Newsletter

An Fóram Uisce – looking after Ireland's water resources

The Water Forum AN FÓRAM UISCE

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In this issue

Water Forum requests a Government-led Strategy for Water Conservation

Water Forum Chair, Dr Matt Crowe, and members of the executive team met with Minister Darragh O'Brien, Minister Malcolm Noonan and officials at the Department of Housing, Local Government and Heritage to urge them to develop a Government-led strategy for water conservation.

The population is set to rise by up to 40% by 2050 yet Uisce Éireann state that 58% of water supply zones have a supply risk at current demand. In recent years, we have experienced water supply restrictions during dry periods, with national hosepipe bans in 2018 and 2020. By the first week of June 2023, there were 7 counties requiring local water conservation measures

Meeting Minister Malcolm Noonan, Minister Darragh O'Brien were Dónal Purcell, Triona McGrath, Matt Crowe (Water Forum), Dr Sarah Cotterill (University College Dublin) and Keith Hyland, Water Forum.

(e.g. night-time restrictions and water tankering to reservoirs) due to increased water demand and extended periods of warm, dry weather. Climate change will result in decreased rainfall in summer and longer dry and drought periods, reducing water availability. Making new homes water efficient could reduce domestic water demand by 25% per person per day and this would relieve pressure on supplies and potentially give rise to water investment savings.

The Minister's commitment to building 33,000 homes every year for the next 10 years provides a golden opportunity to create water use efficiencies now that will provide many future benefits. Developing water efficient standards for all new homes will reduce carbon emissions associated with providing clean drinking water, it will help adaptation to the impacts of drought caused by climate change and reduce pressure on the natural environment through reduced abstractions.

Dr Matt Crowe noted that *'A secure supply of high-quality drinking water is essential for the health of every citizen and is critical for future economic growth. Including water efficient fittings and standards at the build stage of new developments provides a simple way to reduce water supply investment costs and improve supply resilience. There is a great opportunity now, to ensure that new homes are built to be water effecient.'.*

To achieve such an outcome, the Water Forum believes a committed **Government-led strategy for for water conservation in Ireland** that includes a program for actions to implement water conservation measures is needed. This strategy should be developed building on international examples, such as the recently published 'UK Water Efficiency Strategy to 2030'. This is in line with recommendations made by the Joint Oireachtas Committee on the Future Funding of Domestic Water Services in 2017, who recommended that 'the Government should develop a cross departmental strategy to increase water conservation. A strategy should focus on education and awareness; retrofitting; stronger building standards and regulations for all new residential builds.

"Making new homes water efficient could reduce domestic water demand by 25% per person per day and this would relieve pressure on supplies and potentially give rise to water investment savings."

A national water conservation team with a mandate to lead the development and implementation of a government-led water conservation strategy, should be established. This water conservation team should develop an implementation plan for the update of building regulations to include mandatory water efficiency targets, water efficiency labelling for fittings and appliances and data access and transparency around future development which impact water resources.

In the absence of volumetric water charges, adoption of water conservation policy relies upon public awareness, in conjunction with standards and legislation. To address this, the Forum have recommended the development of a **national awareness campaign** to support a bottom-up understanding of water, from the processes that underpin treatment and supply, to the energy and resources required to produce drinking water as this would support understanding of the need to save water and encourage uptake of water conservation measures by the general public.

These are policy recommendations arising from research on how to improve domestic water conservation in Ireland, carried out by Dr Sarah Cotterill and Dr Peter Melville Shreeve.

Links:

- Policy position: **The Water Forum's Policy Position on Water Conservation**
- Research policy brief: **A Framework for Improving Domestic Water**

Policy

The Water Forum made submissions to the Climate Change Advisory Council and to Department of the Environment, Climate and Communications (DECC) with recommendations for inclusion in the 2024 Climate Action Plan.

Climate change adaptation and mitigation is inextricably linked to water management and therefore it is critical that actions to address water management, climate change adaptation and mitigation are addressed together taking a systems-based approach. The Water Forum has made the following recommendations for consideration in the 2024 Climate Action Plan.

1.Integrated Catchment Management
Many of the impacts from climate change (flooding, drought, sea level rise) directly relates to the movement of water within a catchment (i.e. the area of land around a river, from the source to the sea). Therefore, climate mitigation and adaptation plans should use river catchments as landscape management units. Using such a systems-based approach facilitates the identification of co-benefits of measures to ensure optimum outcomes for water, climate and biodiversity for efforts and resources used, while also supporting joined-up decision-making around trade-offs, where required. The Water Forum's policy ***A Framework for Integrated Land and Landscape Management (FILLM)*** provides a framework for how this can be achieved.

The 3rd River Basin Management Plan (currently being finalised by the DHLGH) proposes to develop 46 catchment management plans to address water quality and quantity in Ireland: these would provide an ideal base to align climate mitigation and adaptation planning with water resource management. Aligning action for climate, water and biodiversity would also benefit communities, making landscape management more understandable, less fragmented and thus more achievable. Developing actions at local waterbody scale will enable communities and landowners to understand the direct co-benefits for biodiversity, water and climate that exist from the measures or actions they are being asked to implement.

"Developing actions at local waterbody scale will enable communities and landowners to understand the direct co-benefits for biodiversity, water and climate that exist from the measures or actions they are being asked to implement."

Otters are brown, about 80 cm or 30 inches long and have a distinctive pointed tail that is almost as long as their bodies. They are predominately nocturnal and are typically seen along waterways at dawn or dusk.

2. Governance and Adaptation Planning
The Climate Action plan needs a greater commitment to policy coherence and alignment of climate, water and biodiversity objectives and action to support optimum outcomes. Greater collaboration between government bodies, stake agencies, non-government organisations and other relevant stakeholders at national and catchment scale is necessary.

- Flood management plans should be developed for every catchment, rather than at national or regional scale, to account for spatial variability in projected precipitation. They should address the range of expected change from the most recent climate projections.
- Drought management plans need to be developed urgently to better adapt to projected increases in drought during summer months. These should be developed for every catchment and coordinated nationally due to the spatial variations expected, thus avoiding a 'one fits all' approach.

3. Water Conservation
Water Conservation (i.e. using and wasting less potable water) to support sustainable water use, is a climate adaptation tool (reduce pressure on water availability in times of drought)

and mitigation measure (reduces GHG emissions from the provision of water services).

- Ireland's Climate Action Plan should include water conservation measures; for example, retrofitting public and fitting all new buildings with water efficiency measures to help mitigate the impacts of future droughts and potential water shortages.
- There is a need for education about water, from the processes that underpin treatment and supply, to the energy and resources required to produce drinking water, to encourage more water saving behaviours both domestic and non-domestic users.

4. Sectoral Adaptation Plans

The Government must ensure that adaptation plans are developed for all types of water supplies (public supplies through Uisce Éireann, group water schemes through the National Federation of Group Water Schemes and Private wells through the Environmental Protection Agency).

- Future iterations of the Climate Change Sectoral Adaptation Plan for Water Quality and Water Services should include targets, metrics and key performance indicators to ensure transparency and accountability in adaptation planning.

The Water Forum has made subsequent recommendations for the inclusion of specific water conservation measures to the Climate Action Regional Offices (CARO) for inclusion in Local Authority Climate Action Plans.

Links:

- Submission to DECC: **Call for Expert Evidence – Climate Action Plan 2024**
- Submission to CARO: **Recommendations for Water Conservation shared with CARO and Local Authorities**

Uisce Éireann state that 58% of water supply zones have a supply risk at current demand.

Research

In order to formulate policy advice, the Water Forum commissioned research to evaluate if and how Ireland's national policies and climate change adaptation plans address the future risk to water resources from climate change. One research project focused on projected impacts of climate change on water quantity (led by Dr. Fiachra O'Loughlin, University College Dublin), while the second project focused on impacts on water quality (led by Dr. Michelle McKeown, University College Cork). Outputs from these research projects were used to inform policy recommendations around climate change and sustainable management of Ireland's water resources.

Projected Impacts of Climate Change on Water Quantity

Dr Fiachra O'Loughlin and Mr Behzad Mozafari, Dooge Centre for Water Resources Research, School of Civil Engineering, University College Dublin research project titled: *'Projected climate change and associated risk to water quantity: a review of national policies, governance and plans for future proofing Ireland's water supply'.*

By the middle of this current century, it is expected that the average temperature across Ireland will have increased by between 1°C and 1.6°C from the baseline period (1975- 2005). All seasons will experience increases in temperature; however, Summer (June, July, August) and Autumn (September, October, November) will see the largest increases with 3.1°C warming expected during Autumn by 2100 under Representative Concentration Pathway (RCP)8.5 (the amount of GHG in the atmosphere).

Extended dry periods (of 5 plus days with less than 1 mm of precipitation

"By the middle of this current century, it is expected that the average temperature across Ireland will have increased by between 1°C and 1.6°C from the baseline period (1975- 2005)."

Flood risk management plans should include the latest scienific data and address the projections for climate impacts at catchment scale.

recorded) will become more common due to climate change. There is an increased risk that droughts will become more regular, longer and with potential for multi-year droughts. This will decrease river flows, with large decreases in low flows during summer periods and by the 2080s the Q95 flows (lowest 5 percentile flows) will have reduced by approximately 21%.

There will be an increase in the number of heavy and very heavy rainfall events that occur (where rainfall is in excess of 10 and 20 mm, respectively). The north-west of Ireland is expected to experience the worst of these increases with the occurrence increasing by 30%. All studies show that higher flows are expected in winter and this corresponds to an increased flood risk, where annual maximum flows could increase by between 12% and 16% for 50- and 100- year return periods. Urban runoff in Dublin could increase by 30% in the winter months.

Policy recommendations presented in this research include:

- Ireland's Climate Action Plan has a clear under-representation of the role of water quantity. Future revisions of the Climate Action Plan should **include water quantity in climate action planning.**
- Future revisions of the National Development Plan and Housing for All Plan should consider how **water efficiency measures** can be improved and incorporated into new homes and buildings, to reduce the water per capita demand in order to adapt to future drought conditions and potential water shortages.
- Revisions of the **Flood Risk Management Plan** should include the latest scientific data on future projections for Ireland and details of assessment and investment requirements.
- **Drought Management Plans** should be developed and published for every water resource zone. The roles and responsibilities of government bodies and agencies who have a role in drought management planning should be publicly available, with a clear timeframe for the development and implementation of the drought management plans.
- **Education is key for risk communication** and updates of the Climate Action Plan should explicitly mention sustainable use of water in actions relating to education and awareness, such as in Actions 13 and 38.

Links:

- Research report: **Climate Change and associated risk to water quantity**
- Policy recommendations: **Climate Change and associated risk to water quantity**

Projected Impacts of Climate Change on Water Quality

Dr Michelle McKeown and Dr Karen J. Taylor, School of Biological, Earth & Environmental Sciences, University College Cork research project titled: *'Addressing projected climate change risk to water quality in Ireland.*

Extreme weather events are expected to include extended periods of abnormally low precipitation (droughts), rapid high-intensity precipitation events and flooding, along with increased heat

waves and storm activity. In Ireland, observed changes in climate indicate that seasonal shifts in temperature and precipitation patterns are emerging across a clear west-to-east divide. Projected changes in seasonal precipitation suggest an increase in the frequency of rapid high-intensity precipitation events during the autumn and winter months, affecting mostly the north and west coasts. A substantial reduction in precipitation during the spring and summer months is projected, which will likely result in extended periods of water stress during the summer months, with greatest impacts expected for the east and southeast of the country.

The water quality will be affected at different times of the year and in different parts of the country. For example, heavy rainfall events could put pressure on water infrastructure, particularly for combined sewage overflow systems in urban areas (i.e., Dublin, Cork and Galway city). Ordinarily in urban centres all the waste water is treated before discharge; however, heavy rains can overwhelm combined sewage overflow systems by contributing additional stormwater, and in order to avoid sewers becoming over-whelmed in high rainfall events, excess water is discharged straight into local receiving waters, sending with it a cocktail of pathogens, active pharmaceutical ingredients, household chemicals, heavy metals, hydrocarbons, pesticides, excess nutrients, and other pollutants.

On the other hand, reduced precipitation may lead to less dilution of contaminants present in water, resulting in the concentration of pollutant levels above 'Environmental Quality Standards' (EQS). In rivers and lakes, warmer summer temperatures may exacerbate the effects of eutrophication (excessive nutrients resulting in enhanced growth of plants and algae) and may increase the abundance of cyanobacterial blooms, which can threaten the safe use of water for drinking and recreational (and even tourism) activities.

Policy recommendations presented in this research include:

- **Coherent policies and plans are essential.** This requires identifying where water and climate policies align and diverge using scientific evidence.
- **Effective action to integrate climate adaptation plans for water quality** must be fully comprehensive to ensure the right measures are put in places to address the interconnected pressures of anthropogenic pollution, degradation of the quality of water and climate change.
- **Communication is essential** between Government agencies and stakeholders to develop innovative and practical solutions. Increased transparency in roles and responsibilities is needed to ensure accountability for measures and actions. Co-ordinated national effort is needed to minimise the negative impacts on and of water quality in a warming world.

Links:

- Research report: **Addressing Projected Climate Change Risk to Water Quality in Ireland**
- Policy brief: **Addressing Projected Climate Change Risk to Water Quality in Ireland**

Education and Awareness

Water Forum members made a valuable contribution to the EPA Water Conference. Dr Matt Crowe's presentation, *A Stakeholder Vision for Water* was well received.

In the panel discussion on Agriculture and Water chaired by RTE Journalist, Philip Boucher Hayes, Water Forum members Dr Elaine McGoff (Environmental Representative/An Taisce) and Denis Drennan, (Agriculture Representative/ Irish Creamery Milk Suppliers Association) made very interesting and informative contributions. Water Forum members also contributed actively to the Q&A sessions at the event.

Pictured below: Water Forum members in attendance at the EPA Water Conference at the Galway Bay Hotel, Salthill.