



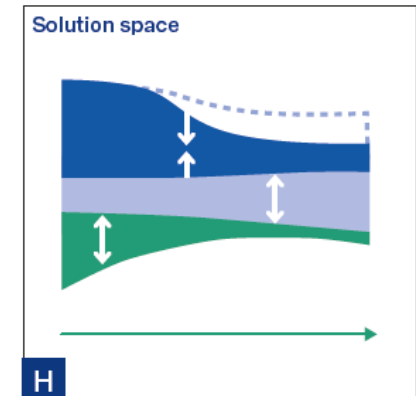
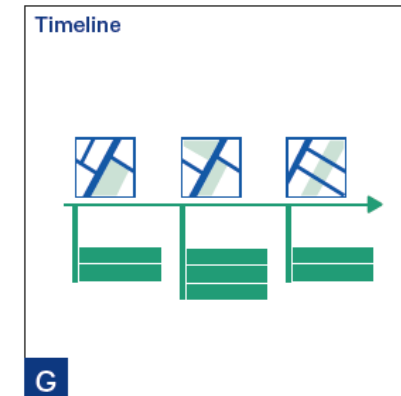
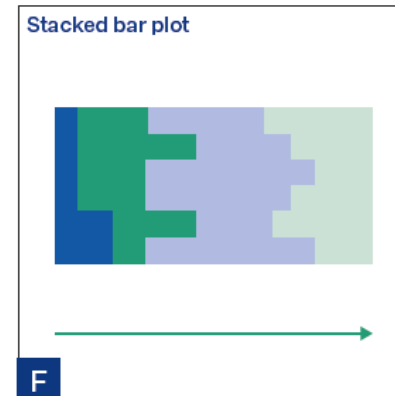
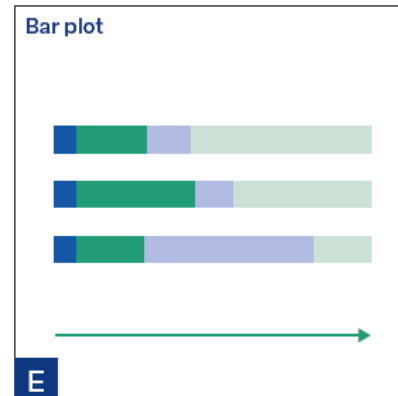
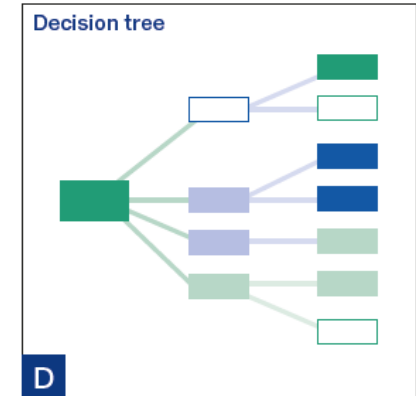
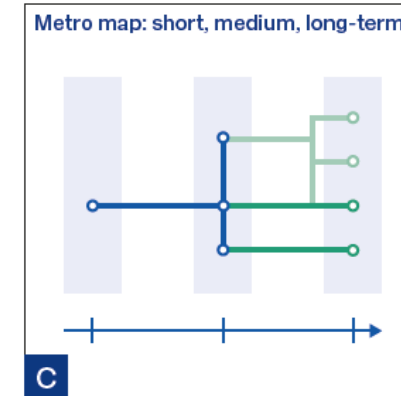
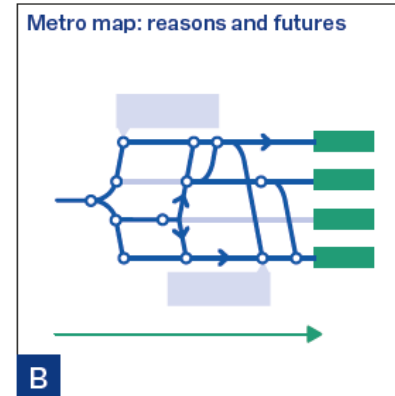
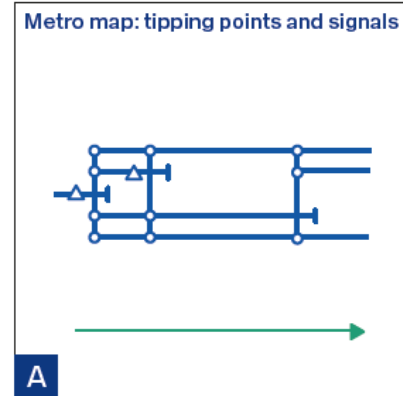
Dynamic Adaptive Policy Pathways (DAPP)

Beyond the Risks: Strategic Choices for Climate Resilient Societies in ASEAN Countries

Andrew Warren - September 28, 2026

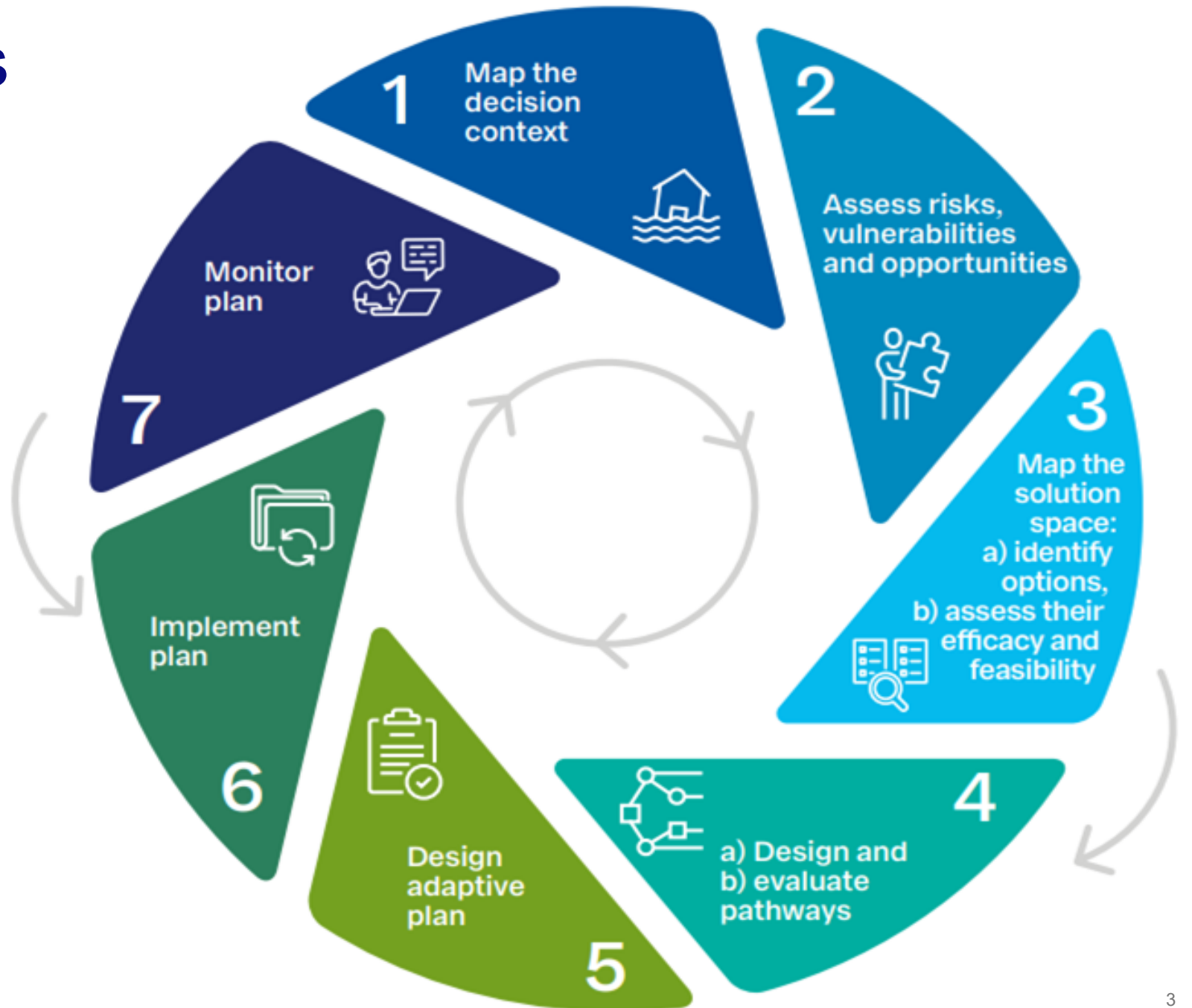
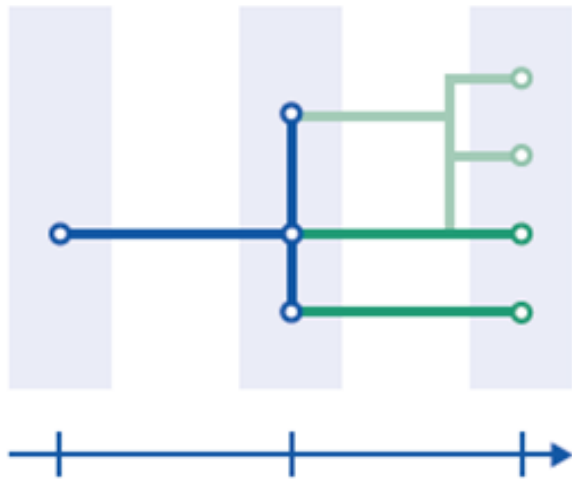
What are pathways?

A policy analysis framework for sequencing adaptation decisions over time, based on performance

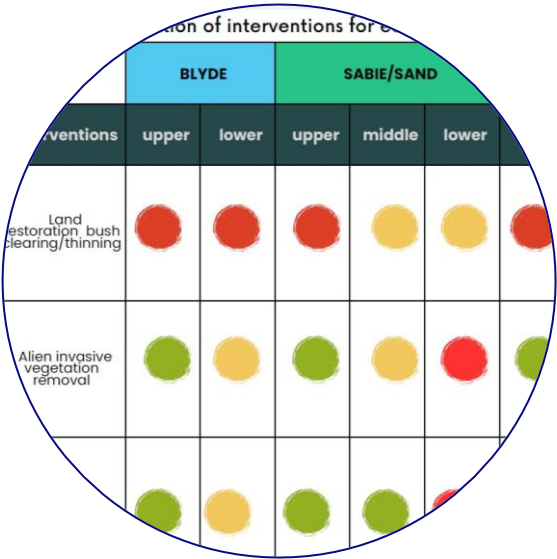


<https://doi.org/10.1016/j.gloenvcha.2024.102907>

Pathways analyses and plans

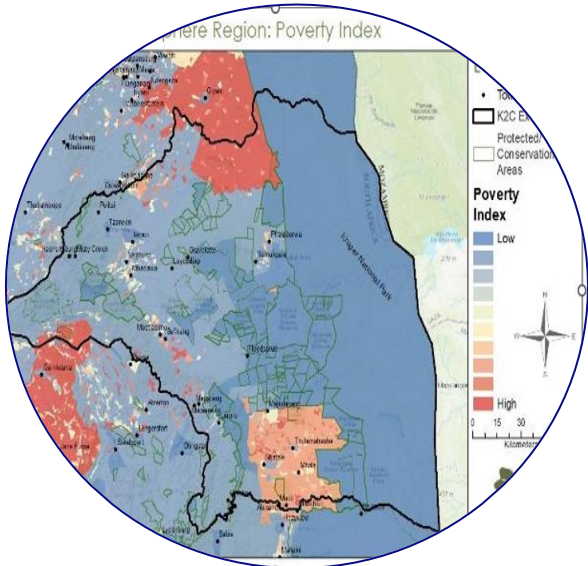


Levels of pathways analysis



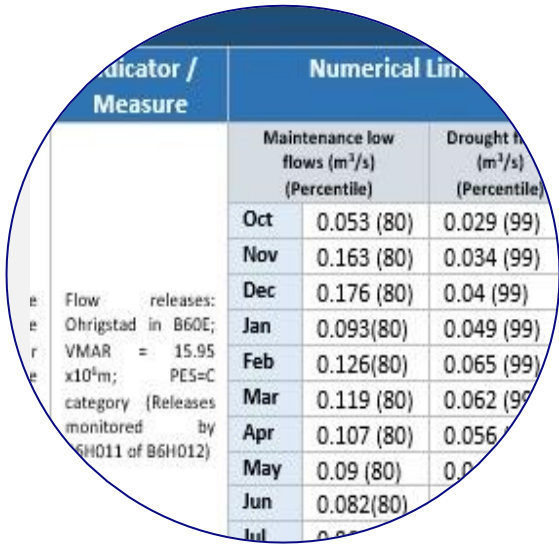
Level I

Narrative based



Level II

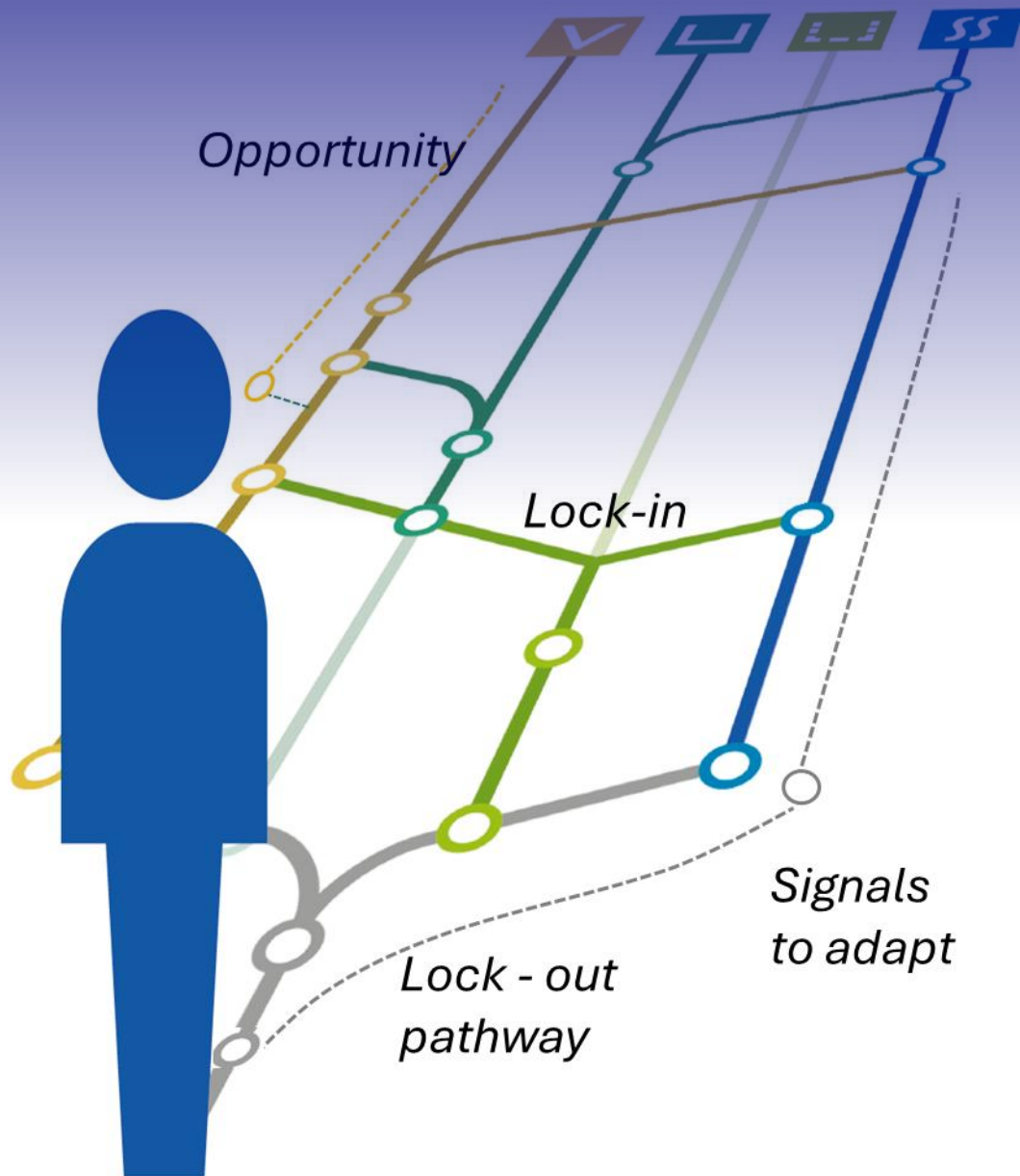
Evidence based



Level III

Model based





Why pathways?

Create manageable steps

Break down complex adaptation into staged decisions

Prioritize near-term actions

Identify and prioritize near-term actions that are low-regret, urgent or needed to keep options open... and which decisions can wait.

Keep long-term options open

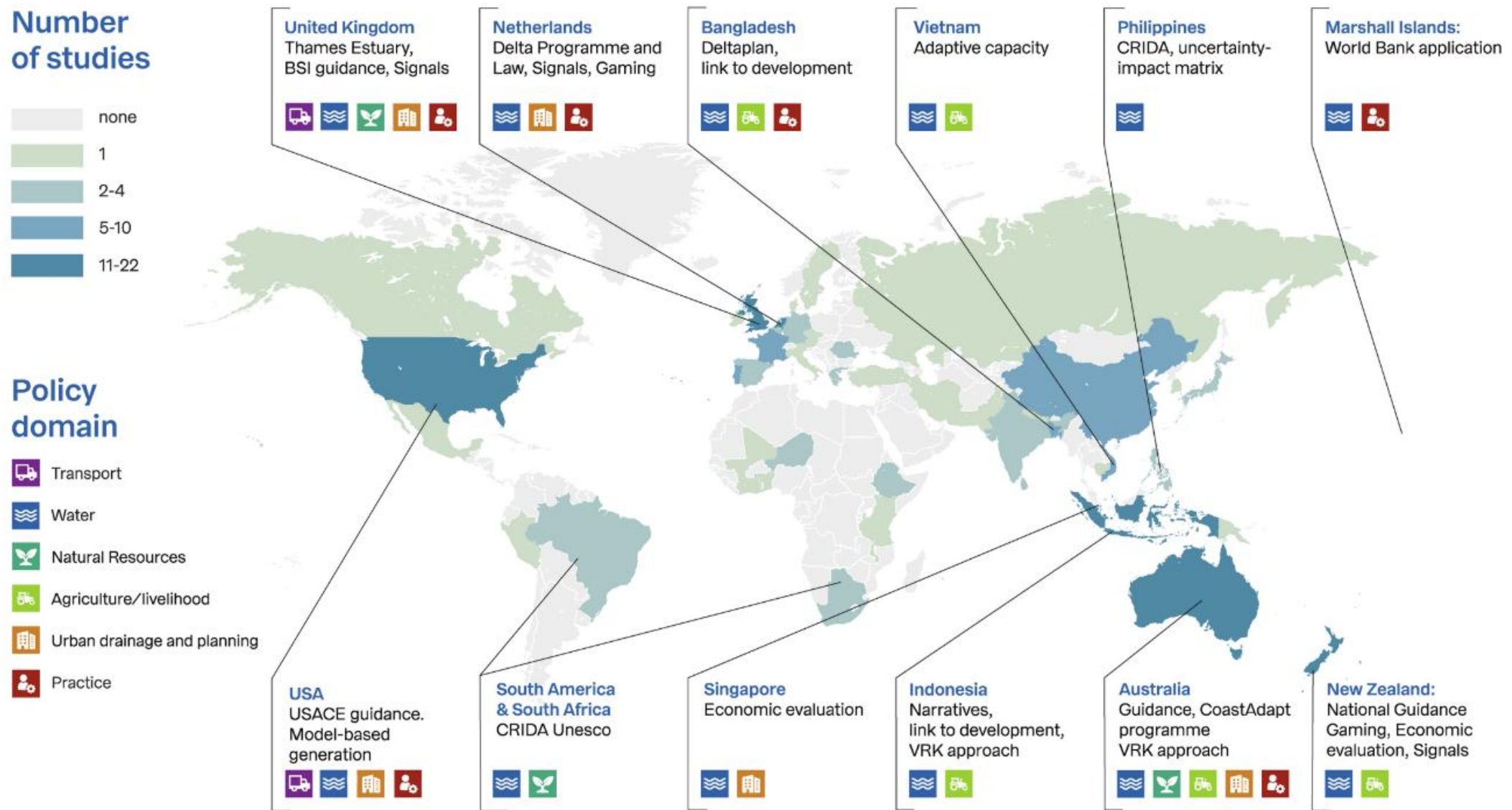
Link near-term actions to long-term needs to avoid maladaptation and lock-in/-out

Develop an actionable and flexible plan

Connects the timing of actions to observable system and performance indicators (e.g. flood losses, drought frequency). Tells decision makers not only what to do but when to act.

→ *It turns a long list of options into a staged pathway of robust/flexible actions with implementation logic*

Pathways in the world





DAPP for NAPs

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Adaptation challenges & NAP needs

- Adaptation vs. development
 - Climate is not the primary driver of risk or action
 - Monitoring and evaluation is unclear
-
- NAPs must stay flexible for longer time horizons, uncertainty
 - NAPs need to be translated to prioritized projects for implementation
 - NAP projects need to be made 'bankable'
 - NAP implementation needs to be aligned across sectors

Using pathways to move NAPs toward implementation

It translates a NAP into a practical, prioritized and logical pipeline of actions rather than a broad list

1. It links implementation to monitoring

- Signals and triggers — connects actions to observable system and performance indicators that are monitored, making implementation dynamic; ministries can track the current approach.
- Operational usefulness — tell decision makers not just what to do, but when to move to the next step or adjust course.

2. It supports prioritization across sectors and accounts for interdependencies

- Institutional clarity — staged actions make it easier to assign who leads when and on what, and what coordination is needed.
- Budget alignment — near-term actions can be linked to current budget cycles while preparing mid- and long-term measures for later finance windows.

3. It creates a stronger bridge from planning to investment decisions

- Strategy to bankable steps — clarifying sequencing, timing, and signals helps translate goals into investment-ready plans with clear justification for why some measures need funding now, while others need preparation, feasibility work, or future financing
- Decision framework — DAPP is a recognized framework at financiers like GCF, World Bank and others.

Bangladesh

Bangladesh Delta Plan 2100 – develop a sustainable, widely supported strategy for water safety, food security and economic growth in Bangladesh

What?

Bangladesh needed a long-term integrated sustainable development strategy to span widely divergent sectors and ‘hot-spots’ susceptible to a variety of future climate risks.

Trainings, stakeholder workshops, scenario development, systems analysis, strategic adaptation pathways formulation

Results

Developed a shared knowledge base and institutional frameworks from which to formulate the Bangladesh Delta Plan, including its associated investment plan.

Partners

Min. of Planning (BD), Deltares, Twijnstra Gudde, Euroconsult Mott MacDonald, Ecorys, Defacto Architecture & Urbanism, Witteveen+Bos, Wageningen University & Research, IHE Delft



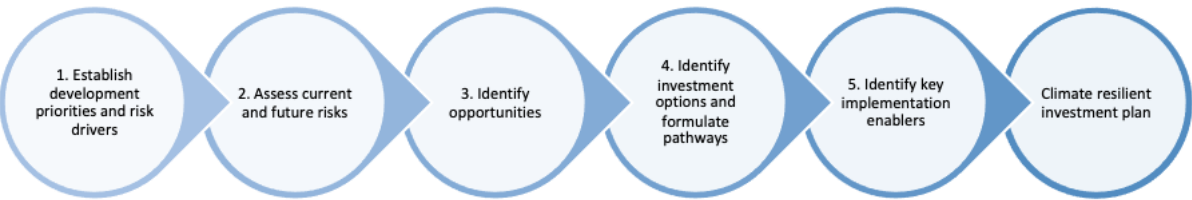
Rapid assessment of climate resilient investment pathways for Noro and Munda

What?

Identification of investment priorities for the twin cities of Noro and Munda across three development priorities: equitable services provision, sustainable economic development, and resilient infrastructure and settlements

Results

5-step rapid approach to climate resilient investment planning, formulation of integrated climate resilient investment pathways

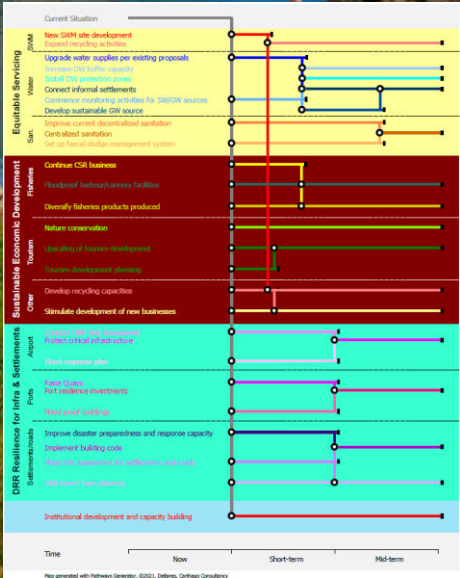


Partners

ADB; Min. Fin. & Treas.; Min. Env., Clim. Ch. & Dis Mgmt.; Min. Lands, Housing & Survey; West. Prov. Govt.; Noro Town Council

Deltares

Solomon Islands



Malawi



Develop a prioritized portfolio of investment-ready projects from national adaptation and development plans

What?

Malawi has many adaptation and development plans that need to be aligned. They need a strategy for prioritizing and developing financeable resilience projects

Trainings, stakeholder workshops, institutional and systems analyses

Results

A tailored framework for developing climate resilient investment pathways from existing studies and plans

Translate priority pathways into bankable concepts, aligned with climate finance criteria

Partners

Min. of Water and Development, Deltares, ARUP, IWMI

Specify Tanzania's NAP for the Pangani River Basin and develop an investment-ready plan

What?

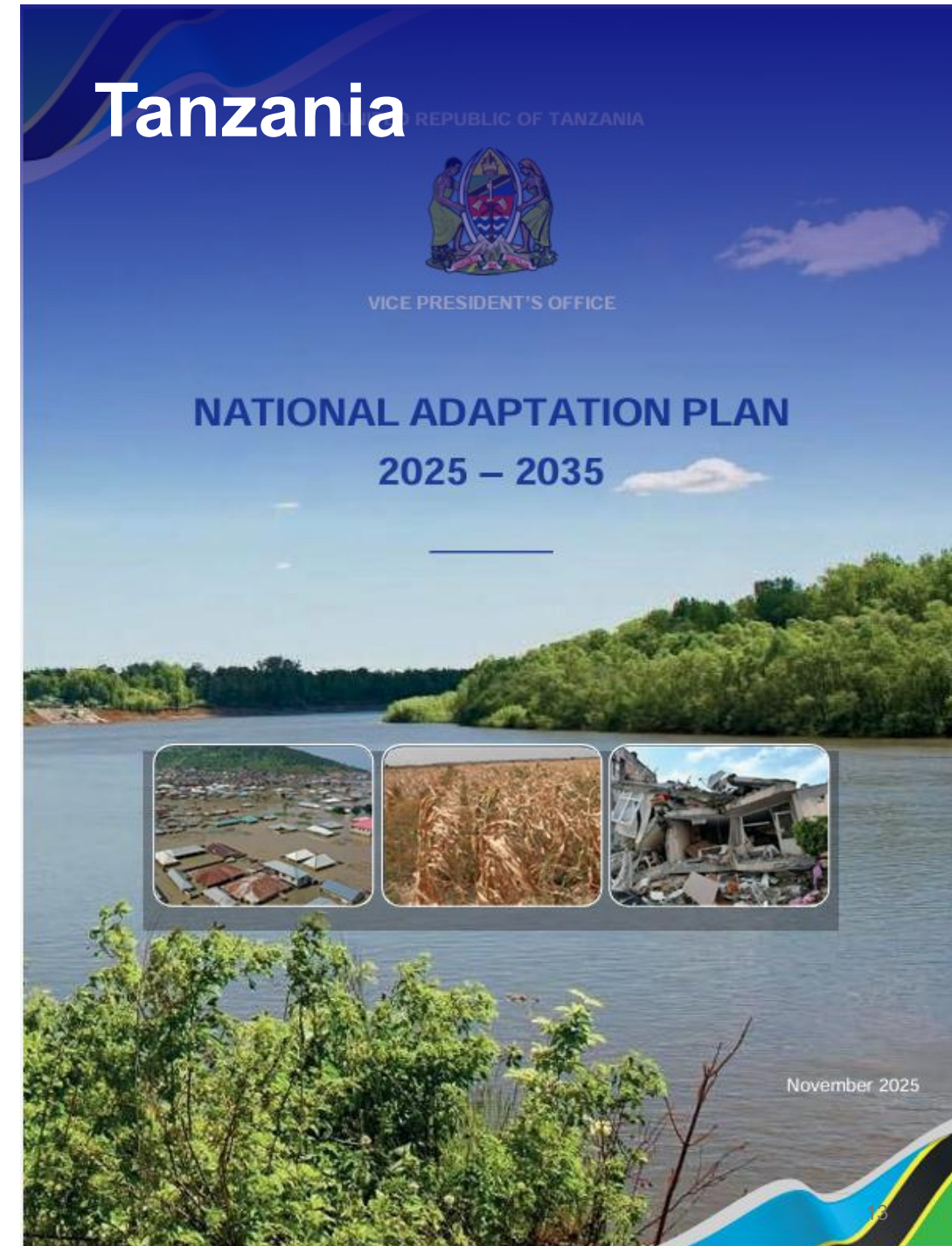
Tanzania's NAP needs to be operationalized into action plans that can be implemented. A pathways approach is being piloted in the Pangani Basin, to be scaled across Tanzania

Results

Ongoing. Evaluation of performance thresholds by water user and distribution of climate risk over time. Pathways evaluated on distributional impact for water security.

Partners

Vice President's Office, Pangani Basin Water Board, Deltares, UNESCO IHP





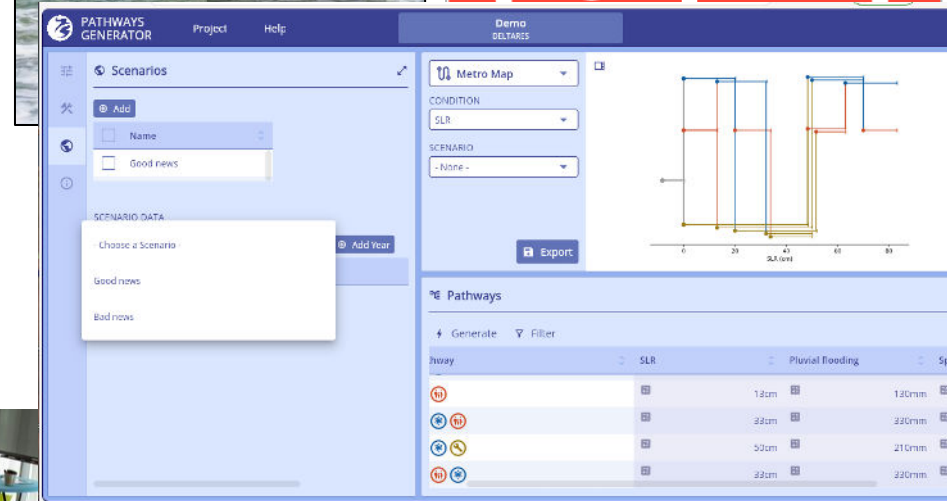
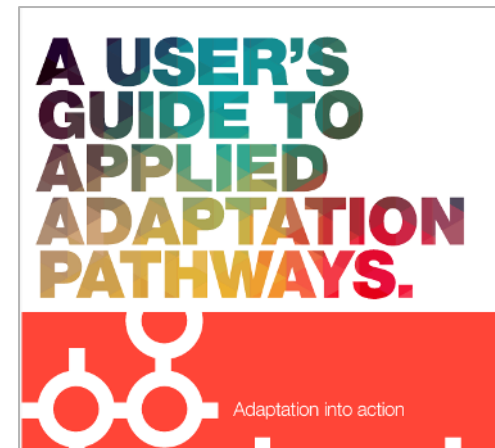
National adaptation plans and pathways planning

NAPs guide long-term adaptation, reduce vulnerability, build resilience, and embed country-driven action across sectors and development

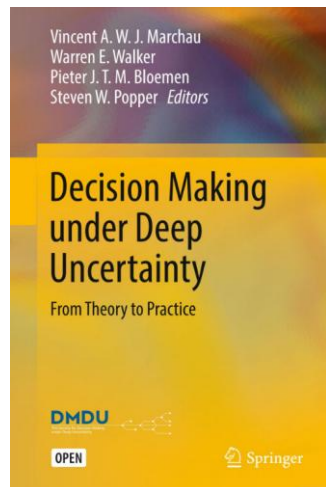
DAPP supports NAP implementation by prioritizing actions according to the timing of adaptation needs, linking near-term decisions to long-term goals, aligning plans across sectors, and keeping NAPs flexible as conditions change.

A selection of tools and resources

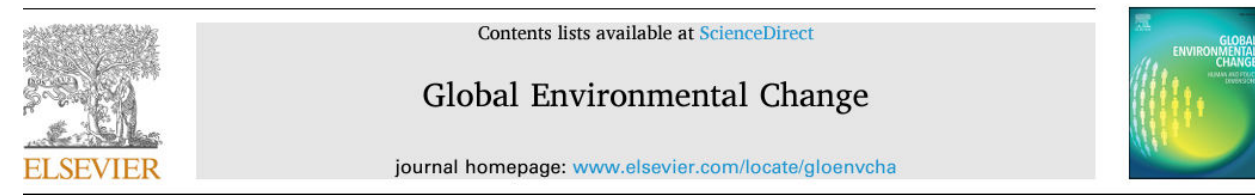
- Policy hackathons
- Serious games
- Case studies and papers
- Guidance and policy documents
- DMDU community
- andrew.warren@deltares.nl



<https://www.deltares.nl/en/expertise/areas-of-expertise/sea-level-rise/dynamic-adaptive-policy-pathways>



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Stay in touch



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