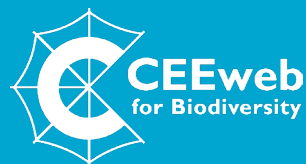


NATURAL WATER RETENTION MEASURES

benefiting society and the economy



NWRMs

Natural Water Retention Measures (NWRMs) are sustainable solutions for water management, which are cost-benefit effective, helpful in achieving policy goals and beneficial for the health and well-being of society. They should be widely used both in Flood Management Plans and River Basins Management Plans. The possibilities to fund such solutions already exist under the current financial mechanisms and they are presented in this publication.

WHAT ARE NWRMs?

“NATURAL WATER RETENTION MEASURES (NWRMs) are multi-functional measures that aim to protect water resources and address water-related challenges by restoring or maintaining ecosystems as well as natural features and characteristics of water bodies using natural means and processes.

The main focus of applying NWRM is to enhance the retention capacity of aquifers, soil, and aquatic and water dependent ecosystems with a view to improve their status. The application of NWRM supports green infrastructure, improves the quantitative status of water bodies as such, and reduces the vulnerability to floods and droughts. It positively affects the chemical and ecological status of water bodies by restoring natural functioning of ecosystems and the services they provide. The restored ecosystems contribute both to climate change adaptation and mitigation.”

(Source: EU policy document on Natural Water Retention Measures)

Currently, there are 54 NWRMs described, divided into four categories:



e.g. buffer strips and hedges,
no till agriculture



e.g. forest riparian buffers,
overland flow areas
in peatland forests



e.g. re-naturalisation of
polder areas, re-meandering



e.g. rainwater harvesting,
permeable surfaces

BENEFITS OF NWRMs

NWRMs are partially overlapping with other concepts, such as Room for the River, Ecosystem-based Adaptation, Natural Flood Risk Management or Green and Blue Infrastructure. Simply, they use the natural flow of river, rather than altering it with grey infrastructure (e.g. dams, embankments etc.). At the same time, such solutions are dealing with contemporary challenges such as droughts, floods, water storage and quality, groundwater level, coastal erosion, destroyed habitats, and declining biodiversity.

NWRMs are more cost effective than grey infrastructure solutions, often times cheaper to build and have no maintenance costs.

Moreover, such solutions can provide new green jobs for engineers and workers and enhance innovation and green economy, including new environmentally-friendly solutions. NWRMs contribute to local communities if used for tourism e.g. birdwatching, human health and quality of life by providing clean water and undisturbed landscape. These measures require sectoral cooperation between environmentalists, water, agriculture and forest managers and urban planners. NWRMs are mentioned in the Europe 2020 Strategy for Smart Sustainable and Inclusive Growth and the EC Communication Green Infrastructure - Enhancing Europe's Natural Capital. Furthermore, natural solutions can support meeting legal objectives of Water Framework Directive, Floods Directive and Birds and Habitats Directives, as well as policies on agriculture, forestry, energy, disaster risk management, green growth and climate change mitigation and adaptation.

Additionally, NWRMs provide a variety of ecosystem services and support biodiversity by creating and sustaining diverse habitats like buffer strips, wetlands or floodplains, as well as by providing high quality of water. The preserved or restored ecosystems can contribute both to climate change adaptation and mitigation.

As presented above, NWRMs are more sustainable, effective and efficient than grey infrastructure solutions as they both save money, and benefit health and the environment.



FUNDING NWRMs

NWRMs can be applied in River Basins Management Plans (RBMPs) under the Water Framework Directive (WFD) or the Flood Risk Management Plans (FRMPs) under the Floods Directive (FD). Unfortunately, uptake of the measures in the last period of RBMPs and FRMPs was not sufficient in many Members States. Therefore, implementation and financing of NWRMs is currently low, with potential for an increase. To increase the uptake of NWRMs we present options of funding it under several schemes with good practice example.

Tab. 1. Examples of sources of possible funding of NWRMs with case studies.

NWRM	Fund	Example / case study
<p>On-farm measures</p> <ul style="list-style-type: none"> • Blocking of drains or ditches to increase water levels • Replanting of vegetation such as trees or shrubs/ Afforestation • Wetland restoration/ Constructed wetlands • Buffer strips • Re-meandering of rivers • Pond restoration and creation • Restoration/management/protection of flood-plains • Continuous cover forestry • Hedgerows 	<p>CAP pillar 2 (Rural Development Programme)</p> <ul style="list-style-type: none"> • Agri-environment measures • Non-productive investment measure • Natura 2000 payments and payments linked to WFD 2000/60/EC • Forest environment measure • First afforestation of agricultural land 	<p>Measures under “greening” of direct payments, such as restoration, as an example of management of landscape features (trees, hedgerows, riparian woody vegetation, stone walls (terraces), ditches, ponds).</p>
<ul style="list-style-type: none"> • River restoration • Wetland restoration • Reforestation 	<p>LIFE</p>	<p>LIFE Riparian Forests project restored 11 riparian and wetland habitats, among them 5 forest habitat types, which included waste removal, cultivation of young forests and alien species removal.</p>
<ul style="list-style-type: none"> • Ecosystem restoration • Catchment, landscape and urban planning • Climate change adaptation • (Several NWRMs can thus be included) 	<p>Cohesion Fund ERDF</p>	<p>The project “Increasing retention and preventing floods and droughts in forest ecosystems in lowland areas” was implemented under the Polish Operational Programme, before Environment Priority. It focused on ecologically sound methods of water retention by the construction or renovation of several thousands of water storage systems in lowland forests throughout the country.</p>
<ul style="list-style-type: none"> • Restoration • Retention measures • Green Infrastructure in cities 	<p>National Funds</p>	<p>The Seine-Normandie Agency in France is financially supporting implementation of WFD measures such as retention ponds and vegetated structures (e.g. grazed trenches, permeable pavements). The Agency offers private investors higher subsidy rates to implement NWRM: 60-70% compared to 20-40% for grey infrastructure, as well as subsidies for 60% of the land acquisition costs for these measures.</p>

NWRM	Fund	Example / case study
<ul style="list-style-type: none"> • Restoration • Sustainable urban drainage systems • Green Infrastructure in cities 	Natural Capital Financing Facility (NCFE)	NCFE is financed by the European Investment Bank and the LIFE Fund, funding projects promoting the conservation of natural capital in order to generate revenue or save costs. It has the potential of funding NWRMs.
<ul style="list-style-type: none"> • Reforestation • Restoration • Targeted planting for “catching” precipitation 	Payments for Ecosystem Services (PES)	Bosco Limite implemented reforestation measures in the area of intensive agriculture to “catch” precipitation and increase groundwater recharge that is used by the towns of Venice and Vicenza in the province of Padua in Italy. It provided alternative, competitive sources of income for land-owners who made their land available for reforestation such as 10 year long contracts of water provision, carbon storage for enterprises, and energy from wood.
<ul style="list-style-type: none"> • Reforestation • Restoration • Targeted planting for “catching” precipitation 	Water funds (capital contributions from different stakeholders involved in watershed management)	FONAG (Fondo para la Protección del Agua) water fund was established in Ecuador to protect water supply to the city of Quito and several neighbouring cantons by the river Guayllabamba. The fund receives financial contribution from the main users of water in the region, metropolitan water and sanitation and electricity utilities, private brewery and bottled water companies, and NGOs/conservation agencies. Activities funded through the scheme include NWRMs such as afforestation, reforestation and planting of other vegetation cover, monitoring, capacity building and communication.
<ul style="list-style-type: none"> • Buffer Strips Around Waterways • Soil Erosion Prevention • Tillage Selection Practices and Soil Compaction Prevention • Irrigation Water Conservation 	Product labelling	Food Alliance is an NGO from the United States issuing certificates for farmers, food processors and distributors for sustainable agricultural and facility management practices. There are several criteria to be met in order to receive a certificate, related to animal welfare, condition for workers, use of fertilizers as well as to water treatment. Guidelines describe good practices for farms, including several NWRM.

Adapted from: Synthesis document n°11. Financing NWRM. How can NWRM be financed? Office International de l'Eau (OIEau). Available at <http://www.nwrn.eu>

SUMMARY

NWRMs provide a wide range of benefits for the economy, society and the environment. There are known ways to fund such measures from EU sources, but there are also more options to further investigate, such as private funding. Green and blue infrastructure solutions are encouraged by existing EU policies, as they are provenly more sustainable and effective than grey infrastructure ones.

To increase the uptake of funds for NWRMs, the next Multiannual Financial Framework (MFF) should have more emphasis on climate adaptation and nature conservation. The proposed commitment of 20% of the EU budget for climate mainstreaming in the MFF should increase support for all water measures related to climate adaptation.

HOW CEEWEB CAN HELP YOU

CEEweb for Biodiversity has vast experience in all aspects of green and blue infrastructure, including policy and project development, providing training for stakeholders and implementing projects at local, national and international level. This experience is further maximized and enhanced through our network of non-governmental organizations in Central and Eastern Europe. We have collected extended knowledge on green infrastructure and its beneficial role in providing human health and well-being. You can consult our Green Infrastructure Hub with a large number of articles and videos at: www.ceeweb.org/green-infrastructure/ or you can contact our Natura 2000 and Water Policy Officer Monika Kotulak at kotulak@ceeweb.org



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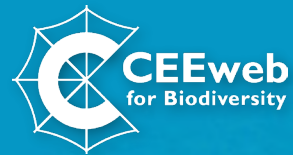
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CEEweb for Biodiversity is a network of non-governmental organizations in the Central and Eastern European region working for 20 years in 20 countries. Our mission is the conservation of biodiversity through the promotion of sustainable development.



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