Summary Report

Potential Pathways to Climate Resilience Workshop

Ashling Hotel, Dublin

15th April 2026

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Summary

The Climate Change Advisory Council's Adaptation Committee held its annual workshop at the Aisling Hotel in Dublin on 15th April 2026, focusing on the topic of pathways to climate resilience.

The workshop brought together national and international experts to explore how thresholds, indicators, and adaptive pathways can support climate adaptation planning under uncertainty across key sectors in Ireland. The workshop agenda can be found under Appendix 1.

The workshop included a wide range of participants (67 in total) including central and local government representatives, researchers and climate service providers. The full list of participants is provided in Appendix 2.

A non-exhaustive selection of key observations arising from the workshop include:

1. Adaptive pathways provide a flexible framework for long-term decision-making. Dynamic Adaptive Policy Pathways (DAPP) can sequence actions over time, link decisions to thresholds and signals, and reduce the risk of maladaptation while preserving future options.
2. Monitoring, thresholds and review mechanisms are as important as the adaptation actions themselves. Effective implementation of adaptive pathways depends on clear monitoring systems, agreed indicators and well-defined trigger points.
3. Real-world application shows adaptive pathways are already emerging in Ireland. Case studies from flood risk management and the water sector illustrated that elements of adaptive pathways thinking are being applied in practice. The need for shared learning across sectors was repeatedly highlighted.
4. Climate services[1] are critical enablers of adaptive planning and decision-making, supporting the translation of climate science into decision-relevant information through indicators, thresholds, warming levels and climate services platforms.

1. Overview of Presentations

George Hussey, Climate Change Advisory Council Secretariat Manager, opened the workshop and welcomed participants.

Dr. Stephen Flood, Resilience Team Lead in the Climate Change Advisory Council Secretariat, introduced the objectives of the workshop and set the scene for the day. His presentation provided context for Ireland's journey to climate resilience as set out in the national climate objective. He framed the concepts of climate change adaptation and resilience, introduced the different climate scenarios that are planned for in Ireland and noted the opportunities provided

[1] Climate services are the provision and use of climate data, information, and knowledge to support decision-making. In Ireland, key elements of climate services include the National Framework for Climate Services, led by Met Éireann, TRANSLATE and Climate Ireland, led by the EPA.

by relevant policy developments at national level and EU level. Lastly, he highlighted the multiple environmental and socio-economic benefits from climate resilience initiatives.

Keith Lambkin, Head of Met Éireann's Climate Services Division, presented on the application of climate indicators, thresholds and climate impact-drivers in adaptation planning In Ireland. His presentation provided a particular focus on the role of climate services information systems, TRANSLATE[2], in translating climate science into actionable planning signals. The use of global warming levels and future climate scenarios (RCPs and SSPs) was outlined as a means of supporting anticipatory decision-making.

Sophie Martinoni, director of Climate Services at Météo-France, introduced France's national reference warming trajectory for climate adaptation (TRACC)[3], developed to provide a common basis for planning in the face of deep uncertainty. The TRACC framework translates global mitigation commitments into reference warming levels at defined time horizons, allowing adaptation planning to focus on warming levels rather than multiple emissions scenarios. Practical applications demonstrated how this approach supports consistency across sectors and reframes time horizons as deadlines for action.

Professor Marjolijn Haasnoot and Dr. Sadie McEvoy, senior researchers at the Deltares Institute in the Netherlands, presented on adaptive pathways planning approaches. They introduced the Dynamic Adaptive Policy Pathways (DAPP) framework[4]. The speakers demonstrated how sequencing adaptation actions over time, supported by monitoring and signals, can help avoid maladaptation and support decision making under uncertainty. International examples illustrated how pathways approaches can be embedded within policy and investment frameworks.

Mark Adamson, Head of the Risk Management and Climate Adaptation Division within Flood Risk Management Services at the Office of Public Works, provided a case study on how adaptive pathways are being applied within Ireland's flood risk management system. The presentation outlined the use of Scheme Climate Change Adaptation Plans to embed flexibility into both new and existing flood relief schemes, recognising uncertainty in future climate and socio-economic conditions.

Charlie Coakley, Senior Manager within Uisce Éireann's dedicated Sustainable Business Team, provided a case study on the application of adaptive pathways in Ireland's water sector. The presentation outlined Uisce Éireann's national climate risk screening process and its role in identifying priority risks across water resource zones. The Water Supply Project for the Eastern and Midlands Region was presented as an example where adaptive planning has been embedded at the regional planning stage to manage uncertainty over long time horizons.

[2] TRANSLATE - Met Éireann - The Irish Meteorological Service

[3] Using regional warming levels to describe future climate change for services and adaptation: Application to the French reference trajectory for adaptation - ScienceDirect

[4] Haasnoot, M., Warren, A., Kwakkel, J.H. (2019). Dynamic Adaptive Policy Pathways (DAPP). In: Marchau, V., Walker, W., Bloemen, P., Popper, S. (eds) Decision Making under Deep Uncertainty. Springer climate. https://doi.org/10.1007/978-3-030-05252-2_4

2. Summary of Presentation Discussions

The following main points were discussed in response to the presentations given by the invited experts.

- Community buy-in: all presenters were in agreement that community engagement and buy-in was a key factor for successful adaptive pathways planning. The OPW applies standards of protection in its scheme adaptation plans, which are key thresholds for community acceptance of flood risk reduction measures. It was also noted that all adaptation projects are implemented locally, have to be designed to acceptable public standards and therefore require local level knowledge of risks and solutions as well as community buy-in through the planning and public consultation processes.
- Knowledge of the thresholds approach: It was considered that thresholds for climate resilience are not well-known or applied in Ireland and there is considerable work needed to move beyond the simplistic approaches that have been applied to date. The challenge of different sectors experiencing different thresholds over different timeframes was discussed. It was noted that the use of thresholds can also depend on multiple and interacting factors in sectors such as agriculture. It was noted that research is not currently geared towards investigation of thresholds and that there is a need to address this gap. Clear monitoring and review mechanisms linked to thresholds are also needed.
- Cross-sectoral risks: the DAPP approach is considered to have good potential in identifying cross sectoral risks from decisions on other sectors and mitigating these risks. Shared learning and coordination across sectors are needed to manage interdependencies and cascading risks. The need for a more collective preparedness thinking was highlighted in Ireland, including to understand what impacts we are likely to face and what needs to happen.
- The usefulness of DAPP in planning for uncertainties: this issue was discussed in relation to uncertainties around greenhouse gas emissions and socio-economic development. It was noted that in some cases policymakers and practitioners should not be deciding now on what adaptation measures will be implemented in decades to come. Instead, they should be planning and ensuring adaptation is considered now and acted upon to maximise choice and facilitate future decisions and action.
- Communication of approaches such as TRACC and DAPP to end users: these approaches were described as an additional tool in the arsenal for decision makers to plan and take decisions that would lead to greater climate resilience. It was noted that different levels of data are required by different role players such as policy makers and engineers and that communication depends on the skills of the end users. It was considered that the TRACC and DAPP approaches hold particular value in describing the future, both for expert and non-expert audiences.
- Application of nature-based solutions: it was noted that nature-based solutions are typically considered in climate resilient development pathways approaches. In the Irish context, they are increasingly being applied in flood relief schemes as part of a more integrated approach to delivering multiple benefits, while they are also widely used in local level treatment of wastewater through integrated constructed wetlands.

3. Summary of Breakout Sessions for Serious Game

Deltares facilitated the afternoon break-out sessions. The Sustainable Delta Game was used to illustrate to the participate how DAPP works in practice.

The Sustainable Delta Game is an interactive, scenario-based policy simulation used to explore long-term flood risk management and climate adaptation decisions under uncertainty. It is based on a real river delta system in the Netherlands.

Participants, in groups of 5 to 7, take on the role of collective decision-makers in government and must:

- Choose between different flood risk adaptation options, each with different costs, benefits and political implications (early warning systems, raising levees, making room for the river, and adapting buildings).
- Work within budget constraints.
- Respond to changing political, social, economic and climate conditions over time.
- Make decisions at successive future time steps (present, 2055, 2075, 2100).

The game is designed to highlight:

- Trade-offs between short-term acceptability and long-term resilience.
- The role of uncertainty, delayed signals and imperfect information.
- The political and social dimensions of adaptation, not just technical ones.
- The benefits and challenges of implementing adaptive pathways when future funding, climate impacts, support and political priorities are uncertain.

Discussions during the game highlighted that adaptation decisions are rarely driven by climate science alone, but emerge from a complex interaction of political priorities, public values, economic pressures and imperfect information. Participants observed that early decisions tended to prioritise short-term acceptability and visible socio-economic benefits, with long-term climate risks often deprioritised until damaging floods occur. The exercise underscored the difficulty of relying on clear “adaptation signals”, as by the time risks become obvious, opportunities for cost-effective action may have passed. At the same time, the use of adaptive pathways was seen as valuable in providing a flexible framework for decision-making, allowing options to remain open over time and enabling decisions to be revisited and adjusted as knowledge, societal values and climatic conditions evolve.

4. Conclusions & Way Forward

Dr. Stephen Flood thanked everyone for their participation in the workshop and emphasised the importance and value of the annual Adaptation Committee workshop, and *inter alia* the Climate Ireland Adaptation Network and National Framework for Climate Services symposiums, as means to build communities of practice for adaptation information sharing, capacity building, decision-making and planning. George Hussey thanked the Secretariat for their work in putting together the workshop.

The next steps post-workshop were outlined, including:

- Distribution of presentations from the speakers
- Dissemination of the workshop report
- Commissioning of research studies building on the key gaps identified during the workshop for climate resilient development pathways.

Appendix 1: Workshop Agenda

Potential pathways to climate resilience

Wednesday, April 15th, 2026

Agenda

Time	Item	Speaker/s	Time (mins)
9:30	Tea and Coffee		30
10:00	Welcome & housekeeping	George Hussey, Climate Change Advisory Council Secretariat Manager	5
10:05	Setting the Scene – Objectives and plan for the day	Dr. Stephen Flood, Resilience Team Lead, Climate Change Advisory Council	10
10:15	National thresholds and indicators	Keith Lambkin, Head of Climate Services Division, Met Éireann	15
10:30	France's reference warming trajectory for climate adaptation (TRACC)	Sophie Martinoni, Head of Climate in Meteo France, the French Meteorological Service	15
10:45	Questions and discussion	Questions to previous speakers	15
11:00	Coffee Break		15
11:15	Adaptive pathways planning for resilience under uncertainty, sharing a decade of experience and practice	Prof. Marjolijn Haasnoot and Dr. Sadie McEvoy, Deltares, The Netherlands	30
11:45	Case study on adaptive pathways for Ireland's flood risk management	Mark Adamson, Head of Risk Management and Climate Adaptation Division, Flood Risk Management and Climate Adaptation Services, Office of Public Works	15
12:00	Case study on adaptive pathways for Ireland's water sector	Charlie Coakley, Sustainable Business Senior Manager, Uisce Éireann	15
12:15	Questions and discussion	Questions to previous speakers	15
12:30	Lunch		45
13:15	Breakout session: The Sustainable Delta Game for dynamic adaptive planning - Session I	Facilitated by Deltares	60
14:15	Coffee break		15

14:30	Breakout session: The Sustainable Delta Game for dynamic adaptive planning - Session II	Facilitated by Deltares	60
15:30	Overview of breakout discussions	Summary of breakout discussions and overview of key common issues raised.	15
15:45	Next steps and close		5
15:50	-		

Appendix 2: Workshop Participants

Surname	First Name	Organisation
Adamson	Mark	OPW
Bambrick	Emer	Iarnród Éireann
Bond	Barbara	HSE
Born	Stephanie	Bord na Móna
Brawley-Chesworth	Alice	Dublin City University
Casey	Louise	Dept of the Taoiseach
Coakley	Charlie	Uisce Éireann
Connolly	Tea	ComReg
Corkery	JP	NTMA
Craven	Kieran	EPA
Cunningham	Sarah	OPW
Delmar	Jordan	Met Éireann NFCS
Devoy	Robert	UCC
Dodd	David	DCEE
Donnelly	Jaqui	Department of housing
Dooley	Katherine	EPA Ireland
Forde	Tim	Department of Culture, Communications and Sport
Galvin	Conor	OPW
Gaynor	Patrick	Dept of the Taoiseach
Haasnoot	Marjolijn	Deltares Institute
Healy	Éadaoin	Uisce Éireann
Holton	Chris	Dublin Bus
Joyce	Joe	Transport Infrastructure Ireland
Kavanagh	Tim	ESB Networks
Keegan	Neil	EirGrid
Kelly	Ina	CCAC Adaptation Committee
Lambkin	Keith	Met Éireann NFCS
Lennon	Andrea	Department of Transport
Mahon	Jillian	CCAC and Adaptation Committee
McAuley	Dervla	EPA
McCormick	Kevin	DCEE
McEvoy	Sadie	Deltares Institute
McMahon	Lynn	Land Development Agency
Moore	Jeanne	NESC
Murphy	David	ESB Networks
Nesbitt	Ray	Department of Agriculture, Food and the Marine
Ní Chiaráin	Eimear	DCEE
Ó Sé	Aislinn	DAA
O Sullivan	Jerome	Port of Cork Company
O'Brien	Turlough	Department of Transport

Surname	First Name	Organisation
O'Donovan	Diarmuid	HSE
O'Hehir	Colin	Department of Health
O'Neill	Darragh	EPA
O'Shea	Tadhg	Department of Enterprise, Tourism and Employment
O'Sullivan	Denise	Marine Institute Ireland
Owens	David	Department of Finance
Pendred	Cathal	DAA
Phillips	Chris	EPA
Rahul	Aditya	Trinity
Richards	Karl	Teagasc
Singh	Shubhangi	Iarnród Éireann
Slevin	Cera	Climate Matters Ltd
Smyth	Stephen	Transport Infrastructure Ireland
Hussey	George	CCAC Secretariat Manager
Macfarlane	Ben	CCAC Secretariat
Canniffe	Bryn	CCAC Secretariat
Hilliard	Ciara	CCAC Secretariat
Camilleri	Claire	CCAC Secretariat
O'Flynn	Dylan	CCAC Secretariat
Carrasco	Marta	CCAC Secretariat
Flood	Stephen	CCAC Secretariat