Rivers and wetlands: drivers of sustainable regional development

A Policy Brief from the Policy Learning Platform on Environment and resource efficiency

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Summary

Rivers and wetlands are critical for life on Earth since they provide a wide range of ecosystem services upon which species and habitats as well as humans and their socio-economic activities entirely depend, such as food, biodiversity, water and climate regulation. Yet available data point both to their continuous degradation as well as to limited and slow-paced efforts to restore their natural functions.

According to the European Environmental Agency (EEA) only around 40 % of the 110,000 bodies of surface water in the EU (i.e. rivers, lakes and transitional and coastal waters) are currently in good ecological status and only 38 % in a good chemical status[1], which will make it hard to achieve the corresponding goals set by the Water Framework Directive[2]. The Global Wetland Outlook published by the Secretariat of the Ramsar Convention on wetlands of international importance also portrays a worrying situation as it reports that our continent lost 35% of its inland and coastal wetlands since 1970. Most damages are being recorded in Mediterranean Europe, where almost half of natural wetlands have disappeared.

The present policy brief aims to provide a clear overview on how the current EU policy framework may guide and support local and regional authorities in the implementation of river and wetland restoration measures and of nature-based solutions to improve or reverse the abovementioned trends. It also intends to put the spotlight on the wealth of good practices from Interreg Europe projects that can serve as **an inspiration for untapping the potential of rivers as drivers of local and regional sustainable development**. In this respect, particular attention will be devoted to showcasing ways to valorise the natural and cultural heritage along inland watercourses, foster sustainable transport on inland waterways, integrate wetlands in green-blue infrastructures and preserve nature and culture around river mouths.

Challenges for inland waters

Rivers and wetlands are subjected to multiple pressures mainly related to land use change and pollution. Land use change impacting on these natural resources has been a reality in Europe for centuries. Wide-scale wetland drainage projects as well as the canalisation of rivers and streams have been undertaken to free space for agriculture and urban development, swiping away these waterbodies or altering their ecological character.

A factor that historically weighted on the modification of rivers is the construction of large dams and barriers along river axis to enable the generation of electricity by hydropower plants. In many cases around Europe such projects have led to an impoverishment of the ecological status of rivers since, besides influencing their flows, they also affected biodiversity and ecosystems hosted by the latter. Among others, this has been identified as the main cause of the 93% decline in migratory freshwater fish witnessed in Europe in the last five decades[3].

Removing barriers

The EEA has recently taken a strong stance in favour of the removal of obsolete barriers to restore European rivers into their free-flowing state. The Agency in fact reported that barriers – over 1 million throughout the continent – constitute a significant pressure for over 20% of surface waterbodies and indicated that dam removal can be a viable solution for restoring river continuity, especially if targeted at obsolete barriers[4]. The Agency therefore encouraged the prioritisation of measures to restore continuity and the adoption of strategies and coordinated approaches in this regard at all levels. At the same time, it recognised that the use of barriers along watercourses remains necessary for activities such as hydropower production, navigation and flood protection, which are supported by various EU policies and instruments. Hydropower, for instance, will be essential to decarbonise the energy mix and

[1] https://www.eea.europa.eu/publications/state-of-water.
[2] Directive 2000/60/EC establishing a framework for Community action in the field of water policy, which requires Member States to achieve the 'good ecological and chemical status' for all waterbodies by 2027.
[3] World Fish Migration Foundation, The Living Planet Index for migratory freshwater fish - Technical Report (2020), see here.
[4] EEA, Tracking barriers and their impacts on European river ecosystems – Report (2021), available here.

achieve RED II targets[5] for 2030 in many regions and the ongoing efforts to partially shift onto inland waterways freight transport will also continue to require the regulation of river flows through barriers.

Barriers for the exploitation of rivers for hydro-electrical purposes or otherwise regulating their flows are not the sole factor that contributes to detaching them from their floodplains and to deteriorating their ecological status. As indicated above, also urban development and agriculture concur greatly to altering river conditions as well as those of lakes, transitional, coastal waters, seas and groundwater bodies.

Trebbia River (Emilia-Romagna, Italy). Image credits: GreenMatters

The European agricultural sector, in particular, should undergo meaningful changes to decrease the pressure it exerts on water bodies, according to another recent EEA report[6]. The Agency called upon EU policymakers to recognise the value of agroecological principles, organic farming and nature-based solutions for greening agriculture in Europe and suggested that the post 2020 Common Agricultural Policy (CAP) should encourage their wider uptake. Nature-based solutions, for instance, can be very effective in limiting at source pollution caused by farming, hence reducing this type of pressure on water bodies while also delivering on greenhouse gas emission reductions and biodiversity protection.

Restoring rivers and wetlands

The importance of restoring rivers and wetlands and implementing nature-based solutions has been notably stressed also by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in its 2019 'Global report on the biodiversity and ecosystem services'. The report, which provides an independent scientific assessment on the state of nature worldwide and aims to inform the development of the post 2020 multilateral framework on biodiversity[7], defines a series of 'approaches of sustainability' that governments, public authorities, communities and private stakeholders are invited to adopt for the purpose of restoring, protecting and enhancing nature and generating multiple long-term socio-economic benefits.

Some of these approaches to sustainability entail taking actions for preventing the degradation of wetlands to enable the effective management and sustainable use of terrestrial landscapes, and to improve freshwater management, protection and connectivity. Concerning nature-based solutions, the IPBES global report suggests that they should be integrated in approaches to sustainability aimed at building sustainable cities, where their cost-effective utilisation can strengthen the green infrastructure and sustain urban development in a manner that contributes to climate mitigation and adaptation.

The current EU policy context

Presented by the European Commission as the growth strategy that will guide the transition towards a carbon neutral economy by 2050, the European Green Deal (EGD) also constitutes the relevant

[5] Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (RED II) requires the EU to fulfil at least 32% of its total energy needs with renewable energy by 2030. For more info on the upcoming revision of the Directive, see here.
[6] EEA Report N. 17/2020 on 'Water and agriculture: towards sustainable solutions', available here.
[7] https://www.cbd.int/conferences/post2020. The 15th meeting of the Conference of the Parties to the Convention on Biological (CBD) that is set to define this framework will take place in Kunming (China) from 11 to 24 October 2021.

framework for the topic addressed by this policy brief. The EGD communication has indeed introduced the overarching goal of restoring the natural functions of ground and surface waters '*to preserve and restore biodiversity in lakes, rivers, wetlands and estuaries, and to prevent and limit the damage from floods*'[8]. The fact that **rivers and wetlands are high on the EU policy agenda** is furthermore confirmed by the assessment of a series of policy instruments adopted under the EGD since its inception in December 2019, which have further shed light on how to implement the various aspects of the aforementioned goal and on how rivers and wetlands can help European cities and regions to become carbon neutral. The most salient ones in this regard are briefly outlined in the remainder of this section.

The EU 2030 Biodiversity Strategy

Adopted in May 2020, the EU 2030 Biodiversity Strategy[9] aims to guide the efforts to reverse in the next ten years the dramatic trends on biodiversity loss being recorded in Europe. It is arguably the most important instrument adopted in the framework of the EGD seeking to determine the future of rivers and wetlands. Indeed, it contains a strong focus on restoring freshwater ecosystems to achieve the objectives of the Water Framework Directive, whose implementation lags behind in many European regions. The Strategy clarifies that restoring the natural functions of rivers can be done by removing barriers preventing the passage of migrating fish and improving the flow of water and sediments. To this end, it establishes the target of restoring at least 25,000 km of rivers into free-flowing rivers through the removal of obsolete barriers and the restoration of floodplains and wetlands by 2030. Besides improving water regulation, flood protection, nursery habitat for fish and removing pollution, large-scale river and floodplain restoration investments are effective in supporting the development of socio-economic activities like tourism and recreation, according to the European Commission.

The Farm to Fork Strategy

In the view of the European Commission, the goal of strengthening the resilience of the EU food system while reducing its environmental and climate footprint and ensuring food security and sustainability cannot be separated from that of protecting rivers and wetlands. In fact, the Farm to Fork Strategy[10] makes clear that preserving and restoring land, freshwater and sea-based resources on which the food system depends will be crucial for enabling its implementation. In this regard, the Strategy stresses the need to address the excess of nutrients from agriculture, a major cause of water pollution and biodiversity loss in rivers, lakes, wetlands and seas. Consequently, it commits the Commission to reduce nutrient losses by at least 50% and calls for at least a 20% reduction in the use of fertilisers by 2030, to be achieved, among others, in the context of the new CAP for 2021-2027 through the proposed 'Sustainability Tool for Nutrients' and the application of sustainable agricultural practices in intensive livestock farming hotspots. The Farm to Fork Strategy also identifies inland waters as a space that may contribute to the objective of reaching a significant increase in organic aquaculture by 2030, a target further enucleated in the Action Plan on organic farming[11] adopted in March 2021.

The Sustainable and Smart Mobility Strategy

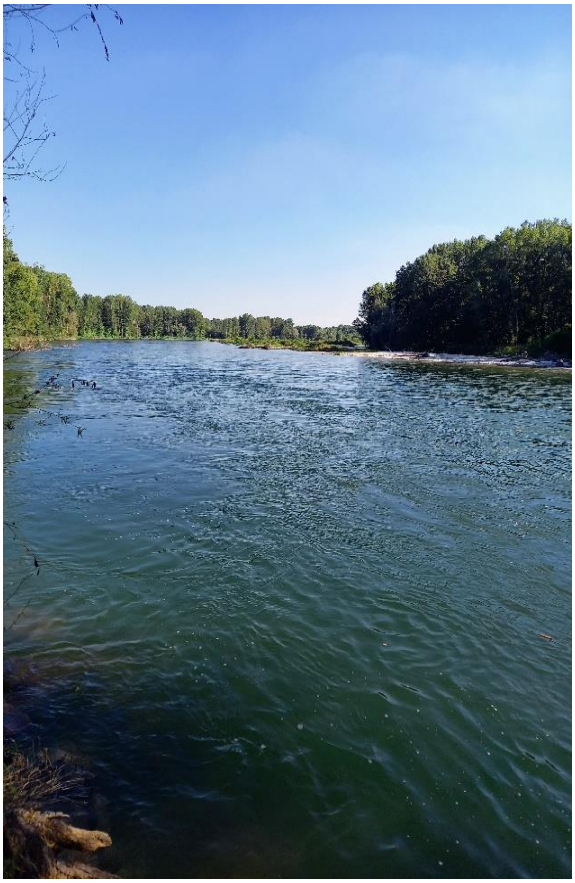
To achieve climate neutrality by mid-century, greenhouse gas emissions from the transport sector will have to undergo a 90% cut. This very deep reduction will only be possible if all transport modes contribute to the effort and if multimodal transport is strongly supported. The Sustainable and Smart Mobility Strategy[12] published in December 2020 constitutes the policy framework for the efforts in this regard, setting milestones and projections for each transport mode for the next thirty years. With regard to inland waterways and short sea shipping the Strategy foresees an increase of 25% by 2030 and of 50% by 2050, respectively, and predicts that waterborne-based intermodal transport will compete on

[8] European Commission, communication on 'The European Green Deal' of 11 December 2019, COM(2019) 640 final.
[9] *Ibidem*, communication on 'EU Biodiversity Strategy for 2030 Bringing nature back into our lives' of 20 May 2020, COM(2020) 380 final.
[10] *Ibid*. communication on 'A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system' of 20 May 2020, COM(2020) 381 final.
[11] *Ib*. communication on 'An Action Plan for the development of organic production' of 25 March 2021, COM(2021) 141 final.
[12] *Ib*. communication on 'Sustainable and Smart Mobility Strategy – putting European transport on track for the future' of 9 December 2020, COM(2020) 789 final.

equal footing with road-only transport. For the Commission, the priority transfer of a substantial part of the 75% of inland freight currently carried by road onto inland waterways (and rail) is required to reduce emissions and increase the overall efficiency of the transport system. The benefits of deploying zero-emission vessels and of promoting waterborne public transport solutions are clearly recognized by the Strategy, which also calls for a better use of inland water ways into cities to green last mile urban logistics.

The new EU Climate Adaptation Strategy

Adopted in February 2021, the new Climate Adaptation Strategy[13] starts from the premise that nature is a vital ally in the fight against climate change. Therefore, its goal of making Europe more resilient and better prepared to respond and adapt to the challenges linked to climate change is anchored to the imperatives of maintaining and enhancing ecosystem services and implementing nature-based solutions. For this reason, the Strategy highlights how much protecting and restoring wetlands and coastal ecosystems and adopting solutions that harness the power of nature to reinforce green-blue infrastructures is essential for delivering on multiple environmental objectives (such as better flood management) and bringing socio-economic benefits to the communities. The local level is labelled by the Strategy as 'the bedrock of adaptation', which thus makes clear that **local and regional policymakers primarily bear the responsibility of forging a climate resilient continent**.



Ticino River (Lombardy, Italy). Image credits: GreenMatters

'Coming soon' – Expected EU policy initiatives and legislative proposals relevant for rivers and wetlands

- Zero pollution action plan on air, water and soil (2021)
- Nature restoration law (2021)
- Technical guidance and support to identify sites for river restoration (2021)
- New EU soil strategy (2021)
- Post 2020 Common Agricultural Policy (negotiations ongoing)
- Strategic Guidelines for the sustainable development of EU aquaculture (2021)
- Revision of Directive 2010/75/EU on industrial emissions (2021)
- Evaluation of the Sewage Sludge Directive 86/278/EEC (2021)
- 2021-2027 Action Plan on Inland waterway transport - NAIADES III (2021)
- Revision of Directive 91/271/EEC on Urban Waste Water Treatment (2022)

[13] European Commission, communication on 'Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change' of 24 February 2021, COM(2021) 82 final.

Reflections on EU river restoration goals for the next decade

For this policy brief we decided to reach out to some public authorities taking part in relevant **Interreg Europe projects** to check if and how they welcomed the river restoration goals set by the EU 2030 Biodiversity Strategy proposed by the European Commission. This box gathers their reactions.

Camille Chowah, Policy Officer at the Val-de-Marne Tourism Board (STAR Cities lead partner, France), stressed that finding a balance between environmental protection and economic development is a challenge that STAR Cities project partners are ready to take on: '*This is one of the core issues we are addressing with our project. With our partners we are committed to tap into the huge potential of riverside tourism and we intend to do so for the post-Covid 19 recovery in a truly sustainable manner. For us river restoration is a key factor in the development of river tourism. Restoring river ecosystems is indeed the best possible answer we can give to satisfy the demand for more nature, more authenticity and more outdoor experiences that we see growing in our regions. With STAR Cities partners we are developing a sustainable tourism offer that can only be strengthened if the 2030 EU Biodiversity Strategy is fully implemented'.*

Carlos Jésus Rivas Rojo, from the Iberian Association of Riverside Municipalities of the Duero River (BIGDATA 4 RIVERS project partner) stressed what river restoration would entail for cross-border regional development in Castilla y León (Spain) and the North Region (Portugal). '*Carrying out restoration actions on the Duero/Douro would mean acknowledging the river as the real backbone of our interregional development and its immeasurable value as a privileged space that can be used for reconnecting with nature. It would also mean bringing back biodiversity and ecosystem services which are so vital for a balanced socio-economic regional development'.* '*Our main challenge* – he continued – *is to improve the promotion of the river as a destination for active and healthy tourism where biodiversity thrives. We want to exploit our potential in this sense also to create economic development opportunities at local level, support the establishment of new SMEs and combat rural depopulation. Involving all territorial stakeholders and coordinating all levels of the public administration in both countries will be crucial for our regions to deliver on river restoration and implement the Strategy'*.

Diego Conte, Environmental Engineer at the Southern Apennines River Basin District Authority (Land-Sea lead partner, Italy) reminded that restoration of rivers and coastal areas is already an essential goal of flood risk management plans and river basin management plans adopted in compliance with EU law. Moreover, he highlighted how measures laid down by such plans encourage, among others, the development of skills and governance structures to better preserve aquatic ecosystems: '*We need to be able to enhance ecosystem services of rivers and coastal areas if we really want to develop regional strategies on ecotourism. Many parts of our River Basin District are still relatively rich of natural resources and possess adequate environmental features to support ecotourism at regional scale*'. With regard to the Land-Sea project, Mr Conte hopes that the interregional cooperation experience could contribute to the economic recovery and inspire the implementation of EU policy objectives on biodiversity in partner regions based on the lessons learned on sustainable management of natural resources and vulnerable ecosystems. He finally noted that: '*A lot remains to be done to change perceptions about vulnerable ecosystems, combat environmental degradation and prevent waste from ending up in our rivers and seas'.*

Local and regional policies for rivers and wetlands

Valorisation of cultural and natural heritage along inland waterways

Local and regional authorities taking part in the Interreg Europe programme are sharing an extraordinary quantity of good practices on sustainable management of the cultural and natural heritage of rivers, that are aligned to the objectives pursued at EU level under the European Green Deal. The WaVE and the SWARE projects, in particular, indicate how to valorise water-linked heritage and support sustainable tourism while raising awareness and educating on water issues by setting up structures such as the Museum of Italian-Swiss Waters on the Ticino River (Lombardy) and the Water Museum of Esztergom on the Danube River (Hungary). The same projects also show the way on how to daylight rivers, as in the case of the Aarhus River (Denmark) and the new Mark River in Breda (the Netherlands), and to leverage the regeneration of watercourses for achieving wider socio-economic goals as well as climate and environmental ones, including better waste water management, flood and coastal management.

Salt marshes heritage and climate adaptation in Cervia (Italy)

Cervia is a Municipality on the Adriatic Coast renowned for long beaches, excellent hospitality and for its inland salt pans, i.e. a protected area hosting a Natura 2000 site and connected to the sea via a navigable channel. In recent years, local authorities adopted a clear vision for sustainable development aimed at increasing attractiveness while preserving the richness of the natural and cultural heritage. Hence, they designed forward-looking projects and used available regional, national and EU financing to enable the revitalisation of the water-linked heritage around salt production. The European Regional Development Fund (ERDF), the European Agricultural Fund for Rural Development (EAFRD) and European Maritime and Fisheries Fund (EMFF) were accessed in the 2014-2020 period to regenerate the ancient salt storehouse and the harbour of Cervia. With ongoing projects, also the Interreg Italy-Croatia and Interreg Central Europe programmes are expected to deliver on the vision adopted by the local administration to valorise its cultural heritage while becoming more climate resilient thanks to better flood management and actions against coastal erosion.

Further information about the practice is available here. Image Source: http://www.turismo.comunecervia.it/

Furthermore, multiple interregional cooperation evidence points to the widely acknowledged value of rivers as axis of ecotourism and cycling tourism in particular. WaVE good practices such as the Blue Routes in the Province of Alicante (Spain), which are hiking and cycling trails linked to the water heritage, and UL2L ones, such as the Green Way along water streams in the Province of Spoleto (Italy), offer insights on how to foster the sustainable use of riverside and water rich territories in full respect of their natural resources. In the latter case, it was precisely around the decision of building a cycling path that river and landscape restoration measures were also implemented. A similar approach appears to have been adopted also in Andalusia (Spain), where a hiking and cycling infrastructure was developed at the Estuary of the Odiel River to shield marshlands from environmental degradation caused by urban sprawling (ECO-CICLE project). The Lahn River Trails in Central Hessen and the Volcano Bike Trail in the Vogelsberg Region (Germany) instead focus more on the provision of all sort of information (on routes, landscape, nearby open-air sport activities, etc.), the availability of services to support users (restaurants, resting spots, bike repair centres, rental shops, etc.) and the integration with public transport to increase accessibility and use of trails along rivers, lakes and ponds (ThreeT project).

Cycling tourism infrastructure along the Ruhr River (Germany)

The Ruhr Valley Cycle Path follows the Ruhr river for over 230 km on a route intertwined with the industrial, natural and cultural heritage of the North Rhine-Westphalia region. Since its inauguration in 2006, it boosted cycling tourism around forests, heathlands and the traces of the industrial past which greatly marked regional development and history. The path stretches mainly along the river, is mostly car-free and entirely signposted. Sections at risk of flooding are specifically signalled. Beside biking along the river, visitors can make canoe, boat and light tram excursions. The good practice stands out as a successful case of multi-stakeholder engagement and cooperation for infrastructure development and riverside tourism promotion.

Further information about the practice is available here. Image Source: Photo by joergkessler1967 from Pixabay.

Preservation of nature and culture around river mouths

Nestled between land and sea, river mouths in Europe are often designated as wetlands of international importance under the 1979 Ramsar Convention and belong to the Natura 2020 ecological network by virtue of their fundamental role in preserving habitats and species of community importance, including migratory species. Nevertheless, they are under constant pressures from land use change and pollution which endanger the many ecosystem services and functions they perform, such as flood protection and shoreline erosion control. The Land-Sea project provide insights to counteract these pressures.

Environmental protection of the Ebro delta (Spain)

Diminishing fluvial sediments kept upstream by artificial dams are the primary reason why the Ebro Delta, a wetland of international importance, is losing ground to coastal regression. According to estimates, the coast is retreating at a pace of 10 m per year at the mouth of the river, where 150 hectares of wetlands already disappeared between 1957 and 2000. The problem, which is worsened by subsidence and sea level rise, could cause the disappearance of 15,000 ha of wetlands by the end of the century. Between 2014 and 2018 the LIFE 'EBRO-ADMICLIM' project implemented a series of demonstration actions on climate adaptation and climate mitigation in the Ebro Delta to address the coastal regression. Such actions were based on an integrated approach that involved different stakeholders and comprised, among others, the transfer of sediment inputs from the upstream reservoirs along the Ebro River and the construction of a pilot plant for purifying water in the rice paddies in the Delta area.

Further information on the practice is available here. *Image Source:* Photo by makamuki0 from **Pixabay**.

These fragile ecosystems constitute also a great laboratory where to experiment on the implementation the European Framework for Action on Cultural Heritage. Evidence gathered from the Delta Lady project demonstrates that policymakers and stakeholders are increasingly understanding this. Hence, they are putting in place solutions to safeguard, enhance and promote heritage at risk of disappearance by encouraging synergies with contemporary creation processes and by engaging young people and local communities in a way that supports local sustainable development.

Traditional crafts in the Danube Delta revitalised through contemporary design (Romania)

The DELTACRAFT project seeks to revitalise traditional crafts in the Danube Delta, an almost entirely rural and sparsely populated area where an important component of the cultural heritage, i.e. the traditional crafts of diverse communities living therein, has become increasingly endangered. Young generations tend in fact either to leave this territory or, if they remain, to lose interest in developing the skills required to craft traditional objects which, on their part, have also lost their ancient appeal. Thanks to DELTACRAFT a study on traditional crafts was carried out and local artisans were chosen to create a collection of contemporary fascinating objects inspired by the culture of the Danube Delta together with a group of young designers. The project is showing the added value of supporting creative processes between generations to enable the survival of traditional knowledge in a way that is mutually beneficial to all parties involved. The collection has its own website and is being sold through an online shop. As a good practice, it received a nomination for the Romanian Cultural Entrepreneurship Awards in 2018.

Further information about the practice is available here. *Image Source:* Photo by Andrew Riley from **Unsplash**.

Wetlands as part of the green-blue infrastructure

The Institute of European Environmental Policy (IEEP) has recently stressed the importance of nature-based solutions for designing and implementing pathways to recover from the pandemic. Further to having a clear role in meeting EU objectives on biodiversity and climate change in the next 10 years, they in fact trigger job creation, provide economic opportunities, increase wellbeing and public health. Restored and constructed wetlands are already being explored in this sense by Interreg Europe projects.

The value of wetland restoration and of multifunctional nature-based solutions is further confirmed by a variety of PERFECT and AQUARES good practices. Among others, the Rainham Marshes nature reserve (UK) demonstrates that restored urban wetlands improve biodiversity while also becoming a local asset for job creation, education and tourism. The dry 'polder' in Žichlínek (Czech Republic) proves that containing floods also results in better landscape management. The rehabilitation of the recreational reservoir 'Arturowek' in Lodz (Poland) shows that implementing ecohydrological solutions, such as rainwater reuse, can improve water quality and enhance biodiversity in otherwise contaminated urban water reservoirs used by residents for recreational purposes, thereby strengthening the green-blue infrastructure and delivering on climate adaptation.

Beam Parklands (United Kingdom)

Defined by the Land Trust as a 'multi-awarding winning wetland park gives people a precious slice of countryside on their doorstep', the Beam Parklands are a 53-hectare park in East London on the floodplain of the Beam river, a tributary of the Thames. Between 2009 and 2011 the Land Trust took over this abandoned site and recreated its primary flood protection role thanks to a blend of funding instruments, from national and private resources to the ERDF. The park area can now store up to 45,000m^3 of water, protecting neighbouring homes and businesses in case of flooding. Besides this, it also provides a high-quality, multi-functional public space for recreation and contributes to the conservation of habitats and wildlife as well as to urban regeneration. Policymakers may learn from this good practice on how to restore the functions of wetlands in densely populated areas. As shown by the case at hand their integration in the wider green infrastructure at city level can serve multiple environmental and social purposes.

Further information about the practice is available here. Image Source: https://thelandtrust.org.uk/ .

Constructed wetlands for treating agricultural wastewater and runoff (Latvia)

Wetlands can be artificially created in proximity of farms for the biological treatment of agricultural wastewater. Thanks to their drainage capacity, these structures can successfully retain nutrients such as phosphorous and nitrogen compounds as well as other polluting substances, thereby cleaning the water which can be reused by farmers for irrigation purposes in times of water scarcity. Moreover, they are useful to reduce at source the load of nutrients in wastewater sent to treatment and subsequently discharged into superficial waterbodies and the seas, with benefits for biodiversity and aquatic ecosystems. Finally, thanks to their water capacity, constructed wetlands may serve the purpose of limiting floods in adjacent areas during heavy rain periods.

Further information about the practice is available here. *Image Source:* Photo by kordi vahle from Unsplash.

Sustainable transport on inland waterways

Even if relatively less than for other matters in the field of environment and resource efficiency, a growing number of good practices identified in the context of Interreg Europe projects also explore ways to foster sustainable transport on inland waterways, as in the case of the EPICAH and SWARE good practiced portrayed below.

The Green Boat project (Greece)

The Prespa lakes are two biodiversity-rich lakes shared by three countries: Greece, Albania and North Macedonia. Municipalities in the area wanted to preserve it as a wildlife sanctuary while promoting sustainable tourism. Thanks to ERDF co-financing and pre-accession assistance, the 'Green Boat' project made possible to deploy three solar-powered vessels (the "green boats") which are now used as a means of zero-emission transport on the cross-border lake area to enable the discovery of the natural and cultural heritage in an environmentally friendly manner. A joint action plan for 'Solar Boat Trips' was developed by Albanian and Greek Municipalities who strengthened their ties around the lakes as a shared natural resource. The practice, which ran for the 2019 RegioStar award in the 'Connecting blue, green and grey' category, offers valuable insights on how to promote sustainable lake tourism.

Further information about the practice is available here. *Image Source:* European Commission.

Ferry across the Gauja River (Latvia)

The Līgatne ferry was constructed after the World War II because of the destruction of the former bridge on the Gauja river. Nowadays, the ferry ensures the daily transfer of residents and tourists from one shore of the river to the other. Owned by the Latvian Nature Conservation Agency and managed by two Municipalities (Līgatne and Pārgauja), the service consists of a barge made of two parallel steel boats and a wooden board that moves back and forth without being propelled by any engine. A steel cable stretching across the river prevents the barge from moving downstream. Policymakers may learn from this practice on how to give a new life to traditional means of transport belonging to the cultural heritage and turn them into appealing tourism attractions.

Further information about the practice is available here. *Image Source:* Photo by Gruu from **Pixabay**.

Another good practice worth mentioning is the SWARE network of uniformly marked waterways in the Province of South Holland (The Netherlands), which boosted connectivity and increased navigability of local waterways. In Romania, the vaporetto lines along the Bega River in the City of Timișoara (Romania), have been introduced as a waterborne public mobility service, a sustainable alternative to private motorized road transport. This good practice has been identified within the MATCH-UP project. The 30 miles concept implemented in the Gulf of Finland (PASSAGE project), on its part, consists in the implementation of a cross-border network of marinas between Finland and Estonia to encourage sailing and exploit the economic opportunities stemming from this form of zero-emission navigation.

European support for rivers and wetlands

EU Financial Support

The Multiannual Financial Framework (MMF) for the period 2021-2027 is finally adopted. Both the European Parliament and the Council have considered regional policy pivotal to mitigate the effects of the COVID-19 pandemic, pursue EGD policy goals and trigger the recovery. Projects to restore river and wetland ecosystems and to implement nature-based solutions (such as constructed wetlands) can make European regions greener and more climate resilient. As such, they will certainly be well-placed to attract EU investments in the current programming period. Based on the latest initiatives adopted by the Commission it is fair to say that the outlook is rather positive for policymakers who intend to turn rivers and wetlands into drivers of regional sustainable development.

With the 2030 EU Biodiversity Strategy, the EU executive has indeed clarified that reversing biodiversity loss and restoring ecosystems - including those of rivers and wetlands - will require 'making the most of *all* EU relevant programmes and funding instruments'[14] including the CAP, European Structural and Investment Funds, Horizon Europe and the LIFE programme. Resources flowing from these programmes and instruments will need to be matched by significant public and private investments at national and regional levels since the challenge of implementing the Strategy is a great one and will require a yearly expenditure on nature of 20 billion EUR. According to the Commission also InvestEU will sustain efforts in this direction through a dedicated natural-capital/circular-economy initiative that will mobilise at least 10 billion EUR in the next decade based on public/private blended finance.

The Farm to Fork Strategy has indicated that the European Regional Development Fund (ERDF) will be the main instrument for supporting regions in making food value chains more sustainable (which includes decreasing pressures on water resources) and that Horizon Europe (with 10 billion EUR) will support research and development on food (including fisheries and aquaculture) and the environment (e.g. to foster nature-based solutions for agri-food). The so-called 'eco-schemes' of the post 2020 CAP are expected to offer a stream of funding to boost sustainable practices. The goal of increasing substantially organic aquaculture by 2030 set by the recent Action Plan for organic production will be supported by the European Maritime, Fisheries and Aquaculture Fund (EMFAF).

To achieve the target set by Smart and Sustainable Mobility Strategy of increasing multimodal transport and the share of waterborne transport on inland waterways regions will continue to make use of ESIFs and, for cross-border initiatives, the Connecting Europe Facility (CEF), which will still be the 'main instrument to finance infrastructure development with maximum EU-added value, while mainstreaming the green and digital objectives'. Moreover, the mission area on 'Climate neutral and smart Cities' under Horizon Europe could help cities to find innovative solutions for cycling along rivers and deploying zero emission solutions for both freight and passenger transport on inland waterways to achieve one of the milestones outlined in the Strategy, namely, having at least 100 completely decarbonised cities by 2030.

The local and regional implementation of the new EU Strategy on Adaptation to Climate Change will count on the increased spending target of 30% for climate action in the long-term EU budget for 2021-2027. Resources for adaptation will be primarily made available under the Cohesion Fund and the ERDF, *inter alia* to promote nature-based solutions that will reinforce green-blue infrastructures, thereby building climate resilience and reaching socio-economic goals. Additionally, also the LIFE programme and the future CAP are set to contribute to ensuring the availability and sustainability of freshwater and the roll-out of nature-based solutions for maintaining healthy rivers and wetlands. Furthermore, the Strategy emphasises the need to leverage long-term investments in nature-based solutions, hints to the role that may be played in this respect by InvestEU, and to the support that may come from the new climate roadmap of the European Investment Bank that will be unveiled in late 2021. Finally, with its mission areas on 'Adaptation to Climate Change, including Societal Transformation' and 'Healthy oceans, seas, coastal and inland waters', Horizon Europe is also expected to give great support to innovative climate adaptation solutions involving rivers and wetlands.

[14] See COM(2020) 380 final, p. 17.

Interreg Europe

Interreg Europe projects entail the sharing of experience and development of regional action plans to improve policy frameworks. Each project gathers and studies policy examples, hundreds of which are available in the Good Practice Database of the Interreg Europe Policy Learning Platform (PLP). Some of them have been featured in this brief.

The PLP is pro-actively supporting learning and exchange of experience and a number of on-demand services which, among others, can support cities and regions in turning their rivers and wetlands into drivers for sustainable development. These services include an online helpdesk, matchmakings and the peer reviews. The latter represent a constructive tool for managing authorities and other local or regional authorities to obtain input and feedback on the challenges policymakers are facing. Carefully selected European peers are invited to the host region for a structured exchange of experiences and to provide input and recommendations addressing the specific local challenge.

Recommendations and key learnings

The next generation of EU funds is on the starting blocks and the deadline for submission of National Recovery and Resilience Plans that will define how Member States will use the 672.5 billion EUR in loans and grants of the Recovery and Resilience Facility is rapidly approaching. In this conjuncture looking at the wealth of Interreg Europe good practices on rivers and wetlands can be a very useful exercise for cities and regions to gain better insight on how to preserve them and use them sustainably, thanks also to the implementation of nature-based solutions.

The recommendations and lesson learned on this matter as presented in this policy brief can be summarised as follows:

Current EU policy context & support

- Discover how the European Green Deal aims to guide local and regional efforts to turn rivers and wetlands into drivers of sustainable development.
- Zoom in on the EU 2030 Biodiversity Strategy, the Farm to Fork Strategy, the Sustainable and Smart Mobility Strategy and the new EU Strategy on Adaptation to Climate Change to find out what they detail on rivers and wetlands.
- Learn about the views shared by authorities involved in the STAR Cities, BIGDATA 4 RIVERS and Land-Sea projects on the river restoration goals of the EU 2030 Biodiversity Strategy and what they entail for riverside tourism, ecotourism and regional development.
- Get a clear overview on how European Structural and Investment Funds and direct funding instruments will support regions in implementing projects on rivers and wetlands in the 2021-2027 programming period.

Valorisation of natural and cultural heritage along inland waterways

- Learn from the WaVE and SWARE projects how to set up museums to showcase water-linked heritage and educate on environmental and climate issues.
- Find out why daylighting urban rivers and restoring city harbours is a good choice for revamping the heritage while stimulating the economy and becoming more climate resilient.
- Discover how the Municipality of Cervia (Italy) is shaping its local sustainable development based on a strong policy vision and a coherent use of regional, national and EU funding opportunities to regenerate its water-linked heritage and deliver on climate adaptation;
- Build hiking and cycling infrastructures and carry out river and landscape restoration measures as under the UL2L and ECO-CICLE projects.
- Get inspired by the Alicante Blue Routes (Spain) the Ruhr Valley Cycling Path, the Lahn River Trails and the Volcan Bike Trail (Germany). Consider how cycling tourism and leisure activities can be fostered along rivers in your region through ubiquitous signposting and adequate support services to increase their accessibility.

- See how improved monitoring of wildlife and river restoration are enabling sustainable fishing and the implementation of nature conservation measures in Northern Sweden (WLE project).

Preservation of nature and culture around river mouths

- See how the LIFE programme supported pilot actions to address wetland disappearance in the Ebro Delta (Spain) and implement long-term local and regional strategies on climate adaptation to protect your wetlands as repositories of biodiversity and ecosystem services.
- Get inspired by the mutually beneficial encounter between the 'guardians' of traditional crafts and young designers in the Danube Delta (Romania). Encourage initiatives to foster the survival of endangered cultural heritage in sparsely populated areas along rivers.
- Learn from Land-Sea and Delta Lady about winning solutions to address the pressures both on the fragile ecosystems and the intangible cultural heritage treasured by river mouths.

Wetlands as part of the green-blue infrastructure

- Create wetland parks in areas of your city at high risk of flooding. Rely on structures, habitats and plant species able to withstand flooding and learn how these nature-based solutions can contribute urban regeneration as in the case of the Beam Parklands in East London (UK).
- Discover constructed wetlands as effective nature-based solutions for treating agricultural effluents. Interregional cooperation shows how this practice enables water reuse and reduces excessive nutrients and pollution that cause eutrophication of waterbodies.
- Delve into PERFECT and AQUARES good practices to further find out how wetland restoration, dry 'polders', and ecohydrological solutions can drive urban regeneration, bring economic opportunities and recreation, improve the landscape and reinforce the green-blue infrastructure.

Sustainable transport on inland waterways

- Support the deployment of zero-emission vessels (e.g. electric boats, boats powered by solar panels, etc.) to boost ecotourism as it was done on the Prespa Lakes (Greece, Albania, North Macedonia).
- See how traditional means of transportation to cross rivers can be maintained as a clean mobility option for residents and become a characteristic attraction for tourists as in the case of barge on bank of the Gauja River in Municipality of Līgatne (Latvia).
- Learn how a uniformly marked network of water channels is bringing opportunities for the local economy and people closer to nature in the Province of South Holland (the Netherlands).
- Commit to waterborne integrated public transport as a valid alternative to private motorised road transport like in Timișoara (Romania, MATCH-UP project) and adopt the '30 miles' concept tested jointly by Finnish and Estonian stakeholders to support sailing (PASSAGE project).

Sources for further information

Interreg Europe Policy Learning Platform information:

- Policy brief - Sustainable water management in the circular economy
- Policy brief - Urban ecosystems
- Policy brief - Protection and sustainable management of heritage in coastal and fluvial regions
- Webinar - Water reuse and the European Green Deal
- Webinar - Ecotourism in riverside territories
- Webinar - Protecting and restoring nature
- Workshop - Developing healthy and prosperous urban eco-systems
- Article - Enhancing policy solutions for water reuse, wastewater and underground water pollution
- Story - Daylighting rivers
- Story - From Drained Wetlands to Water Kingdom
- SWARE, Policy recommendations on sustainable heritage management of waterway regions

Other sources:

- European Commission, Water policy
- European Commission, Zero pollution action plan for air, water and soil
- European Commission, Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment, (Oct. 2020)
- European Commission: EU guidance on integrating ecosystems and their services into decision-making (July 2019)
- European Parliament, resolution on establishing an EU strategy for sustainable tourism (Mar. 2021)
- European Parliament, resolution on cohesion policy and regional environment strategies in the fight against climate change (Mar. 2021)
- European Parliament, resolution on implementation of the EU water legislation (Dec. 2020)
- European Environmental Agency, Water and agriculture: towards sustainable solutions (Feb. 2021)
- European Environmental Agency, Many obsolete barriers harm Europe's rivers (Feb. 2021)
- IPBES, Summary for policy makers of the first IPBES global assessment report on biodiversity and ecosystem services (May 2019)
- WWF, The potential of barrier removal to reconnect Europe's rivers (Apr. 2021)
- WWF, Hydropower in Europe: transformation – not development (Mar. 2021)
- IEEP, Nature-based solutions and their socio-economic benefits for Europe's recovery. Enhancing the uptake of nature-based solutions across EU policies (Feb. 2021)
- Dam Removal Europe (DRE), Strategy 2020-2030 (2020)
- Adaptive Management of Barriers in European Rivers (AMBER, Horizon 2020 project), Let it flow. Reconnecting people with rivers (2020)
- Wetlands International, New EU Inland Waterway Development Action Plan must adhere to legal water protection requirements (2020)
- Wetlands International, Time for action, not despair: The IPBES Global Assessment report and the solutions we offer (2019)
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- UNESCO, Nature-based solutions for water (2018)
- United Nations, Decade of Ecosystem Restoration (2021-2030)

Image credit: Photo by Brandon Montrone on Pexels

Interreg Europe Policy Learning Platform on

Environment and resource efficiency

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Contact us to share your views on this policy brief!

Environment and resource efficiency

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