

Time for a new recipe for flood risk management in Europe

December 2020

The EU Floods Directive (2007/60/EC) requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. Therefore, **Member States will have to adopt Flood Risk Management Plans (FRMPs)**, the second cycle is being due in 2021. Climate change is projected to lead to a higher risk of flooding in Europe^{1,2}. Wetlands International recommends Member States to focus on nature-based solutions and green infrastructure measures and refrain from applying old recipes such as extensive grey infrastructure works. Compared to traditional infrastructure, they deliver more jobs per euro, are less expensive, faster to implement, have a lower carbon footprint and are more sustainable in the long run³.

Current investments addressing water solutions are strongly aligned with grey infrastructure such as dykes and dams, often having significant impacts on aquatic ecosystems. Nature-based solutions that utilise the societal benefits that wetlands provide are not yet strongly integrated. According to the ECA, **the first set of FRMPs needed more compliance with the Water Framework Directive (WFD)** and two-third of the analysed Member States did not focus on Green Infrastructure (GI) for reducing flood risks⁴.

The Sustainable Development Goals and the Paris Agreement have given renewed focus on freshwater issues and include specific focus on wetlands, making their sustainable use and restoration part of development and climate adaptation solutions. However, the gap between high level political frameworks and implementation of such solutions remains great. This factor is acknowledged in the IPBES 2019 Global Assessment Report on Biodiversity and Ecosystem Services which **proposes nature-based solutions** or retrofitting green and blue infrastructure for water management while improving grey infrastructure as some of the possible pathways to transformative change.

Knowledge platforms

Over the past decade, the body of knowledge on nature-based solutions has significantly increased. These are several platforms where this kind of knowledge is shared:

- [The World Bank](#). The Urban Flood Community of Practice (UFCOP) Note on the role of [green infrastructure for urban flood risk management](#) and the WAVES [partnership guidance note on the valuation and assessment of nature-based solutions for coastal protection](#) might be particularly valuable for FRMPs;
- [ThinkNature platform](#). This is a multi-stakeholder communication platform supporting the understanding and promotion of Nature based Solutions (NbS);
- [Oppla](#): Oppla is the EU Repository of Nature-Based Solutions;
- [University of Oxford](#): This includes an interactive bibliography for the latest publications on NbS;
- [RiverWiki](#): This is an interactive source of information on river restoration schemes from around Europe;
- [Ecoshape](#): Through this website the monitoring results and guidelines for replication and scaling up of NbS projects can be accessed;
- [US Army Corps of Engineers](#): The initiative “Engineering With Nature” brings together an international community of practitioners, scientists, engineers, and researchers on how best to implement NbS.



Recommendations

Member States will adopt the second Flood Risk Management Plans in 2021, meaning the planning and drafting process is happening now. Based on the Commission assessment of the 1st Flood risk Management Plans (2016-2021), the new plans must give increased attention to and propose more green infrastructure or natural flood management measures⁵. Wetlands International supports this conclusion and gives the following recommendations for the 2021 Flood Risk Management Plans:

- To increase coherence with the WFD, Member States should consider integrated river [restoration measures](#) which can improve the ecological status of water bodies and biodiversity and reduce flood risk. For the achievement of the environmental objectives by 2027, Member States must avoid as much as possible the deterioration of water bodies through new physical modifications for the construction of grey infrastructure;
- For the identified areas at risk of flooding which are not designated WFD waterbodies, Wetlands International recommends assessments of the ecological condition and hydromorphological quality. This data is necessary for developing Nature-based Solutions;
- How we [use and manage](#) water and land-based resources is central to disaster and climate risk management. For this reason, Wetlands International emphasizes the role of green infrastructure measures and advocates for nature-based solutions such as floodplain reconnection and natural water retention measures to play a central role in the FRMPs:
- [Natural water retention measures](#), such as rewetting floodplain marshes, can help reduce flood and drought risks in Europe through more effective management of water flow. Moreover, they deliver positive effects for biodiversity, water quality, ground water recharge and socio-economic developments;
- Measures that restore lateral and longitudinal river connectivity help deliver the goals of the FRMD, WFD and EU Biodiversity Strategy for 2030. Restoring the lateral connectivity between a river and its floodplains enables floodplains to retain water for natural flood protection and improves habitat quality for species⁶. The removal of transversal structures improves habitat quality through the increased longitudinal connectivity of rivers and can decrease the risk of flooding⁷. Public safety, escalating maintenance costs, reservoir sedimentation, and restoration of a natural river ecosystem are among the reasons driving dam decommissioning⁸. Examples where the improvement of flood safety played a role in the decision making of dam removal are the Vezins Dam in France⁹ and the Tikkurila Dam in Finland^{10,11}.





- We recommend considering carbon pricing in order to include the potential ecosystem services in decision making. Green infrastructure can have fewer negative impacts on the environment and a lower carbon footprint than grey infrastructure¹². This has been applied in the case of the flood safety project “Meanderende Maas” in the Netherlands. The measures carried out in the project consist of mostly green infrastructure¹³. This worked out because the partners priced the CO₂ voluntarily at €100/tonne. This way, the preferred plan became one in which the new riparian forests will sequester enough carbon for the whole project to become CO₂-neutral;
- The drafting of the FRMPs happens at the time that Europe is building its recovery from the COVID-19 pandemic. The Recovery and Resilience Facility, which was set up by the European Commission Spring 2020 to raise funds for addressing the economic and social consequences of the coronavirus pandemic, has amongst its objectives to promote and support Member States’ green and digital transitions. Nature-based solutions, such as river and wetland restoration, help rebuild society’s resilience and should therefore [play a central role](#) in the Green Recovery. The Recovery envelope offers an opportunity to fund these measures to be implemented during the next Flood Risk Management cycle. Other European funding programmes which can [mobilise funding](#) for EU-level GI projects and Nature-based Solutions include the European Structural and Investment Funds (ESIF) and the Multiannual Work Programme for LIFE;
- To avoid conflicting funding streams it is necessary to ensure proper integration between flood risk management and the Common Agricultural Policy (CAP). This is key for advancing floodplain restoration projects and to ensure farmers are compensated, as many measures have an impact on agricultural land. Moreover, this helps avoid the funding of flood protection schemes that are much more costly than the land and goods they are meant to protect.

¹ <https://www.eea.europa.eu/highlights/why-does-europe-need-to>

² Blöschl, G., Kiss, A., Viglione, A., Barriendos, M., Böhm, O., Brázdil, R., Coeur, D., Demarée, G., Llasat, M.C., Macdonald, N. and Retsö, D., (2020) Current European flood-rich period exceptional compared with past 500 years. *Nature*, 583 (7817): 560–566.

³ https://cdn.gca.org/assets/2020-07/Global_Commission_Adapation_COVID_Resilience_Statement.pdf

⁴ ECA, Floods Directive: progress in assessing risks, while planning and implementation need to improve. 2018

⁵ Report From The Commission To The European Parliament And The Council on the implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC) Second River Basin Management Plans First Flood Risk Management Plans.

⁶ EEA (2019). Floodplains: a natural system to preserve and restore. EEA Report No 24/2019

⁷ The upkeep of a dam is usually expensive, and dam safety is often an issue because a dam failure can lead to unexpected floods and even to the loss of lives. Source: The Heinz center. 2002. Dam removal – Science and decision making. Pollution prevention infohouse.

⁸ Perera, D., Smakhtin, V., Williams, S., North, T., Curry, A., 2021. Ageing Water Storage Infrastructure: An Emerging Global Risk. UNU-INWEH Report Series, Issue 11. United Nations University Institute for Water, Environment and Health, Hamilton, Canada.

⁹ <https://damremoval.eu/february-came-with-some-flow/>.

¹⁰ Valtonen, T. The removal of a culture-historical dam for improved resilience of urban nature (Lahti. University of Applied Sciences, Lahti, Finland, 2017).

¹¹ Many case studies on dam removal measures can be found here: <https://damremoval.eu/case-studies/>

¹² (Talberg et al., 2013)

¹³ <https://www.meanderendemaas.nl/>