

# 2016 State Report Card

## Is water-use efficiency improving in our agricultural areas?

Water-use efficiency is a term used to describe how efficiently rain-fed crops produce biomass from water. It measures the efficiency of agricultural productivity, which is also influenced by soil type and condition, and land management systems.

Water use of our irrigation industries is covered in a separate [report card](#).

The main crops grown in South Australia are wheat and barley. Higher water-use efficiency means that grain yields are higher for a given amount of rain, and that the amounts of run-off, evaporation and drainage to water tables are lower.

Land managers can increase water-use efficiency by sowing crops earlier in the season, controlling weeds, retaining stubble and by reducing soil disturbance and compaction by machinery. Planting the most suitable varieties of crops, improving plant nutrition and controlling animal pests, weeds and diseases also improve water-use efficiency.



Regional trends in water-use efficiency



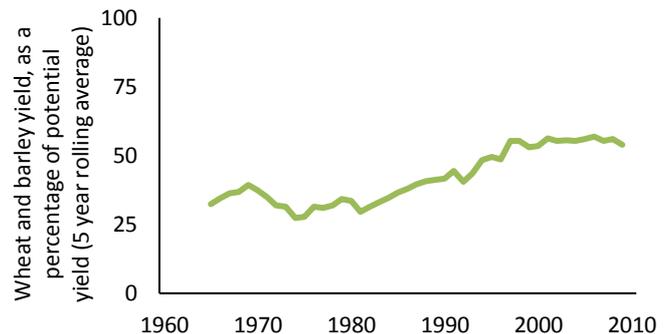
**State target**  
Improve soil and land condition

**Trend (2005–09)** Stable Ongoing efforts will be needed to increase the water-use efficiency of our soils

It is widely accepted that water is the most limiting factor in Australian agricultural production systems. Over recent years, growers across much of Australia have suffered from unreliable rainfall – too little, too early or too late.

For South Australian wheat and barley crops, water-use efficiency improved from 32 per cent to 54 per cent between 1961 and 2009, and was stable from 2005 to 2009 (map above and graph on right).

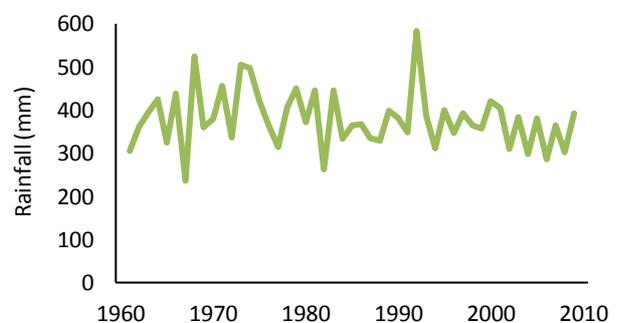
These improvements in water-use efficiency are due to adoption of improved farming practices and not an increase in rain, which was stable over those periods (graph below).



**Where we are at (2009)** Fair The amount of wheat and barley produced was 54 per cent of the potential yield

Land managers can further improve water-use efficiency. South Australian research highlighted water-use efficiency and yield benefits of matching fertilisers to soil type. The pre-crop period is crucial to set the potential for soil to capture and retain water for a subsequent crop. More than two thirds of the water-use efficiencies of a farming system are generated by management practices during the pre-crop period, with a further third attributed to in-crop management practices such as sowing date and nitrogen management.

Optimising the use of rain will help to maintain the long-term productivity of cropping industries.



**Reliability of information** ★★☆☆☆ Fair

**Further information:**

[Technical information for this report card](#), [Soil and land condition monitoring trends in South Australia](#)

