

FACT SHEET -THE SUPPLY-DEMAND GAP

As population increases and the climate changes, a gap is emerging between water supply and demand.

Closing this gap will not be straightforward. Its closure relies on developing a diversity of water sources to suit the circumstances in which the water demand exists. This holds true as much for rural areas as for urban, but the mix of solutions will be different for each.

In urban areas both supply and demand side solutions will be needed. The community is generally aware of initiatives to reduce water consumption including:

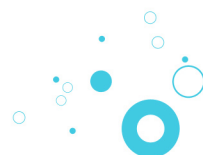
- Price, as a means to rationalise water use
- Water efficiency labelling schemes for appliances
- Minimum water efficiency standards (e.g. dual-flush toilets)
- Subsidies to ease the transition to water efficiency (e.g. showerhead replacement programs)
- Temporary water restrictions
- Promotion of water efficient gardens

These are complemented by supply side options, including the construction of desalination plants; utilisation of groundwater, dual pipe systems to deliver recycled water direct to homes (e.g. the Rouse Hill development in Sydney), greywater reuse at the household scale, industrial water reuse schemes and, potentially, stormwater use and 'sewer-mining' (the abstraction, treatment and reuse of sewage adjacent to the point of use, such as an industrial facility). In some circumstances new surface water sources are being developed, such as Tillegra Dam in the Hunter region.

In future, however, different emphases will need to be applied. The following sets out some of these:

Climate independent sources: Whether or not one accepts that climate change is human-induced, one can't deny that the Australian climate is drying over a significant portion of the continent. The extent of future change is uncertain. The robustness of future systems will depend in part on their resilience in the face of climate change. Recycling and desalination of seawater that are not affected by climate variability will likely be increasingly important parts of the mix of future supply options

Diversity of sources: Many Australian water supply systems are dependent on one or a small number of surface water storages, rivers or groundwater systems. Single source dependence poses risks in the face of failure induced by climate change or another cause. Diversity of supply will increase the robustness of systems.



Efficiency and demand management: Notwithstanding the demand management initiatives already utilised there is room for further opportunities to be explored, including improvements in appliance design, education and incentives to conservation.

Pricing: Reforms over the past 15 years have improved price signals to consumers. Water is now a controllable cost and has real value. That said, average water cost for a household is significantly lower than the cost of other utilities such as electricity, phone and gas. Increases in prices to fund new, more diverse water supply options, improve the sustainability of systems and fully cover the cost of water services in an equitable manner will likely lead to price rises of some magnitude. This will send a stronger water conservation message to consumers.

Water sensitive cities: Taking a more holistic approach to water systems in urban areas will reveal links between systems and opportunities to reduce remote source dependency. For example:

- The use of swales, flow retardation systems and the like may provide opportunities to improve the quality of stormwater reduce the flow from urban areas (which is orders of magnitude greater than that in rural areas because of the extent of hard surfaces in cities) and utilise what remains for non-potable purposes.
- The installation of community-scale recycling/wastewater collection systems can make new supplies available at lower cost and lower environmental impact
- Redesign of buildings can reduce water use (e.g. waterless urinals; improved landscaping; roof water capture and use)
- Development of links between industrial processes or companies can lead to a sharing of water resources (e.g. the cooling water from one facility can be the input to an adjacent industrial facility)
- New urban forms (e.g. changing land uses, changing zonings) can lead to water efficiencies.

In rural areas, there is limited opportunity to utilise new surface water supplies or to recycle directly either because of the economic cost (which makes recycled water uneconomic to produce, say because the source of supply is remote from users) or paucity or irregularity of source water available to be recycled. Rather, in rural areas solutions will be more dependent upon increasing the efficiency of irrigation –and on restructure of the agricultural sector. Examples include, but are not limited to:

- Piping water supplies rather than delivering water by open channel
- Changing on-farm water management practices
- A move to dry-land rather than irrigated farming
- Production of crops in areas in which more water is available (the opening up of Tasmania's central region is a good example)
- Selection of more water efficient crops, or crops that produce greater value for the water consumed.



The last and penultimate points refer principally to the process that will need to be undertaken to utilise markets more effectively to ensure that water is transferred to crops of the greatest economic value and, potentially, the abandonment of some farmed areas in which water is either too scarce to be provided, or will be uneconomic to farm in future.

The efficiency of water trading markets will be critical to a transition that is as smooth as possible. While AWA would support the operation of these markets, the Association recognises that there is the risk of significant social dislocation arising from agricultural adjustment in the face of water scarcity. Investment by government in agrarian reform needs to be extended to mitigating social impacts.

