PART I

IDEAS FOR OUR WATER FUTURE

ASSESSING THE SCHEMES

Australians are innovative. Where there is a problem, we come up with answers; whether it be inventing the stump jump plough, the Hills hoist, or national community programs like Landcare and Clean Up Australia.

There have been many ideas about water - some have been around for a long time, some are new. Many older Australians would remember rainwater tanks all round the place, and using their washing water on the garden. Perhaps we need to go back to some of these approaches. This section encompasses an investigation into the broad spectrum of options available at this point in time. In our diverse and variable country options seem endless and perhaps it will be obvious which direction to head once we have looked down all the paths available.

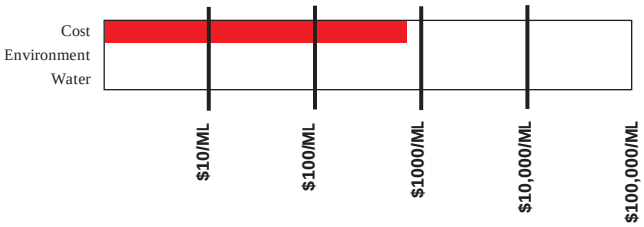
Options have been grouped into ideas for looking at ways to better use water (*More efficient use of water*), recycling the water we have (*Recycling our water*), capturing more rainfall (*Storing more water*), creating more freshwater (*Producing more water*), moving water around (*Transporting water*), making major changes to our climate (*Engineering the weather*) as well as ideas for individuals (*What you can do*).

Each option has been broadly assessed and given a rating based on the cost of the water generated, the environmental benefit and the amount of water it provides. A ranking system of each option is presented in the following form:

The best options will have low cost (not much red), many environmental benefits (lots of green) and produce or save much water (lots of blue).

The costs are broad estimates; only with more detailed, local, 'on the ground' investigations will the exact cost and impacts for a particular proposal be determined.

The cost rating is based on the cost per megalitre of the water generated or saved. It is calculated simply by determining the total upfront cost and the annual operating cost of the option. These are then converted into an annual cost as if a bank loan was required. This is then divided by the water generated (or saved) to give a cost per megalitre of the water.



The cost scale is logarithmic - it goes up ten-fold with each increment. Quarter way is affordable, while the full way means the country is bankrupt. The costs are based around current circumstances (for example, energy prices, construction costs and the like).

The environment benefit rating covers both social and natural environment issues. It is a subjective assessment based on several criteria. These include the physical area impacted (the 'footprint'), the ongoing energy requirements, and the number of people affected.

The quantity of water produced by harvesting or transporting options is based on the best estimate available. The quantity of water saved or replaced in many of the other options involves an assessment of a 10% change from where we are today. Each option is assessed as though it is the only option being implemented, whereas in reality some options will be implemented together and compete for water savings. Only local investigations can produce exact answers.

The ratings are relative; they are a good way to compare different proposals but they are not meant to be part of a detailed study such as a financial feasibility that a bank manager may read. This is in keeping with the purpose of the book as a 'guidebook'.

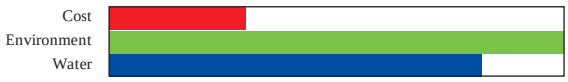
More efficient use of water

Stop the leaks in the Great Artesian Basin

Protect the farm from erosion and salinity

Reduce water losses in irrigation channels

Improve your farm with technology



Improve the way we irrigate

Replant our riverbanks

Plant crops for the Australian environment

Reduce water losses from dams

Farm livestock for the Australian environment

Recycling our water

Don’t waste our wastewater

Treat our wastewater where it is needed

Don’t waste our rainwater

Store our water underground for later

Don’t waste our house water

Storing more water

Install a rainwater tank

Build a dam on a river

Build a dam near a river

Build a dam in the ocean

Producing more water

Take the salt out of saltwater

Tow an iceberg

Build an evaporation channel

Carpark the catchment

Make water from air

Transporting water

Cart water by road and rail

Pipe water from Tasmania

Divert a river inland

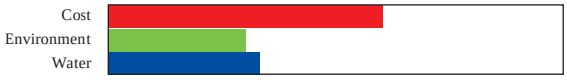
Pipe water from PNG to Australia

Pipe water from the Ord River to Perth

Build a national water grid

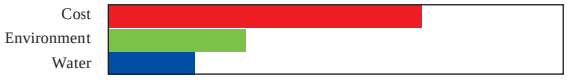
Engineering the weather

Make rain clouds



Connect Lake Eyre to the sea

Whip up a cloud



Build a mountain

Dig a transcontinental canal