

Partner 4 – Lodzkie Region

Conclusions from the paper “State of water resource and management in Lodzkie Region”

Łódzkie Region, like the entire country, is exposed to the negative effects of climate change. Floods and droughts are among the most serious threats. However, the impact of climate change is also reflected in the poor quality of surface waters.

In the period 2014-2019, poor water quality in the Łódzkie Region was diagnosed for 95.3 per cent of the 192 total surveyed Surface Water Bodies. The main source of surface water pollution is municipal and industrial wastewater from point sources, in addition to pollution from diffuse and area sources (rinsed by rainfall from urbanised and agricultural areas, coming from the population not using the collective sewerage system) and linear (of communication origin). The most significant environmental problem in the region is the eutrophication of surface waters. One significant source of water pollution, both surface and groundwater, is agricultural activity involving the use of organic and chemical fertilisers containing nitrates. Regarding groundwater, its condition in the Łódzkie Region is good.

Between 1971 and 2000, the average annual temperature in the region increased by 2 to 3 degrees Celsius, especially in the northern and western parts of the region. This trend is expected to continue. Climate scenarios for Poland show that the most common weather phenomena in the coming decade will be heat waves with a tendency to increase their duration. The number of dry days per year is also forecast to increase by about 16-19 days.

The region experiences snowmelt and precipitation floods. The problem is the low retention capacity of most sub-catchments, with the consequence that water drains relatively quickly into the largest rivers, causing flood levels.

The last serious flood hit the Łódzkie Region in 2010, when the region's three largest rivers flooded: Warta, Bzura and Pilica. As a result of the floods, two people died and material damage was estimated at around PLN 70 million (€15.5 million). More than 70% of the municipalities in the voivodeship are at risk of flooding.

Fortunately for the region's residents, the recent catastrophe caused by the September 2024 Genoan Low did not affect the Łódzkie Region. Nevertheless, its tragic consequences



illustrated what failure to adapt legal norms and regulations to climate change can lead to. This issue was addressed in the 'Communication of the Problem Committee of the Polish Academy of Sciences on the Climate Crisis on the Consideration of Climate Challenges in Post-Flood Action in September 2024' of 8 October 2024, which states:

'In an era of increasing global warming, extreme events related to water cycle disruptions (heavy rainfall, floods and droughts) are becoming more frequent and severe than in the past, impacting residents and the economy. The catastrophic flooding that hit southern Poland in September 2024 was the result of extreme precipitation events. The probability of this and similar phenomena, as a result of climate change, and with intensity increasing with rising temperatures, has doubled. If we do not take immediate action to reduce anthropogenic CO2 emissions, the frequency of similar events will - as temperatures rise - increase rapidly. The magnitude of losses due to increasingly numerous and complex threats will also increase. Inadequate adaptation to the higher frequency of more intense precipitation events, i.e. land-use management not taking into account blue-green infrastructure, water management not taking into account catchment management and changes in the water balance of catchments, landscape degradation and technical infrastructure not adapted to changing conditions, increases and will continue to increase the risk of high flood losses.

If, in recovering from catastrophic flooding, we do not look forward, but apply solutions of the past, forgetting the changing and growing threats, we will miss the opportunity to apply solutions that will mitigate them to the highest possible degree. A knowledge-based shift in thinking about the environment and nature is needed, not as an obstacle to development, but as an ally in effectively ensuring resilience and hydrological, food and health security. Therefore, climate challenges need to be addressed in both urgent flood recovery and strategic actions.

In particular, we call for:

1. In legal solutions - a rapid and effective revision and integration of law and practical action to integrate climate change adaptation into areas such as:
 - spatial planning - currently carried out in areas defined by administrative boundaries, does not take into account physical and natural processes beyond these boundaries;



- forest management - does not sufficiently take into account the protective functions of forests and forest ecosystem services, including the impact of forests on the water balance of catchments;
 - agricultural management - priority is needed to implement agricultural methods that restore soil and landscape structure and enhance ecosystem services for water management;
 - water management - it is necessary to take into account landscape and environmental retention and to integrate landscape management at the catchment scale with spatial planning;
 - introduction of flood and drought risk management plans;
 - effective implementation of environmental protection requirements;
 - the provision of a legal and financial framework for the restoration of ecosystem services in accordance with the Natural Resources Restoration Regulation.
2. in infrastructure solutions - seeking and exploiting synergies that can be achieved by applying technical and environmental solutions (nature-based solutions - NBS) simultaneously, by:
- combining NBS, including forest management, wetland restoration, spatial planning, good agricultural practices and natural and landscape retention, with hydrotechnical safeguards;
 - systemic introduction of blue-green infrastructure in cities and beyond;
 - reduction and/or withdrawal of development from floodplains so as to avoid flood losses;
 - changing the function, form, design, location or use of infrastructure so as to minimise the effects of flooding and ensure that effective emergency management and the necessary minimum of safety can be achieved under extreme events;
 - updating existing design guidelines for the construction of infrastructure (including hydraulic, sewerage, communication) taking into account the latest knowledge on long-term climate change projections and the increasing risk of losses due to the failure of hydrotechnical facilities and infrastructure during catastrophic flood episodes;



- amendment of existing legal acts by introducing provisions enabling faster and systemic adaptation of water and land management to climate change”

Many of the demands cited above (such as the promotion of projects in the NBS area, or updates to the requirements for hydrotechnical facilities), were also expressed by Gov4Water project stakeholders at the meeting on 19 September 2024 and also in the questionnaires on water resources and water management in the Łódzkie Region.

Rising temperatures as a result of climate change and associated droughts are leading to lower surface and groundwater levels. This in turn results in an increased proportion of pollutants in these waters. Lead to eutrophication of waters and other undesirable changes in their chemistry. In this context, mention must be made of the environmental disaster that occurred in 2022 on the River Oder, the direct cause of which was toxins released by the algae *Prymnesium parvum*. Although this event did not occur in the Łódzkie Region, it illustrates the threats posed by climate change and human activity to the entire country.

The natural habitat for *Prymnesium parvum* is salt water and not freshwater rivers, however, as a result of the ongoing pollution of the river with salts from mining sources over many years, an anomaly has been created that has resulted in the death of over 300 tonnes of fish.

In October 2023, a report was produced by the Supreme Chamber of Control dedicated to this disaster , which, in addition to explaining the causes of the tragedy, points out many imperfections in the water resources management system in Poland. Below are some of the conclusions reached by the panel of experts attached to the above-mentioned report:

- no operational monitoring of waters. Existing monitoring is limited to testing a few parameters and monitoring services intervene only on the basis of notifications received;
- the lack of online monitoring covering at least the basic parameters makes controls ineffective because they are based on reported incidents. A problem in this context is the dumping of waste into rivers at night or at weekends.
- Changes to water permits. The granting of further water permits should be based on how many permits are already in place and the potential for pollution. The body issuing water permits should reliably assess what impact further permits will have on the status



of surface water bodies. In addition, the amount and composition of wastewater discharged into the river during dry periods should be included in the permits, as at present, by law, rivers have the same water level and the same amount of wastewater can be discharged into them. There is also no central database that contains information on all the water permits that have been issued and thus allows an analysis of whether the safe threshold for the environment has been exceeded.

- More detailed and restrictive inspections. At present, the inspections of entrepreneurs only concern the parameters specified in the water permit, so if the production process shows that the plant discharges, for example, chlorides, copper and iron, but also mercury, which was not indicated in the declaration, is discharged, the inspections will not detect this. Related to the subject of inspections is also the issue of the amount of fines, which, in the opinion of experts, are too low and for some entrepreneurs it is more profitable to pay them than to invest in effective water treatment or an on-site sewage treatment plant.
- The problem is also too much fragmentation in the management of water resources, which makes it difficult to take effective action. The consequence, for example, is that ministries undertake separate activities and programmes to deal with floods, droughts, supervision and monitoring of water quality. These activities should be joint and complementary. Some experts also point out that in the structure of the Polish Waters (the main entity responsible for national water management) there are no units dealing with the issue of water resources quality.

Considering the findings of the Supreme Chamber of Control reports on water management in Poland, especially those in the publication on the Oder River disaster, it can be concluded that Poland currently lacks an integrated approach to water management, which is defined by the Technical Committee of the Global Water Partnership as ‘a process that promotes the coordinated development and management of water resources to maximise the resulting economic and social welfare in an equitable manner without compromising the sustainability of key ecosystems’.

This does not mean that the need for changes in water policy is not recognised in Poland. An example of efforts to transform the water governance model in Poland is the conference ‘Water



management - integrated resource management. The need for changes in water policy in Poland', which was organised in the Sejm on 22 July 2024. Participants at the conference included MPs, representatives of the Ecological Association EKO-UNIA, the Save the Rivers Coalition, the State Water Management Company Wody Polskie, the Polish Academy of Sciences, the WWF Poland Foundation and experts on water management and ecosystem protection issues.

Conference participants recognised the need to amend existing legislation governing water policy and to improve the existing water management structure. They also highlighted the need to increase the competence of water professionals.

The need for an integrated approach to water management is also recognised by research institutes and local governments, which are involved in projects aimed at multidimensional improvement of water quality. One example of such initiatives is the LIFE Pilica project, carried out by, among others, the European Regional Centre for Ecohydrology of the Polish Academy of Sciences and the Wody Polskie company. It is an integrated project, the main aim of which is to build capacity to implement restoration measures within the Pilica River catchment area. The assumed end result is an improvement in the quality and biodiversity of surface waters with a particular focus on the Sulejów Reservoir. The areas of action of the LIFE Pilica project are: water resources management, reduction of pressure from water and sewage management, adaptation of towns and cities to climate change, reduction of agricultural pressure, restoration of the patency of watercourses and restoration of oxbow lakes, capacity building to support implementation, monitoring of the impact of the project on the environment and the development of the region.

The project is being implemented in municipalities in the catchment area of the Pilica River, with the active engagement of the local authorities.

Another example of multi-stakeholder involvement in water issues is the initiative taken by the Polish Ministry of Agriculture and Rural Development to set up Local Water Partnerships in every district in the country. The idea behind these is to support cooperation and networking between local society and institutions and authorities on water management in rural areas, with a particular focus on agriculture.



One of the outcomes of the LWP (Local Water Partnership) is the creation of Rural Water Management Development Plans for 2022 - 2030 in each district. The plans include, among other things, diagnoses of the problems and needs for water management in each district as well as lists of investments and local actions recommended to be undertaken.

A particular value of the Local Water Partnerships and the meetings organised as part of them is the mobilisation and integration of local communities.

Climate change also requires a change in approach to water management. It is necessary to update legislation, which was often created in a different climate reality. Effective action against droughts or floods, for example, also requires ongoing cooperation between stakeholders from different areas. Europe as a whole faces similar challenges, and initiatives for more efficient and effective water management are being taken in all regions. Therefore, participation in projects such as Gov4Water is extremely valuable as it provides an opportunity to learn about good practices in this area and implement them in the local context.

Gow4Water partnership

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