

FACTS

March 2006

Vol 45, Number 1

AGRICULTURE ISN'T BAD

A guide to food,
its production, and the
environment

1. Genetically Modified agriculture is already here

Genetically Modified (GM) cotton was first planted in Australia in 1996. GM cotton is grown on 90% of cotton farms and oil from cotton seeds makes up around a third of the vegetable oil consumed in Australia. So there's a good chance that your last fish and chips were cooked in oil from GM cotton. The latest cotton varieties have reduced pesticide use by an average of 88%, allowing beneficial insects to return to fields and reducing the risk of pollution.

A quarter of a million hectares of GM cotton was grown in Australia in 2004.



YOUR GUIDE TO THE NUMBERS THAT MATTER

A brief history of agricultural technology

10,000 BC

Dawn of agriculture: selection of plant materials for propagation and animals for breeding.

3,000 BC

Development of beer brewing, cheese making and wine fermentation.

Late 19th century

Identification of principles of inheritance allows progress in breeding methods.

1930s

Development of commercial hybrid crops.

1940s-1960s

Deliberate mutation of plants; plant growth from cells; discovery of DNA structure; identification of detachable and moveable genes.

1970s

Laboratory manipulation of DNA; artificial insemination in animal reproduction.

1980s

Insulin becomes the first commercial product developed through gene transfer.

1990s

Commercial release of genetically engineered plants, vaccines and hormones; cloning of animals.



Financial Times, "EU shrugs off WTO censure over curbs on modified food", Feb 9, 2006

2. Australian agriculture is efficient

Jared Diamond got it **wrong** in his book *Collapse* when he wrote "a larger area of land has to be cultivated in Australia than elsewhere to obtain equivalent crop yields".

Australian rice, cotton and sugar producers are amongst the most efficient and productive in the world.

Rice growers produce more than double the world average of 3.77 tonnes per hectare and have improved their water use efficiency by 60 per cent over the last 10 years. Australian rice growers now use 50 percent less water for every kilogram of rice produced compared to the world average.

Country	Average Yield (tonnes per hectare)	
	1966-68	1995-97
China	3.12	6.17
Indonesia	1.89	4.42
Vietnam	1.81	3.73
Egypt	4.95	8.25
USA	4.96	6.74
Australia	7.33	8.23
World Average		3.77

See: Jennifer Marohasy, *Australia's Environment Undergoing Renewal, Not Collapse*, http://ipa.org.au/publications/publisting_detail.asp?pubid=443

“Whiskey is for drinking, water is for fighting over.” - Mark Twain

3. How thirsty are we?

Australia has **51,000** litres of available water per capita per day. This is one of the highest levels on a per capita basis in the world, after Russia and Iceland, and well ahead of countries such as Indonesia (**33,540**), the United States (**24,000**), China (**6,000**) and the United Kingdom (**3,000**).

We divert only **5%** of average annual runoff with most of the rain falling across northern Australia. This indicates that nationally **95%** of the rain that falls is still for the environment.

70% of water is used for irrigation. (90% of this within the Murray Darling Basin.)

21% is used for urban and industrial use, and 9% for other uses.

73% of the water used in Australia is supplied by rivers, 18 percent by ground water aquifers, and the remaining 9 percent from overland flows.

Managing water in the Murray

Environmental water in the Murray Darling Basin comes in a variety of forms including: minimum flows, environmental flow rules, contingency allowances, tradeable entitlements.

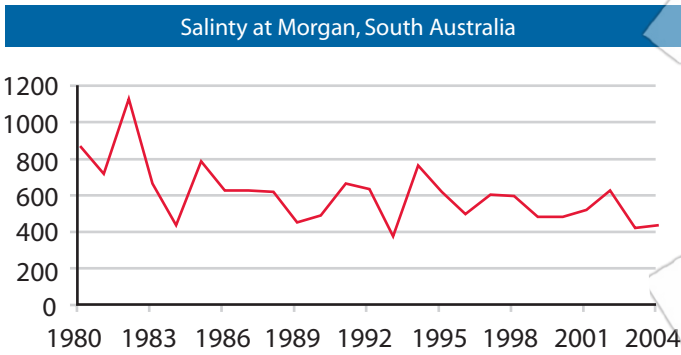
There is potentially a lot of money involved in managing environmental water. Yet it is difficult to access the most basic information including the environmental benefits of the water allocations as well as how the money from the traded water is spent.



Irrigated agriculture uses only about **0.4%** of total agricultural land. But this represents about **one third** of all agricultural production, and **56%** of the net economic return from all agriculture in Australia.

4. Salinity is not destroying our landscape

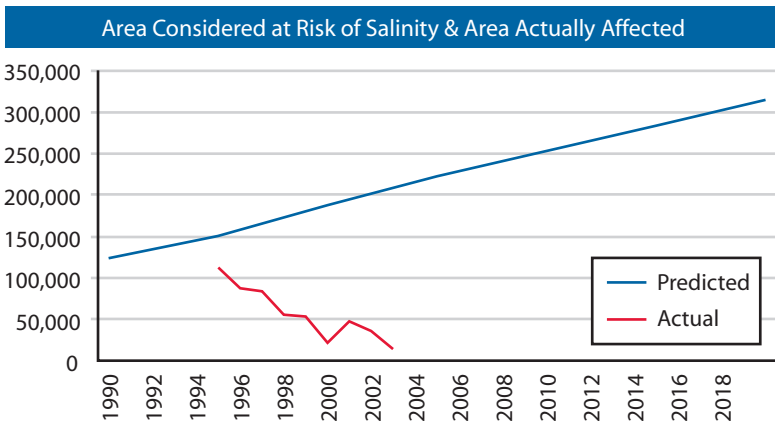
Salt levels were rising in the Murray River until the early 1980s when the Murray Darling Basin Commission began constructing a series of salt interception schemes. These schemes combined with improved land management practices have seen salt levels halve over the last 20 years.



Special salt rations given to early Roman soldiers were known as *salarium argentum*, the forerunner of the English world, 'salary'.

Yearly averages for salinity at Morgan. Data provided by the Murray Darling Basin Commission on 21st September 2004.

It was once believed that much of the farm land in the Riverina would be lost to rising groundwater tables and salt, but this has not happened. The area considered at risk in the NSW Riverina has contracted by approximately 90%. What a good news story!



Murray Irrigation Sustainability Report, 2004

5. Tasmania's forests are OK

There has been an ongoing campaign against logging in Tasmanian forests often giving the impression that the last tree is about to be felled. In fact Tasmania is still heavily forested.

Area of Tasmania

6,840,000 Hectares

Reserved public land

2,935,000 Hectares (**43%** of land)

Forest cover

Estimate of forest cover in 1750

4,822,210 Hectares

Cover in 2006

3,207,250 Hectares

Native public forest reserved

1,442,440 Hectares (**45%** of forest)

Old growth forest

Area of old growth assessed in the Regional Forest Agreement 1997

1,246,280 Hectares

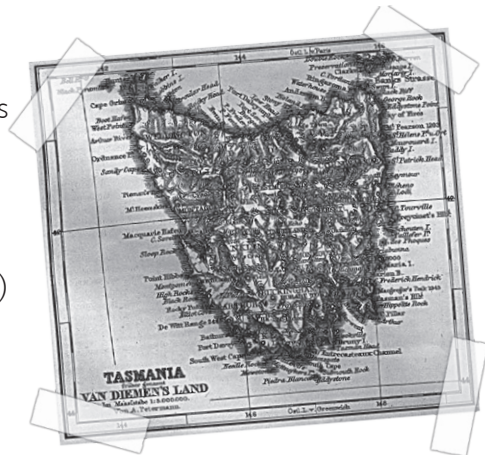
Minimum of old growth to be reserved by the Tasmanian Community Forest Agreement

1,002,480 Hectares (80%)

*In Collapse, Jared Diamond wrote that woodchip from Tasmanian forests is sold to Japan for **\$7** per tonne.*

*The price of Tasmanian woodchips is **actually \$152** per tonne. How did Diamond get it so wrong?*

<http://abareonlineshop.com/PdfFiles/PCI3135.pdf>

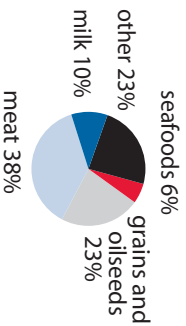


6. Australian food production is a large and globally successful industry

Where does all our food go? Value chain for food in Australia, 2004-05

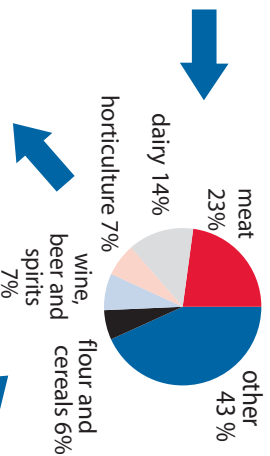
Farm and fish food production

\$31.3 billion



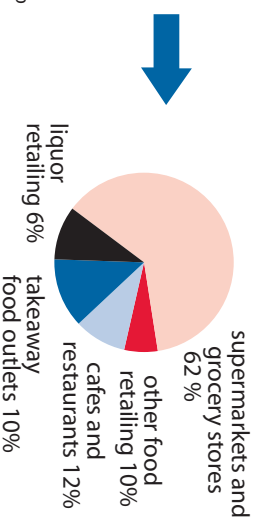
Food processing

(2002-03 data)
\$65.9 billion



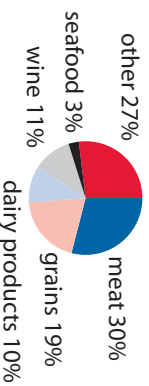
Retail food sales

\$91.8 billion



Exports

\$24 billion



Imports

\$6.5 billion



The total value of Australian farm exports in 2003-04 represented 3 per cent of world agricultural exports.

Agriculture and Food Policy Reference Group 2006, Creating Our Future: Agriculture and Food Policy for the Next Generation,

http://www.agfoodgroup.gov.au/publications/creating_our_future/creating_our_future_full_report.pdf

Around two-thirds of agricultural production is now either directly or indirectly exported.

7. We are still feeding the world

Professor Paul Ehrlich of Stanford University once wrote: “The battle to feed all of humanity is over. In the 1970s the world will undergo famines – hundreds of millions of people are going to starve to death”. Ehrlich also predicted that life expectancy in the United States would drop to 42 years as a consequence of the use of pesticides.

Of course life expectancy has continued to increase and we didn't all starve to death. Technological innovation, including modern high yielding agriculture, has enabled farmers to produce double the amount of food from essentially the same area of land, about 1.5 billion hectares.

We could sit on wooden chairs imported from Indonesia in polyester fleece jumpers manufactured in China while sipping chardonnay from Chile. We don't need to log Australian forests or grow rice. We could import our oranges from Brazil, our sugar and tuna from Japan.

But would we be doing the right thing by the environment if we imported all our food and wood?



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