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Freeing Europe's rivers

addressing legal bottlenecks
in the removal of barriers
on rivers in EU Member States

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1 Introduction

Roughly 1.2 million barriers fragment European rivers. This means that there is almost one barrier for each kilometre of river. They effectively impede the free flow and consequently transform the habitats and hydrology of rivers, posing a threat to biodiversity. In fact, obstacles to the natural flow of rivers are one of the leading pressures on European surface waters[1].

Fragmented rivers are not only damaging to the freshwater biodiversity, but they ultimately threaten society's resilience and adaptability to the consequences of climate change. Disturbed connectivity may lead to shortages of water resources and reduce the ability of the watershed to absorb water, thus depriving it of its natural flood protection capacity.

The necessity to ensure the continuity of rivers has been present in European policies for quite some time now. Already, the Water Framework Directive, dated 2000, introduced hydrological regime and continuity of a river as quality elements in the assessment of their environmental status. The policy to restore the free flow of European rivers was then reinforced in the EU Biodiversity Strategy. Finally, the Nature Restoration Regulation introduced an effective and definitive obligation for the Member States to assess obsolete barriers and remove them to reach the target of 25000 km of free-flowing rivers.

Yet, some Member States are not administratively and legally ready for the effective implementation of NRR`s obligations. This report analyses three legal frameworks – Polish, Finnish and French, compares them and identifies legal recommendations for legal solutions that could be broadly used by different Member States in order to reach the barrier target.

1 European Environment Agency, Europe's state of water 2024 The need for improved water resilience, EEA Report 07/2024

1.1 River connectivity

There are four dimensions to the river connectivity.

- The longitudinal connectivity ensures the connection between upstream and downstream of a river, from its headwater to the mouth.
- The lateral connectivity refers to the connection between the river channel and the floodplain, riparian areas and wetlands bordering the river.
- The vertical connectivity ensures that there is communication between groundwater and surface water.
- The temporal connectivity is the seasonality of flows.[2]

For the purposes of this study, we characterise a free-flowing river as having longitudinal, lateral and vertical connectivity not hindered by artificial structures. The definition we apply is based on Article 3(22) of the NRR. In our analysis, we focus on the longitudinal connectivity of rivers and transversal barriers obstructing their flow. Under barriers, we mean *physical structures created directly by humans that block or reduce the natural flow of surface waters, typically built for purposes like hydropower, flood control, irrigation or navigation*.[3] Thus, this study does not address barriers such as levees, bank protections, embankment, bed revetment or channels.

The longitudinal connectivity is mostly hindered by dams, weirs or culverts. Some of them used to serve many purposes for local communities. They powered mills, supplied drinking water or improved irrigation. However, they do not serve most of these purposes anymore. For human they are, thus, obsolete. Yet for nature, they cause significant hardships.

2 Hermoso, V. (2025). Restoring free-flowing rivers: Planning for longitudinal and lateral connectivity recovery. Journal of Applied Ecology, 62, 2048–2060. https://doi.org/10.1111/1365-2664.70095, European Environment Agency, Europe's state of water 2024 The need for improved water resilience, EEA Report 07/2024, p. 39.

3 Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

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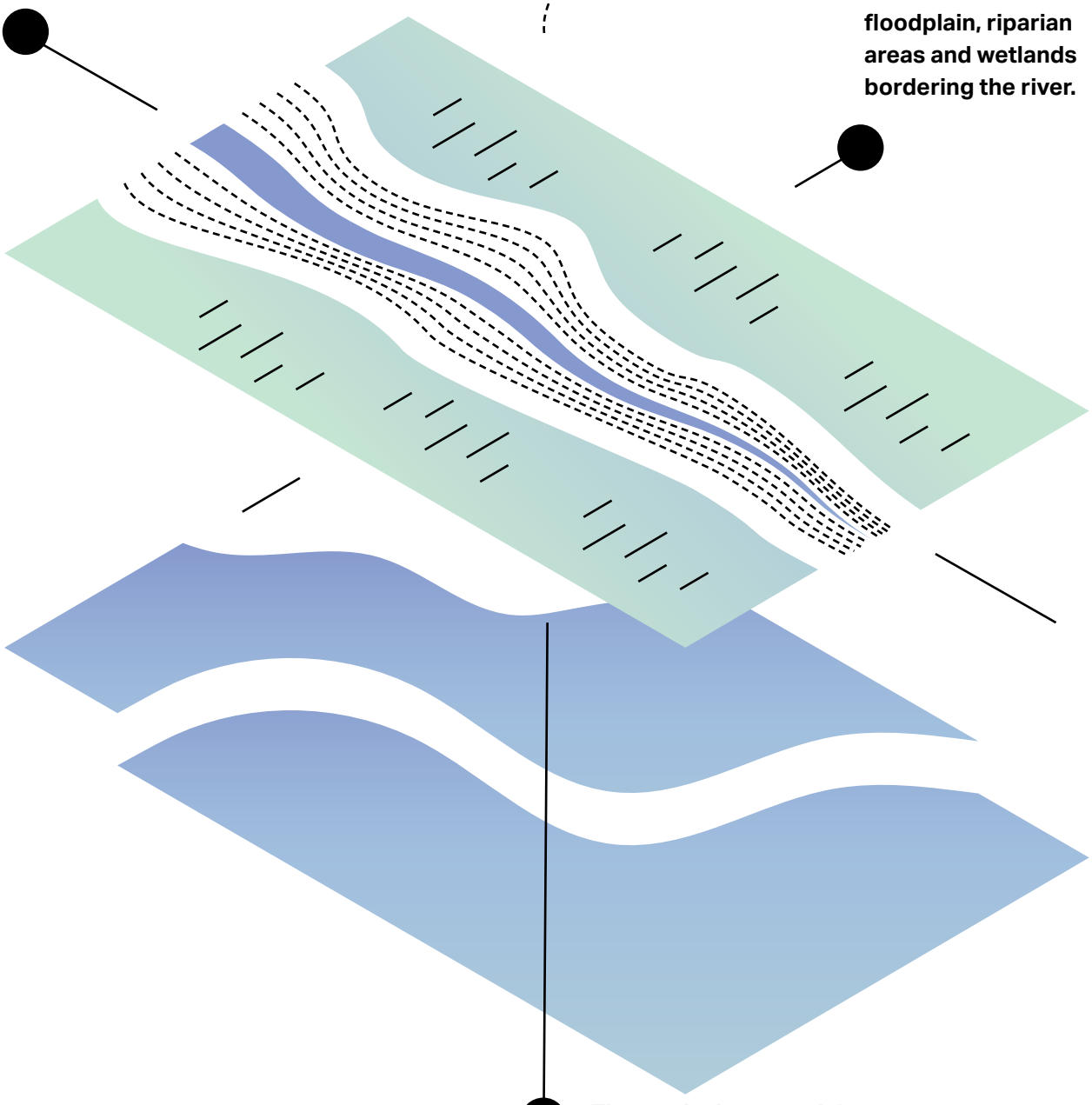


The vertical connectivity ensures that there is communication between groundwater and surface water.

It is estimated that there are at least 1.2 million barriers on European rivers (0.74 barriers per kilometre)[4], from which more than 100.000 are abandoned or obsolete[5]. 68% of existing barriers are structures less than two metres high.[6] Structures higher than 10 metres constitute less than 3% of existing barriers[7]. Barriers on rivers have multiple negative effects on the environment, especially on biodiversity, which for years has been in decline. Between 1970 and 2020, the global abundance of freshwater populations has fallen by 85%, with the populations of migratory freshwater fish declining by 81%[8]. The data for Europe shows an average migratory fish population decline of 75% in this time frame.[9] The main reason for such a decline is habitat degradation and habitat change.[10] Dams are recognised to be a leading cause of fragmentation and thus, of the global decline in freshwater species.[11]

Dams fragment rivers, which transforms habitats and hydrology of the river by altering flow, temperature, sediment transport and water level.[12] They impede fish migration, thus altering the movement, population sizes and distribution of species, as well as isolating habitats. Dams also impact water quality by changing the temperature and the capacity to dissolve oxygen. They disrupt the flow of organic material and nutrients, which are then stored in the reservoir, leading to an algal bloom.

Removing obsolete barriers is a viable, cost-effective restoration measure as it brings back natural water and sediment flows as well as habitats and wildlife.[13] Systematic barrier removal is recognised as more strategic and efficient than engineering interventions, especially in the case of small and obsolete barriers[14]. It also delivers multiple co-benefits across policy areas: in addition to restoring river connectivity, it supports the rewetting of peatlands, enhances natural water retention and improves conditions for adjacent terrestrial and wetland habitats.[15]

4 Belletti, B., Garcia de Leaniz, C., Jones, J. *et al.* More than one million barriers fragment Europe's rivers. *Nature* 588, 436–441 (2020). https://doi.org/10.1038/s41586-020-3005-2

5 Gough, P., Fernández Garrido, P., Van Herk, J., 2018. Dam Removal. A viable solution for the future of our European rivers. Dam Removal Europe; Data based on findings of The EU Horizon 2020 project, AMBER (Adaptive Management of Barriers in European Rivers (www.amber. international).

6 Belletti, B., Garcia de Leaniz, C., Jones, J. *et al.* More than one million barriers fragment Europe's rivers. *Nature* 588, 436–441 (2020). https://doi.org/10.1038/s41586-020-3005-2

7 Gough, P., Fernández Garrido, P., Van Herk, J., 2018. Dam Removal. A viable solution for the future of our European rivers. Dam Removal Europe; Data based on findings of The EU Horizon 2020 project, AMBER (Adaptive Management of Barriers in European Rivers (www.amber. international).

8 WWF (2024) Living Planet Report 2024 – A System in Peril. WWF, Gland, Switzerland.

9 Deinet, S., Flint, R., Puleston, H., Baratech, A., Royte, J., Thieme, M. L., Nagy, S., Hogan, Z. S., Januchowski-Hartley, S. and Wanningen, H. (2024) The Living Planet Index (LPI) for migratory freshwater fish 2024 update - Technical Report. World Fish Migration Foundation, The Netherlands.

10 Deinet, S., Flint, R., Puleston, H., Baratech, A., Royte, J., Thieme, M. L., Nagy, S., Hogan, Z. S., Januchowski-Hartley, S. and Wanningen, H. (2024) The Living Planet Index (LPI) for migratory freshwater fish 2024 update - Technical Report. World Fish Migration Foundation, The Netherlands.

11 Jones PE, Champneys T, Vevers J, et al. Selective effects of small barriers on river-resident fish. *J Appl Ecol*. 2021; 58: 1487–1498. https://doi.org/10.1111/1365-2664.13875

12 Reidy Liermann, Catherine & Nilsson, Christer & Robertson, James & Ng, Rebecca. (2012). Implications of Dam Obstruction for Global Freshwater Fish Diversity. BioScience. 62. 539-548. 10.1525/bio.2012.62.6.5.

13 Gough, P., Fernández Garrido, P., Van Herk, J., 2018. Dam Removal. A viable solution for the future of our European rivers. Dam Removal Europe

14 Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

15 Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

1.2 Nature Restoration Regulation: a requirement of barrier inventory and removal

The problem of river fragmentation by transversal barriers was already addressed by the WFD in 2000. Hydrological regime and river continuity are included in the quality elements for the classification of the ecological status of rivers[16]. Under the WFD, the river meets a high ecological status in hydrological regime criteria if the quantity and dynamics of flow, and the resultant connection to groundwater, reflect totally, or nearly totally, undisturbed conditions[17]. In river continuity criteria, the high environmental status is achieved when the continuity is not disturbed by anthropogenic activities and allows undisturbed migration of aquatic organisms and sediment transport[18].

In the Guidance Document "Ecological flows in the implementation of the Water Framework Directive" European Commission has recognised that *the natural hydrological regime plays a primary role in biodiversity conservation, production and sustainability of aquatic ecosystems*. It also stressed that *maintaining natural patterns of longitudinal and lateral connectivity is essential for the viability of populations of species*[19]. The Commission listed demolishing old dams as one of the actions that may have a positive impact on the flow regime.

According to the EU Biodiversity Strategy, the restoration of freshwater ecosystems can be achieved by removing or adjusting barriers that prevent the passage of migrating fish and improving the flow of water and sediments. It sets a goal of at least 25,000 km of rivers restored into free-flowing rivers by 2030 through the removal of primarily obsolete barriers and the restoration of floodplains and wetlands[20].

The target established in the EU Biodiversity Strategy became binding and time-bound with the adoption of the Nature Restoration Regulation.

The Regulation establishes a goal to restore freshwater ecosystems (Art. 4 of the NRR) and the natural connectivity of rivers and the natural functions of the related floodplains (Art. 9 of the NRR).

16 Annex V of the WFD.

17 Annex V of the WFD.

18 Annex V of the WFD.

19 European Commission (2015) Ecological flows in the implementation of the Water Framework Directive, Guidance Document No. 31, Technical Report - 2015 – 086 https://circabc.europa.eu/sd/a/4063d635-957b-4b6f-bfd4-b51b0acb2570/Guidance%20No%2031%20-%20Ecological%20flows%20(final%20version).pdf.

20 Chapter 2.2.7. of EU Biodiversity Strategy for 2030

The Nature Restoration Regulation imposes on Member States the following obligations:

- To make an inventory of artificial barriers to the connectivity of surface waters (Art. 9(1) of the NRR);
- To identify the barriers that need to be removed in order to meet targets of Art. 4 and the target of 25 000 of free flowing rivers (Art. 9(1) of the NRR);
- To remove identified barriers, giving priority to obsolete barriers (Art. 9(2) of the NRR);
- To complement the barrier removal with measures restoring the natural functions of the related floodplain (Art. 9(3) of the NRR);
- Ensure restored river connectivity is maintained over time (Art. 9(4) of the NRR).

This report will focus on Article 9(1)-(2) of the NRR in the context of transversal barriers.

To properly implement the Nature Restoration Regulation, Member States should have in place working administrative procedures allowing the removal of obsolete barriers. Their law should attribute the responsibility of removing the barrier upon the expiration of the permit or dissolution of its owner[21]. Moreover, the law should effectively ensure the execution of such an obligation. Barrier removal should be preceded by all assessments under the EIA, Habitats and Water Framework Directives when relevant for a particular case[22]. Yet, the procedure should not be too burdensome for applicants and should support effective and timely removal of obsolete structures.

Even though the targets of free-flowing rivers have been in place for over 25 years, some Member States are not legislatively prepared for the process of dam removal. This report aims at identifying gaps in the national legal systems that impede dam removal and at proposing solutions and recommendations based on best practices from analysed Member States.

WThe report analyses the process of dam removal in three legal systems: Polish, Finnish and French. The choice of the analysed Member States was based on very different stages of the dam removal`s state of play, different challenges and solutions. This way, the case study presents a diverse range of challenges and solutions, which could then be applied in different Member States.

The table 1 presents the state of play of dam removal in each analysed countries. The table 2 presents the number of dams in each analysed country as of 2020.

21 See Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

22 See Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

Table 1: progress of dam removal in Poland, Finland and France between 2020 and 2024 based on reports prepared by Dam Removal Europe

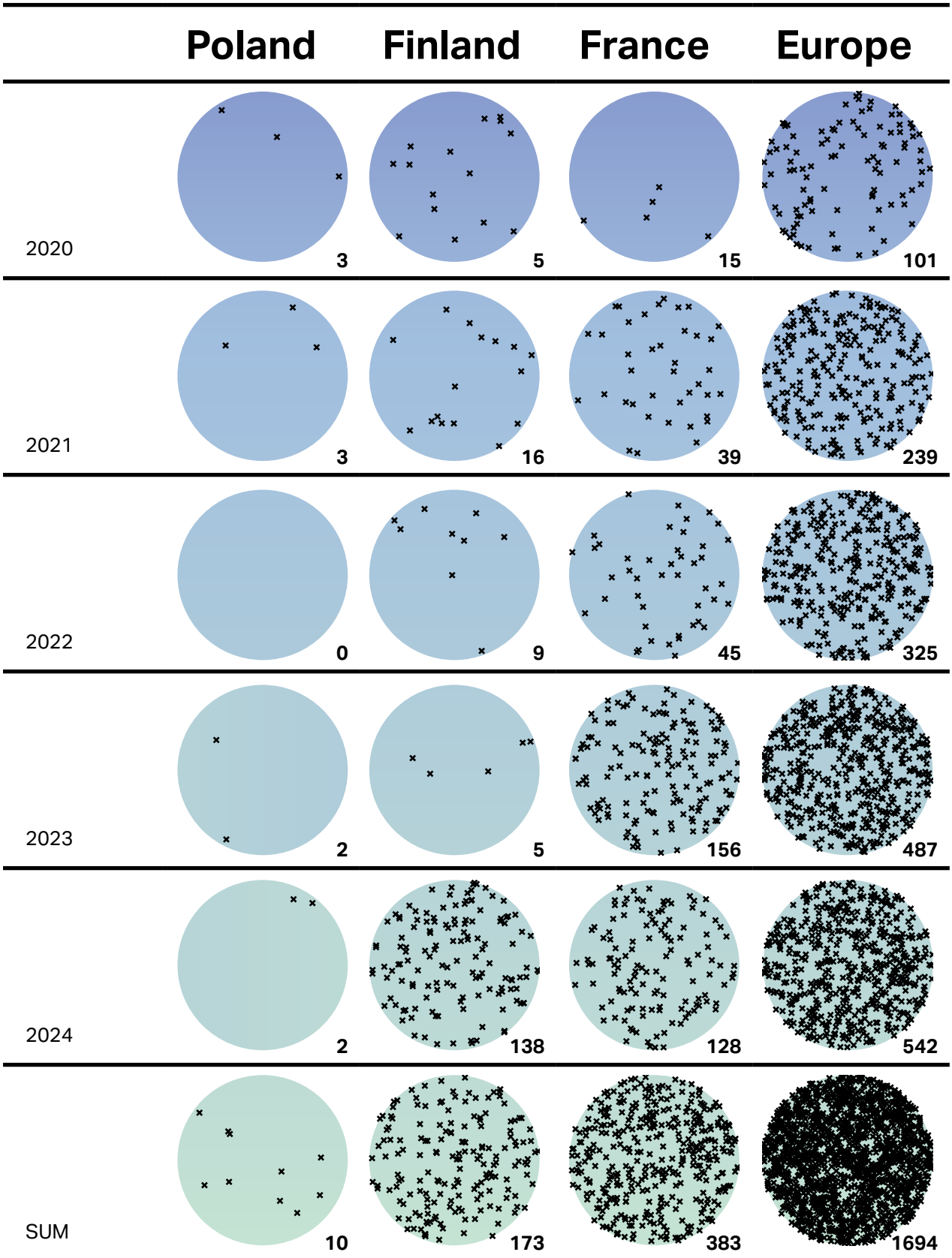
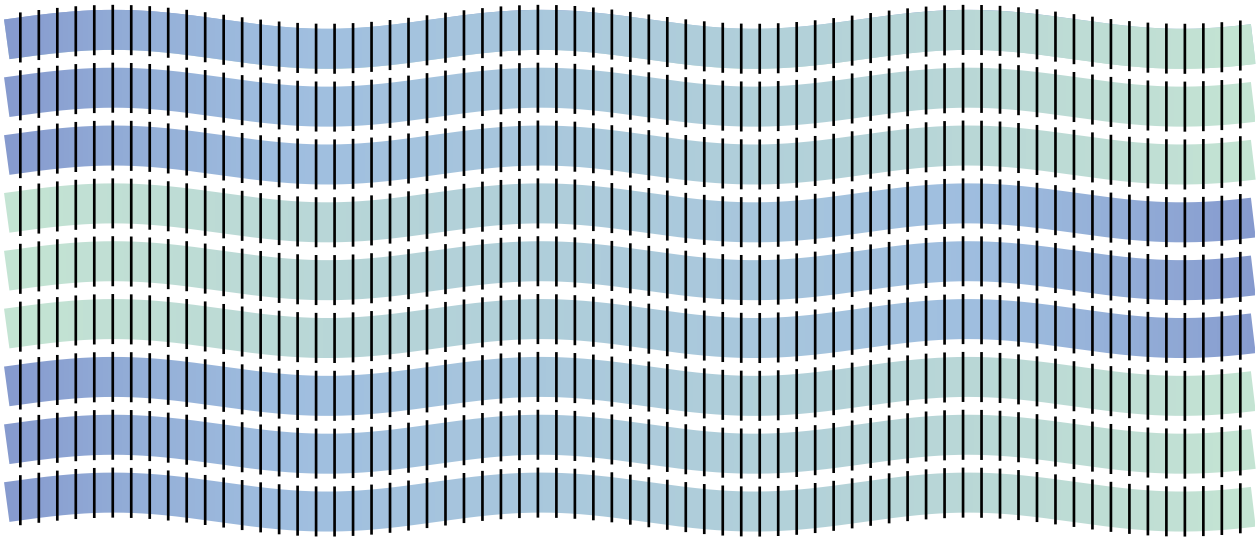
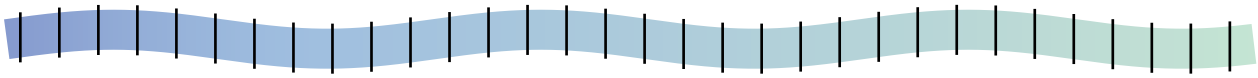


Table 2: comparison of barrier density in Poland, Finland and France as for 2020 based on data from Belletti, B., Garcia de Leaniz, C., Jones, J. et al. More than one million barriers fragment Europe's rivers. Nature 588, 436–441 (2020). https://doi.org/10.1038/s41586-020-3005-2

	Km of rivers	Total number of barriers	Barrier density
Europe	**1,649,489**	**1,213,874**	**0.74**



	Km of rivers	Total number of barriers	Barrier density
France	**183,373**	**63,932**	**0.35**



	Km of rivers	Total number of barriers	Barrier density
Finland	**87,703**	**31,876**	**0.36**

	Km of rivers	Total number of barriers	Barrier density
Poland	**80,401**	**77,530**	**0.96**

As follows from the data presented above, all three analysed countries are at very different stages of barrier removal. In France, dams are removed systematically and on a wide scale. Finland has shown significant progress over the years. At the same time in Poland, dam removal has happened only occasionally. The study compares different water governance systems of all three countries, as well as dam removal incentives and funding. Throughout the study, we seek to identify the main bottlenecks for dam removal, lying both in the lack of a systemic approach and shortcomings of the regulation of the process itself.

The case study divides the barrier removal process into two main steps.

First, we look for systemic solutions to the removal of obsolete barriers. We analyse the legal basis for barrier removal. The systemic approach allows for the identification of barriers and their removal (or rebuilding in order to facilitate fish passage) on a large scale.

Second, we analyse the procedure of the dam removal in individual cases. We identify legal permits that must be acquired before the removal can be executed. We assess whether this process is compliant with EU law and, at the same time, if it is not too burdensome for the initiating party.

For each of the analysed legal systems, we assess the overall process and identify the main obstacles. We aim to find gaps that should be filled in order to smooth out the process, as well as good practices that could be used in other Member States. Case studies are the basis for general recommendations for Member States as to how they should prepare their legal frameworks in order to effectively mitigate the impacts of river fragmentation and implement the Nature Restoration Regulation effectively and in a timely manner.

Structure of each of the case studies

1	**Water governance system in the analysed country**	How is water governance organised, how responsibilities are shared, and competencies distributed?	→ Poland → Finland → France
2	**State of barrier removal**	What programmes and initiatives were undertaken on the systemic level in order to remove barriers? How successful is the policy on barrier removal?	→ Poland → Finland → France
3	**Legal framework**		
3.1	Legal basis for barrier removal	Are there systemic solutions allowing for the initiation of the removal of obsolete dams on a large scale?	→ Poland → Finland → France
3.2	Procedures preceding barrier removal	What is the process for barrier removal? What permits must be obtained and what requirements must be met?	→ Poland → Finland → France
4	**Regulations impeding and facilitating barrier removal**	What are the obstacles to barrier removal in the analysed legal systems? Are there any legal solutions that facilitate it and could serve as good practices in NRR application?	→ Poland → Finland → France

2 Case study: Poland

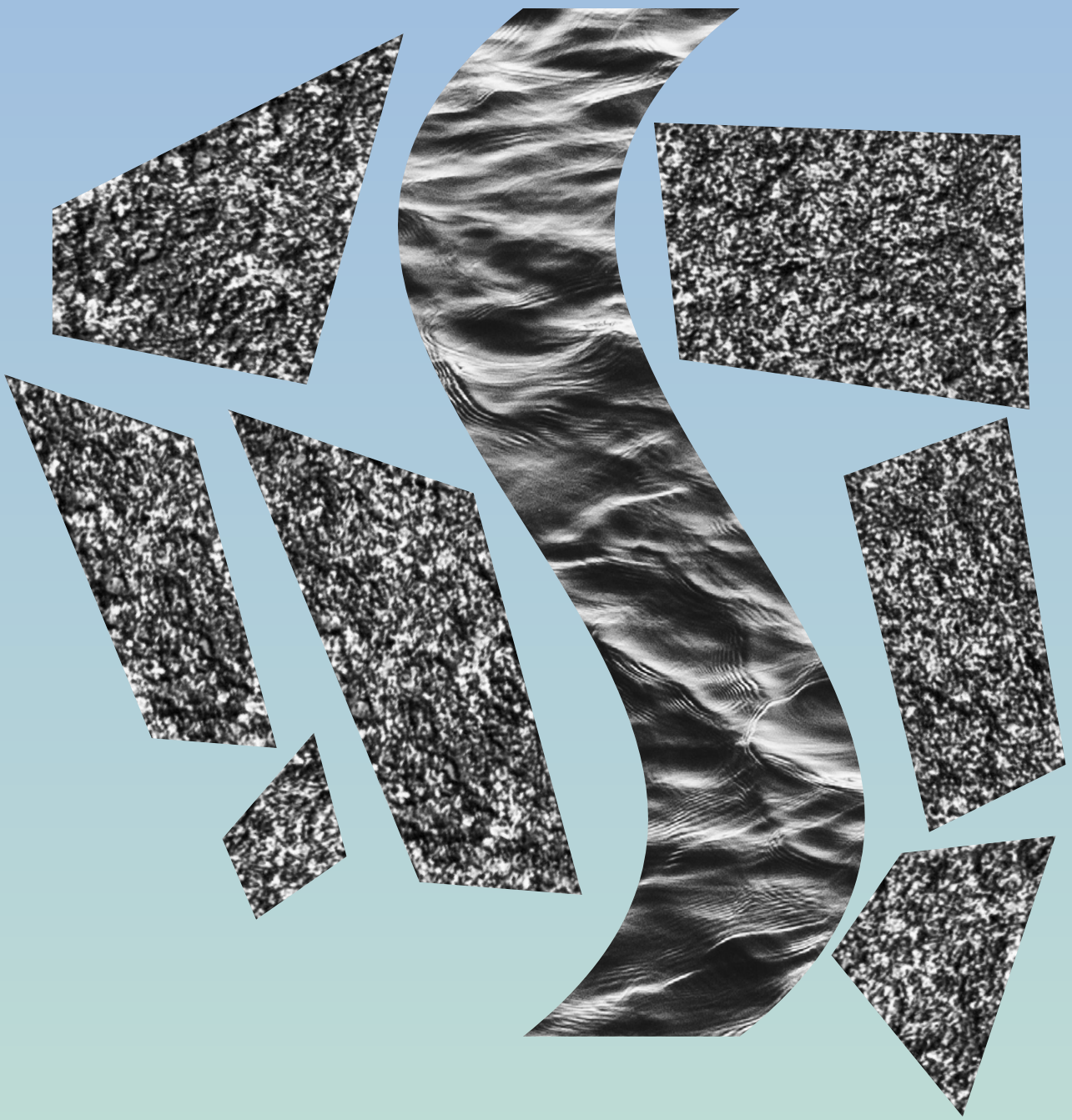


Table 3: the glossary of Polish water governance terms

MinInf	Ministry of Infrastructure, responsible for state water policy
MinEnv	Ministry of Environment, responsible for nature protection
MinAgri	Ministry of Agriculture and Rural Development, responsible for fisheries
Polish Waters	Polish Water Enterprise Polish Waters (*pl Państwowe Gospodarstwo Wodne Wody Polskie)*, authority implementing state water policy
KZGW	National Water Management Authority (*pl Krajowy Zarząd Gospodarki Wodnej*), an organisational unit of Polish Waters, responsible for implementing water management policies on a central level
RZGW	Regional Water Management Authorities (*pl Regionalny Zarząd Gospodarki Wodnej*), an organisational unit of Polish Waters, responsible for implementing water management policies on a regional level and water permitting
GDOS	General Director for Environmental Protection (*pl. Generalny Dyrektor Ochrony Środowiska*), authority implementing state policy on nature protection on central level
GIOS	General Inspector for Environmental Protection (*pl. Generalny Dyrektor Ochrony Środowiska*), authority implementing state policy on nature protection on central level
RDOS	Regional Director for Environmental Protection (*pl Regionalny Dyrektor Ochrony Środowiska*), an authority implementing state policy on nature protection on regional level

2.1 Water governance system in Poland

The main responsibility for water governance in Poland belongs to MinInfr[23], who shapes the directions of the state's water policy and coordinates the implementation of public tasks in water management. At the same time, the Minister of Agriculture and Rural Development is responsible for the government administration of fisheries.

The MinEnv plays a rather secondary role in water management. Though it is responsible for nature protection, the responsibility for environmental objectives under the WFD lies with MinInf. Therefore, MinEnv is responsible for habitats and species within water bodies, but not for the status of water bodies, which makes the water protection system and policies in Poland complicated and fragmented. This was raised as one of the main constraints of the Polish water governance system in the aftermath of the ecological disaster on the Oder River[24].

Polish Waters is the main administrative authority responsible for water management, supervised by MinInfr. They are divided into organisational units. At the central level, there is KZGW responsible for implementing water policies nationwide. At the regional level, there are 11 RZGW (their territorial competence is not aligned with the division into basins). They are responsible for implementing water policies within the regions as well as water permitting. On lower levels, there are also authorities responsible for collecting fees for the use of waters or issuing water permits for smaller investments.

In the Polish legal system, Polish Waters have a dual function. On the one hand, as the body responsible for national water management and water protection, Polish Waters issue water law permits, calculate fees for water services, as well as control water management. On the other hand, Polish Waters act as the owner of rivers and, thus, pursue the economic interests of the State Treasury – such as building water facilities or adapting rivers for water transport. These two roles are contradictory, as in many cases, protection of the environment and achieving environmental objectives contradict economic development and commercial use of the river[25].

Another authority relevant to water management is GDOS, supervised by MinEnvi, responsible for nature conservation policy (species and habitats protection, environmental damage) and the control of the investment process (EIA procedure). GDOS has 16 regional units, RDOS, executing these functions in particular regions (these regions do not overlap areas of competency of RZGW; they are connected to the

23 Up until 2018 the responsibility lied within MinEnvi. However, in 2018 water management was incorporated into the competency of the Ministry of Maritime Economy and Inland Navigation, and after its liquidation, ultimately to the MinInfr.

24 The issue was identified by environmental NGOs in publication White Paper on Polish Rivers https://www.clientearth.pl/media/z1djofj4/2023-03-21-biala-ksiega-polskich-rzek-1.pdf , as well as by the Supreme Audit Office which in their report concluded that: *these conditions [fragmentation of responsibilities] did not serve to ensure adequate water protection. Entrusting the above-mentioned [water governance] tasks to the Minister of Infrastructure shows that protecting rivers from excessive pollution has become a less important aspect of state policy than their use for economic purposes.* NIK, Informacja o wynikach kontroli *Działania podmiotów publicznych w związku z kryzysem ekologicznym na rzece Odrze* https://www.nik.gov.pl/plik/id,28435,vp,31265.pdf

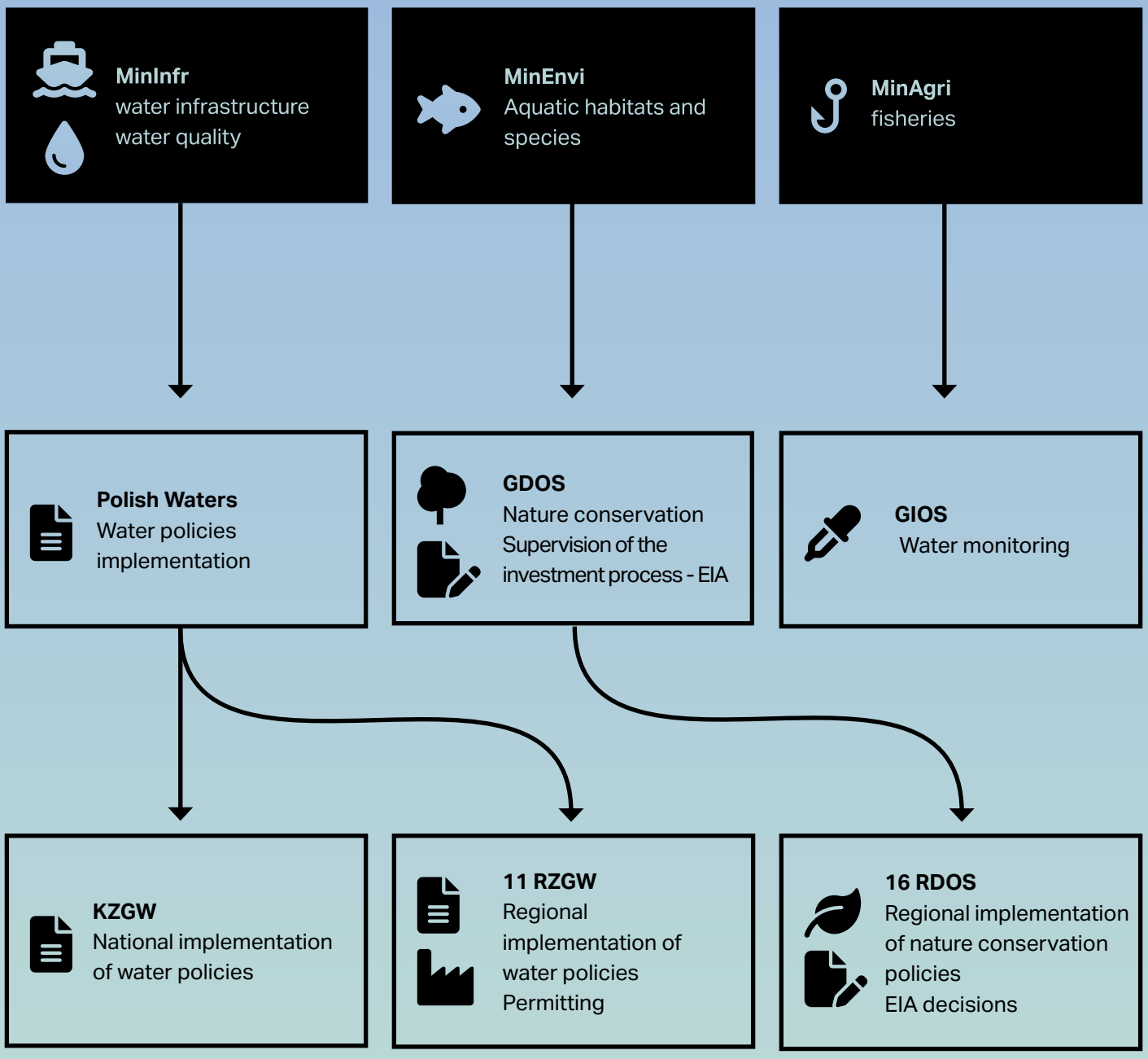
25 This issue was raised in the White Paper on Polish Rivers https://www.clientearth.pl/media/z1djofj4/2023-03-21-biala-ksiega-polskich-rzek-1.pdf

administrative division into voivodeships). Monitoring is fully delegated to yet another authority – GIOS, supervised by MinEnvi.

The water management in Poland is organised, as required by the WFD, at the basin level. There are two main basins (the Oder and Vistula rivers` basins) and 7 basins covering parts of international river basins located within Poland. The basins are then divided into water regions, which are further divided into a total of 50 watersheds.

River basin management plans are prepared for each river basin by the KZGW based on data and technical documents prepared by each RZGW, as well as the results of water monitoring. The project is then approved by the MinInfr and issued as a ministerial regulation, thus having the force of generally applicable law. River basin management plans contain activities assigned not only to Polish Waters, but also other authorities (such as different RDOS units), municipalities and even private entities.

Water governance in Poland



2.2 Barrier removal in Poland – state of play

Dams in Poland are not systematically removed. In 2020, it was estimated that there were 77,530 barriers on Polish rivers.[26] In the years 2020-2024, only 10 barriers have been removed[27]. The implementation of the Water Framework Directive did not result in any effective policies, plans or schemes promoting and supporting widespread dam removal. It also did not result in any major shift in approach to dams, which are still being considered as effective anti-flooding solutions, both by most of the state authorities[28].

River basin management plans include measures aimed at preserving and restoring river continuity. However, in the first (2004-2009) and second (2010-2015) planning cycle no measures that would specifically lead to the removal of obsolete barriers were proposed. The list of measures only included activities aimed at ensuring the continuity of rivers and streams by clearing obstacles to fish migration (e.g. building fish ladders), and yet there were problems with their implementation. Altogether, in the first planning cycle, such measures were provided for in 409 sections of watercourses. An analysis of the degree of implementation of the measures in the first planning cycle showed that migration of fish fauna was possible for only approximately 17% of the watercourse sections identified for clearing[29].

The stage of implementation of measures intended to clear obstacles to fish migration in the second planning cycle is also very low. As for 2018, only 40% of such measures provided for in the first actualisation of the river basin management plan were completed[30]. There is no data available as to the completion of the measures after 2018.

The second actualisation of the river basin management plans (in the year 2022, third planning cycle 2016-2022) finally provided for technical measures that could lead to the removal of barriers. Yet they concern 65 structures (46 structures in the basin of the Oder and 19 structures in the basin of the Vistula)[31]. Moreover, removal of even these 65 structures is not definite, as they will be removed only if a conducted analysis identifies removal as the best measure. Such analysis would consider possibilities of removal, converting structures into rapids or taking other measures to ensure passage.

26 Belletti, B., Garcia de Leaniz, C., Jones, J. *et al.* More than one million barriers fragment Europe's rivers. *Nature* 588, 436–441 (2020). https://doi.org/10.1038/s41586-020-3005-2

27 Data based on Dam Removal Europe, Dam removal progress reports for 2020-2024.

28 As reflected in the Flood risk prevention plans.

29 Opracowanie Aktualizacji Programu Wodno-Środowiskowego Kraju, Warsaw 2016, available at: https://www.apgw.gov.pl/assets/file/40,aPWSK.pdf

30 Ocena postępu we wdrażaniu programów działań dla JCWP i JCWPd wynikających z aPWŚK, available at: https://www.apgw.gov.pl/assets/file/114,Ocena%20poste%CC%A8pu%20we%20wdraz%CC%87aniu%20programo%CC%81w%20dzia%C5%82an%CC%81.pdf , p. 18.

31 Measure RWHM_01.05: Analysis of the possibility of removing transverse structures/rebuilding transverse structures into rapids/other measures to ensure navigability. Implementation of measures to ensure passability in accordance with the analysis. https://www.apgw.gov.pl/assets/img/857,IIaPGW%20%E2%80%93%20Dzia%C5%82ania%20renaturyzacyjne%20i%20udra%C5%BCnianie%20barier%20migracyjnych%20-%20warsztat.pdf

Poland has also developed the National Surface Waters Renaturalisation Program[32] and Handbook of Best Practices in Surface Waters Renaturalisation[33]. The Handbook emphasises *that to ensure two-way freedom of migration for fish, the removal of barriers should be considered first, and only if this is not possible should migration devices be used*[34]. The Renaturalisation Program identifies Priority Zones where renaturalisation should be prioritised. Altogether 3116 water bodies were identified as Priority Zones, and removal or ensuring passage through transversal barriers was proposed as a renaturalisation measure for 1213 of them. The Program is a strategic document and does not constitute a binding law. It should, however, be taken into account in the development of further policies. It dates to 2021, yet to date, there have been no effective steps taken that would ensure implementation of the program. Even the latest update of the river basin management plans (second actualisation in 2022) is not aligned with the program's ambitious proposals for barrier removal. The analysis of the level of incorporation of the Renaturalisation Program for rivers in the second update of river basin management plans[35] clearly shows that out of 91% of river bodies recognised as Priority Zones:

- Measures in line with the Renaturalisation Program were proposed for 16% of water bodies (505 water bodies). However, at the same time, new hydrotechnical projects were planned for 182 of them.
- Measures partially in line with the Renaturalisation Program were proposed for 38% of water bodies (1174 water bodies).
- No renaturalisation measures were proposed for 38% water bodies (1169 water bodies)[36].

Moreover, Polish authorities never made a comprehensive list of existing barriers.[37] At the end of 2025, Polish Waters published a list of nearly 4 thousand barriers that may be shared with investors for hydropower purposes.[38] The list has been widely criticised. For example, the State Council for Nature Conservation, an advisory body operating under the MinEnvi, issued a negative opinion on the list.[39] They indicated that hydropower has a negative environmental impact and, at the same time, minor importance to the Polish energy transformation. The Council pointed out that the list includes watercourses that dry up seasonally or have a very low flow, preventing the successful operation of a hydroelectric power plant in such a location.

32 Renaturyzacja Wód. Projekt Krajowego Programu Renaturyzacji Wód Powierzchniowych, Kraków 2020

33 Pawlaczyk P. (red.), Biedroń I., Brzóska P. Dondajewska-Pielka R., Furdyna A., Gołdyn R., Grygoruk M., Grześkowiak A., Horska-Schwarz S., Jusik Sz., Kłósek K., Krzymiński W., Ligięza J., Łapuszek M., Okrasiński K., Przesmycki M., Popek Z., Szałkiewicz E., Suska K., Żak J. 2020. Podręcznik dobrych praktyk renaturyzacji wód powierzchniowych. Oprac. w ramach przedsięwzięcia „Opracowanie krajowego programu renaturyzacji wód powierzchniowych". Państwowe Gospodarstwo Wodne Wody Polskie, Krajowy Zarząd Gospodarki Wodnej, Warszawa.

34 Ibid.

35 Biedroń I. (2024). Analiza stopnia uwzględnienia „Krajowego Programu Renaturyzacji Wód Powierzchniowych" dla rzek w Drugiej Aktualizacji Planów Gospodarowania Wodami na Obszarach Dorzeczy w kontekście konieczności osiągnięcia celów środowiskowych Ramowej Dyrektywy Wodnej do roku 2027. Fundacja WWF Polska., available at: https://www.wwf.pl/sites/default/files/2025-03/renaturyzacja-rzek_raport-wwf.pdf

36 Ibid.

37 More on this topic see chapter 2.3.1.1.

38 https://www.gov.pl/web/wody-polskie/potencjal-energetyki-wodnej-w-polsce

39 Position PROP-KOE/2026-03 of the State Council for Nature Conservation on the offer by Polish Waters to make 3,835 dams available to investors for hydropower purposes, available: https://prop.gov.pl/wp-content/uploads/2026/02/PROP-KOE-26-03_WP_lokalizacje_dla_MEW.pdf

At the same time, at the beginning of 2026, Polish Waters, in the context of the preparation of the National Restoration Plan, published a list of 5 thousand barriers for removal or rebuilding.[40] The coalition of Polish environmental NGOs *Save the Rivers* [41] notes that the list does not provide even such basic data as geographic coordinates and river mileage, which makes it impossible to locate the objects. It is also unclear whether the intention is to renovate or dismantle the facility in question. On top of that, many listed dams are the same projects that were included on its list of potential new hydropower plants analysed above.

To date, there have been no legislative changes or policy proposals that would aim explicitly at the coordination and promotion of barrier removal. There are also no dedicated financial schemes that would financially aid barrier removal projects.

However, restoration-dedicated funds do exist, and they could, in theory, be used for the removal of barriers. This could be possible under the FEnIKS fund (funded from the European Regional Development Fund and the Cohesion Fund), in particular under the FENX.04 project called "Adaptation to climate change, prevention of disasters and catastrophes"[42]. This fund is dedicated only to Polish Waters. Although removal of transverse structures could fall within its scope, in practice, it finances their reconstruction or clearing[43]. Funded projects raise doubts as to whether they, in fact, would effectively lead to renaturalisation, as some of them include renovation rather than removal of the barriers.

Another fund that could finance the removal of barriers is LIFE, which funded, for example, LIFE for RIVERS[44] - winning project in the call for applications in 2024 – LIFE-2024-SAP-NAT-NATURE. The project plans to clear or remove 35 migration barriers on the Parsęta River and its tributaries. It is based on the cooperation between municipalities, Polish Waters, RDOS, scientists and civil society. The project could serve as an example, as it is science-based and involves various stakeholders. However, this is only an individual project which is being carried out thanks to the efforts of the community.

Polish system of water management lacks legislative, policy or financial solutions that could facilitate barrier removal.

40 https://www.gov.pl/web/wody-polskie/wody-polskie-wspieraja-prace-nad-krajowym-planem-odbudowy-zasobow-przyrodniczych

41 http://www.ratujmyrzeki.pl/297-elektrownie-wodne-czy-odtwarzanie-przyrody

42 2.4 Adaptacja do zmian klimatu, zapobieganie klęskom i katastrofom. Renaturyzacja przekształconych cieków wodnych - FENX.02.04-IW.01-008/24 - Ministerstwo Funduszy i Polityki Regionalnej

43 Wody Polskie z szansą na środki z FEnIKS na realizację 25 dużych projektów - Państwowe Gospodarstwo Wodne Wody Polskie - Portal Gov.pl

44 Zwycięski polski projekt LIFE for RIVERS w naborach 2024 do Programu LIFE. - Narodowy Fundusz Ochrony Środowiska i Gospodarki Wodnej - Portal Gov.pl

2.3 Legal framework for barrier removal

Table 4: Polish legal acts relevant to the barrier removal

WLA	Water Law Act - Act of 20 July 2017 Water Law; consolidated text: Journal of Laws of 2025, item 960 (*ustawa z dnia 20 lipca 2017 r. Prawo wodne; t.j. Dz. U. z 2025 r. poz. 960*)
Water Assessment Regulation	An executive Regulation issued on the basis of WLA – Regulation of the Minister of Maritime Economy and Inland Navigation of 27 August 2019 on the types of investments and activities that require a water law assessment, Journal of Laws item 1752 (*Rozporządzenie Ministra Gospodarki Morskiej i Żeglugi Śródlądowej z dnia 27 sierpnia 2019 r. w sprawie rodzajów inwestycji i działań, które wymagają uzyskania oceny wodnoprawnej (Dz. U. poz. 1752)).*
BLA	Building Law Act – Act of 7 July 1994 Building Law; consolidated text: Journal of Laws of 2025, item 418, as amended (*ustawa z dnia 7 lipca 1994 r. Prawo budowlane; t.j. Dz. U. z 2025 r. poz. 418 z późn. zm.*)
EIA Act	Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments; consolidated text: Journal of Laws of 2024, item 1112, as amended (*ustawa z dnia 3 października 2008 r. o udostępnianiu informacji o środowisku i jego ochronie, udziale społeczeństwa w ochronie środowiska oraz o ocenach oddziaływania na środowisko; t.j. Dz. U. z 2024 r. poz. 1112 z późn. zm.*).
EIA Regulation	an executive Regulation issued on the basis of the EIA Act – Regulation of the Council of Ministers of 10 September 2019 on projects that may have a significant impact on the environment; Journal of Laws, item 1839, as amended (*rozporządzenie Rady Ministrów z dnia 10 września 2019 r. w sprawie przedsięwzięć mogących znacząco oddziaływać na środowisko; Dz. U. poz. 1839 z późn. zm.*).

2.3.1 Legal basis for the barrier removal

As already mentioned, Polish law does not support systemic approach to removing barriers. River basin management plans propose renaturalisation measures and place responsibility for their delivery on Polish Waters. However, if Polish Waters fail to deliver the measures, there is no political accountability. There are no legal solutions that could lead to the implementation of such measures by other actors, for example local communities, municipalities or NGOs. Similarly, there are no legal ways to enforce the execution of the National Surface Waters Renaturalisation Program. This effectively impedes barrier removal on a national scale.

Experts working on river restoration in Poland[45] have criticised the ineffectiveness of the current Polish legal framework providing for removing barriers in individual cases. Polish law does provide for some solutions that make it possible to impose an obligation to remove unused barriers in individual cases. This can be mostly done by Polish Waters in connection with the expiry or revocation of a water permit. However, as practical experience of the consulted experts supported by statistical data shows, in practice, this rarely happens. Another underlying issue of the current legal framework on barrier removal is the unknown ownership status of some barriers, which effectively impedes their removal. It adds an extra layer of complexity to the already inefficient legal framework for barrier removal.

The following section first lists the potential legal bases for the barrier removal under Polish law and examines their practical application to date. Then, it elaborates on the underlying issue of the unknown ownership of barriers and how this issue is a legal bottleneck to their removal.

2.3.1.1 Expiration of the water permit

Under Polish law, damming structures are structures that enable permanent or temporary damming of surface water above the adjacent area or the natural water level[46]. They fall within the broader category of water facilities, which covers all facilities or structures used to shape water resources or utilise these resources (including, for example, flood control and water regulation objects as well as hydropower facilities).[47] In order to build a water facility, a water permit must be acquired[48]. Some water facilities (damming structures being one of them) also require a permit to operate them.[49] A water permit for building a water facility is issued once for the particular project. However, a water permit for operation of the dam is issued for the specified period of time – maximum of 30 years[50].

After the time for which the water permit was issued has passed, the water permit expires (unless the owner applied for prolongation)[51]. In such case, Polish Waters[52] are obliged to issue an administrative decision imposing on the owner the obligation to remove any water facilities that were constructed or used on the basis of that permit, specifying the deadline for fulfilling that obligation[53]. However, according to information provided by the Polish Waters in the years 2020-2025, a decision imposing an obligation to remove water facility based on Article 419(1) of WLA has been issued 170 times[54]. This gives about 30 such decisions per year. These statistics include decisions regarding all water facilities. Thus, not only weirs, dams and other barriers but also, for example, artificial water reservoirs, fishponds and sewerage facilities.

45 The list of consulted experts is included in the editorial page.
46 Art. 16(2) of WLA
47 Art. 16(65)(a) of WLA
48 Art. 389(6) of WLA
49 Art. 389(1) and Art. 35(3)(2) of WLA
50 Art. 400(1) of WLA
51 In practice, prolongation of water permits for dams is oftentimes automatic and granted without environmental impact assessment.
52 In some cases, when Polish Waters was the investor building the water facility, it will be MinInfr.
53 Art. 419(1) of WLA
54 Information obtained under Access to Public Information Act. Number of the response: KZI.0144.5.8.2026.łś

CASE STUDY | Failure to apply the law in practice

An example of lack of application of Art. 419(1) WLA is a weir on the Dłubnia River in Kraków. In 2001, a company acquired a water permit for operating a weir for the technological needs of its production plant. The weir is a reinforced concrete hydrotechnical structure founded on gray clay and gravel. In order to ensure the biological continuity of the river, the weir has been equipped with a fish ladder to enable fish migration in the river.

The first water permit for operating the weir expired in 2011 and was renewed until July 2021. Therefore, from July 2021 on the weir has been existing without being operated[55]. Yet, to date, no decision imposing an obligation to remove the structure has been issued. Additionally, no fines for the company for operating the weir without a valid permit were imposed.

2.3.1.2 Revocation of the water permit

The law provides possibilities to revoke the water permit before it expires. Polish Waters may revoke the water permit by means of the administrative decision when:

- The water facilities have been constructed in violation of the conditions specified in the water permit or are not properly maintained.[56]
- The continued use of water under the conditions specified in the water permit creates a situation that threatens human life or health or may cause serious damage to the environment, in particular due to changes in the aquatic environment.[57]

In case of revocation of the water permit, Polish Water issue an additional decision imposing on the owner the obligation to remove any water facilities that were constructed or used on the basis of that permit, specifying the deadline for fulfilling that obligation[58].

The process of revocation of the water permit can be initiated by the Polish Waters on their own initiative. WLA excludes the society's access to all the procedures for water permitting.[59] Thus, it is not possible for an NGO to initiate this procedure[60]. Polish Waters use the possibility to revoke the permit in extremely rare cases. Between August 2022 and May 2024, on the basis of the first aforementioned ground, only 4 permits were revoked[61]. There was no situation in which the second ground for permit revocation had been used[62]. This is yet another example of regulations that are there on paper but are not being used in practice.

55 Information obtained under Access to Public Information Act, number of the response: K.ROA.0144.25.2026.EK.

56 Art. 415(2) of WLA

57 Art. 415(9) of WLA

58 Art. 419(1) of WLA

59 Art. 403 of WLA

60 The issue of lack of access to justice regarding water permits in Poland was submitted by ClientEarth to the Aarhus Committee and is currently pending, case number: ACCC/C/2017/146.

61 Włoskowicz M., Odra potrzebuje odważniejszej legislacji. Komentarz do projektu nowelizacji ustawy o rewitalizacji Odry, Fundacja Frank Bold, Kraków, styczeń 2025 r.

62 Włoskowicz M., Odra potrzebuje odważniejszej legislacji. Komentarz do projektu nowelizacji ustawy o rewitalizacji Odry, Fundacja Frank Bold, Kraków, styczeń 2025 r.

2.3.1.3 Building supervising authority

Dams or other barriers on rivers, which are hydrotechnical structures under BLA, fall within the definition of building objects.[63] Therefore, a decision ordering the removal of a barrier can also be issued by the building supervising authority. A decision may be issued in case of an unused or unfinished building object which is not suitable for renovation, reconstruction, or finishing due to poor technical conditions[64]. The decision entails an obligation to demolish the building object and clean up the site, as well as the dates for commencing and completing the work[65]. However, if the building object is registered as a historical landmark, this provision is excluded[66].

2.3.1.4 Problematic ownership

Polish law does not provide any effective solutions allowing for the removal of barriers when the owner is unknown. According to WLA, Polish Waters can take over the ownership of water facilities after the permit expires or is revoked, only if the facilities are necessary for the management of water resources[67]. However, there is no possibility for Polish Waters to take over the ownership of the barrier when it is obsolete and should be removed.

In most instances, it is not possible to determine the owner of such an old barrier due to a lack of data in the register. Moreover, the law does not provide any solutions in such cases. The practical experience of consulted experts shows that this effectively impedes issuance of the water permit for the removal of such barriers, as Polish Waters require an owner to be a party to the proceedings. The analysis of the law shows that there is clearly a legislative loophole regarding instances when the owner of the dam is unknown. One possible solution would be to attribute the responsibilities of the facility owner to the owner of the land on which the facility is built (as per the *superficies solo cedit* principle regulated in Art. 191 of the civil code). This approach should, however, be tested in court.

63 Art. 3(1) of BLA
64 Art. 67(1) of BLA
65 Art. 67(1) of BLA
66 Art. 67(2)-(4) of BLA
67 Art. 419(2)-(3) of WLA

CASE STUDY | Problematic ownership

A case best illustrating how problematic ownership impedes barrier removal is one of a small barrier at the Kryściów stream in southern Poland.

The stream is located on the forest-covered slopes of the valley between two mountain ridges. Towarzystwo na Rzecz Ziemi, an environmental NGO, attempted to remove a small and obsolete barrier located on the stream. Polish Waters initially claimed to be the owners of this barrier and approved its removal. The NGO prepared the relevant documentation and obtained a grant from the Open River Foundation to carry out the project.

Yet, before the grant agreement was signed, it turned out that the barrier was not listed in the Polish water register. The registry contained another weir on this stream, yet the location did not match. The barrier was not listed in State Forests registers either. Lack of the formal owner meant that relevant permits could not be legally obtained.

Even though an agreement as to the removal of the obsolete barrier was reached by all the relevant stakeholders and the funds for the works were secured, the lack of its owner effectively impeded the execution of the project.

On top of problematic ownership issues, the case of Kryściów stream also raises the problem of the inadequacy of the Polish Waters` registers. Law does impose on Polish Waters an obligation to keep a register of water facilities in the water management information system.[68] However, the data sources for this register are tit falls on the owners of the water facilities to provide data for this register.[69] This leaves a huge gap for water facilities that do not have a formal owner. Moreover, the register relies on the information from the owners without checking the adequacy of the information "in the field" by Polish Waters inspectors.

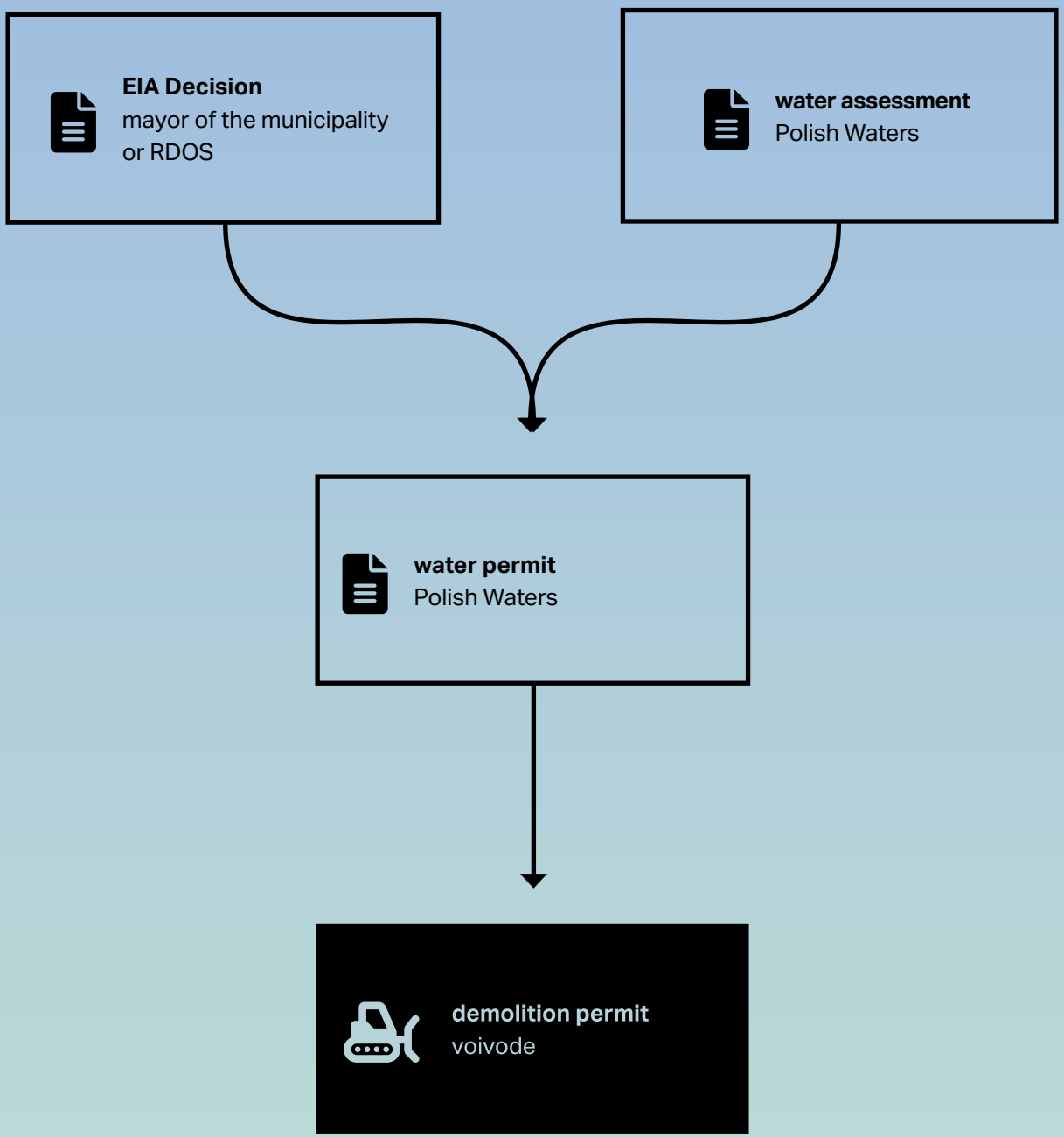
The list of water facilities owned by the State Treasury that are of significant importance for water management should be a part of water maintenance plans[70] and river basin management plans.[71] However, these lists include only water facilities that belong to the State Treasury and that were considered "of significant importance for water management". Thus, the list is not complete.

2.3.2 The procedures preceding the barrier removal

Barrier removal should be preceded by acquiring relevant permits, regardless of whether the structure is privately owned or state-owned and operated by Polish Waters.

68 Art. 329 (2)(12) of WLA
69 Art. 331(1)(15) of WLA
70 Art. 327(1)(2) of WLA
71 Art. 318(2)(2) of WLA

Procedural steps to remove the barrier



2.3.2.1 EIA decision

Polish law requires an EIA decision for every project listed in the EIA Regulation. The complexity of the process will differ depending on whether the project falls within the scope of investments that always or potentially impact the environment. The former are always preceded by the environmental impact assessment and public consultation process. For the latter, the necessity to undergo the full procedure is assessed on a case-by-case basis.

EIA Regulation lists several dams and damming structures that require an EIA decision before they are constructed, but the law does not clearly regulate whether they also require an EIA decision before their demolition. However, considering CJEU case law[72] and the position of the European Commission,[73] demolition works concerning projects listed in Annexes I or II of the EIA Directive should be preceded by the EIA decision. Thus, it shall be assumed that demolition of dams and other damming structures listed in the EIA Regulation requires an EIA decision.

EIA Regulation lists the following dams and damming structures as ones that always impact the environment (requiring the environmental impact assessment):

- dams or other structures designed to retain and permanently store (accumulate) at least 10 million cubic metres of new or additional water[74]
- damming structures with a water retention height of at least 5 metres[75]

The following structures are classified as potentially impacting the environment and will require environmental impact assessment based on a case-by-case analysis:

- damming structures other than the ones referred to above:
  - in protected areas (national parks, nature reserves, landscape parks, protected landscape areas, Natura 2000 sites, ecological use sites), or in their buffer zones, with the exception of damming structures with a water damming height of less than 1 m implemented on the basis of a protection plan, a protection task plan or protection tasks established for a given protected area,
  - if the damming concerns natural watercourses on which there are no damming structures,
  - if there is another damming structure within a radius of less than 5 km on the same watercourse or a watercourse connected to it,
  - with a water damming height of not less than 1 metre[76].

The EIA decision should be acquired before application for other permits can be made. It is usually issued by the mayor and, in cases of bigger projects, by RDOS.

72 case C-50/09 Commission v. Ireland0029

73 The stance expressed in "Environmental Assessments of Plans, Programmes and Projects. Rulings of the Court of Justice of the European Union" supports the interpretation that demolition works fall within the scope of the EIA Directive.

74 § 2(1)(35) of EIA Regulation

75 § 2(1)(36) of EIA Regulation

76 § 3(1)(69) of EIA Regulation

2.3.2.2 Water assessment

Some projects may require a water assessment decision issued by Polish Waters. Such a decision is required if the barrier falls into the categories listed in the Water Assessment Regulation.[77] The issuance of a water assessment decision is preceded by an analysis of the impact of the project on achieving environmental objectives[78].

The Water Assessment Regulation lists the following water facilities:

- flood protection structures, such as e.g. weirs[79]
- damming structures with one of the following characteristics:
  - with a height of not less than 0.3 m on:
    - natural watercourses for which the environmental objective is to ensure morphological continuity, or
    - areas covered by the forms of nature protection, or in their buffer zones, protecting the habitats or species for which the maintenance or improvement of water status is an important protection factor
  - if the damming structure is to be built on natural watercourses on which there are no prior damming structures,
  - with a height of not less than 1 m[80]
  - Importantly, removal of these structures will require a water assessment decision only if they do not require an EIA decision at the same time. In such a case, the EIA decision should be obtained, and it substitutes the water assessment.[81]

2.3.2.3 Water permit

Removal of the barrier also requires a water permit[82] issued by the Polish Waters[83]. However, in case it is the Polish Waters that is the investor applying for the water-law permit, the competent authority to issue it is the MinInf[84].

The application must contain a water-law report, which is a technical document assessing, e.g. the scope and characteristics of a project.[85] The application should be accompanied by the EIA decision or a water assessment decision, if applicable.

The law is quite vague on the requirements of the water law-report in cases of removal of the structure. NGOs attempting to remove small water barriers point out that, in their experiences, before issuing a water law permit for removal of the barrier, Polish Waters require costly and detailed documentation on the impact of the removal on the flood situation. Representatives of NGOs consider such requirements to be inadequate, as the documentation required to remove a barrier is oftentimes more detailed than to construct it.

77 Art. 17(1)(4) and 425 of WLA
78 Art. 429 of WLA
79 § 1(2)(6)(a) tiret 5 of the Water Assessment Regulation
80 § 1(2)(6)(c) of the Water Assessment Regulation
81 Art. 428 of WLA
82 Art. 17(1)(4) and Art. 389(6) of WLA
83 Art. 397 (1) of WLA
84 Art. 397 (2) of WLA
85 Art. 407(2)(1) of WLA.

2.3.2.4 Demolition permit

Finally, to remove a structure, a demolition permit must be obtained. It is required for:

- dams higher than 1 m
- all dams, even below 1 m high, located within national parks, nature reserves, landscape parks or their buffer zones, as well as located on rivers which are designed as inland waterways ("inland waterways" are ways that serve 'the needs of inland water transport and navigation by vessels')[86]

The application for such a permit should include a description of the scope and manner of demolition works, a demolition plan and be accompanied by earlier obtained permits required by separate acts (a water-law permit and EIA decision/ water assessment). The permit is issued by the voivode.[87]

86 Art. 29(1)(13) of BLA

87 Art. 30b(2) of BLA in conj. with Art. 82(3)(2) of BLA.

2.4 Regulations impeding and/ or facilitating barrier removal in Poland – summary

✕ The analysis of the Polish legal system clearly indicates that the main obstacle to barrier removal is the lack of policies and regulations on the systemic level. Barrier removal as a measure to ensure river continuity was not incorporated at all in river basin management plans up until 2022. The 2022 plans include barrier removal in very rare instances. The measures from river basin management plans are not executed on a regular basis, and there is no way to enforce them. Even though Poland has an ambitious National Surface Waters Renaturalisation Programe it is not being carried out in practice.

✕ There is no comprehensive and accurate registry of barriers. The registries administered by Polish Waters are based on information from owners of the structures, which are not double-checked in the field. Oftentimes, they do not include barriers that exist in practice but for some reason were omitted in the registries, or they include barriers that already do not exist in practice. There are numerous barriers existing in the field with an undetermined ownership status, which effectively impedes their removal.

! The law regulates instances where barriers should be removed after the permit has expired, as well as situations in which water permits can be revoked. However, these regulations seem to exist only on paper and are not applied by Polish Waters in practice.

✕ There are no legal solutions for situations in which the owner of the barrier is unknown. In practice, it impedes obtaining relevant permits and carrying out the work, as, according to the authorities, the owner of the structure should be a party to the proceedings. When the owner is unknown, the permits cannot be issued.

! The administrative procedure for barrier removal is adequately comprehensive, although the law could provide for some facilitations when it comes to the removal of obsolete barriers. The fact that the removal of barriers is not explicitly regulated may lead to interpretations that deem the process burdensome (particularly when it comes to documents required to issue a water law permit).

✕ There is no dedicated funding for barrier removal. Existing funding options are not open to projects initiated by local communities (not acting as municipalities), grassroots or NGOs.

3 Case study: Finland

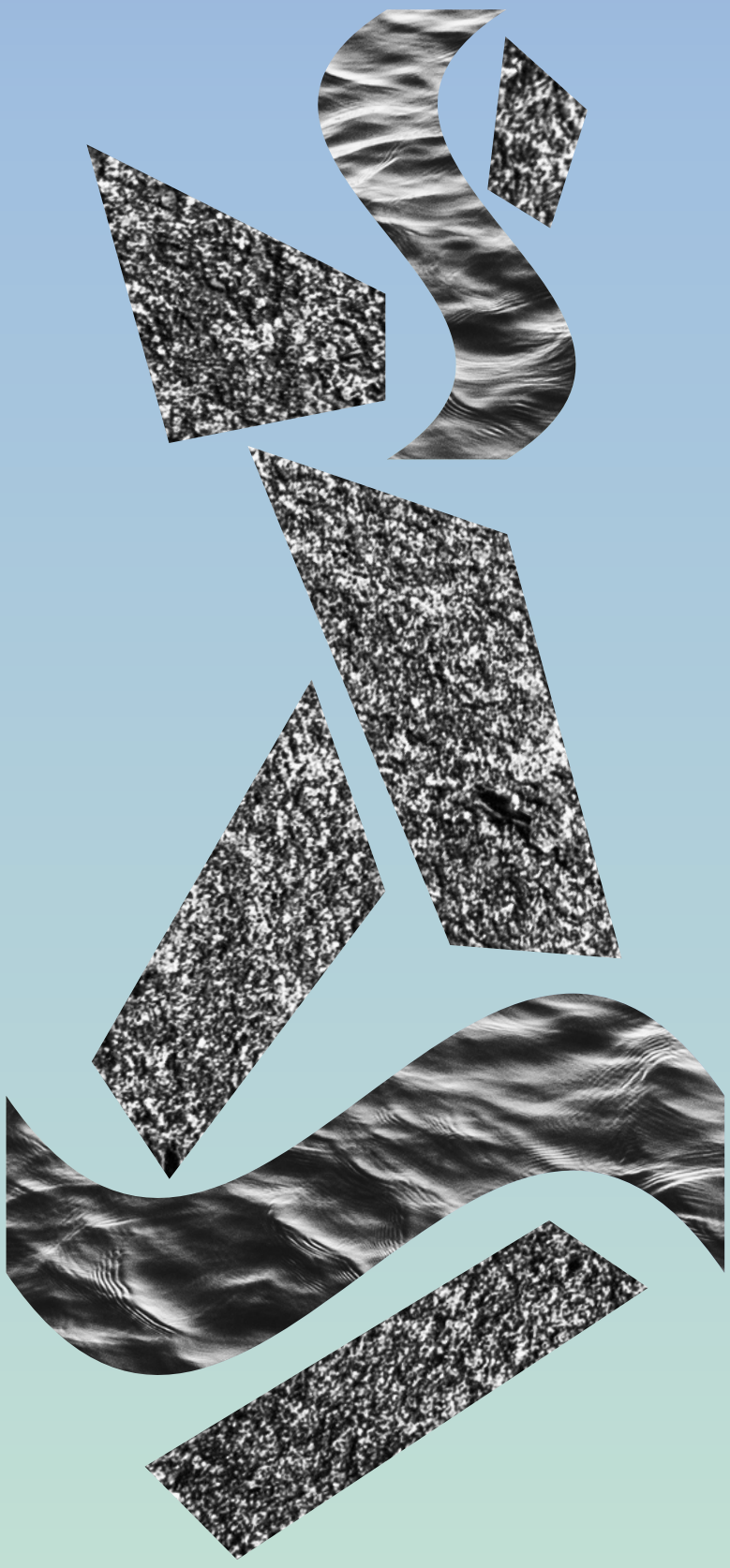


Table 5: the glossary of Finnish water governance terms

MoAF	Ministry of Agriculture and Forestry, administering the use of hydrological resources, such as energy, water supply and sewage, fisheries management and flood protection
MoE	Ministry of Environment, administering environmental protection aspects related to water, water management and protection of aquatic nature
LUKE	the Natural Resource Institute Finland, a research institute supporting MoAF in fisheries matters
SYKE	the Finnish Environment Institute, a research institute supporting both MoE and MoAF in scientific aspects of different water governance as well as coordination tasks
AVI	State Administrative Agencies (aluehallintovirasto), permitting authorities in water matters up until the end of 2025
ELY	Centres for Economic Development, Transport and the Environment (elinkeino-, liikenne- ja ympäristökeskus), responsible for implementation of water policies up ultil the ent of 2025
FSA	Finnish Supervisory Agency (valtion lupa- ja valvontavirasto), responsible for the environmental permitting, supervisory and management duties
EDC	Economic Development Centres (elinvoimakeskus) are set up to promote economic development and other public interests, such as the clean transition, nature conservation and achieving good status of waters and the marine environment
NOSU	Program devised to restore migratory fish stocks through river restoration projects

3.1 Water governance system in Finland

In Finland, water governance involves several sectors of government. Issues related to the use of hydrological resources, such as energy, water supply, sewage, fisheries management and flood protection, are administered under the Ministry of Agriculture and Forestry (MoAF). In turn, environmental protection aspects related to water, water management and protection of aquatic nature fall under the competence of the Ministry of Environment (MoE). The ministries are assisted by state research institutes – LUKE (supporting MoAF in fisheries matters) and SYKE (supporting both MoE and MoAF in scientific aspects of different water governance, as well as coordination tasks).

Until the end of 2025 water governance was administered by 6 Regional AVI acting as permitting authorities and 15 regional ELYs carrying out various tasks related to the implementation of water policies.

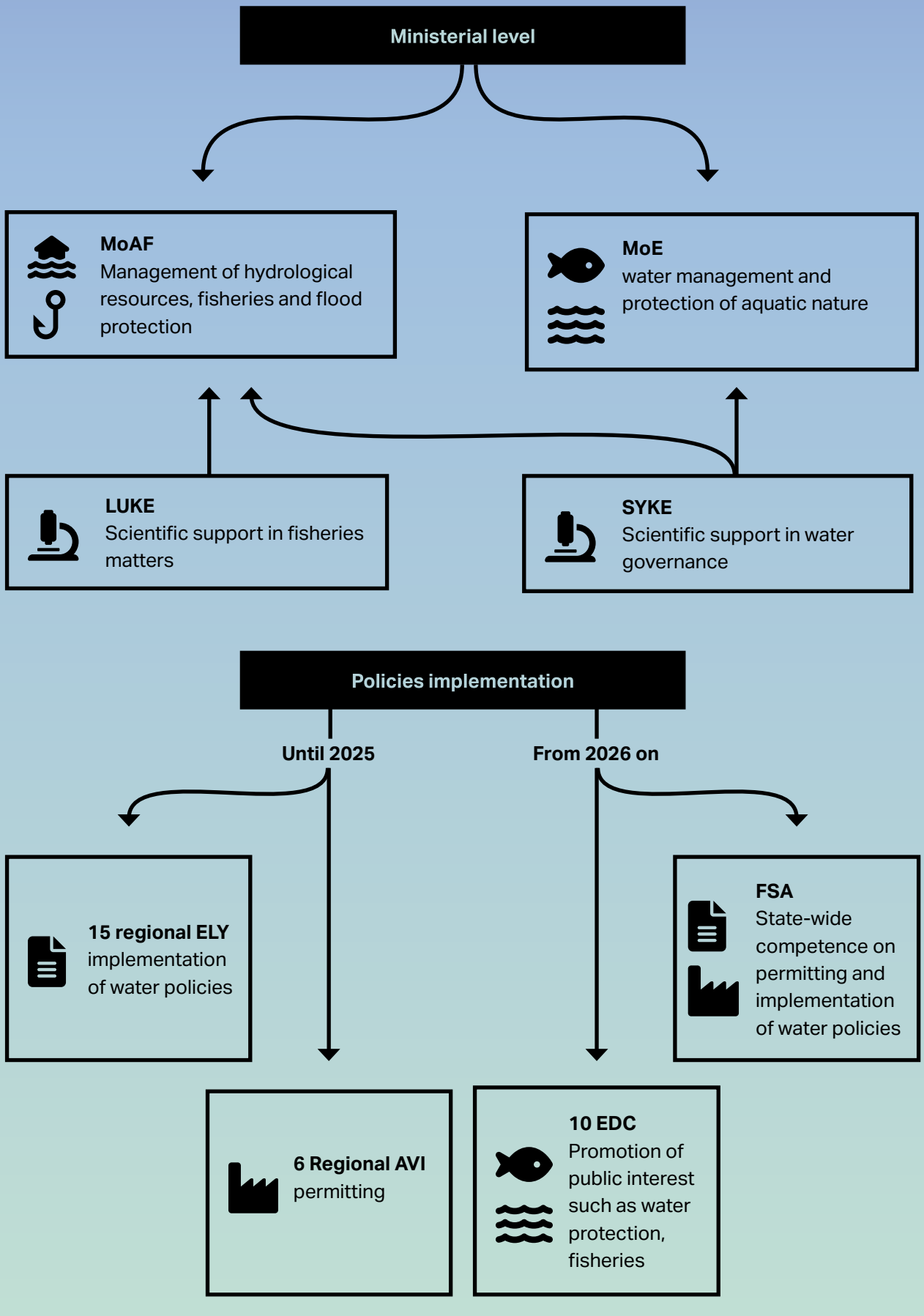
From 1 January 2026, a new reform of the organisation of water governance is in force[88]. A newly formed FSA, which has state-wide competence, is responsible for the environmental permitting, supervisory and management duties. The environmental department of the FSA consists of units responsible for permitting and implementation of different water policies. A separate FSE unit is responsible for overseeing and promoting the public environmental interests. This unit may appeal decisions made by the permitting unit or implementation unit.

FSA is partly divided into 10 EDC which are set up to promote economic development and other public interests, such as the clean transition, nature conservation and achieving good status of waters and the marine environment. The EDCs perform tasks related to advancing and promoting interests within their competence. They oversee and promote the public fisheries and water protection and may appeal decisions made by the FSA.

Finland is divided into five national (and two international) river basins. Since 1 January 2026 the river basin management planning has been undertaken and coordinated by the FSA (before the reform, it was the responsibility of ELYs). EDCs support the process by overseeing and promoting the implementation of the water management measures. As part of the process, FSA also review existing permits for structures built on water, which cause damage to water bodies or constitute barriers to fish migration and ecological flows.

88 More Information on the reform can be found on the website of Finnish Supervisory Agency: https://lvv.fi/tervetuloa

Water governance in Finland



3.2 Barrier removal in Finland – state of play

In Finland, the importance of taking measures to improve the connectivity and ecological flows in river water bodies is generally recognised in the implementation of the WFD's river basin management planning.[89] Nevertheless, river basin management has not spurred widespread barrier removal measures. Barrier removals have taken place in river basin districts under the coordination of respective ELYs on a voluntary basis and through collaborative efforts with relevant stakeholders. However, there have been no legislative changes, projects or programs that would have aimed at explicitly steering, promoting or coordinating barrier removals under river basin management policy.

In addition to river basin management planning, there are formal and informal water governance initiatives relevant to barrier removal. An important development in this regard is Watershed Visions, informal collaborative governance processes taking place in local watershed contexts, developed by MoAF. Watershed Visions are often initiated by ELYs (from 2026 on by EDCs), but they also involve relevant economic actors, municipalities and civil society. They aim to find a shared understanding for the use and protection of the watershed in question, and to design a long-term program for achieving this shared vision. Depending on the local watershed, these processes can address river connectivity measures as well as barrier removal.[90]

Another initiative is the 2012 National Fish Passage Strategy,[91] which included both funding and guidance for the public authorities to aid river restoration projects and to initiate permit review processes and permitting for barrier removal. Yet, it remained rather unsuccessful with respect to concrete actions towards these aims.

Barrier removals have been mostly coordinated and achieved under fisheries management policies, especially the NOUSU program. The NOUSU program provides leverage funding for various kinds of projects that improve the conditions for migratory fish stocks, which is coordinated by the MoAF and ECDs (formerly by ELYs). Actions under the NOUSU program should be based on the river basin management plans and programmes of measures, the National Fish Passage Strategy and other strategies and programs of fisheries policy.

The NOUSU program focuses holistically on fisheries and especially the endangered migratory fish stocks. It can be used to support and enable different kinds of measures, including barrier removal, modifying existing constructions, improving ecological flows and implementing habitat restoration measures. The program relies completely on voluntarism. Projects need to be agreed upon by economic operators

89 See, eg, European Commission, 'Commission Staff Working Document: Second River Basins Management Plans— Member State: Finland', SWD(2019) 46 final, 26 February 2019, 105, 140.

90 Lea Halonen and Jukka Similä, 'Ympäristösääntely ja itseorganisoituminen – tapaus vesistökunnostukset' (2020) 1 Ympäristöjuridiikka, pp. 7–38. See, e.g., Oulujoen vesistöalueen vesistövisio (Watershed Vision for the Oulujoki watershed), 7 Aug. 2023, available at: https://oulujokivisio.com.

91 The Strategy aimed at restoring the natural reproductive cycle of migratory fish populations and prioritising restorative actions in watersheds with the highest potential to this end; See https://mmm.fi/en/fisheries/strategies-and-programmes/fish-passage-strategy.

like hydropower facility owners, regional environmental authorities, municipalities and other stakeholders. For the time being, the NOUSU program has negotiated removals of 10 small hydropower plants altogether and funded 17 other projects involving dam removals or modifications. In addition, the program has funded by-pass channel and ecological flow measures in hydropower facilities around Finland.[92]

However, voluntarism remains the key limit of this approach . Measures are not taken unless consensus is reached, including the consensus of economic operators and owners of the barriers. This leads to implementing barrier removals and other measures in locations where a consensus is found, which might not always match what would be best from an ecological perspective. There have been instances where confirming or setting a permit obligation requiring fisheries mitigation measures has motivated hydropower facility owners to sell the facilities for decommissioning.[93] Setting up systematic, coordinated and ecologically prioritised barrier removal programs would necessitate other types of governmental involvement, such as steering barrier removals through legal measures.

92 For most updated information, see MoAF, https://mmm.fi/vaelluskalat/vaelluskalaohjelma/tulokset. (in Finnish)

93 This was the case, for instance, behind the decommissioning of three hydropower facilities along Hiitolanjoki. See https://yle.fi/a/3-10592961 (in Finnish).

3.3 Legal framework for the barrier removal

Table 6: Finnish legal acts relevant to the barrier removal

Water Act	(587/2011) English translation available, does not contain subsequent amendments: https://www.finlex.fi/fi/lainsaadanto/saadoskaannokset/2011/eng/587
Environmental Protection Act	(527/2014)
EIA Act	Act on Environmental Impacts Assessments (252/2017) English translation available including amendments up to 2023: https://www.finlex.fi/fi/lainsaadanto/saadoskaannokset/2017/eng/252
LUPA	Land Use Planning Act (132/1999) English version available with amendments up to 2003: https://www.finlex.fi/fi/lainsaadanto/saadoskaannokset/1999/eng/132
Cultural Heritage Act	Act on the Conservation of Build Cultural Heritage (498/2010) No English translation available.

3.3.1 Legal basis for the barrier removal

There are no systemic regulations on barrier removal. All projects are based on voluntarism and the cooperation of various stakeholders. There are, however, legal solutions for initiating barrier removal in individual cases.

All projects that physically modify water bodies require a water permit if the modification may adversely affect any protected public interests (including environmental or nature protection, flood protection, fisheries or navigation) or private interests, such as property rights of shore owners.[94] Permit granting is conditioned upon the operator having the necessary property rights or other entitlements (rights to use) to the land and water areas required for the project.[95] If the operator has not acquired such rights prior to submitting the permit application (usually through voluntary transactions), the necessary rights can be established forcefully in the permitting process, provided that conditions set under the Water Act are met.[96]

94 Section 3:2 Water Act. Furthermore, Section 3:3 lists projects that are always subject to permit requirement regardless of their impacts. Such projects include constructing barriers or hydropower facilities but also any measure that transforms a land area permanently into a water area by raising the water level in a water body.

95 Section 3:4.4 Water Act.

96 Section 3:4.4 Water Act. The conditions for establishing rights to use or transferring property rights are provided in Sections 2:13, 2:13a, 2:14 and 2:14a Water Act and they replicate the conditions in general expropriation doctrines, depending to the extent to which the rights needed infringe the rights of others.

Thus, the water permit consists of two parts:

- an administrative part which sets material conditions related to safeguarding public and private interests, as well as requirements that aim to minimise the harms on these interests
- a private law part determining the relevant property rights and other entitlements to the land and water areas, including the rights of use to hydropower in river areas. The permit decision clarifies existing rights, establishes the other necessary rights and determines the amounts of compensation for the previous rights holders.[97]

As such, the permit constitutes a right to construct, maintain and operate the water project and is, at the outset, granted for an unlimited duration.[98] Because a water permit constitutes property rights, the possibilities and scope of its review are restricted. While the Water Act enables changing permit conditions based on, for instance, changed circumstances, amendments may not significantly reduce the benefit gained from the project. Moreover, it is the applicant, not the permit holder, who is liable for paying compensation to the operator in cases other than minor loss of benefit.[99] Most barriers existing in Finland today have been permitted for an unlimited duration under the Water Act or its predecessors.

Thus, water projects cannot be decommissioned unless the permit has expired or otherwise ceased to exist. The Water Act provides some specific circumstances under which the permit of unlimited duration can be ordered to expire.

3.3.1.1 Obsolete barriers

The permit authority may order a permit of an unlimited duration to expire if:

- The permit holder no longer exists, or the permit holder cannot be identified without difficulty
- The project has lost its original significance
- The permit holder so requests[100]

The first and second conditions can provide a basis for initiating a removal process for obsolete barriers.

Obsolete barriers, where the existence of a relevant water permit and/or the identity of the permit holder is unclear, can be subject to a decision ordering the (assumed) permit to expire.[101]

Obsolete barriers where a project has lost its original significance, even if the permit and permit holder are known, can also be subject to such a decision. This is the only case where a permit can expire against the wishes of a known owner. Assessment of the condition of "lost significance" is based on whether the project still provides

97 Water Act Sections 2:13, 2:13a, 2:14. 2:14a and Chapter 13 on compensations.

98 Section 3:8.1 Water Act. Notably, permits with unlimited duration do not expire even when the legislation based on which the permit was granted is no longer in force. Section 19:4.1 Water Act.

99 Section 3:22.1:2 and 3:22.3 Water Act.

100 According to Section 3:24.1,

101 Section 3:24.1:1 Water Act. See Government Bill on the Water Act (HE 277/2009 vp), p. 74–75.

the benefits based on which it was granted a permit originally (such as flood protection, infrastructural significance, hydropower generation).[102] A project can be considered having lost its significance, for instance, if the structures have suffered damage that impairs their functioning, or the surroundings or adjacent infrastructure have changed in a way that doesn't support the operation of the project anymore.[103] Before the permit can be ordered to expire, the permit holder has the opportunity to take action to redeem the significance of the project, for instance, by repairing the structures.[104]

This provision, however, does not apply to structures that are still in operation, even if the project is less significant compared to the time of its initiation (which often is the case for small hydropower facilities that are not crucial anymore for energy provision). Hence, the Water Act does not at the outset entail clear provisions enabling the initiation of a dam removal or decommissioning project coercively, if the owner is not willing to sell the facility. This has become a major problem for some dam removal initiatives that are deemed crucial for nature restoration or resurrecting migratory fish stocks.

CASE STUDY | Limitations to coercive dam removal

A notable example of limitations of the Finnish regulation is the Palokki hydropower facility in Heinävesi. It is a single facility that destroys a major rapid rivers habitat and blocks the migration of highly endangered lake trout and Saimaa salmon.[105] As the owner of the facility has not been willing to sell, advancing the decommissioning would necessitate other legal avenues.

Two legal options to combat this situation have been outlined:

1) filing a water permit application for a decommissioning project, with the intention that property rights to the hydropower facility, related areas and the hydropower permit could be expropriated as part of the permit decision (thus, constituting the "private law part" of the permit)
2) carrying out an expropriation of the hydropower facility, related areas and the permit by a decision of the Government.[106]

Since coercive expropriations of operating water construction projects have never been carried out in Finland for nature protection, there is legal uncertainty on the feasibility of either option. Initiating the process under either option to decommission Palokki would constitute a landmark case, with potentially far-reaching implications on the legal framework for barrier removals.

The application for ordering a permit to expire can be made by the permit holder or another party acting on a mandate from the permit holder[107], an environmental NGO, relevant municipalities or the EDCs acting in their function of promoting fisheries

102 According to the preparatory documents for the Water Act; Government Bill HE 277/2009, p. 75.

103 Ibid.

104 Section 3:24.2 Water Act.

105 See https://www.isury.fi/palokki-hanke/. See in English: https://openrivers.eu/projects/202509717-palokki-dam-pre-demolition-finland/

106 This could be done under the General Expropriations Act (603/1977, Act on the Redemption of Immoveable Property and Special Rights See Matti Hepola, Antti Iho and Antti Belinskij, Vesivoimalaitoksen arvon määritys erityisesti pienvesivoimalan kohdalla. Ympäristöjuridiikka 1/2023 s. 7–33.

107 Section 3:24.3. In which case the permit will be ordered to expire without further conditions based on Section 3.24.1:2 Water Act.

or other public interests.[108] The decision to order a permit to expire is made by the permitting authority. The decision will include relevant regulations on the removal of structures and otherwise decommissioning the project.[109] However, the decision may require parts of the structures to be maintained if the removal would impact public or private interests.[110]

In case the permit holder exists, they continue being responsible for the project and are therefore responsible for carrying out removal and decommissioning. In case the permit holder is not identified, the decision ordering the permit to expire can enable the applicant to expropriate the water project without compensation, in which case the applicant becomes responsible for the project and decommissioning.[111]

In practice, decommissioning projects have been advanced by having NGOs, municipalities and other stakeholders set up a distinct organisation or association that they fund together (often including some funding from the NOUSU project). An organisation or association can, for instance, apply for the permit for an obsolete barrier to expire and take responsibility for the decommissioning. They subsequently take over the ownership of the existing structures, permits and responsibility for carrying out the project.

3.3.1.2 Voluntary transaction and transfer of property rights and permit

The most common avenue in Finnish dam removal projects has been initiating the barrier removal with voluntary transactions of property rights from the operator/permit holder to the party that seeks to initiate and carry on the removal project. In some instances, the owner's motivation to sell the hydropower plant has been triggered by a legal decision requiring costly investments in mitigating environmental or fisheries harms.

CASE STUDY | Imposing additional obligations as a motivation to voluntarily remove the structure

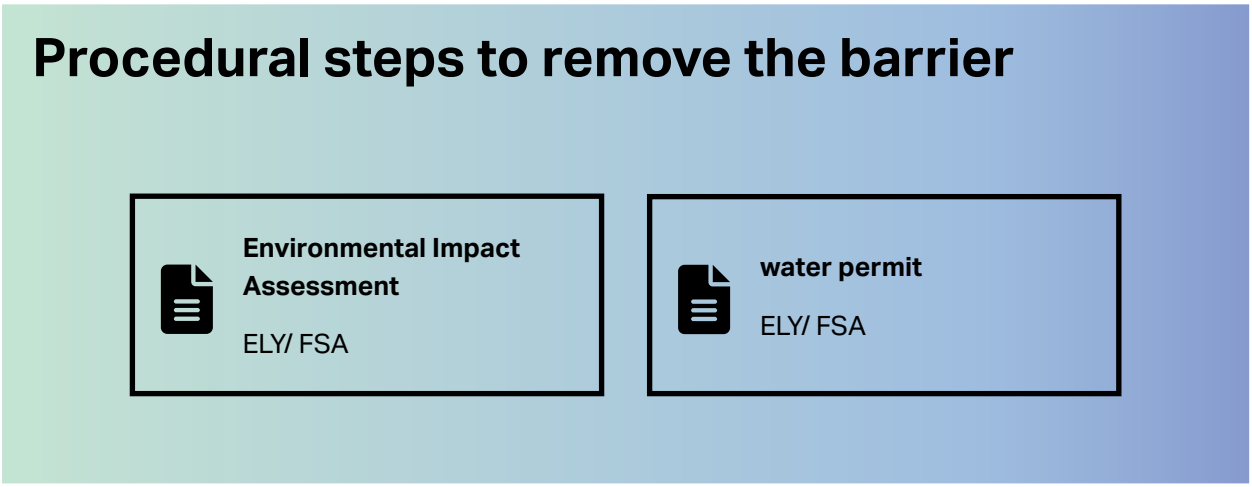
An example of such a situation is the Hiitolanjoki river. In this case, a decision by the Supreme Administrative Court confirming obligations to build fishways past three hydropower stations tilted the scales towards selling the hydropower plants. The plants were sold to an organisation specifically established for the purpose of carrying out the dam removals.[112]

The ownership of the facility (and hence the water permit) has been transferred. This allowed the new owner to request the expiration of the permit.[113]

108 Sections 3:24.3 and 14:14 Water Act.
109 Section 3:25.1 Water Act.
110 Section 3:25.1 and 2:9.2 Water Act.
111 Section 3:25.2 Water Act.
112 See https://yle.fi/a/3-10592961 (in Finnish).
113 Section 3:24.1:1 Water Act.

3.3.2 The procedures preceding the barrier removal

After the permit expiration, the new owner of the facility is responsible for making the necessary permit applications for barrier removal and carrying out the process. Relevant legal requirements include EIA, water permit for the project, preconditions deriving from the rules related to WFD's water management objectives and potentially also provisions related to cultural heritage protection.



3.3.2.1 Environmental Impacts Assessment

Dam removals are not included in Annex 1 of the EIA Act (stipulating a list of projects to which EIA always applies). However, they often qualify as projects that are likely to have significant environmental impacts, and thus, they may have to be accompanied by an EIA. The need to conduct an EIA is determined by the EIA authority (ELY / FSA).

The EIA process runs in parallel with the water permit application process.[114] In practice, the application for a water permit can be made first, and subsequently, the EIA authority will decide on the applicability of the EIA. In case an EIA is required, the public announcement and consultation on the assessment can be done simultaneously with the public announcement and consultation on the water permit application.[115] After the EIA statement is issued, the water permit application is complemented by it. The water permit will include the necessary permit conditions and regulations that mitigate any adverse environmental impacts detected in the EIA.[116]

3.3.2.2 Water permit application

As dam removal entails impacts on public and private interests in water resources, a water permit under the Water Act must be acquired.[117]

Already when the permit is ordered to expire, the necessary conditions and regulations concerning the removal of structures should be put in place.[118] One of such conditions is a water permit requirement for removal of the barrier, as structures

114 Section 11.1 EIA Act.
115 Section 22a EIA Act; Section 11:11a Water Act.
116 Sections 25 and 26 EIA Act, Section 11:3.2 Water Act.
117 Section 3:2.1 of Water Act.
118 Section 3:25.1 of Water Act

that affect the water level or flow of water may not be removed without an explicit permit.[119] Moreover, the positions of property owners need to be considered, as their rights have also been regulated in the original permit (including compensating for damage, expropriated areas or coercive establishment or transfers of entitlements). Owners' positions may include possible permit regulations minimising the damage or settling compensations.

The Water Act provides two legal bases and procedures for granting a water permit. One of the procedures is applied depending on the gravity of the impact of the structure on the environment.

First, a decision to grant a permit can be issued when the project is assessed to not significantly violate public or private interests.[120]. The permit authority assesses the extent to which public or private interests can be violated by the project. The authority may set some conditions and regulations that minimise any potential harm. If the authority determines that no significant violations, such as those meriting compensation, will take place, a permit can be granted. In the context of barrier removals, removal of smaller barriers might be permitted under this section.

Secondly, a permit can be granted based on the so-called interest comparison. This will apply to all "more than minor" construction projects. In this procedure, all benefits to public and private interests gained from the project are weighed against all adverse impacts.[121] The permit can be granted based on the assessment that "the benefit gained from the project to public or private interests is considerable in comparison to the losses incurred for public or private interests".[122]

In practice, the interest comparison will apply to most dam removals, especially those entailing decommissioning an operating hydropower facility. Possible benefits to public interest include benefits to nature protection and restoration, fisheries management and water management objectives. Possible public losses may entail loss of energy generation or impacts on flood protection. In turn, possible private benefits may include recreational income, while private losses include potential damage to riparian landowners and their properties.

In the system of the Water Act, the conditions and regulations attached to the permit function as mitigation measures for the losses caused by the project, so that the interest comparison may be tilted to a position of granting a permit.[123] For instance, a permit for a dam removal may entail necessary conditions on maintaining or constructing partial structures to minimise changes to water levels (including submerged dams) to mitigate losses on flood protection and damage to property. It may also include regulations on how to conduct the decommissioning work to

119 Sections 2:9.2 and 3 of Water Act.

120 Section 3:4.1:1 of Water Act

121 See more specifically Section 3:6 on assessing public benefits and losses and Section 3:7 on assessing private benefits and losses.

122 Section 3:4.1:2. Water Act also contains an absolute bar on granting a permit to projects that jeopardises public health or safety, causes considerable detrimental changes in the natural state of the environment or the aquatic environment and its functions, or causes considerable deterioration in the local living or economic conditions (Section 3:4.2 Water Act). For such project, no amount of benefit for other public or private interest can justify granting a permit. In case law, the threshold for triggering this bar have been set high, making it extremely unlikely that it would become applicable in the context of a barrier removal.

123 Section 3:10 Water Act.

minimise adverse impacts and regulations on restoring and renaturalising the site and adjacent areas. Permits typically also include regulations on monitoring the project and its impacts.[124]

3.3.2.3 Water management objectives and possible derogation

Section 3:4.3 Water Act[125] stipulates that a permit cannot be granted if the project might jeopardise the achievement of the water status objectives for a surface water body or a body of groundwater[126] or if the project might cause deterioration of the water status.[127]

Dam removal projects may often be necessary for complying with the water status objectives, and thus, they often entail positive impacts on water status. However, as outlined by the CJEU in its ruling C-525/20, regardless of any long-term positive effects of the project, the deterioration ban of the WFD also encompasses any temporary, short-term impacts.[128] This also includes temporary deterioration caused by restoration projects, in which case such projects can only be authorised if they are granted a derogation provided in Art 4(7) of the WFD.[129]

The extent to which the deterioration ban encompasses temporary and short-term impacts has not been explicitly codified in the Water Management Act. Yet, the preparatory documents for the provision explaining the content of the no-deterioration ban refer to the CJEU judgement C-525/20. The content of the Finnish provision is therefore to be interpreted in line with the judgment.[130] Accordingly, if the dam removal project is assessed to entail temporary deterioration in water status (for instance, changes in turbidity or in sediment structures) the project requires a derogation. The conditions for the derogation follow from Art 4(7) WFD. In case of physical modifications like dam removal, the derogation can be applied to water bodies regardless of their initial status,[131] provided that the negative impacts are minimised and there is no better alternative for those elements of the project that cause the deterioration.[132] In practice, the conditions and regulations for minimising impacts are included in the water permit, and the derogation is granted by the permit authority as part of water permitting.

3.3.2.4 Cultural heritage protection

Especially older dams may have a cultural heritage value and be protected either with regulations in a land use plan, or by an explicit protection decision under the Cultural Heritage Act.

124 Section 3:11 Water Act.

125 Section introduced with the legal amendments in 2024 transposing of the WFD's obligations related to permitting of new projects in Finnish legislation.

126 i.e. breaching Section 20a of the Water Management Act

127 i.e. breaching Section 20b of the Water Management Act

128 Case C-525/20 Association France Nature Environnement ECLI:EU:C:2022:350, paras 22–27, 30–31, 45.

129 The Court saw, however, that due to their aims of generating positive impacts in the water bodies, such projects can at the outset fulfil the condition under Art 4(7) of being overriding public interest and receive a derogation if the other conditions – mitigation of harms and that there are no better alternatives to the aspects of projects that trigger deterioration – are fulfilled, See ibid, paras 42–44.

130 Government Bill on amending the Water Management Act (HE 175/2024 vp), p. 51–52.

131 See in contrast to derogation based on other types of impacts, like pollution, that is only available when the projects entail deterioration from high status to good status. Art 4(7) WFD, Section 20c.1:1 Water Management Act.

132 Section 20c.2:1 and 3 Water Management Act.

Upon application, the municipality may grant an exemption from the regulations in the land use plan[133] under the condition that this exemption does not compromise the objectives related to the protection of the structure.[134]

Similarly, a derogation from the cultural heritage protection under the Cultural Heritage Act may be granted.[135] For instance, if the protection prevents the use of the construction or an intended new use. However, derogation cannot be granted if , as a result, the construction would no longer possess the cultural heritage value meriting protection.[136]

In other words, complete dam removal and decommissioning of the protected constructions may not be reconcilable with the preconditions for derogations. However, this hurdle can in some cases be overcome by carefully designing the dam removal on a case-by-case basis, in a way that preserves cultural heritage values. In Hiitolanjoki, for instance, protection of cultural heritage values was taken into account in the dam removal by restoring the facility building and turbine and preserving strips of the dam on the riverbanks.[137]

133 under Section 57 of the Building Act

134 Section 57.2.3 Building Act.

135 Section 10a of Cultural Heritage Act

136 Section 10a.2 Cultural Heritage Act.

137 See water permit decision by the State Regional Permitting Authority in Southern Savo ESAVI/1937/2020.

3.4 Regulations impeding and/or facilitating barrier removal in Finland – summary

✕ The Finnish legal framework lacks a systematic approach to river renaturalisation. Finnish law does not provide for systemic solutions that would facilitate a wide-scale barrier removal on an ecologically prioritised basis.

✓ Barrier removals have been successfully implemented in Finland within the current legal framework if they were based on voluntary actions of the previous permit holders. The Finnish legal framework does not entail provisions that would significantly impede the implementation of such projects. This has worked rather well for implementing removals and decommissioning of a selection of smaller and/or obsolete barriers and a number of smaller hydropower facilities.

✓ The Finnish government has implemented projects that facilitate collaborative barrier removal, such as Watershed Visions (informal collaborative governance processes taking place in local watershed contexts can be initiated).

✓ The Finnish government provides funding for projects through the NOUSU program. The program provides government funding for projects such as barrier removal, modifying existing constructions, improving ecological flows and implementing habitat restoration measures. The program has been quite successful, as it led to removals of 10 small hydropower plants and 17 other projects involving dam removals or modifications.

✕ The Finnish legal system does not adequately address the problem of the permanence of water permits. The law does not provide sufficient means to order permits to expire without the permit holder's consent. There are provisions allowing the removal of the barrier if it has lost its original significance. This provision, however, does not apply to structures that are still in operation, even if the project is less significant compared to the time of its initiation (which often is the case for small hydropower facilities that are not crucial anymore for energy provision).

✓ Finnish law provides a solution for removing barriers which owner is unknown.

! The provisions and synergies of the EIA and Water Act generally facilitate the dam removal process. The temporary deterioration ban stemming from water management objectives may impede dam removal. However, this obstacle is mitigated by the procedural provisions enabling a derogation to be granted in connection with the mitigation measures in the water permit. Similarly, provisions related to cultural heritage protection may impede dam removal.

4 Case study: France

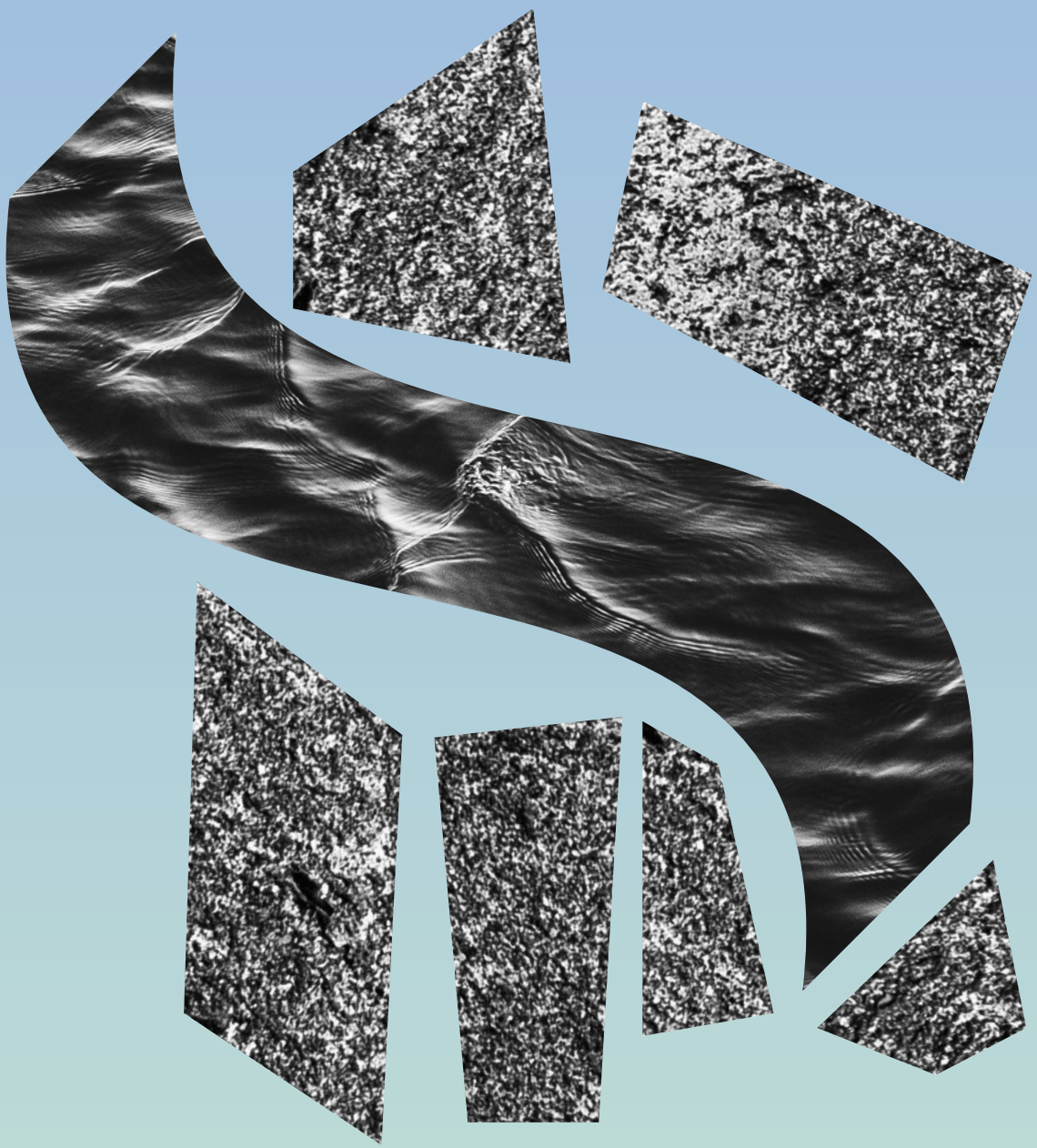


Table 7: the glossary of French water governance terms

DREAL	Regional Directorate for Environment, Planning, and Housing (fr. direction régionale de l'environnement, de l'aménagement et du logement), responsible for issuing the necessary authorisations under IOTA regulations and enforcement of water regulations
OFB	The French Office of Biodiversity (fr. office Français de la Biodiversité), responsible for the enforcement of administrative and judicial policies relating to water and providing scientific expertise to support public actors
SDAGE	The master plan for water development and management (river basin management plan) (fr. *schéma directeur d'aménagement et de gestion des eaux*)
SAGE	water development and management plan prepared at the sub-basin level based on SDAGE (fr. *schéma d'aménagement et de gestion de l'eau*)
coordinating perfect for the basin	Responsible for coordinating the State's policy on water resources on the basin level
IOTA	Installations, structures, works, and activities likely to impact water resources, the aquatic environment, or water flow for which special procedures of either environmental declaration or authorisation applies.
basin committee	Committee comprising various public and private stakeholders involved in the water sector, which prepares the SDAGE for the basin (fr. *comité de bassin*).
water agency	Responsible for collecting fees for water use and offering technical expertise to basin committees, as well as to public and private stakeholders (fr. *agence de l'eau*)
CLE	Local water commission at the sub-basin level (fr. *commission locale de l'eau*)
DDT	Departmental directorates for territories at the sub-basin level (fr. *direction départementale des territoires)*
PARCE	Action Plan for the Restoration of Ecological Continuity
PAPARCE	Action plan for a peaceful policy of ecological continuity restoration

4.1 Water governance system in France

In France, several ministries (environment, agriculture, health, and economy) are responsible for setting out and implementing water policies at the national level. These ministries do not share the same strategic vision. The policy adopted by the Ministry of the Environment tends to focus on water protection and achieving good water status. The ministries responsible for agriculture and industry are more concerned with preserving water consumption opportunities in their respective sectors.

The water governance in France is organised around seven river basins, which are divided into sub-basins. Each basin has its planning document, SDAGE, which constitutes guidelines for SAGE prepared at the sub-basin level.

At the river basin level, the State's policy on water resources is coordinated by the coordinating prefect for the basin, supported by technical departments:

- DREAL, which issues the necessary authorisations under IOTA regulations[138] and enforces water regulations;
- OFB, which contributes to the enforcement of administrative and judicial policies relating to water and provides its scientific expertise to support public actors.

For each basin, there is a basin committee comprising various public and private stakeholders involved in the water sector, which prepares the SDAGE for the basin. The SDAGE is then approved for a period of six years by the coordinating prefect of the river basin.

Basin committee brings together stakeholders such as:

- representatives of the Parliament, departmental and regional councils, municipalities or local authorities competent in the field of water,[139]
- representatives of nature protection associations, regional conservatories of natural areas and associations for fishing and the protection of the aquatic environment,[140]
- representatives from sectors such as agriculture, organic farming, forestry, professional freshwater fishing, aquaculture, tourism, industry, water distributors, electricity producers and hydroelectricity producers.[141]

In each basin, there is also a water agency responsible for collecting fees from water users and offering technical expertise to basin committees, as well as to public and private stakeholders. Water agencies use the fees they collect from water users to finance research programs, infrastructure projects, and initiatives aimed

138 For explanation of IOTA regulations see p. 45.
139 Article D213-19-1 of the Environmental Code
140 Article D213-19-2 of the Environmental Code
141 Article D213-19-3 of the Environmental Code

at preserving water resources and combating pollution. They are responsible for implementing the SDAGE and SAGE.

At the sub-basin level, there are CLEs responsible for the development, revision, and monitoring of SAGE's implementation, as well as DDTs acting as DREAL's representatives. Another important figure at the sub-basin/ departmental level is the departmental prefect responsible for declarations and authorisations relating to IOTA.

Water governance in Finland

BASIN LEVEL ⟷ **REGIONAL LEVEL**

SDAGE

PROJECT → **BASIN COMMITTEE - public and private stakeholders involved in the water sector** — Preparation of SDAGE for the basin

APPROVAL → **PREFECT OF THE REGION = COORDINATING PREFECT** — Coordination of State's policy on water resources; Approval of SDAGE

IMPLEMENTATION → **WATER AGENCY** — Collecting fees from water users and financing research, programs and infrastructural projects; Technical expertise for Basin Committees

REGIONAL LEVEL ⟷ **DEPARTAMENAL LEVEL**

SAGE

DEVELOPMENT, REVISION, AND MONITORING → **CLE**

DDT

DEPARTMENTAL REP. OF DREAL → **DREAL**

OFB

DEPARTAMENTAL PREFECT — declarations and authorizations relating to IOTA

4.2 Barrier removal in France – state of play

Although France had already carried out work to remove obstacles from water courses during the 1990s, it was the transposition of the WFD in 2004[142], which sparked the implementation of a genuine policy on ecological continuity restoration.

The law introducing WFD provided for the classification of watercourses into two separate lists[143]:

List 1: watercourses to be preserved: water courses in very good ecological condition, requiring complete protection for migratory fish and on which no authorisation or concession may be granted for the construction of new structures if they constitute an obstacle to ecological continuity. Renewals are subject to requirements for maintaining or achieving good status.

List 2: watercourses to be restored: water courses for which it is necessary to ensure sufficient sediment transport and the movement of migratory fish within five years of their inclusion on the list (then the deadline was extended for another five years). Owners or operators of the structures built on these watercourses must comply with the restoration requirement.

In 2009, the Ministry of Ecology[144] presented PARCE – the action plan highlighting the problem of transverse structures preventing France from meeting its commitments to good status and biodiversity preservation. The plan identified weirs and dams on all rivers in mainland France, noting that only 10% of these structures had an identified economic use. PARCE was followed by the establishment of ROE, a national reference system for flow obstacles. According to ROE in 2015, there were 80.000 obstacles on water courses[145].

In 2010, the government signed the Convention for Sustainable Hydropower with i.a. stakeholders in the hydropower sector. Under this convention, it is possible to remove hydropower dams when it is essential for restoring ecological continuity. Parties also agreed on the removal of the Condamine[146], Trente Pas[147] and Caubous[148] dams, as well as the removal and exemplary renaturalisation of the sites occupied by the dams located on the Sélune River.

142 followed by the adoption of the Law n° 226-1772 of 30 December 30 2006 on water and aquatic environment

143 Law n° 226-1772 of 30 December 30, 2006, on water and aquatic environment, which introduced L.214-17 into the Environmental Code

144 Name of the Ministry at that time.

145 This figure has been revised to 110,000 obstacles, including 25,000 on List 2 water courses, by 2025. However, it should be noted that this refers to « a very heterogeneous set [of obstacles] including bridge foundations, culverts, groynes, sluice gates, small dams, etc.» (Response from the Minister for Ecological Transition to parliamentary question n°6973, July 15, 2025).

146 However, it turns out that only the water intake and penstock structures were dismantled by EDF, the concessionaire. On 26 November 2018, the prefect of Alpes-de-Haute-Provence authorised the construction of a smaller hydroelectric facility by another company, which rehabilitated EDF's former facilities.

147 The dam was demolished in 2013.

148 The dam was demolished in 2020.

CASE STUDY | long removal of Sélune dam

In 2009, the Ministry of Ecology announced that it would not renew the concession for operating two large dams (Vezins and La-Roche-Qui-Boit) located on the Sélune River and that they should be removed.

In 2012, a multidisciplinary scientific program was set up to study the mechanisms for restoring ecological continuity for this type of operation. That same year, the environmental authority issued a deliberative opinion in which they identified difficulties in barrier removal. They indicated strong local opposition, a lack of precision regarding objectives of the project (which is detrimental to public understanding), as well as the technical challenges associated with the project (renaturalisation, sediment management, dismantling waste management, fish farming management, etc.).

After a long delay, the project was finally confirmed in 2017. Works to remove the dams have been completed between 2020 and 2023, giving way to the ecological restoration phase, which will continue until 2027.

In 2019, another action plan, PAPARCE, was established. It set out criteria for a shared national methodology for prioritising the watercourses to be restored. PAPARECE was followed by the technical note dated 30 April 30 2019[149] clarifying criteria for prioritisation of structures to be removed. According to the note, a structure that already sufficiently ensures ecological continuity will not be considered a priority. Structures to be removed should be identified in the 2019-2021 and 2022-2027 SDAGEs for each basin and will receive priority support and expertise from government departments, as well as financial resources from water agencies. The coordinating prefect for the basin is responsible for overseeing the establishment of the prioritisation program, developed by all the departments with technical expertise (DREAL, water agency, OFB, DDT, etc.), with the support of local authorities. The departmental prefect oversees the operational implementation of appropriate solutions to ensure ecological continuity.

In most basins, the process of prioritising structures that need to be brought into compliance through construction work (removal, levelling) takes several years[150].

Between 2012 and 2023, approximately 1.400 identified structures on watercourses on List 2 were removed with funding from water agencies. According to the Ministry of the Environment, in most cases, removal is not the technical solution chosen, as priority is given to modifying the structure by installing a fish pass, a bypass river, or lowering the threshold.[151]

Dam removal is financed mainly from water agencies but may also be supplemented by aid from local authorities (regions, departments, municipalities[152]). Since 2019,

149 Technical note dated 30 April 30 2019, on the implementation of the action plan for a peaceful policy to restore the ecological continuity of water courses

150 For example, in the Adour-Garonne basin, the prioritisation phase led to the planning of two phases of work, lasting until 2027.

151 Response from the Minister for Ecological Transition to parliamentary question n°8562, published in the Official Journal of 17 October 2023, page 9184.

152 Under article L.211-7 of the Environmental Code, public establishments for intermunicipal cooperation (EPCI) with responsibility for « *aquatic environment management and flood prevention* » (GEMAPI), which includes the restoration of aquatic ecosystems, may intervene to undertake certain works on watercourses, such as the removal of weirs, provided that this is in the public interest.

each of the water agencies has launched a call for projects aimed at restoring the ecological continuity of water courses, covering up to 80% of total expenses.

In 2023, according to ROE data, there was an average of one structure obstructing water flow for every 4.16 km of watercourse in France. However, in the same year, France became the leading European country in terms of the number of obstacles removed (156 in one year).[153]

153 Dam Removal Progress, Dam Removal Europe 2023, World Fish Migration Foundation.

4.3 Legal acts relevant to barrier removal

Table 8: French legal acts relevant to the barrier removal

Environmental Code	Code de l'environnement
Energy Code	Code de l'énergie

4.3.1 Legal basis for the barrier removal

4.3.1.1 General rules

Out of the analysed countries, France is the only one that has a systemic approach to barrier removal.

Barrier removal on the watercourses on List 2

Together with the classification of the watercourse on List 2,[154] each owner of the structure based in such watercourse was officially informed of their obligations resulting from such classification. They should manage, maintain and operate structures in accordance with rules defined by the administrative authority (the rules are defined in consultation with the owner or the operator).

However, current or potential use of the structure, particularly for energy production purposes, cannot be compromised.[155] Thus, except for unused structures, the removal is only considered when maintaining the structure is incompatible with France's commitments under European directives.[156] In practice, the current or potential use is being assessed, with the actual water level situation being properly considered.

If the requirements already imposed on the operator or owner of a structure do not guarantee the objectives of restoring ecological continuity set by law, the authorities will have an obligation to intervene. Yet, the emphasis is primarily on a conciliatory approach developed between the administrative authorities and the owner of the water structure.

The authorities seek the owner's agreement on the proposed scenarios. While the owner may express disagreement with the chosen scenario, if they reject all proposed works, they must then propose their own solution. The worked-out scenario cannot compromise the current or potential use of the structure, particularly for energy production. Therefore, the operator of a structure cannot be required to remove it if the structure is in use or has the potential to be used.

154 Watercourses for which it is necessary to ensure the sufficient transport of sediments and the circulation of migratory fish, for more information see p. 36.

155 L.214-17 of the Environmental Code.

156 Council Regulation (EC) No 1100/2007 of 18 September 2007 establishing measures for the recovery of the stock of European eel ; Framework Directive on water ; Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

CASE STUDY | Assessing the current or potential use

In the case of the Sélune River, the 2012 expert report commissioned by the Minister of the Environment concluded that the removal of the dams was essential to meet water quality requirements and ensure the free movement of migratory species, which led to the launch of the project. The minister stated that: *It is a balance between energy issues and the preservation of aquatic environments that will enable France to achieve its objectives, by* developing hydroelectricity at sites that offer the best energy potential and the least environmental impact, *and by restoring the ecological continuity of the most important water courses*[157]

The Pont-Sal dam (Morbihan), which was demolished in 2017, was used to store water for drinking water supply. The low capacity of the reservoir and its poor quality during the summer months led to the decision to demolish the structure, which was no longer fulfilling its original function effectively.

In practice, authorities take a conciliatory approach also when it comes to sanctions. Exceeding the compliance deadline leads to considering new solutions rather than initiating a sanction process. Moreover, the law stipulates that administrative or judicial enforcement action should primarily target cases of structures for which no compliance steps have been taken by the owner or operator.

Once regulations are imposed, failure to comply with them may lead to the initiation of administrative proceedings[158] and the commencement of criminal prosecution.

For example, the operator of a structure located on a water course on List 2 is required to ensure fish passage and sediment transport by carrying out work on the structure. While the operator is not necessarily required to remove the structure, they are liable to a fine of €75,000 if the structure obstructs the passage of migratory fish[159].

Barrier removal on all watercourses, including beyond List 2

In any case, even for watercourses not listed on the List 2, the departmental prefect has the power to take *all necessary measures to ensure the free flow of water* with respect to the owner of the structure[160]. Removal will not necessarily be the chosen option if it proves not essential for restoring ecological continuity. More preferred options would be lowering the structure or implementing specific measures, provided they are effective, and their cost makes them a viable option.

Furthermore, the law stipulates that *authorisations or permits granted for the construction of structures or facilities may be modified, without compensation from the State exercising its police powers, if their operation does not allow for the preservation of migratory species that live alternately in fresh and salt water*[161].

157 "Development of the Sélune Valle – 10 questions/10 answers", Ministry of Ecology, April 2012.

158 L.171-8 of the Environmental Code – administrative enforcement; L.211-7-1 of the Environmental Code – possibility to undertake studies and works necessary to comply with imposed rules by the authority and charge the costs to the owner.

159 Article L.216-7 of the Environmental Code

160 Article L.215-7 of the Environmental Code

161 Article L.215-10 of the Environmental Code

4.3.1.2 Rules for specific types of dams

Apart from these general rules outlined above, there are also specific regulations on the removal of particular structures. Rules will differ depending on the structure's goal and capacity.

4.3.1.2.1 Structures not used for hydroelectric power generation

The first category is obstacles resulting from fish farming operations. They are considered facilities classified for the protection of the environment[162] and are subject to special rules. Restoration at the end of the operating period should involve removing all obstacles from the water course, unless other measures have been taken during operation to ensure ecological continuity. The operator is responsible for carrying out all the restoration work under the supervision of the departmental prefect.

Works on weirs and/or thresholds that obstruct flow (which are sometimes remnants of old water mills) may be carried out on the initiative of the local authority or a public establishment for intermunicipal cooperation[163] responsible for the water course in question. For example, in Saint-Laurent-sur-Sèvre (Vendée), work to remove a stone weir on a watercourse was carried out by a public establishment for intermunicipal cooperation. It was financed by the establishment, the relevant water agency, and the region.

When the structure is a water reservoir used for drinking water supply, it is the competent local authority[164] that may take the initiative to remove the structure. For example, the dam and drinking water plant at Pont-Sal (Morbihan) were demolished in 2017 under the supervision of the mixed association responsible for drinking water. The work was financed by the association, the Loire-Bretagne water agency, and the Morbihan department.

Finally, the strictest rules will apply to water mills. Removal of such structures usually faces strong local opposition due to the perceived cultural value of the mills . According to the law, their removal can only result from the owner's decision. Their maintenance, management, and equipping of retention structures are the only measures provided for the fulfilment of obligations relating to the passage of migratory fish and sufficient sediment transport. Any other measures, in particular those relating to the destruction of such structures, are excluded[165]. As a result, *prefectural authorities are no longer able to order the removal of* [water mills] *located on priority water courses as a means of restoring ecological continuity. However, removal of these structures remains possible for other reasons, particularly health or hydraulic safety*[166]*.*

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162 Under Article Article L511-1 facilities classified for protection of the environment are facilities which may present dangers or inconveniences either for the neighbourhood, for public health and safety, for agriculture, for the protection of nature, the environment and landscapes, for the economical use of natural, agricultural or forest soils, for the rational use of energy, or for the conservation of sites and monuments as well as elements of the archaeological heritage.

163 According to Article L5111-1 and Article L211-7 of the Environmental Code local authorities may join forces in the exercise of their powers by setting up public cooperation bodies. They may undertake the study, execution and operation of any works, actions, structures or installations of a general interest or emergency nature, within the framework of the water development and management plan.

164 or where applicable, a mixed association set up for the production, transport, and/or storage of water: Art. L.2224-7-1 and L.2224-7-9 of the General Code for Local Authorities

165 Article 49 of the Law n°2021-1104 of 22 August 2021 on combating climate change and strengthening resilience to its effects

166 Response from the Minister for Ecological Transition to parliamentary question n°8562, published in the Official Journal of 17 October 2023, page 9184

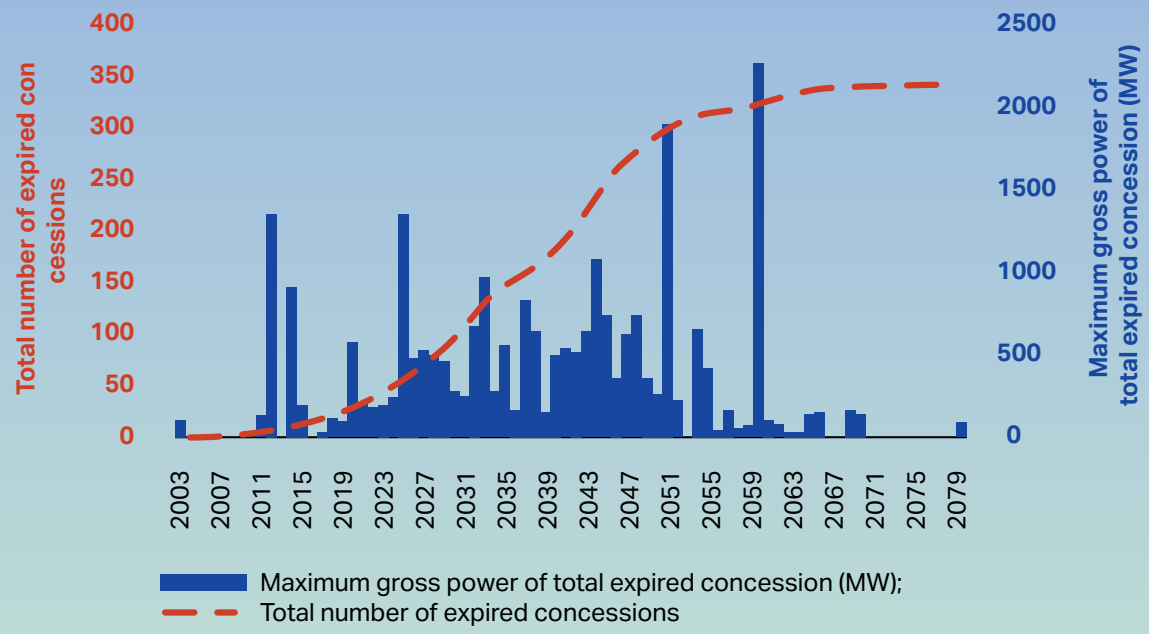
The Conseil d'Etat recognised the incompatibility of this legislative provision with the Water Framework Directive, as it completely exempted mill owners from the obligation to ensure their compliance with the restoration of ecological continuity goal.[167]

Mill owners' associations accuse the state of subsidising the destruction of cultural heritage through the aid granted by water agencies for the restoration of ecological continuity. They have filed appeals against certain decisions of the water agencies approving objectives for the restoration of aquatic environments. Such appeals have been rejected by the Conseil d'Etat on the grounds that a subsidy program does not alter the obligations incumbent upon the owners of the structures.[168]

4.3.1.2.1 Barriers used for hydroelectric purposes

Another set of rules will apply to hydroelectric dams. Such dams can be removed only when the authorisation or concession on the basis of which they are operating is up for renewal. In such a case, authorities may decide not to grant the renewal. There is no legal provision that would allow to revoke such a concession or otherwise render it ineffective. Yet, the concessions are granted for a long period of time. The graph below shows the concession expiry schedule.

Expiration of hydropower concessions



SOURCE: https://www.assemblee-nationale.fr/dyn/17/rapports/cion-eco/l17b1439_rapport-information

167 Conseil d'Etat (Council of State, Administrative Supreme Court), 28 July 2022, n°443911.

168 Conseil d'Etat, 25 mars 2025, n°487831 : Cour administrative d'appel de Versailles, 18 novembre 2024, n°23VE01914.

The concession expiry schedule shows that the last currently granted concession will expire in 2080[169].

CASE STUDY | Removal only at the end of the operating cycle

The dams on the Sélune River could be removed only after the concession has expired. Indeed, it was during the concession renewal process that the question of whether to remove the structures arose. The same applies to the removal of the Ferrières dam (Tarn) in 2023, which took place twenty years after the concession expired, and the Maisons-Rouges dam (Indre-et-Loire), where dismantling work followed the refusal to renew the concession granted to EDF.

The removal of a hydroelectric dam is considered both a separate construction project, requiring certain permits, and a restoration project carried out at the end of a period of operation. Legal regimes on the operations of dams will differ depending on their capacity, and they subsequently impact the conditions for their removal. Legal provisions are divided into:

- the Environmental Code setting out the applicable standards to ensure protection of resources, natural environment, water quality, and biodiversity.
- the Energy Code setting out the provisions applicable to the use of hydropower, in particular the rules relating to authorisation and concession schemes.

Category A: Hydraulic installations with a capacity not exceeding 4.5 MW

Hydraulic installations with a capacity not exceeding 4.5 MW are subject to the authorisation regime and thus [170]. They fall under the jurisdiction of the departmental prefect, who is responsible for issuing operating permits and monitoring their operating conditions. Approximately 2,300 facilities currently operate[171].[172].

Only the provisions of the Environmental Code will apply to the removal of such dams. Thus, the dam operator must comply with the restoration obligations applicable to this category of IOTAs. They must restore the site to a state in which the protected interests (such as, for example, nature protection, convenience of the neighbourhood, or public safety) will not be adversely affected. The administrative authority may, at any time, impose requirements for the restoration of the site[173].

Category B: Hydraulic installations with a capacity exceeding 4,5 MW

Hydraulic installations with a capacity exceeding 4,5 MW are subject to the concession regime[174]. This means that the facilities belong to the State and are operated by a concessionaire. The facilities under concession are therefore public facilities contributing

169 Report submitted by the Senate Economic Affairs Committee on the management and operation of hydroelectric facilities, 17 May 2025, accessed at: https://www.assemblee-nationale.fr/dyn/17/rapports/cion-eco/l17b1439_rapport-information page 23.

170 Art.L531-1 of the Energy Code. More on IOTA see p. 46

171 Report submitted by the Senate Economic Affairs Committee on the management and operation of hydroelectric facilities, 17 May 2025, page 14.

172 Report submitted by the Senate Economic Affairs Committee on the management and operation of hydroelectric facilities, 17 May 2025, page 14.

173 Art. L.181-23 of the Environmental Code.

174 Art.L511-5 of the Energy Code

to the public energy service. They are built and operated on behalf of the State by the concessionaire[175]. At the end of the concession period, the assets necessary for the operation of the public service revert to the State. Other assets may remain the property of the concessionaire, in accordance with the concession specifications[176].

The concession is granted by the departmental prefect (for installations with a capacity between 4,5 MW and 100 MW) or by the minister responsible for energy (for installations with a capacity of more than 100 MW)[177].

Although only 340 facilities operate under the concession system in France. However, they account for 90% of installed hydroelectric capacity.

Removal of dams under the concession regime is not specifically regulated under French law. The applicable rules will depend on the precise wording of the concessionaire's duties in the concession specifications. There are, however, regulatory gaps when it comes to technical and financial arrangements for managing the end of life of the hydroelectric facilities under the concession regime.

CASE STUDY – Regulatory gap on dismantling structures at the end of consesions

Removal of the dams on the Sélune river revealed a regulatory gap in the management of the end of life of hydroelectric facilities under concession regime. Under standard concession specifications at the expiry of the concession the assets return to the State, which is then responsible (also financially) for project management of any dismantling work. In the specific case of the Sélune dams, the State acted as project manager for the work while entrusting EDF (the concessionaire) with a management mandate to ensure the safety of the structure until it was emptied.

These problems lead to changes in the regulation of the rules applicable at the end of the concession. Two documents were issued: a decree[178] approving new specifications applicable to hydroelectric power concessions and an order[179] defining the procedures for preparing the concession termination file.

During the five years preceding the expiry of the concession, the concessionaire is required to carry out any work that the prefect deems necessary in order to prepare the object for future use of the venue according to the plans of the state. The work is carried out at the expense of the State[180].

Eighteen months before the expiry of the concession, the concessionaire shall submit to the concession authority a draft protocol describing measures intended to be taken to ensure a smooth end of operations as well as the return of the concession's assets and facilities (including the parts of the public river domain)[181].

175 Report submitted by the Senate Economic Affairs Committee on the management and operation of hydroelectric facilities, 17 May 2025

176 Art.L.3132-4 of the Public Procurement Code.

177 Art. R.521-1 of the Energy Code.

178 Decree n°2016-530 of 27 April 27 2016, relating to hydroelectric power concessions and approving the model specifications applicable to such concessions.

179 Order of 27 November 2015 defining the procedures for completing and submitting the file for the end of a hydroelectric power concession.

180 Art. R.521-55 of the Energy Code.

181 Art. R.521-56 of the Energy Code.

However, neither of the newly introduced provisions explicitly mentions the procedures for restoring the natural environment. They refer to restoration work on «*the assets and appurtenances of the concession,* which may include *parts of the public river domain,*[182] works *necessary for the preparation and development of future operations* or ensuring the smooth cessation of operations.

4.3.2 The procedures preceding the barrier removal

The previous chapter clarified the legal basis for the removal of the barrier. This chapter will focus on permits and approvals that need to be acquired after the legal basis has already been established.

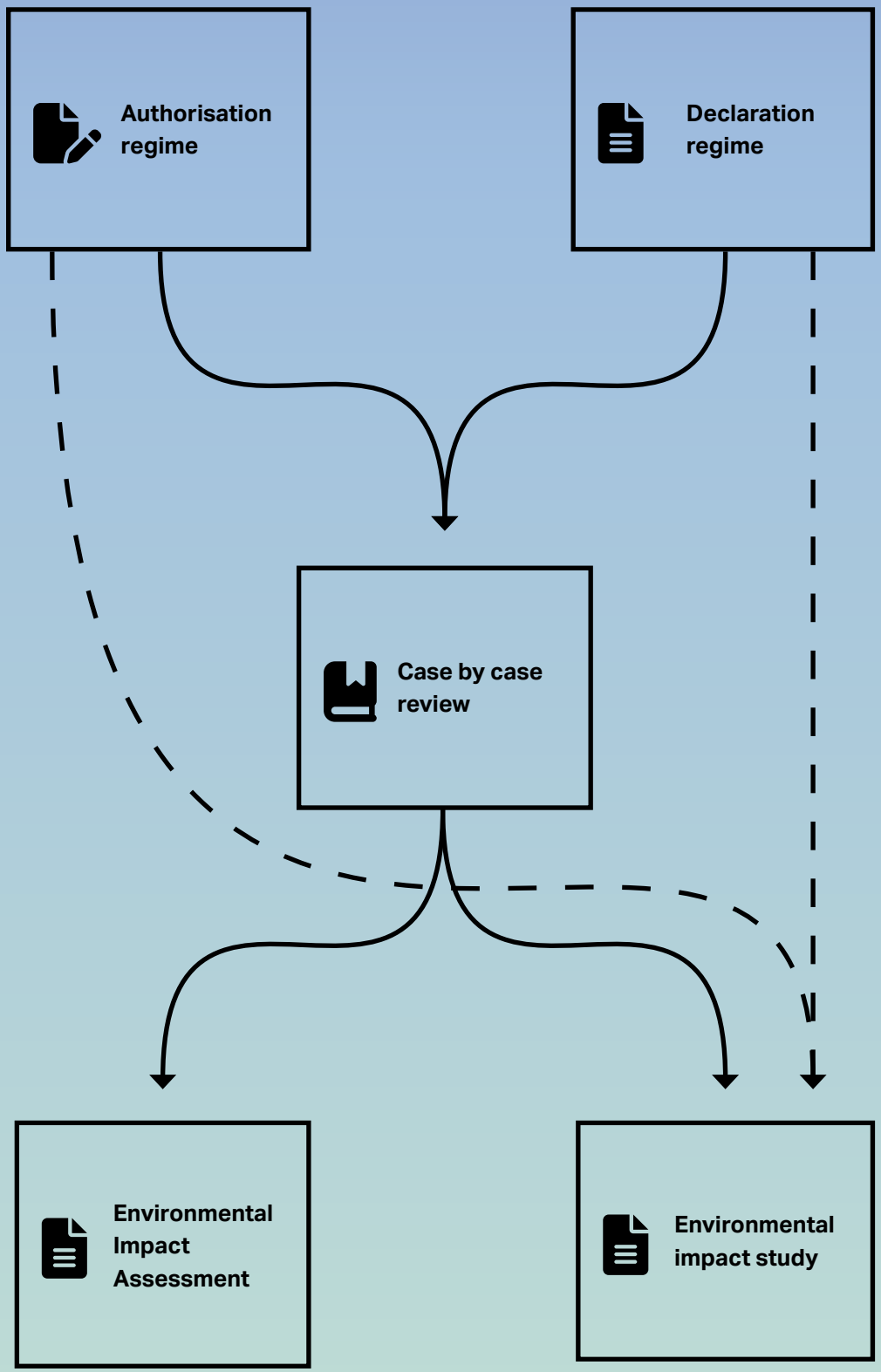
Projects that are likely to have an impact on water fall under the category of IOTA, namely installations, structures, works, and activities likely to impact water resources, the aquatic environment, or water flow. All types of IOTAs are listed in the appendix to the Environmental Code (called water classification). [183] The water classification specifies what projects and under what criteria fall in one of two procedural regimes: declaration and authorisation regimes. The declaration regime is easier and intended for smaller projects, while the authorisation regime involves more detailed analysis and application of more complicated rules.

Projects are categorised in different sections of the water classification according to their nature and the impact of the work to be carried out. Sometimes classification of the project into either a declaration or an authorisation regime will depend on thresholds reached by the project. If the criteria for the authorisation regime of at least one section are met, the project will be subject to this stricter regime. If the particular project falls within neither of the sections, it can be carried out without any environmental procedure.

182 Decree n°2016-530, appendix, article 11.

183 Appendix to the article R.214-1 of the Environmental Code

Procedural steps to remove the barrier



4.3.2.1 Authorisation regime

The authorisation regime applies to classified dams. The Environmental Code introduces three classes of dams (A, B, C), according to their height and the volume of water they retain[184]. To be classified, dams must be at least 2 meters high, exceed 0.05 million cubic meters of retained volume, and there must be at least one household up to 400 m downstream of the dam. Moreover, removal of a dam may fall within other sections of the water classification providing for an authorisation regime.

Classified dams will also be subject to environmental impact assessment if the project falls within one of the categories of projects classified in the appendix to Article R.122-2 of the Environmental Code. Projects listed in the appendix may be subject to environmental assessment either automatically or after a case-by-case review conducted by a dedicated administrative authority. However, the scope of automatic environmental assessment has narrowed over the years. It is now reserved only for large-scale projects whose disadvantages are proven to be serious. Thus, dam removal projects under the authorisation regime will not be subject to automatic environmental assessment. They will either:

- be subject to an environmental assessment, after a case-by-case review[185]: this involves submitting a file containing a comprehensive impact assessment, followed by a public consultation procedure conducted under the supervision of an investigating commissioner[186]
- require including an environmental impact study in the application for an authorisation: an impact study is a less demanding document[187], followed by a public consultation conducted under the supervision of an investigating commissioner[188].

4.3.2.2 Declaration regime

Procedures under the declaration regime are simplified. This regime applies to works which sole purpose is to restore the natural functions of aquatic environments if:

- they are located in the riverbed, except in the case of classified dams;
- they are built alongside water courses, unless they are part of a flood defence system;
- they have an impact on water flow or aquatic environments, unless they are part of hydraulic developments designed to reduce exposure to the risks of flooding and marine submersion.

184 Article R.214-112 of the Environmental Code

185 Appendix to article R.122-2 of the Environmental Code, items n°10 and n°25.

186 Art. L.122-1, R.122-5, L.181-10 et L.181-10-1 of the Environmental Code

187 The impact study focuses on the direct and indirect impacts of the project, taking into account the sensitivity of the environment and the measures envisaged to prevent, reduce, or offset them. The impact assessment is more comprehensive and will involve an in-depth study of the initial state, its evolution if the project is implemented, the factors likely to be impacted by it, and details more precisely the various aspects that the project manager must understand as part of his assessment

188 Art. R.181-14 of the Environmental Code.

The applicant will be required to submit a file to the departmental prefect containing, in particular:

- An impact study of the project on water
- Evidence of its compatibility with the SDAGE
- The planned measures to prevent, reduce or compensate for the negative impacts
- The monitoring and evaluation measures planned during the work
- Where applicable, an assessment of the project's impact on one or more Natura 2000 sites

If the declaration file is complete, the departmental prefect will send the petitioner a declaration receipt within fifteen days, which will indicate either:

- that they do not intend to oppose the project. In this case, the work can begin immediately
- the date on which work may begin, provided there is no opposition on the prefects` part.

The prefect has the power to submit a project to a case-by-case review in order to determine whether an environmental assessment should be carried out, even if the project falls below the thresholds specified in the environmental assessment classification. If the case-by-case review concludes that an environmental assessment is necessary, the project manager must follow the procedure.

4.3.2.3 Additional permits

In addition to the environmental permits outlined above, depending on the scope of the work, they may also require:

- A demolition permit issued by the mayor or the prefect;[189]
- An exemption from the prohibition on destroying protected species, which is included in the environmental authorisation if this regime is applicable, issued in all cases by the prefect of the department[190]
- A procedure for ensuring the compatibility of urban planning documents, when necessary and when the project is in the public interest[191] (as was the case with the dismantling of the Sélune dams).

189 Art.L.422-1 and L.422-2 of the Planning Code. On top of that other planning permissions that may be required depending on the operations carried out with the sediments extracted or displaced see Art. R*421-19 of the Urban Planning Code and Art. R.421-23 of the Urban Planning Code.

190 Art. L.181-2 of the Environmental Code.

191 Art. L.300-6 and R.153-17 of the Planning Code

4.4 Provisions impeding and/or facilitating barrier removal – summary

✓ Together with the Water Framework Directive Implementation, France introduced a systemic approach to barrier removal. There is a list of watercourses that need to be restored and a list of structures obstructing the flow, as well as criteria for their prioritisation. A legal framework is in place, allowing for coordinated barrier removal and clearance. It is a basis for cooperation between the administration, owners and/or operators of the barriers and other stakeholders. All relevant authorities are engaged in carrying out barrier removal.

✓ There is a funding scheme for barrier removal. They are financed mainly by water agencies from fees paid by water users. Since 2019, each of the water agencies has launched a call for projects aimed at restoring the ecological continuity of water courses, covering up to 80% of total expenses. Barrier removal financing is also aid from local authorities (regions, departments, municipalities).

✓ Even though there is a constraint that a dam may be removed only if it would not compromise its current or potential use, and other measures are preferred, these requirements are assessed adequately, not impeding the Water Framework Directives implementation. The current or potential use is being assessed, taking in mind actual water levels and forecasts. This constraint did not prevent the removal of some major dams in France.

✕ French law does not provide for legal ways to coercively remove the barrier used for hydropower purposes until the expiration of the time for which the concession or authorisation was issued. Currently, there are even concessions granted up until 2080.

! There are regulatory uncertainties around the technical and financial arrangements for managing the end of life of the hydroelectric facilities under concession. Although some regulations in this regard were introduced, the procedures for restoring the natural environment are still not specifically addressed. While this hasn't prevented the removal of structures granted under concession in the past, it certainly won't make it any easier.

✓ The procedure for the removal of the specific barrier is adequately regulated in French law. It ensures that environmental standards are not being overlooked and is not overly burdensome or lengthy.

✕ Water mill owners are exempted from the obligation to ensure the restoration of the ecological continuity of watercourses. The dismantling of mills and mill races faces strong local opposition. This exemption was recognised as incompatible with the Water Framework Directive.

! There is a local opposition to the removal of old mills as well as dams. This opposition sometimes ends in legal actions taken by relevant associations or communities. These appeals did not lead to a delay of the work (due to the failure of an emergency procedure that could have led to work suspension). They were also ultimately rejected. The arguments put forward in support of the appeals, sometimes echoed during parliamentary questions, demonstrate a lack of understanding of the scientific data concerning the consequences of removing structures on water courses, as well as strong prejudices that are detrimental to the public acceptance of the work.

5 Conclusions and recommendations

Case studies from three analysed legal systems allow us to form general recommendations for Member States as to how they should prepare their legal frameworks in order to implement the Nature Restoration Regulation effectively and in a timely manner.

5.1 Systemic solutions

The first recommendation that arises from the study is that the approach for barrier removal should be systemic.

5.1.1 State policy on barrier removal

The systemic approach starts with a strong policy which acknowledges the need to restore river continuity and recognises barrier removal as an effective and cost-efficient solution. The policy must be rooted in the most current scientific knowledge and the newest data. It should debunk all stereotypes and assumptions about the significance of barriers for flood protection and promote river restoration as a measure to adapt to extreme weather events (both flood and drought) following climate change.

examples from case studies

The comparison of the case studies from Finland and Poland shows that the approach of the administration and involvement of the stakeholders is crucial to ecological continuity restoration. Finland, even though lacks a systemic approach to barrier removal, has successes in this field, achieved mostly through voluntary programs. Barrier removal is initiated and coordinated by competent environmental authorities and supported at the ministerial level by initiatives such as Watershed Visions or the NOUSU program. On the other hand, in Poland, in addition to the lack of systemic regulations, there are also no informal initiatives, policies or programs that would facilitate barrier removal. In consequence, there are no voluntary local projects that could fill the gap of regulations.

examples from case studies

The French legal system is a good example of how a statewide policy implemented on different level of administration is a foundation of river renaturalisation. The 2009 action plan PARCE which highlighted the problem of transverse structures, set the scene for the other programs and regulations. It was followed by ROE - a national reference system for flow obstacles, PAPARCE – which set out criteria for a shared national methodology for prioritisation of the watercourses to be restored and a 2019 technical note clarifying criteria for prioritisation of structures to be removed. As a result of these statewide policies between 2012 and 2023, approximately 1.400 identified structures were removed with public funding.

examples from case studies

A good example of how a policy on free-flowing rivers can be effectively embedded in law is article L.214-17 of the French Environmental Code. It introduced the division of watercourses for those that need to be preserved (List 1) and those that need to be restored (List 2). Placement of a particular watercourse on one of the lists is a basis for future more specific measures such as e.g. removal of obsolete barriers.

5.1.2 Registry of barriers

Relevant authorities should create and maintain a registry of barriers on watercourses. The list should be based not only on issued permits and information from the owners of the structures, but also on field research. The registry may also derive data from citizen projects such as AMBER reporting app. The registry should include information such as the owner of the structure, if known, its location and permits in force.

examples from case studies

The example of France clearly shows that such an inventory is crucial, constituting a foundation for the next steps. In 2009, France already presented the plan that identified weirs and dams on all rivers in mainland France (PARCE). It was followed by the establishment of a national reference system for flow obstacles, according to which in 2025 there were 110,000 obstacles on watercourses, including 25,000 on List 2 water courses, by 2025. These registries formed a basis for the prioritisation criteria for removing structures and their identification.

examples from case studies

The Polish example of the lack of an adequate and comprehensive registry of barriers shows the gravity of the consequences of such an omission. Incomplete registry can impede determination of the legal status of a barrier and thus its removal. As the Polish example shows, an incomplete registry also prevents the Member State from completing a list of obsolete barriers as required by the NRR.

5.1.3 Prioritisation of barriers to be removed

The law should provide for clear criteria based on which barriers should be prioritised for removal. Old and obsolete structures should be removed first. As a case study of French policy shows, that one of the effective approaches would be to centrally establish general criteria for prioritisation and then leave the identification of the barriers to regional authorities. The identification should be accompanied by a schedule for barrier removal with clear attribution of obligations to relevant authorities.

The law should clearly define "obsolete barriers" in accordance with the Nature Restoration Regulation (encompassing barriers that are no longer needed for renewable energy generation, inland navigation, water supply, flood protection or other uses)[192].

The barrier should be considered obsolete when its original use is no longer relevant. The lack of relevance should be understood as resulting from one of the following:

a. The structure has lost its significance, e.g. its operation is not economically profitable, the hydrological situation of the watercource has changed, the structure built for social or recreational purposes does not serve them anymore.
b. Original permits or licenses have ceased to exist either because they expired or because they were annulled or revoked.

192 On the definition of obsolete barriers under the NRR see Duque, I, Agapakis, I., Pravuljac, M. (2025) Going with the flow: Barrier removal for healthier rivers. ClientEarth, Living Rivers Europe.

c. The owner of the structure does not use or maintain it, has abandoned the site or is unknown.

The legal definition should prevent artificial repurposing of barriers by linking their significance to the original purpose. It should also prevent artificial extensions of permits or licenses based on hypothetical future use.

5.1.4 General legal framework on systemic removal

There should be a legal framework in place for how to initiate the removal of obsolete barriers obstructing the flow. The competence should be attributed to the relevant authority. This legal framework should be a part of a broader regulation on river restoration by other technical measures (e.g. lowering the structure or building fish bypasses). The law should also clearly attribute obligations to monitor the site after the work has been carried out.

5.1.4.1 The law should provide solutions for removal of the barriers with unknown owners

The example from Poland shows how both the incomplete registries and the lack of law regulating removal of barriers with undetermined legal status, can be an effective obstacle to any barrier removal initiatives. Therefore, we recommend that the law should provide for a specific solution for such situations.

examples from case studies

In Finland, this situation is resolved by the possibility to order a permit to expire if the permit holder no longer exists or the permit holder cannot be identified without difficulty. If the existence of a water permit is unclear, authorities may issue a decision of the assumed permit. According to this regulation, the lack of the owner or the permit predetermines the lack of purpose of the barrier.

examples from case studies

In France, the situation of unknown ownership status may arise in cases of old dams.[193] Such structures may be classified as ownerless property. In such cases, law provides for a procedure allowing an owner the opportunity to come forward, which results in the relevant municipality acquiring the structure. Moreover, in cases of emergency or for reasons of public interest, work aimed at restoring aquatic ecosystems may be undertaken by local authorities regardless of the lack of the owner of the barrier.

5.1.4.2 The law should regulate the removal of obsolete barriers with permits in force and on coercive removal in particular cases.

The possibility of such removal can be connected to the significance of the barrier for its original use. However, the mere fact that the structure is operated should not automatically mean that they are significant. The law should require an analysis of the profitability of the structure over time, taking into account changed hydrological, economic and social circumstances. The legal framework should accommodate

193 difficulties in implementing restoration obligations due to the disappearance of the operator do not occur for IOTAs. This is probably thanks to the fact that water courses are subject to greater scrutiny under the IOTA regime, which was introduced already in the early 1990s.

the cooperation between the State authorities, the owner of the barrier, the local authorities, the local communities, NGOs and other relevant stakeholders.

examples from case studies

In Finland, even though, law allows authorities to order expiration of the water permit if the project has lost its significance, the practical application of this provision is the obstacle. Assessment of the condition of "lost significance" is based on whether the project still provides the benefits based on which it was granted a permit originally (such as flood protection, infrastructural significance, hydropower generation). In practice this provision does not apply to structures that are still in operation, even if the project is less significant compared to the time of its initiation (which often is the case for small hydropower facilities that are not crucial anymore for energy provision). Therefore, in practice, there is no provision allowing for removal or decommissioning project coercively, if the owner is not willing to sell the facility. This has become a major problem for some dam removal initiatives that are deemed crucial for nature restoration or resurrecting migratory fish stocks.

examples from case studies

French law provides for solutions on how barrier removal can be imposed coercively. The Environmental Code allows the departmental prefect to take *all necessary measures to ensure the free flow of water* with respect to the owner of the structure. Even though, removal will not necessarily be the chosen option if it proves not essential for restoring ecological continuity, it still can be ordered on this basis. Furthermore, the Environmental Code stipulates that *authorisations or permits granted for the construction of structures or facilities may be modified, without compensation from the State exercising its police powers, if their operation does not allow for the preservation of migratory species that live alternately in fresh and salt water*.

5.1.5 Funding schemes

Funding schemes for barrier removal projects should be established. They should be inclusive and accessible to different types of applicants – not only state authorities but also municipalities, NGOs, and associations of stakeholders created with the goal of renaturalisation of a particular watercourse.

examples from case studies

In France barrier removal is financed by funding from water agencies. They are responsible for collecting fees from water users. The fees are used to finance research programs, infrastructure projects, and initiatives aimed at preserving water resources and combating pollution. Dam removal is financed mainly from water agencies but may also be supplemented by aid from local authorities (regions, departments, municipalities). Since 2019, each of the water agencies has launched a call for projects aimed at restoring the ecological continuity of water courses, covering up to 80% of total expenses.

examples from case studies

Polish example shows that without a specific fund for barrier removal, not much can happen in practice. Even though in theory some renaturalisation activities can be funded under projects for climate change adaptation, in practice it finances rather barriers reconstruction or clearing. Moreover, funded projects raise doubts as to whether they, in fact, would effectively lead to renaturalisation, as some of them include renovation rather than removal of the barriers. This underlines another important factor that should be taken into account in designing funds for barrier removal, namely adequate safeguards and requirements for the project.

examples from case studies

Finland finances barrier removal under the NOUSU program. The NOUSU program provides leverage funding for various kinds of projects that improve the conditions for migratory fish stocks. Actions under the NOUSU program should be based on the river basin management plans and programmes of measures, the National Fish Passage Strategy and other strategies and programs of fisheries policy.

5.2 Facilitating barrier removal in individual cases

Apart from the need to systemically regulate barrier removal, it is also crucial to ensure that the procedure for the removal of barriers in individual cases adequately protects the environmental considerations and, at the same time, is not too burdensome or time-consuming.

5.2.1 Clear and enforceable provisions on barrier dismantling

The law should clearly attribute barrier dismantling and restoration of the site to the owner or the operator at the end of the operation period. There should be an obligation to provide concrete dismantling and restoration plans upon the expiry of the operation permit, with sanctions for non-compliance.

examples from case studies

Polish example shows that legal provisions obliging authorities to order dismantling of the structure upon expiry of the permit are not sufficient when they are not being enforced. Therefore, law should provide enforcement mechanisms. Law should also allow the society to be able to request authorities to order dismantling of the structure upon expiry of the permit.

examples from case studies

French example of dismantling dams upon expiry of the concessions show how precise regulations in this regard are crucial to the effective renaturation. Removal of dams under the concession regime is not specifically regulated under French law. The applicable rules will depend on the precise wording of the concessionaire's duties in the concession specifications. This allows for regulatory gaps which leads to problems of technical and financial arrangements for managing the end of life of the hydroelectric facilities under. Even though some legislative changes were introduced, neither of them explicitly mentions the procedures for restoring the natural environment, leaving room for uncertainty.

5.2.2 Adequate procedure

Authorisation of the dismantling of barriers should be preceded by obtaining relevant permits and assessments. However, the requirements as to what information and studies must be provided should not be excessive, and in any case, they should not be higher than for building a barrier. There should be clear regulations on what information an applicant must provide. The scope of information may differ based on the size of the barrier, its initial purposes or the proximity of potentially impacted households.

examples from case studies

Polish example shows that lack of specific regulation on procedure for dismantling dams leads to legal uncertainty. The law is quite vague on the requirements of the water law-report in cases of removal of the structure. As practical experience shows, before issuing a water law permit for removal of the barrier, Polish Waters require costly and detailed documentation on the impact of the removal on the flood situation. Such requirements are considered to be inadequate, as the documentation required to remove a barrier is oftentimes more detailed than to construct it.

examples from case studies

As outlined in the Finnish case study, the temporary deterioration ban stemming from water management objectives may impede dam removal. In Finland, this obstacle is mitigated by the procedural provisions enabling a derogation to be granted in connection with the mitigation measures in the water permit.

5.2.3 Rules on duration of water permits and their renewals

Permits for the operation of barriers should be renewed only in specific cases. The renewal should be preceded by a thorough analysis of the purposes the barrier serves and their adequacy, considering the current local water resources situation. Law should not allow to grant permits for unlimited duration.

examples from case studies

In Finland the problem with unlimited duration of water permits is aggravated by the particularities of the legal system. Water permits con consists not only of an administrative part but also of a private law part, which grants property rights and constitutes a right to construct, maintain and operate the water project and is, at the outset, granted for an unlimited duration. Most barriers existing in Finland today have been permitted for an unlimited duration under the Water Act or its predecessors. The Finnish legal system does not adequately address the problem of the permanence of water permits.

examples from case studies

In France it was decisions not to renew water concessions that eventually lead to some major dam removal and renaturation projects. In 2010, the government signed the Convention for Sustainable Hydropower with i.a. stakeholders in the hydropower sector. Under this convention, it is possible to remove hydropower dams when it is essential for restoring ecological continuity. Parties also agreed on the removal of the Condamine[194], Trente Pas[195] and Caubous[196] dams, as well as the removal and exemplary renaturalisation of the sites occupied by the dams located on the Sélune River.

5.2.4 Facilitating cooperation between stakeholders

Law should facilitate the cooperation in barrier removal projects between various stakeholders, such as local and regional authorities, water management authorities,

194 However, it turns out that only the water intake and penstock structures were dismantled by EDF, the concessionaire. On 26 November 2018, the prefect of Alpes-de-Haute-Provence authorised the construction of a smaller hydroelectric facility by another company, which rehabilitated EDF's former facilities.

195 The dam was demolished in 2013.

196 The dam was demolished in 2020.

scientists, NGOs and business. There should be funding in place for such initiatives as well as legal solutions allowing for smooth and effective cooperation.

Polish LIFE for RIVERS project is based on the cooperation between municipalities, Polish Waters, RDOS, scientists and civil society. It plans to clear or remove 35 migration barriers on the Parsęta River and its tributaries. The project could serve as an example, as it is science-based and involves various stakeholders. It shows that cooperation between various stakeholders is the best way forward to effective renaturation. However, this is only an individual project which is being carried out thanks to the efforts of the community. There are programs, funding schemes and incentives needed for such projects to be common.

examples from case studies

In Finland barrier removal projects have been advanced by having NGOs, municipalities and other stakeholders set up a distinct organisation or association that they fund together (often including some funding from the NOUSU project). An organisation or association can, for instance, apply for the permit for an obsolete barrier to expire and take responsibility for the decommissioning. They subsequently take over the ownership of the existing structures, permits and responsibility for carrying out the project.

examples from case studies

Watershed Visions, informal collaborative governance processes taking place in local watershed contexts, developed by MoAF. Watershed Visions are often initiated by ELYs (from 2026 on by EDCs), but they also involve relevant economic actors, municipalities and civil society. They aim to find a shared understanding for the use and protection of the watershed in question, and to design a long-term program for achieving this shared vision. Depending on the local watershed, these processes can address river connectivity measures as well as barrier removal.[197]

examples from case studies

French basin committees comprise various public and private stakeholders involved in the water sector. They bring together representatives of the authorities on different level and specializing in different issues, different associations specialising in water and nature protection as well as representatives of business in sectors such as fisheries, agriculture and hydro energy. Their main goal is to prepare the SDAGE for the basin.

197 Lea Halonen and Jukka Similä, 'Ympäristösääntely ja itseorganisoituminen – tapaus vesistökunnostukset' (2020) 1 Ympäristöjuridiikka, pp. 7–38. See, e.g., Oulujoen vesistöalueen vesistövisio (Watershed Vision for the Oulujoki watershed), 7 Aug. 2023, available at: https://oulujokivisio.com.

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