

Water Trading Tool Kit - Fact Sheet 3

How much and how often?

Introduction

Farmers in the Murray Dairy region need to think beyond their own river catchment when planning their water access and consider the whole southern Murray-Darling Basin. The river systems are interconnected and although some restrictions apply to moving water between different trading zones market price is driven by a combination of water supply and demand across the entire southern MDB.

Seasonal Allocations

When looking water allocations, we can break them up into 5 scenarios: extreme wet and extreme dry periods, and then a range in between that will be what occurs most of the time. The scenarios are illustrated below with a description of the relevant water allocation against the major water entitlements in those scenarios. The medium scenario is broken into three levels which are determined by the allocation against NSW general security (GS) entitlement.

Table 1: Water availability scenarios¹

Scenario	Allocation level	Probabilities – Number of years in 20			Total Water Availability (GL)
		LTCE	Based on inflows over the last 20 years	Based on inflows over the last 10 years	
Wet	100 % HRWS, 100% GS, Some allocation against LRWS	7	3	1	6500
Medium – Wet	100% HRWS 70–100% GS, 0% LRWS	4	5	5	6100
Medium	100% HRWS, 50–70% GS, 0% LRWS	4	5	5	4800
Medium – Dry	100% HRWS, 0–50% GS, 0 LRWS	4	5	5	3600
Drought	<100 % HRWS, 0% GS, 0% LRWS.	1	2	4	1800

- The probabilities are approximations and rounded to give orders of magnitude.
- Water availability is a guide based on the allocation against all the different entitlements in the southern-connected MDB for that scenario. Entitlements include Victoria Murray, Goulburn, NSW GS (including Murrumbidgee) and South Australia.

¹ Refer to Water trading tool kit for additional notes in relation to assumptions in Table 1. Water available does not include water held by the Commonwealth as of May 2015.

- Water availability does not include allocation against water entitlements owned by the Commonwealth as of May 2015.
- Water available includes approximately 500 GL of ground water
- Scenario probabilities are derived from three inflow assumptions:
 - based on a long-term cap equivalent (LTCE), which is based on inflows and irrigation-development modelling for 113 Years up to 2009
 - looking at the probabilities based on inflow conditions in the last 20 years
 - looking at the probabilities based on inflow conditions in the last 10 years

In the three levels of 'normal' years, the High Security allocation is always 100% in all valleys and States; the only variable is how much NSW General Security is available.

Future inflow Scenarios

How often each scenario occurs depends upon whether you use LTCE, the last 20 years' inflows or the last 10 years' inflows. As demonstrated in Table 1 the last 20 years is worse than the LTCE and the last 10 years is worse again due to the millennium drought.

What this shows is that for most of the time (60-75%), we operate in the normal scenarios irrespective of the inflow assumptions (LTCE, last 20 years or last 10 years). What does change and what can have the biggest impact on irrigation enterprises is the number of dry years in any 20-year period.

If the last 20 years is more reflective of future inflows, then the frequency of dry periods doubles compared to the longer term (2 years in 20 compared to 1 year in 20). If the last 10 years are more reflective of the future then the frequency of the dry period increases four-fold (4 years in 20 compared to 1 year in 20).

Your view of the future will determine your risk management strategies to cope with the dry years. If your view is a return to long-term inflow conditions (LTCE), then not much may need to be done to mitigate the risk due to the infrequency of dry years. However, if you are thinking the last 10 years is the new normal, then strategies will be needed to mitigate against those more frequent dry periods.

Risk management strategies may include:

- Use of carryover water
- A spread of strategies to gain access to allocation water – entitlement ownership, leasing entitlement, future contracts, trading in the allocation water market
- Building up feed reserves
- Growing more water-efficient crops
- Improving water productivity through farm irrigation infrastructure upgrades
- Feed supply contracts and forward markets (including future water contracts)