Ireland's adaptation to climate change in relation to Water Scarcity and Drought and use of nature-based solutions

Averil Gannon,
Water Policy Advisor
Department of Housing, Local Government and Heritage, Ireland

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Map from the European Drought Observatory showing Ireland with a high soil moisture deficit in Feb 2023.

This will impact on ground water supplies where trans evaporation is high for this time of year.

IE has numerous small ground water drinking water scheme, that situations like this prove challenging.
National Water Resources Plan (NWRP)

The plan will set out how we can balance the amount of drinking water we can supply with the demand for water that is needed over the short, medium and long term.

### National Water Resources Plan (NWRP)

- **Calculate the demand for water from homes, businesses, farms and industry now and into the future.**
- **Assess the amount of water we have available.**
- **Identify areas where there is not enough water supply to meet demand or where there are risks to water quality.**
- **Develop a national plan to ensure there will be enough water to meet demand and address any risks to water quality.**
- **How climate change will impact our water.**
- **Our three pillar approach will ensure we have a safe, secure, reliable and sustainable drinking water supply for everyone.**

### Drought Stage Trigger

<table>
<thead>
<tr>
<th>Drought Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Normal range of monitoring actions.</td>
</tr>
<tr>
<td>Potential Drought</td>
<td>Actions required to prepare for drought following a prolonged period of dry weather.</td>
</tr>
<tr>
<td>Drought</td>
<td>Actions required to manage drought once conditions impact on customers and the environment.</td>
</tr>
<tr>
<td>Emergency (Severe Drought)</td>
<td>Actions required when drought conditions cause water demand to exceed the amount of water available for customers and the environment.</td>
</tr>
<tr>
<td>Post-Drought</td>
<td>Actions required to monitor and manage recovery of water supplies and to review Irish Water’s response to drought.</td>
</tr>
</tbody>
</table>

### Drought Stage

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Normal</td>
<td>SPI above -1.</td>
</tr>
<tr>
<td>Potential Drought</td>
<td>SPI of -1 or below</td>
</tr>
<tr>
<td>Drought</td>
<td>SPI of -1.5 or below</td>
</tr>
<tr>
<td>Emergency (Severe Drought)</td>
<td>SPI of -2 or below</td>
</tr>
<tr>
<td>Post-Drought</td>
<td>Recovery in supply position and easing of environmental stress</td>
</tr>
</tbody>
</table>
# Water Scarcity and Drought - Planning and Actions, IE

## Water Scarcity ACTION PLAN

### ASSET OPERATIONS - CENTRAL ACTIONS

<table>
<thead>
<tr>
<th>Regional Operations</th>
<th>WorkFlow</th>
<th>DPM</th>
<th>GIS</th>
<th>OECM</th>
<th>Business Support</th>
<th>Communications</th>
<th>Digital Marketing Team</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>End of week 2 April - start</td>
<td></td>
<td></td>
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</tbody>
</table>

### Core Actions

- **Ensure all operations staff are fully aware of procedures when a potential drought is imminent through training or workshops.**

- **Ensure all staff are briefed and trained for a response to a drought issue.**

- **Monitor production rates from each treatment works.**

- **Monitor reservoir levels and demand flows to the distribution system.**

- **Ensure there are accurate records for abstraction rates, production flows, volume storage in reservoirs and demand flow values.**

- **Prepare a water conservation plan for contingency for a DROUGHT category.**

- **Ensure availability of records of Water Supply Zones and detailed mapping of all distribution systems.**

- **Ensure LA contacts are up to date and contact details available from stand-up drought tracker.**

- **Have up to date contacts for the national and regional LH contacts.**

- **Prepare drought management reporting templates.**

- **Draft communications to prepare for a potential drought - press releases, briefing notes, updates to external stakeholders such as elected reps, community groups, schools, key customers and draft updates for web and social media channels and marketing materials.**

- **Ensure all communications and contacts are up to date with the OPEM team in Asset Operations.**

- **Develop plan on a page for GIS supplying large populations (Pressure, Management, F&F, Non-Dom Use, Excessive Usage, Conservation Orders...).**

- **Alignments of data for SharePoint tracker and use of GIS.**

- **Recorded in monthly status reports provided by DBO Contractors.**

- **Alignments of data (WSZ, population, X, Y) for GIS.**

- **Maps should be provided to the Communications teams for issue with external communications and on our website and social media channels.**

- **Ensure all communications and contacts are up to date with the OPEM team in Asset Operations.**

- **Ensure team added to all appropriate Asset Operations group emails so important information is treated immediately.**

### Additional Actions

- **Maintain a register of contacts of Stakeholders, phone, email and standby/deputy contacts.**

- **Prepare drafts for the Drought Management Report, LA Summary Report, National Summary Report, Drought Management Table, DW Top 50 Sites Table.**

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- **Ensure all staff are briefed and trained for a response to a drought issue.**

- **Ensure the Communications Team are briefed and trained for a response to a drought issue.**

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- **Prepare drafts for the Drought Management Report, LA Summary Report, National Summary Report, Drought Management Table, DW Top 50 Sites Table.**

- **Ensure all communications and contacts are up to date with the OPEM team in Asset Operations.**
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<th>Any supply that is showing stress in relation to source levels and reservoir or bank storage levels.</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>- Any scheme with demand increases above normal.</td>
</tr>
<tr>
<td></td>
<td>Note: This should relate to dry and high temperature conditions excluding general plant breakdowns which are not associated with weather.</td>
</tr>
<tr>
<td></td>
<td>- Any scheme proposing source IFI Interventions</td>
</tr>
<tr>
<td></td>
<td>- Any scheme that has historically been effected by water shortages due to dry weather and high temperatures.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Drought</th>
<th>Any scheme or WTP where night and/or day time restrictions are in place</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Any scheme where tankering is in place or IBCs in place</td>
</tr>
<tr>
<td></td>
<td>- Any scheme serving bottled water to consumers</td>
</tr>
<tr>
<td></td>
<td>- Any WTP that has to be shut down because of low source levels at intervals during 24 hour operation</td>
</tr>
<tr>
<td></td>
<td>- Any scheme where source IFI Interventions are agreed and are in place.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Severe Drought</th>
<th>Any scheme or WTP which has experienced the conditions of ‘Drought’ for more than 4 days.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Any scheme or WTP that has to be shut down indefinitely because of source and demand issues.</td>
</tr>
<tr>
<td></td>
<td>- Any scheme that has full tankering import of its water supply to its reservoir for more than 2 days.</td>
</tr>
</tbody>
</table>
Climate Adaption – Use of nature-based solutions

- Use of nature-based solutions to minimise the risk on sensitive area
- Devise and implement new policies
- Learn from the lessons of others around slowing the flow
- Transferring the learnings from the nature-based solutions back into the rural landscape.
- These climate adaption measures should all contribute to a reduction in water scarcity instances
Need for NBS Guidance?

Initial webinar in 2020 with approximately 500 attendees -

Feedback from the attendees - Nature-based SUDS would significantly benefit water, climate adaptation, biodiversity, and human well-being objectives.

81% of respondents to poll believed that Nature-based SUDS were not being adequately implemented in Ireland.

Scoping study to determine the components and parameters of a National SuDS Implementation strategy.

To publish a Nature-based Solutions Interim Guidance document.
Surface water and rainwater runoff in urban areas – guidance doc
Information Webinars

• Launch of **Interim Guidance Document** - Nov 2021 Approx. 500 attendees

• Project Managers in Urban and Rural public funded schemes – March 2022. Approx. 300 attendees

• **Active Travel** teams – May 2022. Approx. 230 attendees

• CPD presentation for **Department Planners** – May 2022 –approx. 20 attendees

• **Engineers Ireland Webinar series** – May 2023 – 4 webinars with over 1200 registered for each webinar. 1st webinar attended by over 1500 people

Image: Front of St Peter and Pauls Church, Clonmel, Fran Igoe
NBS – looking to other countries – best practice – climate adaption measure
DMURS Advice Note 5: Road and Street drainage using Nature-based Solutions

Published in August 2023
Integration of water sensitive urban design concepts including development of Rainwater Management Plans as part of settlement plans / Local Area Plans)

Follow water across the development landscape.

Will become more important from Climate Change perspective (pluvial flooding, cloud bursts etc).

Guide location, type, scale and integration of nature-based solutions

Working with Cork*, Wexford, Offaly, Kildare, Fingal CoCos on development of template
National Implementation Strategy for Nature-based Solutions

Measure in the RBMP 2022-2027

National Implementation Strategy Project commencing in 2023
In December 2022 the Department of Agriculture, Food and the Marine, in collaboration with the Department of Housing, Local Government & Heritage, issued a call under the European Innovation Partnerships Initiative seeking proposals for the development and implementation of one single EIP with national coverage, targeting water protection and restoration actions on lands under agricultural management within River Basin Management Plan Areas for Action.

The new Agri-Climate Rural Environment Scheme (ACRES) aims to contribute significantly to achieving improved biodiversity, climate, air and water quality outcomes. These will be achieved through two approaches under the scheme:

- ACRES has capacity to support up to 50,000 farmers in implementing measures.
Future and Conclusion

- Further work in the Water Scarcity area – localised situations most critical for Ireland
- Promotion of Nature-based solutions in Ireland through planning and guidance
- Aim that National Implementation Policy will provide a road map for the regulator requirement for inclusion of nature-based solutions in all projects where possible.

Thank you

Email: Averil.Gannon@housing.gov.ie