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DESIGNING A TRANSNATIONAL FRAMEWORK FOR GREEN INFRASTRUCTURE ASSESSMENT

The Leibniz Institute for Ecological Urban and Regional Development (IOER) is coordinating the framework design for Green Infrastructure assessment. It aims to identify the specific needs regarding Green Infrastructure (GI) at all spatial levels and how GI management approaches can support territorial policy objectives. The second aim is to develop a remote sensing-based methodology for the assessment of GI in Central Europe.

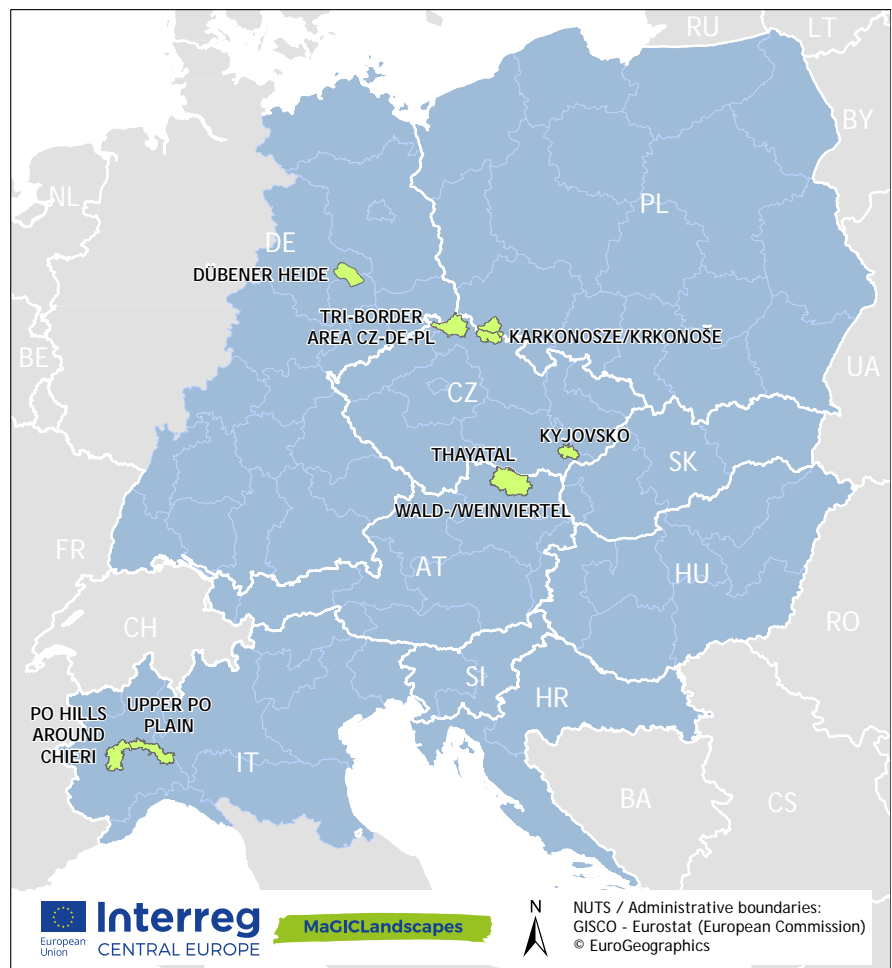
REFLECTIONS ON GREEN INFRASTRUCTURE IN LAWS AND POLICIES

Where is GI currently stated within national laws and policies of the MaGICLandscapes partner countries? Is GI already mentioned in EU regulations and programmes? If yes, in which context? Not only was the simple reference of the term "Green Infrastructure" decisive for the inventory of laws and policies. It was also analysed to what extent single elements of GI are already considered and at best managed by the respective sectors.

The result is a comprehensive compilation of GI-relevant laws, policies and regulations for each partner country and the European level. It demonstrates the relationships between the GI approach and existing planning policies and strategies and how multiple sector objectives can be achieved using the GI approach.

STAKEHOLDER CONSULTATIONS ON ASSESSMENT NEEDS

The MaGICLandscapes partners consulted stakeholders in their respective countries to identify specific needs for the assessment of GI. The term and concept of GI, already well established in the UK and elsewhere, is not very well-known by administrative bodies



Overview of MaGICLandscapes case study areas | Map: IOER

across Central European territories. Therefore, the benefits of the GI and the multifunctional approach of this concept towards more sustainability need to be further promoted. Stakeholders also mentioned the need

- to promote the linkage between green and 'grey' infrastructure (e.g. green spaces around settlements, streets, railway lines etc.),
- to focus more on GI in (peri-) urban areas and

- to plan and assess GI independently of administrative boundaries (and bodies).

ASSESSMENT OF SPECIFIC GI ELEMENTS VIA GIS AND REMOTE SENSING

The transnational assessment of GI is carried out by means of GIS (Geographical Information System). All partners investigated CORINE Land Cover data (CLC) from 2012 as a basis for the identification of GI. CORINE stands for "Coordination of Information on the Environment" and allows for the application of a consistent and comparable dataset in the MaGICLandscapes partner countries. The project partners defined each

land use class: Is it GI or not? After that, they compared the CORINE data with the satellite images from the EU's Earth Observation Programme Copernicus. To test that the land cover and land use information derived from CORINE and satellite images is really the same as on the ground. The partners also tested the results by visiting selected areas in the field (ground-truthing).

Currently a transnational Handbook for GI assessment is being compiled. Beside basic definitions of "Green Infrastructure" or "Ecosystem Services" it will provide practice-oriented information about the relationship of GI to national and regional laws or

policies as well as EU regulations or programmes. Furthermore, it will cover the needs for a GI approach in general and especially in the respective regional or local contexts of our partner regions.

As next steps of Work Package 1 the responsible partner IOER will make the large-scale transnational assessment of GI also applicable for the regional and local level. A practice-oriented manual will guide the user through the assessment of the structure and types of GI. Within the manual case studies demonstrate the methods used and results gathered.

FROM TRANSNATIONAL LEVEL TOWARDS GI ALONGSIDE THE RIVER KYJOVKA: 2ND PARTNER MEETING IN KYJOV (CZ) ON 16TH AND 17TH MAY 2018

The MaGICLandscapes project partners experienced two full days of interesting and constructive discussions about Green Infrastructure (GI) in Central Europe and about its visualisation and communication on regional and local level on their recent meeting in South Moravia.

The Leibniz Institute for Ecological Urban and Regional Development (IOER) is coordinating the transnational assessment of Green Infrastructure which is the central objective of the first work package (see page 1). The partners presented their progress and experiences gained so far within the GI assessment of their case study areas. It became obvious that GI is defined and classified differently in these areas. In some cases the CLC class is not describing the "actual" land cover type detected in the field during the ground-truthing that was carried out to check the detected GI elements in the field.

The consortium has developed a catalogue of CLC classes which describe GI in the respective case study areas. Thus, some classes definitely represent GI in this region but in the other regions this class is not considered to be GI - it is dependent on the local context and pre-conditions. Regional maps showing the network of GI from the



The 2nd MaGICLandscapes partner meeting took place in Kyjov (CZ)
Photo: Ashis K. Saha

Dübener Heide Nature Park over the Karkonosze Mountains to the Po Hills around Chieri near Turin have been produced.

STARTING IN SUMMER 2018: WORK PACKAGES 2 AND 3

During the partner meeting in Kyjov the upcoming functionality and public benefit assessment of GI and the strategy development

were outlined and the task sharing among the partners discussed.

The University of Vienna provided an approach of assessing the functional values of certain GI elements by means of three staged key-factors: classification regarding broader habitat types, determination of the hemerobic status and the



Left: Libor Ambrozek, former Czech Minister of the Environment and currently working for the White Carpathians protected landscape area, presented valuable GI elements in and around Kyjov to the project partners; right: Sheep and goats grazing on extensively managed grasslands with fruit trees | Photos: Anke Hahn

provision of ecosystem services. This assessment approach will be tested out in each case study area. The partners are requested to compile a regional catalogue of biotope types of their case study area and to view the appropriate geodata they want to use for the functionality analysis in their case study area. The assessment approach will be tested in the case study areas during the summer. The test results and experiences will be discussed at the next partner meeting on 7th and 8th November 2018 in the National Park Thayatal.

The Italian National Agency for New Technologies, Energy and Sustainable Economic Development

(ENEA) introduced the tasks and deliverables within the public benefit assessment of GI and development of a strategy/action plan on how to implement GI on local level.

The first step is to develop a draft tool to assess the public benefits of green infrastructure which could be, for example, more space for recreation, improved air quality and shade during hot summer days or reduction of flooding risk etc. This draft tool will be presented to and tested with regional stakeholders in each case study area. In the end the public benefit assessment tool should help to identify local specific

needs (strengths, weaknesses, threats, opportunities) for green infrastructure investment.

During conversations in small working groups and face-to-face the MaGICLandscapes project partners have developed more detailed working steps in their case study areas. On a field trip from the neighbouring village Bohuslavice back to Kyjov the partners viewed the local green infrastructure network of hedgerows, arable lands and extensively used meadows connected to the river Kyjovka as important elements of local green and blue GI.



The MaGICLandscapes Partner consortium | Photo: Anke Hahn

INVESTIGATING GREEN AND BLUE INFRASTRUCTURE OF THE ITALIAN PIEDMONT REGION

How and from what is the current Green Infrastructure (GI) along the River Po comprised? Where are the biodiversity hot spots and where are localities where ecological functionality needs to be improved? What are the strengths, weaknesses and opportunities of the existing GI network in this region? The Italian project partners of MaGICLandscapes are striving for the answers to these questions. This article describes the Italian case study areas which are both covering valuable parts of the blue and green infrastructure network along the River Po, the major river of the Piedmont region and Northern Italy.

MAKE PEOPLE AWARE OF THE ECONOMIC VALUE OF ECOSYSTEM SERVICES

In 2015 the Metropolitan City of Turin (CMT) replaced the previous Province of Turin and thus covers all tasks on provincial level, especially adopting and updating the annual Metropolitan Territorial Strategic Plan. The Department for Planning and Management of the (Metropolitan) Ecological Network, Protected Areas and for Environmental Monitoring is actively involved in the MaGICLandscapes project and is examining the GI inventory and functionality assessment in the case study area around the town of Chieri and the Upper Po river near Turin.

The town of Chieri is surrounded by a hilly landscape mostly covered by vineyards. With around 36,000 inhabitants the city is part of the larger Metropolitan area of Turin. Paola Vayr, architect at CMT, described the major elements of GI in the case study area as follows: *"The River Po and its system includes the minor river*

network that passes through rural areas, woodlands, wetlands, orchards, vineyards and centuries-old cultivations, hedge and tree rows, urban parks etc. A number of protected areas and Natura 2000 sites are central elements of local GI."

During the GI assessment CMT is cooperating intensively with the town administration of Chieri and other associated institutions like the protected areas along the River Po near Turin (Italian: Aree protette del Po Torinese) and the Piedmont region.

"Together with our associated partners and local stakeholders we are trying to identify a method of evaluation, maintenance and enhancement of GI in order to integrate it to the territorial and urban planning process," Paola Vayr reiterated their wish to actively involve external stakeholders in the GI strategy development within the project.

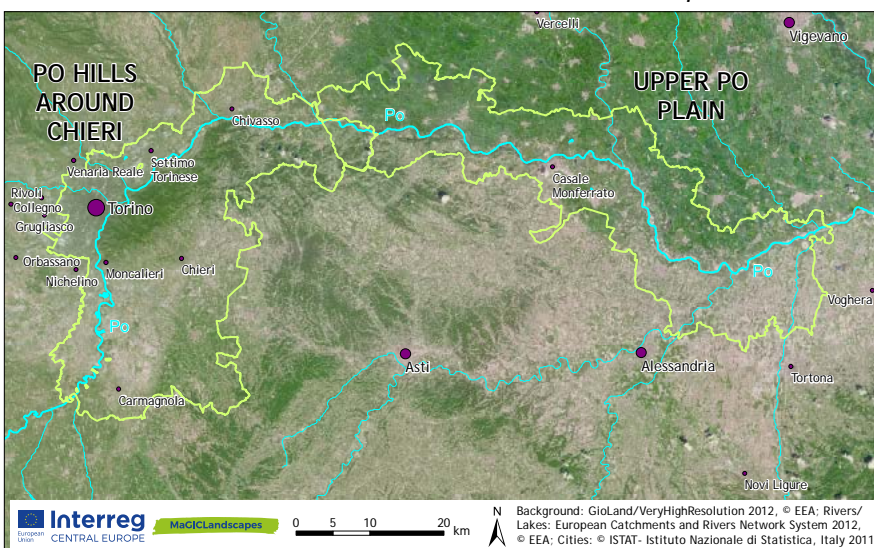
Massimo Ceppi, Assessor of the Chieri Council, is one of the local stakeholders collaborating with CMT. *"Land consumption and*

agricultural exploitation are the main factors that adversely affect ecosystem services," he stated. *"I believe that MaGICLandscapes can help to find ways of communicating and raising awareness of the need to improve ecological functionality, landscape and habitat quality."* For Ceppi the added value of the project would be an initial process of recognising the economic value of ecosystem services that GI is providing.

RECOMMENDATIONS FOR THE INTEGRATION OF SUSTAINABLE TOURISM AND ENVIRONMENTAL PROTECTION NEEDED

The Italian Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) is a public research body with particular expertise in the planning of ecosystem recovery and the protection of areas with a high risk of environmental damage. Because the researchers from Saluggia are assessing GI along the River Po in the provinces of Alessandria, Vercelli and parts of the Metropolitan City of Turin, they are working very closely with the Metropolitan City of Turin.

The network of protected areas is part of the River Po ecosystem and includes the landscape mosaic of the Vercelli rice fields. It is designated to protect threatened habitats and species typical of lowland and fluvial environments, e.g. alluvial forests of black alder, European ash and oak as well as the habitats of several heron species. *"For me the River Po corridor with its diverse habitats is the major GI elements in this area together with woodlands, marshes, natural elements of the rice fields and other rural areas,"* Simone Ciadamidaro,



MaGICLandscapes case study areas "Po Hills around Chieri" and "Upper Po Plain" in the Italian Piedmont region | Map: IOER

researcher at ENEA, stated.
“Together with our associated partners and stakeholders we will investigate how to improve this local yet regionally significant ecological network (...) and how to reconcile the realisation of certain structural elements of the Po plain.”

In the upstream section of the Po, woodlands, extensively used meadows and vineyards of the Monferrato hills contrast with the

Vercelli rice plain. Rice fields and large poplar plantations represent the dominant farming activity in the lowland section.

Dario Zocco, director of the River Po Park Alessandria-Vercelli, one of ENEA's associated partners, knows that the high pressure on the Po plain ecosystems is mainly from intensive agriculture. According to him the main need for improving the GI network is the integrated

view of sustainable economic activities and the improvement of local environmental conditions:
“It would be good to get some recommendations for the evaluation and implementation of sustainable tourism projects in our area, in particular for the realisation of the cycleway ‘VenTo one’ from Venice to Turin alongside the River Po.”



(1) The centre of Chieri viewed from St. George's church | Photo: Xavier Caré/Wikimedia Commons/CC-BY-SA 4.0; (2) The river Po from above | Photo: C. Lenti; (3) The Superga Hills Nature Park (Parco naturale della Collina di Superga) is part of the case study area "Po Hills around Chieri" | Photo: Roberto Pascal; (4) The Adventure Park in Pino Torinese, one of the municipalities belonging to the Metropolitan City of Turin | Photo: A. Miola; (5) Ricefield of the Po plain with poplars behind; (6) Marshland; (7) The Po river and its gravel bed | Photos 5-7: Simone Ciadamidaro

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