



PCAS | Policy Coherence in
Adaptation Studies

A SUMMARY OF POLICY COHERENCE IN ADAPTATION STUDIES: SELECTING AND USING INDICATORS OF CLIMATE RESILIENCE

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WHAT ARE CLIMATE RESILIENCE INDICATORS?

Climate resilience captures the capacity of a system, whether physical, social or ecological, to absorb and respond to climate change and by implementing effective adaptation planning to reduce negative climate impacts while also taking advantage of any positive outcomes.

An *indicator* is a characteristic or variable which helps to describe an existing situation and to track changes or trends over a period of time. A *climate resilience indicator* can provide either qualitative information on, for instance, the degree of development and implementation of a policy process, or quantitative information, such as the total seasonal rainfall or number of climate adapted bridges.

WHY ARE THEY USEFUL?

Indicators aid the characterisation of climate risks, allow tracking of progress in implementing adaptation actions and permit the evaluation of the outcomes and impacts of actions taken.

HOW DO THEY SUPPORT IRELAND'S GREEN TRANSITION?

Climate resilience indicators may serve a range of purposes, including capturing the state of a natural or human system, tracking progress in the implementation of an adaptation strategy or plan, monitoring the spending of adaptation funds, mainstreaming adaptation in different sectors and communicating adaptation information to policy-makers.

HOW WERE THEY SELECTED?

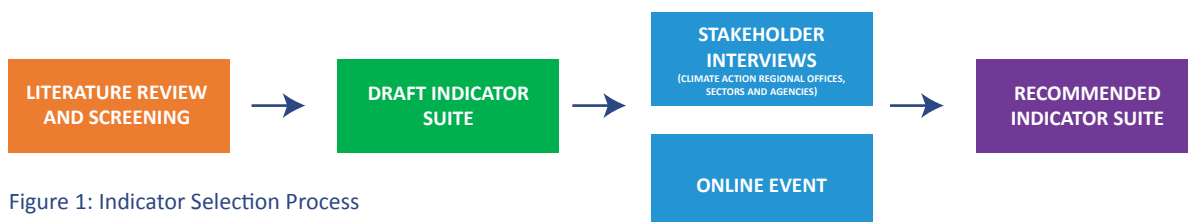


Figure 1: Indicator Selection Process

KEY HAZARDS FOR IRELAND

A *climate hazard* is understood as the potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources.

River and Inland Flooding



Extreme Events (Heat, Wind, Wildfire, Drought)



Coastal Flooding and Erosion



WHAT ARE THE INDICATORS?

Based on the three major sets of climate hazards identified for Ireland four climate resilience indicator types were established to form the basis of the indicator suite. The four indicator types and examples of each are provided below:

CLIMATOLOGICAL INDICATORS capture information about observed climatic conditions.



Total Seasonal Rainfall



Frequency of Drought



Sea Level Anomaly

IMPACT INDICATORS capture information about the observed impacts of climate variability and change on human and environmental systems.



Coastal Erosion Rates



People Impacted by Heatwaves



Number of Properties Flooded

IMPLEMENTATION INDICATORS provide information to help track the implementation of adaptation actions or strategies.



Programmes to Upskill on Adaptation



Drought Resistant Crops Grown



Investment in Programmes to Monitor and Forecast Coastal Erosion

OUTCOME INDICATORS provide information to help track the outcome of results of adaptation actions or strategies.



Number of Climate Adapted Bridges



Change in Number of Vegetation Fires



Change in Overhead Power Line Damage by High Winds

The outcome from the stakeholder co-design process, followed by additional refinement, led to a total of 127 recommended indicators, of which 91 are seen as priority. Indicators were tagged as priority if they were identified in the existing international indicator literature, recognised by the stakeholders as of high importance and reflected in the Irish climate impact literature (Figure 2).

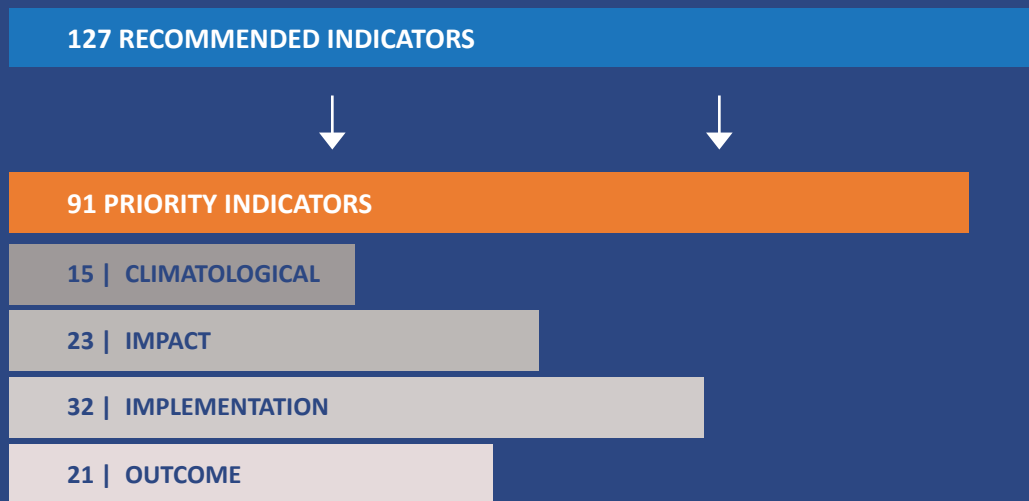


Figure 2: Indicator Overview

HOW WILL THEY BE IMPLEMENTED?

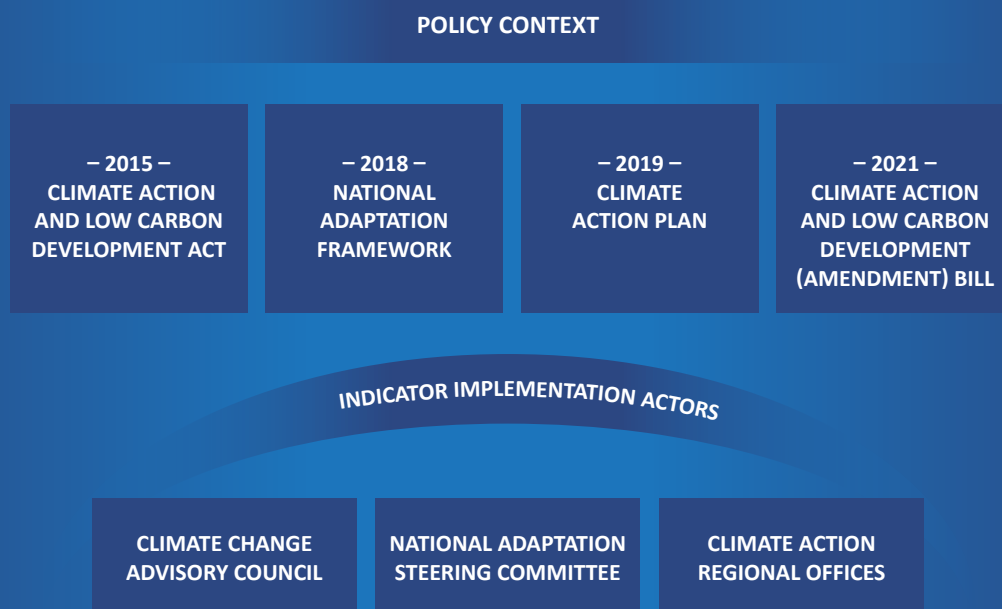


Figure 3: Policy Context and Indicator Implementation Actors

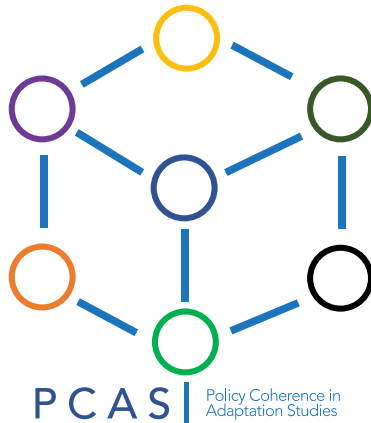
The development and use of climate resilience indicators is a clear opportunity to enhance this Monitoring, Reporting and Evaluation (MRE) framework and will provide an important component of this climate policy and governance structure.

RECOMMENDATIONS

This report reflects on the challenges of indicator selection and the steps taken along the way to successfully navigate it. Challenges on ensuring effective stakeholder uptake and indicator implementation are considered and a pathway towards implementation proposed. As a result of this study the following recommendations are made:

- The co-created recommended **indicator set should form an input into the monitoring, reporting and evaluation of climate change adaptation actions** for Ireland. An agreed subset of these indicators should be implemented in a pilot study
- An **existing State body should be identified to oversee the detailed development and refinement of the indicator framework**. This should ideally be given to a body with cross sectoral remit and authority and complement existing remits and skillsets within the relevant organisations
- Collecting of data demands significant resources. Therefore, the **selection of indicators should be driven by pragmatic decisions related to data availability**
- **A National Framework for Climate Services should be developed** and have as part of its **remit to identify**, evaluate and recommend appropriate data for indicator calculation. Qualitative data should also be incorporated to ensure the comprehensiveness of the indicator framework
- **Implementation and reporting on indicators should be aligned with existing national, EU and international reporting requirements** to streamline reporting burdens and avoid duplication of reporting obligations. **Consideration also needs to be given to the frequency of reporting indicator data** and to how any indicator used can best support existing adaptation planning processes at national level. Moreover, **synergies with disaster risk management, sustainable planning and the green infrastructure agenda should be considered**
- While some of the indicators identified can be collated using existing data it is still necessary to **identify the financial and human resource costs** of adopting the entire indicator framework as significant additional investment will be needed for data collection, curation, analysis and archiving for indicator development
- A comprehensive **capacity-building and communications programmes should be implemented** in relation to climate resilience indicators to engage with all relevant stakeholders, especially those in local authorities and government departments that will be responsible for implementation of adaptation actions. Climate Ireland would be well placed to support this activity in its role as a research service that connects and integrates scientific research, policy making and adaptation practice for the purposes of enhancing adaptation decision making in Ireland

Further details on the project including a complete list of indicators can be found in the full report [here](#).



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This report is based on research carried out/data from March 2019 to September 2020. More recent data may have become available since the research was completed.

The EPA Research Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in relation to environmental protection. These reports are intended as contributions to the necessary debate on the protection of the environment.



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