### **Ireland**

#### Climate change impacts on water systems

## Observed changes and trends

- Warming evident in two periods, from 1910 to the mid-1940s and from 1980 to 2004. In the latter period, warming occurred at a much greater rate than the global temperature rise.
- · Increases in annual and seasonal mean maximum and minimum temperatures.
- Changes to precipitation patterns are more spatially and seasonally variable than temperature changes.
- On the West Coast, significant annual increases in the number of days of extreme precipitation events (number of days where daily
  precipitation is greater than or equal to 10 mm).

#### Projected impacts

- Increase in annual mean temperture of 1 °C to 3 °C by 2100, compared to the average of 1961-2000.
- Wetter winters in the west, drier summers in the southeast. Decrease in summer rainfall of 5% to 25% in 2021 to 2060, as compared to 1961 to 2000.
- · Less snow and fewer days of snow.
- · Changing patterns of precipitation will clearly impact on water service provision and may increase risk of pollution and contamination.

| Primary concerns | Water<br>quantity | Water<br>quality | Water supply and sanitation | Extreme<br>weather events | Ecosystems |  |  |  |
|------------------|-------------------|------------------|-----------------------------|---------------------------|------------|--|--|--|
|                  | ✓                 |                  |                             |                           |            |  |  |  |

Key vulnerabilities

Source: Department of the Environment, Heritage and Local Government (2010), Ireland's Fifth National Communication under the UNFCCC, http://unfccc.int/national\_reports/annex\_i\_natcom/submitted\_natcom/items/4903.php (accessed 22 June 2012).

#### **Key policy documents**

| Document  | Reference to water? | Туре                                  | Year    | Responsible institution  |
|---|---------------------|---------------------------------------|---------|--|
| National Climate Change Strategy  | Υ                   | National climate change strategy      | 2007-12 | Department of the Environment, Community and Local Government (DECLG)  |
| National Climate Change Adaptation<br>Framework                           | Υ                   | National adaptation framework         | 2012    | DECLG  |
| A Summary of the State of Knowledge on Climate Change Impacts for Ireland |                     | National impact assessment            | 2009    | Environmental Protection Agency (EPA)  |
| National Adaptive Capacity Assessment                                     | Υ                   | National adaptive capacity assessment | 2012    | DECLG, EPA   |
| Climate Change Strategy for Dublin City<br>2008-12                        | Y                   | Sub-national responses                | 2008-12 | The Environment and Engineering Strategic<br>Policy Committee in association with City<br>of Dublin Energy Management Agency |

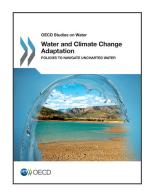
#### **Policy instruments**

| Policy mix Areas   | Regulatory instruments   | Economic instruments | Information and other instruments  |  |  |
|--|--|----------------------|--|--|--|
| Water quantity Water quality Water supply and sanitation |  |                      | National Catchment-based Flood Risk     Assessment and Management     Programme: Involves consideration of     potential future climate change scenarios,     as well as maps of existing conditions.  |  |  |
| Extreme weather events                                   | SI No. 122 of 2010, European<br>Communities (Assessment<br>and Management of Flood Risks)<br>Regulations 2010: Sets requirements<br>in relation to climate change. |                      | This programme is now well underway following completion of a set of pilot projects, www.cfram.ie.  • Flood information websites: As part of the strategy to manage flood risk, the website aims to raise awareness of flood   |  |  |
| Ecosystems   |  |                      | risk and promote preparedness, effective emergency response planning and better flood forecasting and warning, www.flooding.ie.  • The National Climate Change Adaptation Framework provides a clear mandate for the preparation of an adaptation plan for the water sector. |  |  |

#### Main research programmes

- Climate Change Research Programme of the Environmental Protection Agency: Aims to advance the understanding of and to support action to address climate change. To support adaptation and risk management. It aims to provide information on future climate impacts and vulnerability, www.epa.ie/researchandeducation/research/ourresearchprogramme/climatechange/#d.en.33770.
- Project on "Co-ordination, Communication and Adaptation for Climate Change in Ireland": Aims to identify an effective integrated approach to vulnerability assessment and adaptation in key sectors, including water.

#### Principal financing mechanisms and investment programmes



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