

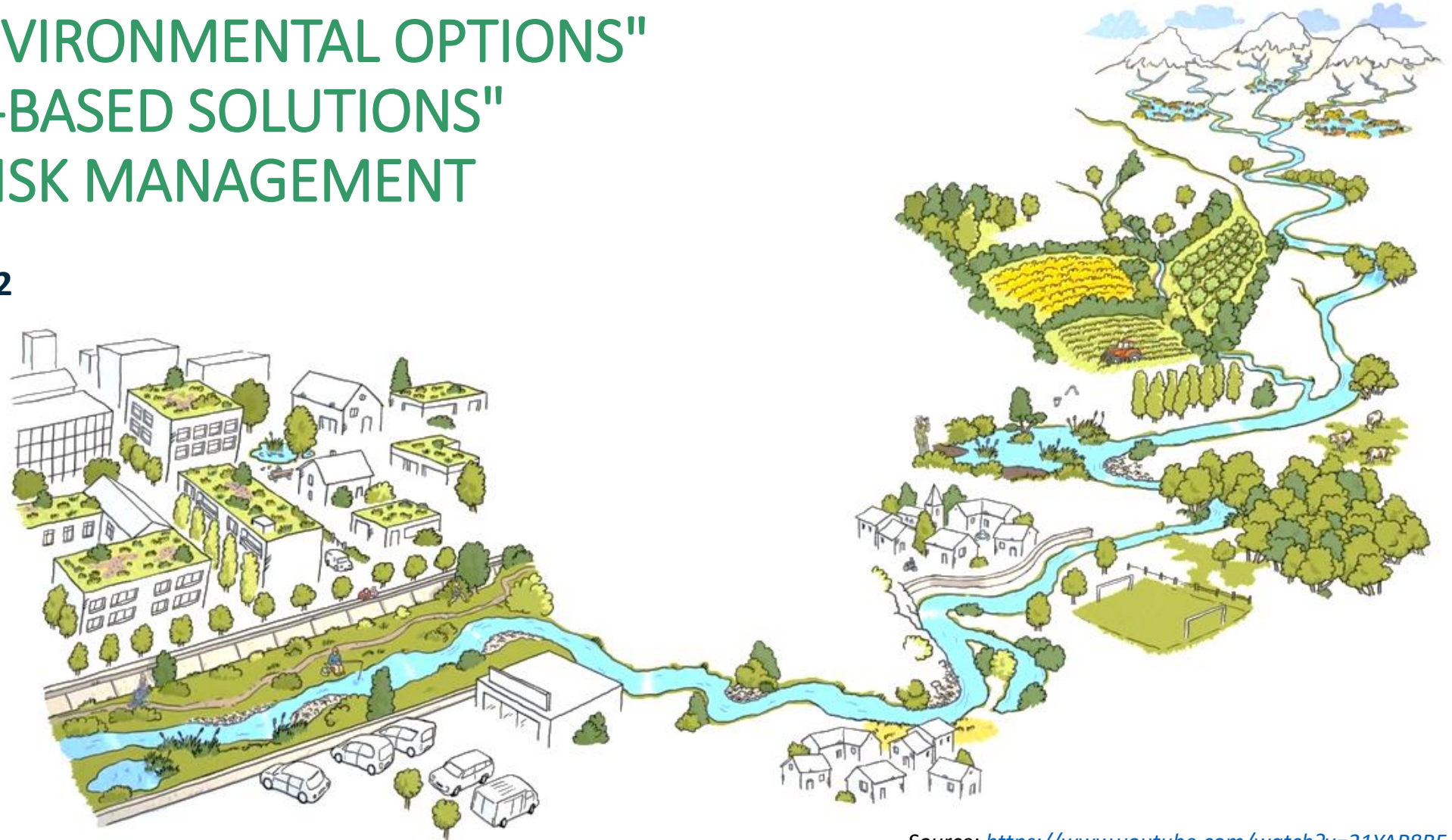
CHALLENGES IN APPLYING "BETTER ENVIRONMENTAL OPTIONS" & "NATURE-BASED SOLUTIONS" IN FLOOD RISK MANAGEMENT

River University 2022

13 July 2022

Estonia & online

ILONA BIEDROŃ



PRESENTATION PLAN

Part I General

1. The essence of sustainable planning in water resources management.
2. River restoration as a Nature-Based Solution to Flood Risk Management.
3. Recommendations of European Commission to use "Better Environmental Options" and "Nature-Based solutions".
4. Suggestions from the EC in the national analyses of the FRMP of selected Member States.

Detailed part II on the example of selected experiences from Poland

1. The scale of application of close-to-nature measures in Flood risk management plans in Poland - results of analyses of first revision FRMP projects.
2. Potential for the implementation of restoration measures to reduce flood risk on the example of the upper Oder and Vistula river basins in Poland.
3. Social acceptability of activities favouring natural retention on the example of the experience from the Kampinos Forest.

THE ESSENCE OF SUSTAINABLE PLANNING IN WATER RESOURCES MANAGEMENT

Recital of the Floods Directive

(14) Flood risk management plans should focus on prevention, protection and preparedness. With a view to **giving rivers more space**, they should consider **where possible** the **maintenance and/or restoration of floodplains**, as well as measures to prevent and reduce damage to human health, the environment, cultural heritage and economic activity. The elements of flood risk management plans should be periodically reviewed and if necessary updated, taking into account the likely impacts of climate change on the occurrence of floods.

(15) **The solidarity principle** is very important in the context of flood risk management. In the light of it Member States should be encouraged to seek a fair sharing of responsibilities, when measures are jointly decided for the common benefit, as **regards flood risk management along water courses**.

(17) Development of river basin management plans under Directive 2000/60/EC and of flood risk management plans under this Directive are elements of **integrated river basin management**. The two processes should therefore use the mutual potential for **common synergies and benefits, having regard to the environmental objectives of Directive 2000/60/EC**, ensuring efficiency and wise use of resources while recognising that the competent authorities and management units might be different under this Directive and Directive 2000/60/EC.

(18) Member States should base their assessments, maps and plans on appropriate **'best practice'** and **'best available technologies'** not entailing excessive costs in the field of flood risk management.

THE ESSENCE OF SUSTAINABLE PLANNING IN WATER RESOURCES MANAGEMENT

PRELIMINARY FLOOD RISK ASSESSMENT

The assessment shall include at least e.g.:

Article 4.2(d) an assessment of the **potential adverse consequences of future floods** for human health, the environment, cultural heritage and economic activity, taking into account as far as possible issues such as the topography, the position of watercourses and **their general hydrological and geomorphological characteristics, including floodplains as natural retention areas**, the effectiveness of existing manmade flood defence infrastructures, the position of populated areas, areas of economic activity and long-term developments including impacts of climate change on the occurrence of floods.



Spring floodplains on the Narew River

<https://www.gospodarek.pl/polska-z-drona/>

THE ESSENCE OF SUSTAINABLE PLANNING IN WATER RESOURCES MANAGEMENT

FLOOD RISK MANAGEMENT PLANS

Article 7

Point 2.

Member States shall establish appropriate objectives for the management of flood risks for the areas identified under Article 5(1) and the areas covered by Article 13(1)(b), **focusing on the reduction of potential adverse consequences of flooding** for human health, the environment, cultural heritage and economic activity, and, **if considered appropriate, on nonstructural initiatives and/or on the reduction of the likelihood of flooding.**

Point 3.

Flood risk management plans **shall take into account** relevant aspects such as costs and benefits, flood extent and flood conveyance routes and areas which have the **potential to retain flood water, such as natural floodplains**, the **environmental objectives of Article 4 of Directive 2000/60/EC**, soil and water management, spatial planning, land use, nature conservation, navigation and port infrastructure.

Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060>

COORDINATION WITH DIRECTIVE 2000/60/EC, PUBLIC INFORMATION AND CONSULTATION

Article 9

Member States shall **take appropriate steps to coordinate** the application of this Directive and that of Directive 2000/60/EC focusing on opportunities for improving efficiency, information exchange and for achieving common synergies and benefits having regard to the environmental objectives laid down in Article 4 of Directive 2000/60/EC.



<https://www.gospodarek.pl/polska-z-drona/>

THE ESSENCE OF SUSTAINABLE PLANNING IN WATER RESOURCES MANAGEMENT

How do you understand the coordination and synergy of planning in flood risk management vs. water protection (Water Framework Directive environmental objectives)?

Use 3 terms that best illustrate this.

Go to **www.menti.com**

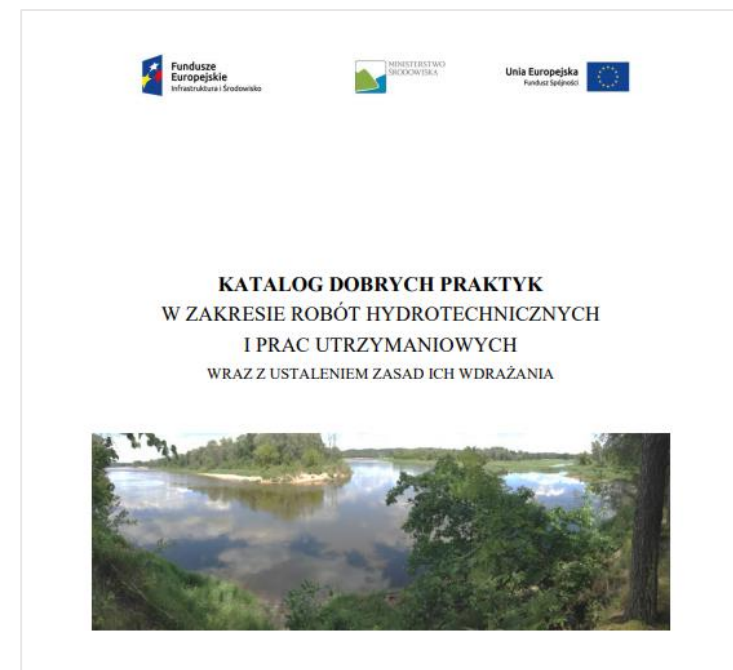
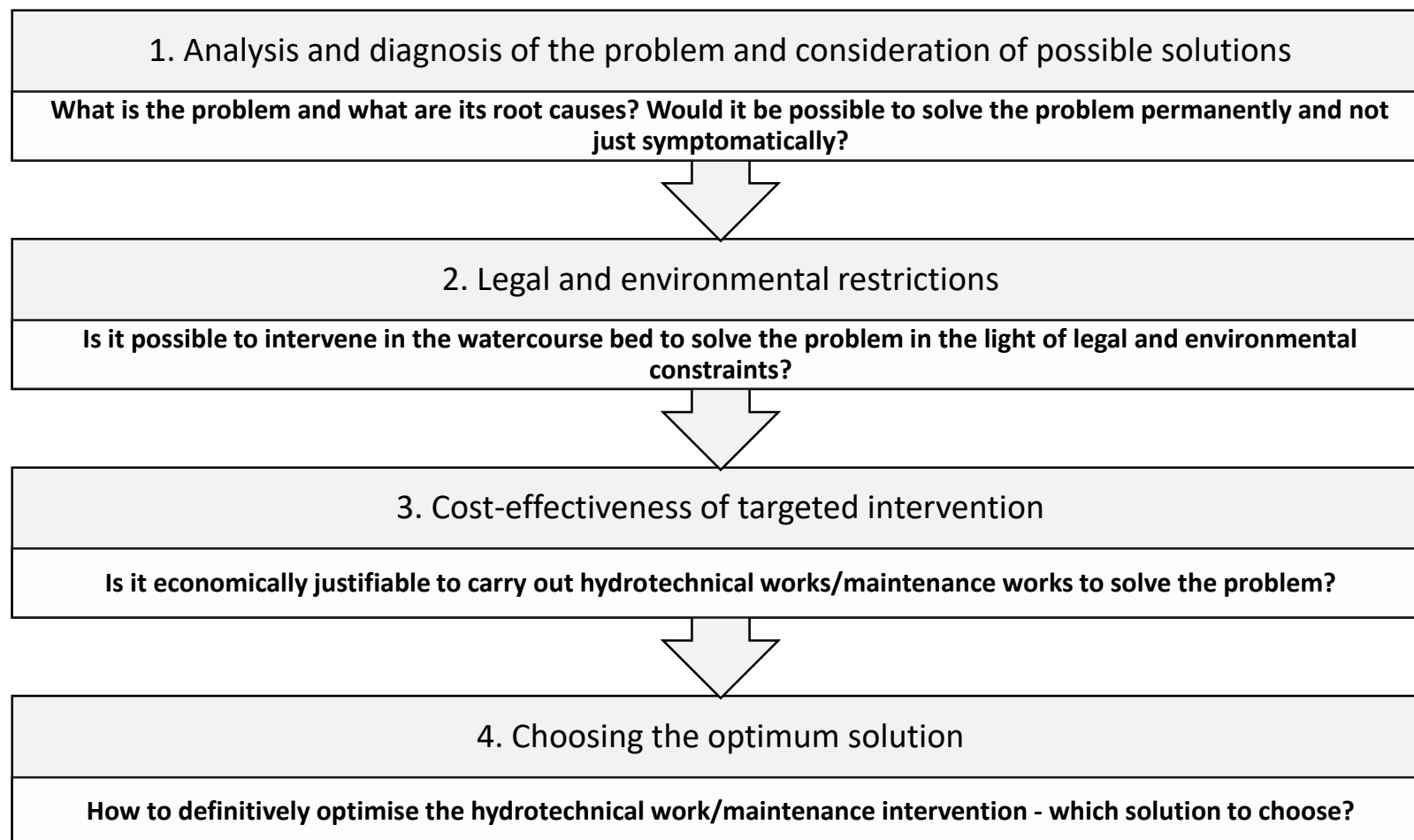
and use the code **6882 1231**

<https://www.menti.com/18jzgy78e8>



THE ESSENCE OF SUSTAINABLE PLANNING IN WATER RESOURCES MANAGEMENT

Key to sustainable water management planning - good practice concept - 4 decision-making steps



Source:
<https://www.gov.pl/attachment/9e835e20-1ffc-4172-96a9-307fcf0fa832>

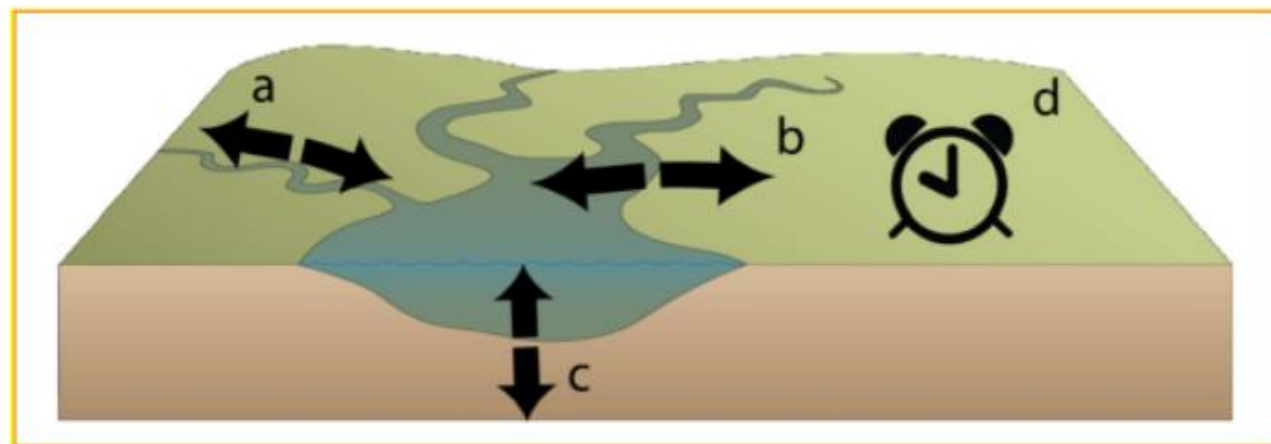
RIVER RESTORATION AS A NATURE-BASED SOLUTION IN FLOOD RISK MANAGEMENT

FREE-FLOWING RIVER

A free-flowing river is not impaired by anthropogenic barriers and is not disconnected from its floodplain when a floodplain is present

Four dimensions of connectivity within lotic ecosystems (after Ward 1989):

- a) longitudinal connectivity (channel ↔ channel);
- b) lateral connectivity (channel ↔ floodplain);
- c) vertical connectivity (channel ↔ groundwater);
- d) temporal connectivity (across time)



Source: *Guidance on Barrier Removal for River Restoration*,
https://environment.ec.europa.eu/publications/guidance-barrier-removal-river-restoration_en



RIVER RESTORATION AS A NATURE-BASED SOLUTION IN FLOOD RISK MANAGEMENT

WATER RESTORATION AS A MEASURE TO REDUCE FLOOD RISK

**IT'S THE BASIS OF
UPSTREAM-DOWNSTREAM SOLIDARITY**

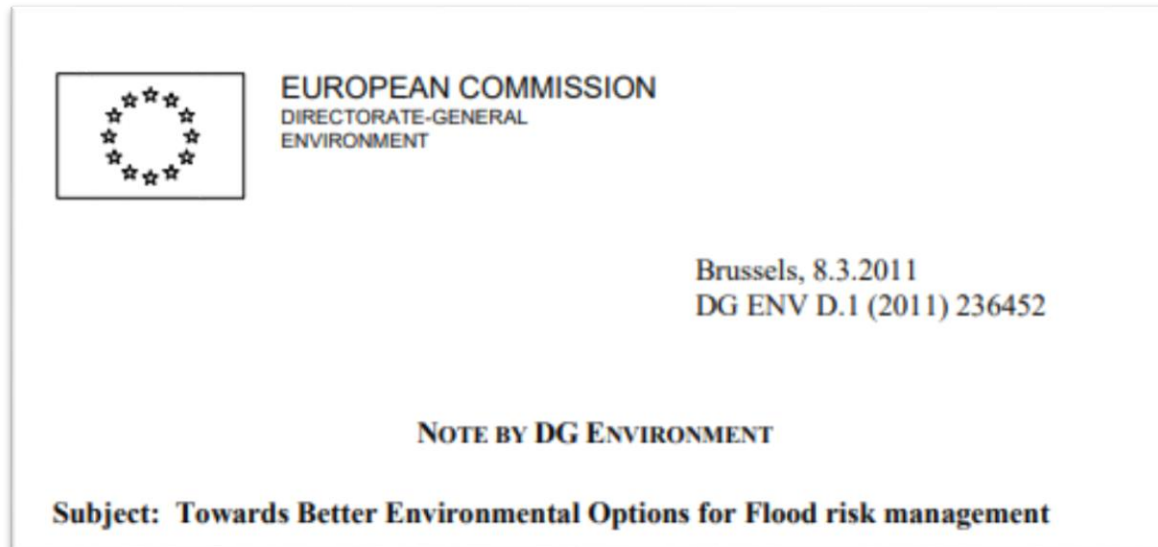
**ISSUES AND STRUCTURES MANAGED FOR
EACH CATCHMENT THAT WILL HELP MAKE
INFORMED DECISIONS**



RECOMMENDATIONS TO USE "BETTER ENVIRONMENTAL OPTIONS" AND "NATURE-BASED SOLUTIONS" FOR FLOOD RISK MANAGEMENT

Flood risk management should work with nature, rather than against it.

Commission White paper on Adaptation to Climate Change.



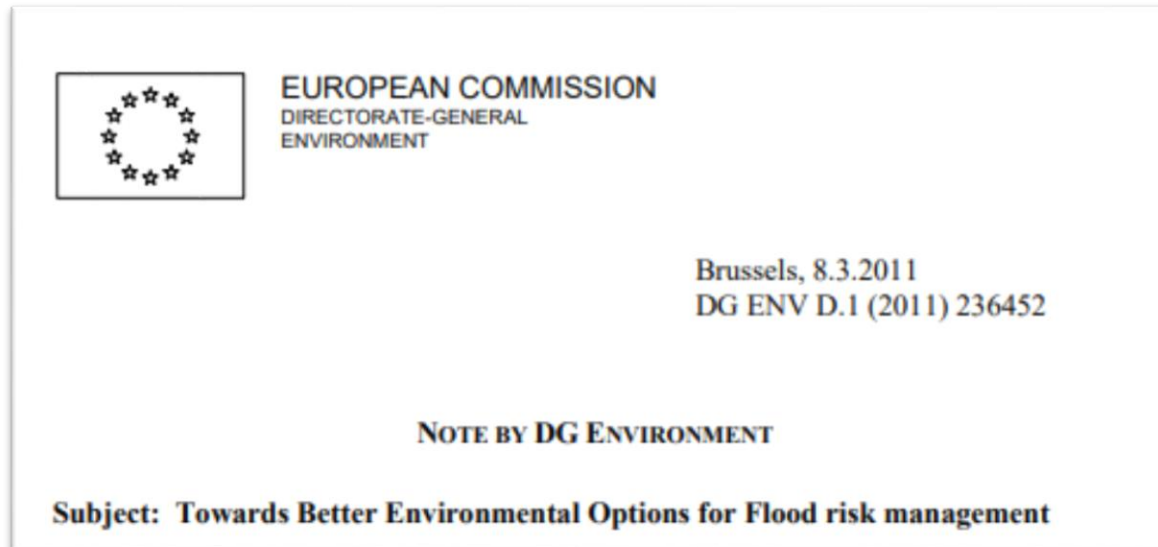
What is this note about?

Flood risk management **can go hand in hand with nature protection and restoration**, and deliver benefits for both people and nature.

This is an **initiative of the European Commission**, which aims at bringing win-win solutions into the focus of flood risk management.

RECOMMENDATIONS TO USE "BETTER ENVIRONMENTAL OPTIONS" AND "NATURE-BASED SOLUTIONS" FOR FLOOD RISK MANAGEMENT

What does the document contain?



Reference to key documents explaining legal and policy framework, the **benefits** of natural flood risk management, and the **way to implement** it on the ground are provided.

Examples of the **role of natural flood management** via green infrastructure and their multiple benefits – both in rural and urban areas are explained.

An annex with further background information with key documents, tool-kits and best practice examples completes the information material.

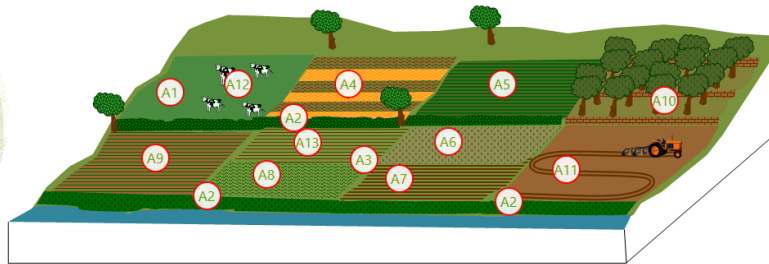
CATALOGUE OF MEASURES AND EXAMPLES OF THEIR USE



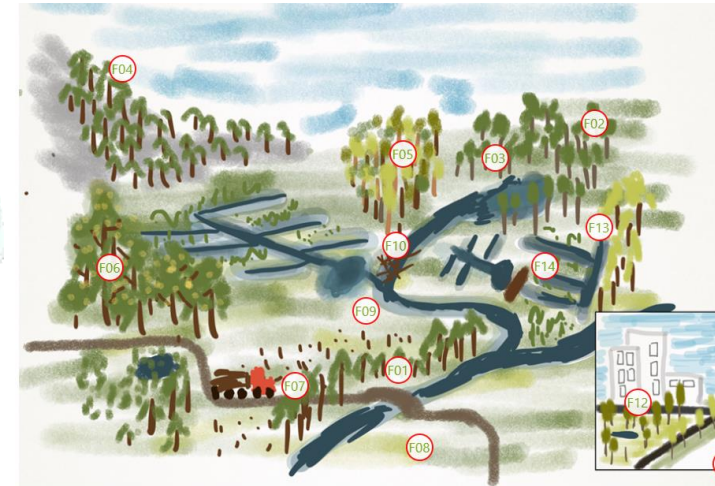
Source: <http://nwrn.eu/>



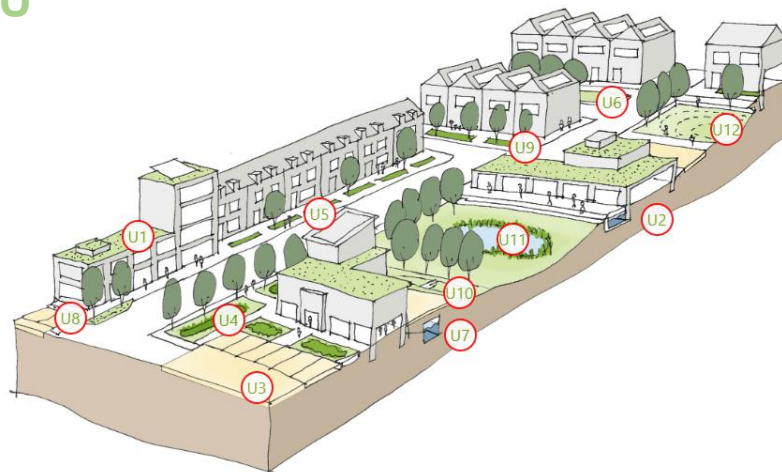
AGRICULTURE



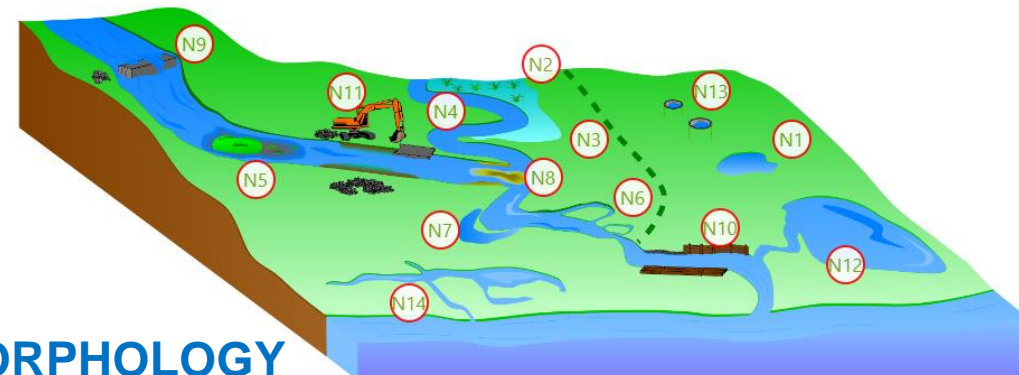
FOREST



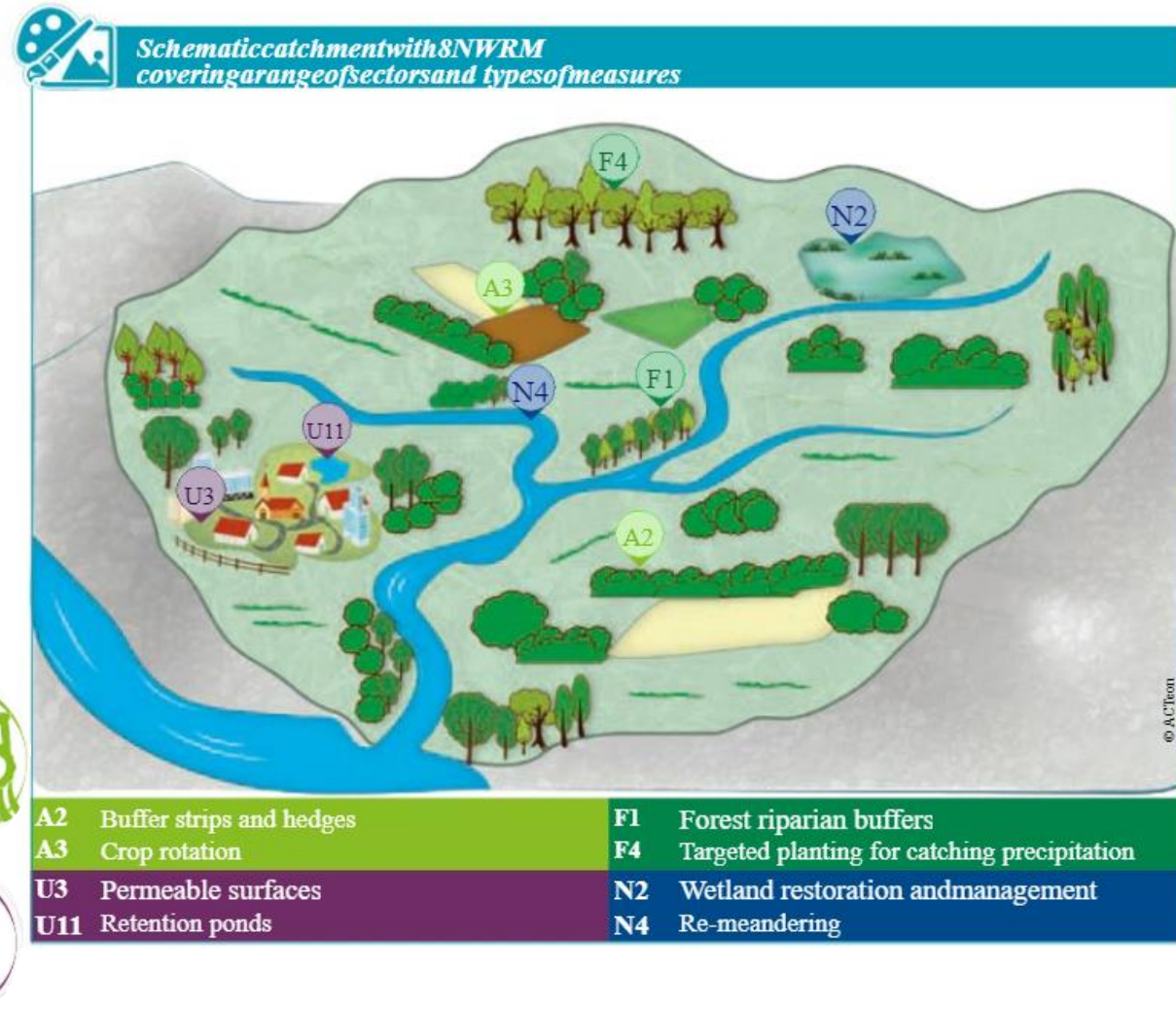
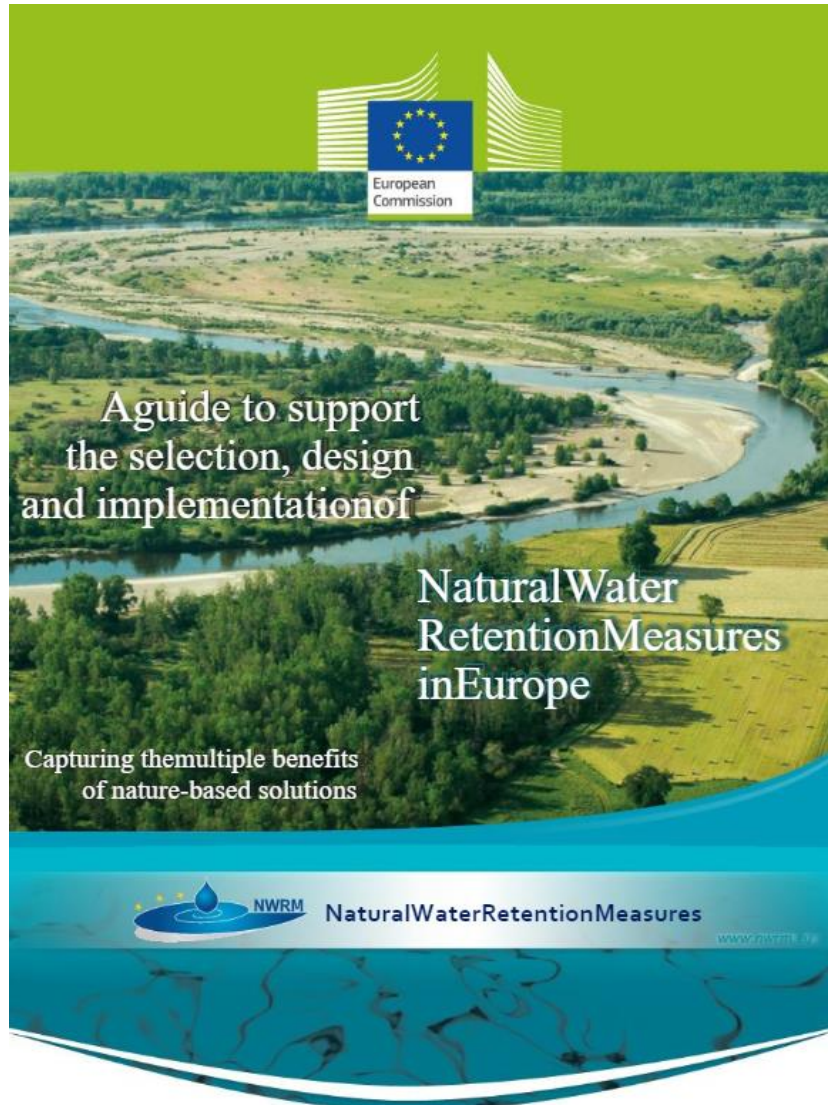
URBAN



HYDRO MORPHOLOGY



CATALOGUE OF MEASURES AND EXAMPLES OF THEIR USE



Translated versions: BG, CZ, DE, EL, EN, ES, FR, HR, HU, IT, NL, PL, PT, RO, SK

CATALOGUE OF MEASURES AND EXAMPLES OF THEIR USE



Example of a measure card:

Project funded by the EU – DG Environment



References & Learn more: <http://nwrn.eu/measures-catalogue>

N3 - Floodplain restoration and management

A floodplain is the area bordering a river that naturally provides space for the retention of floods and rainwater. Floodplains have often been drained and in many places they have been separated from the river by structures. They have also been covered by sediments. Restoration and management of floodplains aims to restore their **retention capacity** and **ecosystem functions**, by reconnecting them to the river. It requires measures such as modification of the channel, removal of sediment, creation of lakes or ponds in the floodplain, modification of agricultural practices, afforestation, plantation of native grasses, shrubs and trees, creation of grassy basins and swales, wetland creation, invasive species removal, riparian buffer installation and development.

<p>Land surface relevant for application</p> <ul style="list-style-type: none"> Artificial surface ○ Agriculture land ● Forest and semi-natural areas ● Wetlands ● 	<p>Financial costs (Capital, operation & maintenance)</p> <p style="font-size: x-small;">The Sigmajplan case study provides costs associated with large-scale floodplain restoration: dyke heightening (€300 (wall on top) to €16 100/m (Quay wall)); inner dike adaptation (€770/m); outer dike construction (€840/m); outlet sluices (€19 000/ha); inlet sluices (€4 000/ha). Engineering costs are typically 10% of the investment cost and maintenance costs less than 1.5% of the investment cost.</p>	 <p style="font-size: x-small;">© http://www.trng.org.uk</p>
<p>Scale</p> <p style="font-size: x-small;">This measure cannot be implemented in catchments with a small area, as the river will have limited or no floodplain.</p>	<p>Design</p> <p style="font-size: x-small;">The slope of the river and floodplain is one of the most important parameters when evaluating the retention potential of the floodplain: shallow slopes reduce discharge peaks and prolong retention periods, while steeper slopes reduce the effects of retention, especially when the flood wave is contained completely within the channel (Habersack).</p>	

Project funded by the EU – DG Environment



References & Learn more: <http://nwrn.eu/measures-catalogue>

N3 - Floodplain restoration and management

Potential biophysical effects	Ecosystem services delivered	Contribution to policy objectives
<ul style="list-style-type: none"> Runoff ● Reducing pollution ● Soil conservation ● Habitat ● Climate Change ● 	<ul style="list-style-type: none"> Provisioning ● Regulation & maintenance ● Cultural ○ Abiotic ○ 	<ul style="list-style-type: none"> Water Framework Directive ● Floods Directive ● Birds & Habitats Directive ● 2020 Biodiversity Strategy ●

By allowing the natural functioning of rivers, floodplain restoration measures have high potential to **control runoff** and reduce flood risk, since they should aim to maximise the capacity of the floodplain to store river water. Breaches in the summer dikes, by-pass channels and oxbow lakes can enhance this function. The roughness of the vegetation contributes to slowing down water. Floodplain restoration creates **connectivity** between surface flows and groundwater. The associated changes in land use and reduction in surface runoff can lead to higher recharge of water into the ground. Increased organic matter content can increase soil water retention, while removal of sediment improves soil permeability. A significant change of land cover can reduce pollution by activating filtration by vegetation and soil. Floodplain restoration enables recovery of natural erosion and sedimentation processes, therefore **reducing sediment transport** downstream. It contributes to creating terrestrial, aquatic and riparian **habitats**, increasing fish populations, improving biodiversity and providing natural biomass. The restoration site can be planted with native grasses, shrubs, and trees, which will discourage the establishment of invasive vegetation. Floodplains are likely to contribute to **climate change adaptation** through the fixation of carbon dioxide by photosynthesis and C-burial. They also provide **recreational opportunities** and aesthetic value.

HYDROMORPHOLOGY ▣ Table of contents

HYDROMORPHOLOGY ▣ Table of contents

Case studies: Floodplain restoration in the Lonjsko Polje Nature Park in Croatia; ~~atia~~ Floodplain restoration of the river Sluippe, Latvia

High ● Medium ● Low ● None ●

Source: <http://nwrn.eu/id-card/files/assets/basic-html/index.html#1>

CATALOGUE OF MEASURES AND EXAMPLES OF THEIR USE

Benefit tables:

Source: <http://nwrn.eu/catalogue-nwrn/benefit-tables>

Potential biophysical effects

- Runoff
- Reducing pollution
- Soil conservation
- Habitat
- Climate Change

Ecosystem Services delivered

- Provisioning
- Regulation & maintenance
- Cultural
- Abiotic

Contribution to policy objectives

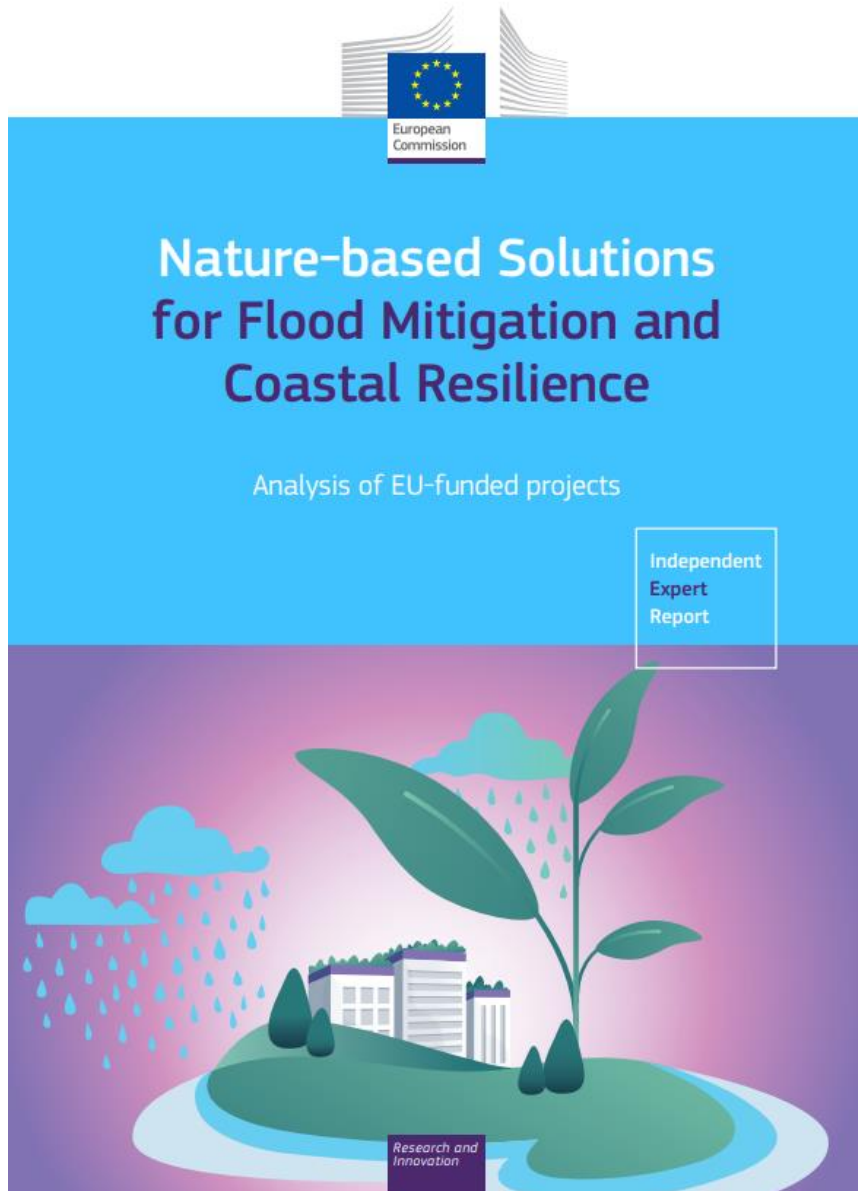
- Water Framework Directive
- Floods Directive
- Birds & Habitats Directive
- 2020 Biodiversity Strategy

		Mechanisms of Water Retention							Biophysical Impacts Resulting from Water Retention									
		Slowing and Storing Runoff				Reducing Runoff			Reducing Pollution		Soil Conservation		Creating Habitat			Climate Alteration		
		BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8	BP9	BP10	BP11	BP12	BP13	BP14	BP15	BP16	BP17
		Store runoff	Slow runoff	Store river water	Slow river water	Increase evapotranspiration	Increase infiltration and/or groundwater recharge	Increase soil water retention	Reduce Pollutant Sources	Intercept Pollution Pathways	Reduce Erosion and/or Sediment Delivery	Improve Soils	Create Aquatic Habitat	Create Riparian Habitat	Create Terrestrial Habitat	Enhance Precipitation	Reduce Peak Temperature	Absorb and/or Retain CO ₂
N1	Basins and ponds	High	High	None	None	None	Medium	Medium	None	None	None	None	None	None	None	None	None	None
N2	Wetland restoration and management	High	High	Medium	Medium	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N3	Floodplain restoration and management	High	High	High	High	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N4	Re-Meandering	Medium	Medium	Medium	Medium	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N5	Stream bed re-naturalization	None	None	None	None	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N6	Restoration and reconnection of seasonal streams	High	High	High	High	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N7	Reconnection of oxbow lakes and similar features	High	High	High	High	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N8	Riverbed material re-naturalization	Medium	Medium	Medium	Medium	None	Medium	Medium	None	None	None	None	High	High	High	None	None	None
N9	Removal of dams and other longitudinal barriers	None	None	None	None	None	None	None	None	None	None	None	High	High	High	None	None	None

Legend: Qualitative Scale

Dark Blue	High
Medium Blue	Medium
Light Blue	Low
White	None
Red	Negative

EXAMPLES OF KNOWLEDGE SOURCES

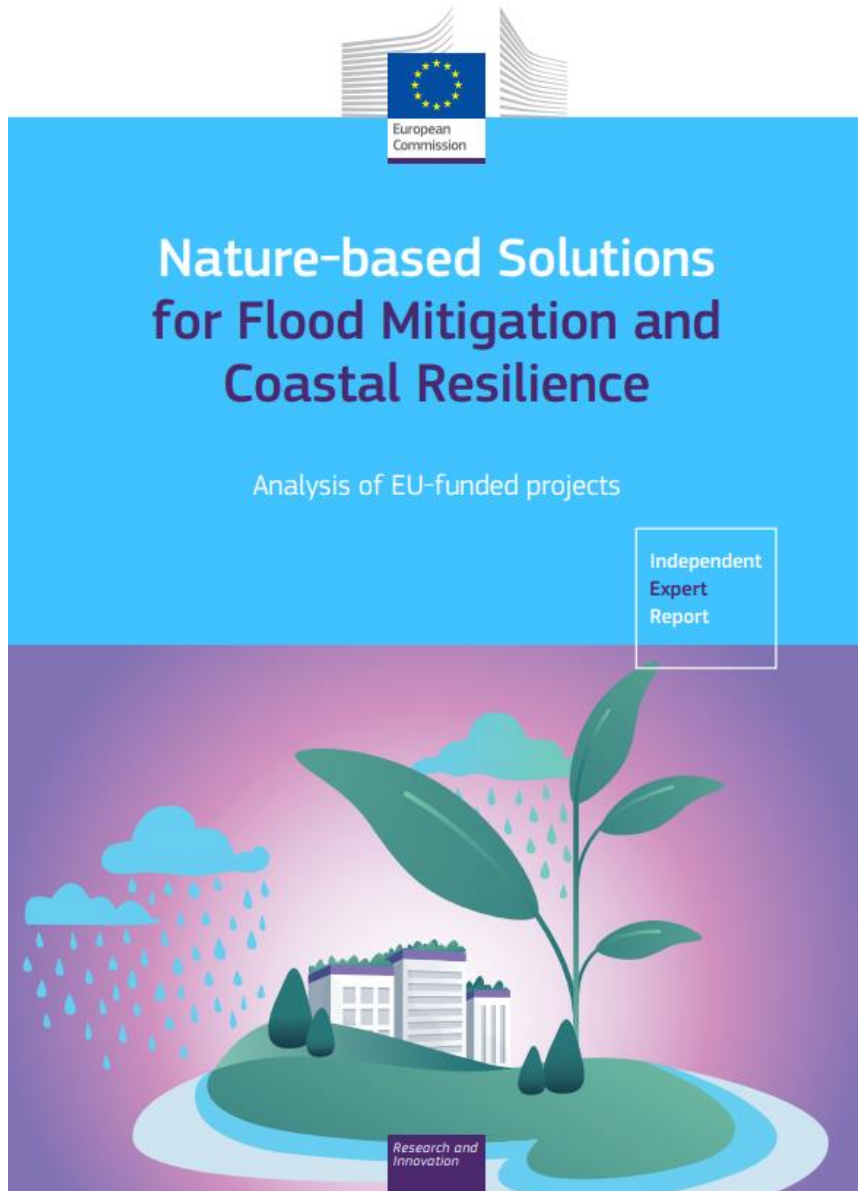


This report reviews the results from EU-funded Nature-Based Solutions projects in support of policy instruments and to identify the gaps for future Research and Innovation investments.

The term ‘policy instruments’ refers here to documents such as directives, frameworks and strategies at EU or Member States levels.

A number of projects from several EU research programmes such as FP7, HORIZON 2020, INTERREG, COST Actions and LIFE were reviewed in relation to the three related policy instruments, namely Floods Directive, EU Action Plan on the Sendai Framework for Disaster Risk Reduction 2015-2030 and EU Strategy on Adaptation to Climate Change.

EXAMPLES OF KNOWLEDGE SOURCES



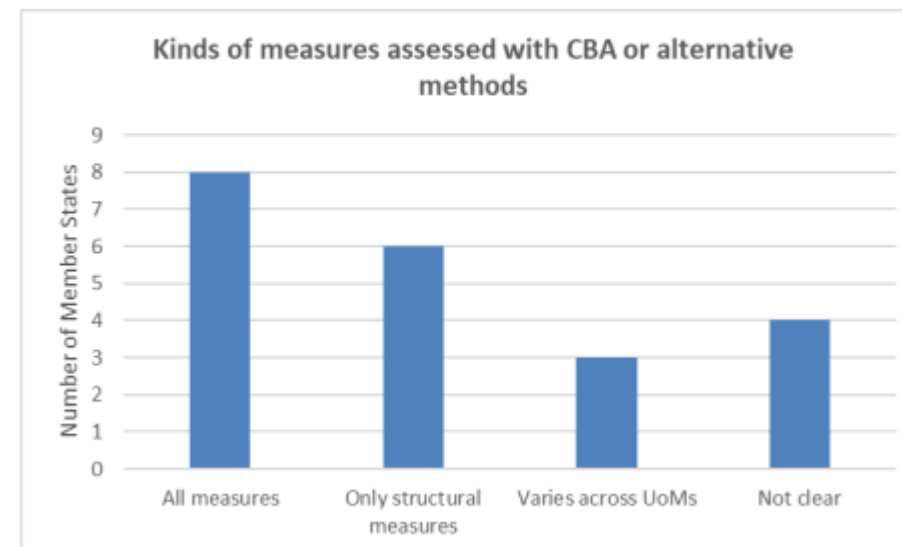
ANNEX 1. LIST OF REVIEWED PROJECTS

ANNEX 2: NBS PLATFORMS, PORTALS, DATABASES, NETWORKS AND INITIATIVES

- OPPLA <https://oppla.eu/casestudy/17577>
 - Natural Water Retention Measures <http://nwrn.eu/>
 - Urban Nature Atlas <https://naturvation.eu/atlas>
 - ClimateADAPT
<https://www.eea.europa.eu/themes/climate/european-climate-adaptation-platform-climate-adapt>
 - Natural Hazards – Nature Based Solutions
<https://naturebasedsolutions.org/>
 - BISE <https://biodiversity.europa.eu/>
 - ThinkNature <https://www.think-nature.eu/>
 - Nature-based Solutions Initiative (Nature Based Solutions Evidence Platform) <https://www.naturebasedsolutionsevidence.info>
-

Source: <https://op.europa.eu/en/publication-detail/-/publication/d6e80dca-d530-11ea-adf7-01aa75ed71a1/language-en>

EC SUGGESTIONS FROM THE NATIONAL ANALYSES OF THE FRMPs



Source: https://ec.europa.eu/environment/water/water-framework/pdf/5th_report/SWD_2021_254.PDF

Luxembourg – NWRM: 90% of 813 individual measures

Austria – NWRM: ongoing or planned in 96 Areas of Potential Significant Flood Risk (APSFRs), completed in 32 APSFRs, and foreseen in the next implementation cycle in 200 APSFRs

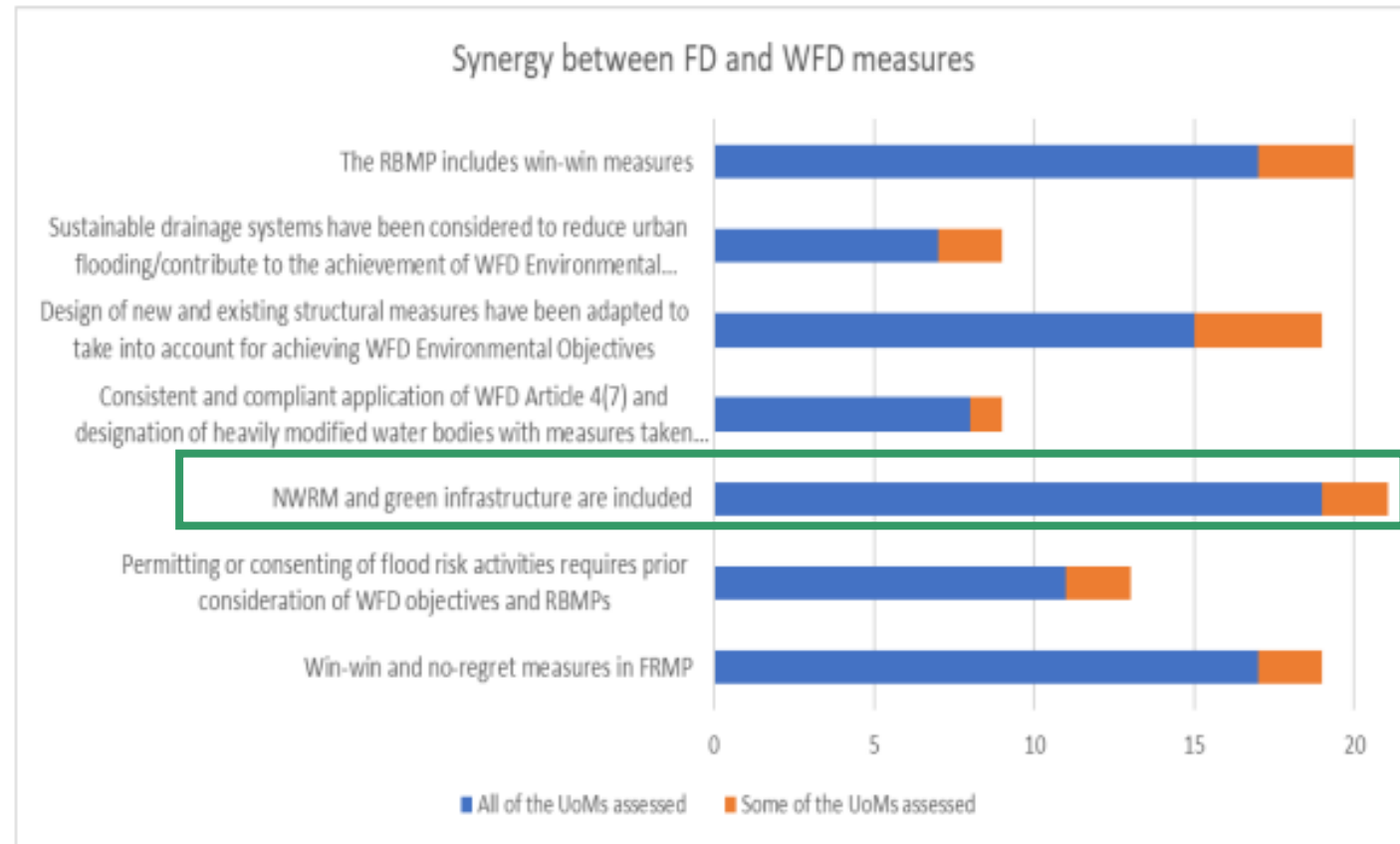
Slovakia – NWRM: almost 40% of 413 measures, and opportunities for these types of measures were identified through modelling

Poland - measures to develop guidelines and the identification of ‘priority areas for re-naturalisation in river valleys, with particular reference to wetlands’.

EC SUGGESTIONS FROM THE NATIONAL ANALYSES OF THE FRMPs

FRMP measures can support WFD objectives. Synergies between FRMPs and RBMPs can include:

- Consistent application of WFD Article 4(7) and designation of heavily modified water bodies due to measures under the FD, e.g. flood defence infrastructure;
- The design of new and existing structural measures, such as flood defences, storage dams and tidal barriers, have been adapted to take into account achieving WFD Environmental Objectives;
- The use of sustainable drainage systems, such as the construction of wetland and porous pavements, have been considered to reduce urban flooding and also to contribute to the achievement of WFD Environmental Objectives;
- The RBMP PoM includes win-win measures in terms of achieving the objectives of the WFD and FD, drought management and NWRMs;
- Permitting or consenting of flood risk activities (e.g. dams, dredging, flood defence construction) requires prior consideration of WFD objectives and RBMPs.



Source: https://ec.europa.eu/environment/water/water-framework/pdf/5th_report/SWD_2021_254.PDF

THE SCALE OF APPLICATION OF CLOSE-TO-NATURE MEASURES IN FRMP IN POLAND - RESULTS OF ANALYSES OF FIRST REVISION FRMP PROJECTS

Catalogue of measures

Type of of flood risk
management measure:

M31: Natural flood management

Type of PL measures:

1. Protecting or increasing
catchment retention on
wooded and bushing forest
land

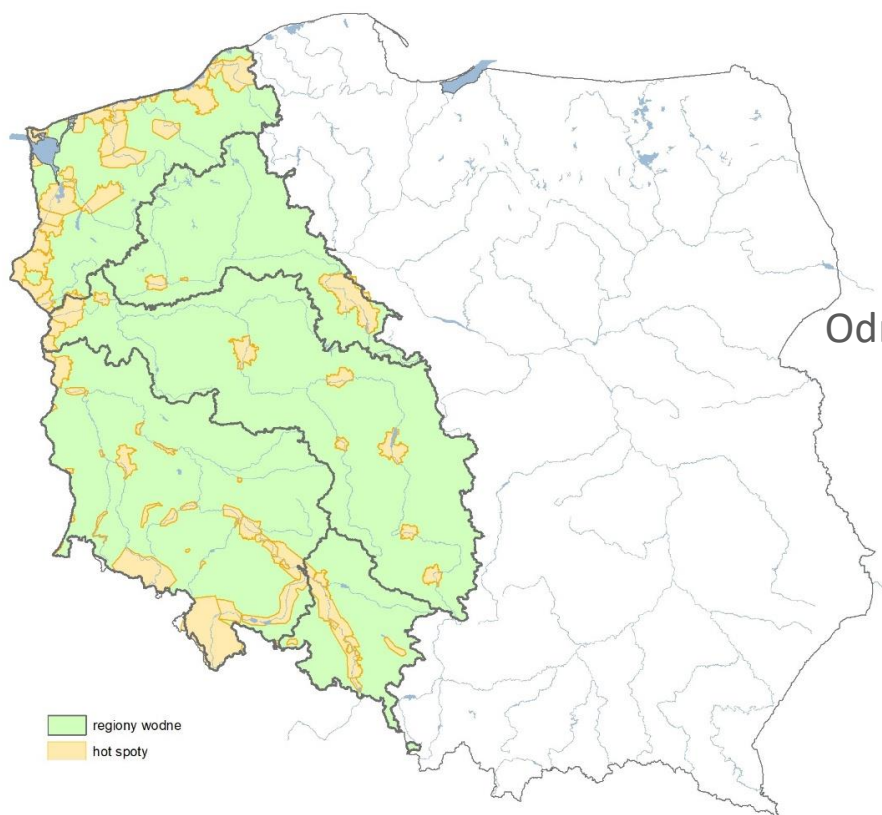
2. Protection or increase of
catchment retention on
agricultural land

3. Protecting or increasing
catchment retention on
urbanised land

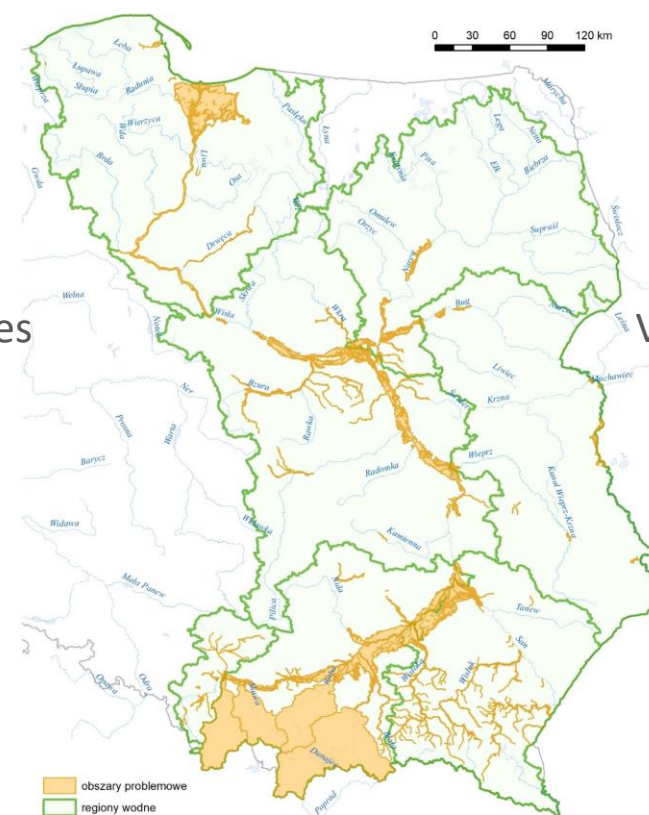
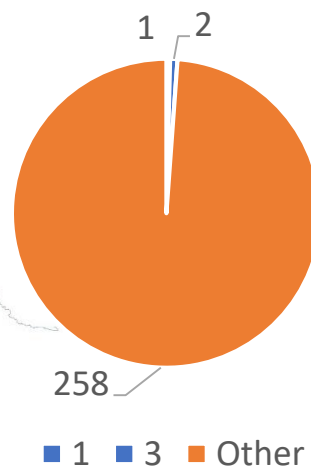
Source: <https://legislacja.gov.pl/projekt/12360400/katalog/12884408#12884408>
<https://legislacja.rcl.gov.pl/projekt/12360254>

THE SCALE OF APPLICATION OF CLOSE-TO-NATURE MEASURES IN FRMP IN POLAND - RESULTS OF ANALYSES OF FIRST REVISION FRMP PROJECTS

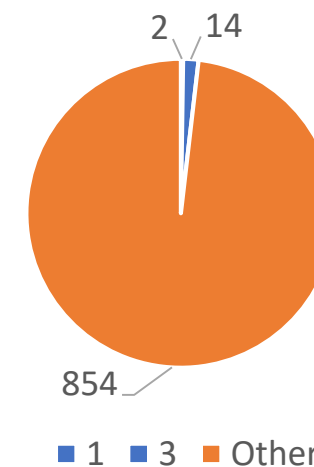
Problem areas in projects of first revision of FRMP for main river basin districts



Odra - number of measures



Vistula - number of measures



Source:

Odra: <https://legislacja.gov.pl/projekt/12360400/katalog/12884408#12884408>

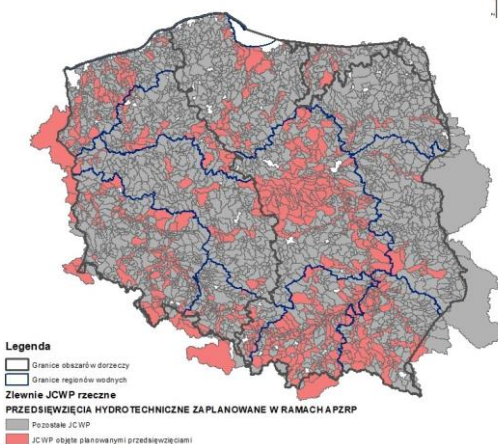
Visula: <https://legislacja.rcl.gov.pl/projekt/12360254>

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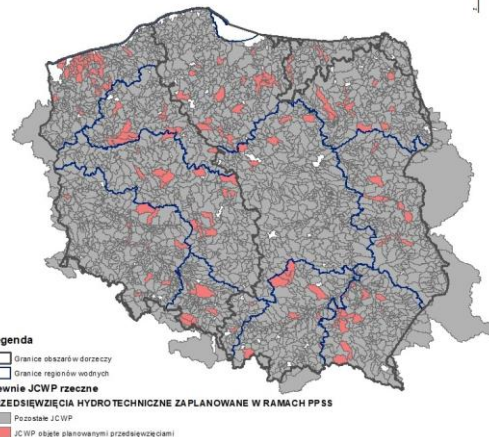
Why are NBS measures unpopular in Poland?

Scale of planned investments and/or other hydrotechnical projects:

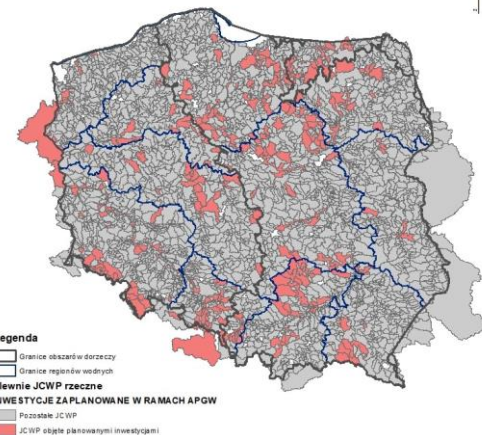
PROJECTS OF THE FIRST REVISIONS OF FRMP



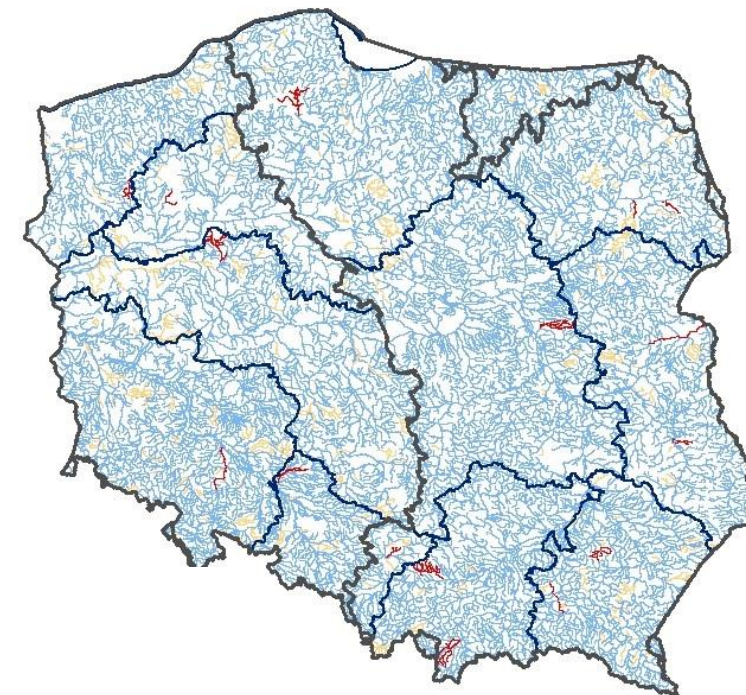
PROJECTS OF THE SECOND REVISIONS OF RBMPs



DROUGHT MANAGEMENT PLAN



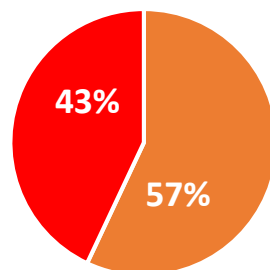
THE NATIONAL PROGRAMME FOR SURFACES' WATER RESTORATION (NPSWR)



— Areas Requiring Restoration
— Priority Areas

river water bodies

Assessment of the degree of implementation of the NPSWR by the 2nd RBMPs

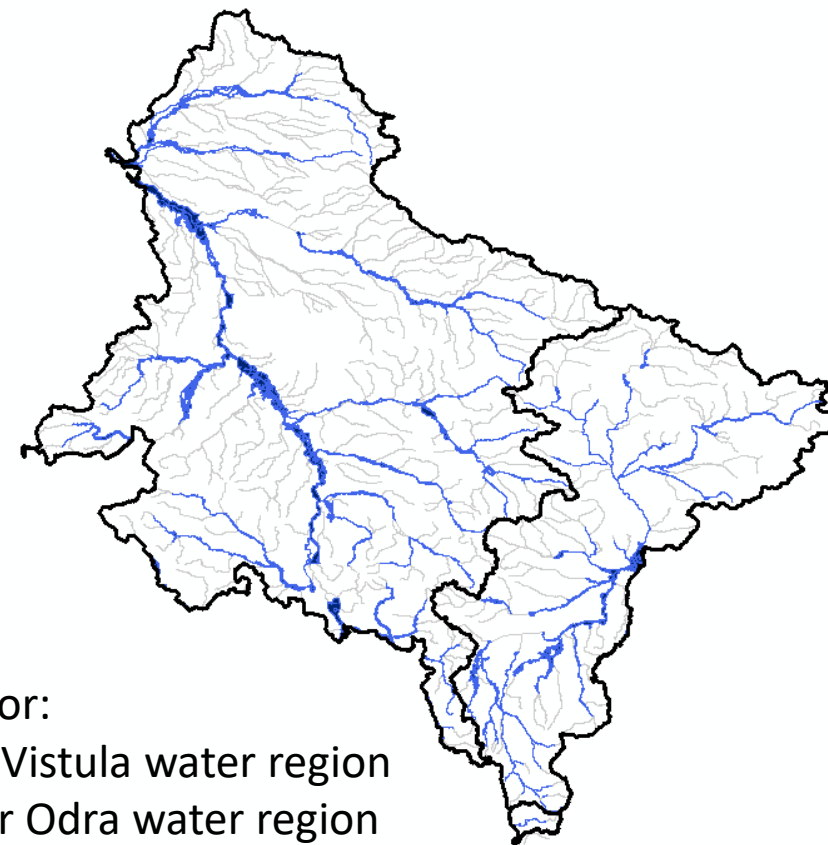


- partial implementation of the measures identified in the NPSWR
- lack of implementation of NPSWR statements

POTENTIAL FOR THE IMPLEMENTATION OF RESTORATION MEASURES TO REDUCE FLOOD RISK ON THE EXAMPLE OF THE UPPER ODER AND VISTULA RIVER BASINS IN POLAND

How information from flood hazard maps (FHM) can be used to plan measures?

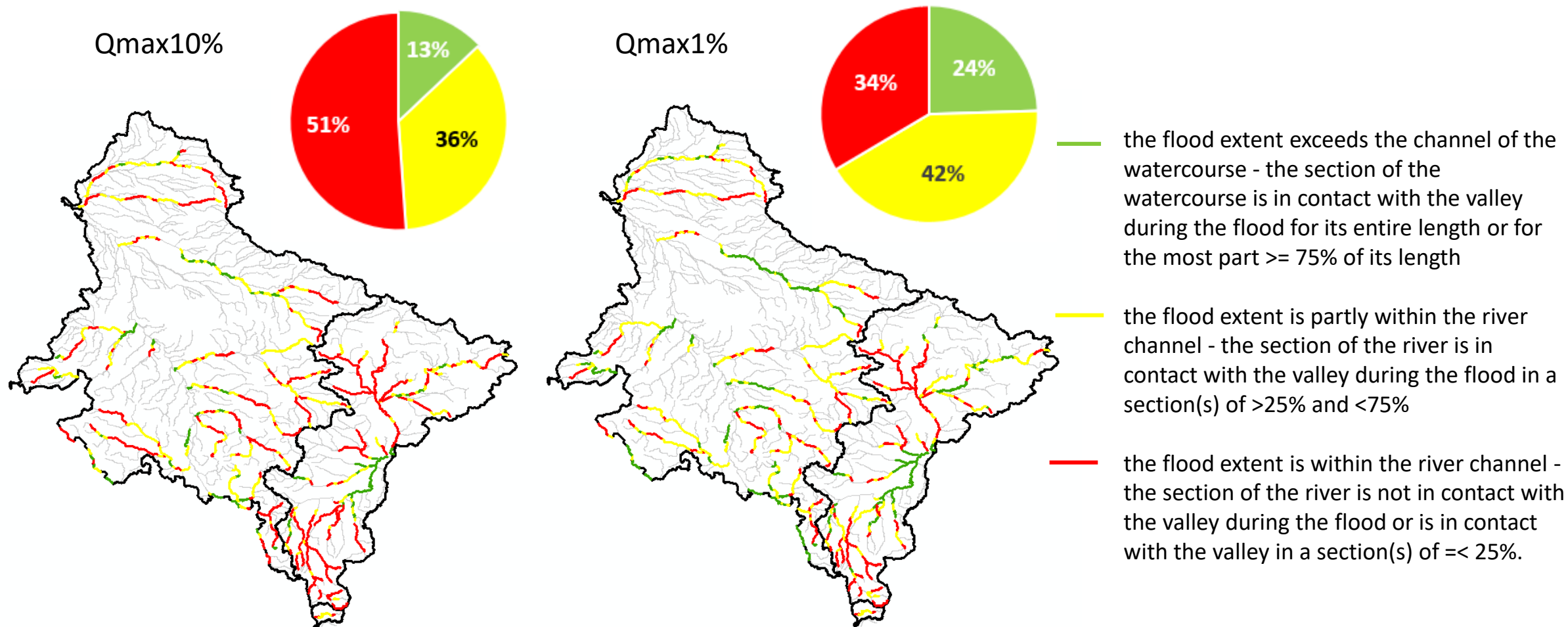
Rivers or river sections for which MZPs and MRPs were drawn up in the first and second planning cycles



Flood Hazard Maps for:
29 rivers in the Little Vistula water region
28 rivers in the Upper Odra water region

POTENTIAL FOR THE IMPLEMENTATION OF RESTORATION MEASURES TO REDUCE FLOOD RISK ON THE EXAMPLE OF THE UPPER ODER AND VISTULA RIVER BASINS IN POLAND

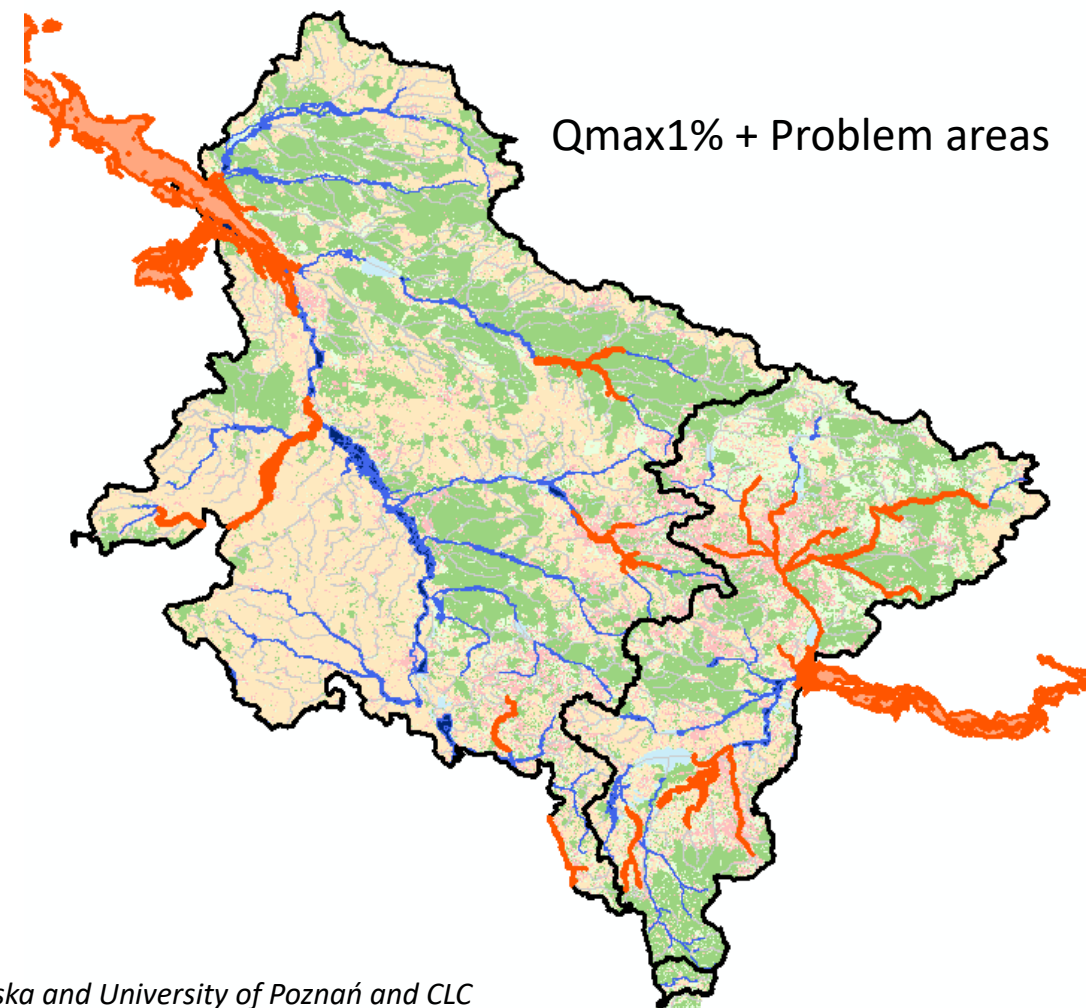
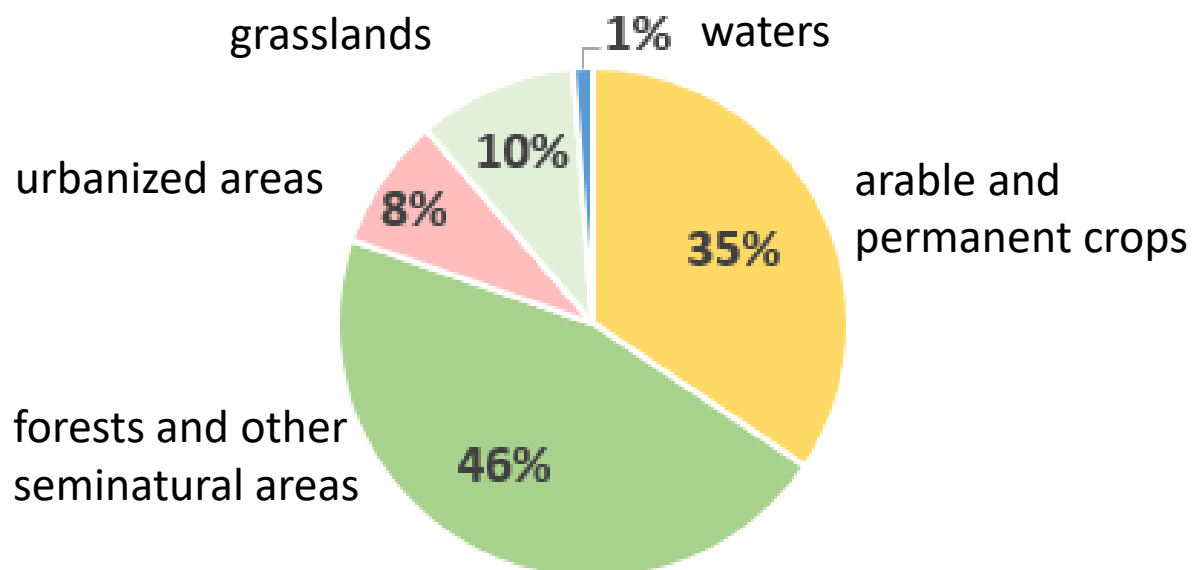
Scale of opportunities for NBS measures - assessment for river sections - contact with the river valley



Source: own elaboration based on data from Polish Water Management Authority and WWF Polska and University of Poznań

POTENTIAL FOR THE IMPLEMENTATION OF RESTORATION MEASURES TO REDUCE FLOOD RISK ON THE EXAMPLE OF THE UPPER ODER AND VISTULA RIVER BASINS IN POLAND

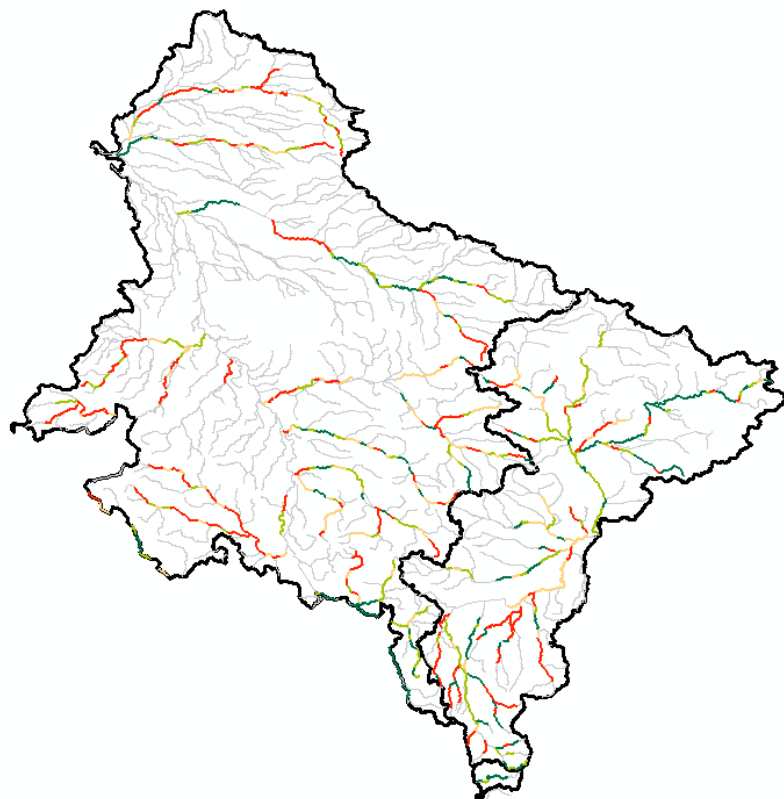
How information from flood hazard maps (FHM) can be used to plan measures?



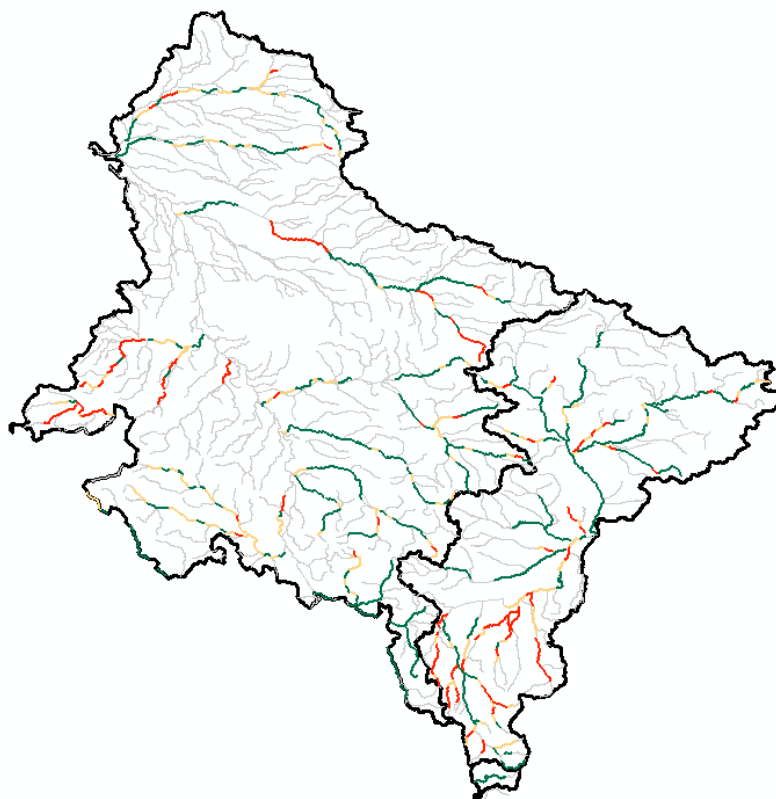
POTENTIAL FOR THE IMPLEMENTATION OF RESTORATION MEASURES TO REDUCE FLOOD RISK ON THE EXAMPLE OF THE UPPER ODER AND VISTULA RIVER BASINS IN POLAND

Scale of opportunities for NBS measures - assessment of the management class of a watercourse section based on the degree of naturalness

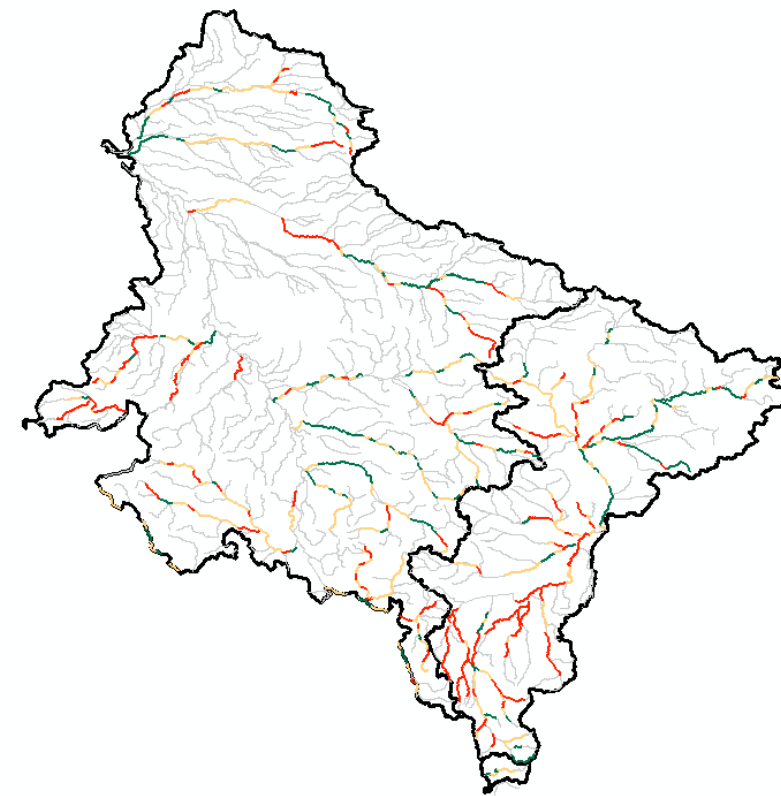
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POTENTIAL FOR THE IMPLEMENTATION OF RESTORATION MEASURES TO REDUCE FLOOD RISK ON THE EXAMPLE OF THE UPPER ODER AND VISTULA RIVER BASINS IN POLAND

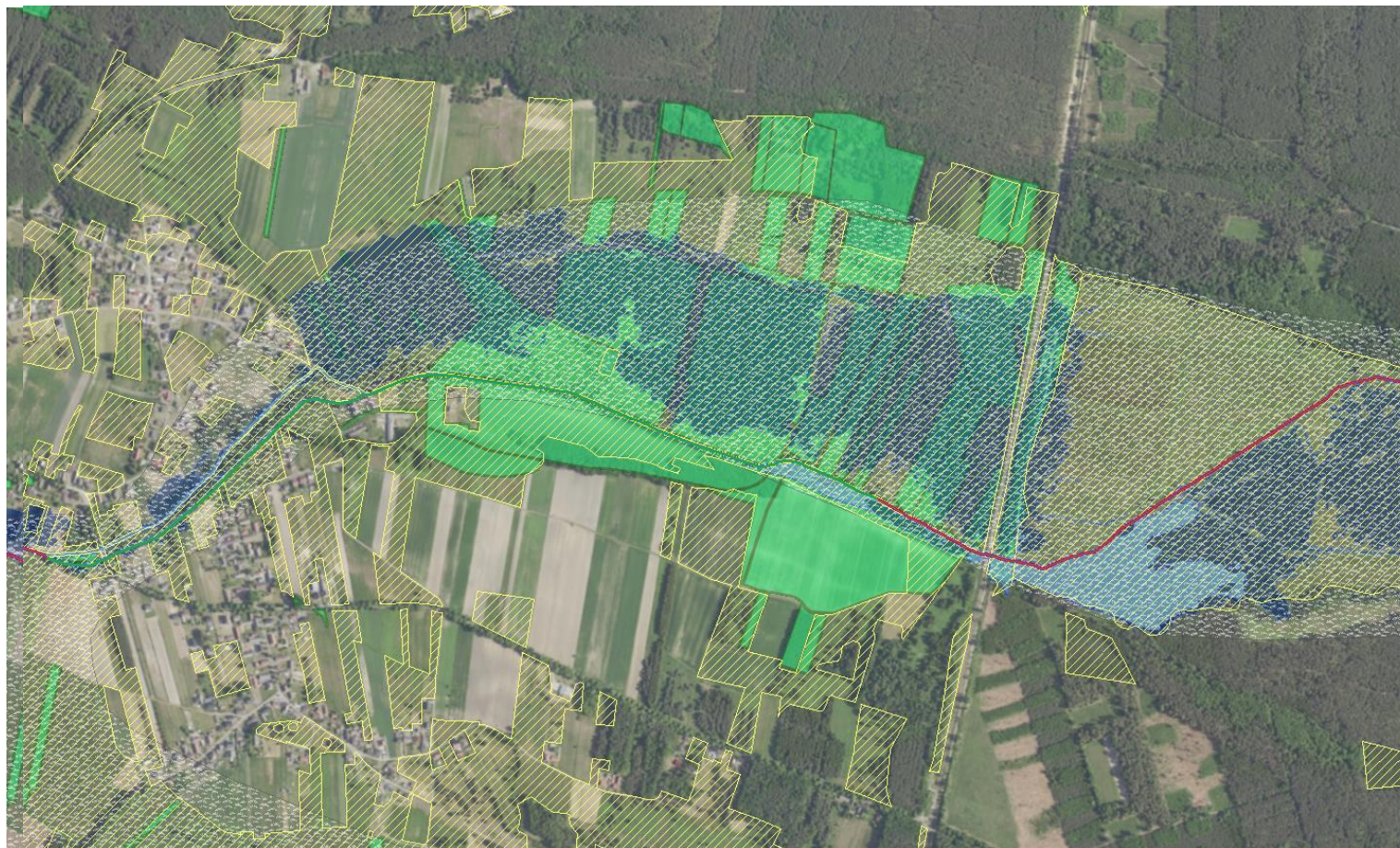
Examples of site for restoration measures (BEO & NBS)

Analysis of the extent of the $Q_{max10\%}$ (blue area) and $Q_{max1\%}$ (dark blue area) flood hazard areas

Land ownership analysis - state-owned agricultural land (green areas)

Peatlands (white grey area)

Permanent grassland (yellow grey area)



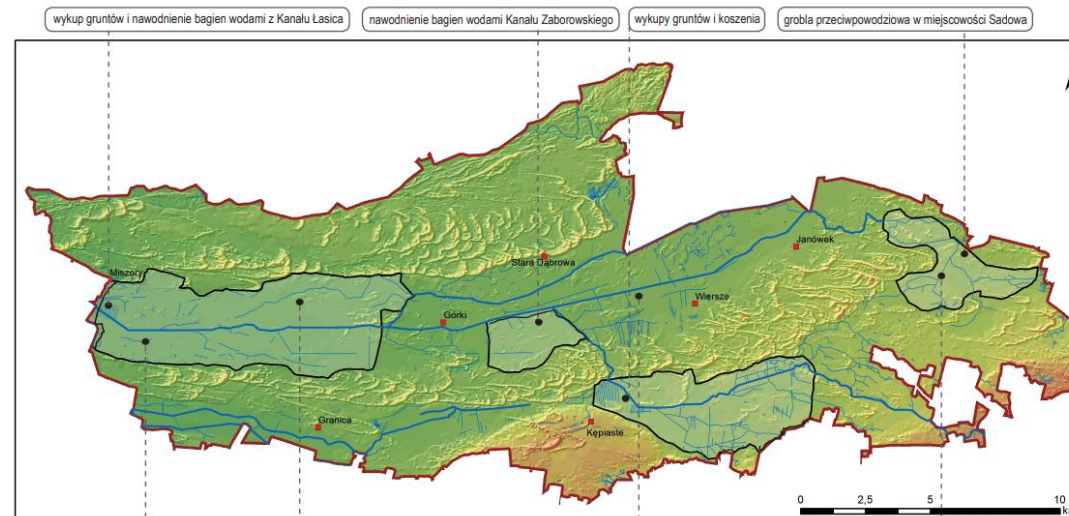
SOCIAL ACCEPTABILITY OF MEASURES FAVOURING NATURAL RETENTION ON THE EXAMPLE OF THE EXPERIENCE FROM THE KAMPINOS NATIONAL PARK

Patience pays off - gradually building public trust and implementing NBS in Kampinos Wetlands

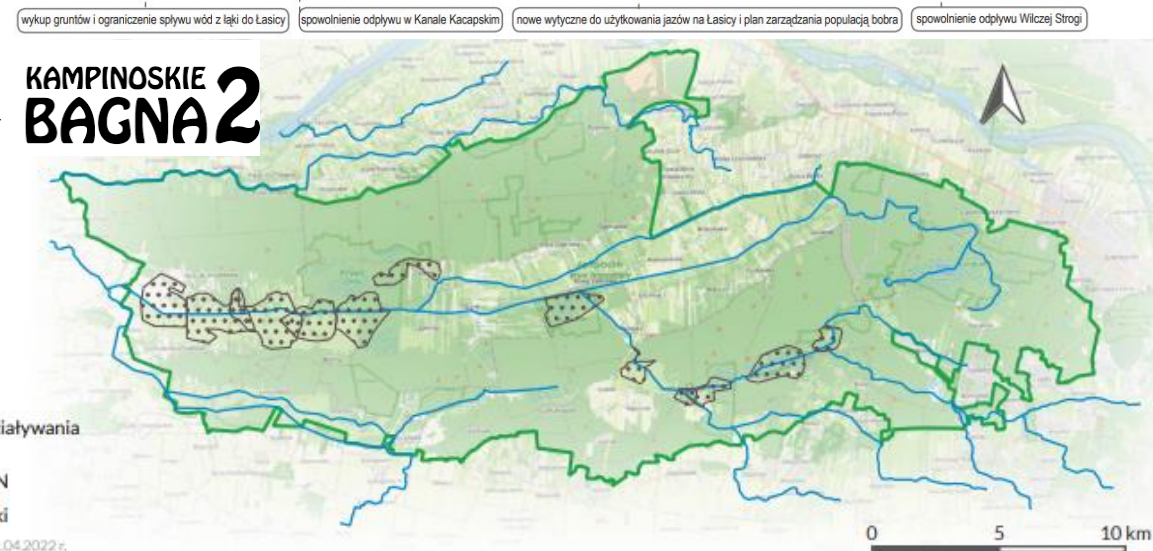
Protection and restoration of wetlands in “Puszcza Kampinowska” Natura 2000 site



Source: <https://www.kampinoskiebagna.pl/>



Source: <https://www.kampinoskiebagna.pl/wp-content/uploads/2022/05/Ulotka.pdf>



Source: https://www.kampinoskiebagna.pl/wp-content/uploads/2022/05/ulotka-KB2_PL.pdf

Project partners:

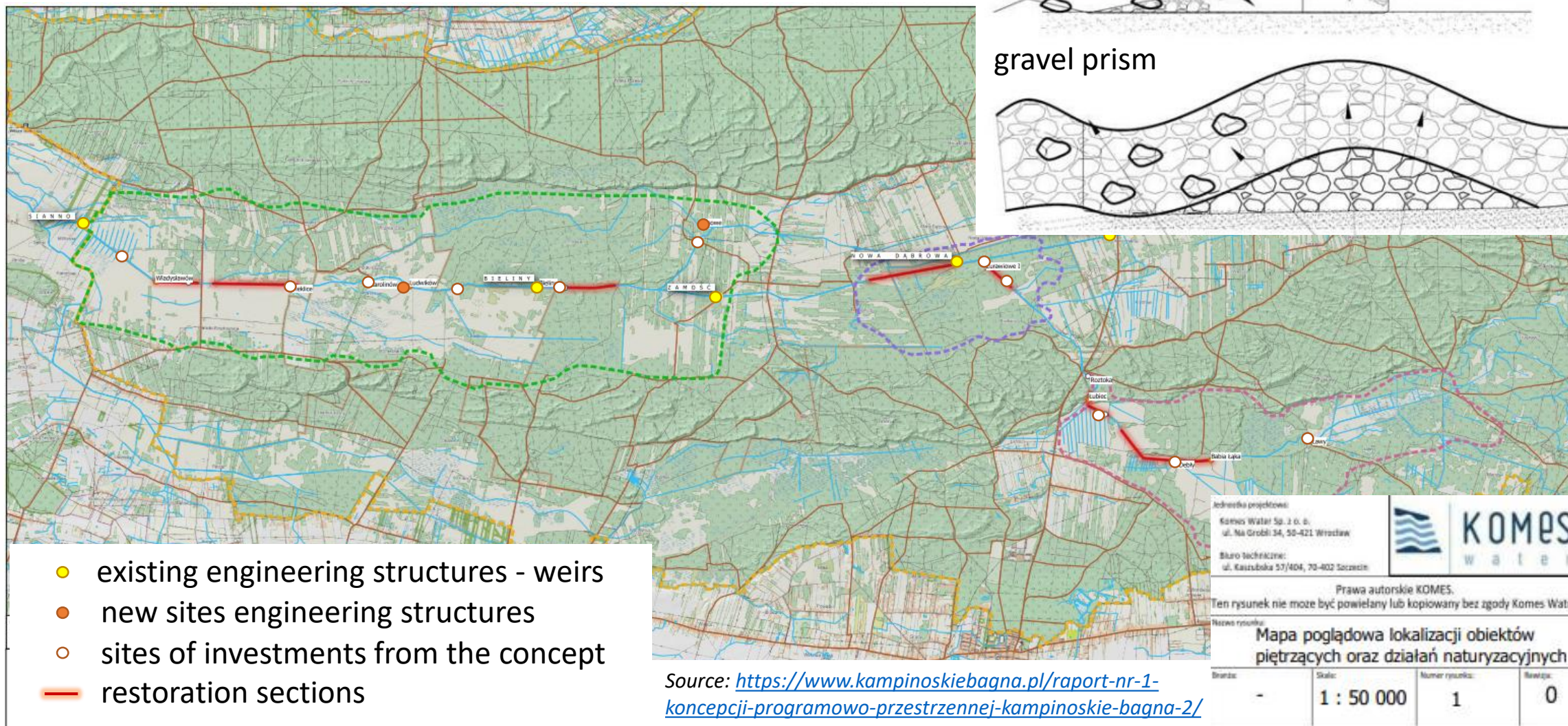


Project sponsors:



SOCIAL ACCEPTABILITY OF MEASURES FAVOURING NATURAL RETENTION ON THE EXAMPLE OF THE EXPERIENCE FROM THE KAMPINOS NATIONAL PARK

Measures in Kampinos WetLIFE (2020 – 2025)

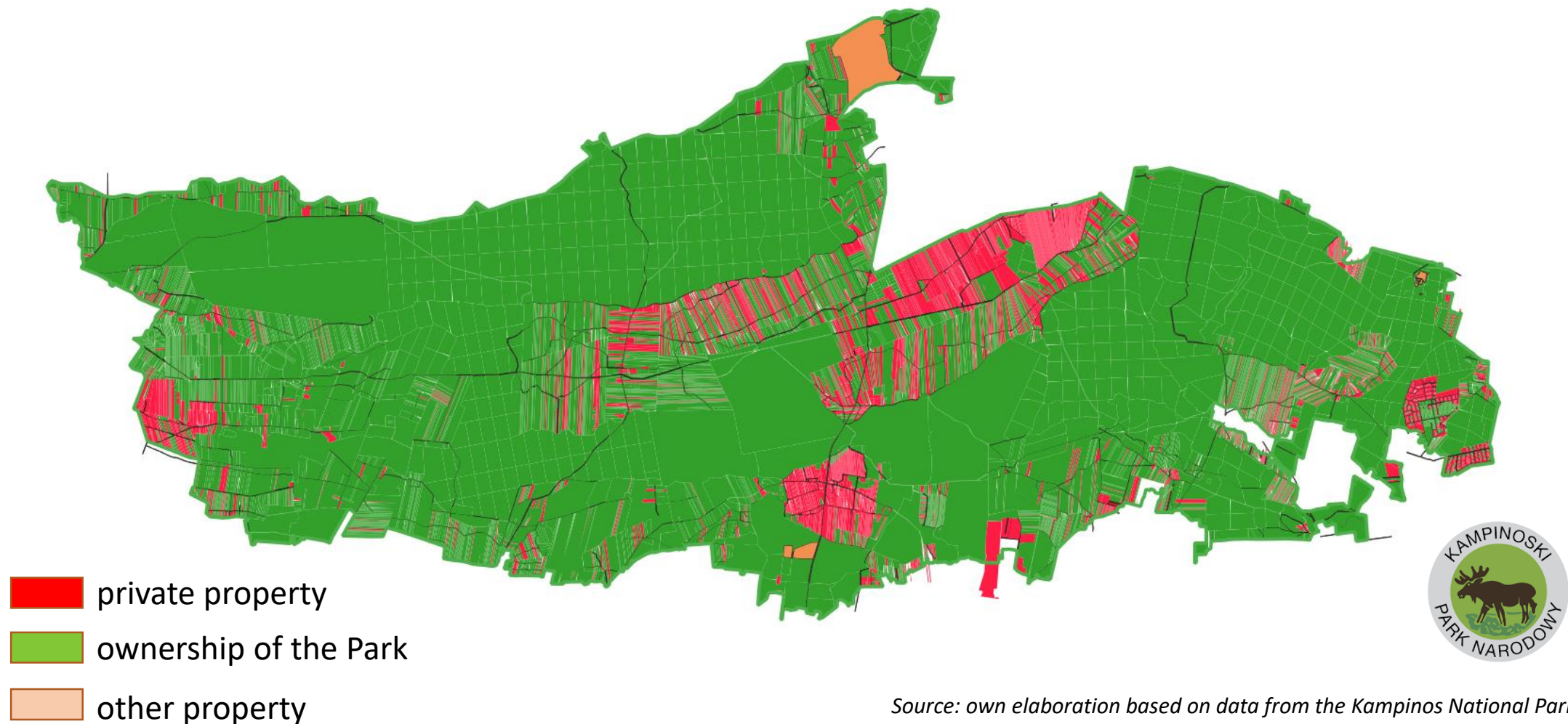


SOCIAL ACCEPTABILITY OF MEASURES FAVOURING NATURAL RETENTION ON THE EXAMPLE OF THE EXPERIENCE FROM THE KAMPINOS NATIONAL PARK



HEKTARY
DLA
NATURY

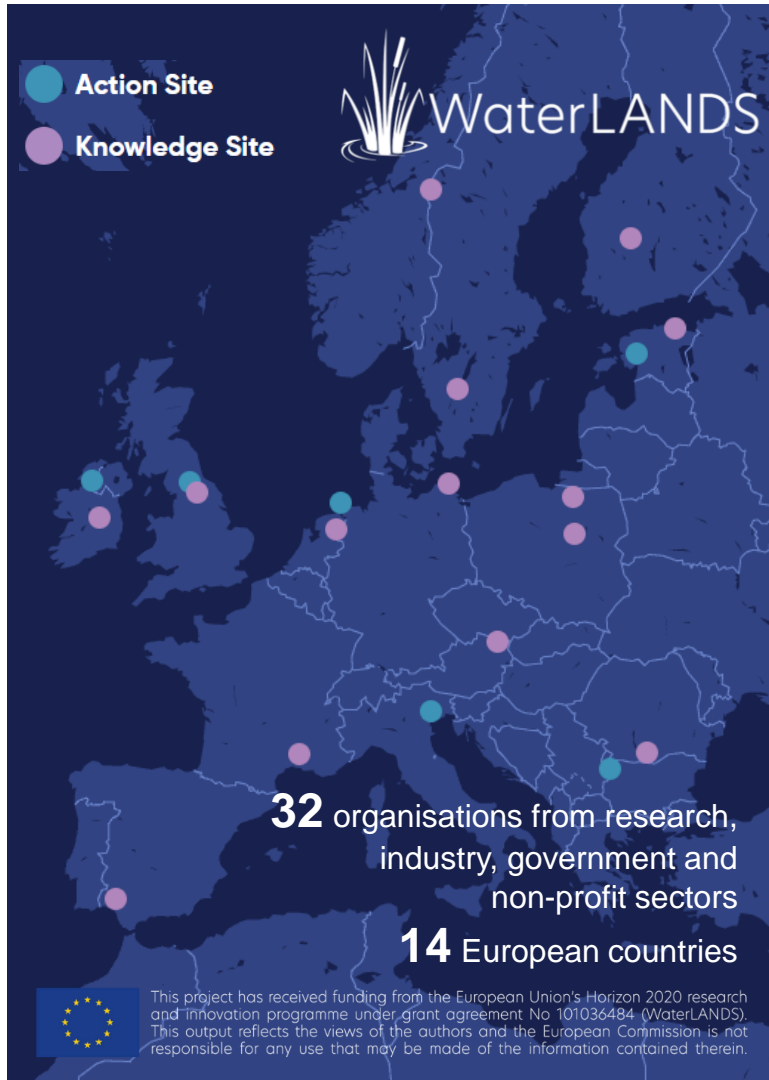
Measures in Kampinos - purchase of private land as a basis for implementing rewetting measures



Source: own elaboration based on data from the Kampinos National Park

CHALLENGE - RESTORATION AND PROTECTION OF WETLAND SITES ACROSS EUROPE ACROSS LARGER AREAS

Objective of the WaterLANDS project - Water-based solutions for carbon storage, people and wilderness



Objective 1

Provide a demonstration of upscaling on a large scale

Objective 2

Identify barriers to restoration and integrated solutions for upscaling

Objective 3

Foster cross-sectoral and interdisciplinary collaboration to co-create restoration

Objective 4

Apply a community-led paradigm in the co-design of restoration

Objective 5

Ensure that relevant past experience informs future wetland restoration

Objective 6

Provide tailored financial solutions and resources for restoration

Objective 7

Incubate a restoration legacy, by showing the basis for upscaling

Polish partners:



"Previous attempts at wetland restoration have often been too localised or fragmented to make a significant difference to the re-establishment of ecosystems and species. We aim to co-create more effective restoration which captures ecological, social, governance and financial aspects, to connect habitats and communities across Europe, ensuring both thrive for many generations to come."

Source: www.waterlands.eu

Craig Bullock, Project Coordinator, University College Dublin

HOMEWORK

What could be the key to increasing the applicability of "Better Environmental Options" and "Nature-Based Solutions" in flood risk management?

Go to:

<https://miro.com/app/board/uXjVOn2OrGk=/>



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THANK YOU FOR YOUR ATTENTION

Ilona Biedroń

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