

Lithuania

Country report

This report captures the main messages of a review on how to close the financing gap to fully comply 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 Vilnius, 9 July 2019.

The workshop focused on financing compliance towards the EU water *acquis*. It was co-convened by the Lithuanian Ministry of Environment, the OECD and the European Commission (DG Environment). It gathered approximately 60 delegates from national and local authorities, water utilities, and financing institutions.

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1. Financing compliance with the EU water acquis

1.1. Challenges

Water supply and water sanitation

Lithuania was able to invest around one billion euros in water infrastructure - mainly thanks to EU funding since 2004. While some progress has been achieved, the sector is still plagued with structural challenges:

- Only half of the wastewater treatment capacity is currently used. Connection to central water supply and wastewater treatment is incomplete, partly because the infrastructure has not been completed and partly because some households are not willing or able to pay for connection costs.
- The water utilities sector is fragmented, subject to major inefficiencies. Utilities are too weak financially to make further investments. Several water companies do not meet the requirements to receive grants and the sector has difficulties in obtaining loans. Low revenues hinder utilities' capacity to maintain the existing assets. The depreciation of EU funded assets is not taken into account to assess future investment needs, thus not reflected in water tariffs.
- Individual on-site systems for wastewater treatment are expected to continue playing an important role in remote rural areas but performance monitoring and compliance enforcement are complex and challenging.
- Cost recovery is a guiding principle of Lithuanian law but is not fully applied.

These points signal that financing is an issue, both in terms of the allocation of financing resources and the capacity to increase available domestic finance.

Flood risk management

The implementation of the EU Flood Directive has helped Lithuania investigate more systematically flood risk and identify hotspots: 104 territories (more than 200 000 ha flooded areas) and 20 high priority projects. However, awareness about flood risks remains low, which undermines the willingness of municipalities to finance flood protection measures. The financing of priority measures is highly dependent on the availability of EU funding and municipal budgets and therefore not secured. Current measures for flood risk management are focused on grey infrastructure.

Selected issues related to the Water Framework Directive

Selected issues emerged from the discussions at the workshop (on 9 July 2019), although they are not directly related to quantifying investment needs. One relates to diffuse water pollution: while management of point sources pollution has improved - in particular thanks to the upgrade of wastewater treatment plants - progress in addressing diffuse pollution from agriculture remains slow. Another one relates to the

hydromorphology of water bodies: it is increasingly affected by land reclamation for agriculture and hydropower dams.

1.2. Recommendations

The following recommendations aim at assisting Lithuania to close the finance gap and manage the transition towards sustainable water management.

Minimise investment needs

- Improve benchmarking and public reporting of operators of water supply and sanitation services to increase accountability, transparency and incentives for operational efficiency and financial sustainability.
- Encourage agglomeration of utilities e.g. through licensing obligations. Experience from Hungary (where a staged approach has allowed to consolidate utilities) or Ireland and Portugal (where respectively Irish Water and Aguas de Portugal were set up as a national service provider or a partner for mixed public enterprises) can inspire ways forward in Lithuania.
- Encourage connection to central supply and water treatment systems in selected priority areas, possibly with a direct subsidy to households for connection.

Optimise investments

- Develop a sustainable financing strategy in future Water Sector Development Programmes, both for water supply and sanitation investments, and flood risk management. Investment plans can be optimised through proper calibration and sequencing. Priorities can be given to investments that contribute tangible benefits for the population and the environment and that contribute to compliance with EU acquis on water.
- In addition, options should be systematically considered, which generate multiple benefits and adjust to shifting circumstances (such as uncertainty about future water demand and water availability). Nature-based solutions are likely to be relevant and competitive if these features are taken into account.

Mobilise additional sources of finance

- Adapt WSS tariffs to ensure adequate funding for service providers and reflect reinvestment needs (including depreciation of existing assets).
- Set up well-targeted social measures outside the water bill as appropriate.
- Explore options to attract commercial capital for creditworthy borrowers to finance water-related investments, building on existing financing structures such as the VIPA public fund. This may include exploring how public and development finance and risk-mitigation instruments (e.g. guarantees, credit enhancement instruments) can be used strategically to improve the risk-return profile of investments for commercial finance.
- Taxes on fertiliser and pesticide may be considered, to reflect environmental externalities associated with water pollution. Revenues from taxes could be earmarked and finance measures that facilitate transition to sustainable farming practices, or contribute to good ecological/chemical status of water bodies.

2. Context

Lithuania is the largest and most populous of the three Baltic States, which joined the European Union (EU) in 2004. The country has a territory of 65 300 km² and a population of around 2.8 million inhabitants in 2018. It is characterised by one of the lowest population densities in Europe (45 inhabitants per square kilometre). A majority of the population is urban (66.5%) and 19% of the population lives in the capital Vilnius. The largest Lithuanian cities are Vilnius, Kaunas, Klaipėda, Šiauliai, and Panevėžys. Lithuania's urbanisation rate is expected to climb slightly by 2050.

2.1. Economy

Lithuania's level of per-capita economic output sits below the EU member states' average, although the country experienced on average real GDP growth of 3% over the period 2013-2017. The services sector accounts for 67.1% of value added compared to 37.2% for industry and 1.7% for agriculture (OECD, 2018). Lithuania has a diversified economy base: oil refining, pharmaceutical and chemicals (especially plastics and fertilizers) industry, wood processing, textile, manufacturing of machineries and electronics industries as well as food and agriculture products.

2.2. Key country features related to water

Lithuania benefits from abundant freshwater supply.

The country relies exclusively on groundwater for drinking water supply. Groundwater resources are generally of good quality (EC, 2009). However, illegal abstraction is an issue, as 13% (approx. 50,000 m³/day) of the drinking water is abstracted from not approved groundwater resources (usually small-scale groundwater well sites).

Despite some coverage gaps, Lithuania performs well on wastewater treatment compliance (only one non-compliant agglomeration). Connection to central water supply and sanitation is however incomplete (82% of population currently benefits from central water supply and 74 % from central networks of sanitation services¹). Lithuania displays a leakage rate of 19%, which compares well with other OECD countries. The country relies extensively on individual wastewater treatment systems (so-called IAS; such as septic tanks, individual biological sewage treatment plants, sewage storage tanks) for which monitoring is complex.

Flooding presents less of a risk than in most other member states although the frequency of heavy rainfall is projected to increase and storm surges are likely to intensify.

Table 1 presents a number of key indicators characterising the country context and features relevant to future expenditures for water supply and sanitation (WSS) and flood protection.

¹ The figures refer to a presentation by Lithuanian ministry of environment at the country workshop

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

	Indicator	Value (rank if applicable)	Data Source	Year
Economy and Demographics	GDP per capita	EUR 13 500 (22/28)	Eurostat	2016
	Projected GDP growth	3.2% (4/28)	IMF	2016-2022
	Projected urban population variation by 2050	0.77x (28/28)	UN	2017-2050
Water Supply and Sanitation	Estimated annual average expenditure per capita	EUR 72	Authors based on EUROSTAT	2011-2015
	Population not connected to public water supply	24%	EC	2015
	Annual domestic sector consumption per capita	50.9 m3	EUROSTAT	
	Leakage rate for public water supply	19%	EC	2017
	Non-revenue water	n.a.	EurEau	2017
	Compliance with UWWTD Art.3, 4 and 5 (Index)	99% (6/28)	EC	2014
Flood Protection	Estimated annual average expenditure per capita	EUR 2 (23/27)	EC survey	2013-15
	Pop. potentially affected in flood risk areas	5%	EC report	2015
	Value of assets at risk (rise 2015-30):	0.67x (3/28)	WRI	2015-2030

Note: Rank 1 implies best in class among the EU member countries for which data is available for each indicator.

2.3. Water policies and governance

The Water Sector Development Programme 2017- 2023 and its Action Plan are the key strategic documents related to water policies in Lithuania. The main legal instruments for water policies are the Law on Water (No. VIII-474 adopted by the Parliament on 21.10.1997), the Programme for the Reduction of Water Pollution by Hazardous Substances (approved by Order No. D1-71 of the Minister of Environment on 13.2.2004, as last amended 8.7.2015) and the Regulation on Wastewater Management.

Lithuania applies a wide range of regulatory (pollution permits and standards) and economic instruments (e.g. tax on water abstraction and pollution discharges) to manage water quantity and quality.

The Ministry of Environment is the main ministry in charge of water policies. It collaborates with the Ministry of Agriculture and the Lithuanian Geology Survey to coordinate pollution reduction measures in the agriculture sector. The Environmental Protection Agency monitors and collects data on discharges of pollutants in surface water and evaluates the status of water bodies. It is responsible for granting, updating and cancelling pollution permits. Regional Environmental Protection Departments control compliance with pollution permit conditions.

Lithuania is divided into 4 river basin districts and comprises 1185 surface water bodies (approximately 2/3 of which include rivers and 1/3 lakes). The country has 2 coastal bodies and 4 transitional water bodies. It also shares three river basins with Latvia and one river basin with Belarus, Poland and Russia.

3. Characterising the financing challenge

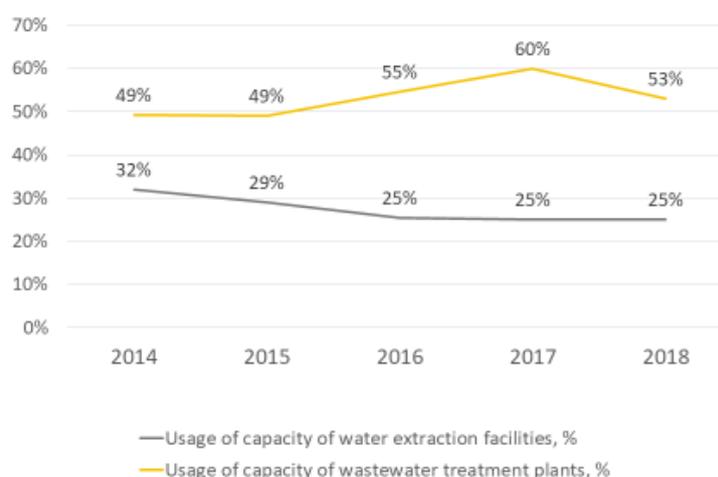
This section provides an overview of the challenges, current financing strategies and factors driving future investment needs related to drinking water and sanitation and flood protection.

3.1. Water supply and sanitation

In Lithuania, 82% of population benefit from central water supply and 74 % from central networks of sanitation services (Environmental Protection Agency of Lithuania). Connection to the central systems is therefore incomplete. Lithuania relies extensively on individual treatment systems, so called IAS, which are difficult to monitor. In 54 agglomerations, more than 2 % of pollution load is treated by such individual treatment systems. The country estimates that an additional 30 000 inhabitants would need to be connected to central sanitation services in order to fully comply with EU directives in the period post 2023 (Kiskis, 2019).

Lithuania has invested heavily in wastewater treatment since 2004 mainly thanks to EU funding (ISPA Strategy & 2004-2006: € 279.3 million, 2007-2013: € 561.1 million, 2017-2020: € 295.1 million). However, only half of the treatment capacity is currently used (Figure 1), which tends to indicate that the country invested in facilities that do not immediately benefit water users or contribute to compliance with the EU Directives. The depreciation of EU funded assets is not taken into consideration in the current assessment of investment needs, which suggests future needs may be underestimated.

Figure 1. Used capacity of water extraction facilities and wastewater treatment plants in Lithuania (2014-2018)



Source: Žilienė, 2019

The water utilities sector is fragmented with 74 licenced drinking water and sanitation companies operating in the 60 Lithuanian municipalities. Municipalities often own water utilities that operate as monopolies. Assets are either owned by water utility companies or municipalities themselves, which makes it difficult to assess the financial capacity of utilities. The performance of water companies greatly varies across the country (e.g. for water losses and infiltration). Salaries represent a very high share of utilities total costs (42%), which indicates that there could be efficiency gains; the share of investments is particularly low (Žilienė, 2019). In 2018, 52.1 million euros were dedicated to depreciation and maintenance of assets. However, this figure may be underestimated. Some assets belong to municipalities and do not appear in the accounting of utilities. The depreciation of assets funded by grants (included EU grants) is not accounted for².

Overall the water utility sector is too weak financially (7 companies are already facing financial difficulties) to maintain appropriate investments levels, which means the current infrastructure could be at risk in the future. Water utilities are currently not able to attract financing while commercial investors are not contributing due to low (or negative) financial viability and long payback period of the projects.

In May 2019, the Ministry of Environment has commissioned a study to consider options to encourage further consolidation of the sector (establishing a single national utility company, regional companies, encouraging the merging of existing companies).

There are wide differences in water tariffs according to municipalities and water utilities. Municipalities with the most vulnerable population (low income) are also those facing the highest prices, mainly in remote rural areas. Although cost recovery is a guiding principle enshrined in the Lithuanian Law on Drinking Water Supply and Wastewater Management, the principle is not fully applied.

Lithuania established an independent regulator in 2015 to manage water tariffs. This creates opportunities to setting tariffs that reflect the cost of service provision.

Funding arrangements for water investments are evolving with a decreasing use of direct grants. A national fund (VIPA) supervised by the Central bank of Lithuania is available to fund water-related investments and offers soft loans and repayable grants with decreasing interest rates. The investment gap for the water sector is estimated at more than 3.5 billion euros (Vaskeliene, 2019).

3.2. Flood risk management

Although flood risks remain low in international comparisons, floods threaten more than 5 percent (351 thousand Ha) of the Lithuanian territory (OECD, 2016 accession review Revised position Lithuania). Flood risk typically stems from river flooding events, with 42 such events between 2000 and 2010. Significantly fewer flood events have occurred from coastal waters and dam failures (EC, 2015). Analysis of historical data shows a significant decreasing trend in river flow during spring, summer and autumn with a significant increase in winter. The frequency of heavy rainfall is projected to increase. Storm surges are projected to intensify due to reduction of sea-ice cover in winter and stronger winds (EC, 2009).

In accordance with the Floods Directive (2007/60/EC) Directive, Lithuania has undertaken a preliminary assessment of the risk of flooding from all relevant sources (rivers, costal water, surface water flooding form heavy rainfall, dams and reservoirs and groundwater) to prepare a Flood Risk Management Plan (Kniežaitė-Gofmanė, 2019). The preliminary assessment identified 154 flood related disasters in the period of 1812 – 2010 and projected future floods risks while taking into account the effects of climate change. Based on this assessment, flood hazards maps and flood risks maps were drawn considering multiple factors (population housing density, depth of flooding, roads, wastewater treatment and industrial plants

² Note that this rule is frequent, including in France where public accounting does not depreciate the amount subsidised.

and possible sources of pollution, cultural heritage value, economic activity). As a result, Lithuania identified 104 high risk territories representing an area of more than 200 000 ha as well as 20 priority projects where engineering measures are required (erecting or raising dykes, concrete walls, reconstruction polders, road elevation).

However, a number of challenges undermine flood risk management in Lithuania:

- Low awareness among municipalities and public authorities that are often reluctant to implement (and finance) measures to minimise exposure to flood risks as these are not mandatory;
- Grey infrastructure may be detrimental to other features of the EU acquis on water, in particular as regards the hydromorphology of water bodies, or the operation of ecosystems. Municipalities tend to overlook nature based solutions in favour of less cost effective engineering measures because of land use restrictions, property rights in flood risk areas and perceived complexity of project implementation;
- Flood risk was not systematically considered in spatial planning policies related to land use or infrastructure development (EC, 2015). Things changed in June 2019, when the Law on Special Conditions of Land Use was adopted, which includes restrictions and conditions for construction in flood risk areas.
- In terms of financing needs, the Water Sector Development Programme states that, by 2023, EUR 72 million are required, of which EUR 18 million are high priority, 32 million are low priority, and 22 million are earmarked for additional road protection measures. Financing is not secured and no sustainable stream of funding has been identified besides EU funding. There is currently no insurance product covering flood risks.

3.3. Water Framework Directive: water quality and quantity management

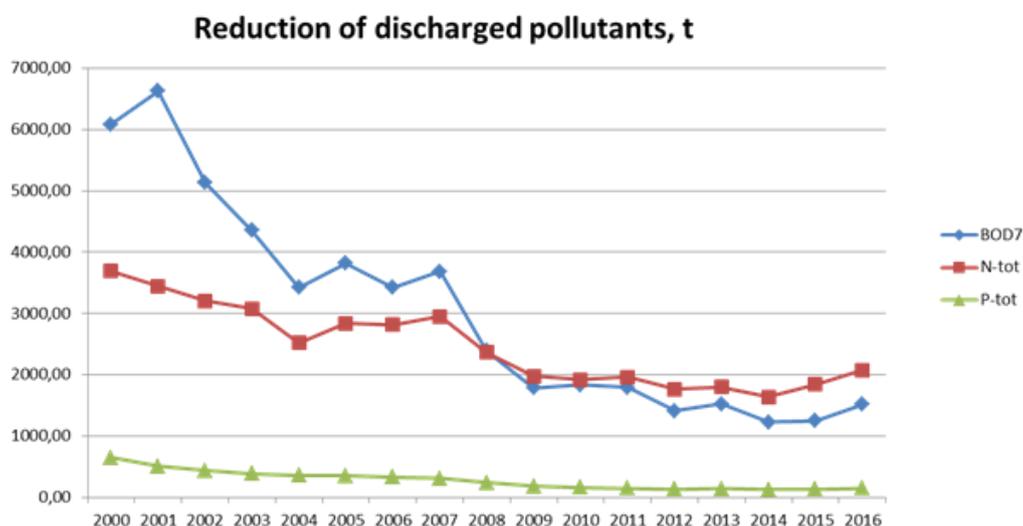
Around half of Lithuanian surface water bodies are not reaching good ecological status (51% of rivers and 40% of lakes). The 12 Lithuanian groundwater bodies benefit from good chemical and quantitative status in all river basin districts although high concentrations of fluorides, sulphates and chlorides have been detected in some areas (Margeriene, 2019).

More specifically, diffuse pollution from agriculture (undermining water quality in 30% of water bodies) and straightening of rivers (undermining 45% of the good ecological status of rivers) have major impacts on water quality (Margeriene, 2019).

The modernisation of wastewater treatment plants has contributed to improve pollution control and reduce the discharge of pollutants from point sources (see figure 2) but the country has made little progress regarding diffuse pollution from agriculture (Kiskis, 2019).

Lithuania applies a number of economic instruments to foster water quality and quantity management such as taxes on pollutants discharged into water bodies (established by the Law on Environmental Pollution Tax) and a tax on water abstraction and water resources (established by the Law on State Natural Resources Tax). Revenues generated from pollution taxes are directed to special funds earmarked for environmental protection projects, while revenues from the water resources tax are transferred to the national budget.

Figure 2. Reductions of discharged pollutants from point sources in Lithuania



Source: Kiskis, 2019

The Water Sector Development Programme 2017- 2023 and its Action Plan foresee a series of measures to address water quality including reducing pollution from agriculture with i.a. the implementation of fertilisation plans, financial support to farms growing catchcrops, strengthening the control of point source pollution, requirements to reduce hydromorphological impacts of projects (including re-naturation, construction of fish passes etc). However, implementation is facing a number of challenges including financing (Margeriene, 2019).

Although farmers benefit from subsidies (through the Common Agricultural policy) to reduce diffuse pollution from agriculture and improve the management of pollutants such as nitrogen, their capacity to invest in new measures for pollution reduction is limited. Farmers estimate that yearly investments of EUR 50 million would be needed (Jankauskas, 2019). There is strong opposition from farmers to the introduction of new technical requirements or taxes related to the use of fertilizers and pesticides. Still, taxes on fertiliser and pesticide may be considered, to reflect environmental externalities associated with water pollution.

References

- European Bank for Reconstruction and Development (EBRD) (2016), "Strategy for Lithuania", www.ebrd.com/documents/strategy-and-policy.../strategy-in-lithuania.pdf (accessed: 22 February 2018).
- European Commission (EC) (2019), European Overview - Flood Risk Management Plans, Accompanying the document 'Report from the Commission to the European Parliament and the Council on Implementation of the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC) Second River Basin Management Plans First Flood Risk Management Plans' <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=SWD:2019:31:FIN&qid=1551205988853&from=EN>
- EC (2017), "The EU Environmental Implementation Review", 28 Country reports, http://ec.europa.eu/environment/eir/index_en.htm.
- EC (2016a), "Synthesis Report on the Quality of Drinking Water in the Union examining Member States' reports for the 2011-2013 period, foreseen under Article 13(5) of Directive 98/83/EC", COM (2016) 666 final, <http://ec.europa.eu/environment/water/water-drink/pdf/reports/EN.pdf> (accessed 22 October 2018).
- EC (2016b), Eighth Report on the Implementation Status and the Programmes for Implementation (as required by Article 17) of Council Directive 91/271/EEC concerning urban waste water treatment (COM (2016)105 final) and Commission Staff Working Document accompanying the report (SWD(2016)45 final).
- EC (2015), "Report on the progress in implementation of the Floods Directive", Commission Staff Working Document, SWD(2015) 51 final, Brussels, 9.3.2015.
- EC (2009), "Lithuania: Country overview and assessment of climate change adaptation" *The economics of climate change adaptation in EU coastal areas*, https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/lithuania_climate_change_en.pdf (accessed: 22 February 2018).
- HELCOM (2018), Declaration of the Ministers of the Environment of the Baltic Coastal Countries and the EU Environment Commissioner, Brussels, 6 March 2018, HELCOM, Baltic Marine Environment Protection Commission, www.helcom.fi/Documents/HELCOM%20at%20work/HELCOM%20Brussels%20Ministerial%20Declaration.pdf.
- Jankauskas, I (2019) *What investments are required for the agricultural sector to contribute to good status of water bodies?* Presentation at OECD Workshop "Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania", 8 July 2019
- Kiskis, I. (2019), *Investments into Water Management in Lithuania. Lessons Learned*. Presentation at OECD Workshop "Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania", 8 July 2019
- Kniežaitė-Gofmanė, A. (2019) *Floods risk management How to improve investment decisions?*, Presentation at OECD Workshop "Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania", 8 July 2019
- Margeriene, A. (2019) *Towards achieving good status of water resources*. Presentation at OECD Workshop "Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania", 8 July 2019

- OECD (2018), Database on Policy Instruments for the Environment, <https://pinedatabase.oecd.org/> (accessed: 22 February 2018).
- OECD (2018), *OECD Economic Surveys: Lithuania 2018*, OECD Publishing, Paris, https://doi.org/10.1787/eco_surveys-ltu-2018-en.
- Vaskeliene, K (2019) Presentation at OECD Workshop “Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania”, 8 July 2019
- WHO-UNICEF (2017), *Progress on Drinking Water, Sanitation and Hygiene: 2017 update and SDG baselines*, Geneva, World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF).
- WHO-UNICEF (2014), “Lithuania: Sanitation, drinking-water and hygiene status overview”, http://www.who.int/water_sanitation_health/glaas/2014/lithuania.pdf (accessed: 22 February 2018).
- Žilienė, I (2019) “Water Sector Regulation State of play and issues to be solved, a Regulator’s perspective”, Presentation at OECD Workshop “Strategies to close the financing gap for water supply, sanitation and flood protection in Lithuania”, 8 July 2019