

part European environmental assessment



FRESHWATER

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Freshwater drivers and pressures in the pan-European Context

food, energy and nature policies integration

This is the mindset for water resources management, giving to water its vital binding role..This paradigm requires an improved water governance and evidence-based knowledge.

IWRM in the pan-European region is key

52 countries share transboundary rivers, lakes and aquifers. IWRM and governance is only achievable at a river basin scale.



Freshwater drivers and pressures in the pan-European Context

diffuse and point sources contamination, as well as **hydrological, and morphological stressors** remain in the pan-European region, hindering achievement of water policy objectives.

Emergent contaminants spur new health concerns requiring stringent limits and further monitoring of surface and groundwater.

On top of existing pressures, **climate change** became the key driving force on water management. Climate scenarios foresee that precipitation will have higher peak intensities, driving more extreme flood events. Land impermeabilization without green infrastructures will foster frequent flash floods. Severe water shortages will intensify along the Mediterranean zone.



Freshwater drivers and pressures in the pan-European Context

International cooperation

is much needed under flood events and drought periods. Water allocation mechanisms in transboundary waters are mostly seen from the supply side.

demand-side approaches or benefit-sharing can complement supply-focused solutions towards an IWRM.



Freshwater drivers and pressures in the European Context

Financing is a key aspect to support intervention strategies

“...while water is the central element and enabler for adaptation, the latter attracted only 5 percent of all climate finance and just over one fifth of all climate finance from developed countries for developing countries”.

The EU WFD was a starting point for stronger economic considerations and cost-recovery principles in the water sector. However, the significance for the attainment of sustainable and equitable water use and how cost recovery may contribute to these aims are still undetermined.

RENEWABLE FRESHWATER RESOURCES ARE ASYMMETRIC IN THE PAN-EUROPEAN REGION.

Freshwater abstracted as a proportion of renewable freshwater resources has a significant national variability:

- Cyprus ranks first as the country with the highest water scarcity, but Greece, Spain, Malta, Italy, Portugal in the EU region, as well as Armenia, Azerbaijan and Turkey are of concern;
- Except for the Scandinavian Peninsula and some small areas in central Europe, under less favorable climate change scenarios river runoff production is projected to reduce all over Europe, more so in the Mediterranean basin;
- Heat waves will increase forest fires, which in turn impact aquifer recharge and surface water quality. There are more recently recorded forest fires than ever before, including in northern pan-European countries, like Siberia and Sweden.

Key messages

#1

Water quantity

Freshwater Resources Quality and Quantity “Renewable freshwater resources” (UNECE)

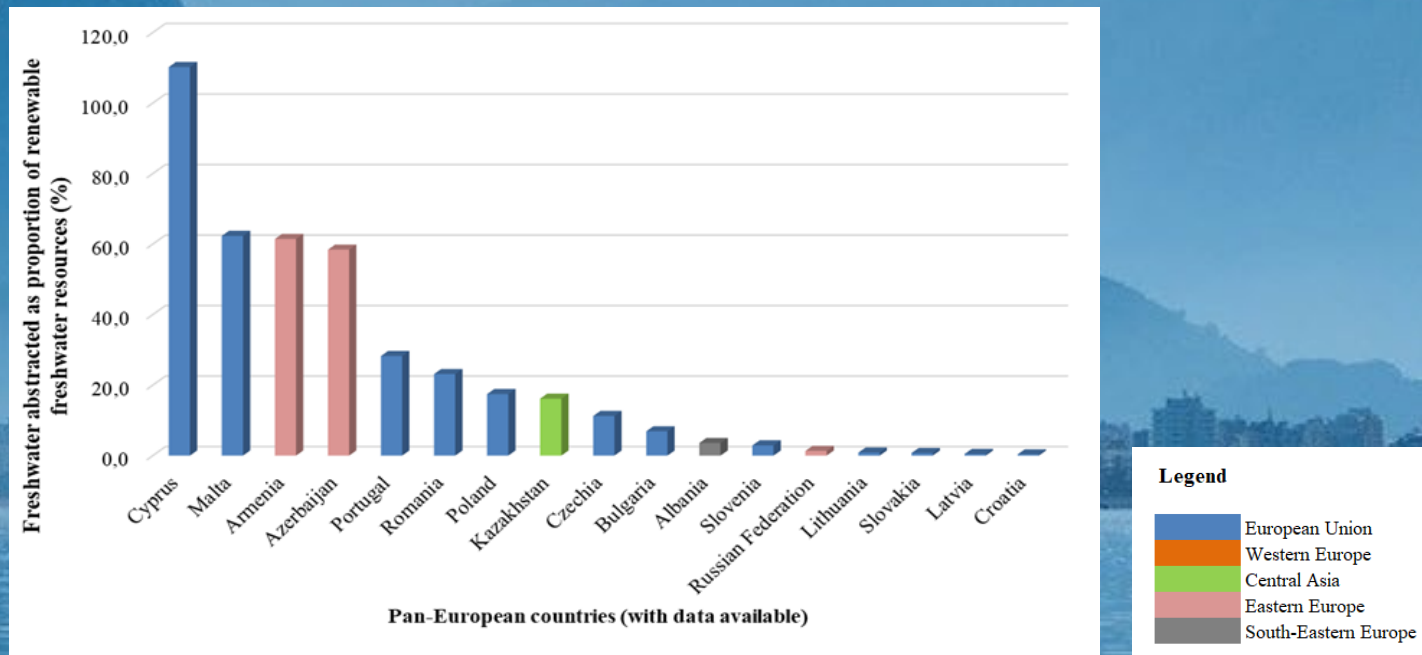
The purpose of this indicator is to provide a measure of the state of renewable freshwater resources in a country and of its change over time.

There is a significant national variability, with the Russian Federation ranking first as the country with the highest value of renewable freshwater resources, while Malta is the country with the lowest value. Territorial extension plays a major role in the results.

Freshwater Resources Quality and Quantity

“Freshwater abstracted as proportion of renewable freshwater resources”

This indicator provides, in relation to total resources available for abstraction, a measure of the pressure on the environment in terms of the abstraction of freshwater resources.



Freshwater abstracted as proportion of renewable freshwater resources (%) in 2017

FRESHWATER AND ECOSYSTEMS BIODIVERSITY PROBLEMS ARE STILL QUITE RELEVANT IN EUROPEAN REGIONS

- 76 per cent of the countries **in the pan-European** regions presented more than 60 per cent of water bodies at “**good water quality**” level in 2020;
- In the EU zone just 40 per cent of surface water bodies achieved a “good ecological status” and 38 per cent were in “good chemical status” in 2015;
- **Hydro-morphological impacts** remain an environmental challenge, as do extreme weather events, namely floods, triggering potential water contamination. **Mining activities** are an example in several pan-European countries such as Kazakhstan, Tajikistan and Romania;
- **Ecosystems biodiversity Impacts have potential cross-border effects**

Key messages

#2

Anthropogenic pressures

#3

Ecosystems quality

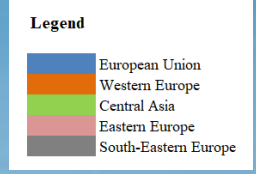
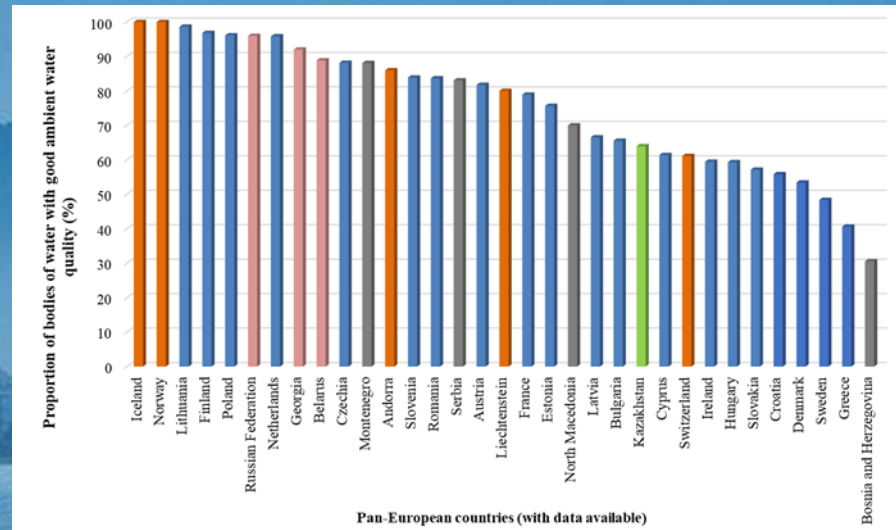
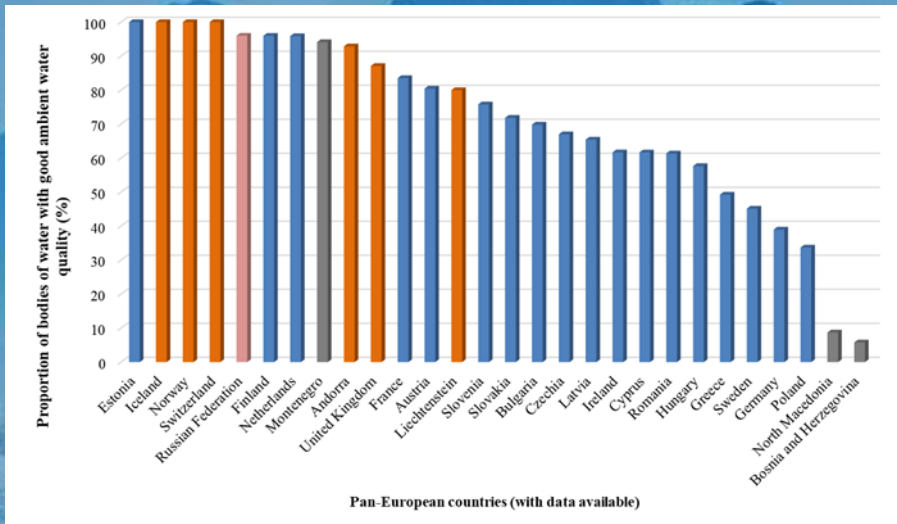
Freshwater Resources Quality and Quantity

“Proportion of bodies of water with good ambient water indicator (SDG 6.3.2)”

This indicator aims to improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally, by 2030.

2017

2020



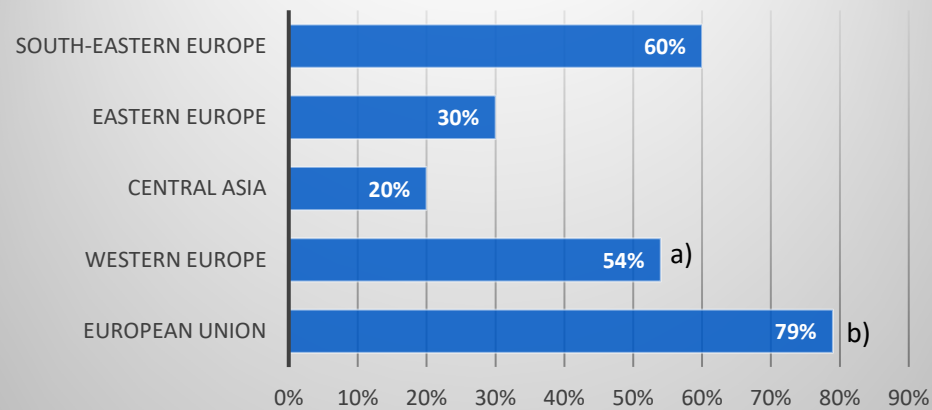
Proportion of bodies of water with good ambient water quality (%)

Freshwater Resources Quality and Quantity

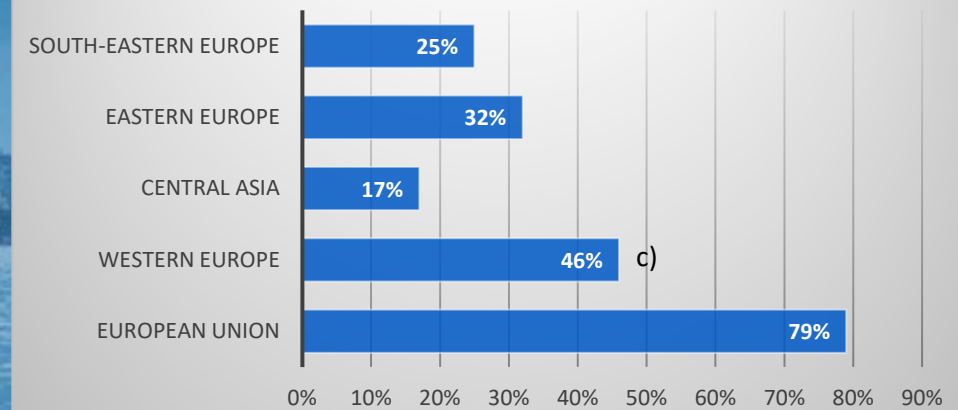
“Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type (indicator 15.1.2)”

This is an indicator that intends to ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements, by 2020.

Average proportion of freshwater KBAs covered by protected areas (in 2017)



Average proportion of terrestrial KBAs covered by protected areas (in 2017)



- a) For this sub-region there is no available information for Andorra, Liechtenstein, Monaco and San Marino
 b) There is no available information for Malta
 c) There is no available information for Monaco and San Marino

DRINKING WATER SERVICES

- **Safely managed drinking water services in the pan-European region is higher than 70 per cent at national level:**
 - EU sub-regions and Western Europe are those that present the best results, 97 and 98 per cent respectively;
 - Central Asia is the sub-region that presents a lower average value, 73 per cent.
- **Access to basic and safely managed water services** increased globally by 10 per cent during 2000-2015, but in the pan-European region not more than 4 per cent in the same period;
- **Emerging contaminants** should be increasingly monitored in the pan-European region.

Key messages

#4

**Economic
sustainability**

SANITATION SERVICES AND WASTEWATER COLLECTION AND TREATMENT

- 38 per cent of the population (344 million people) in the pan-European region do not have access to safely managed sanitation services;
- EU and Western Europe present more than 70% of coverage while Eastern Europe and South-Eastern Europe have considerably lower values;
- The EU estimated that it will be necessary to invest about € 25 billion annually to rehabilitate and construct new sewers and wastewater treatment plants;
- Non-conventional water sources should be expanded:
 - Wastewater recycling or grey water recycling;
 - Rain and atmospheric water harvesting;
 - Desalination of brackish waters.

Key messages

#4

**Economic
sustainability**

Water Services

“Proportion of population using safely managed drinking water indicators” (SDG Indicator 6.1.1) and “Proportion of population using safely managed sanitation services” (SDG Indicator 6.2.1)

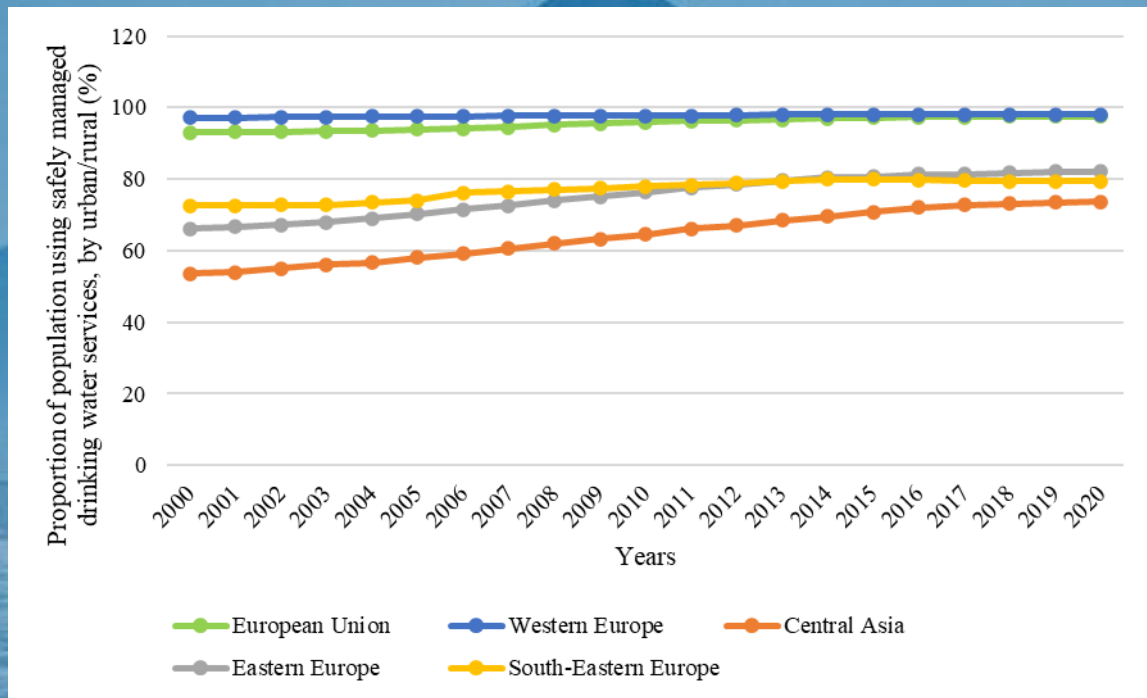
These SDGs indicators were defined for the purpose to guarantee the availability and sustainable management of water and sanitation for all (Goal 6):

SDG indicator 6.1.1 - contribute to achieve universal and equitable access to safe and affordable drinking water for all, by 2030;

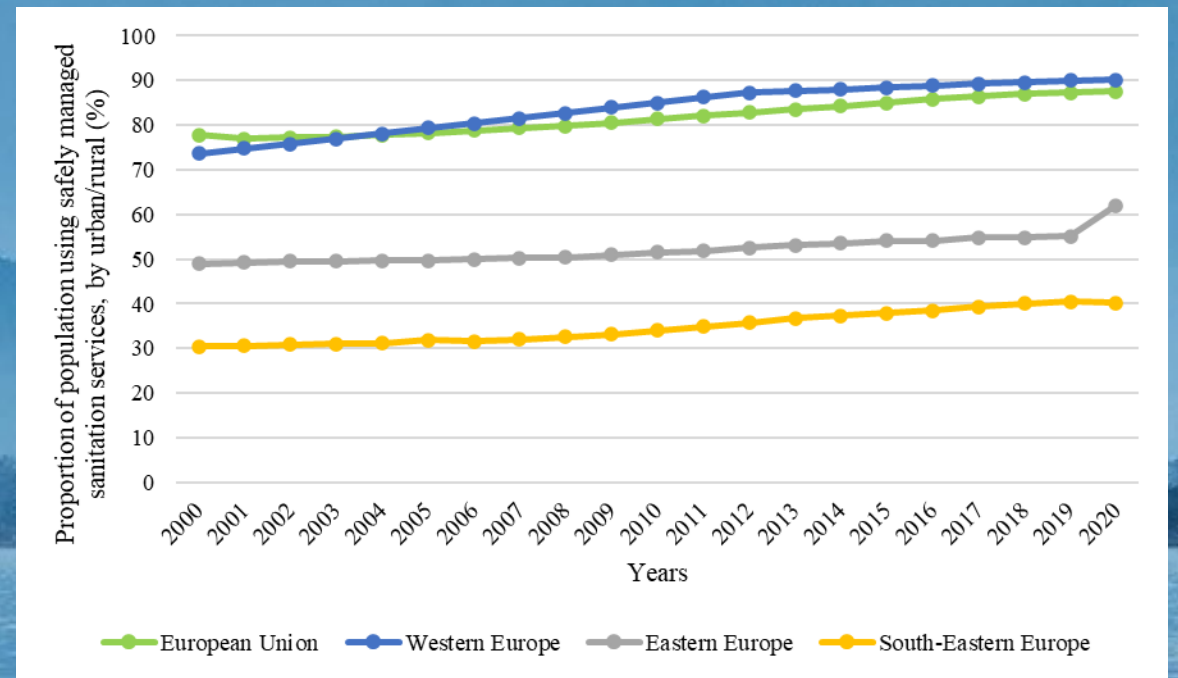
SDG indicator 6.2.1 - contribute to achieve access to adequate and equitable sanitation and hygiene for all, by 2030.

Water Services

“Proportion of population using safely managed drinking water services” (Indicator 6.1.1) and “Proportion of population using safely managed sanitation services” (Indicator 6.2.1)



Evolution of the SDG 6.1.1 indicator throughout the time (2000 to 2020)



Evolution of the SDG 6.2.1 indicator throughout the time (2000 to 2020)

Water Services

“Population connected to wastewater treatment” (UNECE indicator)

The indicator refers to the percentage of the resident population whose wastewater is treated at wastewater treatment plants.

- France, Latvia, Malta, Netherlands and Monaco rank first as the countries with the highest proportion of population connected to wastewater treatment, above 90%.
- Most countries with available information are above 70%.
- Azerbaijan and Albania are the countries with the lowest values, 20 per cent and 17 per cent, respectively, data from 2017.

CLIMATE CRISIS

- **Good water governance** is key to managing the demand and offer:
 - Water governance means a participatory and transparent approach, especially when it comes to trade-offs between different sectors or between countries - only 20 countries in the pan-European region have their shared waters covered by operational arrangements and just 19 of these countries are Parties to the Water Convention;
 - Transboundary watershed co-management in the Pan-European region is far from implemented.

Key messages

#5

**Water resources
management**

#6

Governance

#7

**Transboundary
management**

Water Governance

“Degree of integrated water resources management (Indicator) 6 (SDG)

The indicator refers to the percentage of the resident population whose wastewater is treated at wastewater treatment plants.

- SDG Target 6.5 calls for the implementation of integrated water resources management at all levels, by 2030.
- SDG indicator 6.5.1 score provides a simple and comprehensible way of measuring progress towards this target, with ‘0’ interpreted as no implementation of IWRM, and ‘100’ interpreted as IWRM being fully implemented.
- In 2017, the degree of IWRM in the pan-European region was 66 %.
- The European Union is the sub-region where there is a higher degree of IWRM (77%).
- The sub-region that ranks second in terms of the degree of IWRM is Western Europe (68%), followed by Eastern Europe (46 %) and South-Eastern Europe (43%).
- Data provided by each country included in the pan-European region, ranks France as the country with the highest degree of IWRM (100%), while North Macedonia is the country with the lowest degree of IWRM (22%).

Hydrologic Risks

“Proportion of land that is degraded over total land area” (SDG 15.3.1)

The indicator refers to the percentage of the resident population whose wastewater is treated at wastewater treatment plants.

- This indicator measures the proportion or percentage of land that is degraded over total land area. Land degradation results in losses to GDP, local food insecurity, climate change and biodiversity and ecosystem loss.
- In 2015, the percentage of land degraded in the pan-European region was 18 %.
- Central Asia is the sub-region where there is a higher percentage of degraded land (42%).
- The sub-region that ranks second in terms of percentage of land degradation is Eastern Europe (12 %), followed by the European Union (10%) and South-Eastern Europe (7%).
- Data provided by each country included in the pan-European region, shows that Tajikistan is the country with the highest proportion of degraded soil (97%), while Finland and Belarus are the countries with the lowest degradation (1%).

DATA COLLECTION AND INFORMATION PROCESSING

- **Water management means data and updated information**, transparency and dialogue between governments and stakeholders;
- In the pan-European region **there is a positive trend regarding information and communication technologies (ICT)**, connecting science and policy;
- **On a country basis there are heterogeneous territorial realities** that may hide local and regional water weaknesses.

Key messages

#8

**Data collection
and information**

Key messages and recommendations

#1

Water quantity has an asymmetric distribution in the pan-European region.

Climate change is delivering additional challenges, all future climate scenarios indicate that extreme hydrological events will be longer, more frequent, and intense.

#2

Anthropogenic pressures amplify water asymmetry by constraining freshwater quality and aquatic biodiversity:

- Efforts to control diffuse pollution and urban plus industrial wastewater discharges remain significant;
- Persistent organic contaminants are under increasing surveillance.

#3

Whenever freshwaters and aquatic **ecosystems quality** are at risk, the best available technology should be applied:

- Nature-based solutions can be used in water retention basins or in riparian zones restoration;
- New methods for environmental flows regimes are available;
- Non-conventional water sources use.

#4

Economic sustainability in water resources management should be pursued.

A clear legal framework is vital for success.

Key messages and recommendations

#5

Water resources management is more efficient at the basin level.

This integrated approach is even more critical in international rivers, lakes or aquifers where floods or droughts are likely to occur.

#6

Fragmented **governance practices** are unlikely to succeed in the long term. Integrated water resources management should be pursued.

The nexus water-food-energy-ecosystems should strengthen an anticipatory policy approach towards combining short term projects with a long-term vision for the region.

#7

Water resources **transboundary management** remain a challenge.

Cooperation and participatory processes are not in-depth implemented as they could be in the pan-European region.

#8

Investment in **data collection and information** processing is mandatory.

A continuous improvement of monitoring and communication technologies is a top priority towards a *water information system* for the pan-European region.

Nature based solutions: from watershed protection to flood control

#1 MANAGING AND RESTORING WATERSHEDS

Land use within catchment areas has a major influence on determining whether watersheds are healthy and can deliver environmental services. An average of EUR 5.5 billion per year was committed to restoring and conserving watersheds in Europe over the 2014-2020 period and an estimated 99 per cent of funding for these investments came from public sources.

Some water service providers and cities have engaged with upstream parties in their source water catchments to support change in agriculture and forestry practices or to build artificial wetlands. These investments have remained limited, due to regulatory barriers, high risk perception or a general lack of appreciation for what such investments can achieve. Nature-based solutions (NbS) can have a broad potential, with 63 cities in the pan-European region indicating high feasibility for at least one NbS.

Nature based solutions: from watershed protection to flood control

#2 CLIMATE CHANGE AND FLOOD RISKS

The Glinščica river basin in Slovenia is within the borders of the city of Ljubljana. The expansion of Ljubljana in the lowlands of the Glinščica river basin has increased the amount of impervious surface which, coupled with a rise in groundwater level and more torrential rain, has resulted in periodic flooding in parts of the city. To develop a NbS that would be effective at lowering the flood risk whilst addressing other societal challenges, a participatory design process was instigated to gather the risk perception of individuals and institutions from the area. The stakeholders were involved in co-designing and assessing NbS to deal with floods under different scenarios.

UKRAINIAN SMART AGRICULTURE

Increasing Productivity and Resilience through Climate Smart Technologies

Ukrainian farmers are set to benefit from a new project designed to boost climate-smart agriculture in the country. An advisory initiative of IFC, a member of the World Bank Group, will be implemented in partnership with the Austrian Federal Ministry of Finance.

IFC's Country Private Sector Diagnostic estimates that with \$3 billion of investment in climate-smart agriculture technologies, Ukrainian agricultural producers of grains and oilseeds could increase annual revenues by \$11 billion. Investments can also help reduce significant greenhouse-gas emissions annually equivalent to 11 metric tons of carbon dioxide.

IFC will help develop a carbon accounting system to help agricultural producers monetize their greenhouse-gas reductions. A robust system, comprising metrics and climate-smart agriculture standards, will contribute to a conducive environment, promoting green bonds and niche securitization in Ukraine.



Thank you

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