Transforming Domestic Consumption Patterns in Urban Water Supply in South East Queensland

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Overview

- Australia is the driest continent on earth
- But until recently urban water supplies plentiful and cheap
- ‘Millennium Drought’ 2000-2008 created critical water shortages
- Hit South East Queensland (SEQ) especially hard
- Lead to new institutional, supply and demand strategies
- Dramatic changes in water consumption
  - 1990’s – estimated 700 litres per person, per day
  - Height of the drought (2007) – water consumption brought down to 140 L pp/pd
  - Today – 1 year after end of drought, 155 L pp/pd
- How were these changes in water consumption achieved?
South East Queensland

Population - 2.7 million
Water use in Brisbane/SEQ

- Unlimited until 1990’s:
  - No restrictions
  - 90% households unmetered
  - Sprinklers, hoses, pools
  - Estimated use 700 litres per person per day (Spearritt)
  - High by international levels
  - Official literature: water use 300 litres per person per day at the beginning of the drought

- 95% water supply from climate reliant sources - dams
Millennium Drought (2000-2008)

- Worst drought on record
- 2007 - Dam levels supplying Brisbane down to 16.7% (QWC)
- Responses:
  - Institutional reform (Queensland Water Commission)
  - Supply-side
  - Demand-side
Demand management strategies

“Any regulatory, policy, technical, service or commercial interaction with customers or consumers that aims to minimise the overall demand for water” (QWC)

Three main approaches:
- Regulation
- Fiscal/economic incentives
- Communication and education
Regulation – water restrictions

- Progressive reduction in what reticulated water could be used for
- Covered a range of activities (outdoor water use only):
  - Gardens and lawns
  - Pet and animal care
  - Vehicle washing
  - Pools and spas
- ‘Level 1’ → most relaxed
- ‘Level 6’ → height of the drought
## Water restrictions – ‘progressive deprivation’

| LEVEL | DATE    | LAWNS | | GARDENS | | |
|-------|---------|-------|---|---------|---|
|       |         | Sprinklers | Hoses | Buckets | Sprinklers | Hoses | Buckets |
| 1     | 05 May  | ✓ T    | ✓ T  | ✓ A    | ✓         | ✓     | ✓ A    |
| 2     | 05 Oct  | X      | ✓ T  | ✓ A    | X         | ✓     | ✓ A    |
| 3     | 06 June | X      | X    | ✓ A    | X         | X     | ✓ A    |
| 4     | 06 Nov  | X      | X    | ✓ T    | X         | X     | ✓ T    |
| 5     | 07 May  | X      | X    | X      | X         | X     | ✓ T    |
| *T140 |         |        |      |        |           |       |        |
| 6     | 07 Nov  | X      | X    | X      | X         | X     | ✓ T    |
| High  | **T.170 | 08 July| X    | X      | ✓ T       | ✓ T   | ✓    |
| Medium| T.200   | 09 April| ✓ T  | ✓ T    | ✓         | ✓ T   | ✓    |
| Perm. | T200    | 09 Dec | ✓ T  | ✓ T    | ✓         | ✓ T   | ✓    |
| Long  | Term 200| 10 Jul | ✓ T  | ✓ T    | ✓         | ✓ T   | ✓    |

* X = ban
* T = time limited
* A = anytime
Demand management: Legal response - regulations

- **Enforcement**
  - Local Councils
    - water patrol officers
    - on the spot fines ($200, $600 repeat offence, $1400 for third offence in 2 years)
    - ‘dob in neighbour’

- **Sanctions for high water users – ramped up as drought worsened**
  - Research in 2007 found 13% of households responsible for 28% residential consumption
  - Level 5 restrictions – high volume water audit
  - Level 6 restrictions – enhanced use of sanctions – warning notices, two tier fines: $450 → $1050
Demand management: Fiscal/economic incentives

- Rebates for water saving measures:
  - Rainwater tanks
  - Washing machines
  - Showerheads
  - Dual flush toilets
  - Pool covers
  - Drought tolerant Plants

- ‘Home Water Wise Service’
  - Licensed plumber – water audit + water saving devices
Demand management

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- Three main approaches:
  - Regulation
  - Fiscal/economic incentives
  - Communication and education
Demand management: Communication

- Message was clear: we were in a crisis and could run out of water
- ‘Target 140’ campaign began June 07
- Rare coordinated response – two tiers of government – State and Local
- Comprehensive message delivery
  - High profile advertising – TV, newspapers, billboard, internet
  - Positive press releases every week – “pat on the back” + dam level update + encouragement to continue
  - Website – easy to see dam levels + consumption
  - Information directly to households from Local Councils – water rates, public events in local parks, festivals
  - ‘Promos’ – eg May 2007, QWC mailed out 1million shower timers to households in SEQ
Consistent behaviour change messages

- Limit showers to four minutes or less
- Do one less load of washing a week
- Only use the dishwasher when it's full
- Turn off the tap when brushing teeth or shaving
- Only water gardens with a bucket

Easy to understand ‘logo’ reminding people about individual consumption target
And it worked …

Average Residential Consumption Trends 2005 to 2008
(SEQ Councils subject to QWC Restrictions)
QWC Annual Report 08-09
Reasons for success

- **Regulation**
  - Study (Shearer) found correlation between tightening of restrictions and decrease in water use (compared to areas without restrictions)
  - Significance of restrictions demonstrated by comparison between Brisbane and the Sunshine Coast

- **Communication strategy**
  - Two levels of government working together – State and Local – consistent messages
  - People believed we were in a crisis, and could run out of water
  - Study (Shearer) found correlation between major media announcements and decreases in water use
  - 2008 Survey - SEQ (Queensland Water Commission)
    - 86% believed water scarcity permanent
  - 2009 Survey – Queensland (Qld Office of Govt Statistician)
    - 94% believed water precious, must be conserved;
    - when asked if water restrictions negatively impacted on their life, 83% disagreed or strongly disagreed
Reasons for success

- Effective integrated strategy
- Communication strategy was combined with regulatory ‘back up’ and marketed together
  - The Target 140 campaign voluntary
  - Anecdotal evidence that some thought the target was regulatory
Relevance to adaptation

- Official discourse did not refer to ‘adaptation’
- But it’s evident that transformative adaptation of water use occurred

Recap
- Late 1990’s – 700 litres pp/pd;
- Pre-drought 300 litres pp/pd
- Achieved Target 140 in 2007

- As at 25 June, all of SEQ still below target of 200 litres per person per day (155 average)
- Permanent ‘plan’ due this month
- Will be aiming for 200 L pp/pd not 230 litres as first thought
- Lessons for behavioural change in other sectors? Or is water unique?