



**Sustainable
Communities
and Waste**

National Environmental Science Program

IP1.02: Water Sensitive and Liveable Communities in Regional and Remote Australia

Phase One Overview



This document: Phase One Overview

This document provides an overview of research activities undertaken throughout 2023 as part of Phase One of the project Water Sensitive and Liveable Communities in Regional and Remote Australia (IP1.02).

These activities include:

- **A synthesis of existing knowledge and practice to frame surveys and discussions**
- **A national survey of 400 Local Government Areas (LGAs) across regional, rural and remote Australia**
- **Key knowledge holder workshops & discussions**

The report also provides a conceptual framework for a national platform for country and place-centered servicing, and a snapshot of the proposed next steps in our research program.

Funding Acknowledgement:

This project is supported with funding from the Australian Government under the National Environmental Science Program.



Project context

Sustainable People-Environment Interactions (IP1)



Sustainable
Communities
and Waste

National Environmental Science Program

MONASH
SUSTAINABLE
DEVELOPMENT
INSTITUTE

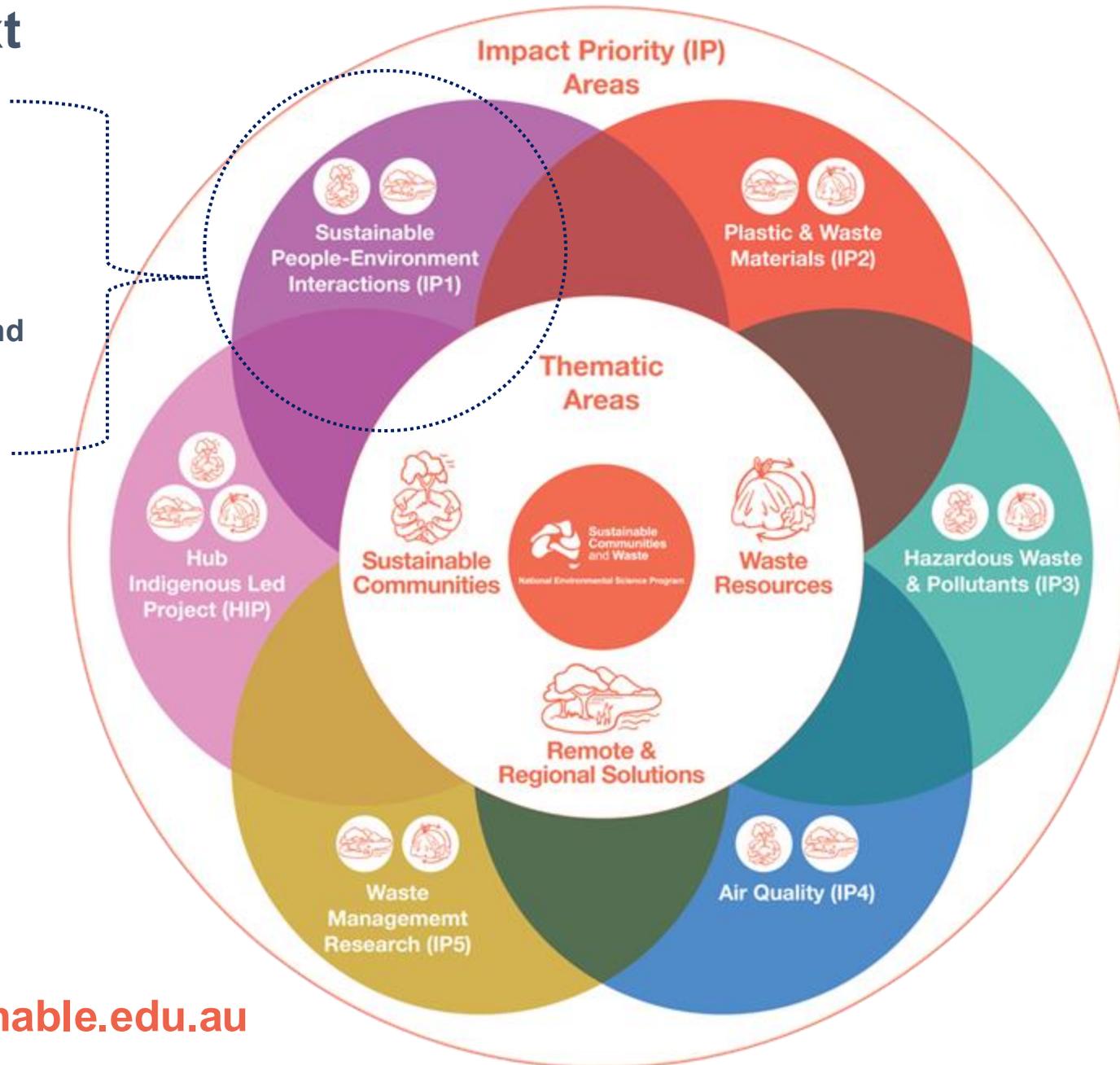


Curtin University

Project context

IP1.01 Nature Based
Solutions and Nature
Connections

IP1.02 Water Sensitive and
Liveable Communities



IP1.02- Water Sensitive and Liveable Communities Research Program Overview

STREAM 1: Supporting liveability and water sustainability outcomes in regional and remote communities

Co-design of concept and scope for a National Platform or Framework

- Needs and capacity assessment
- Knowledge synthesis (what tools do we have?)
 - National Survey (user experiences, needs and capacities?)
 - Co-design Workshops for a National Platform

Establishing conditions for a National Platform or Framework

Establishing operational characteristics and enabling conditions(s) for implementation

Place-based case studies / Piloting

Place-based learning in regional and remote contexts to identify supporting institutional processes, systems change outcomes and capacity building needs for optimising water and liveability outcomes in regional and remote settings

2023-2024

2024-2025

2026 onwards

STREAM 2: Aqua nullius

Establishing the conditions to support the transformation of the Australian water sector through reinvigorated indigenous water science and governance.

- Indigenous Water practitioners workshop series
- A national gathering shaped by the above workshops

Indigenous review

Indigenous review of the work required to transform the architecture of the Australian water sector.

Country centred Indigenous led research

Indigenous governance and scientific frameworks and methods for improved water outcomes.

Project background

Sustainable People-Environment
Interactions (IP1)



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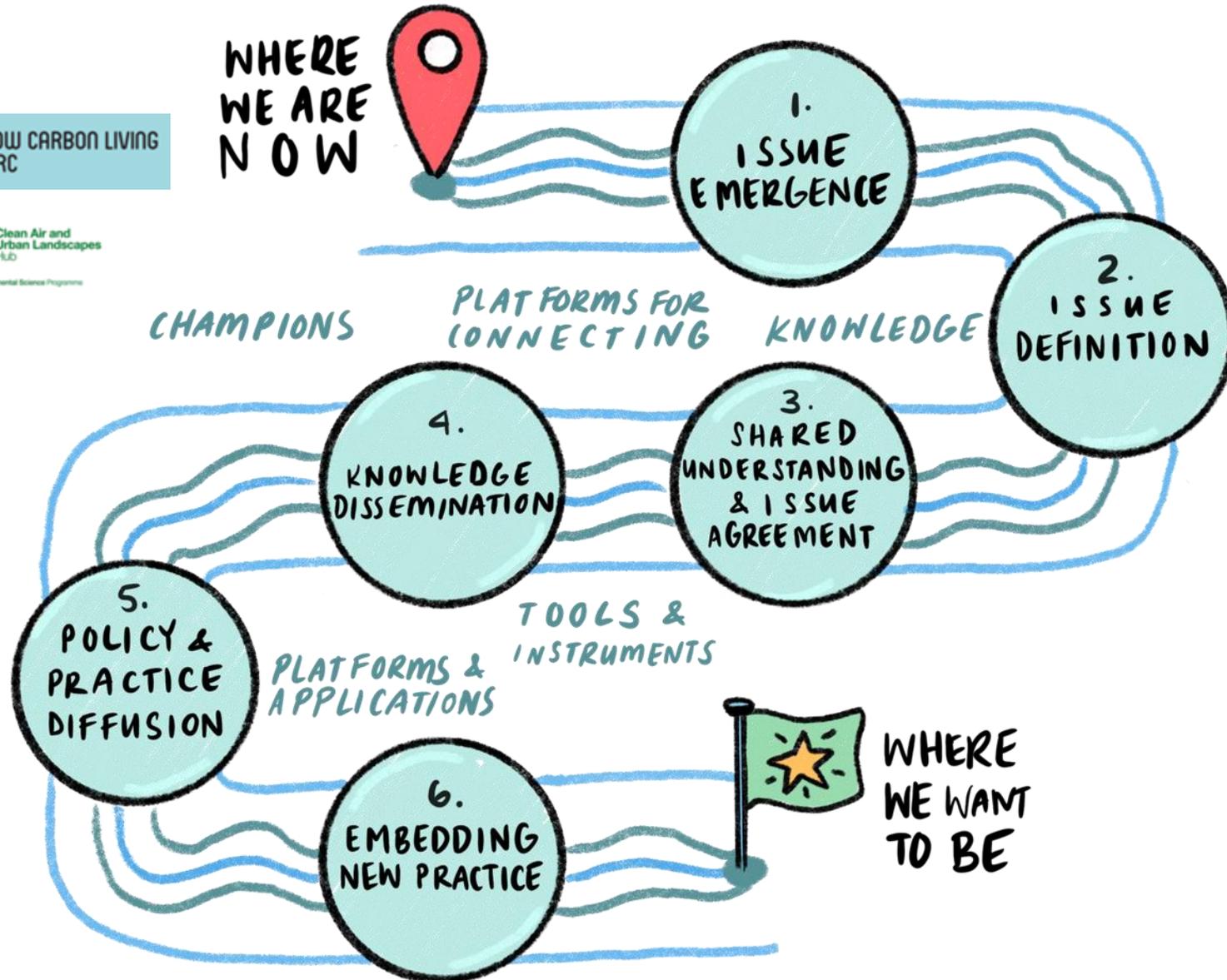


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Progress



COOL SUBURBS
HEAT RESILIENCE RATING AND
ASSESSMENT TOOL



Initial Project Aim

To identify processes and requirements to scale, retrofit & reimagine knowledge capital for regional, rural & remote Australia

Case study: Water Sensitive Cities

Considerable research has been undertaken alongside industry partners to understand how we might transition towards more water sensitive and liveable communities in Australia. These actions include:

- The implementation of tools and processes in over 60 Australian cities (Local Government Areas (LGAs))
- The establishment of a Water Sensitive Communities (WSC) Knowledge Hub provides a platform for knowledge sharing and connecting
- Informal governance arrangements that advocate for and support enabling environments transitions
- The establishment of networks and champions to promote capabilities (eg. WSC-SA (Water Sensitive Cities South Australia), Water Sensitive Transition Network (WSTN) Perth, WSBendigo (Water Sensitive Bendigo (Vic)), and WSNth Qld (Water Sensitive North Qld))

Much of this research has been carried out in the urban context, leaving us with the important question of how to scale these and other approaches to transition towards water sensitive communities in widely varied remote and rural contexts in Australia. This project seeks to bridge these gaps in knowledge.



Policy landscape

This comes amidst a policy landscape that recognises an urgent need for **supporting regional and remote service providers with climate adaptation planning and data/monitoring capability,**

A broadening of federal investment policy frameworks to support place –based outcomes for water supply security

Principles for **enhancing local government capacity** for water related servicing planning and management outcomes



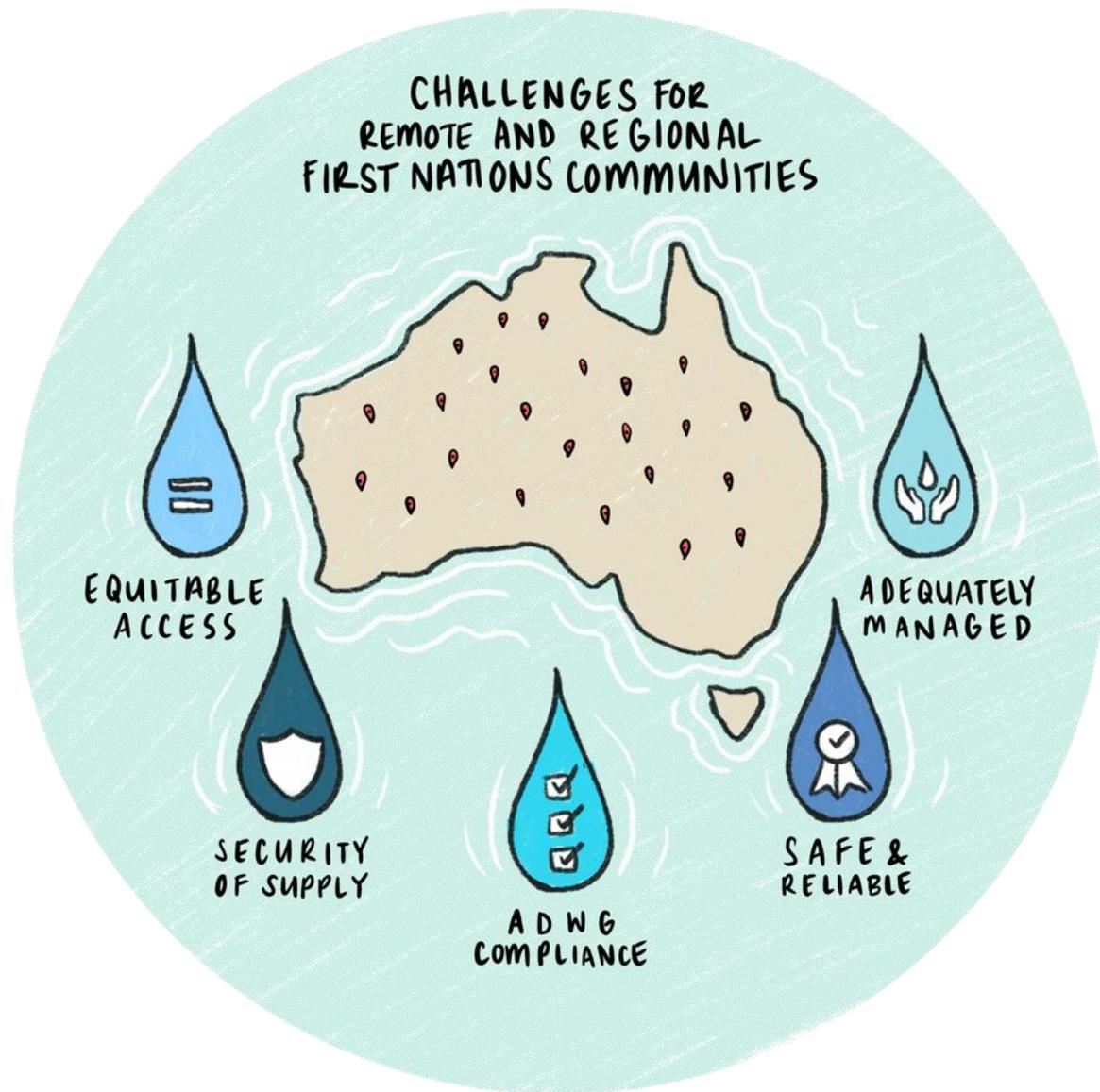
To address challenges such as

Poor and declining natural and related social conditions across many parts of regional and remote Australia.

Limited data and data related capability in remote and regional contexts

An urgent need to structurally empower Indigenous voices – holistic and long-term programs for Indigenous-led and governed caring for Country

Regional and remote area challenges are central to first nations outcomes

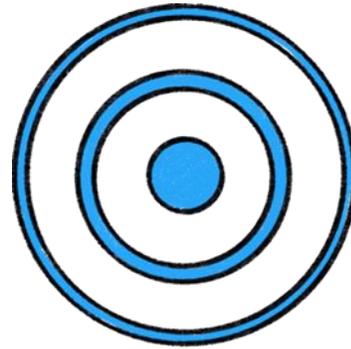
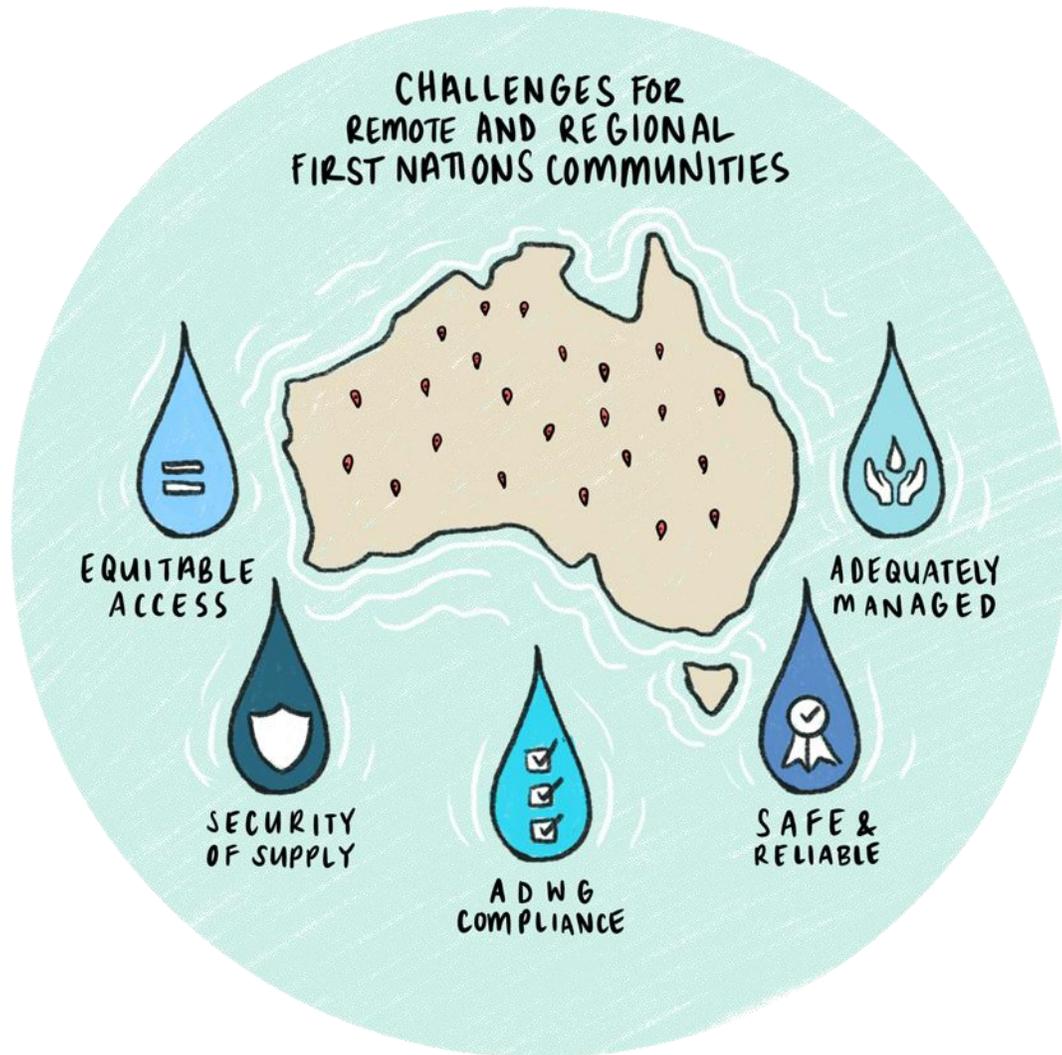


Many of Australia's First Nations people reside in regional and remote parts of Australia

1,100+
INDIGENOUS
REMOTE
COMMUNITIES

150,000
ABORIGINAL AND
TORRES STRAIT
ISLANDER PEOPLE

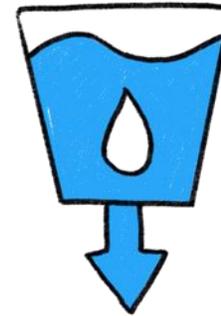
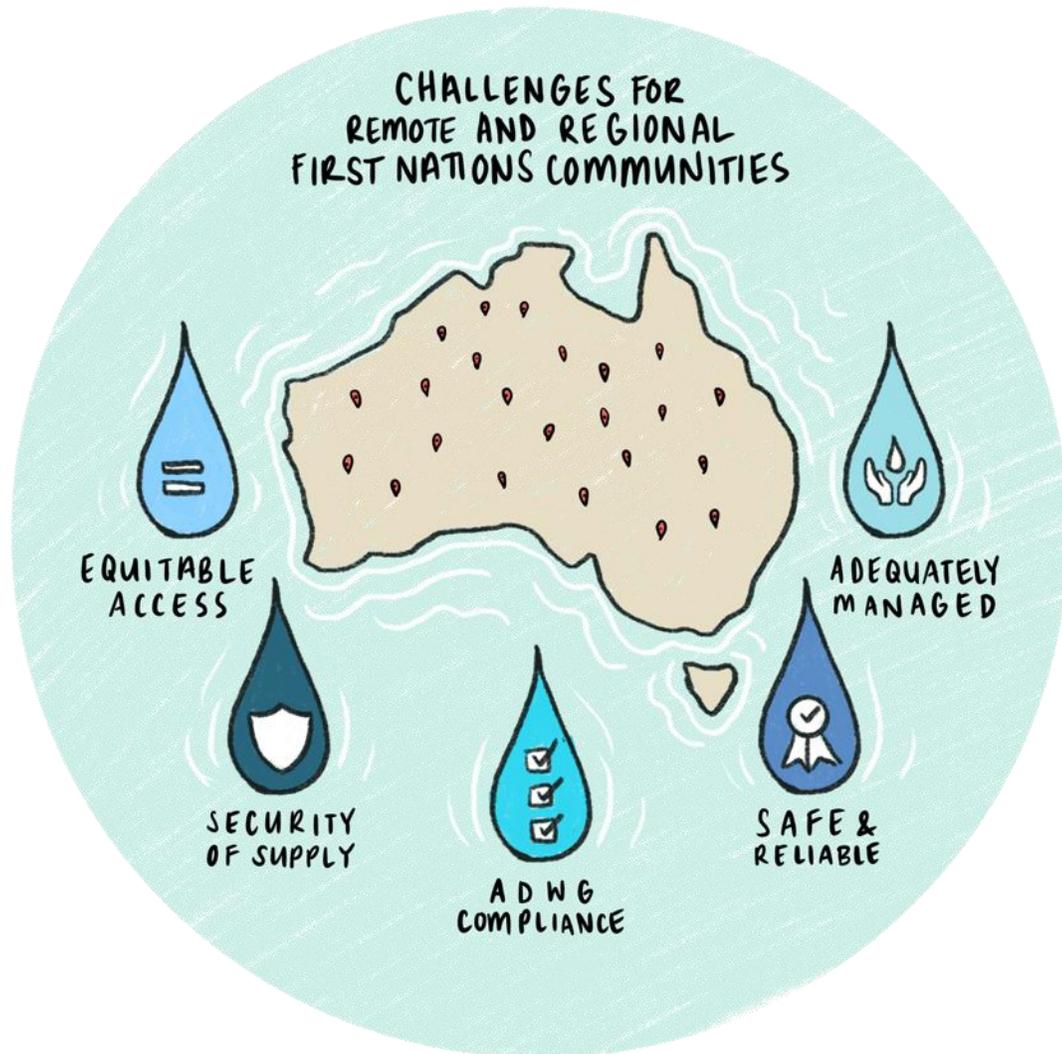
This project will seek to support closing the gap priority reform areas by:



CLOSING
THE GAP

- **Strengthening of First Nations partnership with Government** through place-based arrangements
- **Coordination and increases in funding** for First Nations community organisations
- **Transforming Government organisations** to support employment and cultural safety
- **Improving access to regional level data** to improve First Nations decision making

And progress SDG6 leaving no one behind indicators



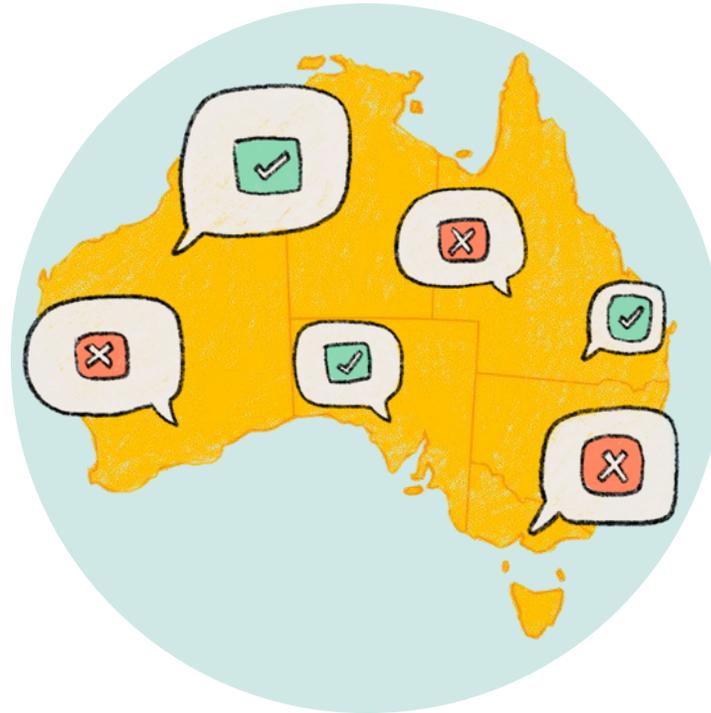
UN SUSTAINABLE DEVELOPMENT GOAL 6: CLEAN WATER FOR ALL

- **3.5% of Australians residing in small towns, rural or remote** communities face ongoing limitations in water security, compliance with safety standards and sufficient servicing outcomes
- **There are currently Critical gaps and discrepancies in data** sources used for benchmarking and reporting, particularly in regional and remote areas
- This project provides **tools, training and capability** building to support localised processes and practices that can enhance **data reliability, consistency and accuracy**

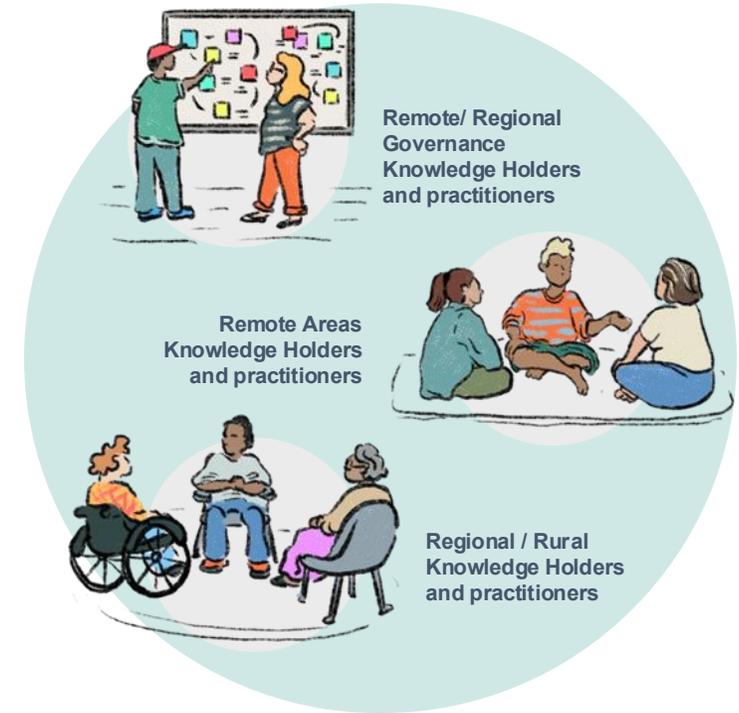
What has been done?



1. A synthesis of existing knowledge and practice to frame surveys and discussions



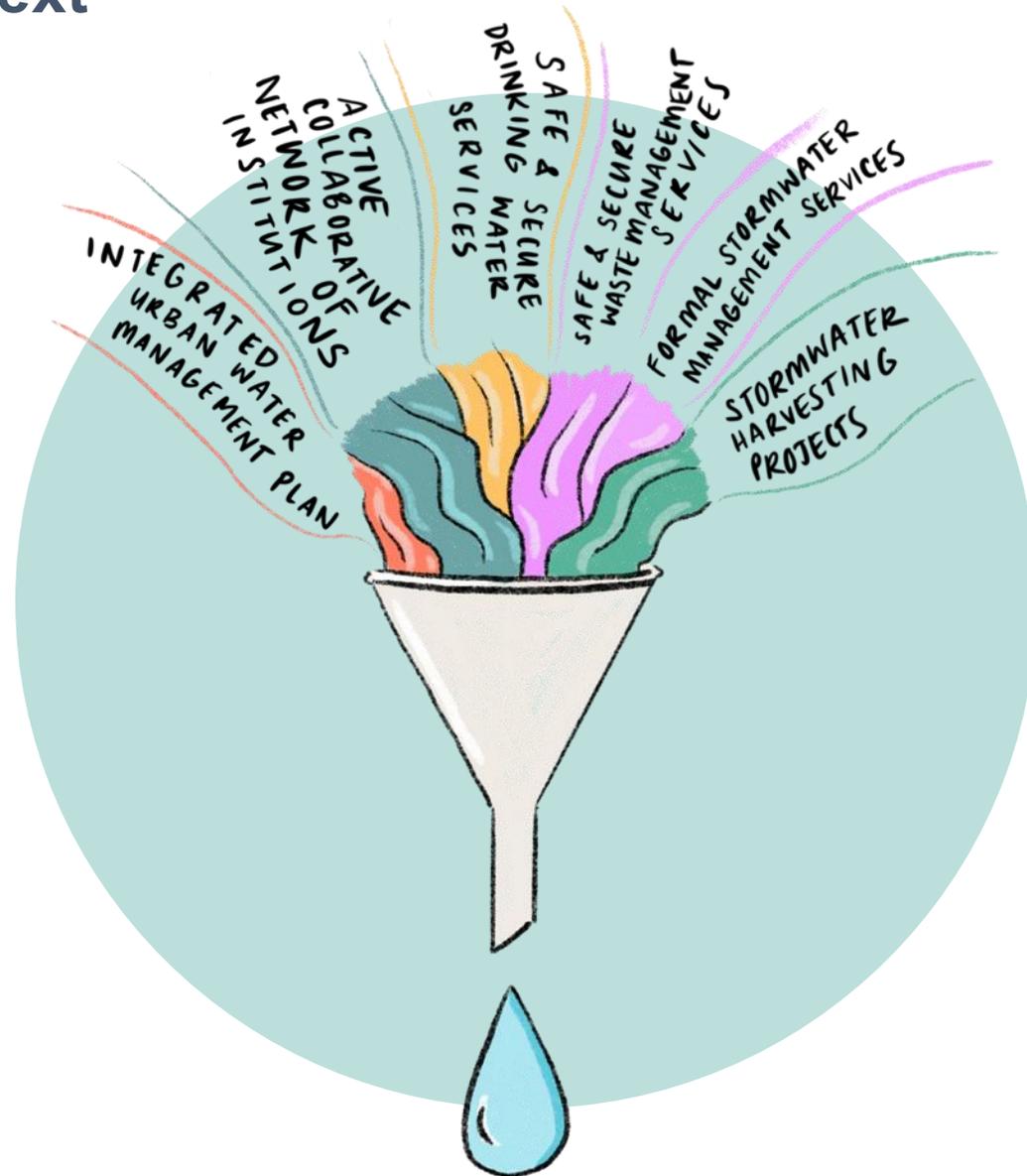
2. A national survey of 400 Local Government Areas (LGAs) across regional, rural and remote Australia



3. Key knowledge holder workshops & discussions

National survey: Preliminary examination through the Local Government Area (LGA) context

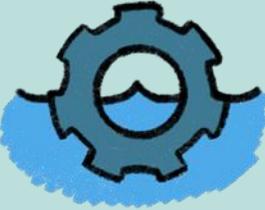
We circulated a national survey of 400 Local Government Areas (LGAs) across regional, rural and remote Australia to understand current water liveability planning challenges and requirements.



Refer to this report for more information.

Key findings

The more remote
the community...



THE GREATER THE
NUMBER OF SERVICING
OBLIGATIONS & NEEDS

AND



THE FEWER THE
INTERNAL RESOURCES &
CAPABILITIES TO MEET
THESE DEMANDS



THE GREATER
THE LIMITS TO
RELIABLE TOOLS,
TRAINING & GUIDANCE

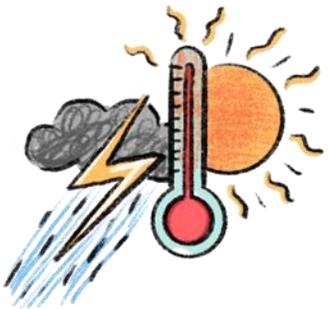
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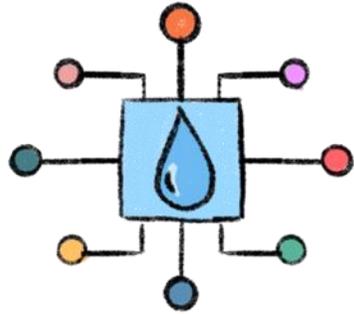
THE MORE REDUCED
THE ACCESS TO
SUPPORT

Future priorities for LGAs to achieve more sustainable water management and improved liveability

Top 10 priority issues identified by LGAs*
(in no particular order):



Climate change and extreme weather events



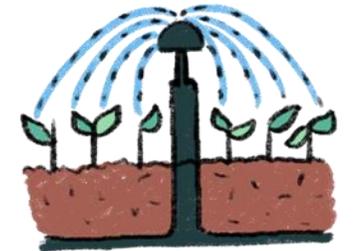
Integrated planning



Empowering Local knowledge



Water reuse



Irrigation management



Community water supply



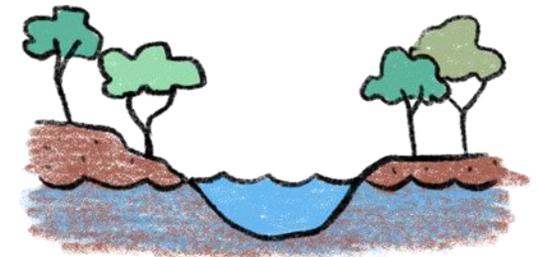
Upgrade aged infrastructure



Stormwater system



Constrained resources

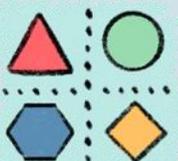


Groundwater usage

*LGAs: Local Government Areas

Knowledge Holder Workshops

Aim: deepening insights and extending beyond the Local Government Area perspective to:



Characterise water sustainability and liveability needs and aspirations for regional and remote contexts (broadly)



Identify the role of knowledge products, tools and resources in building capability



Envisioning a way forward - the pathways and processes for access, adoption and impact

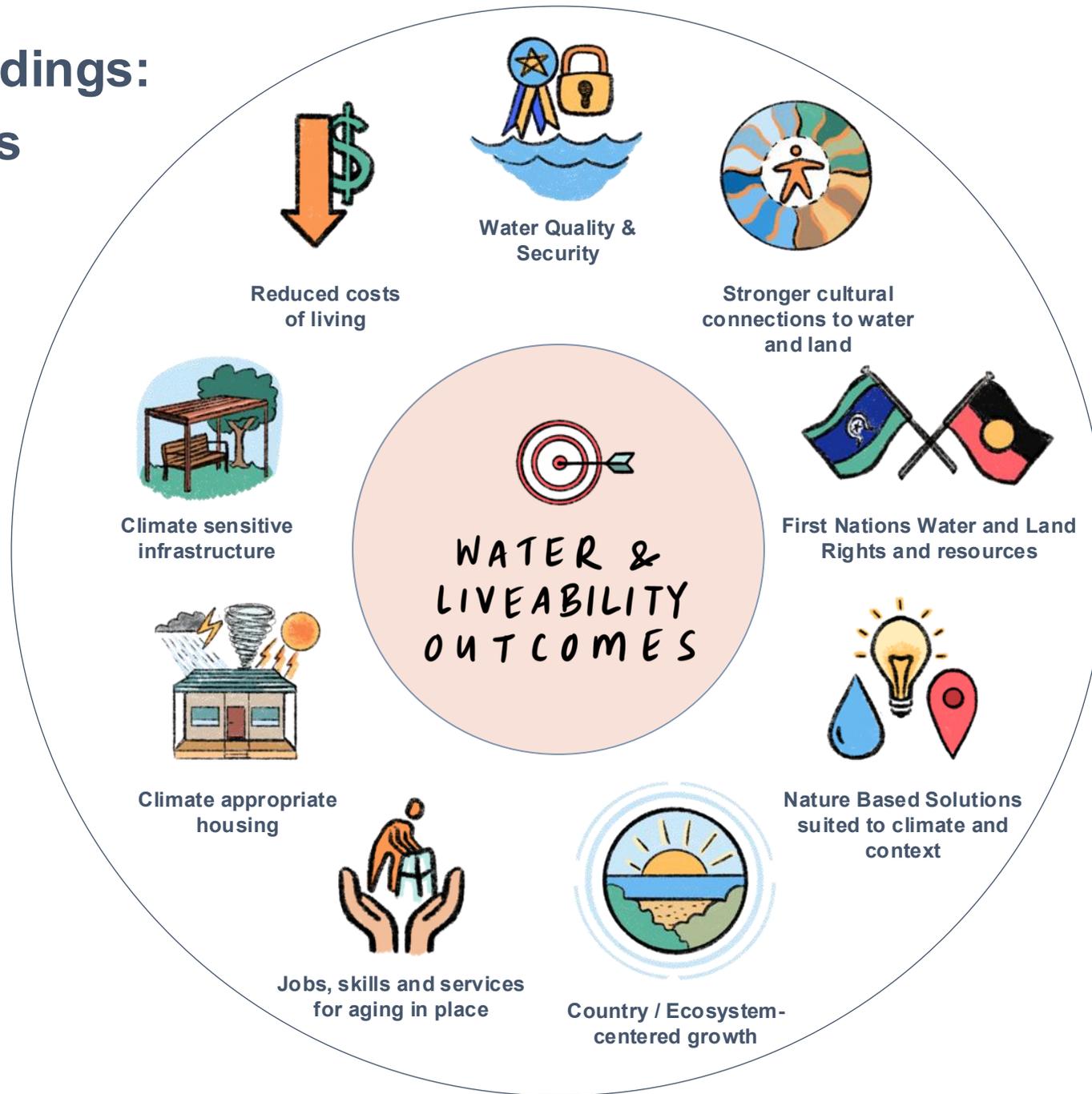
Overview of Findings: Rural and Regional Settings



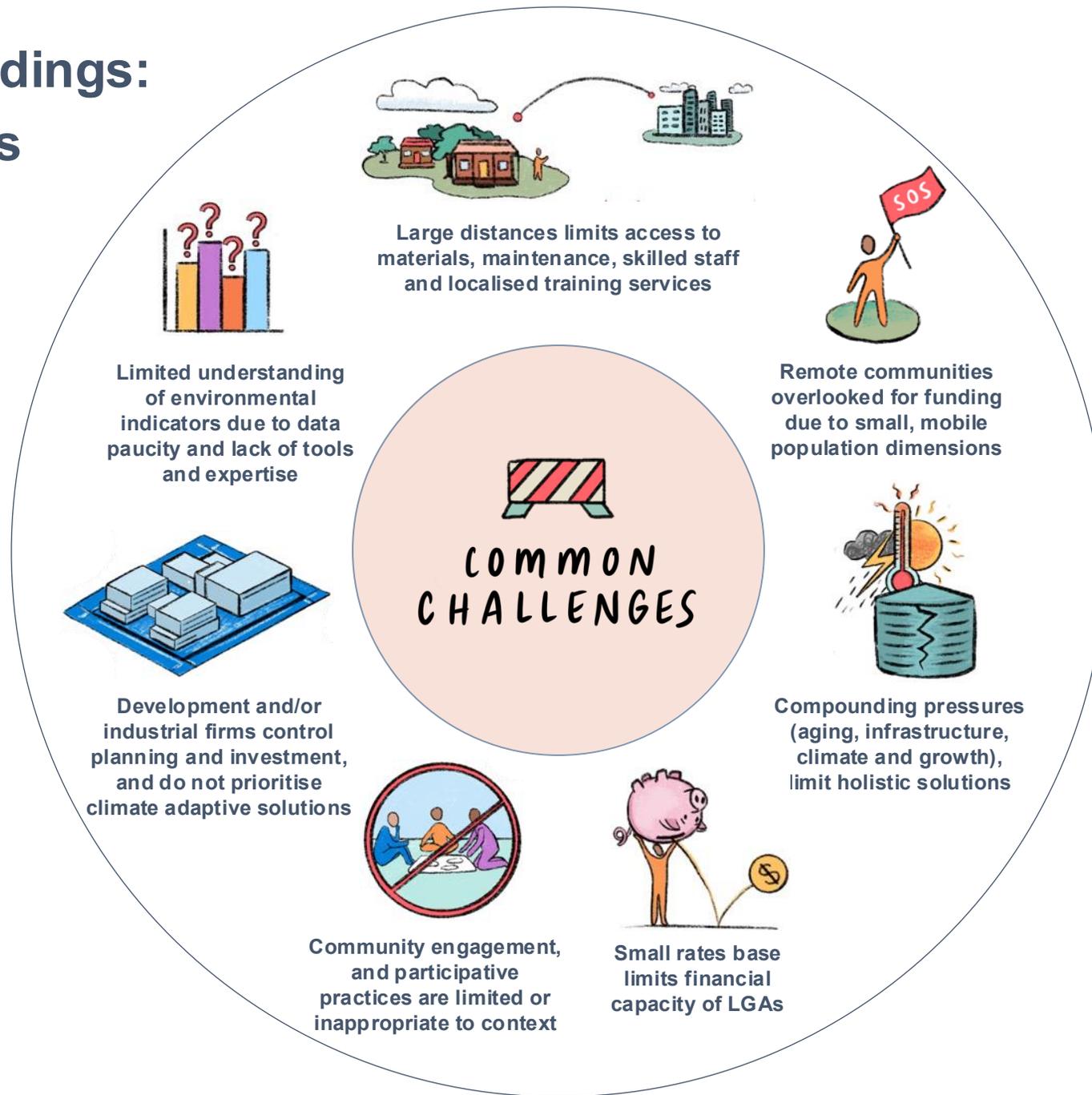
Overview of Findings: Rural and Regional Settings



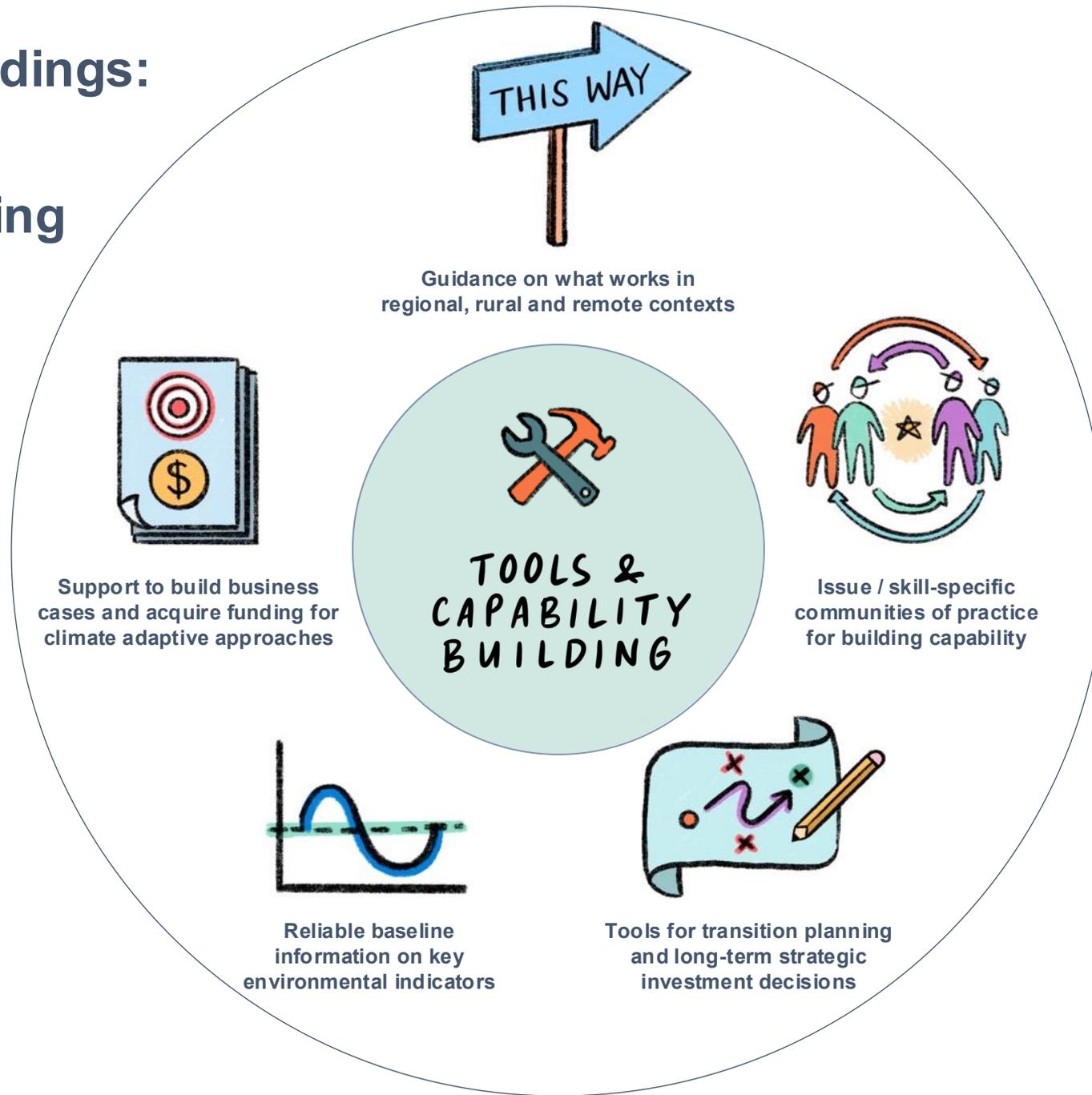
Overview of Findings: Remote Settings



Overview of Findings: Remote Settings

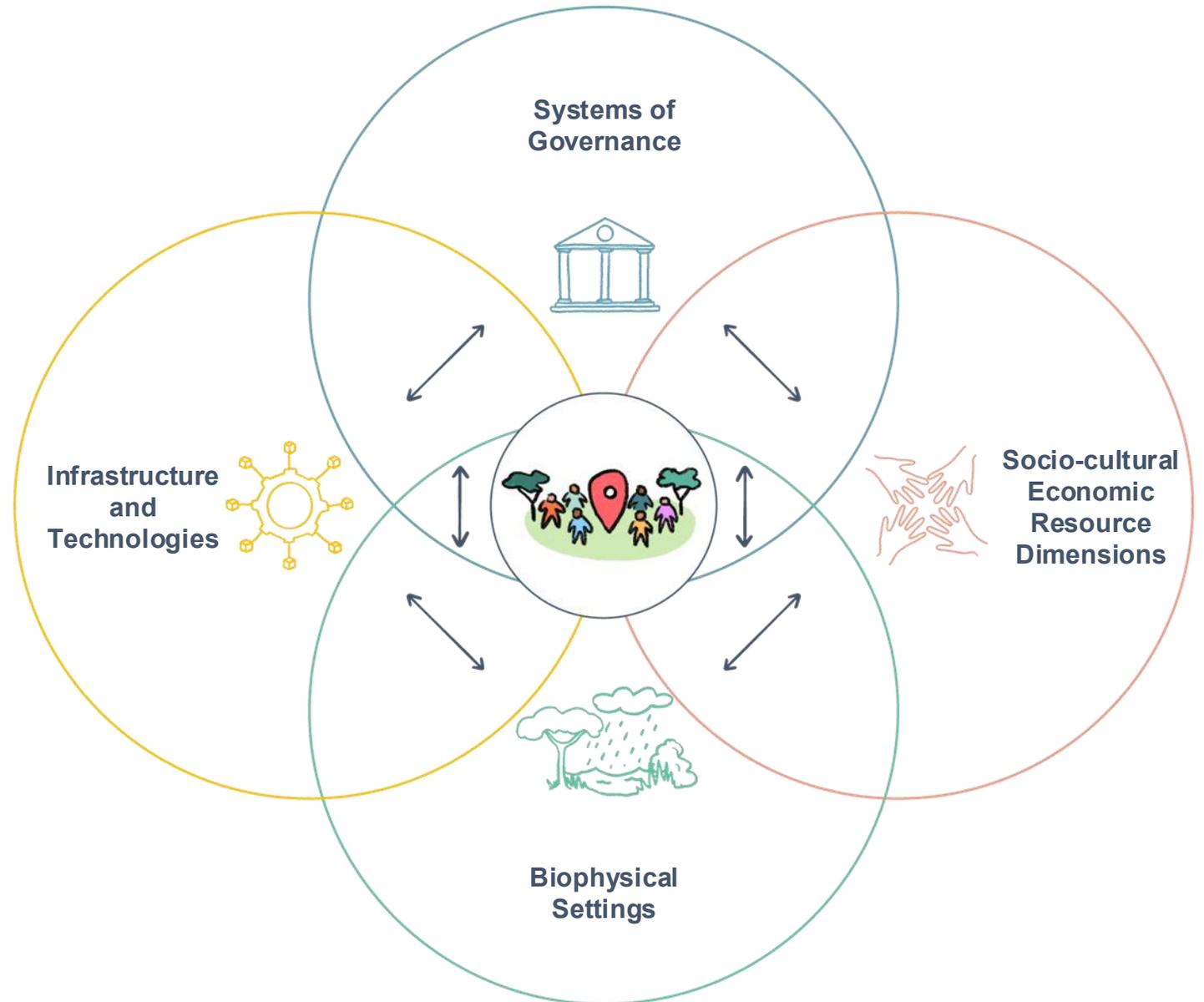


Overview of Findings: How tools and capability building can assist



Water and liveability as an interlinked Country-centered or place-based system

Our findings to date emphasise the importance of considering the interconnected relationships of people in place or on Country to environment, culture, people, infrastructure and technologies and systems of governance in achieving water liveability outcomes. We refer to this as a systems perspective.



Water and liveability variables, challenges and interlinkages

Common urban and Peri-urban centric management **approaches- Lack relevance to regional and remote contexts**

Limited guidance on achieving multiple outcomes in \$ and skills constrained remote/regional settings

Restrictive land tenure and policy recognition of local actors- lack of authoritative capacity for place-based outcomes

Influence of major industries on strategic planning outcomes, environmental health and resourcing

Literacy and appetite of Leadership (eg. Councillors, Directors, exec) for new approaches

Leadership of who? Req. for representation of cultural knowledge, values and meanings ascribed to water and place/Country in decision making

Systems of Governance



“A lot of case studies are urban or peri-urban. I find it challenging in that our elected members see it as a trend or new fad and are thus not accepting of it”

“No one is thinking about the next generation who want to live on Country, but cannot as there is no water and housing”

Water and liveability variables, challenges and interlinkages

Insufficient baseline data and **data management to inform decision making (locally and regionally)**

Multiple actors, siloed decision making and reduced support/training for new approaches

A legacy issue of insufficient infrastructure and housing- now aging

The **push for regionalisation** and population growth without supporting infrastructure and resourcing

Infrastructure and Technologies



“if we leave it to individuals [planning organisations] and everyone races out with their own contractors and tools to seek solutions, we lose that ability to measure and compare success and actually know how we are more broadly tracking across regions”

Water and liveability variables, challenges and interlinkages

Small rates base limits financial capacity of LGA's

Limited funding coordination and suitability for smaller population bases - (remote communities traditionally overlooked)

Skills shortages and increasing costs for contracted expertise, materials and maintenance

Limited/ inappropriate community engagement, literacy building and participation programs in water and liveability related decision making

Socio-cultural Economic Resource Dimensions



“We currently have 20% of positions available and that gets worse as you go west. So [support] networks are a critical requirement”

“The biggest challenge is having a plan administered through the water corporation that aligns to community perspectives and aspirations through effective engagement and participation in decision making”

Water and liveability variables, challenges and interlinkages

Geological/hydrological regimes highly varied and unique- Feasibility- WSUD? RW-Tanks? Etc.

Increasing Climate variability (increasing drought, fire, flood and heat episodes)

Remoteness: Large distances to major centers limit availability and access to materials, maintenance, skilled staff and localised training services

Biophysical Settings

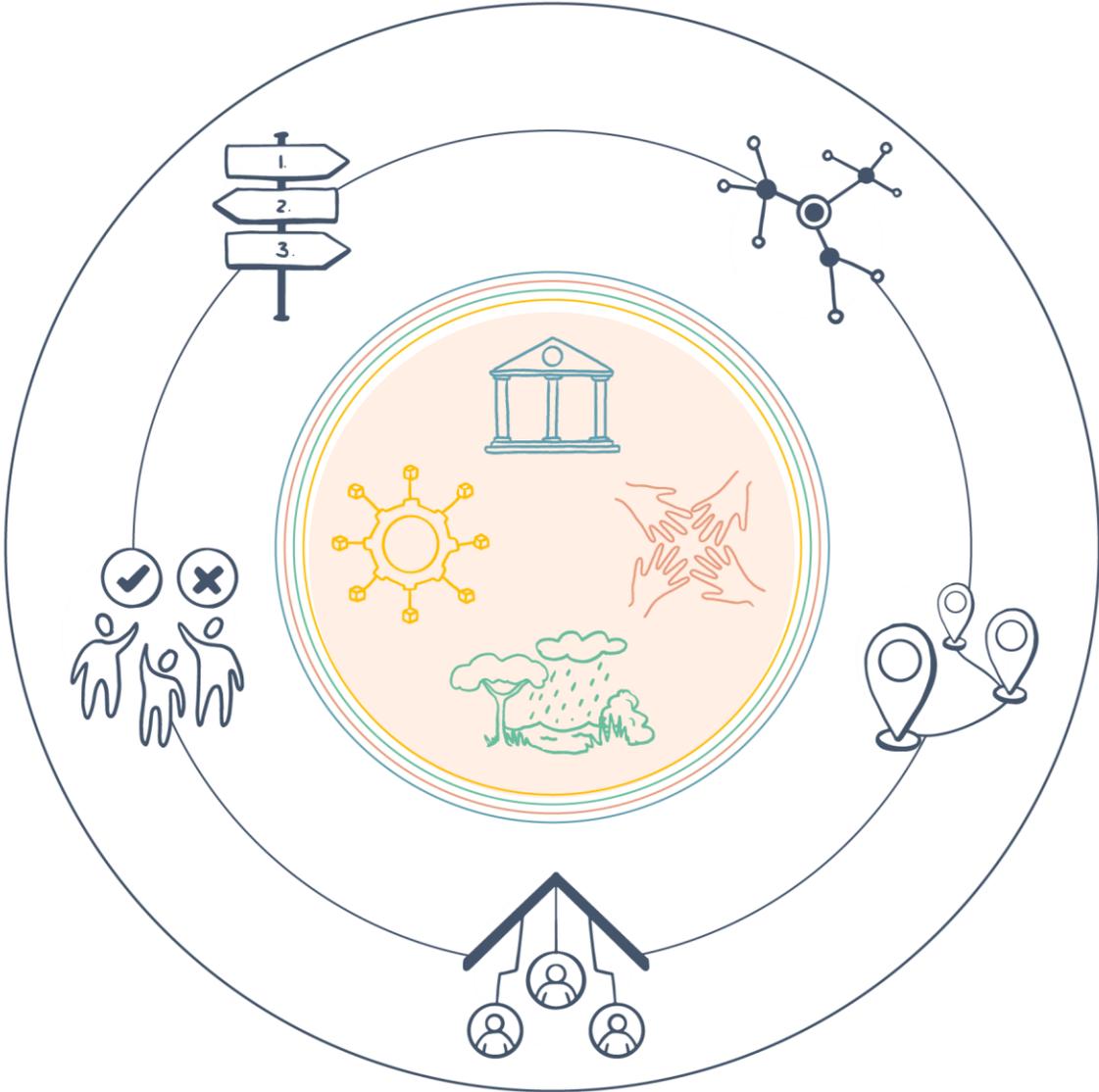


“We need guidance on what is contextually suitable – how arid and semi-arid plant species can support Water Sensitive Design and Greening outcomes for example”

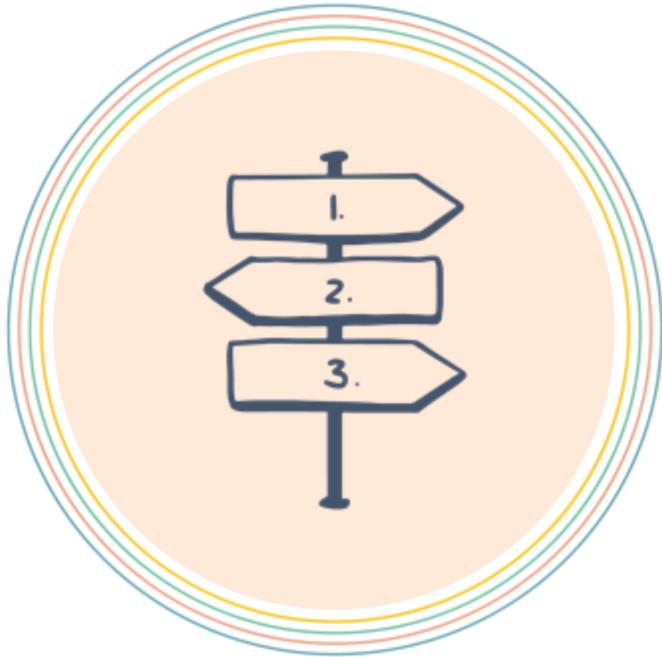
Tools and knowledge products can support localised capabilities for systems strengthening and enable transformations

Supporting outcomes for water sustainability and liveability requires us to consider these interconnections to address challenges and support capabilities. This is known as a system-based approach.

Our findings identified a number of ways tools, training and knowledge products could support local capabilities for strengthening or transforming systems for improved water liveability outcomes.



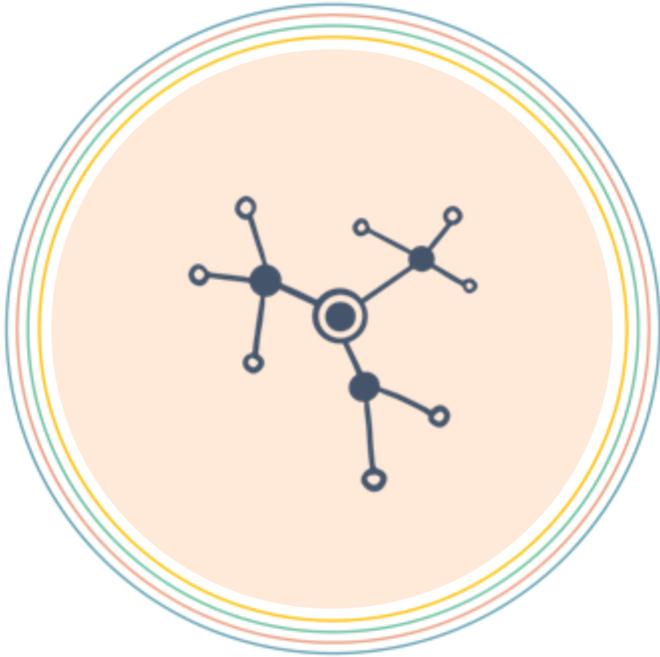
The role of tools and knowledge products as system strengtheners and enablers



Providing endorsed guidance, information and tools relevant to budget and capacity restrained contexts and responsive to specific remote and regional experiences, needs, capacities and cultures

“Providing case studies from larger-scale implementation to small scale and budgetary options, all relevant to the rural and regional setting (not urban/ peri-urban)”

The role of tools and knowledge products as system strengtheners and enablers



Extending collaborative opportunities and capacity for integrated servicing outcomes through building, aligning and connecting regional, state and national networks, working groups and communities of practice

“We need to connect broadly first up to identify key issues and challenges within the regional context and establish a rolling series of forums”

The role of tools and knowledge products as system strengtheners and enablers



Providing a platform / hub for cross-regional strategic planning through:

- Supporting systems for access to local / regional data, data sharing and baseline analysis
- Funding, financing and shared resourcing initiatives and guidance
- Regional skills acquisition, sharing and placements
- Policy advocacy and reform initiatives

“...This platform could support business case development for “like for green and blue renewal” instead of “like for like renewal” servicing options”

“We have been crying out for planners and urban designers for remote towns for a long time. If they were to just give each LGA a planner for 3 years, there is so much that could be done. [it would] at least allow us to get the basics done- basic waste, basic water, basic food security”

The role of tools and knowledge products as system strengtheners and enablers



De-siloing and resource optimisation:

Supporting internal / cross-organisation capabilities for service optimisation through guidance on integrated and multiple-benefits base planning and servicing approaches

“We need more consistency across disciplines e.g. updating planning policy alongside engineering and design manuals”

“Make it broad to support whole-of council [and] multi-stakeholder [water planning] uptake... to support integrated servicing outcomes.”

The role of tools and knowledge products as system strengtheners and enablers



Addressing power imbalances through providing relevant channels for building local capacities, culturally appropriate engagement and participation for integrated decision making

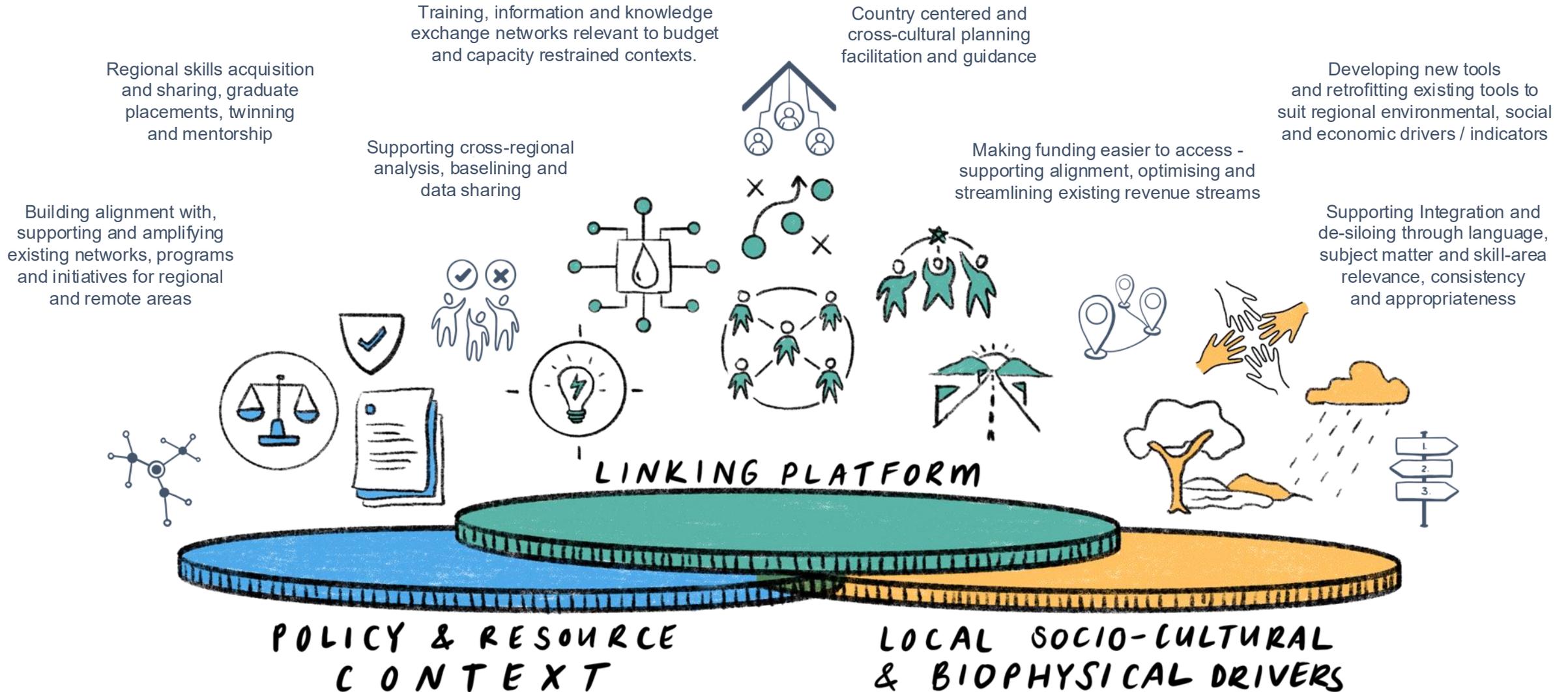
(e.g. Water cycle planning, climate adaption / disaster response, healthy Country planning).

“Building capability is not just about how you support water use and quality [technical] systems. The actual capability to activate and access water via the enabling environment is key and capabilities must be built for this in context”

“Governance and community engagement needs to come together. Rethinking how Communities can be part of the design, and even framing what the problems are from the outset”

Envisioning a way forward: A linking and coordinating platform for system strengthening and enabling in regional and remote contexts

Benefits of a linking platform could include:



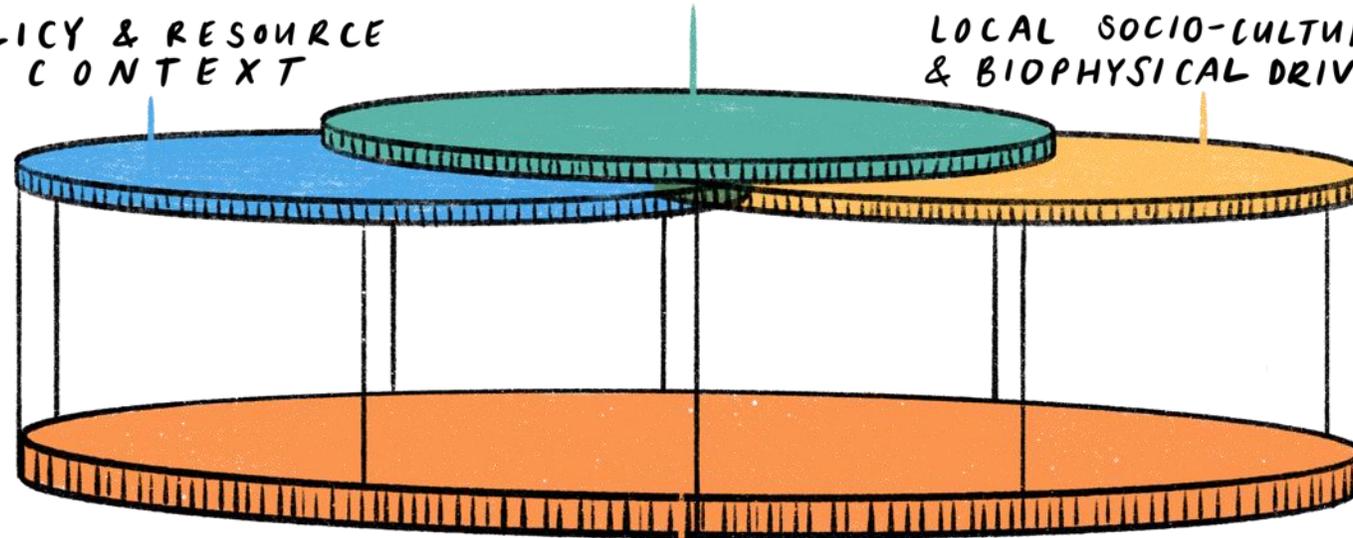
Envisioning a way forward: A system strengthening platform

"A linking-platform would be very useful but must be connected by backbone institutions to support systemic function over a longer-term timeframe"

LINKING PLATFORM

POLICY & RESOURCE
CONTEXT

LOCAL SOCIO-CULTURAL
& BIOPHYSICAL DRIVERS



BACKBONE / ANCHOR INSTITUTIONS

Play a bi-cultural facilitatory role to empower First Nations Leadership, self-determination and knowledge

Strengthen local needs and values through partnership facilitation and capability building

"Provide a focal point for innovation and coordination due to their stable nature, robust network capacity and asset base"

"[are] large, typically financially stable organisations [or collectives] whose long-term sustainability is tied to the wellbeing of the populations and Country they serve..."

"Leverage and facilitate economic, physical, social, political, and other forms of power/capital toward community benefits"

A coordinating or linking platform for country/place-centered servicing

A coordinating platform of tools, knowledge products, resource guidance, training and networked capacity building for liveability and water servicing outcomes

Developing / endorsing new tools, products and initiatives

Retrofitting existing tools, initiatives and products to suit regional and remote contexts

Governance and financing guidance and support

Network / community of practice establishment and support

How will it operate effectively?

What are its functions?

A coordinating or linking platform for country/place-centered servicing

resource flow



Federal Resource Administration
(Policy, Regulation and Agency support)

State Resource Administration
(Policy, Regulation and Agency support)

Inter-regional Resource Administration
(Research, Philanthropy, Private Sector etc.)

A coordinating platform of tools, knowledge products, resource guidance, training and networked capacity building for liveability and water servicing outcomes

Developing / endorsing new tools, products and initiatives

Retrofitting existing tools, initiatives and products to suit regional and remote contexts

Governance and financing guidance and support

Network / community of practice establishment and support

How to link top-down processes?

How will it operate effectively?

What are its functions?

A coordinating or linking platform for country/place-centered servicing

resource flow



Federal Resource Administration
(Policy, Regulation and Agency support)

State Resource Administration
(Policy, Regulation and Agency support)

Inter-regional Resource Administration
(Research, Philanthropy, Private Sector etc.)

A coordinating platform of tools, knowledge products, resource guidance, training and networked capacity building for liveability and water servicing outcomes

Developing / endorsing new tools, products and initiatives

Retrofitting existing tools, initiatives and products to suit regional and remote contexts

Governance and financing guidance and support

Network / community of practice establishment and support

local needs, values, strengths and cultures



local capability and culture



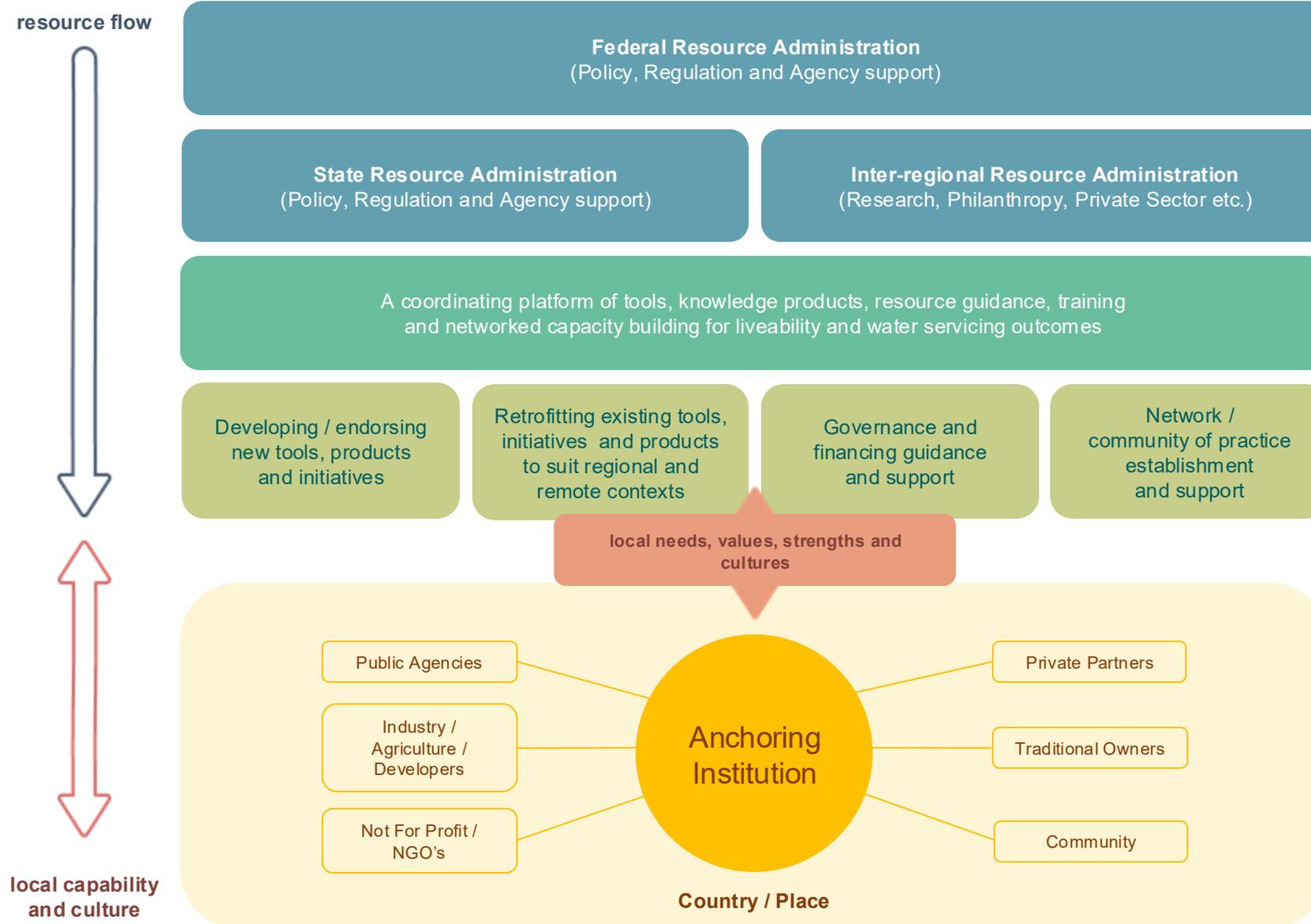
How to link top-down processes?

How will it operate effectively?

What are its functions?

How will it link and empower on-ground process and outcomes?

Where to next? Research Framing



How to link top-down processes?

RQ 4. What is the facilitatory role and architecture required for a coordinating platform to Support and integrate forms of Federal, state and cross-regional resource streams (inc. knowledge, human and economic capital)

How will it operate effectively?

RQ 3. What are the operational components of a coordinating platform? Inc.

- Governance
- Financing
- Service delivery and Maintenance
- Scale and Scope

What are its functions?

RQ 2. What are the capability building resources anchor institutions require in context and how can they be developed and supported by an overarching platform?

How will it link and empower on-ground process and outcomes?

RQ 1. What are the functional capabilities required of anchoring institutions in rural, regional and remote settings to ensure their success in progressing water and liveability outcomes, and how can a coordinating platform support their establishment and growth

Where to next? Living labs

Piloting the Anchoring Institution model through a learning network of Living Laboratories throughout Regional and Remote Contexts.



(Remote) **Uluru-Kata Tjuta National Park** -Water Cycle Management for Sustainable Communities and Culture

Water Utility Model- Remote WA
A water utility centered model TBD?

(Remote/Rural) **Research Cooperative Model**
TBD ?

(Remote) **Cape York / Torres Strait Country** centered / regional councils model

(Regional/Rural) **North Queensland Water Sensitive Cities Adoption Hub**
A Partnership model supporting IWM planning in the Northern Queensland Reef region

A regional/Rural local government Model **TBD?**

 = Preliminary opportunities identified through Phase One engagement

 = Other potential opportunities identified through Phase One engagement

IP1.02 Research Program Next Steps (Proposed)

STREAM	RESEARCH QUESTION (RQ)	OBJECTIVE(S)	YEAR ONE	YEAR TWO	YEAR THREE
1. Anchor Institution Processes and Outcomes	<p>1a. What are the functional attributes of anchoring institutions in rural, regional and remote settings that ensure their success in progressing water and liveability outcomes on Country and/or in place?</p> <p>1b. How can a coordinating platform support their establishment and growth?</p>	<ul style="list-style-type: none"> To understand how a coordinating platform can provide a system strengthening role in supporting the development of anchor institutions in these contexts. 	<ul style="list-style-type: none"> Living lab inception, network establishment and formalised commitment Rapid evidence review of literature and practice to inform principles and practice for anchor institutions approach Establishment of funding and partnership agreements with living lab networks, NESP and end users 	<ul style="list-style-type: none"> Implementation of Yr 1 programs (TBD) Refinement / co-design of future program priorities 	<ul style="list-style-type: none"> Implementation of Yr 2 programs (TBD) Refinement / co-design of future program priorities
2. Platform Functions	<p>2a. What are the capability building resources anchor institutions require in context?</p> <p>2b. How can they be developed and supported by an overarching platform?</p>	<ul style="list-style-type: none"> To identify the key tools, training, networks and resources that the platform should host to support in-context outcomes. To develop them directly and/or establish the institutional and structural arrangements to support their development and accessibility for anchors and partners 	<ul style="list-style-type: none"> Living Lab needs assessment and co-design of Years 1-3 priorities (for each LL) Establish prospectus detailing implementation and funding requirements (short-term ie. yrs 1-3) 	<ul style="list-style-type: none"> Implementation of yr 1 tools and platform establishment. 	<ul style="list-style-type: none"> Development of proposal and work program to support scaled development and adoption
3. Platform Operations and Administration	<p>3a. What are the operational components of a coordinating platform? Inc.</p> <ul style="list-style-type: none"> Governance Financing Service delivery and Maintenance Scalability and Scope <p>3b. How can they be established?</p>	<ul style="list-style-type: none"> Identifying the components required to support the development and function of a knowledge platform 	<ul style="list-style-type: none"> Establish an end user advisory network to oversee development Establish First Nations Advisory to guide and oversee program outcomes Yr 1 Scoping workshops to identify operational development (including research) requirements for years 1-3. 	<ul style="list-style-type: none"> Yr 2 EU and FN advisory workshops designing/piloting operational development requirements (responding and alignment to localized and top-down processes) 	<ul style="list-style-type: none"> Yr 3 EU and FN advisory workshops designing/piloting operational development requirements (responding and alignment to localized and top-down processes) Establish proposal detailing architecture, proof of concept and value proposition for scaled delivery of the National Platform/ anchor institutions initiative
4. Resource Flows and Authorising Environments	<p>4a. What is the facilitatory role of a coordinating platform in supporting, streamlining and integrating forms of federal, state and cross-regional resource streams (inc. knowledge, human, institutional and economic capital)</p> <p>4b. What is the architecture necessary to support this?</p>	<ul style="list-style-type: none"> Identify the economic, institutional, knowledge and skill-based resource streams that can support Country-centred and /or place-based water and liveability outcomes Identify processes for aligning, supporting and coordinating top-down processes to support available, access and uptake at the local scale 	<ul style="list-style-type: none"> Ongoing engagement and network establishment with key federal, state and cross regional stakeholders Co-design workshops responding to localised priorities from living labs and program advisory workshops 	<ul style="list-style-type: none"> Ongoing refinement / co-design of future program support priorities and opportunities with broader s/holder network (TBD) 	<ul style="list-style-type: none"> Ongoing refinement / co-design of future program and resource support priorities and opportunities (TBD)