

# Urban Water Security Research Alliance



## Systematic Social Analysis of Household Water Demand Management

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# The context for the research

- IPCC
  - Freshwater resources vulnerable
  - Existing stressors (population growth, urbanisation) exacerbated by climate change
- South East Queensland
  - Continued pressure on existing water sources
  - Need to efficiently manage existing water resources
- Effective policy underpinned by an understanding of how households use water in their daily lives and how water conserving behaviours may be supported as a “way of life” in SEQ through a mix of interventions.

# What the existing literature tells us

- Review of the literature by Russell & Fielding (2009) suggests that households who engage in water conservation have:
  - Lower incomes
  - Fewer residents in house
  - Higher environmental knowledge
  - Prioritise ecological issues
  - Developed water conserving habits (e.g., shorter showers, full loads of laundry)
- But, current literature has many limitations

# Shortcomings of the existing literature

- Dearth of rigorous studies on the psycho-social determinants of household water conservation
- Most studies do not distinguish between different water conservation approaches (i.e., everyday behaviour, install water efficient appliances)
- Lack of objective data (i.e., studies often measure intentions rather than actual household water use)
- Studies do not take into account the collective context – the impact of family/household dynamics

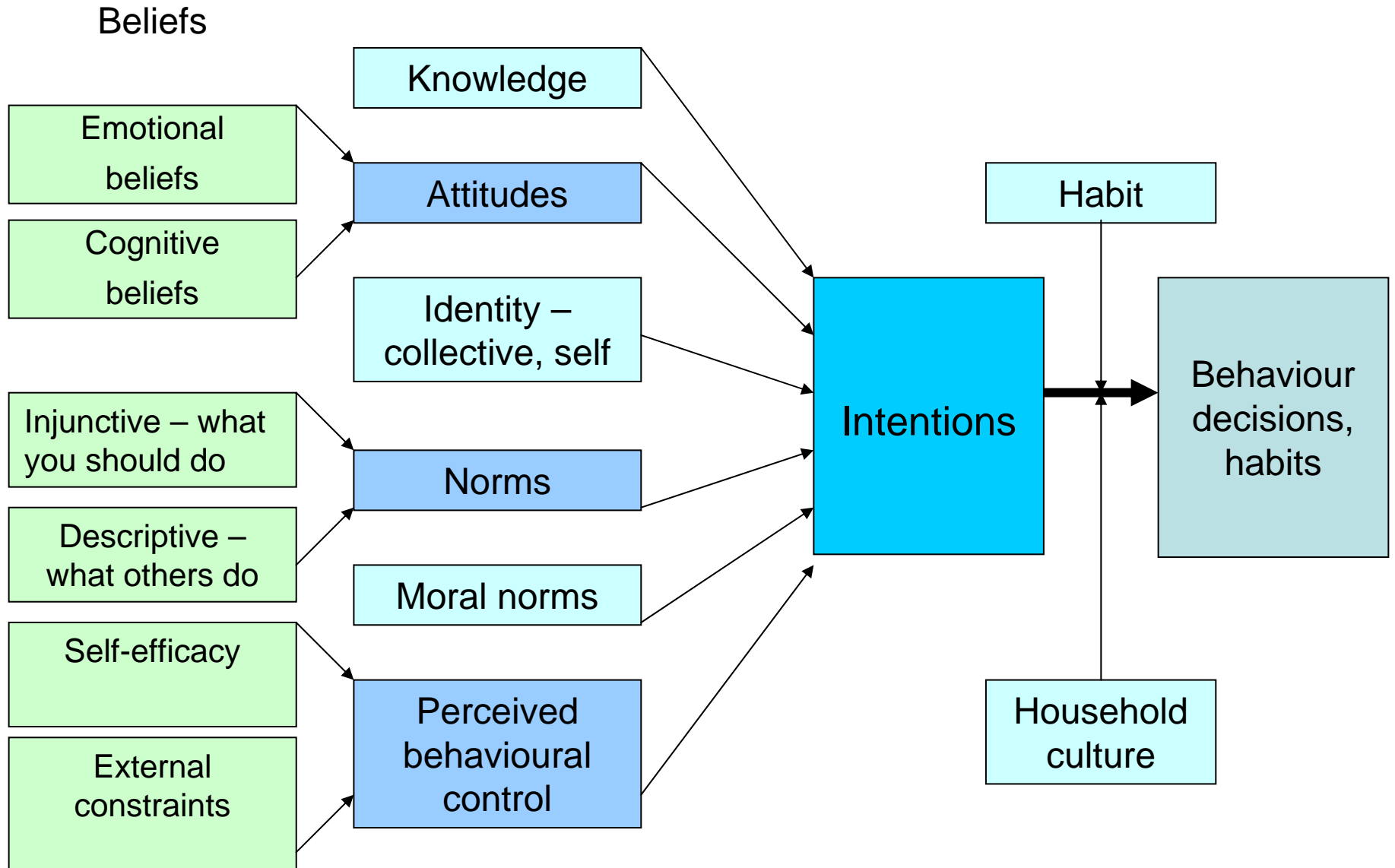
# The current project

## Objectives:

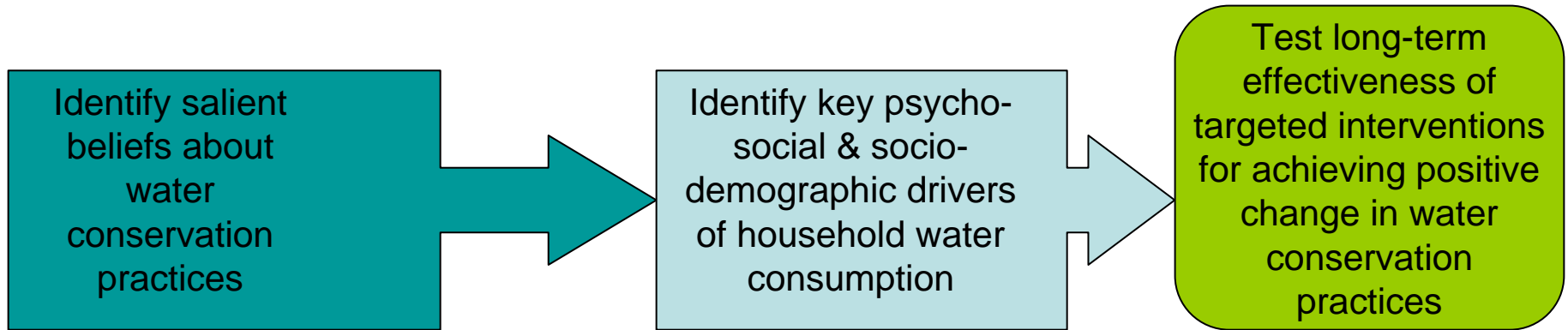
1. Identify the **psychosocial** and **socio-demographic drivers** of residential water using practices.
2. Determine the **effectiveness** of targeted **intervention strategies** for achieving long term sustainable residential water use.
3. Gain an understanding of how best to **tailor intervention strategies** for **different community segments**.
4. Make a **significant contribution** to the **scientific literature** on water demand management.

# Theoretical model framing research

## Expanded Theory of Planned Behaviour



# Research process



Phase 1: Focus groups

Phase 2: Baseline Survey

Phase 3: Intervention study

# Phase 1: Identifying important beliefs

- 12 focus groups
- 84 participants
- Conducted in:
  - Sunshine Coast
  - Gold Coast
  - Ipswich
  - Brisbane



# Two approaches to water conservation

## Everyday water saving behaviours

- Reuse grey water
- Full dishwasher/clothes washer loads
- Shorter showers
- Check and fix leaking taps
- Use less water in kitchen (cooking, washing up, rinsing)
- Turn off taps when brushing teeth
- Water-wise gardening

## Installing water efficient appliances

- Water tanks
- Low flow taps & shower heads
- Water wise plants/gardens
- Dual flush or composting toilets



These behaviours were the most cited water conservation methods identified by focus group participants

# Benefits of household water conservation

## Everyday water saving behaviours

- Saves money
- Protects water for future generations
- Promotes greater awareness of need for water conservation
- Protects the environment

*“Mine is saving money. I know... and the environment is very important but it’s saving money on a very precious resource, yes. So a bit of both but I think as a family, saving money. Because water costs money, you know? It costs a lot of money.”*

## Water efficient appliances

- Long-term monetary savings
- Alleviates need for constant monitoring of behaviour

*“It’s kind of ensuring that there’s enough water for kids in the future, for the future generations”.*

*“You don’t have to be quite as vigilant. If you know you have got a showerhead that is only letting out so much per minute then you don’t have to be quite as conscious.”*

# Costs of household water conservation

## Everyday water saving behaviours

- Time consuming and inconvenient
- Reduces quality of life
- Concerns about health, safety, and hygiene

*"It's your quality of life. Like our house desperately needs a clean, it's just filthy."*

*"Not being able to hose things down. A lot of people get a lot of pleasure out of hosing things."*

## Installing water efficient appliances

- Initial set-up costs
- Functionality of water efficient fittings
- Red-tape associated with rebates

*"My kids hate it that I've changed everything over. Hate it. I reckon they stay in longer because there's not enough pressure. I swear they do. It's crappy. They've all got masses of hair like me. They take forever in there, because there's no damn pressure. It's a crappy little thing that they come out with, and you just go, God I wish I had the other one back."*

# Influences on household water conservation

- Government (approve)
- Environmentalists (approve)
- Businesses who manufacture appliances (approve)
- Local council (may disapprove)

The screenshot shows the Queensland Water Conservation website. At the top, the logo for Queensland Water Conservation is visible, along with the text "TARGET 140" and "Making conservation together". A navigation menu includes links for Home, About Target 140, Indoors, Outdoors, Recycled, Living too much?, For Business, Restrictions, and Useful links. The main banner features a circular gauge with segments for Target 140 (green), Target 150 (yellow), Target 160 (orange), and Target 170 (red). The needle is positioned between Target 160 and Target 170. Text on the banner reads: "WE'VE MOVED FROM TARGET 140... TARGET 170 AND HIGH LEVEL RESTRICTIONS START 31 JULY READ MORE". Below the banner, there are several sections: "TARGET 140 TIPS" with a tip to "Wash your hands in a plugged sink. More tips.", a "41.69%" statistic for "Combined dam water levels for SE QLD for 18 September" with a "More information" link, and a "TAKE THE TARGET 170 TEST" section with a "Water Usage Service" link. A "THANK YOU FOR THE BEST YEAR ON RECORD" section is also present, followed by a "We're now at Target 170" section with a "Read more about High level restrictions" link. A "Latest News" section lists three items: "Fine weather (snip up water use)", "Walt's best in Water", and "Residents rally and drive down water consumption". A "How to read your water meter" section includes a "3 STEPS" icon and text: "We all need to take responsibility for how much water we use each day. A good starting place is to find out how much you use at the moment - read your water meter or read your water advice notice from your council. Three steps to read your water meter". The footer contains copyright information: "© Queensland Water Conservation. Licensed: 11 Apr 2006. Authored by: Gerald Smith, PO Box 15967, City East, Brisbane, QLD 4002".

# Facilitators of household water conservation

## Everyday water saving behaviours

- Social marketing reminders
- Helpful technology
- School education

## Installing water efficient appliances

- A home installation and advice service
- Rebates

*“Seeing ads on TV, the media helps me. Just keeps reinforcing how important it is that I’m doing what I’m doing.”*

*“Brochures in your council rates and your electricity rates.”*

*“Yeah, more of that. Ring a number half a dozen things get sorted for you. You pay whatever the cost is, you're done.”*

# Barriers to household water conservation

## Everyday water saving behaviour

- Other's lack of awareness & effort
- Having to change behaviour & habits

## Installing water efficient appliances

- Expense time & effort of set-up
- Lack of knowledge about products & maintenance

*"You are paying for it. So then those people don't cut down. So anyone that comes into the area who isn't a permanent resident has to be reminded of the situation."*

*"With the pool cover, just taking the time to shop around and get the best deal on the cover and then you've got to cut it to size and all these things."*

*"You get into a routine over your lifetime and it's very hard to change."*

# What water conserving behaviours have become habits?

- Checking and fixing leaking taps
- Turning off taps when brushing teeth
- Having shorter showers
- Only running dishwashers/clothes washers with full loads
- Water-wise gardening



# Phase 2: Baseline survey (1)

- **Sample**

- Recruited from Sunshine Coast, Gold Coast, Ipswich, Brisbane
- Dual recruitment approach
  - online sample from social research company (drawn from existing panel members)
  - Postal sample via mail out survey

- **Method**

- Adult decision-makers in household to complete survey

# Phase 2: Baseline survey (2)

- Behavioural measurement
  - Access to council water records
  - Water End Use data
    - Integration of systematic social analysis project with Alliance Residential Water End Use project
    - A subset (N = 320) of meters replaced of participating households
    - Social and demographic variables linked with overall and specific household water use data
  - The integration of theoretically grounded psycho-social data with water end use data represents a world first

# Phase 3: Intervention study

- **Interventions** designed to **address key drivers** (identified by baseline survey)
  - Example interventions: structural, feedback, financial
  - Experimental design: interventions compared against **control group**
- **Assess effectiveness of interventions through:**
  - **Attitudinal** data (follow-up surveys)
  - **Behavioural** data (smart metering project + council records for households without smart meters)

# Project outcomes

- Identification of the important **beliefs** associated with household water conservation in SEQ
- An understanding of the **key drivers** of **household water conservation** and how these might **vary** across **demographic groups** & **geographic regions**
- Development and evaluation of **evidence-based interventions** to promote long-term sustainable water use in residential homes

Thank you

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