

# CAN THE FOOD INDUSTRY SURVIVE DROUGHT?

## ABOUT THE AUTHOR

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## Maintaining food and water security in a drought prone world

Droughts are becoming more frequent and more prolonged throughout Australia. Drought cuts yields of the crops we depend on, but our food and beverage processors are hit in two ways. Reduced yields mean increased prices of essential crop inputs, and the water, which is also essential for processing becomes more expensive and subject to supply restrictions that can limit output, even where market demand for products is strong. In most parts of Australia potable water is fairly cheap and of high quality, but the price of water becomes irrelevant if supply simply stops.





## DROUGHT TRENDS IN AUSTRALIA

Droughts are nothing new in Australia. There are anecdotal records describing the Settlement Drought of 1790 to 1793, which hit the early settlers trying to establish a foothold on a strange and harsh land.

Weather records were only collected from the late 1800s but this limited data shows that the country has experienced prolonged periods of drought, most notably the Federation Drought (1895-1903), the World War 2 Drought (1939-1945), and more recently the Millennium Drought (1997-2009). Each of these droughts dealt a devastating blow to the agricultural sector, with broader economic impacts.

To get a clearer understanding of rainfall trends and the potential for prolonged periods of drought in Australia, we need long-term data to reveal the climatic context in which these droughts occur. Our weather records do not go back far enough, but scientists have a few other tools to fill in the blanks.

### “RESEARCHERS FOUND THAT THE RECENT MILLENNIUM DROUGHT (1997-2009) AFFECTED A LARGER AREA THAN ANY PREVIOUS DROUGHT THAT OCCURRED OVER THE LAST 400 YEARS IN SOUTHERN AUSTRALIA.”

In a study recently published on the Climate of the Past website, scientists examined ice cores, corals, tree rings and sediment records from sites around Australia, as well as from the adjacent Pacific and Indian Oceans, to help augment the limited rainfall records, extending these by 400-800 years. This extra data puts our recent variations in rainfall into a long-term context across the whole of Australia. The researchers found that the recent Millennium Drought affected a larger area than any previous drought that occurred over the last 400 years in southern Australia. They also found that fluctuations in rainfall variability currently observed are unprecedented, particularly for northern Australia and southern Australia, which over the last century have been unusually wet and dry respectively.

Drought is called the “creeping disaster”, because it starts gradually and by the time it is acknowledged its impact on agriculture and water supplies may already be devastating and it may be too late to take action to limit the fallout. Because of this, and Australia’s long history of shifts in rainfall

patterns, is critical that we prepare for drought, making ourselves more resilient to these fluctuations, especially considering that they are projected to grow even stronger in the future with climate change.

## CAN RECYCLING WATER IMPROVE WATER SECURITY?

If we are to improve our resilience to drought, we must manage our water resources more sustainably. Beside conserving water through prudent water use, implementing water saving mechanisms and water-wise agricultural practices, we need to recycle wastewater back to potable water quality so that it can be reused.

According to the NSW Food Authority Water reuse guideline, it is acceptable for food businesses to use recycled industrial wastewater in direct contact with food, provided it has been adequately treated to the quality specified in the Australian Drinking Water Guidelines for its microbiological, chemical and physical properties, and has been approved by the relevant water authority for use as drinking water.

The technology is already available to produce potable water from the wastewater generated from any food processing operation. It is proven technology and is becoming cheaper. Despite the low cost of mains water it could become very expensive if the supply is cut off by water restrictions. It is not just farmers who need to think of ‘drought proofing’, processing facilities need to be ‘drought proofed’ too.

Recycling wastewater for reuse can significantly improve the country’s water security and can help the food and drink industry to become more resilient to droughts in the future.

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