

## Poland

### Country report

This report captures the main messages of a review of the state of play in Poland with regard to compliance with the EU Directives on Drinking Water, Urban Waste Water Treatment and Floods, and to a lesser extent the Water Framework Directive. It reflects OECD analyses, and official and expert opinions expressed at a national workshop held in Warsaw, 6 December 2018.

The workshop focused on financing compliance towards the EU water *acquis*. It was co-convened by the Polish Ministry of Maritime Economy and Inland Navigation, the OECD and the European Commission (DG Environment). It gathered approximately 50 delegates from national and local authorities and financing institutions.

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# 1. Financing compliance with the EU water *acquis* - Recommendations

Significant investment is required for Poland to reach compliance with the EU water *acquis* on water supply and sanitation and flood management<sup>1</sup>. As the largest recipient of EU Cohesion Funds, Poland has benefitted from considerable funding from the EU. While EU transfers are large in absolute terms, they are relatively small compared to domestic sources of funding. Municipal and local governments bear most of the capital cost of providing water supply and sanitation services.

Poland has pursued a massive investment programme over the past two decades. Ambitious legal, regulatory and institutional reforms have also put the sector on a more sustainable footing. Greater independence in the water supply and sanitation (WSS) tariff setting process is leading to more cost reflective tariffs, while balancing affordability for users. However, minimising delays in tariff approval process and securing revenues for utilities to contribute to investment programmes remains a priority. The trend in water prices is increasing, contributing to a greater share of cost recovery. Abstraction charges are now applied to a greater number of water users. Yet, in case of drinking water supply these charges continue to be low, not reflecting the resource value.

Many challenges remain. Compliance with the UWWTD lags behind in agglomerations > 2,000 p.e.. Additionally, wastewater collection and treatment is challenging for smaller towns and rural areas (< 2,000 p.e.), where decrease of economic activities led to depopulation. At the same time, demographic trends reflect the outward movement of people from cities, contributing to urban and peri-urban sprawl, potentially increasing investment needs for water-related infrastructure in agglomerations < 2,000 p.e. There remains scope to better allocate existing funding and improve the efficiency of investments by capturing economies of scale and scope. Coherence between spatial planning and flood risk management could be improved.

Complying with the EU water *acquis* delivers multiple benefits for society, the economy and the environment. While some measures can be costly, this report considers options to comply in cost-effective ways, taking account of distinctive capacities and challenges in Poland.

This report identifies a number of recommendations to assist Poland with closing the finance gap and managing the transition towards sustainable water management. Key recommendations include:

- There is a need for the development of a **long-term vision for both water supply and sanitation** taking into consideration opportunities for consolidation of the sector where appropriate (e.g. through inter-municipal cooperation or investment criteria that encourages regional consolidation) and more systematically link to spatial planning to minimise investment needs. In parallel, there is a need to continue reviewing and making amendments to the boundaries of agglomerations to mitigate costly implications of current arrangements or past mistakes. Consolidation of the sector would allow for capturing economies of scale and scope of investments and contribute to improving the cost efficiency of investments.

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<sup>1</sup> This includes the EU Drinking Water Directive (DWD), Water Framework Directive (WFD), Urban Waste Water Treatment Directive (UWWTD) and the Floods Directive.

- **Target investments** to close the compliance gap for the UWWTD. The last stages are the most difficult. This arises due to the mismatch between high investment needs per capacity in smaller municipalities and more constrained financial and technical capacity. The construction of pipelines is costlier per meter in smaller and more sparsely populated areas. This requires re-enforced attention to optimising remaining investments and targeting public funding where most needed. There is also a need for **prioritisation of new investments**, taking into account the total cost for operation and maintenance (O&M) costs over the lifetime of the investment. Municipalities tend to neglect the future costs of maintaining the infrastructure that have to be borne by the users e.g. increasing leakage rate for drinking water. As a result, many of the agglomerations with low population density may face difficulties of infrastructure which is neither economically viable nor environmentally not justified.
- Make best use of **existing sources of funding** and leverage **additional sources of finance** (including domestic commercial finance). The National Fund for Environmental Protection and Water Management could declare that water and wastewater investments are still a priority in recognition of the significant investments still needed to reach compliance. Further, disbursement criteria from the Fund could be strengthened to require evaluation of projects in line with economic efficiency criteria. Domestic commercial finance could be explored for creditworthy utilities.
- For flood risk management, there are opportunities to consider **innovative financing approaches** (e.g. value capture mechanisms) to capture benefits from infrastructure investment (including private funding sources). For the Water Framework Directive, continue efforts to **raise awareness** of water users (notably farmers and the general public) to strengthen the understanding of need for measures and also charges and fees reflecting Polluter and User Pays Principles. Poland could also further promote the support to agri-environmental actions to improve the ecological status of rivers.

## 2. Context

Poland is endowed with limited freshwater resources, with yearly per-capita annual availability of just 1 600 m<sup>3</sup>, and has a water use intensity roughly double the OECD average. Freshwater resources (mostly rivers and lakes) are thus under medium to high stress. Surface waters meet approximately 80% of Poland's water use needs, with limited groundwater uses primarily for drinking water. Industry remains a major user of freshwater, with over half of freshwater abstracted for electricity production alone. Encouragingly, over the last two decades, total water withdrawals have been growing at a slower rate than GDP (OECD, 2015[1]).

Poland sits slightly below the EU-average in terms of population connected to public drinking water supply and also on wastewater treatment levels. According to Statistics Poland's publication *Municipal Infrastructure 2017* some 92% of Poland's population is connected to large or small water supply zones and it demonstrates compliance with the EC's Drinking Water Directive. Non-revenue water accounts for about 20% of water supplied, in line with the average of other countries (EurEau, 2017[2]).

Poland remains not compliant with the EU's Urban Wastewater Treatment Directive and is prioritising specific agglomerations and investments in the 2014-20 planning period (EC, 2019[3]).

Water supply and sanitation services are managed by a range of institutions, with overall authority at national level resting with the National Water Management Authority, which co-ordinates river basin management plans created by the 11 Regional Water Management Boards, established by the recent legislative reforms (2017 Water Law). Water supply and wastewater collection infrastructure is managed at the municipality (gmina) level.

The asset renewal rate for water supply and sanitation infrastructure is less than 1%, which, although broadly in line with many other European countries, may be lower than required to maintain current service levels for an extended period of time (EurEau, 2017[2]).

Poland is exposed to coastal and riverine flood risks across its entire territory, from climate change and anthropogenic factors. In future, inland floods are expected to occur more often and be more impactful than coastal floods (OECD, 2016[4]). Increased probability of flash flooding due to heavy precipitation is likely to affect many parts of the country (Poland, 2013[5]). In absence of adaptation, sea level rises over the next century are projected to have a modest negative impact on Poland's GDP (Bosello et al., 2012[6]).

Inadequate treatment of municipal and industrial wastewater, plus diffuse pollution from agricultural production, are the major sources of non-compliance with water quality standards (OECD, 2015[1]). 69 % of water bodies do not meet the standard of "good ecological status" required by the EU Water Framework Directive (EC, 2019[3]). Poland contributes to the nitrogen load in the Baltic Sea, primarily from non-compliance with the Nitrates Directive in the agriculture sector (EC, 2019[3]). The Water Act in July 2017 accentuates Poland's effort to address water pollution by nitrates. The Act extended the scope of the nitrates action programme from a small part of the country to the whole of it. Moreover, the Environmental Implementation Review of 2019 noted that the whole country has been designated a 'nitrate-vulnerable-zone' and the rural development programme has increased its support for building manure storage facilities to reduce the risk of nitrate leaching into water.

Key features relevant to future expenditures for water supply, sanitation and flood protection are presented in Table 1.

**Table 1. Key features relevant to future expenditures for WSS and flood protection**

	Indicator	Value (rank if applicable)	Data Source	Year
<b>Economy and Demographics</b>	GDP per capita	EUR 11 100 (25/28)	Eurostat	2016
	Projected GDP growth	2.8% (9/28)	IMF	2016-2022
	Projected urban population variation by 2050	1.05x (22/28)	UN	2017-2050
<b>Water Supply and Sanitation</b>	Estimated annual average expenditure per capita	EUR 116	Authors based on EUROSTAT	2011-2015
	Population not connected to piped water supply	8%	Municipal Infrastructure in 2016	2016
	Annual domestic sector consumption per capita	36.8 m <sup>3</sup>	<a href="#">EUROSTAT</a>	
	Leakage rate for public water supply	24%	EC	2017
	Non-revenue water	c.15%	EurEau	2017
	Compliance with UWWTD Art.3, 4 and 5 (Index)	94% (16/28)	EC	2014
<b>Flood Protection</b>	Estimated annual average expenditure per capita	EUR 3 (17/28)	<a href="#">EC survey</a>	2013-15
	Pop. potentially affected in flood risk areas	11%	<a href="#">EC report</a>	2015
	Value of assets at risk (rise 2015-30):	1.3x (10/28)	WRI	2015-2030

Note: A rank of 1 implies best in class.

## 3. Characterising the financing challenge

Poland has pursued a massive investment programme in water supply, sanitation and wastewater treatment infrastructure over the past two decades, including with substantial support from EU funds. Over EUR 15 billion was spent under the National Programme for Municipal Wastewater Treatment between 2003-17. EU transfers are large in absolute terms, but relatively small compared to domestic sources of funding. Municipal and local governments bear most of the cost of providing water supply and sanitation services.

Significant investment is still needed to reach compliance with the EU water directives. There are plans to spend EUR 6.48 billion for wastewater treatment over the 2016-21 period. At the same time, considerable part of the existing infrastructure is aging, requiring renewal and modernisation. Notably, compliance with the Urban Wastewater Treatment Directive (UWWTD) is lagging behind. As is the case in other countries, there is a mismatch between high investment needs and technical and financial capacity of especially small municipalities (mainly rural). Affordability issues arise in smaller towns.

Poland has pursued ambitious legal, policy and institutional reforms to strengthen the sector. The amendments to water legislation in 2017 and the establishment of Polish Waters have been a transformational change and established a strong foundation for the future. The enforcement of the legislative framework and capacity development of the new institution require further strengthening.

Poland has a fairly robust financing model for water-related investments drawing on multiple sources of financing (tariffs, municipal and national public budgets, EU funds). Reliance on commercial finance is minimal.

The National Fund for Environmental Protection is a dedicated fund with an important focus on protecting water resources. It has played an important role in financing water-related investments over the past several decades. Nearly 1,600 wastewater plants have been modernised with investments from the Fund. Overall, the fund allocated over PLN 12 billion (EUR 2.8 billion) for wastewater management over the period 1989-2016, with the value of co-finance projects exceeding PLN 55 billion (EUR 12.7 billion) (Kamieńska, 2018[7]). The Fund is also well-placed to provide liquidity for investments when there are bottlenecks in the disbursement of EU Funds. In addition, 16 regional funds provide 3 times more finance for wastewater management and the protection of water resources.

An overview of the challenges, current financing strategies and factors driving future investment needs is presented in the following subsections, on water supply and sanitation services, flood protection and the WFD (water quantity and quality).

### 3.1. Water supply, wastewater collection and treatment

Poland has pursued a massive investment programme in water supply, sanitation and wastewater treatment infrastructure over the past two decades, including with substantial support from EU funds. Under the National Programme for Municipal Wastewater Treatment, EUR 15.42 billion was spent between

2003 and 2017 (27.3% EU Funds, 15.2% national/regional funds; 50% municipal budgets; 7.2% other sources). In 2016-21 plans to spend EUR 6.48 billion under the National Programme for Municipal Wastewater Treatment will include a greater percentage of EU Funds, so less of a burden on municipal budgets.

EU transfers are large in absolute terms, but relatively small compared to domestic sources of funding. Poland has been the largest beneficiary of EU Cohesion Policy funds and is forecast to remain so between 2014 and 2020 (EC, 2019<sup>[3]</sup>). The public sector accounts for about 80% of total investment in wastewater management (OECD, 2015<sup>[1]</sup>).

In terms of reaching compliance with the EU *acquis*, the UWWTD is the main issue relevant to water supply and sanitation. Considerable investment has taken place at rapid pace; in recent years, the length of the piped network doubled. Some large agglomerations have reached maximum capacity for wastewater treatment and sludge management. Additional funding for sludge management is needed. Further, compliance still lags behind, particularly in mid-sized and smaller towns and rural areas. For agglomerations relying on individual appropriate systems (IAS), ensuring the collection of wastewater from septic tanks should be a priority, for instance inspired by the SPANC systems in France (public service for non-collective sewerage). In addition, further investment is required to improve the extend access to water supply services to vulnerable populations and improve the performance of drinking water networks, many of which suffer from high leakage rates.

Additional investments are also expected in water supply, possibly driven – inter alia – by the new Drinking Water Directive.

Poland has pursued ambitious legal, policy and institutional reforms to strengthen the sector. In December 2017, amendments to the legislation governing water use (Acts on Collective Water Supply and Collective Sewage Disposal) established a new regulatory office to oversee water tariffs. The new process of tariff regulation allows for external oversight and approval with the aim to ensure tariffs are affordable, while also taking into account the financial stability of service providers. Notably, the new national system of tariff regulation allows for a full accounting of the costs of service provision (assuming robust data is available), which was not the case previously.

The 2017 reforms also significantly expanded the list of users and uses subject to fees<sup>2</sup>. The aim of the reform was to ensure, in accordance with Article 9 of the Water Framework Directive, that all users pay for water, and that fee revenues are used for investments aimed at improving the ecological status of water bodies. Households connected to water supply and sanitation infrastructure typically pay user charges (OECD, 2015<sup>[1]</sup>).

To date, the regulator already evaluated 2,700 tariff applications. Mayors are required to bring legal action in the courts if they oppose the tariffs approved by the regulator. Greater (independent) oversight of tariffs should lead to more robust and cost-reflective tariff setting process. International good practices indicates that affordability issues are best addressed through targeted social measures (rather than via the water bill) (Leflaive and Hjort, 2019<sup>[8]</sup>)

Overall, there is a trend of increasing water tariffs, with greater contribution to cost recovery. Tariff levels are considered reasonable for large cities where there are economies of scale and scope. Affordability is an issue for smaller towns, in particular due to higher costs of service provision per capita and lower household incomes.

Delivering water supply and sanitation services is one of the main tasks of municipalities. Nearly all (99%) operators are owned by local governments. There are only a few private operators in Poland. The sector

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<sup>2</sup> For example, fees for diminished water retention paid by some real estate owners that had previously been exempt from charges.

is highly fragmented with a large number of operators. There is considerable scope for consolidation (for example through regionalisation of operators or co-operative agreements between municipalities).

At present, incentives to encourage local governments to deliver services in the most cost-effective way are lacking. There is scope to improve the prioritization of investments to systematically explore opportunities to reap economies of scale and maximize environmental benefits. There is also scope to consider incentives to encourage more economically-efficient investment. There is a need to continue strengthening the capacity of the municipalities to plan viable investments and secure the necessary human and financial resources to implement them in a timely manner. This is essential for compliance with a competitive process of access to EU funds and the preparation of successful bids for funding in case of smaller and less resourceful municipalities.

### 3.2. Flood risk management

Recent legal and institutional reforms were designed to improve coherence of flood risk management. The 2017 amendments to the Water Law aimed at strengthening catchment-based water management and integrated flood risk management, effectively consolidating numerous competences under the authority of Polish Waters. The Minister of the Interior and Administration also has some responsibilities for flood risk management, mainly focussed on crisis management in the event of a flood. State water holding, Polish Waters, is responsible for developing draft flood risk management plans, which are approved by the Minister of Maritime Economy and Inland Navigation, after public consultation. Polish Waters is also responsible for co-ordinating flood protection activities.

The reform helped to clarify responsibilities for flood risk management and better co-ordinate investments. There is still scope for stronger linkages between spatial planning and flood risk management and aligning incentives at different levels of government (including post-disaster assistance). Balancing multiple competing priorities and associated legislation, e.g. ecosystem conservation and risk reduction, is challenging. Tensions remain between different priorities for use and design of waterways: navigation, flood risk management, environmental objectives. More systematic consideration of all options, including nature-based solutions in combination with conventional grey infrastructure, would contribute to minimising investment needs.

Poland has developed extensive documentation to support flood risk management, including preliminary flood risk assessment, flood hazard maps, flood risk maps and flood risk management plans. Increasing the focus on taking a long-term view is vital to incorporate projected impacts from climate change and prioritise investments. Notably, there is a need to shift from focus on historical approaches and data and take a forward-looking view to incorporate projected impacts due to climate change and increasing uncertainty. More systematic consideration of the range of risks (both floods and drought) is needed. Ensuring adequate water supply in water-stressed areas poses an important challenge, which may be exacerbated in the future due to increased demand and shifting precipitation patterns related to climate change.

In terms of financing, flood risk management has mainly relied on public funding, with little recourse to private finance to date. Household insurance coverage for flood risk is typically automatic (although not mandatory). There are opportunities to consider innovative financing approaches and instruments to capture benefits from infrastructure investment (including private funding sources). This is especially the case where flood risk management investments deliver multiple benefits (opportunities for property development, amenity values, environmental protection, etc.). Lessons from experience with value capture mechanisms can inform the design of such innovative financing instruments.

### 3.3. The Water Framework Directive

Since January 2018, major water users (aquaculture, irrigation) are no longer exempt from water abstraction charges (at least for groundwater abstraction). Hydropower generation is requested to pay (assuming water intakes are monitored). This is an improvement to the previous situation, which was not only costly in terms of forgone fiscal revenues, but also did not provide incentives for water conservation. As noted above, the reforms of the water sector, introduced in 2017, also significantly expanded the list of users and uses subject to fees to better align with Article 9 of the Water Framework Directive. This is a positive development, which can provide incentives for more rational water use as well as raise funding for measures that contribute to improved water management.

Authorities recognise the importance of raising awareness of water users, notably farmers and the general public, in order to strengthen the understanding of needed measures and also charges and fees reflecting Polluter and User Pays Principles. Further efforts in this regard would help to solidify acceptance of water abstraction charges and fees.

There is continued progress on improving the monitoring of water bodies' status, but significant gaps remain. Quality monitoring should be strengthened, in particular the status and cumulative impact of measures on water bodies. The frequency of monitoring and more precise and fit-for-purpose scope of parameters would provide a more robust basis for decision making. Such information can inform setting treatment priorities on the basis of water quality modelling at the river basin level.

Reducing pressures that prevent water bodies from achieving good status should be a priority. Poland could also further promote the support to agri-environmental actions to improve the ecological status of rivers. Notably, the extension of cross-compliance requirements for the agricultural sector could be considered. Compliance and enforcement of environmental standards of IAS requires greater attention.

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