ENDANGERED LANDSCAPES PROGRAMME

Project Summary Information	
Project Title (Max. 12 words)	Restoring the Ticino River Basin Landscape. One River – Many Systems – One Landscape
Project duration (up to 2 years)	12 months
Project location (Country(ies), region)	Italy (Lombardy and Piedmont Regions), Switzerland (Canton of Ticino)
Project budget (grant requested from the ELP in US$)	80,000 $
Project summary (a concise description of your project. Max. 150 words)	The project will prepare the ground for the overall restoration of the Ticino Landscape shared by Switzerland and Italy. The area is among the wealthiest and most productive in Europe, and yet it still hosts valuable biodiversity and habitats. Due to the pressures and threats menacing the landscape, and thanks to the synergies and opportunities that exist, now it is the time to act. To reach the One River – Many Systems – One Landscape vision, project partners are enthusiastic to work together and coordinate planning and interventions to restore this Landscape to its role as a macro-corridor between the Alps and the Apennines and the Adriatic Sea. Concrete measures will be designed to overcome barriers, restore native habitats, species vital populations and river eco-morphological processes, encourage sustainable livelihoods, enhance ecosystem services and foster resilience to climate change. Partners and stakeholders will all work together to achieve one functionally-coherent Landscape.

Lead Organisation Information
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Project description

1. About your organisation – Its background, experience and qualifications to lead and manage the project (0.5 pages)

Istituto Oikos is an Italian non-profit organisation established in 1996 and operating in Europe, Africa and Asia to safeguard biodiversity and promote sustainable lifestyles. Total 2018 revenues 5.86M Euros, 2019 revenue forecast 5.92M Euros, 149 staff worldwide, 55 projects underway; 315 projects managed in 22 years on biodiversity (100), water (24), climate and energy (51), sustainable communities (140).

Experienced technical staff and permanent scientific partnership with universities and research institutions ensure science-based interventions and sound impact evaluation. Istituto Oikos' stable alliance with public institutions and local governments ensures the social and institutional sustainability of the programmes, designed with a long-term vision and a scaling-up approach.

Istituto Oikos has a proven experience in leading international multi-stakeholder projects related to sustainable livelihoods, biodiversity conservation, habitat restoration for the come-back of native species (e.g., *Capra nubiana* in Lebanon and *Capra Ibex* in the Alps), recovery of natural processes, climate change adaptation, capacity building and awareness raising.

Istituto Oikos has always applied an integrated approach. We are convinced that environmental protection is linked to community wellbeing, and that landscape restoration is only possible through multi-functionality, participatory land use and natural resource planning, economic diversification and the coexistence of local/traditional know-how and innovative technology; we believe in fostering awareness, skills and participation and encouraging debate and exchange.

In collaboration with protected areas, regional and local authorities and communities, In Northern Italy, Istituto Oikos has been working on habitat restoration and wildlife conservation, with the aim to monitor and improve the safeguard and management of key wildlife species; Istituto Oikos has already implemented several projects in the Ticino Landscape on habitat restoration, ecological connectivity and alien species management/removal.

2. Partners – A description of the most significant partners involved in the project (relevant experience/expertise etc.) and their roles and responsibilities in the project. (0.5 pages)

- **Parco Regionale Lombardo della Valle del Ticino (Regional Park, IT); Ente di Gestione delle Aree Protette del Ticino e del Lago Maggiore (Regional Park, IT); Piano di Magadino Cantonal Park (CH); Bolle di Magadino Foundation (CH**

Protected areas responsible for land use planning, natural resource management and relationship with stakeholders. Tasks: alignment of their planning to the proposal's objectives, landscape restoration, species reintroduction, mediation among stakeholders, advocacy with senior level administrations.

- **Office for Nature and Landscape; Office for Watercourses of Canton of Ticino (CH)**

The former administers, manages and supervises the protected area system; the latter manages and monitors water bodies. Tasks: stakeholder engagement/mediation, interface with federal government, endorsement of the proposal's actions.

- **LIPU-BirdLife Italy; Ficedula-BirdLife Switzerland**

Leaders in conservation and research projects on the protection of birds and their habitats. Tasks: technical expertise, lobby/advocacy, relationship with stakeholders, monitoring.

- **Italian Centre for River Restoration *(CIRF- Centro Italiano Riqualificazione Fluviale)***

Research and support to public authorities in the water sector, advocacy for river restoration. Tasks: technical expertise, actions for the adaptation to climate change of the water system and for the restoration of river morphological process.

- **State Universities of Insubria and Milan (IT)**

They implement research and applied projects on: biodiversity conservation, wildlife management, the effects on biodiversity of threats like alien species and climate change. Tasks: scientific supervision, plans for invasive alien species management, native species restoration/reintroduction.

- **Varese, Pavia Provinces (IT)**

NUTS-3 authorities responsible for land use planning, Natura2000 sites and water resource management outside protected areas. Tasks: alignment of their planning to the proposal's objectives, landscape restoration, mediation among stakeholders, advocacy with senior level administrations.

- **Idrogea Servizi srl; Graia srl (IT)**

Consulting firms with experience in: project planning for habitat restoration, hydraulic modelling of river network, fish conservation/monitoring/research. Tasks: plan interventions on habitat restoration, conservation and reintroduction of endangered fish species.

3. Relevance to the ELP – Describe how your project will help deliver the vision of the ELP: *"restoration creates landscapes that are enriched with biodiversity, establishing resilient, more self-sustaining ecosystems that benefit both nature and people"* (0.25 pages)

Our Vision fully reflects the ELP Vision: *The Ticino Landscape is a functional terrestrial and aquatic ecological corridor between the Alps and the Apennines, and the Upper Ticino River and the Adriatic Sea, with habitats and native species, including formerly-extinct ones, in good conservation status. Water quality is good throughout the basin and river morphology mostly natural; existing physical barriers are permeable to wildlife and do not significantly impair natural river fluctuations and hydro-morphological processes. Economic activities and local communities are sustainable, support biodiversity and in turn benefit from ecosystem services – such as flood risk/drought mitigation and recreation. The people recognize a common identity in the cross-border Ticino Landscape and adopt sustainable behaviours. The Landscape is known as a striving economic area in harmonious balance with the environment*.

One River – Many Systems – One Landscape. It is one river, the Ticino. It is one landscape, identified by its common natural and social features. Yet, it is the result of many *systems* – ecosystem types, land use approaches, governance, countries, policies, stakeholders, administrations, communities, political levels – making it rather heterogeneous. To achieve the Vision(s) it is necessary to recognize the differences in all these systems, and to **look beyond them**, letting the river, through its water flow, unite the landscape.

In a nutshell, the project will help to deliver the Vision(s) through a **concerted conservation effort** that will take off thanks to the **shared understanding** that a more ecologically-functional river corridor provides more ecosystem services to concerned stakeholders. To this purpose, the focus of this proposal will be on **governance** and on **completing the activities preliminary to a coordinated and landscape-scale planning**.

4. Landscape description and biodiversity importance – A description of the *current* situation. For example, its location, size, status, condition, habitat types, biodiversity importance, use by people, tenure, why and how it is degraded, history of use, management, previous or on-going conservation efforts (including details of any previous funding) etc. (1 page)

The **248km-long Ticino River** originates in the Swiss Canton of Ticino, where its **course** has been **deeply modified** starting from the late XIX Century, with the construction of levees, dams, artificial channels and the drainage of the "Bolle di Magadino" swamps, to prevent the flooding of agricultural land, for hydropower and to increase agricultural production between WWI and WWII. The Upper Ticino River enters Lake Maggiore downstream of the historical city of Bellinzona, and its mouth is a RAMSAR site protected by the Bolle di Magadino Swiss Nature Reserve and Cantonal Park. The Lower Ticino River leaves the Lake in the southern, Italian portion, flowing through Piedmont and Lombardy towards the Po River, crossing significant agricultural areas (e.g. the northernmost rice paddies in the world and the most productive in Europe) and the historical city of Pavia. The **Lower Ticino River** has also suffered man-made alterations such as the construction of 3 dams and a vast system of secondary channel network for agriculture, but **it is still free to move along most of its course,** creating river branches, isles and wetlands, thus showing remarkable biodiversity value in the Mediterranean region. The water level of Lake Maggiore and the Lower Ticino River is regulated by the Miorina dam, naturally permeable to fishes. In Italy, the river is protected by a UNESCO MAB Reserve and two Regional Parks: the Parco Lombardo della Valle del Ticino and the Ente di Gestione delle Aree Protette del Ticino e del Lago Maggiore; the MAB Reserve functions as an important ecological corridor within the urbanized and industrialized Po Plain and has recently been extended to include the Val Grande National Park and municipalities close to Lake Maggiore as far as the Swiss border (Fig. 2).

Throughout the centuries, the Ticino Basin has been an important agricultural area, with navigable waters used in the past to move people and goods between the Canton of Ticino and the Po Plain. Here **Leonardo da Vinci** studied hydraulics, **designed an extensive system of canals**, explored natural history and made world-famous drawings. Since the XIX century, human intervention has changed the original ecosystems and created a **cultural landscape, rich in history and traditions**

both in CH and IT, with different patterns but with the same cultural heritage. Intensive agriculture and animal farming have greatly affected the native mixed deciduous forests; urbanisation and industrialisation have destroyed 95% of the largest lowland heathland in the Po Plain that once covered the central portion of the basin. Environmental degradation and habitat fragmentation have led to loss of biodiversity and ecological connectivity.
In spite of this, the area is currently home to **significant biodiversity**, including several threatened species: around 350 bird species, incl. Common Pochard *Aythya ferina* and European Turtle-dove *Streptopelia turtur*, both Vulnerable (VU) at global scale; over 60 mammal species, incl. the largest European nursery of Geoffroy's Bat *Myotis emarginatus*; 30 native fishes, incl. **Adriatic Sturgeon** *Acipenser naccarii*, Critically Endangered (CR) globally, and **White-clawed Crayfish** *Austropotamobius pallipes*, Endangered (EN) globally and absent in the lower river; over 10 native amphibians, incl. the endemic Italian Agile Frog *Rana latastei* VU and the endemic subspecies of Common Spadefoot *Pelobates fuscus ssp. insubricus*, EN in Italy; over 15 reptiles, incl. a highly-threatened population of European Pond Turtle *Emys orbicularis,* EN in IT and CR in CH. Among threatened plants, the **endemic Piedmont Quillwort** *Isoetes malinverniana* CR globally. **Valuable habitat types** present in the area are: wetlands (e.g. Bolle di Magadino, the only natural river mouth in a lake in the southern Alps and one of few in Europe); reed beds; oxbow lakes; well-preserved residual patches of the mixed deciduous forests once covering the whole Po Plain, incl. the largest one, 20,000 ha; residual lowland heathlands; water meadows (unique traditional agricultural areas). This Landscape is the only ecological corridor crossing the Po Plain connecting Alps and Apennines (Fig. 4).

The changes in the **Upper Ticino River** have generated deep hydro-morphological impacts and flow alterations; these are being addressed by the Canton of Ticino through a **comprehensive 2016-2035 strategic plan for the restoration of the river** with interventions along the entire Swiss course. This plan needs to be strongly supported by actions leading to vast public social acceptance of restoration measures and the resolution of conflicts, especially with the agricultural sector. In **Lake Maggiore and the Lower Ticino River**, past interventions, including 4 LIFE Projects on the conservation of threatened freshwater species and the enhancement of the aquatic corridor, have **defragmented the dams**, now permeable to fishes (LIFE11 NAT/IT/000188 CON.FLU.PO, LIFE00 NAT/IT/007268 Salmo Ticino, LIFE03 NAT/IT/000113 Conservation of *Acipenser naccarii,* LIFE00 NAT/IT/007159 Conservation of *Austropotamobius pallipes*). Other projects have contributed since 2000 to the restoration of key habitats for endangered species and the enhancement of the ecological network (LIFE TicinoBiosource, LIFE97 NAT/IT/004134, LIFE B4-3200/98/486 and LIFE 00NAT/IT/007233 on *Pelobates fuscus insubricus,* LIFE10 NAT/IT/241 TIB and 14 Cariplo Foundation projects). **Current key issues** for this portion of the basin are: the **regulation of the Lake water level**, that has an impact on fragile water-related habitats such as rushes, riparian forests and wetlands (currently addressed by the 2018-2021 INTERREG project ParchiVerbanoTicino); the **increasing constraining of morphological processes** due to flood protection works, that needs a coordinated and basin-scale approach to redress it. These **issues are currently worsened by climate change**, that has led to severe droughts during the last years; there is a strong need for the development and implementation of strategies for the adaptation to these global changes.

Past and current projects have prepared the ground for this large-scale proposal: conditions are appropriate, both at the governance and field level, to progress from individual projects to a united and holistic programme, and to prepare and implement a landscape-based catalytic intervention: **One River – Many systems – One Landscape**.

5. Vision for the site and theory of change – At this stage of planning:

- What do you expect restoration to achieve (for biodiversity, for ecosystem services, for local communities)?
- How (based on present knowledge) do you expect this change to be delivered (and by whom) and how will the change be sustained long-term? i.e. provide a description of the known barriers to restoration and how they would be overcome by a future restoration project
- What are the current opportunities to restore the landscape once your planning is complete (why restore the landscape now)? (1.5 pages)

Complementary, yet different, approaches in the two Countries will be transformed into creative opportunities and inserted into a **Landscape restoration plan to achieve the One River – Many**

Systems – One Landscape vision. The plan will guide the Landscape back to its natural functions, restoring artificial stretches, wetlands, forests, water quality; ameliorating the eco-morphological state of the river; removing or managing invasive alien species and favouring or reintroducing umbrella species; promoting sustainable economic activities and local quality products.

It is proposed to **overcome the following known barriers** as described below:

- uncoordinated governance → development and endorsement of a shared landscape vision
- uncertain social acceptance of restoration measures, especially when aiming at giving room back to the river → stakeholder analysis & involvement, participatory planning processes, supported by explicit evaluation of ecosystem services and expected benefits, extensive communication plans to make programme activities acceptable to individuals and interest groups
- unsustainable economic activities, especially agriculture → adoption of more sustainable practices; participation in future consultations to allocate funds from the 2021-27 Common Agricultural Policy; implementation of sustainability labels
- tourism overexploitation in hotspots → tourism management plans; support to sustainable tourism activities; organization of participatory processes as the European Chart of Sustainable Tourism, and adoption of certification mechanisms for the tourism sector (e.g. Global Sustainable Tourism Council)
- inadequate management practices in the river/channel system and in the Lake, leading to the disappearance of riverine and lake habitats (riparian forests, rushes, wetlands, water meadows) → development of appropriate management practices (aligning with the Interreg ParchiVerbanoTicino project on the water regulation of Lake Maggiore and with rural development plans); wetland restoration
- habitat fragmentation → restoration of the ecological connectivity both through defragmentation in the field and seamless planning at the transnational and inter-administration level
- local pollution in river stretches, hindering the natural return of locally-extinct umbrella species ad affecting habitats → rely on communication/education and on local policies to change people behaviour and reduce the use of chemicals in agriculture and private gardens
- hydropeaking and dams non-permeable to fishes in CH → implementation of the river restoration plan of the Canton of Ticino
- poor morphological and ecological state of river stretches (altered geomorphological processes, disconnection of the riverbed from the alluvial plain, limited lateral river mobility) → definition and implementation of a river mobility corridor; development of a sediment management plan at basin scale (required by Italian legislation, but still missing); implementation of strategic projects in cooperation with Drainage Authorities (*Consorzi di Bonifica*)
- invasive alien species, altering native habitats and competing with indigenous species → implementation of the 1143/2014 EU Regulation and development/implementation of a strategic plan for the management and removal of IAS; establishment of a coordinated early-detection system in the two Countries, thus creating a synergy with the LIFE project Gestire 2020; establishment of circular economies for the use of carcasses and biomasses from alien species; strategic communication plan to foster social acceptance in synergy with the LIFE project Asap.

Changes will be delivered by all actors involved, stakeholders and partners, each doing their part: authorities will bear their responsibility to care for the Landscape and its components, coordinating efforts, passing plans, approving funding and delivering policies in line with the Landscape restoration plan; communities and individuals will acquire new awareness and switch to sustainable behaviours, as well as producers and other entrepreneurs; civil society and sectoral associations will align their activities to the priorities of the Landscape. Participation, transparency, communication and education will be crucial.

Changes will be sustained in the long term through:

- a coordinated and cooperative governance pursuing the Landscape vision beyond the duration of the programme; approved guidelines and multi-annual plans harmonizing and guiding interventions and approaches at landscape scale for the years to come
- the economic sustainability of the proposed changes, e.g., creating circular economies (reusing biomasses of alien species); making sustainable livelihoods more attractive; implementing Payment for Ecosystem Services schemes; succeeding in raising funds

- the solid awareness on the issues faced by the Ticino Landscape (e.g. droughts, pollution, land use trends) and the subsequent change of attitude and behaviour.

Current opportunities: complete defragmentation of river barriers for fishes in IT, and a plan in CH, to foster river continuity; development of a new IT-CH strategy for water level regulation; high potential for natural/assisted return of locally-extinct endangered species; recovery of traditional crops and increased consumers' interest for organic products; willingness of stakeholders to participate in a concerted effort to secure this as a healthy and functioning landscape; it will soon be time to influence how national and regional programmes for rural development will use the 2021-27 EU funds. These opportunities will be best capitalized on with a **well-planned restoration programme at landscape scale** and with the involvement of all relevant stakeholders from **IT and CH**. This will provide the **decisive change** needed by the river and the entire basin to return to a functional ecological state, supporting unique biodiversity, favouring species movements and sustaining healthy communities and green livelihoods.

In addition, the partner meetings held in January-May 2019 to prepare this proposal have created a good **momentum**, which makes it even more the ideal time to act. The Ticino Landscape, located between the Canton of Ticino and the Region of Lombardy in South-Central Europe, is a wealthy, productive and attractive land; this is both an opportunity for attention and funding, and a challenge for ecological restoration: the **One River – Many Systems – One Landscape** approach will recombine them.

6. Stakeholders - A description of the main stakeholders (including in the local community), their participation, consultation and involvement so far, and the role that they will play in project planning. (0.5 pages)

During the activities under the Project Innovation Grant, stakeholders will undergo detailed mapping in view of refining the preliminary Theory of Change. The main stakeholders currently identified are:

- **Swiss Federal Government, Lombardy and Piedmont Regions:** high-level governing bodies, responsible for policy making at federal (CH) and regional (IT) level. They will be involved as advisory bodies to obtain a Landscape restoration plan consistent with the territorial planning at national/regional scale, and to generate synergies.
- **ERSAF (Regional Authority for Agriculture and Forestry):** operative service of Lombardy Region, it will be a consultant for increasing CO_2 absorption by soils.
- **Po Basin Authority (IT)**. Administration responsible for the integrated management of the Po River Basin, in which the Ticino River is included. They will be consulted to define the Ticino Basin management strategies, and invited to participate in relevant working groups.
- **Drainage Authorities (IT).** Organizations of owners of real estate that manage water for irrigation purposes and ensure flood risk management. Engaged in a Parco Lombardo della Valle del Ticino project to reduce the impact of irrigation systems on valuable habitats. CIRF signed an MoU with ANBI (National Association for Land Reclamation, Improvement and Irrigation) to protect and restore the water network at national and regional level. They will be involved in the development of projects to improve the ecological status of water bodies and the conservation of biodiversity.
- **Farmers and their associations (IT & CH).** Involved so far for: the development of a quality brand for sustainable productions (IT) and the planning of river restoration activities (CH). They will be involved in the ToC; their needs and attitudes towards the proposed actions will be mapped through interviews.
- **Anglers and their associations, fish farmers (IT & CH).** Professional and recreational fishing is widely practiced and different fishing associations exist. They have been involved so far by the protected areas for the farming of threatened fish species. They will be involved in the ToC and through interviews to analyse their needs and attitudes towards the actions proposed.
- **Civil society associations, Environmental organizations.** All NGOs potentially interested in the restoration programme will be mapped and potentially involved for the definition of the ToC and through interviews to analyse their needs and attitudes and to identify other potential roles for them.

7. What you will do with your Project Innovation Grant – A description of the activities that you will carry out with a Project Innovation Grant to plan and prepare for restoration of the landscape, including why they are necessary, the outputs that will be delivered by the end of the grant, and how the work will be managed (roles and responsibilities etc.). (1.5 pages)

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The Project Innovation Grant (the *project*) prepares the ground for a **landscape-wide programme** (the *programme*) by creating one governance system, completing data and information, developing and agreeing on transnational plans and initiatives, and planning the future economic sustainability. At the end of the project, all will be ready to launch the broad landscape programme and fundraise for it through one large fund or a composition of coordinated smaller, interrelated projects.

Both the project and the programme intervene on governance, ecosystem services & human communities, the continuity of the terrestrial and aquatic ecological corridor, species, habitats, and adaptation to climate change. Once restored, the Ticino Landscape will become **one functionally-coherent landscape.** The Vision for the Landscape is attained if six objectives are achieved (see Project Summary, 1st column). During the project, progress will be made on all of them, as follows.

I. (includes Objective 0. Project management) The Landscape will be in the hands of **dedicated authorities collaborating with one another** on both sides of the IT-CH border, providing a smooth **governance** system sensitive to the needs of the **one landscape** they share, and disposing of **plans that are aligned with each other and reflecting the shared landscape restoration plan**
Project activities: all base analyses preparing the future programme (stakeholders, communication targets, synergies with other initiatives and policies); team building and alignment of funding and planning tools; Theory of Change, contributing to describing the context and compacting the team; agreement on the approach and the M&E framework.

II. The Landscape will ensure that **human activities** and **ecosystem services positively reinforce each other:** that the former are sustainable and do not hinder ecological processes, and the latter provide good living conditions to individuals and communities and support a variety of economic activities including traditional livelihoods (local variety of rice for risotto, dairy products, cured meats, hops, beer, Italian caviar from Adriatic Sturgeon)
Project activities: market analyses for agriculture and tourism, so they will further benefit from, and support ecosystem services; improve the effectiveness of ecosystem services by increasing CO_2 absorption by soils; exploring potential schemes for Payment for Ecosystem Services.

III. The Landscape will host a fully-functional **terrestrial ecological corridor** between the Alps and the Apennines, thanks to ecosystem defragmentation, the restoration of forests and riparian habitats and the widespread adoption of environmentally-friendly practices
Project activities: definition of detailed intervention areas, technical assessments, and analysis of land ownership and rights, to design concrete interventions on the ground and acquire relevant authorizations; production of maps (Fig. 3).

IV. The Landscape will host a fully-functional **aquatic ecological corridor** between the Upper Ticino River and the Adriatic Sea via the Po River, through barrier defragmentation, water quality improvement and river restoration
Project activities: data consolidation, collection and analysis on water quality, hydrogeology, eco-morphology; participatory processes to frame the river sediment plan and mobility corridor; plans and maps for concrete interventions on the ground; feeding information to the communication experts to frame awareness campaigns (Fig. 3).

V. The Landscape will host **populations of native species in good conservation status**, in particular: reproductive populations of **locally-extinct umbrella species** like Beluga *Huso huso*, Atlantic sturgeon *Acipenser sturio* and European Otter *Lutra lutra*; lively populations of **threatened species**, ameliorating their conservation status at least at regional or national level, e.g. *Emys orbicularis, Isoetes malinverniana, Pelobates fuscus insubricus;* eradicated or controlled populations of aquatic and terrestrial **alien species**, e.g., Common Slider *Thrachemys scripta* and the aquatic plant *Ludwigia hexapetala*
Project activities: consolidation of existing data on native species, present or locally-extinct, and on alien species; framing of action plans to bring extinct species back, improve existing populations of endangered species, and control or eradicate invasive alien species; feeding information to the communication experts to get local endorsement.

VI. The Landscape will be more **adapted to climate change** and to the variations of water flow caused by extreme climate events, especially droughts, making local economies and people more resilient, e.g., through climate-responsive agriculture, soil management, water regulation and individual behaviours.
Project activities: assessments and working groups on the theme; feeding of the results of other activities (sediments, river mobility) to plan the adaptation of the landscape to extreme climate events.

8. Risks and assumptions – What factors would (a) prevent you from carrying out your planning activities; (b) prevent delivery of a future restoration project (0.25 pages)

Factors linked to the **economic and political situation**, at national or international level, that could hinder both our planning activities and the delivery of the future landscape restoration plan:

- Outcome of the European elections in May 2019, with a change in the course of the European institutions, weakening the environmental strategy and the implementation of the EU Directives.
- A diplomatic crisis between IT and CH that would weaken the existing positive collaboration
- Worsening of the economic downturn in IT, which would alienate individuals and entire communities from longer-term strategies.
- A serious devaluation the US dollar, diminishing the value of the Project Innovation Grant.

Factors that could prevent the delivery of the future landscape restoration:

- Increased conflicts among authorities and stakeholders on the project activities, impairing the social acceptance of the restoration programme.
- Catastrophic natural events also linked to climate change (e.g. severe droughts, wildfires, strong winds), or catastrophic anthropic events (e.g. industrial accidents) that will severely affect water quality or significant key areas of the Ticino Landscape, and will require urgent actions prior to the development of a shared restoration plan at basin level.
- Spreading of plant/animal diseases that will severely affect important populations of endangered species.
- Dramatic change in the Italian laws and regulations about habitat management practices (e.g. of the river bed, of the riparian vegetation) that will impair restoration activities.

9. Fundraising plans – Explain what steps you plan to take to raise the funding needed to implement the restoration project once your plan is complete. Please be as specific as possible (0.5 pages)

A detailed fundraising strategy will be developed under the Project Innovation Grant; at the moment, some preliminary sources of funding have already been identified, as follows.

Existing, **already allocated** funds, which will finance activities that have been foreseen and will be included in the overall Landscape Restoration Plan:

- Funds from the Canton of Ticino for the Upper Ticino River restoration
- Compensation funds already paid by SATAP (*Società Autostrade Torino-Alessandria-Piacenza*) for highway construction, which will fund interventions in Piedmont and will be managed by the Ente di Gestione delle Aree Protette del Ticino e del Lago Maggiore, a partner to this proposal

Use of public funds, that **can be allocated** to the themes of the proposal:

- Italian national funds for flood risk mitigation – "integrated projects" component (The Decree law 133/2014 introduced the obligation to allocate at least 20% of funds for flood risk mitigation to "win-win" measures improving at the same time the ecological status of water bodies and the conservation of biodiversity). This funding strand is particularly suitable for Drainage Authorities, to be applied in the secondary surface waters network.
- Funds for implementation activities under the ongoing Integrated LIFE Gestire 2020 project by Region of Lombardy.
- Swiss Federal Fund for Landscape (for traditional rural landscapes in CH)
- Rural Development Fund under the future 2021-27 EU Common Agricultural Policy (for IT);

Applications for EU funds through expected calls for proposals, such as the LIFE Programme (Nature and Biodiversity or Climate Change Mitigation lines), the IT-CH Interreg Programme.

Applications to private foundations with whom Oikos has a long-standing relationship, such as the Swiss Segré Foundation and the Italian Cariplo Foundation; the latter also funds ecological connectivity, habitat restoration and soon climate change, and co-funds European projects.

Maps

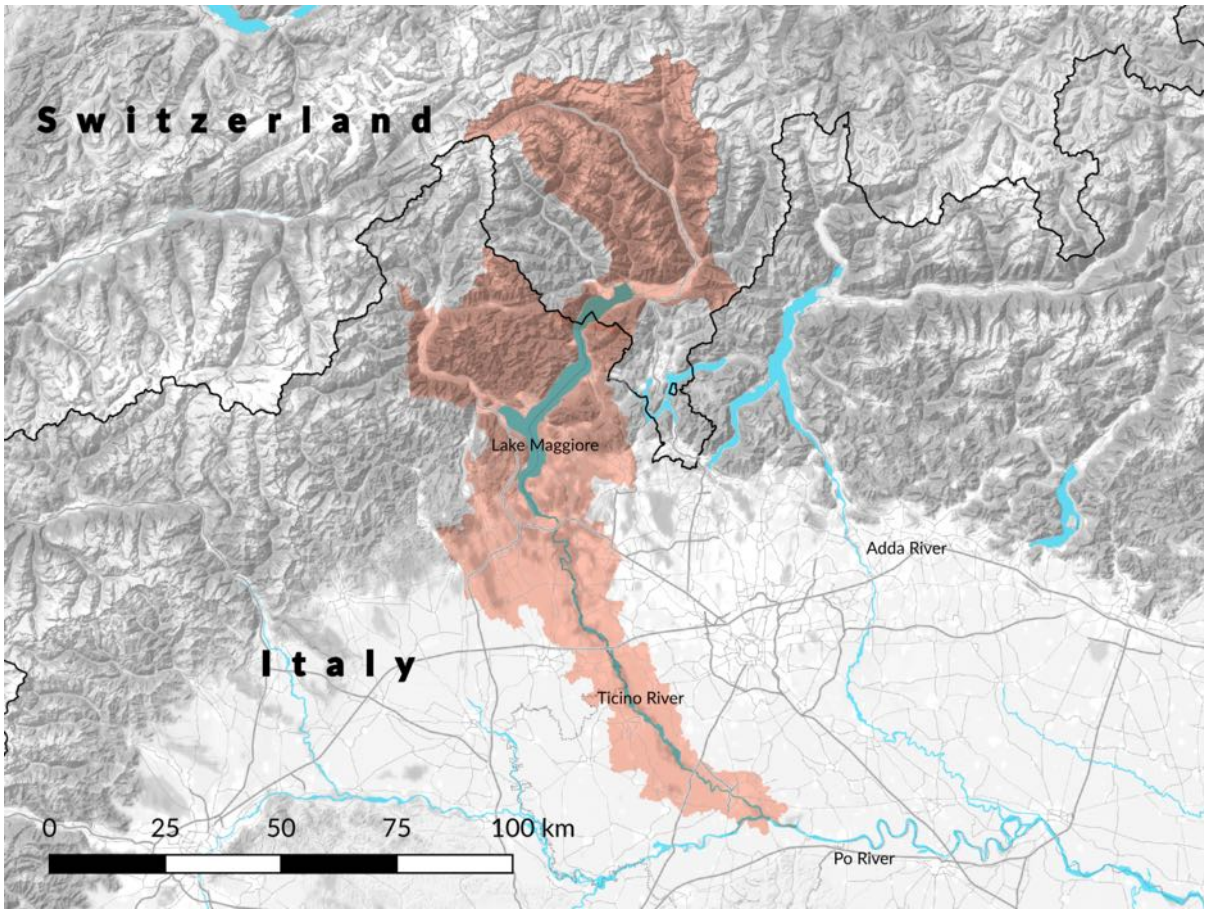

Figure 1. Ticino Landscape location. The 248 km-long Ticino River encompasses two Countries (Switzerland, Italy), forms the transnational Lake Maggiore - the second largest Italian lake - and enters the Po River - the longest in Italy - to which it is one of the main tributaries.

Figure 2. Detailed Ticino Landscape location. In Switzerland, the Magadino Reserve and Cantonal Park protects the river mouth in the Lake Maggiore and its wetlands; in Italy, the "Parco Lombardo della Valle del Ticino" and the "Ente di Gestione delle Aree Protette del Ticino e del Lago Maggiore" Regional Parks ("Ente Ticino e Lago Maggiore" in Fig. 2) protect the rivercourse (the former in Lombardy, the latter in Piedmont). The "Parco Lombardo della Valle del Ticino" also manages the UNESCO Man and Biosphere Reserve (MAB), which comprises the whole Italian portion of the intervention area.

Figure 3. Preliminary areas of intervention as identified at this stage of planning. They will be refined and increased within the planning phase of the Project Innovation Grant.

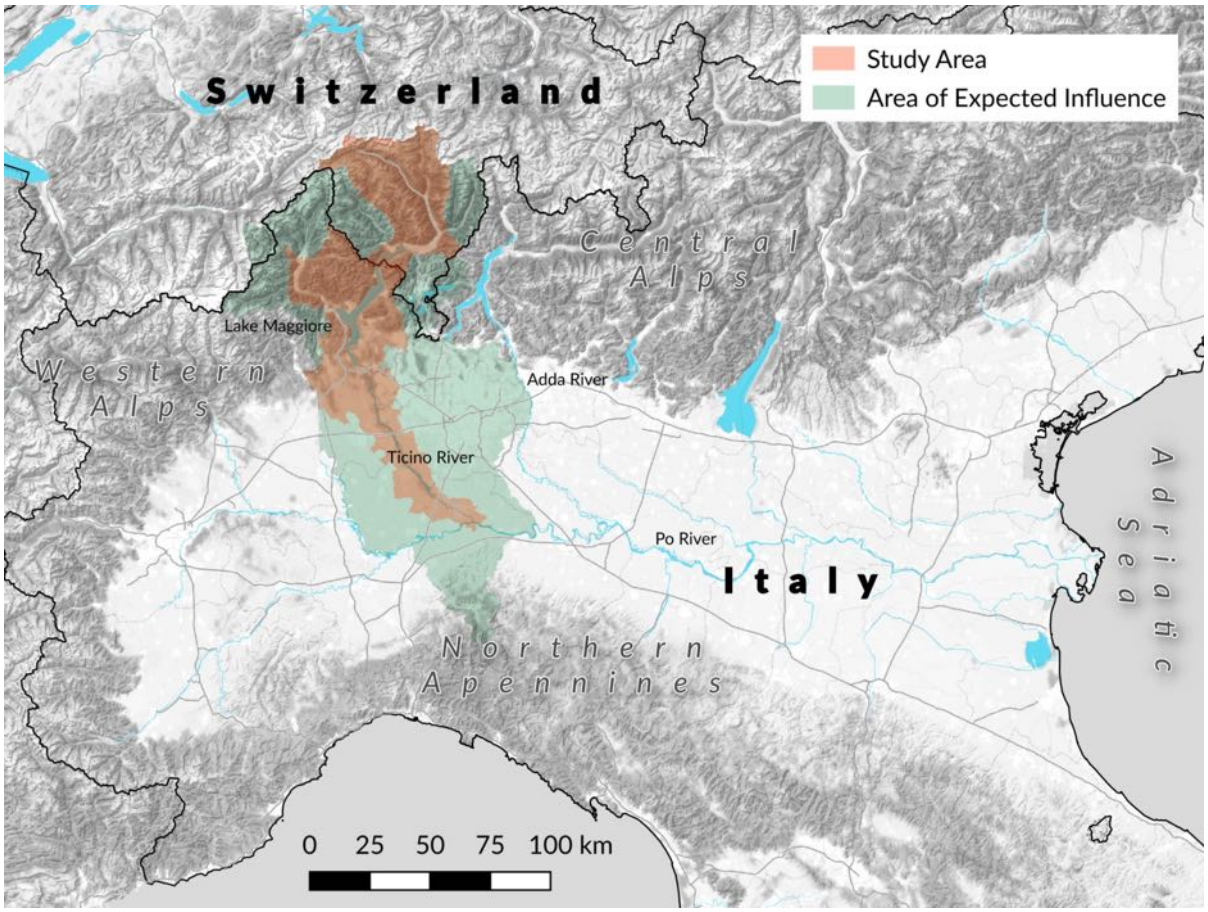

Figure 4. Area of expected influence. It comprises the whole Ticino River Basin and the connected vast secondary water network. The vision for the Ticino Landscape is that it will be a functional ecological corridor between the Alps and the Apennines and between the Upper Ticino River and the Adriatic Sea via the Po River.

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Project Summary				
Objective of the landscape-wide programme	**Activity(ies) during the Project Innovation Grant**	**Output(s) during the Project Innovation Grant**	**Why this is important/necessary?**	**Who is responsible, during the Project Innovation Grant?**
0. Ensure effective **project management**	1. Stakeholder analysis 2. Context analysis for communication 3. Identification of M&E framework 4. Analysis of actions' costs 5. Exploration of funding sources	1. Map of stakeholders, perceptions & beliefs, current and potential conflicts and alliances 2. Preliminary communication ecosystem analysis 3. M&E framework 4. Programme budget 5. Programme fundraising plan	1. To plan activities, mitigate conflicts, find shared solutions 2. To design project brand identity; involve stakeholders; gain public consensus and ownership 3. To strengthen planning for the future programme 4. To prepare the final design for the broad Landscape 5. To ensure programme feasibility	Istituto Oikos
I. Establish and strengthen the joint, coordinated transnational **governance** of the landscape	1. Team building 2. Theory of Change 3. Discussion of the intended approach with key experts 4. Analysis of relevant policies and strategies 5. Alignment of the new MAB Reserve management plan, due in 2020 with Landscape vision	1. Meetings/other interactions 2. Shared Theory of Change 3. 1-2 sectoral events; lessons learned 4. Agreements with stakeholders/initiatives; list of synergic activities 5. Draft management plan of the MAB reserve	1. To create the one river – one landscape feeling 2. To drive actions towards the vision 3. To reflect in the Programme the sectoral state of the art 4. To be consistent with the policy framework and exploit synergyes 5. The MAB Reserve covers the entire Italian programme (Fig. 2)	1. Istituto Oikos, all 2. ToC consultant 3, 4. Istituto Oikos 5. Parco Lombardo della Valle del Ticino, Istituto Oikos
II. Ensure that **ecosystem services** (ES) and human activities positively reinforce each other	1. Market analysis - agriculture 2. Market analysis – tourism 3. Assessing ecosystem services, designing PES schemes proposal 4. Analysis of CO_2 absorption by soils (agriculture)	1. List of main economic activities and issues 2. List of actors; options to further develop this sector 3. PES scheme proposals 4. List of measures/practices to increase organic fraction in soils and related M&E	1. To promote sustainable productive activities and quality brands 2. To support communities and foster income from sustainable tourism; to manage tourist fluxes and preserve biodiversity hotspots; to evaluate sustainable tourism certification 3. To support the long-term socio-economic sustainability of activities 4. To mitigate climate change and foster the ES provided by soils	1, 2. Istituto Oikos 3. Consultant (ETIFOR srl) 4. Stakeholder (ERSAF)

ENDANGERED LANDSCAPES PROGRAMME

Objective of the landscape-wide programme	Activity(ies) during the Project Innovation Grant	Output(s) during the Project Innovation Grant	Why this is important/necessary?	Who is responsible, during the Project Innovation Grant?
III. Create a fully-functional **terrestrial** ecological corridor between the Alps and the Apennines	1. Definition of detailed intervention areas 2. Technical assessments to support intervention planning 3. Analysis of land ownerships/rights and restrictions	1. List of interventions 2. Preliminary plans and maps of specific interventions 3. Technical report on land ownerships/restrictions	1. To restore the terrestrial corridor 2. To implement restoration actions 3. To obtain the authorisations required for the restoration actions	1. Istituto Oikos, all Protected areas, Provinces, LIPU-BirdLife Italy, Ficedula-BirdLife Switzerland 2, 3. Idrogea Servizi srl
IV. Create a fully-functional **aquatic** ecological corridor between the upper Ticino River and the Adriatic Sea via the Po River	1. Collection/validation of existing data on water quality 2. Collection/integration of data on river morphology/trajectories 3. Discussion of solutions to mitigate hydropeaking (CH) 4. Participative processes for river restoration actions (CH) 5. Discussions on hydrological and morphological restoration 6. Identification of morphological restoration actions	1. Database/technical report 2. Preliminary river mobility corridor; list of actions for sediment management plan 3. List of activities to redress hydropeaking 4. Plans and maps for specific interventions 5. Workshops IT-CH 6. Preliminary projects for restoration in river corridor & secondary surface waters	1. To improve water quality for the return of locally-extinct species 2. To promote river morphological process restoration/ensure key ES 3. To mitigate hydrological alteration in support of habitats and species 4. To implement restoration actions 5. To provide a common framework and promote shared solutions 6. To find measures to improve the ecological status of water bodies and favour biodiversity conservation	1, 2. CIRF 3, 4. Canton of Ticino 5. CIRF, Canton of Ticino, all Protected Areas, Idrogea Servizi srl, Graia
V. Establish **reproductive populations** of locally-extinct species; ameliorate the conservation status of threatened species; foster resilience to alien species	1. Consolidation and analysis of existing ecological data to provide a common framework and define actions	1. Shared databases; maps of pressures/threats; list of actions for the return of locally-extinct species and to strengthen endangered populations; preliminary plan to manage/remove invasive alien species	1. To have a shared and coordinated strategy for biodiversity enhancement; to restore biodiversity	1. Universities (Varese and Milan), LIPU-BirdLife Italy, Ficedula-BirdLIfe Switzerland, Graia, Istituto Oikos
VI. Mitigate the impacts of **extreme climate events** and foster the resilience of ecosystems and human communities	1. Working group on the resilience of the ecosystems/landscape 2. Identification of main trade-offs 3. Definition of actions to improve adaptation to climate change of the river corridor/secondary network	1. Functioning working group 2, 3. Shared list of activities for adaptation to climate change	1. To ensure long-term sustainability of restoration/conservation measures 2, 3. To address one key factor hindering Landscape restoration; to identify trade-offs and properly guide efforts for restoration of habitats & species	1. CIRF 2. CIRF, LIPU-BirdLife Italy, Ficedula-BirdLife Switzerland, all Protected Areas, Provinces