Managing Water in a Changing Climate

WATER FORUM CONFERENCE REPORT

Introduction

The global climate change crisis is closely linked to water, where water is the medium through which many of the impacts of climate change are felt by society. While Ireland is fortunate to be a water rich country, approximately 50% of surface waters are not reaching WFD ecological standards with resulting negative impacts for nature, the economy and public health. Furthermore, Ireland already faces deficits in water supply and wastewater treatment due to inadequate and ageing infrastructure, rapidly increasing population and economic development. Climate Change is already and will add additional challenges to managing our water resources. Increasing extreme weather events can cause water quality issues following both floods and droughts. Increasing temperature, droughts and dry periods can result in increased water demand and reduced water availability in some areas, which can put agricultural and aquatic ecosystems under stress. More intensive storms produce floods that can overwhelm water and wastewater infrastructure resulting in pollution events and/or supply disruptions.

The Water Forum has a statutory function to advise on water policy and the implementation of the Water Framework Directive. The objective of this conference was to provide an opportunity to present and discuss the latest scientific evidence on how climate change will impact water quality and water quantity in Ireland. It also provided a platform for agencies to come together to discuss the challenges and opportunities of taking a more integrated management approach to address climate and water management. To consider putting catchment-scale water management at the heart of climate adaptation to deliver outcomes for water quality and availability, nature and climate. It is expected that learnings from the conference will support the upcoming revision of the Sectoral Climate Adaptation Plans, including water services, flooding and public health.

Target Audience

The Water Forum invited a target audience of local authority personnel and agencies with responsibility for the implementation of the Water Framework Directive and Climate Action planning. Government department staff responsible for policy development and implementation were also invited along with academics and researchers leading in the field of climate and water sciences.

Registration was managed through Eventbrite and 195 people registered with 162 attending on the day. Sixty-one different agencies and organisations were represented.

An Fóram Uisce - The Water Forum

CONFERENCE: *Managing Ireland's Water in a Changing Climate*

20th NOVEMBER 2024 - Tullamore Court Hotel

Climate change impacts on water resources and a catchment-based approach to climate change adaptation

The conference will provide an opportunity to present the latest science and discuss how climate change will impact on water quantity and water quality. The challenges and opportunities of taking an integrated catchment management approach to drought and flood management and climate change adaptation will be explored.

Time	PROGRAMME
9:00-9.45	Registration and Refreshments
9:50-10:00	Welcome and Introduction – Dr Matt Crowe, Chair, National Water Forum
Session 1: Presenting the Science – What are the impacts and why should we care?	
10:00-10:20	Keynote Address - Prof Conor Murphy, Maynooth University Impacts of Climate Change on Water Resources (Flooding and Drought)
10:20-11:00	*Response panel presentation working titles* • The role of water conservation in Ireland - Dr Sarah Cotterill, University College Dublin • Climate Change effects on water quality: Emerging challenges and insights - Dr Michelle McKeown, University College Cork • The impacts of extreme weather events on public health - Dr Jean O'Dwyer, University College Cork • Freshwater ecosystem management: the challenges & opportunities - Dr Ken Whelan, Fisheries Scientist
11:00-11:30	Q&A Chaired by Dr Matt Crowe
11:30-12:00	*Coffee and poster session*
Session 2: Panel Discussion - Management and Implementation - Agency Perspectives	
12:00-12:05	Introduction - Catchment Management and Climate Change Adaptation – Dr Conor Quinlan, EPA
12:05-12:20	Presentation on Integrated Catchment Management – Dr Bernie White, Local Authorities Waters Programme
12:20-12:45	Agency perspectives on taking a catchment-based approach to climate change adaptation - *Response panel discussion* • Conor Galvin, Office of Public Works, OPW • Kevin Motherway, Climate Action Regional Office, CARO • Mairéad Conlon, Uisce Eireann, UE • Brian Beckett, Inland Fisheries Ireland, IFI
12:45-13:15	Q&A Chaired by Dr Conor Quinlan
13:15-14:15	*Lunch and poster session*
Session 3: Case Studies– Management for Water, Nature and Climate Change Adaptation	
14:15-14:20	Introduction - Knowledge Sharing: Examples of Climate Change Adaptation - Lisa Cronin, Atlantic Technological University
14:20-15:00	• Home Performance Index (HPI) & the Kilbride housing project – John Fingleton, Irish Green Building Council • Rain gardens, a popular urban drainage solution in Carlow – Ciarán Brennan, Carlow County Council • Paludiculture at catchment level – Dr Doug McMillen, Farm Carbon EIP & Adrian & Kieran Egan, Farmers. • Making space for rivers – Rossa Ó Briain, Inland Fisheries Ireland
15:00-15:30	Q&A Chaired by Lisa Cronin
15:30-16:00	Event close

SESSION 1: PRESENTING THE SCIENCE
Chair: Matt Crowe

Conor Murphy, Keynote Speaker, Maynooth University.

Topic: Impacts of Climate Change on Water Resources (flooding and drought)

Key messages

1. Climate change is not just a future threat, it is happening here and now, and we need to adapt.
2. Water needs to be at the core of our national climate objective of a climate resilient Ireland. We also need to recognise our vulnerability and exposure.
3. We are making progress on adaptation in the water sector but have a long way to go. Even climate resilience means different things depending on focus. So, it's very important that we develop shared goals to avoid conflicting priorities.

Learnings

Climate Change is impacting temperature, rainfall, river flows

- Climate Change models project heavier rainfall across Ireland
- Temperature records indicate that some Irish stations are warming at a faster rate than the Global Mean Temperature.
- Models indicate the impact on river flows will vary across catchments and seasons. Higher flows are projected for winter, particularly in the west and north-west. Lower flows are projected for summer months across most areas.
- Drought projections show increases in magnitude of droughts in spring and summer for medium and high emissions scenarios by the end of the century.
- Models of Low flows (Q95) of rivers across 40 Irish catchments project that low flows are likely to become more extreme for all but the most ambitious greenhouse gas emission scenarios. But success at reducing global GHG emissions does result in more modest low flow changes.
- Projected changes in floods for medium and high scenarios illustrate a wide range of changes to catchment hydrology, with smaller catchments showing the most extreme impacts and widest ranges of change.

Key Actions

The foundations for adaptation are being built. But there are challenges we need to confront:

- Develop a shared understanding of the meaning and goals of resilience,
- Address conflicting priorities,
- Build capacity and political buy-in,
- Provide funding and supports to incentivise collaboration,
- Develop shared values across sectors and society.

Presentation Link

Sarah Cotterill, University College Dublin

Topic: The role of water conservation in Ireland

Key Messages

1. Ireland's water resources are under pressure and there are many competing end-users to supply.
2. Sustainable water management and water conservation is central to a climate-resilient Ireland and Ireland's climate action plan.
3. Water conservation is an underused tool which offers multiple societal, environmental and economic benefits.
4. Water conservation should be used as a climate change adaptation tool, alongside capital upgrades.

Learnings

- Water supply demand deficits currently in 20 out of 26 counties are projected to get worse to 2044.
- The regional variation in water availability and predicted population and economic growth will contribute further to Supply Demand Balance (SDB) deficits in water supply zones particularly in the east, midlands and south.
- New abstraction legislation could increase supply demand deficits further by reducing the amount of water that can be abstracted from sources by Uisce Éireann.
- Leakage reduction alone will not solve all SDB issues.
- One of the greatest barriers to increasing housing supply is a lack of water and wastewater treatment infrastructure.
- Water conservation is an underused tool which offers multiple societal, environmental and economic benefits. For example, a 20% reduction in water use could save up to 0.45 kg-carbon dioxide emissions /property/day.

Key Actions

- At a national level, incentivised and mandated water efficiency measures should be considered, for example updating building regulations, retrofit of public buildings and committing to water efficient new homes and buildings.
- Ireland's Climate Action Plan should include more reference to water efficiency.
- At a local level, Local Authority plans should include actions to increase water efficiency and water conservation in public housing and public buildings, and sustainable water management should be included in all planning decisions.
- There are technical, regulatory and educational measures that could be introduced - but the suitability for doing so should be established by a cross-sectoral national conservation team as part of a government strategy.

Presentation Link

Michelle McKeown, University College Cork

Topic: Climate Change impacts on water quality

Key messages

1. Water quality in Ireland is currently under pressure with 50% of surface waters not reaching good ecological status. Droughts and Floods resulting from climate change will make that situation worse.
2. Climate change is impacting water quality, with multiple stressors, direct and indirect, that vary over geography and time.

Learnings

- Lower flows in rivers results in less dilution of pollutants which can be an issue for both drinking water supplies and aquatic ecosystems.
- High rainfall events can cause washout of pollutants from land into waterbodies (particularly if it occurs after a dry period), impacting raw water quality (with impacts for water treatment and ecosystems).
- Shifts in precipitation patterns will have significant implications for combined sewage outflows (CSO)
- Higher temperatures can influence water quality, particularly in lakes, e.g. manganese can increase in raw water causing issues for treatment and supply.
- Drying out of peatlands results in the release of Dissolved Organic Carbon to waterbodies. This can exacerbate exceedances of carcinogenic trihalomethanes (THMs) following chlorine treatment of drinking water.

Key Actions

- We need innovative, integrated responses with agencies and stakeholders working together to find solutions at catchment level.
- Solutions need to be tailored, yet adaptative and must be long term.

Presentation Link

Jean O'Dwyer, University College Cork

Topic: The impacts of extreme weather events on public health

Key messages

1. Climate Change will inevitably lead to poorer health outcomes amongst the population of Ireland, largely driven through hydrology.
2. Environmentally associated infectious diseases will increase in both incidence and geographic distribution with both temperature and precipitation changes.
3. Aside from physical health, the psychological impact of extreme weather events is an area worthy of further investigation.

Learnings

- Climate Change hazards of flooding, drought, fire, extreme weather events and infectious diseases have direct and indirect impacts on human health. Ireland has the highest incidence of environmentally associated infectious diseases (VTEC & Cryptosporidiosis) in Europe. The

incidence and geographic distribution of infectious diseases will increase with both temperature and precipitation changes with consequent impacts on public health.

- The incidence of waterborne diseases increases significantly with increased rainfall and precipitation and increased temperatures.
- A 20mm rainfall increase can result in an increase in Cryptosporidium cases of 127% and a VTEC increase of 117%.
- An increase of 2℃ in temperature results in an increase in incidence of VTEC of 219% and 169% of Cryptosporidium.
- These are rural diseases, that are 20 times more prevalent in private well water supplies.
- Extreme weather events caused by climate change will negatively impacts on people's health both physical (infectious diseases) and mental health.
- Negative psychological impacts similar to post traumatic stress disorder are associated with extreme weather events and this area is worthy of further investigation.

Key Actions

- We are urgently in need of actionable policy to help protect those most vulnerable and reduce the environmental, social and economic burden of the public health impacts of climate change.
- Climate Change is a kaleidoscope issue and can no longer be viewed simply through an environmental lens- it is a global problem with local consequences.

Presentation Link

Ken Whelan, Atlantic Salmon Trust

Topic: Freshwater ecosystems management – challenges and opportunities

Key messages

1. Climate change is impacting ecosystems in a multitude of ways, resulting in profound changes particularly in our lakes– invertebrates, fish, flora and water chemistry with significant regime shifts – changing the natural ecosystems.
2. This change is happening more rapidly and intensely than projected with negative and potentially, some positive consequences.
3. Climate related stresses are causing major biological modifications including the appearance of new species and the spread of non-native species around the coast and in freshwater.

Learnings

- Adaptations are occurring such as mayflies creating homes in non-native zebra mussel shells.
- Changes are happening very quickly and profoundly. We need to be aware of these changes, so our management strategies are appropriate, we need to monitor and evaluate the ecosystem impacts in a holistic way.
- Adaptation to climate change is in our hands. Combating climate change requires a clear and unambiguous focus on: monitoring change; responding to change; conserving populations of animals and plants; and relieving man-made stresses on the environment.

Key Actions

- It is essential to take and ecosystems approach to climate and water management. The scale and pace of our response action needs to be transformed.
- We need a data transformation with AI / big data to develop– integrated ecosystem models to inform the national debate, which we so urgently require.
- We need an integrated approach to manage our ecosystems. For example, there should be at least two workshops each year with all of the relevant experts and agencies to consider the fundamental changes and to develop holistic ecosystems-based solutions.
- We need to bone-up communications around the climate change issues and impacts.

Presentation Link

SESSION 2: MANAGEMENT AND IMPLEMENTATION - AGENCY PERSPECTIVES
Chair: Conor Quinlan, EPA

Bernie White, LAWPRO

Topic: Integrated Catchment Management approach to water management

The Local Authority Waters Programme (LAWPRO) support the implementation of the EU Water Framework Directive (WFD) through the River Basin Management Plan for Ireland (RBMP) Water Action Plan, which seeks to protect, improve and restore water quality in Ireland. LAWPRO is a Local Authority national shared service, works on behalf of all 31 Local Authorities, and is funded by the Department of Housing, Local Government and Heritage. LAWPRO supports the 3rd tier of Governance for Ireland's Water Action Plan and through its Regional Committee structures it engages with agencies and communities to implement the actions of the WAP.

The Water Action Plan (WAP) and Catchment Management Planning – take an integrated catchment management approach to water management. While LAWPRO is responsible for 21 specific actions in the WAP, three key deliverables are:

- Supporting the development of Sectoral Action Work Plans. Sectors responsible for water pressures will develop Sectoral Action Plans that will identify measures they will implement to both restore waterbodies impacted and protect waterbodies by preventing deterioration.
- The development of Catchment Management Work Plans, beginning in 5 pilot catchments to create a plan that will deliver outcomes for water quality at waterbody level. These plans will facilitate monitoring, evaluating and assessment of measures implemented.
- The establishment of Community Catchment Fora has already begun with scoping workshops in each of the pilot catchments that will inform a model and framework for Catchment Community Fora and how these might exist at a national scale to support communities to enhance, restore and protect our waters.

Presentation Link

AGENCY PERSPECTIVES on taking an integrated catchment management approach to water management and climate adaptation, considering the challenges and opportunities.

Q. What is your agency's role in climate adaptation and water management?

Conor Galvin, Office of Public Works (OPW)

The Office of Public Works (OPW) are the lead agency with responsibility for flood management and delivering the EU Floods Directive. Floods are the most damaging natural hazard across the EU, with impacts extending beyond infrastructure damage to include risks to human health. The Office of Public Works (OPW) have a Climate Adaptation team of eight engineers that contribute to spatial planning and Local Development Plans.

The 2018 national Catchment Flood Risk Assessment and Management (CFRAM) programme aimed to address flood risk that is increasing over time. There are 300 flood maps for at risk areas, that need to be reviewed every 6 years. The OPW manage 100 major flood relief schemes and work with LAs on minor works schemes for small urban areas.

We are working on climate adaptation plans to manage increasing flood risks, with a focus on developing adaptation pathways based on climate projections. We are also collaborating with other agencies to develop these plans but challenges are likely at the operational level.

Mairead Conlon, Uisce Éireann (UÉ)

Uisce Éireann (UÉ) are the single public utility for water and wastewater services in Ireland. UÉ manage 539 Water Resource Zones (WRZ) across the country. UÉ's National Water Resources Plan (NWRP) is reconfiguring supplies and building operational capacity and resilience into the drinking water supply. Wastewater Management Plans are being developed and include flood mitigation and an assessment of Storm Water Overflows (SWOs). Flooding causes issues with storm water overflows and increased temperatures cause odour problems. National Wastewater Plans will address these issues and UÉ have started these strategies already. UÉ have made progress to date but there is still a long way to go to understand the potential impacts of climate change and to protect our customers.

Water and wastewater services are dependent on the environment for both a water source and for dilution of wastewater. We need to adapt to future climate change, including changes to water availability and impacts on abstractions and changes to raw water quality and its impact on treatment requirements. UÉ are carrying out drinking water source risk assessments, which are part of drinking water safety plans and building resilience in supplies by integrating water resource zones.

UÉ engage with LAWPRO at Regional Committees to address WFD water quality challenges. UÉ have catchment management plans and need collaboration with agencies and stakeholders to deliver and sustain these actions.

Kevin Motherway, Climate Adaption Regional Office (CARO)

CARO's key role is climate adaptation and mitigation in Ireland, with a primary action to liaise with Local Authorities and support their climate adaptation planning. The development and

implementation of Local Authority Climate Action Plans includes workshops with agencies to develop consensus on actions. There are considerable water related actions in the county Climate Action Plans.

Kevin is the CARO liaison for LAWPRO, to engage on the overlap between the Water Action Plan and the Climate Action Plan. Actions do not always need capital investment, sometimes outcomes can be achieved by practice change. CARO's key functions span many areas, including road maintenance and adaptation, beach management, greenhouse gas emission reductions and storm management.

Brian Beckett, Inland Fisheries Ireland (IFI)

The key role of IFI is to protect, conserve and develop fish species, including migratory species to 12 miles offshore. Water quality and habitat restoration is key to supporting this. IFI are involved in catchment and climate change planning and have temperature risk maps for rivers to guide catchment work.

IFI looks at water and climate through the lens of fish, dealing with broad sustainability issues and delivering protection and sustainable management of fish populations. They also carry out planning for climate mitigation and adaptation, data collection, operations and research to support management of fisheries over time.

IFI engage with agencies, OPW, LAWPRO, ACRES and have habitat restoration funding. The Nature Restoration Law will be a further catalyst for work and focus into the future. IFI work with local groups and agencies on climate adaptation actions but this needs to be scaled up particularly at local level. The challenge is how to make this more impactful, find agreement and space to act, there is potential with biodiversity plans.

Bernie White, LAWPRO

Local Authority Climate Action Plans provide opportunities for collaboration. Teams have various levels of knowledge and capacity across Local Authorities and even at different levels within the Local Authorities, a weakness that needs to be addressed.

Regional Committees are already established to support the implementation of the WFD and could have a role in collaboration across sectors and local authorities.

LAWPRO's Community team engage with the public on how citizens and communities can play a part and inform decision making. The Catchment science team inform and future proof the measures for water quality outcomes and have an increasing role in nature-based solutions, upskilling the teams and supporting Local Authorities in this.

Q. Shared risk requires agencies to work together to address adaptation challenges. How might this be achieved?

Opportunities and Challenges

Collaboration is essential: Agencies must work together to address climate adaptation challenges, as shared risks require collective action. Input from multiple sectors should be encouraged to address climate change risks. Identifying areas of agreement will leverage cooperation.

Consensus building: CARO facilitates workshops and creates consensus on adaptation and mitigation actions, many of which are now part of Local Authority Climate Action Plans.
Non-financial solutions: Some actions don't require funding; changes in work practices and sharing best practices can resolve some issues.
Building capacity: Local Authorities need more capacity and knowledge through different levels of staff to effectively engage in climate action, which can be achieved through targeted training and support.
Sustaining projects: Projects like the UÉ Source to Tap need ongoing funding and maintenance beyond their initial timeline to ensure long-term success.
Scaling up efforts: IFI's ground-level work requires ongoing collaboration and overcoming barriers to scale up the work they do with local groups.
Operational challenges: Delivering projects on the ground presents challenges, especially when measures fall outside some agencies' remits (e.g., softer measures such as community impact).

Q. What are the barriers to prioritising nature, water and climate in planning?

Opportunities and Challenges
Integration of Nature-Based Solutions (NBS) and Co-Delivery of Solutions: Catchments need to be assessed to incorporate NBS effectively. NBS and hard infrastructure should be co-delivered, with their co-benefits valued and included in infrastructure planning. OPW is exploring how NBS can complement traditional infrastructure, but they feel hard engineering remains essential in major flood risk areas.
Environmental Considerations in Planning: Uisce Éireann (UÉ) evaluates options with a focus on minimizing environmental impact, considering multi-criteria approaches and cumulative environmental effects in the early stages of project planning.
Opportunities in National Utilities: UÉ a national water utility has a unique opportunity to prioritize projects to address the greatest need and cumulative environmental impacts.
Prioritizing NBS in Urban Areas: Local Authorities can leverage Compulsory Purchase Orders (CPOs) to incorporate NBS into road developments, aligning design standards with NBS. There is a need to increase NBS in urban environments to manage both surface water and ecological considerations effectively.
Knowledge Gaps at Local Authority Level: Local Authorities often lack knowledge on planning for NBS, requiring best practice guidelines and supports to plan for future projects. LAWPRO is collaborating with the Department to help Local Authorities plan for NBS at earlier stages of project development.

SESSION 3: KNOWLEDGE SHARING – EXAMPLES OF BEST PRACTICE MEASURES AND HOW THEY MIGHT BE SCALED FOR OUTCOMES.
Chair: Lisa Cronin, Atlantic Technological University, Sligo.

John Fingleton, Irish Green Building Council

Topic: Making homes water efficient

The Irish Green Building Council support improving sustainability in the built environment, they provide a resource to companies seeking to transition to sustainable practices.

An example of our work was when the Green Building Council supported the Kilbride Multi-Use Housing project along with Wicklow County Council and Coady Architects, the to achieve the highest sustainability standard in Ireland. 40 new homes that were built with a certified water efficiency of 75 litres per person per day. This was achieved using water saving fittings in toilets, basin mixers, shower mixers and sink mixers. Dishwashers and washing machines were of High-Performance Index standard.

Inputting measures at development stage will be important to achieve outcomes as it requires no behavioural change. The challenge is to keep costs low in new housing.

Presentation Link

Ciaran Brennan, Carlow County Council

Topic: Rain gardens as urban drainage solutions

Heavy rainfall events in Carlow has resulted in surface water floods which were becoming an increasing challenge for traffic management, water and sewage management in the urban area.

Staff at the Municipal District in Carlow explored the feasibility for rain gardens as a solution to the surface water flooding in the town. Engagement between LAWPRO, Local Authority engineers, road maintenance teams and the local community resulted in the establishment of strategically placed rain gardens to act as a sponge for surface waters but also provide a garden like amenity for the community.

This process of turning urban grey to green proved very popular with the community and there are now plans to implement more rain gardens. The team plans to work with the local university to research the water quality benefits of the gardens and their learnings contributed to the Departments Guidance Note on Road and Street Drainage using Nature Based Solutions.

Presentation Link

Doug McMillan, Green Restoration Ireland

Topic: Paludiculture at catchment scale

Rewetting of peat soils has huge benefits for water quality as it reduces the loss of nitrogen, phosphorus, ammonia and dissolved organic carbon to waterways and uses carbon sequestration to reduce the release of GHG to the air.

Damming peat allows for water storage, plant growth and reduces the likelihood of wildfires. Paludiculture or wet peat agriculture brings the water table to between 30cm and 10cm below the surface. Managed trials focused on farm output targets with economically viable crops such as blueberries, cattails, fodder crops and vegetables such as celery, potatoes, onion, lettuce and rhubarb. Trees can also be supported, and upscaling of pilots could be hugely impactful.

Presentation Link

Rossa Ó'Briain, Inland Fisheries Ireland

Topic: Making Space for the River

Rivers are dynamic, they are not just the channels we see but are intricately linked to the wider landscape. Therefore, all land use impacts on river water quality and river habitats. Making space for the river seeks to address land use and drainage in the river catchment. Fortunately, rivers are dynamic and will respond to actions such as the Stonyford River where arterial drainage works were halted and within 10 years eels, crayfish and trout had returned to the channel.

Flow regulation can also cause challenges such as the impacts on Vartry River from Roundwood Reservoir which regulates flow levels and prevents pulses of high flows reaching the coast. These are necessary for signalling to salmon and trout to move upstream to spawn. We need stronger legislation for flow regulation to protect important species.

Presentation Link

MATT CROWE

Key learnings from the day

- We need a national coordinated approach to align action at government level for water, climate and nature.
- We need community engagement at local level to be supported in a co-ordinated way that addresses all the landscape issues together.
- We need to prioritise and focus on implementation of national and local plans to deliver outcomes with multiple benefits. We have the policy and the science, now we need to focus on delivering the actions.

APPENDIX 1

Agencies and organisations in attendance

An Taisce
Angling Council of Ireland
Armagh, Banbridge Craigavon Borough Council
ASSAP
Athena
Atlantic Salmon Trust
Atlantic Technological University
Carlow County Council
Cavan Local Dev. Company
CCLD
Carlow County Council
Clare County Council
Climate Change Advisory Council
Coastwatch
Cork County Council
Cork Nature Network
DAFM
DECC
DHLGH
Dublin City County Council
Dublin City University
Dun Laoghaire Rathdown County Council
Dundalk Institute of Technology
EPA
ESB
Farm Carbon Project
Fingal County Council
Geological Survey of Ireland
Green Restoration
IBEC
ICMSA
Inland Fisheries Ireland
Irish Co-Operative Society
Irish Green Building Council
Irish Rural Link
Kerry County Council
Local Authority Waters Programme
Limerick County Council
Macra
Maynooth University
Meath County Council
Met Eireann
National Economic and Social Council
National Federation of Group Water Schemes
National Parks and Wildlife Service
National Treasury Management Agency
Office of Public Works
Rivers Trust
South Dublin County Council
SWAN
Teagasc
Technological University of Dublin
Trinity College Dublin
Ui Maine Kingdom
Uisce Eireann
University College Cork
University College Dublin
University of Galway
Westmeath County Council
Wicklow County Council
Zero Waste Alliance

APPENDIX 2

Attendee Feedback Summary

Overall Impression or Experience of the Day

Presentations, venue and organisation: Interesting and informative presentations and discussion with diverse perspectives. Excellent venue, organisation and timing.

Networking: Broad audience and opportunities to speak to a wide range of different individuals with varying interests in the water space.

Impressions: Water Quality/Climate Change is being tackled seriously and the work people are doing is valued. Many people are interested in finding solutions despite the challenges. The level of enthusiasm and commitment shown is encouraging.

Key Learnings or Take-Home Messages from the Day

Water as Priority: Climate change is affecting all aspects of life, including water quantity, quality, health, and beyond. Water should be a key focus in climate adaptation, particularly regarding resource availability, flood risks, and water quality.

Collaboration and Alignment: There is positive progress as state agencies are increasingly aligning to address water and climate issues, but this is just the beginning and will need continuous tracking and revisiting. Climate change adaptation will depend on collaboration across government agencies and communities, particularly in managing and protecting water bodies.

Long-Term Approach: A multi-year, multi-agency strategy is needed to address climate change, with continuous review and implementation, ideally overseen by a Department of Climate Change.

Water, Climate, and Biodiversity Plans: While water action plans show good cooperation across national, regional, and local levels, there's less coordination for biodiversity and climate. The role of the CAROs in linking national and local authorities is significant.

Water Crisis and Water Management: The conference emphasized the urgency of addressing water quality issues in the context of climate change, which accelerates negative impacts. Coordination efforts are crucial as water management is complex, but there is a risk of failure if resources and commitments fall short, for example changes in agricultural practices are needed to reduce pollution. Local Authorities must play a central role in implementing actions outlined in legislation.

Regional Coordination: Despite ongoing efforts, there is a lack of clear connections between regional or local projects that could complement each other, particularly in translating research into actionable policy and practical implementation. While research is vital, grassroots organizations are often driving change without adequate support or recognition.

Climate Change Awareness: It's crucial for all stakeholders to have a shared understanding of climate change, especially its immediate effects on temperature and precipitation in Ireland. Furthermore, efforts to raise awareness about water management and conservation need to be intensified among various interest groups and the general public.

Low-Cost Water Efficiency: Simple water-saving measures, like efficient taps and showerheads, can lead to significant water savings at low cost, and should be prioritized in new building regulations.