Newsletter

An Fóram Uisce – looking after Ireland's water resources

The Water Forum AN FÓRAM UISCE

Issue 11 / Spring 2023

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National Water Forum hosts a workshop on opportunities for education and communication on the need for water conservation

Despite our predominantly wet climate and abundance of water resources, in recent years there have been regular shortages in water supply to homes and businesses. Population growth and economic development are expected to continue to increase at varying rates across the country, which will result in a greater demand for water. Climate change projections indicate there will be an up to 27% increase in drought periods in Ireland, particularly in the south and east of the country, which will add further pressure to water supplies.

Attendees at the Water Conservation Workshop on 29th March 2023.

Demand management and reducing wastage of water is essential to make supplies resilient and sustainable.

Increasing water conservation efforts will provide multiple benefits. Firstly, it would reduce the demand for water, thereby reducing the volume of water taken from waterbodies and reducing the energy consumed to abstract and treat water. Secondly, reduced abstraction demands will help mitigate water availability stress owing to longer and more frequent droughts thereby supporting climate adaptation. In addition, 19% of the energy used in the home is for heating water, therefore if we transition to using more water efficient technologies and alternative water sources, such as rainwater harvesting, we will decrease energy costs in the household and carbon emissions.

The Water Forum commissioned research to identify what measures are needed to incentivise water savings and discourage wastage in Ireland. This research completed by Dr Sarah Cotterill of University College Dublin (UCD) and Dr Peter Melville-Shreeve from Exeter University made a number of policy recommendations. One of these was the need to: Rethink Water Education – to support bottom-up understanding of water, from the processes that underpin treatment and supply, to the energy and resources required to produce drinking water, linked to the national curriculum. To explore potential opportunities to promote education about water conservation the Forum invited key stakeholders and organisations with expertise in awareness raising to a workshop to share learnings and discuss approaches.

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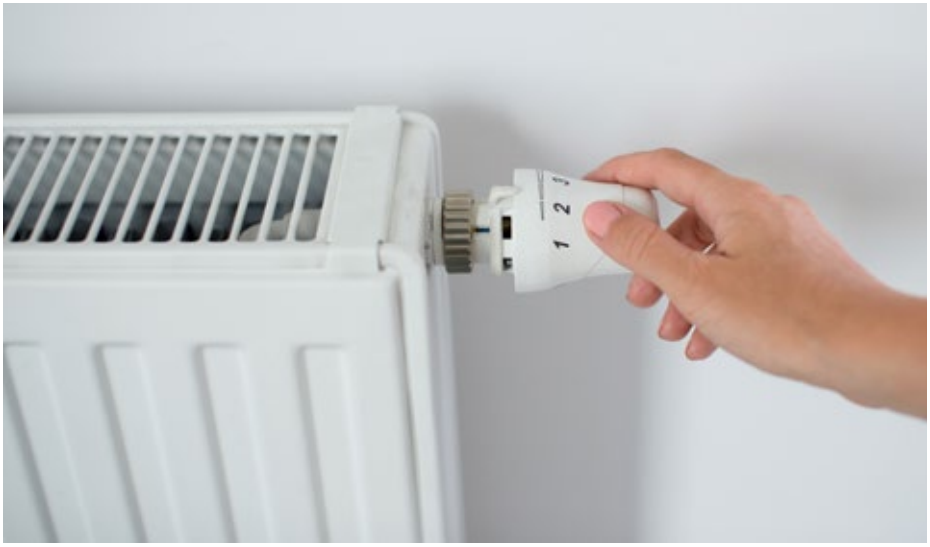

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Representatives from many organisations attended the meeting, including the National Federation of Group Water Schemes, Irish Environmental Network, Tidy Towns, Local Authority Waters Programme, Dublin City University (DCU) Citizen Science Projects, An Taisce Green Schools and Globe projects, Clean Coasts, EcoEd4All, Uisce Éireann, Public Participation Networks (PPNs), Saolta, Mayo, Sligo, Leitrim Education & Training Board (MSLETB), Atlantic Technical University, Trinity College Dublin, Dwr Uisce project, Leave no trace, Rivers Trusts, Louth County Council and Water Forum members.

Session 1 of the workshop included a presentation from Waterwise UK, the leading UK water efficiency non-government organisation, which provided learnings from the development of the UK Water Efficiency Strategy that could be applied in Ireland. Waterwise deliver a range of campaigns to promote awareness and water effeciency actions by individuals and organisations.

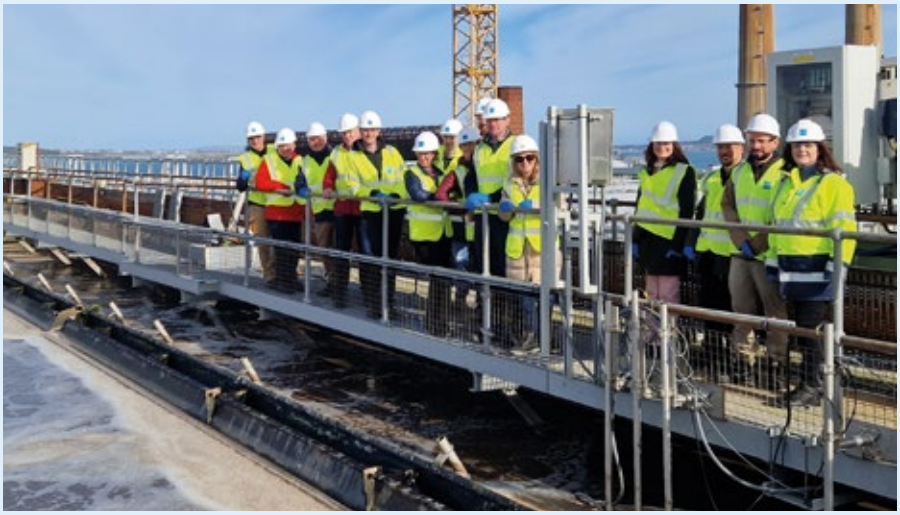
In Session 2, Dr Anne Dolan, who is Chair of the National Council for Curriculum and Assessment (NCCA) Development Committee for the new Leaving Certificate subject, Climate Action and Sustainable Development, highlighted that getting water education into the national curriculum can be challenging due to a myriad of demands on the curriculum. However, opportunities do exist to use the excellent resources currently available, for example through the National Strategy for Education for Sustainable Development and the Forum will work with agencies and providers to progress Anne's recommendations to advance education on water conservation.

A round table discussion led to further suggestions for action to promote water conservation in Ireland. In the coming months, the Water Forum will publish a position paper on progressing water conservation in Ireland and a Workshop Report will be circulated in due course.

Water Services Standing Committee visit Ringsend Water Treatment Plant

Uisce Éireann very kindly hosted members of the Water Services Standing Committee at the Ringsend Wastewater Treatment facility and provided a tour of the facility and it's new nutrient recovery system.

The plant, when originally built, had a treatment capacity for 1.6m population equivalent (p.e.) but since then, the population has grown and Ringsend currently treats 44% of Ireland's wastewater load. The plant upgrade will include newly available wastewater treatment technologies, such as nutrient recovery through a process of phosphorous fixation from the waste that produces struvite, a fertilizer. The ultimate aim of the €500 million upgrade is to achieve compliance with the Urban Waste Water Treatment Directive (UWWTD) for treatment of effluent for 2.1m (p.e.) by the end of 2023 and 2.4 m (p.e.) by the end of 2025.



Uisce Éireann hosted members of the Water Forum and staff at the Ringsend Wastewater Treatment Plant.

Research

The Water Forum funded an early career research project titled: Nutrient recovery and recycling from wastewater in Ireland, with associated policy gaps and recommendations.

Dr Matteo Giberti and Dr Recep Kaan Dereli from the School of Engineering at UCD presented their research findings. Nitrogen, Phosphorous and Potassium are nutrients that are essential for modern agriculture but 83% of global Phosphorous (P) reserves are in only 5 countries, with 73% in Morocco and western Sahara. Europe imports 90% of global P, with Ireland the 9th largest fertiliser consumer in the EU. There are other sources, a typical human produces 1.8g of total Phosphorous every day, so municipal wastewater is a rich source, and with new technologies P can be recovered as Struvite, which is a really useful slow-release fertiliser.

In recent years, wastewater treatment plants has been evolving from basic sanitation provision to become waste resource recovery facilities. Nutrient removal from waste in Ireland was at 39% in 2021. When recovered from wastewater struvite does not contain heavy metals and experts have now approved it's use under the EU Organic Farming Regulations. A research study on the acceptance of urine based fertilisers showed that Irish farmers have a lack of awareness about these products.

The research made policy recommendations including:

Adoption of nutrient recovery technologies be fostered through dedicated regulations such as:

- Legislation to support nutrient recovery and recycling should be uniform and homogeneous across the EU.
- More ambitious limitations for cadmium and uranium in fertilising products, as well as more flexible discharge regulations can promote the adoption of recovered phosphorous based fertilising products.
- Continuous monitoring and assessment of the effects of new regulations are crucial to prevent the shift of environmental problems from one sector to another.

Economic instruments are also necessary:

- Life cycle assessments of the impact of traditional fertilisers can help factor in the indirect costs associated with current approaches.
- Incentives/penalties can significantly increase the adoption of nutrient recovery.
- A shift towards "polluter pays principle" could be considered for the current discharge limitations.

Increasing the awareness of the importance of nutrient recovery remains essential:

- Awareness campaigns targeting both policy makers and the public are necessary.
- Dedicated training for the wastewater treatment plant operators is needed.

Links:

- **Nutrient recovery and recycling from wastewater in Ireland Research Report**
- **Nutrient recovery and recycling from wastewater in Ireland Policy Recommendations**

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