Latvia

The European Commission and the OECD jointly review investment needs and financing capacities for water supply, sanitation and flood protection in each of the European Union's 28 member countries[1]. A fact sheet was developed for each country. Each fact sheet: (i) highlights the main drivers of future expenditure and quantifies projected investment needs; and (ii) analyses past sources of financing as well as capacities to finance future needs.

The analysis reflected in the fact sheets aims to support cross-country comparisons. For some indicators, trade-offs had to be made between reporting the most up-to-date and accurate data for each individual country and using data available for all countries in order to support such cross-country comparisons. The fact sheets were reviewed by country authorities and have been revised to reflect comments as much as possible. Inaccuracies on selected items may remain, which reflect discrepancies between national and international data sources.

A full methodological document will be published to explain in detail the sources, categories and methods used to produce estimates. In a nutshell:

- Current levels of expenditure (baseline) on water supply and sanitation are based on a range of data sets from Eurostat, which combine water-related public and household expenditures.
- Projections on future expenditures for water supply and sanitation are driven by the growth in urban population. Additional scenarios for water supply and sanitation were developed to factor in such drivers such as compliance with Drinking Water Directive (DWD), Urban Wastewater Treatment Directive (UWWTD) and emerging EU water directives.
- The paucity of data on current levels of flood protection expenditures did not allow for monetisation of projected future investment needs. Projections of growth rates of future expenditures for flood protection combine estimates of exposure of population, assets and GDP to risks of coastal or river floods.
- The characterisation of past sources of financing in each country is derived from baseline data on current levels of public and household expenditures, debt finance and EU transfers.
- Countries' future financing capacities are approximated by analysing room for manoeuvre in 3 areas: i) the ability to raise the price of water services (taking into account affordability concerns); ii) the ability to increase public spending; and iii) the ability to tap into private finance. Affordability analysis is based on water-related household baseline expenditures, not on average tariffs (which are highly uncertain, inaccurate and not comparable across countries).

[1] Further information and project outputs can be found on the websites of the European Commission and the OECD.

The future costs of diffuse pollution, compliance with the Water Framework Directive, adaptation to climate change, contaminants of emerging concern, urban floods from heavy rains, as well as the potential of innovation to minimise future financing needs are explored qualitatively and will be reflected separately. Costs related to water storage and bulk water supply are not considered.

Key messages

- Aging infrastructure is among the key challenges to achieve compliance with the UWWTD.
- Access to safe water and sanitation remains an issue in rural areas.
- Storm surges are expected to cause more coastal floods.
- Pricing instruments are in place. Affordability is an issue in rural areas.

Context

Latvia's level of economic development remains lower than in most EU member states, although its economy is forecast to undergo strong growth over coming years. Latvia's population is expected to fall over the next 30 years, affecting both rural and urban areas. Despite water supply coverage gaps, Latvia performs above average on wastewater treatment compliance. Flooding presents a major future risk.

Latvia's freshwater supply exceeds current demand. However, there are a few small towns where freshwater supply is not adequate for the local population (EC, 2009).

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 12 700 (23/28)	Eurostat	2016
	Projected GDP growth	3.2% (5/28)	IMF	2016-2022
	Projected urban population variation by 2050	0.86x (27/28)	UN	2017-2050
Water Supply and Sanitation	Estimated annual average expenditure per capita	EUR 77	Authors based on EUROSTAT	2011-2015
	Population not connected to public water supply	24%	EUROSTAT	2015
	Annual domestic sector consumption per capita	56.8 m3	EUROSTAT	
	Leakage rate for public water supply	28%	EC	2017
	Non-revenue water	n.a.	EurEau	2017
	Compliance with UWWTD Art.3, 4 and 5	100% (1/28); 100% (1/28); 95.8% (11/28)	EC	2014
Flood Protection	Estimated annual average expenditure per capita	EUR 3 (21/27)	EC survey	2013-15
	Population potentially affected in flood risk areas	N/A	EC report	2015
	Expected increase in urban damage	2,49	Authors based on WRI	2015-2030

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

Main drivers and projections of future investment needs

Water supply and sanitation

Latvia demonstrates very high compliance (99-100%) for microbiological and chemical parameters and 98.7% compliance with indicator parameters in the DWD (EC, 2016a).

For the UWWTD, Latvia has overall high compliance rates: 100% of its wastewater load is collected and 98.7% receives secondary treatment. Just over 10% of wastewater, however, is managed via individual or other systems. The adequacy of such systems to protect the environment might be questionable (EC, 2016b).

Rural areas have less access to safe water, particularly quality drinking water and sustainable wastewater services. As a consequence, they are at greater risk to water borne diseases and reduced economic activity (EBRD, 2016). There is a substantial gap (19%) between urban and rural areas in terms of the percentage of the population with access to safely managed sanitation (WHO-UNICEF, 2017).

Aging infrastructure is among the main challenges to achieve compliance for the UWWTD. Most of Latvian's water supply and wastewater collection infrastructure were built during the Soviet period over 30 years ago. Latvian water utilities overtook the assets in poor condition

in the early 1990s and this legacy has contributed to frequent leaks, infiltration[2] and ruptures of the supply and distribution infrastructure.

According to the information collected in 2015 from Latvian water utilities in large communities (agglomerations with people equivalent over 2000), the investment needs for renovation and reconstruction of wastewater systems are more than EUR 204 million**.** The Ministry of Environmental Protection and Regional Development is currently updating estimations of investment needs.

Table 2 projects future investment needs in water supply and sanitation for a business as usual and a compliance scenario. The compliance scenario consists of two dimensions (1) investments needed to comply with the revised DWD, extend access to vulnerable populations and improve network efficiency (reduce leakage); and (2) investments needed to comply with the UWWTD. A major caveat is the lack of accurate cross-country data on the state of the asset and on whether the business as usual appropriately reflects the need to renew existing infrastructures.

Table 2. Projected investment needs – Water supply and sanitation to 2050 (m. EUR)

LATVIA		Baseline 2015	2020	2030	*Total by 2030*	2040	2050
BAU water supply and sanitation	**CAPEX**	**122**	**113**	**98**	-	**87**	**79**
	TOTEX	**156**	**150**	**139**		**133**	**131**
Scenario Compliance + for water supply and sanitation	**ADD. CAPEX**	-	**70**	**59**	***708***	-	-
	ADD. TOTEX		**94**	**84**	***963***		
Compliance with DWD, access and efficiency (water supply)	ADD. CAPEX	-	13	13	*128*	-	-
	ADD. TOTEX		18	18	*181*		
Compliance with UWWTD (sanitation)	ADD. CAPEX		57	46	580		
	ADD. TOTEX		76	66	781		

Note: BAU projections on future expenditures for water supply and sanitation are estimated based on the growth in urban population. Additional scenarios for water supply and sanitation are based on drivers relating to compliance the DWD and UWWTD as well as (for water supply) the cost of connecting vulnerable groups and of reduced leakage. The projections do not take into account the age and pace of renewal of water supply and sanitation assets due to the lack of comprehensive and comparable data across EU member countries.
Source: OECD analysis based on Eurostat (water-related public and household expenditure data) for the baseline; United Nations and Eurostat (total and urban population statistics and projections); European Commission (estimates of costs of compliance with revised DWD and of connecting vulnerable groups, leakage rates, and distance to compliance with UWWTD).

Flood risk management

Latvia has undertaken a preliminary assessment of the risk of flooding from all relevant sources (rivers, coastal waters and dams and reservoirs). Flooding from coastal waters is

[2] In 2017 a study covering a sample of wastewater collection systems in 25 Latvian towns and cities, documented that mean concentrations of pollutants were on average 23% higher in summer than in autumn. The study concluded that differences in concentrations are caused by rainwater infiltration in wastewater collection systems.

more common than river flooding in Latvia. Five significant coastal flood events have been recorded, compared to one historical river flood event (EC, 2015).

Less than 1% of properties are estimated to be at risk from a 1-75 years flood event. The perception of flood risk is generally low in Latvia (OECD, 2016). Storm surges are the main cause of coastal flooding in Latvia (EC, 2009). The vulnerability of rivers and coastal waters to climate change has been assessed, but significant changes in flood events are not expected in the foreseeable future (EC, 2015).

Table 3 highlights growth factors in future investment needs for protection against (riverine and coastal) flood risks. Urban floods from heavy rains will be discussed separately (not in the country fact sheet).

Table 3. Protection against coastal and river flood risks: Projected growth rates of investment needs to 2030

	Expenditures to protect against river flood risk			Expenditures to protect against coastal flood risk
	Total growth factors, by 2030			Categories (1-4), by 2030
	Expected urban damage	Expected affected population	Expected affected GDP	
Latvia	2,49	1,07	2,16	1

Note: It was not possible to establish a robust baseline of current expenditures for flood protection due to the absence of comprehensive and comparable data across EU member countries. As a result, this table presents projected growth factors in future expenditures. A growth factor is defined as the factor by which current flood risk expenditures should be multiplied in order to maintain current flood risk protection standards in the future (by 2030). For coastal flood, countries were classified in one of four categories of projected coastal flood risk investment needs, in which 1 indicates very low growth of projected investment needs and 4 very high growth of projected investment needs by 2030.
Source: OECD analysis based on the Aqueduct Global Flood Analyzer of the World Resources Institute (river flood impacts by urban damage, affected GDP, and affected population), the global database of FLOod PROtection Standards (Scussolini et al., 2016) (for countries river flood-related protection level), the European Commission Joint Research Centre (change of build-up in areas vulnerable for coastal flooding), a 2010 study by Hinkel et al, (number of people exposed to coastal flooding, and damage costs in the case of a coastal flood event).

Other selected pressures affecting compliance with the WFD

Just over half (53%) of surface water bodies and almost all groundwater bodies in Latvia are classified as having good or high ecological status and all groundwater bodies have good groundwater status, according to the first RBMPs (EC, 2017).

The main pressures are point sources from urban (and to a lesser extent industrial) wastewater, diffuse sources from agriculture and hydro morphological alterations. Nitrate levels have shown a slight decrease in the period 2008-11. However, eutrophication of the Baltic Sea remains an issue (EC, 2017).

As one of the Baltic countries, Latvia has agreed to develop measures to address micro-plastics and urban and storm water discharges to rivers, and to consider cost-effective mitigation measures to reduce legacy pollutants and contaminants of emerging concern, including pharmaceuticals (HELCOM, 2018).

Past financing strategies and room for manoeuvre to finance future needs

Water supply and sanitation

Latvia has benefitted from significant EU funding for the construction and rehabilitation of environmental infrastructure, mainly related to water and wastewater. Total funding of EUR 588 million was provided in the period 2007-13 to improve the quality and availability of centralised water supply and wastewater collection and treatment (Krukle, n.d.).

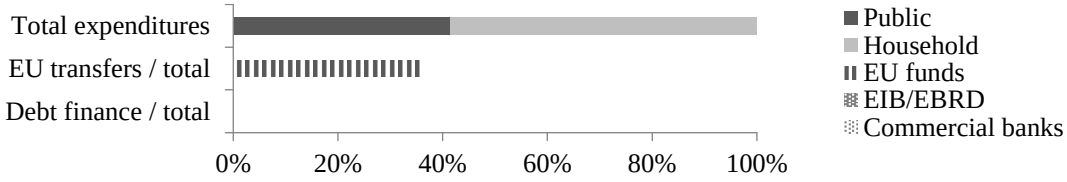
Currently in the most urgent cases water utility companies repair the faulty parts of the systems using the income from tariffs, however, income from tariffs alone cannot ensure qualitative and sustainable functioning of the systems in the long term. There are a number of environmental taxes and charges related to water in Latvia (including abstraction and pollution charges and water consumption and sewage charges), some of which earmark revenues for environmental protection measures (OECD, 2018).

Affordability issues remain a concern in rural areas. Notably, 7% of households in the poorest quintile spend over 3% of total expenditure on WASH services (WHO-UNICEF, 2017).

Key challenges relate to the need to improve contractual arrangements for water and wastewater infrastructure outside of the capital city. The introduction of an independent tariff setting methodology has also been identified as a challenge to tackle (EBRD, 2016).

Figure 1 highlights that Latvia has been relying slightly more on household than public expenditures to cover WSS-related costs. Public expenditures have been heavily reliant on EU transfers. Debt finance has not played a role.

Figure 1. Share of annual average expenditure on WSS, by source (2011-15 average, %)



Source: Eurostat (for public and household expenditures), European Commission (for EU transfers), European Investment Bank, IJ Global, Thomson Reuters, Dealogic (for debt finance).

Table 4 highlights affordability constraints, especially given Latvia's already low current level of WSS expenditures per capita (Table 1). Authorities may have some leeway to increase public spending thanks to a healthy fiscal condition.

Table 4. Indicators of future financing capacities for water supply and sanitation

	Indicator	Value (rank)	Year	Data Source
Ability to price water	Water expenditures in lowest household income decile	2.13% (16/26)	2011-15	Authors based on EUROSTAT
	Full cost recovery equivalent in lowest household income decile	3.63% (19/28)	2011-15	Authors based on EUROSTAT
	At-risk-of-poverty rate	21.8% (24/28)	2016	EUROSTAT
Ability to raise public spending	Tax revenue / GDP	31.6% (5/28)	2016	EUROSTAT
	Government consolidated debt / GDP	40.6% (8/28)	2016	EUROSTAT
	Sovereign rating	A-	2017	Standard & Poor's
Ability to attract private finance	Domestic credit to private sector / GDP	49% (25/28)	2015	World Bank

Flood risk management

Private insurance against flood risk is available for residential and commercial properties. Public insurance is also available for residential properties. Standard residential property insurance policies are automatically extended to cover flood risk, thus penetration rates are relatively high (95%). However, insurance companies are unwilling to offer flood coverage in flood-prone areas or only with high deductibles (OECD, 2016).

Coastal protection is considered the sole responsibility of local authorities and measures are mainly limited to laws and regulations concerning spatial planning. The national government does not finance coastal defence measures. Expenditure on protection measures is negligible (EC, 2009).

Investment in flood and coastal erosion reduction has benefitted from some EU funding. Options to make use of green infrastructure in cities and towns with a high population density have been explored (Krukle, n.d.).

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