SAFE ACCESS TO WATER ON HOMELANDS:
A SOCIO-ECOLOGICAL FRAMEWORK
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Homelands

remote

recognised tenure

Indigenous population


Water is the foundation of life
Inequality of access

99.9% of Australia’s urban population have access to safely managed drinking water. This represents 96.5% of the total Australian population.
Inequality of access

In 3.5% of Australians in small towns, rural or remote communities the water does not comply to safe standards or there is insufficient data.
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Inequality of access

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In the Northern Territory, 42% of homeland communities lacked access to safe drinking water, while only 34% of those with access were classified as low risk in terms of both drinking quality and operational capacity.
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Similarly for remote communities in Queensland, 44% of water systems service fewer than 500 people and 12% of these are not potable. There are further threats to the longevity of Queensland water supplies because they have been locally managed since 2009 when co-investment by state and local state government ceased.
Design area 1: Water supply

Water is life in Cape York. The area experiences a monsoonal climate with large amounts of rain falling during the wet season from roughly December to May and a dry season from June to November. There are large wetlands across the Cape that flood each year during the wet season. During the dry season this water recedes dramatically and often disappears under the sandy beds of the waterways.

The outstations source their water supply by pumping it from either bores, or directly from a river or lagoon. Rainwater tanks are also quite common however it is usually necessary to use them in conjunction with water from a bore, river or lagoon during the dry season. Sometimes it is even necessary to pump water from under the sand in the dry season or to have a fire truck come and top up the rainwater tanks with fresh water for drinking.

Figure 2 (top left and right) shows water being pumped from under the sand in a dry waterway. Figure 3 (right) shows a water storage tank. Water is pumped up to this storage tank and then distributed throughout the outstations.

Figure 4 shows water being pumped from a standing lagoon towards the end of the dry season.

Source: JMP Thematic Report on Drinking Water 2016

### India

Indian Government funded water reservoir.

### Cape York Homelands

Sand filtered pump and standing lagoon.
Photo: Engineers Without Borders and the Centre for Appropriate Technology, 2016.
What can we do to improve safe access to water on homelands?
Systematic rapid review

Water resource management approaches

- Socio-technical approaches
  - e.g. healthabitat, NIRA, government policy

- IWRM and Hydrosocial cycle discourse, Global Water Partnership

Physical and territorial - homelands contexts and understandings

- Social return on investment frameworks
  - e.g. Warddeken Land Management

Socio-cultural knowledge systems

- Systematic rapid review

Socio-ecological system approaches

- Eg. Warddeken Land Management
The co-influence between water resourcing variables

- territorial connections
- cultural connections
- climate (drought/flood)
- geology
- geography
- topography
The co-influence between water resourcing variables and technologies

- ad hoc policy settings
- insufficient funding
- restrictive land tenure
- insufficient infrastructure
- insufficient water quality data
The co-influence between water resourcing variables

- remoteness
- lack of reticulated services
- urban centric systems
- poor levels of maintenance
The co-influence between water resourcing variables

- educational capacity
- meanings ascribed to water
- cultural knowledge
The co-influence between water resourcing variables

- Systems and infrastructure
- Socio-cultural dimensions
- Biophysical settings
- Domestic contexts and technologies

The image illustrates the interconnections between these variables, emphasizing the co-influence nature of water resourcing.
Government dominates in policy delivery with an emphasis on socio-technical systems that are “city-centric” with limited contextual sensitivity.
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Social, cultural, economic and material settings determine experiences, needs and capacities.

Bio-physical conditions are complex. Local skills and existing technologies.
The materials, meaning and competencies (knowledge) that underpin the daily processes for water access and use are shaped by intersecting biophysical, infrastructure, technical and socio-cultural dimensions.
Intersection of **community** (socio-cultural process of place) with **environment** (natural and built form). Processes shaping the individual play out at the community scale. Knowledge, meaning and materials are experienced, accessed and re-perpetuated.
Intersection of biosphere (people in environment) and culture (shaped by Social and Political dynamics)
What is the value of the framework?

Useful policy tool for developing more contextually sensitive water resource management responses.

What are the next steps?

Partnering with communities to pilot and test the efficacy of the framework.

For the framework to work effectively more robust data collection is needed to determine the specific contextual needs and resources (physical, social, natural, cultural or financial) that can be used to provide safe access to water.
Thank you!