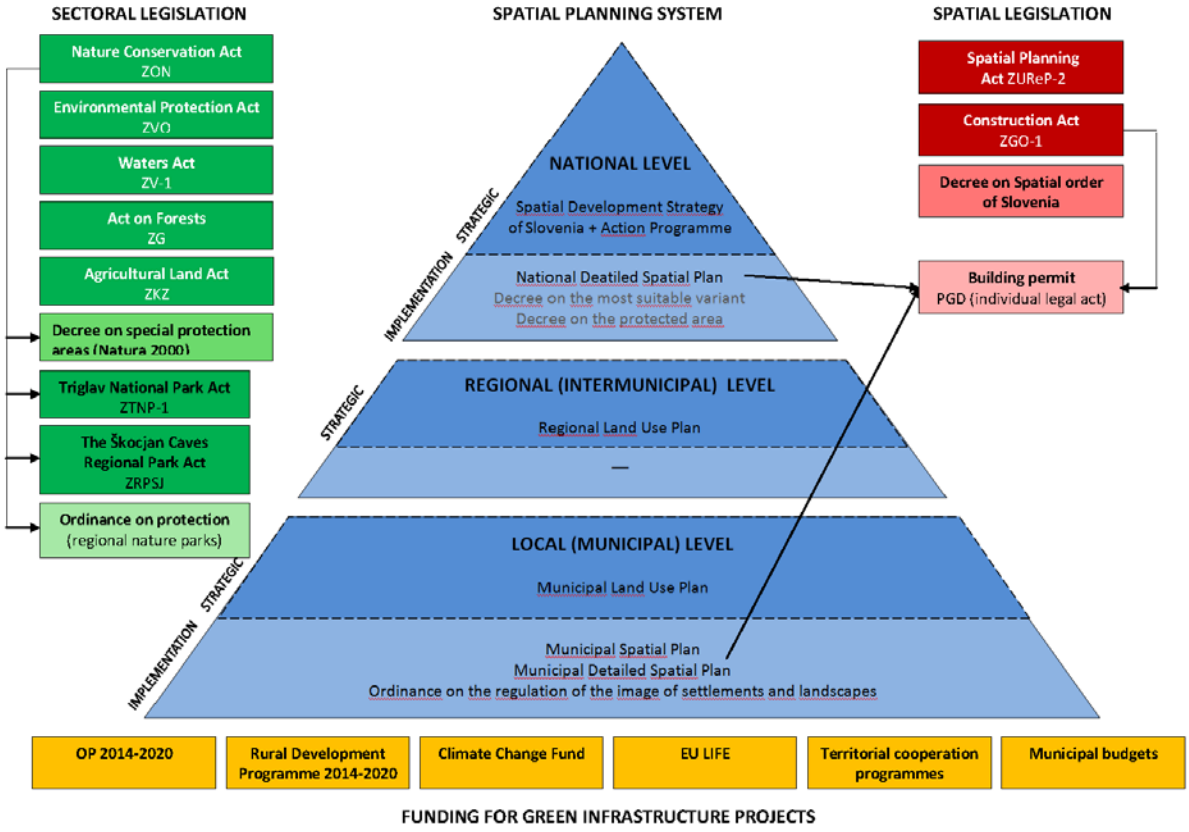


Figure 76: Slovenia planning diagram (RRA LUR, 2021)

Funding programmes that promote the creation/maintenance/marketing/education etc. of the selected GI

1. Rural Development Programme 2014-2020. Measures included under Slovenian RDP are:

- Measure 1 – Knowledge transfer and information actions;
- Measure 2 – Advisory services, farm management and farm relief services;
- Measure 3 – Quality schemes for agricultural products and foodstuffs;
- Measure 4 – Investments in physical assets;
- Measure 6 – Farm and business development;
- Measure 7 – Basic services and village renewal in rural areas;
- Measure 8 – Investments in forest area development and improvement of the viability of forests;

- Measure 9 – Setting-up of producer groups and organisations;
- Measure 10 – Agri-environment-climate payments;
- Measure 11 – Organic farming;
- Measure 13 – Payments to areas facing natural or other specific constraints;
- Measure 14 – Animal welfare;
- Measure 16 – Cooperation;
- Measure 19 – Support for LEADER local development (CLLD – community-led local development).

2. The LIFE programme. Funds for nature conservation and biodiversity, environment and resource efficiency, environmental governance and information.
3. Territorial cooperation programmes: Interreg V-A, Alpine Space Programme.

4.10.4 Targeted approaches for the LUIGI project

- To raise awareness on importance of meadow orchards as GI elements;
- To identify future oriented solutions for maintenance and expansion of meadow orchards;
- To encourage orchard owners to develop business models for orchard products. Development of innovative product ideas and marketing strategies;
- To preserve and revive orchard meadows with importance for preserving the typical appearance of the landscape;
- To exchange knowledge and to learn from other Alpine countries.

4.10.5 Factsheet: Goriška Idrija-Cerkno region, Slovenia

Goriška Idrija-Cerkno region

Figure 77: Orchard meadows in Idrija
Photo credit: (ICRA)

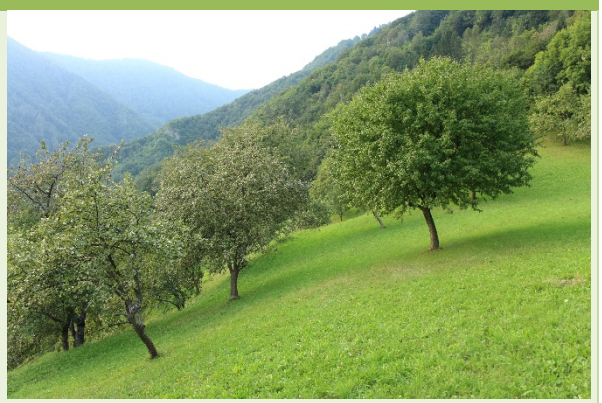


Figure 78: Orchard meadows in Cerkno
Photo credit: (ICRA)

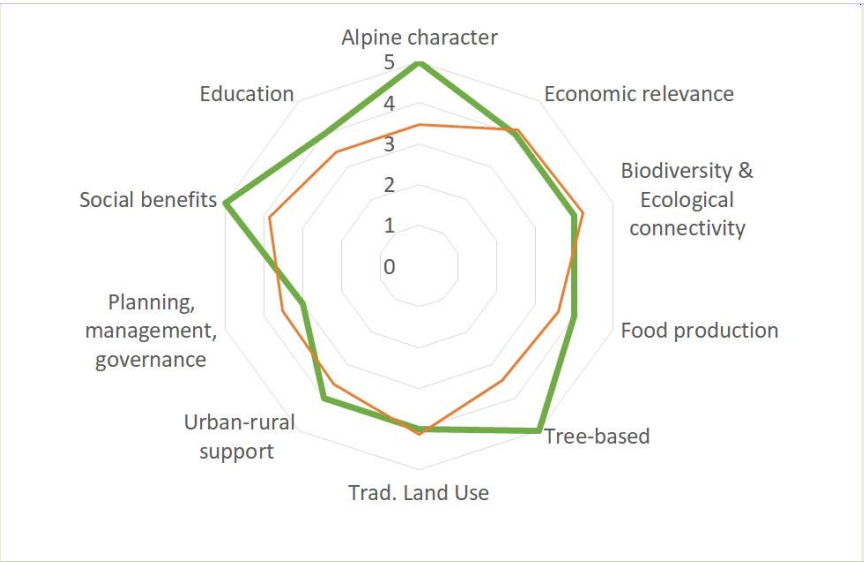
Country: Slovenia **NUTS-region**: SI043 Goriška, LAU2: 036 Idrija, 014 Cerkno	**Size:** 425 km² **Coordinator**: Development Agency of Idrija and Cerkno (ICRA)
Current challenges	• to raise the awareness about the orchard meadows • to maintenance of orchards • to inspire farmers to revive orchards • to increase interest in ES of orchard meadows
Implementation activities	**Ideas** • lectures and trainings for orchard owners and potential orchard owners • educational program for schools • organisation of events/ workshops to promote local food and raising awareness on ES of orchard meadows

The case study contributes to LUIGI because:
☒ "We expect to find solutions to current challenges"
☐ "It already serves as an innovative good practice example offering pathways for solutions in other areas"
☐ "It will create, attract investment/create new business or markets"
☐ Other
Region:
☐ City/Urban ☒ Peri-Urban ☒ Rural

Targeted key-alpine GI: Orchard meadows

History/idea behind
Orchard meadows are one of the most widespread traditional land uses in Slovenia that gives a unique mark to our landscape. Besides fruit production, orchard meadows provide many other forms of services and are becoming an indispensable part of modern agricultural landscape. One of the most important measures for maintaining orchard meadows are grazing by livestock and mowing. Today, land use changes and lack of interest for their maintenance are two main reasons threatening the existence of orchard meadows.
In Idrija-Cerkno region, because of rugged terrain and unfavourable soil composition, agriculture cannot develop, therefore the main activity on farms is livestock, and fruit growing represents only a supplementary activity. Due to the Mediterranean influence and quite favourable soil characteristics and economic conditions, fruit growing could represent a higher proportion of agricultural production.

Contribution of the case study area to the must-have and nice-to-have criteria:



Legend
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1 (very low contribution)
2 (low contribution)
3 (middle contribution)
4 (high contribution)
5 (very high contribution)

Scoring of the individual Case study
Average scoring value for all LUIGI Case studies

Urban-rural connectivity Orchard meadows are part of the traditional rural cultural landscape and as such one of the most important building blocks of the identity of the Slovenian countryside. They have a great experiential and aesthetic role, which is an important motive and potential for a variety of recreational activities and tourist activities.	**Ecological connectivity** Meadow orchards are a good example of nature-friendly or sustainable farming.
Social cohesion Autumn market Event in Idrija (once in the year, in October): a good opportunity to connect growers/ farmers and consumers. Suggested activities for this event on the topic of meadow orchards (in 2021): • exhibition of different apple varieties • promotion of local fruit growers • exhibition and tasting of different local products (using local meadow orchard products): dried fruit, juice, vinegar, pastries, … • practical demonstrations of, for example, apple pressing • food preparation workshop (cooking course) • networking with educational institutions (school)	**Economic benefit** Opportunity to expand market for local products.
Involved stakeholders	☒ Local public authority: Municipality of Idrija, Municipality of Cerkno. ☐ Regional public authority: ☐ Cantonal public authority: ☒ National public authority: Institute of the Republic Slovenia for Nature Conservation, Ministry of Agriculture, Forestry and Food Republic of Slovenia ☒ Non-government organisations & Associations: Cerkno Idrija Fruit Growers Association ☐ Community groups: ☐ Business partners / SME: ☒ Education and research on GI: Agricultural Institute of Slovenia

	☒ The public/inhabitants/visitors:
Funding programmes being used	Rural Development Programme of the Republic of Slovenia for the period 2014-2020, European Regional Development Fund
Relevant projects	**Project name** Dobimo se na tržnici, Formica, Odprta vrata kmetij,
Links / Homepages / Literature	Ferreira et al. (2012), Statistical Office of the Republic of Slovenia (2020)

5 Summary

A number of valuable insights can be drawn from this first analysis. The following summary gives an overview of the most important ones to determine the upcoming strategies for further evaluation and the upcoming in-depth analysis.

5.1 Relevant stakeholder groups

A first glance on stakeholder groups with responsibility for GI is visible from the information within the case study area analysis (17 Factsheets) provided in Figure 79.

In all regions**, local public authorities** are dealing with the issue of GI (100 %), more than **regional public authorities** (71 %), and therefore clearly more than any **national authorities** (6 %). In fact, national public authorities only play an important role in Slovenia. A different situation is found in Switzerland, were the **cantonal public authorities** have a responsibility concerning GI in all three case study areas in the canton of Grisons.

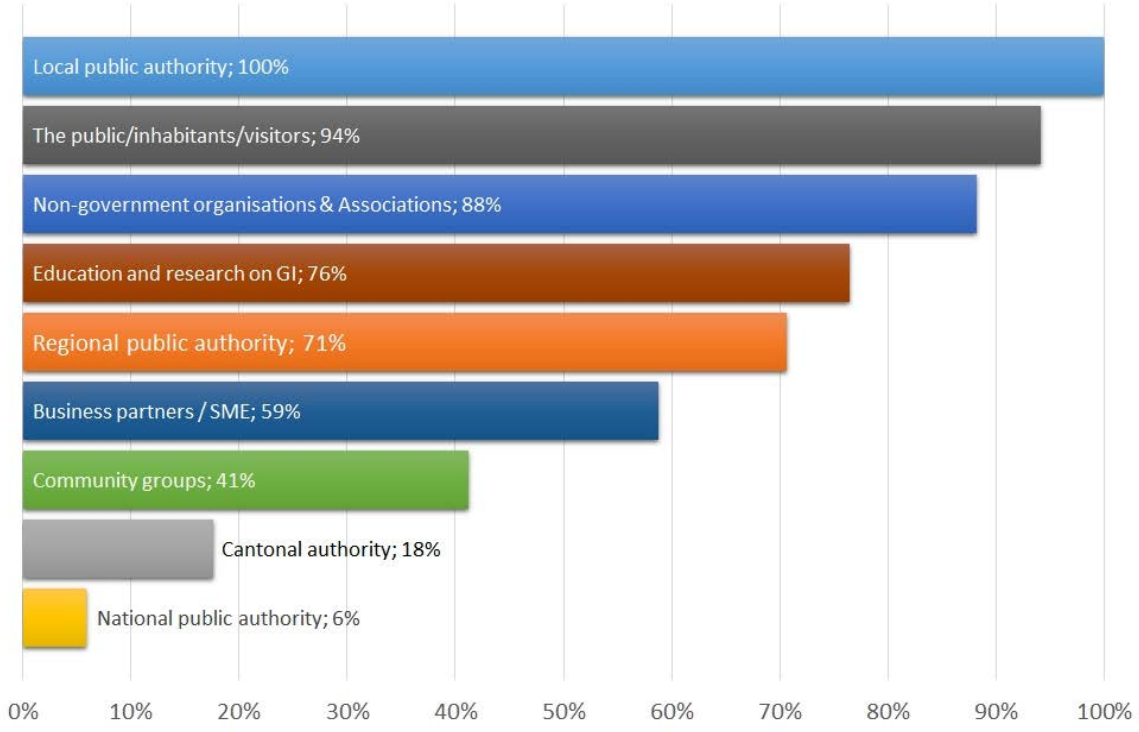

Figure 79: Overview on relevant stakeholder groups

Besides the classical government actors, also grass root initiatives and the public are taking action in GI governance. **Local inhabitants and the visitors** were mentioned in almost all case study region (94 %) together with **non-governmental organisations and association** (88 %).

Community groups were mentioned in almost half of the regions (41 %). Of greater importance is the role of **education and research** (76 %), somewhat lesser involved in the governance of GI seem **business partners and SMEs** (59 %).

With respect to the four ideal-typical governance arrangements by Frahm and Martin (2009) introduced in Chapter 2.2.2 it is yet too early to fix the case studies to one or another. However, this status analysis already shows, that there seem to exist a number of constellations and mixed systems of governance frameworks. This will be undertaken in the in depth analysis.

5.2 Differences in planning families and territorial government systems

The pilot regions can be assigned to different planning families, (based on Nadin and Stead, 2008) and the territorial government system in the pilot regions, (based on Tosics, 2013). Accordingly, six LUIGI pilot regions can be considered to follow a "Central" planning typology where the management of regional economy is primarily guided through public interventions into infrastructure and development. Three pilot regions follow the "Urbanism" with a high relevancy of structural planning, urban design through rigid building regulations, zoning and codes. Slovenia being a post-socialist country is still categorized as in the process of change.

Table 33: Overview on typology of planning families and the territorial government system in the Alpine countries being analysed

Partner		Pilot region	Typology of planning families	Typology of the territorial government system
AT	SIR	Central area of Salzburg	**Central** → Regional economic planning: management of regional economy by public interventions into the infrastructure and development	Federal states
AT	RMB	South-Burgenland		
CH	PTE	Canton of Grisons		
DE	HSWT	Metropolitan Region of Munich		
FR	ALPARC	Parc Naturel Régional du Massif des Bauges		Decentralised unitary with strong local and regional level
FR	GAM	Metropolitan Region of Grenoble		
IT	MCM	Metropolitan City of Milan	**Urbanism** → structural planning, urban design through rigid building regulations, zoning and codes	Regionalized unitary
IT	EURAC	South-Tyrol		
IT	CityMetroTO	Metropolitan City of Turin		
SI	AIS	Goriška region	**Post-socialist** → in the process of change	Centralised unitary with strong, integrated local authority level

5.3 Representativity and multifunctionality of identified case studies

The identified case study areas within the pilot regions can be considered as representative regarding their ecological, social and economic relevance, according to the defined selection criteria. In order to select suitable case studies, it was necessary to distinguish in so-called "must have"-criteria – marked with an asterix in Figure 80 – and other "nice-to-have"-criteria. The spider graph visualizes how far the individual case studies fulfil the necessary and optional functions and values contribution to multifunctionality of inner-alpine GI.

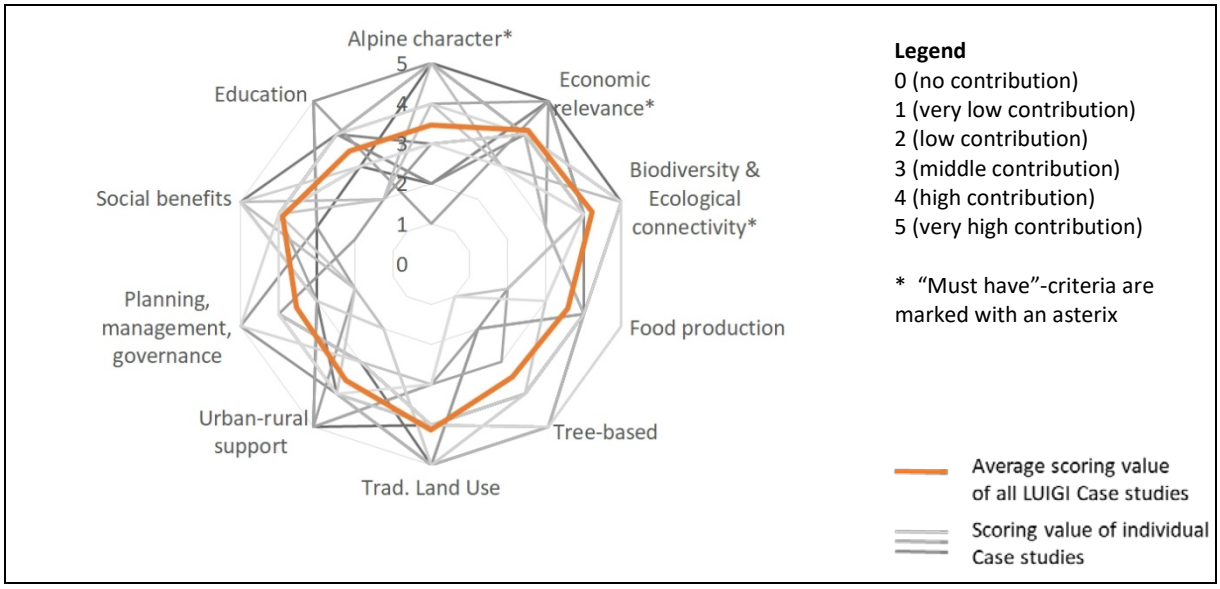

Figure 80: Summary of contributions of the listed LUIGI case study areas to the criteria of multi-functionality of inner-Alpine GI

Across all case studies (Figure 80), most frequent occurrences were achieved in the **presence of GI supporting biodiversity and ecological connectivity*** (score 4.2), **economic relevance: market potential** of products & services and/or ability to mobilize financial resources* (score 4.1), existing **traditional land use forms** with cultural landscape elements (score 4.1), and lastly, creating **social benefits** for the **pilot region** and its inhabitants (e.g. welfare, well-being, health, recreation etc.) & activating **civic engagement** (score 3.9).

A somewhat lesser involvement with the topics, existing sustainable practices in **food production** and GI supporting connection of **urban-rural areas** (both of them scored by 3.6) became evident.

Four topics received a somewhat lower ranking but rare still important; **characteristic for pre- and inner Alpine landscape***, existing "**tree-based**" systems; innovative **planning, management, governance** solutions and communication strategies on GI, and existing **educational practices** on GI (all score 3.5).

To sum up, the selection criteria play an important role to various degree, looking at the average ranking score. Some received a significant lower ranking in some case study regions, e.g. "Alpine character" due to their location rather distant to the Alps, insofar relevant for the selection procedure, as this was determined a "must-have"-criteria. Another criteria, i.e. the relevancy of trees as GI element, was also partly ranked low, a result derived from the broader spectrum of targeted key Alpine GI in the respective case studies (see also Table 2). On the contrary, some categories received a higher ranking in individual case studies, e.g. for the role of the economics, being especially relevant in the metropolitan areas.

5.4 Challenges for key Alpine Green infrastructure

From the information provided by the pilot coordinators, summarized in Table 2 in chapter 3.4, we conclude that **orchard meadows** can be considered as key alpine GI in 7 out of 9 LUIGI pilot regions, elaborated in contributions from 17 selected case study areas. As respective challenges seem to overlap, data was clustered into 14 categories. The results have been summarised according to the number of their occurrences as distinct argument in Figure 81.

Figure 81: Tree map visualising the relevance of challenges based on the number of case studies

The synthesis refers to the key Alpine GI orchard meadows, being in target for the majority of the LUIGI project consortium. Some of the arguments have a special relevancy to governance that will be analysed in the next step and are therefore marked in bold in the text.

The highest rankings received "**lack of awareness and non-valuation"** (17 occurrences), followed by "lack of care and maintenance for trees" (11), "felling of fruit orchards and abandonment" (10) and "**incompatibility with "modern" consumers' preferences"** (10). In the medium range, PP mentioned, "**economically not interesting enough for farmers"** (7), **"loss of cultural and landscape values"** (7), "**settlement pressure"** (6). Less frequent mentions contained "diseases, rodents, Mistletoe infestation" (4), incompatibility with "modern" fruit production (4), over ageing of trees / wrong or no replanting (4), "**land share vs. land spare conflict"** (4), "**inter-sectoral and interagency conflicts of interests"** (3), "loss of biodiversity and ecological connectivity" (3). Few mentions – albeit somewhat specific topics that might not be on everybody's mind first hand, were "loss of genetic diversity" (2), "no suitable use of fruits" (2) and "climate change effects" (1).

The main lines of arguments behind the numbers and specifically relevant to governance are represented through the following statements:

1) **Economically not interesting enough for farmers**

- Maintenance and care not sufficiently supported;
- Income alternatives more attractive;
- Farming /outside farm job occupies time;
- High prices for land triggers intensification;

2) **Incompatibility with "modern" consumers' preferences**

- No mainstream fruit product – "rather expensive";
- Old varieties not recognised by trade – little marketing;
- Little recognition for Protected Geographical Indication (PGI);

3) **Inter-sectoral and interagency conflicts of interests**

- Complex planning and management framework;
- Contrasting interests, lacking dialogue and coordination;
- Lack of a strategic and proactive visions;

4) **Lack of awareness and non-valuation**

- Lack of awareness on ecological functions and ecosystem services;
- Little awareness on the "value";

5) **Land share vs. land spare conflict**

- Societal pressure and NGO activities collide with farmers' self-perception – may trigger protest actions;
- Leisure activities vs. protection of biotopes;
- Entrepreneurs and farmers are crowded out by strict rules;

6) **Loss of cultural and landscape values**

- Typical element of the rural cultural landscape is in danger of disappearing;
- Varieties are unknown – danger to disappear even before they are recognized;

7) **Settlement pressure**

- Communities aspire the surrounding land for development;
- Collision with large infrastructure developments;
- Land consumption does not halt for GI.

5.5 Solution pathways identified

Finally, PPs where asked to mention concepts and ideas to successfully address GI governance and the results are presented in Figure 82. These "Ideas" for possible solution pathways form the base for further exploration in the next WPs.

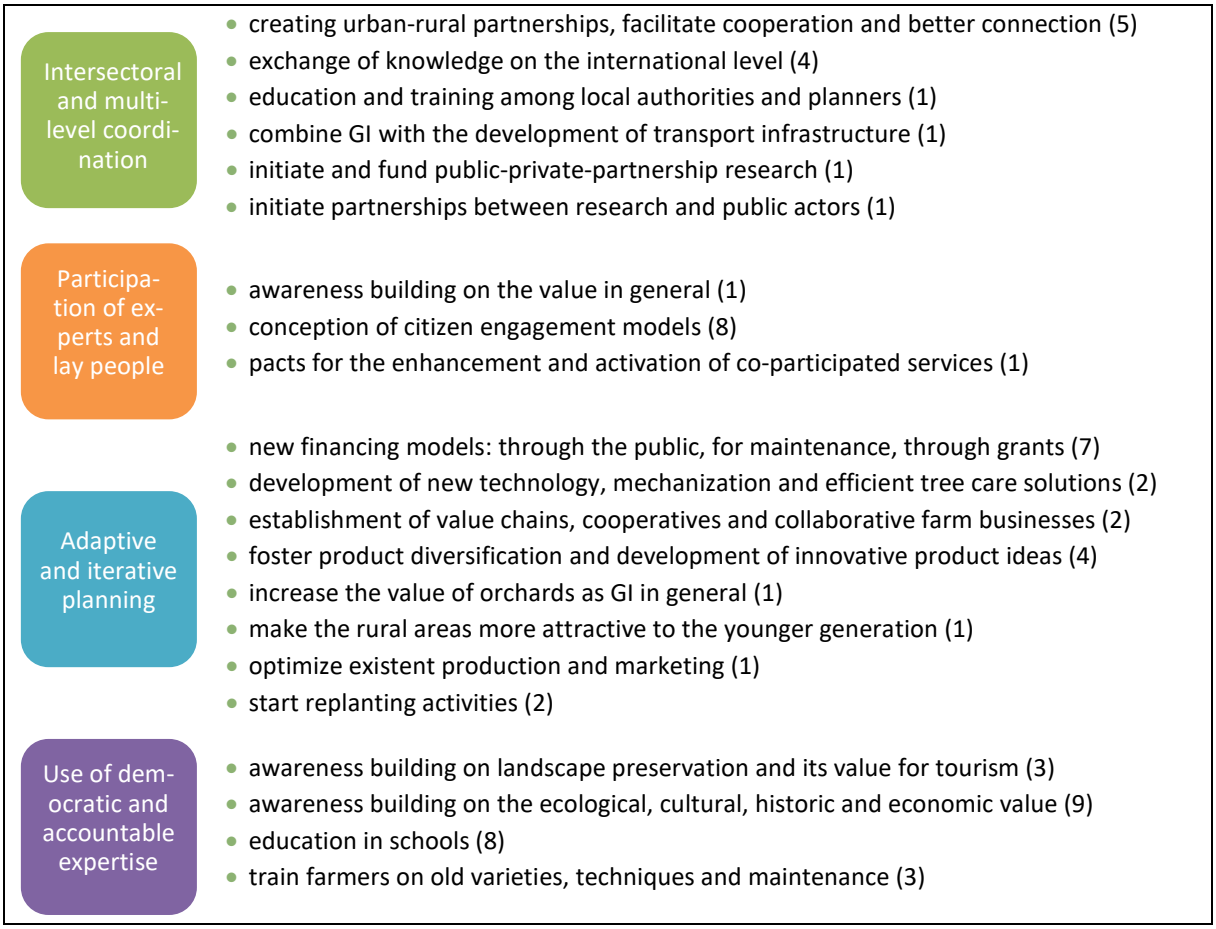

Figure 82: Summary of clustered ideas to enhance GI governance with number of mentions in brackets

6 Outlook

In the next phase, as part of the task 3.2 an in-depth analysis will build upon these first results. It will be conducted in different case studies involving stakeholders. The in-depth analysis aims to identify success and hindering factors within the governance mechanisms in order to address the identified challenges and innovative governance arrangements to overcome them.

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Photo sources & copyright

Annex

6.1 A – Glossary

This glossary summarizes the terms that are commonly agreed on within WP3 of the LUIGI project.

Pilot regions: Selected territories of PPs location at the regional level (e.g. Metropolitan region of Munich) in the pre- and inner Alpine Space that will be in the focus of the LUIGI project. Ten pilot regions have been defined in six Alpine countries.

Good practice (GP) area: Area on local/district level with already implemented good practice GI governance solutions based on the three "must have" criteria (see chapter 3.2.2.).

Good practice (GP) example: an existing project/approach that sets a very good or outstanding example for one or more of the 10 defined criteria, that can be used for reference or collaboration for the LUIGI implementation activities. By contrast with GP area, GP examples can be geographically outside of the border of the pilot regions as well as they can be locally, regionally, supra-regionally relevant.

Case study (**= implementation**) **area** on local/district level within the border of the pilot regions where LUIGI activities will be implemented and applied. PPs have listed 1-3 case study per pilot region, which have been documented in factsheets. The case study area can be either 1) the GP area itself, based on scoring of 10 criteria with the goal to "improve" or 2) another area on local/district level with the goal to "establish" new activities.

Implementation activities: Those activities within LUIGI work packages that will be carried out in the case studies (e.g. via stakeholder workshops, educational activities, stakeholder interviews etc.).

6.2 B – Guideline on the good practice areas

		Name of the good practice (GP) area
		Country
		General Information
1		City/urban/peri-urban/rural region
2		Name of the organisation involved in the GI management in the GP area
3		Link / **website** of the organisation
4	**a**	**Contact person** (name)
	b	**Contact details** of the person (email)
	c	**Designation** of the contact person
	d	Stated intent of collaboration (yes/no/not yet contacted)
5		**Data** sources & **statistics** for the GP area
6		**Publications** about the GP area (if any) specifically to the selected key-Alpine GI
		Idea, History/ Background
7		Please briefly describe the **idea, history** behind the GP area
		Geographical information of the <u>good practice area</u>
8	**a)**	Location:
		GP-area: name of the NUTS1, NUTS2, NUTS3 and (if relevant) LAU2 region
<u>NOTE</u>		Please send to WP3 leader, the administrative border of the GP area either in form of:
		1. *.shp data
		or
		2. Naming of LAU2/NUTS3 code
		The data will be forwarded to WP1 Lead EURAC, who will be responsible for the mapping and visualization of the GP areas in ArcGIS
	b)	Size (~km2) of the GP area
		Targeted key Alpine GI and its relevance
9		Common name (in EN and native language) and description of **targeted key alpine Green Infrastructure** in the GP area

10		Please briefly describe the targeted **key alpine GI** and its **relevance** to the listed categories below:
	a	Please briefly explain how the key alpine GI makes the **urban and rural linkage** in the region
	b	Please briefly explain how the key alpine GI contributes to a **better ecological connectivity** of pre-and inner alpine GI
	c	Please briefly describe how the targeted key Alpine GI contributes to **positive social effects** (e.g. health, recreation, social cohesion, education etc.) in the GP area
	d	Please briefly describe how the targeted key Alpine GI contributes to **positive economic effects** (e.g. trade, green jobs, mobilization or attraction of financial resources/investment being private or public) in the GP area
		Linkage to the LUIGI Project
11		The good practice area contributes to LUIGI because:
	a	"We expect to **find solutions** to current challenges"
	b	"It already **serves as an innovative** good practice example offering pathways for solutions in other areas"
	c	"It **will create, attract investment**/create new business or markets"
	d	**Other** - please elaborate
12		Please mention if there are any **challenges** existing that have not yet been resolved, which could be potential undertakings for LUIGI during the implementation activities
13		Please briefly explain **existing solution pathways** to the above challenge (if any)
		Stakeholders / beneficiaries from the targeted key Alpine GI
14		Please select influencing stakeholders who are benefited and **directly involved** in the management and development of the key alpine GI:
	a	Local public authority
	b	Regional public authority
	c	Cantonal public authority (CH)
	d	National public authority
	e	Non-government organisations & Associations
	f	Community groups
	g	Business partners / SME
	h	Education and research on GI

	i	The public/inabitants/recreational visitors
	j	Other - please elaborate
15		Please mention other stakeholders that **indirectly benefit** from the key alpine GI, that are not directly involved in the management, maintenance and development of the GI (if any)
16		Which stakeholder should be **further involved** improving the management, maintenance, development and marketing of the key alpine GI?
		Contribution of the GP area to the must-have and nice-to-have criteria:
17		How do you evaluate the **current contribution** of the GP area to the selection criteria in the guideline (must-have and nice-to-have) Please rate the contribution on a scale of 1 to 5 where **1 = no contribution and 5 = high contribution**
	a	**Characteristic for pre- and inner Alpine landscape** *Reason / explanation for the score for "a"*
	b	**Economic relevance:** market potential of products & services and/or ability to mobilize financial resources *Reason / explanation for the score for "b"*
	c	**Presence of GI supporting biodiversity and ecological connectivity** *Reason / explanation for the score for "c"*
	d	Existing sustainable practices in **Food Production** *Reason / explanation for the score for "d"*
	e	Existing "**Tree**-based" systems *Reason / explanation for the score for "e"*
	f	Existing **traditional land use forms** with cultural landscape elements *Reason / explanation for the score for "f"*
	g	GI supporting connection of **urban-rural areas** *Reason / explanation for the score for "g"*
	h	Innovative **planning, management, governance** solutions and communication strategies on GI *Reason / explanation for the score for "h"*
	i	Creating **social benefits** for the **pilot region** and its inhabitants (e.g. welfare, well-being, health, recreation etc.) & activating **civic engagement**

	Reason / explanation for the score for "i"
j	Existing **educational practices** on GI
	Reason / explanation for the score for "j"
	Governance aspects and GP examples within the GP area
18	Is there any existing local /regional/national/EU **subsidy program** for the support of the key alpine GI of the good practice area? If yes, please list
19	GP examples: Are there any **project related activities** with local/regional/national/EU **funding** in the good practice area? If yes, please add the following information:
a	Project name
b	Time period of project implementation
c	Funding program
d	Funding amount
e	Please briefly describe how the GP example determines **positive ecological effects** (e.g. biodiversity, ecological & functional connectivity etc.) in the governance of the GP area
f	Please briefly describe how the GP example determines **positive social effects** (e.g. health, public spaces creation, recreation, etc.) in the governance of the GP area
g	Please briefly describe how the GP example determines **positive economic effects** (e.g. trade, green jobs, mobilization or attraction of financial resources/investment being private or public) in the governance of the GP area.
20	Are there any **formal/informal instruments** that regulate the management if the key alpine GI?
21	Are there any **tourism related programs** or **educational programs** being governed in the good practice area?
	Additional information
22	Please provide at least one representative **photo/image** as file (jpg) illustrating the character of the key alpine GI of the good practice area (incl. copyright for the LUIGI project)
23	Please provide any **document (pdf) or sources (URL)** related to the **key alpine GI** within the GP area