

This country profile was compiled by the OECD Secretariat and reflects information available as of June 2013. Further information and analysis can be found in the publication: OECD (2013) *Water and Climate Change Adaptation: Policies to Navigate Uncharted Waters*, OECD Studies on Water, OECD Publishing. <http://dx.doi.org/10.1787/9789264200449-en>. Country profiles for all OECD member countries are available for download at: www.oecd.org/env/resources/waterandclimatechange.htm. These profiles will be regularly updated and it is planned to expand coverage over time to include key partner countries.

Belgium

Climate change impacts on water systems

Observed changes and trends	<ul style="list-style-type: none"> • Significant temperature rise in both summer and in winter by 2050. Rise in average summer temperatures ranging from 1.5 °C to 7 °C by the end of the century, as compared to the end of the 20th century. • Increased costs and damage linked to flooding in recent decades mainly due to the reduction of ground surface permeability, as well as construction of buildings in flood prone areas. • Increased frequency of surface water scarcity during periods of prolonged drought. 				
Projected impacts	<ul style="list-style-type: none"> • Increase in winter precipitation of 3% to 30% by the end of the century. Precipitation changes in summer varying between the current levels and a decrease of up to 50%. • An increase in winter precipitation will contribute to increased water recharge. • Reduced summer flows may negatively impact surface water quality and availability. • Increase of the number of heavy rainfalls episodes. 				
Primary concerns	Water quantity	Water quality	Water supply and sanitation	Extreme weather events	Ecosystems
	✓ (decrease in summer precipitation ¹)	✓	✓	✓ (floods and droughts)	✓
Key vulnerabilities	<ul style="list-style-type: none"> • Metropolitan and coastal areas (such as the 65 kilometre-long coast and the Scheldt estuary) are vulnerable to flood risks. • Concerning water scarcity, in contrast with flood risks, less is known about the geographic distribution of the risk of water scarcity in periods of prolonged droughts. • The process of salinisation in the western province (West-Vlaanderen) due to overexploitation and the sea level rise is also a major concern in terms of water scarcity. 				

1. The expected decrease in summer precipitation can lead to a lack of water availability and problems for different sectors (e.g. agriculture, waterway transport).

Sources: National Climate Commission (2009), *Belgium's Fifth National Communication under the UNFCCC*, Federal Public Service Health, Food Chain Safety and Environment, Belgium, http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/4903.php (accessed 20 June 2012); Ecores-TEC (2011), *L'adaptation au changement climatique en Région wallonne*, <http://orbi.ulg.ac.be/handle/2268/113405> (accessed 21 October 2012).

Key policy documents

Document	Reference to water?	Type	Year	Responsible institution
Belgium:				
Belgian National Climate Change Adaptation Strategy	Y	National adaptation strategy	2010	National Climate Commission
Belgian National Climate Change Adaptation Plan	Y	National adaptation plan	Under development	National Climate Commission
Flemish Adaptation Plan	Y		Under development	LNE
Walloon Adaptation Plan	Y	Sub-national responses	Under development	AWAC
Brussels Adaptation Study	Y			IBGE- BIM

Key policy documents (cont.)

Document	Reference to water?	Type	Year	Responsible institution
Flanders: Sigma Plan ¹	Y	Transboundary responses	2005	Flemish Ministry for Mobility and Public Works (Agency "Waterwegen en Zeekanaal N.V. (W&Z)
Master Plan Coastal Safety (IMCORE)	Y	Sub-national and transboundary responses	2011	Agency "Maritieme Dienstverlening en Kust (MDL)"
First generation River basin management plans (RBPMS)	Y	Sub-national responses	2009	(Flemish) Coordination Commission on integrated Water Policy (CIW)
Water policy document including significant water management issues	Y	Sub-national and transboundary responses	Adoption foreseen in 2013	
Second generation RBMP	Y		Under development ²	
Wallonia: First generation River basin management plans (RBPMS)	Y	Sub-national and transboundary responses	Under development	Directorate-General for Agriculture, Natural Resources and Environment
Brussels: First generation River basin management plans	Y	Sub-national and transboundary responses	Under development	IBGE-BIM

1. For more information, see www.sigmaplan.be/en (in English).

2. Adoption expected in 2015.

Policy instruments

Areas	Policy mix	Regulatory instruments	Economic instruments	Information and other instruments
Water quantity		<p>Flanders:</p> <ul style="list-style-type: none"> "Water toets": A requirement that building plans are scrutinised for their potential impacts on water. The procedure applies in particular to flood prone areas, zones important for infiltration, or near drinking water catchment areas. An additional measure in the first River Basin Management Plans defined a surface water abstraction permission that allows limiting or suspending the abstraction in periods of prolonged drought and low flows. A permitting system for the abstraction of groundwater (> 500 m³/year) that takes the quantitative status of the groundwater system into account. 	<p>Flanders:</p> <ul style="list-style-type: none"> Groundwater abstraction charge: The price is differentiated by the aquifer and a regional factor.¹ Surface water abstraction from navigable waterways: Abstraction charge for abstractions > 500 m³/year. 	<p>Belgium:</p> <ul style="list-style-type: none"> Information campaign to promote water savings (launched in 2000). Obligation for notaries and real estate agents to provide information about the risks of flooding of houses and building land. <p>Flanders:</p> <ul style="list-style-type: none"> A flood warning and decision support system to forecast high flow events for the un-navigable watercourses 48 hours in advance, www.overstromingsvoorspeller.be/default.aspx?KL=en (in English). Water metering obligation for ground water abstraction (except for domestic use < 500 m³/year). <p>Wallonia: Hydrological instruments in Wallonia:</p> <ul style="list-style-type: none"> For navigable watercourses: http://voies-hydrauliques.wallonie.be/opencms/opencms/fr/hydro/Actuelle/crue/index.html (in French). For non-navigable watercourses: http://aqualim.environnement.wallonie.be (in French). Real-time monitoring of watercourses, hydrology studies and co-ordination of flood alert.
Water quality		<p>Flanders: Discharge permits.</p> <p>Brussels:</p> <ul style="list-style-type: none"> Brussels Water Management Plan: Adopted in 2012, contains measures about drinking water quality draining, wastewater treatment and watercourses protection, http://documentation.bruxellesenvironnement.be/documents/Plan_Eau_PGE_7_Programme_de_Mesures_2012_FR.PDF?langtype=2060 (in French). 		

Policy instruments (cont.)

Areas	Policy mix	Regulatory instruments	Economic instruments	Information and other instruments
Water quality (cont.)		<ul style="list-style-type: none"> Brussels Adaptation study (2012): Provides measures aiming <i>inter alia</i> to optimise the surface water management in order to maintain it in a good quantitative and ecological condition. 		
Water supply and sanitation		<p>Flanders:</p> <ul style="list-style-type: none"> An additional measure in the first River Basin Management Plans to stimulate rational water use: Allows adjustments to the tariff structure for drinking water to distinguish basic uses and discretionary (or luxury) uses. <p>Brussels:</p> <ul style="list-style-type: none"> Water Management Plan (see above). Brussels Adaptation study: Provides measures aiming to reinforce the control of groundwater as well as the supply and demand of water in a climate change perspective. 	<ul style="list-style-type: none"> Charges for use, taxes, purification, etc. 	
Extreme weather events		<p>Wallonia:</p> <p>Flood prevention plan in Wallonia (PLUIES plan): Approved in 2003, aims to improve knowledge of the risk of flooding, reduce and decelerate run-off, improve river management and reduce vulnerability of flood-prone areas, http://environnement.wallonie.be (in French).</p> <p>Brussels:</p> <ul style="list-style-type: none"> Flood prevention plan in Brussels (<i>Plan Pluie</i>, approved in 2008): Promotes preventive measures to ensure the built environment is better adapted to increased precipitation. Measures are being implemented to recover rain water (water tanks are compulsory for new housing and promoted through regional grants for existing housing) and increase evapotranspiration (e.g. limit on built-up areas, green roofs), http://documentation.bruxellesenvironnement.be/documents/Plan_pluie_2008-2011_RIE_FR.PDF (in French). Adaptation to drought risks and heat waves, and improvement of urban micro-climates (characterised by the "heat island" effect), through the measures of the Water Management Plan. 	<p>Belgium:</p> <p>Insurance for floods and other natural hazards: Recent reforms² at the federal level introduced coverage for natural disasters in household fire insurance policies. In a departure from previous arrangements, state subsidies to support coverage for natural disaster will not be provided.³</p>	
Ecosystems				

- The latter factor will annually rise from 2010 to 2017 to take into account the pressure on groundwater and to stimulate rational water use.
- Laws of 21 May 2003 and 17 September 2005. While not primarily targeted at adaptation, the new laws may discourage new residential construction in areas where the risk of flooding is higher, especially if this results in higher insurance premiums. There is also a price setting board to limit the premiums for existing constructions in high-risk areas, by sharing the cost among all insured parties. However, new construction in high risk zones would be excluded from the premium limitation mechanism, effectively making such constructions likely uninsurable.
- With the exception of situations where the total cost of cover against natural disasters exceeds a threshold linked to the turnover insurance companies.

Main research programmes

- Research Program "Science for a Sustainable Development": Belgian Science Policy has undertaken research on climate change and inland floods, www.belspo.be/belspo/ssd/index_en.stm (in English).
- Research report "Climatic Vigilance" (2009) by the Royal Institute of Meteorology: Described observed climatic trends from 1830 to present day, www.meteo.be/meteo/view/fr/66940-Artikels.html?view=3236558 (in French).
- Support of research and development projects by the agency for innovation by Science and Technology (IWT): Supporting the research project CcASPAR on spatial planning, www.iwt.be/english/funding (in English).
- European Research Project AMICE "Adaptation of the Meuse river to the Impacts of Climate Evolution", www.amice-project.eu/en (in English).

Principal financing mechanisms and/or investment programmes

Highlights and innovative initiatives

- **Green spatial planning policy** to reduce inundations by reducing paved surface, www.vlaanderen.be/ruimtelijk/br2012/groenboek_beleidsplanruimte.pdf (in Dutch).
- **Various national and international projects on climate change**, www.ine.be/themas/klimaatverandering/adaptatie/studies-en-onderzoek/studies-en-onderzoeken (in Dutch).
- In Flanders, the Water Framework Directive and the Flood Directive are transposed via a single legislative instrument – the Decree on Integrated Water Management. The Flood Risk Management Plan will be integrated in the River Basin Management Plan in 2015.