Eco

Feature

Into the meat of the issue

Drive less, use less water, sure. But cut back on beef or lamb? That's a different story, writes **Steve Dow**.

Illustration: Simon Letch

Hey, canivore, think you can call yourself an environmentalist? Actually, while you might want to drop that hamburger, you might not need to completely swear off meat.

It's a dilemma that has exercised the best minds. The Canadian environmentalist David Suzuki challenges people to eat less meat for the future of the planet, and the Australian ethicist Peter Singer, based at Princeton University in the US, argues going vegetarian or even vegan – dumping dairy and eggs – will reduce your personal greenhouse gas emissions.

Meanwhile, in Australia, meat production is responsible for a massive 18 per cent of the country's CO_2e emissions. CO_2e is the measure of total greenhouse gas contribution.

Ian Lowe, the president of the Australian Conservation Foundation, eats chicken once a week. "Some people would be critical of that," he admits. "What I'd say is I've gradually reduced my consumption of meat. But I'm not pure."

Lowe grew up in the country, and his family's hens provided abundant eggs.

I'd say nature doesn't care how you emit, but how much.
MANFRED LENZEN, physicist

A chook would be solemnly beheaded, plucked and roasted only on special occasions such as Christmas.

This year Australia will slaughter more than 430 million chickens, providing at least 36 kilograms of chicken meat per person, nine times what we ate in the 1940s.

We will also eat more than 37 kilograms of beef and veal per person this year, 15 kilograms of lamb and mutton, and 21 kilograms of pig meat, all record amounts. And the CSIRO and Sydney University in 2005 forecast continued substantial increases in domestic consumption of all meats over the next half century.

Arguments that eating meat is environmentally unfriendly, or even that intensive animal farming compromises human health and ethics, might eventually make more of us ponder a vegetarian diet, but these rallying cries have barely penetrated the national psyche like, say, the cholesterol bogyman – our egg consumption has fallen from 250 to 150 per person over the past 60 years.

Yet as environmentalists and vegetarians will tell you, most Australians take the suggestion they should also give up meat as a personal or even patriotic slight, as though meat protein built a nation.

Tapping into this jingoism, the Australian Meat and Livestock Corporation had the former Australian rules footballer Sam Kekovich front its satirical TV ads launched on Australia Day in 2005, in which Kekovich called vegetarians "un-Australian" and urged viewers to eat more lamb.

In the coming decades, too, the export demand for Australian meat is forecast to leap, particularly among increasingly affluent South-East Asian countries, according to the joint CSIRO-Sydney University report *Balancing Act*. Small wonder that against such a carnivorous public appetite, many environmentalist voices are advocating a realistic approach of eating less meat, rather than cutting it out.

So does the Australian Conservation Foundation's Lowe believe you can eat meat and call yourself green?

"Strictly, you probably can't," he concedes. "The process of converting vegetable protein into animal protein is very inefficient, and the method of meat production isn't particularly flash in its impact on the land."

Yet Lowe's meat eating is as pragmatic as his attitude to motoring: he took up driving a car when he recently moved from Brisbane to the Sunshine Coast because public transport was poor.

Eating meat, it seems, cannot be considered in isolation when assessing your own green credibility.

"I'd say nature doesn't care how you emit, but how much," physicist Manfred Lenzen, of Sydney University's Centre for Integrated Sustainability Analysis, suggests.

"It's a trade-off between emissions for domestic energy, transport, food, leisure and so on.

"Someone with many flights around the world may easily emit more than a non-travelling meat eater," Lenzen says.

Nevertheless, Lenzen and his colleague Christopher Dey published a paper in the journal *Energy Economics* in 2002 recognising the meat we produce has a big impact on land and water use, greenhouse gas emissions, soil erosion and logging. However, if the average Australian reduced their fat, dairy and sugar intake, Lanzen and Dey showed the greenhouse gases generated by that person from their food would drop from six to 3.8 tonnes a year, a saving of 2.2 tonnes. Most of this saving – 1.4 tonnes – would come just from halving our daily average meat intake, from 305 to 155 grams.

But it may be a little disingenuous to lump the ecological impact of all meats together. When it comes to reducing your environmental footprint – and especially if you love chicken – then giving up beef might be your smartest option.

None and some ... vegetarian senator Andrew Bartlett, and right, Ian Lowe of the Australian Conservation Foundation. Photos: Glen McCurtayne, Ken Irwin

The *Balancing Act* report found 86 per cent of greenhouse gas emissions from the meat sector come from beef cattle production, of which two-thirds are attributable to land clearing in northern Australia – particularly in Queensland – and one-third due to methane emissions from gut fermentation; from the animals' burping more so than farting.

The report also shows Australia's meat-products industry all up accounts for 91 megatonnes of greenhouse gas emissions a year. By comparison, an Australian Greenhouse Office 2005 figure shows the Australian transport industry produces 80.4 megatonnes.

While there are differences in methodology between the reports, Geoff Russell of Animal Liberation Australia argues the CSIRO report, although "brilliant", underestimates the full greenhouse cost of meat, only counting emissions up to the point of retail sale, but not including emissions from cooking or washing greasy grillers.

Still, what's the point of giving up hamburgers, steaks and chops to help the environment if the land has already been cleared?

"If there was less demand for beef, then farmers would return grazing land to native vegetation," Lowe insists. "It would send a signal if people ate less meat; it would discourage its production."

Yet meat is "one of the most environmentally sound foods available", David Thomason, the general manager of marketing at the Australian Meat and Livestock Corporation, says. "We don't dig up the soil like other industries do. We don't destroy or divert rivers. We use resources which are naturally available, such as rain and grass and sunshine."

That may be true, but the *Balancing Act* report found meat production tears through such natural resources: every dollar's worth of beef at the farm gate not only causes 26.7 kilograms of greenhouse gas emissions, it also guzzles 731 litres of water, and contributes to the ongoing disturbance of 187 square metres of land. What, then, is the meat industry doing about reducing its water usage, given the scarcity of water, or the old culture of stripping grazing land bare?

Thomason says graziers are being encouraged to plant perennial, deep-rooted grasses, which are able to capture more of the rainfall and divert it into the soil, rather than the greater run-off that occurs when annual grasses are planted. Australian farmers also plant more than 20 million trees a year for conservation purposes, according to figures from the Australian Bureau of Statistics.

And since the Kyoto benchmark year of 1990, Thomason says, quoting data from the Australian Greenhouse Office, Australia's livestock industry has reduced methane emissions by 6 per cent, due to improvements in what animals are fed.

Research is under way to improve genetic breeding stock.

"In terms of genetically modifying the animal, the industry would not be doing that," Thomason says.

"But with genetic selection the question is whether some animals in the population produce less burping than others, and if we can identify those, we will use more of those for breeding purposes."

Have you found them? "It's research work in progress."

At the Co-operative Research Centre for Beef Genetic Technologies at the University of New England in Armidale, scientists are experimenting with three species of methane-inhibiting gut bacteria found in kangaroos that, if introduced in cattle, might reduce emissions. And at the CSIRO laboratories in Brisbane, microbiologists are attempting to understand the genetics of methane-producing micro-oganisms in cattle. It's a puzzle with many pieces.

For now, the pragmatic approach might be to reduce meat or dairy. The Democrat senator Andrew Bartlett became a vegetarian at 19, and says he has only been stopped from becoming vegan because a politician's busily travelling life makes it hard to filter his food for egg and dairy products.

"It's not about putting on the hair shirt and trying to be 100 per cent purist," Bartlett explains. His initial motivation was animal cruelty, but he gradually became aware of the environmental implications.

He considers that any attempt to make people feel guilty or "sledgehammer them" won't work, though he notes people are so resistant to vegetarianism that many "interpret any mention of it as being guilted into it". Australians are more likely to acknowledge the environmental issues around plane travel and the use of private cars than with meat, he says, adding that he gets frustrated that environmentalists don't focus on meat production as an issue as often as they would, say, deforestation.

"Obviously I'm personally committed as a vegetarian, and my raising those things doesn't equate me to lecturing everyone else and saying they must become a vegetarian, but I do think we must at least educate ourselves, because [the greenhouse gas figures from meat production] are hugely significant.

"There is a genuine widespread concern about climate change in the community now, and it's not all going to be fixed by everybody else. It's going to be fixed in part by our own behaviour."

The overlooked costs

For every dollar spent on the following products at the farm gate

- Beef caused 26.7 kilograms of greenhouse gas emissions, used 731 litres of water, and contributed to the continuing disturbance of 187 square metres of land.
- Dairy cattle and milk caused 4.4 kilograms of greenhouse gas emissions, used 1452 litres of water, and contributed to the continuing disturbance of 8.5 square metres of land.
- Pig meat caused 3.2 kilograms of greenhouse gas emissions, used 169 litres of water, and contributed to the ongoing disturbance of 3 square metres of land.
- Poultry and eggs caused 2.4 kilograms of greenhouse gas emissions, used 93 litres of water, and contributed to the continuing disturbance of 10 square metres of land.

Source: CSIRO-Sydney University *Balancing Act* report 2005

Green stuff
RAINWATER TANKS

Gone are the days when homes were built on a spacious quarter-acre block with plenty of room in the backyard for a Hills hoist and a game of rubbish-bin cricket.

With increasing housing densities, block sizes have shrunk to the point where finding room for a birdcage, let alone a bulky water tank, can be a challenge. The solution could lie in new-style, slimline water tanks such as the waterHOG. The tanks are 1800mm x 500mm x 220mm [or 240mm], which means they can be stored along the side of most houses or under veranda decking. The smaller size holds 180 litres of water, the larger 203 litres.

The tanks – made from recycled plastic – are simple to install and do not require expensive pipe work, making them a good option for renters. For those who would rather their waterHOG was out of sight, there is a hog screen, made from

red cedar, which can be pulled across the tank to hide it. The tanks are $280 and $290, including connections. More information at hia.waterhog.com.au.

Paul Bibby

Rainwater tanks get a makeover – in Essential on Thursday.

Clear conscience
GREEN EGGS AND SHAM

Most of us roughly understand what free-range (or barn-laid) means – the chooks get to scratch and strut about with room to roam.

But are free-range or barn-laid eggs better for the environment than their cage-laid cousins? And just because some eggs are labelled environmentally friendly, does it guarantee they have come from happier hens?

True certified-organic eggs should always be free range, says Dr Andrew Monk, the chairman of the standards committee for Australian Certified Organic.

"Animal welfare is a 'core commandment' of the organic movement and the organic industry," he says.

Organic eggs should be better for the environment because they are produced without pesticides and other agrichemicals or antibiotics (which are given to sick chickens in the cage-laid industry, although while the chickens are on antibiotics their eggs aren't used). But Monk warns that eggs carrying faux organic labels such as "natural grain-fed", or "non-genetically modified fed", are not as comprehensive in their environmental focus and may even be laid by caged hens.

Dr Bidda Jones, the chief scientist for the RSPCA, says the public gets animal welfare and environmental standards mixed up. "You don't have to be environmentally focused to be accredited by the RSPCA and equally environmental standards don't necessarily have animal welfare requirements."

A quick scan of Woolworths at Town Hall station showed 10 of the 25 different types of eggs on display were free range, but only one was certified organic and free-range – Pace Farms' Eco Eggs, and at $4.23 for six, it was considerably dearer.

Monk estimates there are less than 10 major producers of certified organic eggs in Australia, but he says the drought has contributed to this because the cost of feed has risen. An end to the drought could lead to more companies seeking certified organic status for their eggs.

One way in which barn-laid and free-range eggs are usually greener than cage-laid eggs, Jones says, is that a cage-laid egg operation uses a lot more electricity (producing carbon emissions) because the rooms are constantly temperature-controlled. Free-range and barn-laid operations often use natural ventilation and thus much less power.

However, the egg industry's peak body, the Australian Egg Corporation Limited, argues that cage-laid operations are more environmentally friendly in other ways.

Anthony Fisk, the communications manager for the corporation, says that the chooks' manure is usually taken away by conveyor belt in the cage-laid industry, keeping odour to a minimum, whereas it lies on the ground in barns or ranges.

Because of this, free-range and barn farmers scatter dust on the ground, which can blow into surrounding areas.

The egg industry has been in the news of late, over allegations that some producers had substituted cage-laid eggs for free-range eggs. A spokesman for Ian Macdonald, the NSW Minister for Primary Industries, told the *Herald* that a NSW Food Authority investigation "did not unearth any evidence of widespread egg-labelling irregularities involving free-range eggs". However, substitution has already been proven in the courts. In March, GO Drew Pty Ltd was forced by the Australian Competition and Consumer Commission to pay $270,000 to the Organic Federation of Australia and the National Association for Sustainable Agriculture after it admitted substituting free-range eggs for organic eggs.

But most experts agree the best way to be sure about what goes into your eggs is to keep your own hens. That, and the eggs taste better, too.

Peter Vincent