Revision of the Water Framework Directive (Directive 2000/60/EC)

Aqua Publica Europea's response to the *Call for Evidence* of the European Commission

Brussels, 14 April 2026

Aqua Publica Europea is the European association of publicly owned water and sanitation operators. We bring together more than 70 members across Europe, serving over 90 million people and generating a combined annual turnover of €16 billion. Our mission is to strengthen the capacity of the public water sector by working together to develop efficient and sustainable solutions that serve the public interest.

Executive summary

- The situation of water bodies in Europe is already critical, with thousands of catchment areas closed in some Member States over recent years, and the ecological and chemical status of waters under the Water Framework Directive still far from reaching "good status" by 2027.
- The current legislative framework on water does not prohibit mining and has enabled several new projects since the entry into force of the WFD. Given the Directive has only recently been revised, its implementation should first be assessed before any further changes. This is further compounded by the ongoing Environmental Omnibus Simplification Package, which could ease environmental assessments and facilitate mining development.
- Mining activities involve multiple environmental risks, including dewatering, brine discharges, acid mine drainage, spoil tips, aquifer interactions, changes in water flows, abstraction pressures, subsidence, and long-term hydrological alterations.
- These risks pose serious threats to water operators, communities, and ecosystems. Without proper regulation, the costs of pollution and related externalities will be shifted to public authorities and citizens (as reported in examples in this document). For this reason, Aqua Publica warns about the risk for citizens and the economy of a weakening of the non-deterioration principle (Article 4) or of a systematic expansion of exemption regimes, especially for chemical pollution.
- Should a modification of the non-deterioration principle be decided to facilitate the implementation ResourceEU Plan, it is important that such revision does not compromise the capacity of the WFD to continue protect the environment, human health and water resilience. To this end, the strategic added value at EU level of new mining projects should be demonstrated through strict, transparent, and democratic decision-making processes. In addition, strong safeguards, robust monitoring, long-term site management obligations, and full financial responsibility for environmental degradation by permit holders should be ensured, particularly in catchment areas used for drinking water provision.
- In any case, a thorough assessment of the potential economic impact for water utilities and businesses and citizens should be assured, with information fully made available to relevant authorities. The economic and social costs, deriving from additional treatment for pollution, or from the closure of existing catchments can be significant.
- The transboundary nature of water bodies, as illustrated by river basins that cross national borders, must not be overlooked. This underlines the importance of the Water Framework Directive as a key EU-level instrument, ensuring coordinated management

across Member States and helping to prevent potential tensions arising from the shared use of water resources.

- More generally, beyond mining, any weakening of the non-deterioration principle, especially for chemical pollution, can lead to more catchment closures, and create unsustainable conditions for water service providers. This would significantly raise treatment and investment costs, particularly for advanced treatment technologies, and increase financial risks, including reduced insurability for water operators linked to emerging pollutants: something which is already happening for diffuse PFAS pollution.

- What is more, relevant changes to the WFD may create legal uncertainty or conflict with Article 8(4) of the Recast Drinking Water Directive 2020/2184, which requires risk management of catchment areas through prioritisation of preventive approaches based on WFD monitoring.

- In line with the European Water Resilience Strategy, the Water Framework Directive could benefit from integrating water balance assessments and water quantity planning based on climate adaptation analysis within River Basin Management Plans. This would support more informed planning of actions and investments to prevent water scarcity risks, in line with the objective of “repairing the broken water cycle” set out in the Strategy.

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Introduction

In the call for evidence on the revision of the Water Framework Directive, the European Commission indicated a “targeted revision of the WFD to address specific challenges that its implementation poses for Critical Raw Materials projects (activities related to extraction, processing and recycling, as defined by the Critical Raw Materials Act)”. As the European Association of Public Water Operators, Aqua Publica Europea is concerned about the economic, environmental, and public health impacts that a new revision of the Water Framework Directive could entail. This concern has notably been raised in a letter sent on 1 April to Ms Jessika Roswall, Commissioner for Environment, Water Resilience and Competitive Circular Economy, by a broad coalition of industry representatives dependent on raw water.

This potential reopening would come in a context where the Water Framework Directive has only recently been revised, with the latest vote taking place on 26 March in the European Parliament. This revision, which includes new exemptions to the non-deterioration principle of water bodies—thereby facilitating the activities of polluting industries—has not yet entered into force and has therefore not been fully assessed. Meanwhile, the good ecological and chemical status of water bodies in the European Economic Area continues to deteriorate, despite repeated calls to relax certain provisions of the Directive. At the same time, new emerging pollutants are being identified each year, further threatening an already degraded water cycle and forcing public authorities to close drinking water catchments. Between 1980 and 2025, 14,640 catchment areas were closed in France due to deteriorating water quality (representing 31.9% of cases), while only 37,788 catchment areas remain active in the country[1].

Despite the difficulty of thoroughly assessing the economic and environmental impacts—due to the limited number of active mines and the variability of risks across different sites—it is still possible to draw relevant considerations based on historical evidence. This is largely due to the fact that most of these mines are not currently located in the countries where our member water operators operate. However, while it remains difficult to fully assess the impacts of currently active mining operations in Europe, historical experience clearly demonstrates the long-lasting and often irreversible effects of such activities long after their closure. The potential negative impacts are therefore well documented—for instance, the irreversible closure of drinking water catchments—and their economic quantification may vary significantly depending on the activity. However, they can readily be considered extremely severe or even incommensurable in the event of accidents that, as the cases reported here show, can never be fully excluded. This paper therefore outlines the various

[1] Statistique Publique De L’énergie, Des Transports, Du Logement Et De L’environnement. (2026, 4 March). *Qualité des eaux superficielles et souterraines en France - État des connaissances en 2025*. https://www.statistiques.developpement-durable.gouv.fr/qualite-des-eaux-superficielles-et-souterraines-en-france-etat-des-connaissances-en-2025

ways in which mining activities could affect water resources and the operations of water providers.

Finally, in the call for evidence, the European Commission stresses that any potential revision "should ensure that it continues to protect the environment, human health and water resilience". To ensure this, the introduction of exemptions must be accompanied by strong preventive measures and obligations to inform local authorities and water operators about the potential implications of such projects for the environment, public health, and economic activities.

The overriding priority must remain the protection of citizens' health, ensuring their fundamental right to clean and affordable drinking water.

I. A framework already flexible enough for mining activities

1. Already existing flexibilities for mining activities within the current directive

Flexibilities for the development of mining activities are already embedded in the Water Framework Directive (WFD). In particular, several provisions allow for exemptions or adjustments to environmental objectives where justified. These include:

- **Article 4(5)** – Setting less stringent environmental objectives under specific conditions;
- **Article 4(6)** – Allowing temporary deterioration in water status due to unforeseen circumstances;
- **Article 4(7)** – Granting exemptions for new modifications to water bodies, including alterations to groundwater levels, or for activities linked to sustainable human development.

Mining activities can and do benefit from these provisions. For instance, in Germany, mercury pollution caused by lignite mining affects a large proportion of surface water bodies in the Elbe River basin. These water bodies are covered by exemptions under Article 4(5) of the WFD.

In addition, mining projects may qualify as being of "overriding public interest" under Article 4(7), as illustrated by the balancing test developed by the EFTA Court (Case E-13/24). This is notably the case in Spain, in the Guadalquivir basin (Seville), where Article 4(7) has been invoked to authorise mining expansions such as Aznalcóllar/Los Frailes and Cobre Las Cruces. In these cases, large-scale discharges containing metals have been permitted despite contamination risks reaching levels up to ten times higher than permissible thresholds. The "overriding public interest" exemption has been applied without a sufficiently rigorous assessment of alternatives or adequate consideration of cumulative impacts.

More broadly, a large majority of water bodies across the EU are already subject to exemptions. According to the European Commission's 2025 report (*Update of the costs of not implementing EU environmental law*, p. 76), Article 4(4) exemptions have been applied to between 79% and 99.9% of the total length or area of water bodies classified as having bad, poor, or moderate ecological status.

Therefore, as illustrated by cases such as Aznalcóllar/Los Frailes and Cobre Las Cruces, the current legislative framework has not prevented the development or expansion of mining activities in Europe, with numerous projects approved since the implementation of the Water Framework Directive.

2. Recent legislative developments that still have to be applied and assessed

Furthermore, recent changes to EU legislation, including those affecting the WFD, have only just been adopted or implemented and have not yet been fully assessed.

The Critical Raw Materials Act (CRMA), adopted in 2024, introduces the concept of "Strategic Project" status. Its objective is to ensure the EU's access to a secure, resilient, and sustainable supply of critical raw materials, with designation decisions taken by the Commission based on defined legislative criteria. This status entails several important consequences:

- Shorter deadlines for permit-granting procedures;
- Priority access to administrative support and financing;
- A presumption of overriding public interest, facilitating access to exemptions under Article 4(7) of the WFD.

In addition, new exemptions to the Water Framework Directive were introduced in autumn 2025, which are not yet in force. These include:

- The possibility of temporary deterioration of chemical status (for up to one year) and biological quality elements (for up to three years);
- The possibility of relocating pollution from one water body to another under certain conditions.

Further developments are expected in the near future, including upcoming guidance on the application of the WFD to mining activities (expected in March/April 2026), as well as the Environmental Omnibus package, which is currently progressing through the legislative process.

II. Risks linked to the reopening of mining activities

Considering the current legislative framework governing water bodies, environmental protection, and mining, the risks associated with mining activities—particularly those related to critical raw materials—are well documented and have been observed for decades, if not centuries, across Europe. The development of new mining projects is likely to affect the achievement and maintenance of good ecological status, including chemical, biological, and hydromorphological conditions. This section therefore outlines the main risks that mining activities pose to water resources, drawing on concrete, real-life examples, primarily from across the European Union, illustrated in the following section.

1. Risks to the environment: pollution linked to brine, dewatering and acid mine drainage

- **Dewatering**

Dewatering, defined as the process of removing groundwater or surface water from a mine, can lead to significant environmental impacts (see also next section). In many mining operations, dewatering techniques are used to remove water from mine workings, with the extracted water subsequently discharged into nearby river systems. This discharged water often contains elevated concentrations of dissolved minerals and contaminants that are not naturally present at such levels. As a result, it typically requires treatment processes such as oxygenation to avoid damaging aquatic life.

Moreover, the natural filling of mines by groundwater could involve a diversion of flows that previously fed surface waters. This can lead to reduced flow levels in surface water, which in turn will automatically entail higher concentrations of pollutants already present in the water body (less dilution). In this way, both the quantity and quality of surface water may be adversely affected.

- **Acid mine drainage**

More severe risks arise with dewatering in connection with mining processes involving heavy metals, particularly where acid mine drainage develops and persists over time. In fact, a number of water bodies across Europe are already affected by long-lasting, and in some cases effectively irreversible, contamination linked to acid mine drainage. Acid mine drainage occurs when mining activities expose sulphide minerals to air and water, triggering chemical reactions that generate acidic conditions. This acidity, in turn, facilitates the dissolution and mobilisation of heavy metals, which can then spread into surrounding rivers, soils, and groundwater systems.

- **Brines**

Many risks also arise from the treatment methods used during the mining activities, that produce brine, which must be disposed of. The discharge of these brines, like mine drainage, can have multiple adverse consequences. These include contamination of drinking water resources, disruption of the growth and reproduction of aquatic flora and fauna, and corrosive effects on infrastructure, such as bridges and hydraulic installations[2].

- **Spoil tips**

Mining waste and residues, often accumulated and stored as spoil tips, can release sulphates and other pollutants that may subsequently contaminate water resources. These spoil tips can also generate acid rock drainage, leading to the pollution of nearby streams and rivers. In addition, surface runoff of fine sediments and the leaching of harmful chemical compounds from weathered spoil deposits can further contribute to environmental degradation, including groundwater contamination.

Due to the significant weight of spoil tips, the groundwater table may come into contact with their base, particularly where the aquifer is shallow or outcropping. This interaction can disrupt natural groundwater flow patterns. Spoil tips may also influence infiltration and runoff processes, thereby altering the local hydrological regime. In some cases, their load can contribute to ground subsidence, further affecting subsurface water movement.

These risks are especially pronounced where mining waste is poorly managed or inadequately stored, with potentially serious implications for groundwater quality and overall environmental integrity.

- **Aquifer interactions**

If mine galleries are not backfilled after use, the underlying carboniferous groundwater may infiltrate into the abandoned workings. This water can be highly mineralised, including elevated sulphate concentrations, as observed in regions such as northern France. Such infiltration can then lead to contamination of overlying aquifers.

Mine shafts may also act as preferential pathways, enabling hydraulic connections between different groundwater bodies, including the chalk aquifer above, the ore-bearing formations, and the carboniferous aquifer. When mining operations cease, these voids should ideally be properly backfilled to prevent such inter-aquifer communication. However, this is not always carried out adequately; in some cases, only partial plugging is implemented.

In addition, the precise location of old shafts and plugs is not always known, which makes it difficult to remediate legacy impacts or correct past engineering failures. The upward or downward movement of poor-quality water through these connections is particularly problematic, as it can degrade the overall quality of higher-quality aquifers by introducing contaminated water from deeper, more mineralised layers.

[2] USGS. (2018, 26 July). *How does mine drainage occur?*. https://www.usgs.gov/faqs/how-does-mine-drainage-occur

2. Risks in terms of quantity and availability: creation of conflicts of use linked to water

- **Changes in water flow**

Mining activities can significantly alter water flows and therefore affect both the quantity and availability of water resources. The excavation of mines, combined with the continuous pumping of water from underground workings, can disrupt natural groundwater circulation. By tapping aquifers, such operations often lead to a lowering of the water table. This drawdown can modify water levels across the wider watershed and reduce baseflow conditions, particularly during dry periods. While such impacts are especially critical in water-scarce regions, they can also occur in areas that are not traditionally considered water-stressed, potentially creating localised water scarcity or even desertification-like conditions.

Comparable impacts associated with excavation and tunnelling activities have also been observed in other contexts, such as the construction of the Lyon–Turin railway tunnel. In this case, local water resources in Alpine valleys were affected, including depletion of groundwater and impacts on strategic infrastructure such as dams[3] which underscores the importance of inclusive and coordinated governance in projects that may alter hydrological systems.

- **Water grabbing**

Another significant risk lies in the fact that many mining techniques are highly water-intensive. Most methods currently used to extract critical minerals require substantial volumes of water for mineral separation, cooling of machinery, and dust suppression. This can exacerbate problems related to water scarcity[4].

3. Risks linked to land subsidence and the increase of floods

Surface subsidence may occur because groundwater naturally provides buoyancy to soil particles. When the water table is lowered, this support is reduced, increasing the effective weight of the overlying soil and leading to consolidation and ground settlement. This phenomenon is particularly pronounced in karst landscapes, such as those formed in limestone or chalk, where lowering the water table can result in the washing out of soil and sediment from underground voids. Over time, these empty cavities may collapse, causing the surface to sink, or even sudden and sometimes catastrophic surface failures.[5]

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[3] Correia, M., Lindgaard, J. (2024, 3 October). *Lyon-Turin : le mégaprojet de tunnel impacte l'eau de la montagne*. Mediapart. https://www.mediapart.fr/journal/ecologie/160724/lyon-turin-le-megaprojet-de-tunnel-impacte-l-eau-de-la-montagne

[4] Lakshman, S. (2024, 10 January). *More critical minerals mining could strain water supplies in stressed regions*. World Resources Institute. https://www.wri.org/insights/critical-minerals-mining-water-impacts

[5] Luo, Y., Yang, J. (2018, June). *Effects of dewatering flooded abandoned room-and-pillar mines on surface subsidence*. Mining Engineering Magazine. https://www.researchgate.net/publication/325562642_Effects_of_dewatering_flooded_abandoned_room-and-pillar_mines_on_surface_subsidence

The consequences of such mining-related processes often extend well beyond the operational phase of a mine. Environmental, economic, and social impacts can persist for decades after extraction has ceased, reflecting the long-term nature of the disturbances introduced to natural systems. Once mining operations cease and pumping stops, groundwater levels may gradually recover to their natural state. However, because geological layers have been fractured and modified by mining, groundwater circulation patterns are often permanently altered. As a result, water may rise closer to the surface than before, leading to upward flooding, where water emerges from the ground itself rather than from surface runoff or precipitation.

III. Consequences on water operators and citizens

The potential environmental impacts from mining activities as outlined in the previous section will translate into economic and infrastructural consequences for water utilities and communities.

1. Potential economic impacts on operators and citizens related to water quality deterioration

Additional costs associated with the increased treatment of raw water due to its deterioration would make compliance with the Drinking Water Directive (DWD) and the Urban Wastewater Treatment Directive (UWWTD) more challenging, despite the essential role these frameworks play in safeguarding human health and protecting the environment. As a result of the processes and environmental implications described in Section II, treatment costs are expected to increase, notably due to the need to remove certain pollutants and manage the resulting sludge. This is further compounded by the fact that treating water contaminated with heavy metals is both technically complex and highly costly, while also generating additional challenges related to the management and disposal of the resulting sludge.

In some cases, reverse osmosis is the only viable solution for treating polluted water. However, this technology is not yet widely deployed, is highly expensive, requires very high energy consumption, and generates highly polluting brine sludge that is difficult to dispose of in a safe manner (see case study 3). In practice, this places the responsibility for managing mining-related pollution in water onto water operators, despite them not being the source of this contamination[6].

Alternatively, where activated carbon technology for depollution is already in use, increased pollution would lead to more frequent replacement rates for carbon, resulting in greater economic costs and a higher environmental impact related to carbon transport and sludge disposal. Moreover, many activated carbon suppliers are located in non-EU countries where differences and trade tensions with the EU already exist.

All of the above factors would ultimately lead to increased operational costs, with direct consequences for citizens' and businesses' water bills, thereby exacerbating affordability issues.

[6] Herber, G. (2024, 15 February). *Seawater reverse osmosis systems: Price factors and benefits of producing clean water*. Medium. https://medium.com/@desalter/seawater-reverse-osmosis-systems-price-factors-and-benefits-of-producing-clean-water-542a64cc355a

Case study 1
Cyanide spill at Baia Mare, Romania

The cyanide spill at Baia Mare in Romania in 2000 is one of the most compelling examples of mining activities that have caused major environmental incidents in Europe. A United Nations Environment Programme (UNEP) report published the same year noted that pollution of surface water, groundwater, and soils resulting from such leaks or acute accidents is likely to occur and recur[7].

The uncontrolled spill of some 100,000 m^3 of liquid and suspended waste occurred on 30 January 2000 at the Aurul S.A. gold and silver producing plant in Baia Mare (Romania). According to the UNEP report, "the spill released an estimated amount of 50-100 tonnes of cyanide, as well as heavy metals, particularly copper, into the Lapus/Somes/Tisza/Danube river catchment system. […] Acute effects, typical for cyanide, occurred for long stretches of the river system down to the confluence of the Tisza with the Danube: phyto- and zooplankton were down to zero when the cyanide plume passed and fish were killed in the plume or immediately after. The Hungarian authorities provided estimates of the total amount of fish killed in excess of one thousand tons."

Despite this assessment, the continued use of cyanide-based processing in mining remains authorised, and operations using these techniques are still active, including at sites such as the Roșia Poieni copper mine[8]. These practices also raise transboundary concerns, particularly where pollution affects downstream countries and highlights challenges related to the governance and oversight of such projects.

Case study 2
Acid water in the Rio Tinto river, Spain

The Rio Tinto River in Spain illustrates the long-lasting and, in some cases, irreversible impacts that mining activities can have on water bodies. Located within the Iberian Pyrite Belt, this river is one of the most emblematic global cases of mining-related water degradation. The region has experienced intensive mining activity for centuries, and the cumulative effects of these operations have led to highly altered hydrological and geochemical conditions.

[7] United Nations Environment Programme, United Nations Office for the Coordination of Humanitarian Affairs. (2000, March). *Cyanide spill at Baia Mare, Romania: UNEP/OCHA assessment mission report*. https://unece.org/sites/default/files/2025-07/Dam%20tailings%20pond%20broke%20in%20baiamareRomania.pdf
[8] Lakshman, S. (2024, 10 January). *More critical minerals mining could strain water supplies in stressed regions*. World Resources Institute. https://www.wri.org/insights/critical-minerals-mining-water-impacts

The Rio Tinto is characterised by highly acidic waters, with a pH often below 3, as well as very high concentrations of heavy metals, including iron, copper, zinc, arsenic, and cadmium. Its distinctive reddish colour results from the oxidation of iron present in the water. These conditions are not the result of a single recent incident, but rather the outcome of centuries of continuous mining activity in the area.

Scientific studies[9] have shown that acid mine drainage (AMD) in this context is largely self-sustaining. Even after mining activities cease, the oxidation of sulphide minerals continues to generate acidity and mobilise metals, meaning that the degradation process can persist over long periods without active intervention.

As a result, the environmental impacts are long-term—spanning decades or even centuries—difficult to reverse, and affect entire river basins rather than isolated sections. Metal concentrations in the Rio Tinto significantly exceed environmental quality standards, rendering the water unsuitable for human consumption without extensive and costly treatment.

Case study 3
Water polluted by heavy metals in Kraków, Poland

In Kraków, where local water resources show significantly elevated concentrations of chloride and bromine ions due to current and historical mining activities, these levels render local water sources unsuitable for drinking purposes. The concentrations mean that local water from the Vistula River cannot be used as a source of drinking water. These ions are responsible for accelerating corrosion processes in steel and grey cast iron distribution networks. This phenomenon is rapidly causing the deterioration of the water supply infrastructure. Preventing or limiting corrosion processes in water supply networks significantly increases the operating costs of the systems.

Unlike in other Polish cities such as Aqua Publica Europea's member Warsaw Waterworks, where concentrations are within the limits set by the Drinking Water Directive (250 mg/l), Kraków faces a much more serious situation in terms of water quality.

To address this issue, reverse osmosis is identified as the only viable treatment option for heavily contaminated water in affected areas. A pilot plant is currently being tested to assess its feasibility. Should reverse osmosis be found ineffective or not cost-effective, new additional water sources will need to be identified, with the only currently available alternative being the large-scale development of canalisation systems to transport water from other, less affected regions.

[9] Ayora, C., et al. (2016, 28 June). *Recovery of Rare Earth Elements and Yttrium from Passive-Remediation Systems of Acid Mine Drainage*. Environmental Science & Technology. https://doi.org/10.1021/acs.est.6b02084

Despite these serious consequences, current regulation in Poland still allows mining operations even in cases where environmental impact is anticipated, as companies can avail themselves of special permits allowing the discharge of mine water into surface waters. Another aspect is the lowering of groundwater levels associated with lignite mining, as illustrated by the dispute between the Czech Republic and Poland concerning the Turów lignite mine, which will be discussed in more detail below.[10][11][12]

2. Potential impacts on operators and citizens related to water quantity changes

Additional costs and impacts are also related to water quantity changes deriving from mining activities.

Impacts from pollution and changes in flow regimes could force authorities to abandon or close water catchment areas, thereby increasing the vulnerability of supply systems. In extreme cases, operators may ultimately be forced to abandon affected water sources. This occurs in a context where the overall number of usable catchment areas in Europe is deteriorating, creating critical water supply situations in certain regions, in a world entering an era of "global water bankruptcy"[13].

As a response, water operators and authorities may need to build interconnections with other networks, develop or reactivate groundwater wells where possible, and use alternative techniques such as managed aquifer recharge. All these interventions will significantly increase the costs of water service provision.

Beyond the economic implications, these dynamics can also generate significant social and governance consequences, including transboundary impacts, ecosystem degradation, and conflicts between different water users. As illustrated in case studies 4 and 5 below, mining-related pressures on water resources can lead to cross-border tensions, disruption of drinking water supplies, damage to infrastructure, and intensified competition between industrial, environmental, and community needs.

[10] Dymkowski, E. (2019, 7 October). *The impact of lignite mining on the environment and human activity in the Konin area (Bachelor's thesis, Jagiellonian University).* Jagiellonian University Repository. https://ruj.uj.edu.pl/xmlui/handle/item/234854

[11] Wesoły, M., et al. (2025). *Wprowadzanie do rzek zasolonych wód z kopalń węgla kamiennego województwa śląskiego (LKA.430.2.2025, Nr ewid. 4/2025/P/24/058/LKA).* Supreme Audit Office of Poland. https://www.nik.gov.pl/plik/id,31367,vp,34479.pdf

[12] Staniszewski, A. (2024, 31 July). *Jaka jest jakość wody w Wiśle? Sprawdziliśmy to i mamy wyniki*. Blog Manifest Klimatyczny. https://blog.manifestklimatyczny.pl/2024/07/31/jaka-jest-jakosc-wody-w-wisle-sprawdzilismy-to-i-mamy-wyniki/

[13] Madani, K. (2026). *Global Water Bankruptcy: Living Beyond Our Hydrological Means in the Post-Crisis Era*. United Nations University Institute for Water, Environment and Health (UNU-INWEH). https://collections.unu.edu/eserv/UNU:10445/Global_Water_Bankruptcy_Report__2026_.pdf

Case study 4
Cross-border water conflicts in Turów, Poland

The Turów lignite mine dispute between Czechia and Poland illustrates well the dynamics of water quantity conflicts linked to mining activities. In this case, Poland granted a mining licence for a lignite mine covering approximately 30 km^2 without a proper environmental impact assessment[14], resulting in cross-border impacts on water resources.

The Turów mine has had environmental consequences extending beyond national boundaries[15]. In Germany, particularly in the town of Zittau, the drainage of groundwater from deep aquifers has contributed to land subsidence and structural damage to buildings, including cracks in houses[16]. In Czechia, groundwater levels have been declining as water flows towards the Polish side, causing wells to dry up and disrupting essential activities for local users[17]. The operation of an opencast lignite mine causes water to flow from the region's aquifers in the Czech Republic into Poland. To mitigate this effect, an underground filtration barrier has been installed to protect the Czech aquifers; however, its effectiveness remains difficult to assess.

This case highlights significant shortcomings within the current framework: despite deficiencies in the environmental assessment, the project proceeded, and the resulting situation remains ongoing, generating conflicts between industrial water use and drinking water supply.

Case study 5
Mining projects exacerbating water scarcity issues in Barroso, Portugal

The risks related to water quantity and high demand often lead to the development of artificial reservoirs and storage basins, which may in turn alter natural hydrological regimes and groundwater recharge patterns. Such modifications can exacerbate conflicts over water use, particularly in contexts where water scarcity is already intensified by climate change.
The appropriation or diversion of water resources—whether from surface water or groundwater—can have significant implications for biodiversity, the chemical status and

[14] Pintera, P. (2023, 27 February). *Summary of the Turów case*. Frank Bold. https://en.frankbold.org/news/summary-of-the-turow-case
[15] European Court of Justice. (2022, 8 March). *Action brought on 26 February 2021 – Czech Republic v Republic of Poland (Case C-121/21).* https://www.climatecasechart.com/documents/czech-republic-v-poland-mine-de-turow-application_9989
[16] Kraśnicki, S. (2023). *Report on the cross-border effects of the continuation of lignite mining in Turów (Poland) on water in Germany*. Bund Sachsen e.V. https://www.bund-sachsen.de/fileadmin/sachsen/Bilder/Mensch___Umwelt/Braunkohle/2023-Report_Turow_groundwater.pdf
[17] Czech Geological Survey. (2023, 23 January). *IV. zpráva mise Turów*. http://www.geology.cz/img/aktu/2023_01_23-24_IV_zprava_mise_Turow.pdf

morphology of water bodies, and, more broadly, for the communities and economic activities that depend on these resources.

These concerns are particularly relevant given that approximately 16% of critical mineral mines, deposits, and districts are located in highly water-stressed areas[18]. This is illustrated by projects such as the Mina do Barroso lithium project in northern Portugal[19], where water availability and competing uses have already become central issues in the assessment of the project's impacts.

3. Potential impacts on operators and citizens related to infrastructure degradation

The collapse of surface ground and the potential flooding of certain regions are also significant risks that may fall, directly or indirectly, under the responsibility of water operators. These situations can be observed in several areas across Europe, where water operators are sometimes required to manage flood prevention or ground subsidence mitigation for entire communities, often at their own expense and, ultimately, that of citizens. In many of these cases, those costly mitigation measures—such as continuous pumping stations and monitoring systems—must be implemented and maintained indefinitely (see case study 6). This creates a lasting dependency on human intervention, as systems must continue operating long after mine closure to prevent flooding and associated damage—proving that the impacts of mining are not temporary, but can persist across generations.

These hydrological changes can generate long-term economic and social consequences. Local communities may face threats to their livelihoods, damage to infrastructure, and loss of usable land (see case study 7). Land subsidence in certain regions—reaching on average up to 7 metres in mining areas in the north of France—also requires authorities to intervene to maintain critical infrastructure at stable and functional levels, including railways, canals, and underground pipelines. Such infrastructure maintenance can entail very high costs, particularly for rural communities.

Case study 6
Everlasting effects from mining activities in Wallonia, Belgium

A similar situation to the ones overserved in France can be seen in Wallonia (Belgium), where the region continues to bear the legacy of historical mining activities, despite their cessation approximately 40 years ago. Due to intensive soil exploitation and ground subsidence, many areas are now located below river level, increasing their vulnerability to

[18] Lakshman, S. (2024, 10 January). *More critical minerals mining could strain water supplies in stressed regions*. World Resources Institute. https://www.wri.org/insights/critical-minerals-mining-water-impacts
[19] Niranjan, A. (2025, 21 June). *The 'sacrifice zone': villagers resist the EU's green push for lithium mining*. The Guardian. https://www.theguardian.com/environment/2025/jun/21/lithium-mining-sacrifice-zone-portuguese-villagers-eu-energy-transition

flooding, while subsidence processes are still ongoing. To mitigate these risks, water operators such as the Société Publique de Gestion de l'Eau, an Aqua Publica Europea member, must continuously pump excess water, including rainwater, from the ground. This operation represents a significant financial burden, amounting to over 12 million euros annually, ultimately borne by citizens through their water bills, while also generating additional energy demand.

Case study 7
Threats to communities' livelihoods in Creutzwald, France

These issues are illustrated by the case of Creutzwald in France, where water levels have continued to rise following the cessation of mining activities. This has led to significant damage to local property, including agricultural land degradation, structural humidity in buildings, cracks in infrastructure, unusable land, and pollution, affecting a population of approximately 17,000 inhabitants. Persistent flooding has required the installation of a permanent pumping system, which must operate continuously to maintain water levels under control. This example highlights how historical mining activities can result in long-term environmental disruption, along with sustained human and financial costs[20].

[20] Magnenou, F. (2021, November 8). REPORTAGE. *En Moselle, une inexorable montée des eaux souterraines depuis l'arrêt des mines de charbon*. Franceinfo. https://www.franceinfo.fr/economie/risque-industriel/reportage-en-moselle-une-inexorable-montee-des-eaux-souterraines-depuis-l-arret-des-mines-de-charbon_4822655.html

IV. Additional risks linked to the easing of agricultural activities within the WFD

A potential weakening of the Nitrates Directive or of the WFD in its application to agricultural activities would create an unsustainable situation for water operators. Across Europe, numerous water catchment areas are already being closed each year due to pollution (as illustrated by the figures mentioned above for France). An increase in pollution levels in raw water—whether in surface water or groundwater—would further exacerbate this situation and could become unmanageable for operators.

For example, the Société Wallonne des Eaux, the largest water operator in Wallonia, has experienced a significant rise in treatment costs over the past nine years. Overall production costs increased by 27% over this period, while costs related to reagents, sludge management, and operational inputs rose from 42% to 68%. Investments aimed at improving water quality have also accounted for around 18% of total expenditures, with an additional cost of approximately €0.15 per m³ for the treatment of nitrates and pesticides, and a shared additional cost of 2.4 euro cents per m³ on the water bill, according to the Brussels-Wallonia government. Similarly, other operators, such as Aqua Publica Europea member SDEA in the Alsace-Moselle region in France, incur costs of around €0.20 per m³ solely for the treatment of pesticide metabolites. These forms of pollution, often linked in part to agricultural practices such as pesticide use, require costly treatment processes. This is particularly challenging for smaller rural operators, which must rely on advanced treatment technologies such as activated carbon, ion-exchange resins, and, in the case of TFA contamination, reverse osmosis filtration systems—solutions that can be financially prohibitive.

More generally, any weakening of the non-deterioration principle or systematic widening of the exemption regime, especially for chemical pollution, is likely to lead to an increase in costs for treatment and/or a reduction in available catchments for drinking water purposes.

In addition to the sources of costs outlined in the previous sections, it is also important to highlight the increasing difficulties that water operators are already facing in getting insurance coverage in relation to some emerging pollutants, in particular PFAS. Many members of APE are facing problems in getting insurance coverage not only in the case of accidents in the treatment process, but also in the case of more general environmental degradation deriving from point or diffuse sources, something on which water operators have often little or no agency. This will not only further increase costs but may create serious legal and operational uncertainties for operators.

Last but not least, Article 8 of the Recast Drinking Water Directive 2020/2184 introduces a long-overdue connection with the Water Framework Directive, as it requires the conducting of a "Risk assessment and risk management of the catchment areas" based on the monitoring results under the WFD. Importantly, Article 8(4) further establishes that Member States (and operators) must take adequate risk management measures based on this monitoring, prioritising Article 8(4)(a) "preventive measures”.

This important provision, meant to reduce as much as possible treatment needs, risks being undermined by a weakening of the non-deterioration principle. More importantly, a risk of legal uncertainty or inconsistency may develop between the two Directives, as the prioritisation of preventive measures may become in theory less viable or potentially conflicting with an extension of derogation regimes.

V. Observations and proposals for revisions

- What water operators, citizens, businesses, and the environment need is not less stringent regulation for the protection of water bodies, but rather stronger safeguards. These are necessary both to ensure the sustainability of water operators' activities and economic development, and above all to protect the environment, as well as the health and well-being of citizens.

- By facilitating the deployment of mining activities, the European Commission should require adequate financial guarantees/insurance to cover the potential (immediate or long-term) environmental damage and establish clear mechanisms for post-closure site management. Water operators and local and regional authorities (LRAs) must not bear financial responsibility or liability for negative externalities associated with the reopening or expansion of mining operations. Mining companies should remain fully responsible for the environmental damage they cause, as well as for any additional treatment or management costs imposed on water operators and LRAs. A dedicated compensation fund should ensure full coverage of the long-term impacts of mining on water management, including those that persist decades after the cessation of activities. This mechanism should be complemented by the establishment of transboundary compensation frameworks to prevent disputes between Member States responsible for pollution and those affected by it.

- Non-deterioration safeguards must be maintained. Weakening this principle would be inconsistent with the precautionary and at-source approach, which is a cornerstone of the Directive (see section IV), and would run counter to the core objectives of the legislation. Any adjustment should avoid general dilution of the principle, allowing exemptions only under strict and transparent conditions, through a clear decision-making process that demonstrates the incontestable European strategic value of the project concerned, and strengthen cumulative impact assessments at the river basin level. If the non-deterioration principle were to be revisited, any revision should be limited to specific, clearly defined cases rather than constituting a general facilitation of mining activities, and should at minimum be conditioned on the following requirements:
  - The prohibition of irreversible environmental damage, such as land subsidence;
  - The full coverage of additional treatment costs by polluters, for instance through extended producer responsibility mechanisms, in order to internalise the economic externalities of the sector, particularly vis-à-vis other sectors, including those classified as critical entities;
  - A firm commitment that no further exceptions to this principle will be introduced, preserving its status as a unique safeguard;
  - A mandatory review of any such exception within a fixed timeframe, in order to assess its impacts on the environment, public health, and Europe's strategic autonomy.

- The European Commission should also introduce specific protection measures for water bodies used for drinking water abstraction, in line with the Drinking Water Directive (DWD). This could include requiring prior assessments of impacts on existing and future abstraction points, with the aim of preventing the continued degradation and eventual abandonment of drinking water catchment areas.

- In the context of this revision, the European Commission should further strengthen continuous monitoring systems and enhance data sharing between mining operators, water service providers, and the competent authorities, in order to improve transparency, risk prevention, and early detection of potential impacts. In particular, site monitoring should be reinforced through a clearer, more transparent, and less ambiguous alert procedure in the event of incidents, ensuring that water operators are informed directly and as quickly as possible in order to minimise potential damage.

- Monitoring of water quality should also be significantly improved both upstream and downstream of sites; annual measurements are not sufficient, and continuous monitoring should be implemented wherever possible. Relevant stakeholders should also agree on clearly defined upstream and downstream monitoring points, with site-specific, continuous and, where appropriate, independent monitoring systems. Corrective measures should be implemented as soon as anomalies are detected, as alert and follow-up procedures remain a critical issue. Even after mine closure or abandonment, these sites must continue to be properly monitored. This responsibility should lie with competent independent authorities rather than water operators, who are not responsible for the originating pollution. Monitoring parameters must be clearly defined, consistently applied, and maintained in the post-mining phase, with a fixed monitoring frequency. The designation of responsible authorities or competent bodies, as well as the allocation of sufficient funding to ensure long-term monitoring, are essential to guarantee effective oversight of these sites.

- It should also be ensured that the development of critical raw materials does not compromise water security. The EU should promote lower-impact extraction technologies and the reuse of water in industrial processes, in order to minimise the overall impact of mining activities on water resources.

- The increasing presence of emerging pollutants that threaten public health does not justify a reduction in ambition. Raising Environmental Quality Standards (EQS) thresholds while maintaining high—and welcomed—standards under the DWD and the Urban Wastewater Treatment Directive (UWWTD) would effectively shift responsibility for water quality from public authorities and the mining industry to water operators, while transferring the associated costs to citizens.

- Finally, while the revision of implementation deadlines may appear inevitable in light of widespread non-compliance among Member States, Aqua Publica Europea recalls the importance of legal stability and clarity of objectives as a condition for investment planning and for ensuring the protection of water bodies.