



# Rice and Water

Water is a vital resource used in farming. The production of food and fibre is dependent on water and rice growers know better than most the real value of water. Without it, Australian rice growers can't plant a crop, make a living or continue to grow the rice which feeds up to 40 million people around the world every day.

## **The Australian rice industry is one of the most efficient users of water in the world.**

Australian rice growers use 50% less water to grow one kilo of rice than the world average and are recognised worldwide for growing high quality rice varieties suited to Australia's climate known as temperate rice. Contrary to popular belief, in terms of bulk use, rice uses much less water than many other agricultural products.

## **Rice grown in Australia has been developed especially for our climate.**

The type of rice grown in Australia is different to that which is grown in Asia. Rice varieties grown in Australia have been specially developed to suit the conditions of southern NSW, the main growing region.





## **Rice growing is Australia's most regulated agricultural industry in terms of land, water use and environmental impacts.**

Much of this regulation has been industry-initiated. Rice can only be grown on soils that are deemed suitable by the irrigation corporations and/or the New South Wales Department of Water and Energy based on soil textural classification, electromagnetic induction to determine clay depths and sodicity.

Overall water availability for irrigated agriculture in the region is determined by Water Sharing Plans with announcements made by the NSW Government of water allocations for each irrigation area.

## **Careful water management of rice farms is needed to ensure both environmental sustainability and rice productivity.**

Land and Water Management Plans set by state governments and rice growers are the cornerstone of environmental initiatives in the irrigation areas of the Riverina. Each plan is an integrated natural resource management strategy prepared by landholders and local communities with technical and financial assistance in partnership with the NSW and Federal governments.

Plans set out the best practices for managing irrigation farming and improving water and soil management within the landscape. They also provide for long-term biodiversity restoration and better farm management techniques, so the land is preserved for future generations.

## **The amount of rice able to be grown directly relates to the amount of water available to irrigators.**

Like all farmers, rice growers are not immune to drought conditions. Each year State governments assess the water resource available in the dams and determine allocations for different users based on a hierarchy. Most rice is grown by general security irrigators who receive their water last in this hierarchy of allocations. They are also the first to have allocations reduced in times of water shortages.





## **A rice crop forms one part of a farming system.**

Australian farmers make decisions about which crops they will plant each season taking into consideration variable conditions such as water allocations and the weather. A rice crop forms one part of a farming system, and is only planted when the conditions are suitable.

In Australia, rice is grown from October until March and in rotation with other crops such as wheat, barley and maize. Many of these crops grown in rotation with rice utilise the existing soil moisture from the harvested rice crops, meaning they often don't require further irrigation. This allows for further water savings and more efficient water usage, and effectively provides growers with two crops from the one application of water.

## **Australian rice is not the same as that grown in Asia.**

Most rice varieties grown in Australia have been specifically developed for our climate and have been bred to suit the environmental conditions of south-eastern Australia.

A common perception is that rice is a tropical crop, but almost all of the rice produced in Australia is Japonica, a variety which is perfectly suited to the dry temperate micro-climate of the Australian rice growing region.

Rice can be divided into two types – Japonica and Indica. Japonica rice is usually grown in temperate climates, like Australia, California, Egypt, China and Japan. The grains are round and when cooked, this rice is sticky and moist.

Indica rice is grown in hot, tropical climates. The grains are long and when cooked, the rice is fluffy and does not stick together. Most of the rice produced in Southern Asia, including India, Thailand, Vietnam and Southern China is Indica rice.

*“One year I'll grow rice in a paddock and after harvest I'll directly sow in a wheat crop. I am getting two crops from the same water because I utilise the moisture remaining in the soil from the rice”*

*Les Gordon,  
rice grower of 22 years*



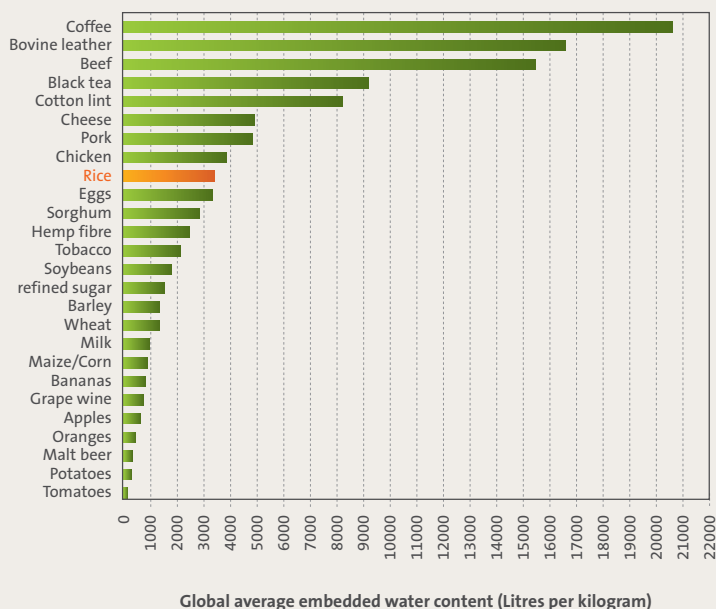


**Internationally, Australian rice production uses less water per hectare than other countries and is consistently in the top 4 of water efficient producers.**

If we imported all our rice, particularly from developing countries, we would consume food that is produced in countries with natural resources including water that are under considerable pressure.

The Australian rice industry has a record of continuous improvement in product quality, productivity, land and water use, and environmental management.

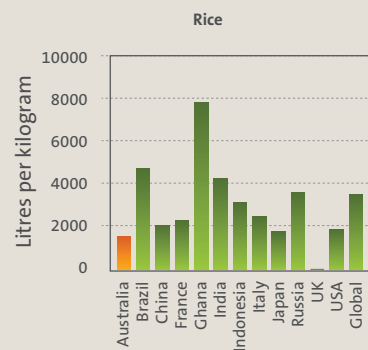
**Figure 6. Global average water content of some major agricultural products. (Chapagain and Hoekstra 2004)**



Source: "Hidden Waters" A Waterwise Briefing, February 2007 by Joanne Zygmunt

Figure 6 (below left) compares the global average embedded water content for some selected agricultural goods, but as Figure 7 shows, embedded water can vary significantly depending on country of origin. There are a number of factors which influence how much water is embedded in a product: Climate, yield, crop requirements, technology and irrigation efficiency are a few of the variables that have an effect.

**Figure 7. Embedded water differs depending on country of production. (Chapagain and Hoekstra 2004)**



Source: "Hidden Waters" A Waterwise Briefing, February 2007 by Joanne Zygmunt