

A method for tracking national progress toward climate change adaptation

The Australian Adaptation Database contains examples of climate change adaptation collected for the purpose of adaptation stocktaking. Adaptation stocktaking, a recognised part of the Paris Agreement, is the process of measuring adaptation progress to understand areas of increased resilience or gaps which need to be addressed. The adaptation stocktake has been designed to aggregate data at a national scale.

In order to build a structured database that answers key questions about the progress of adaptation in Australia, we required a consistent standard for measuring activities. In the paper 'A method for tracking national progress toward climate change adaptation' we outlined the methodology used in the Australian Adaptation Database. It required overcoming barriers to

adaptation stocktaking, given adaptation data is sparse, underreported, lacking evaluation and often difficult to consolidate.

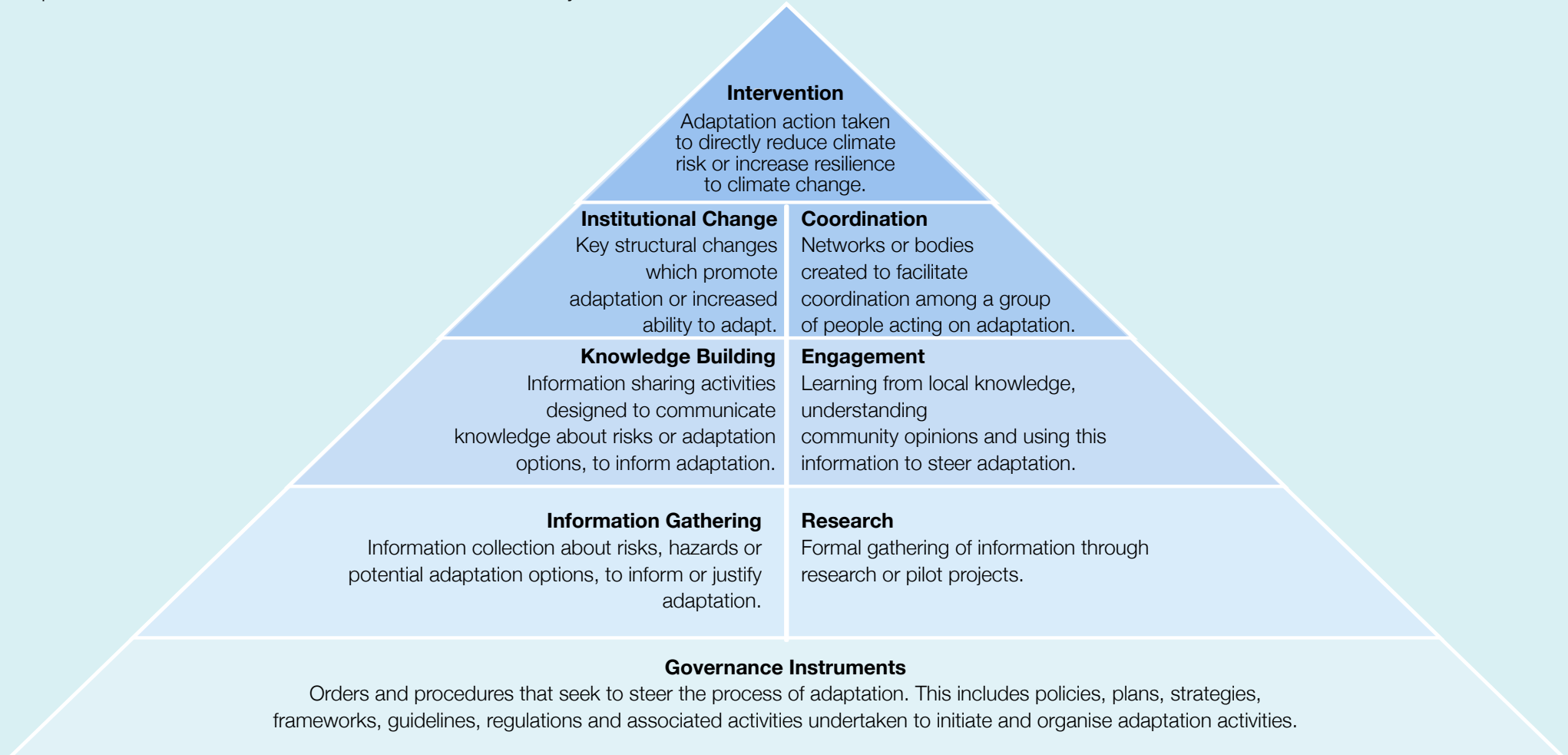
In the Australian Adaptation Database, we developed a set of categories to assess progress in adaptation within and between sectors and jurisdictions. **We propose adaptation progress is the degree to which adaptation activities move toward interventions intended to reduce vulnerability.** We assume that the closer these collectively are to an intervention, the more progress is being made. The typology builds on the ideal adaptation process as it is widely understood in the literature.



Image: Broadbeach and Surfers Paradise © Down Under Photo / Adobe Stock

A typology of progress towards adaptation

Here we represent the typology as a pyramid recognising the breadth of work conducted under the remit of climate change adaptation, building from foundational activities through to tangible adaptation actions. The different types of adaptation activities are those considered necessary to move in an idealised sequence towards the ultimate aim of reduced vulnerability or increased resilience.



The typology reflects that for any given sector or jurisdiction the distribution of activities across an ideal adaptation process can indicate when adaptation is moving towards increased resilience. The sequence is idealised: not all preconditions are necessary for the next step, and the steps of the adaptation process are iterative. It should not be implied that any given adaptation action is not worthy or valuable if its evolution does not conform to the idealised process or has not culminated in an intervention. Indeed, we do not propose this method be used to evaluate discrete actions, but as a high level assessment of progress.

Examples of typology of adaptation progress drawn from the Australian Adaptation Database

Adaptation Purpose	Common outputs	Case Study: Extreme heat	Case Study: Riverine flooding
Governance instruments	Adaptation plan, adaptation strategy, planning workshops.	Adelaide Urban Greening Strategy: a strategy aiming to increase tree canopy coverage and green spaces throughout metropolitan Adelaide. https://australianadaptationdatabase.unimelb.edu.au/adelaide-urban-greening-strategy	City of Playford Storm Water Management Plans: plans for each catchment area accounting for stormwater management under different climate change scenarios. https://australianadaptationdatabase.unimelb.edu.au/city-of-playford-storm-water-management-plans
Research	Academic paper, research project, pilot projects, new technology, research and development, climate impact modelling.	City of Adelaide Safe Worker in the Heat Program: a pilot program to analyse local heat and human physiological responses and establish a system for safe outdoor working in the future. https://australianadaptationdatabase.unimelb.edu.au/city-of-adelaide-safe-working-in-the-heat-program	CRATER: Climate Adaptation using Terrain Evaluation Results, a spatial analysis evaluation tool to assist decision makers identify flooding risks around mines. https://australianadaptationdatabase.unimelb.edu.au/crater-climate-adaptation-using-terrain-evaluation-results
Information gathering	Pilot project, risk assessment, vulnerability, assessment, literature reviews.	Adelaide Urban Heat and Tree Mapping Project: multispectral imagery, LiDAR technology and thermal imagery to map tree canopy, green spaces, built environment and urban heat islands across the entire metropolitan Adelaide. https://australianadaptationdatabase.unimelb.edu.au/adelaide-urban-heat-and-canopy-mapping	Tasmanian Strategic Flood Mapping Project: High resolution digital terrain modelling using LiDAR to support flood risk assessments, land use planning and evacuation planning for at-risk communities. https://australianadaptationdatabase.unimelb.edu.au/tasmanian-strategic-flood-mapping-project
Knowledge building	Explanatory videos, explanatory documents, flyers, newsletters, social media posts, reports, guidelines, seminars, presentations.	Which Plant Where Website: an interactive database which demonstrates climate resilient plant species suitable to a given location in Australia. https://australianadaptationdatabase.unimelb.edu.au/which-plant-where	Western Australia's Floodplain Mapping Tool: a public resource used to view floodplain maps and flood levels for household land use planning, insurance decision-making and other household uses. https://australianadaptationdatabase.unimelb.edu.au/floodplain-mapping-tool

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Engagement	Community workshops, interviews, focus groups, community forums, locally-led project planning and implementation.	Melbourne 'City Engine' Urban Systems Heat Vulnerability Analysis: A pilot project to assess the impact of extreme heat on critical interconnected urban systems, including 2 workshops and one-on-one interviews with key stakeholders. https://australianadaptationdatabase.unimelb.edu.au/city-engine-urban-systems-heat-vulnerability-analysis	Northern Rivers Living Lab: a community engagement and planning space developed by researchers in Lismore, to help facilitate conversations about climate change adaptation following severe flooding in 2022. https://australianadaptationdatabase.unimelb.edu.au/living-lab-northern-rivers
Institutional change	New laws, regulations or standards, changed laws, regulations or standards, new grants or funding, new adaptation jobs or roles, changes in investment, creation of dedicated adaptation bodies or departments (within an institution).	Australian Capital Territory (ACT) Minimum Energy Efficiency Standards for Rentals: new regulation on minimum standards for ceiling insulation in rental properties commenced in 2023. https://australianadaptationdatabase.unimelb.edu.au/australian-capital-territory-minimum-energy-efficiency-standards-for-rentals	River Murray Flood Resilience Code Amendment (South Australia): updates to planning and design codes to increase resilience to future 1-in-100 year floods following 2022 flooding event. https://australianadaptationdatabase.unimelb.edu.au/river-murray-flood-resilience-code-amendment
Coordination	Cross-jurisdiction networks Regional networks Communities of Practice	Green Adelaide: A government led 'urban environmental organisation', they coordinate regional activities across all 17 Adelaide metropolitan local government areas and other key stakeholders, as well as provide funding and educate local community on urban greening. https://australianadaptationdatabase.unimelb.edu.au/green-adelaide	National Emergency Management Agency: a government body that works to develop, lead and coordinate Australia's emergency preparedness and response, for various hazards. https://australianadaptationdatabase.unimelb.edu.au/national-emergency-management-agency
Intervention	Urban Greening Seawall Early warning app. Change in agricultural practice Retreat or relocation	\$2 Summer Dips Initiative: a program subsidising the cost of public swimming pool entry in Brisbane City Council to help families stay cool during heatwaves. https://australianadaptationdatabase.unimelb.edu.au/2-summer-dips-initiative	Katherine Flood Mitigation Project: building levee banks and upgrading drainage to protect residents against 1-in-20 year flooding. https://australianadaptationdatabase.unimelb.edu.au/katherine-flood-mitigation-project