



ROSSLYN BEEBY

Drought aid modest

CLAIMS by urban media pundits that farmers receive "excessive" government support don't stack up against figures released by the NSW Farmers Association. They show drought aid is minimal compared with assistance to the manufacturing and car industries. In 2003-04 the Federal Government gave \$10 billion in business support to the manufacturing industry and the automotive industry received \$2 billion in direct tax concessions, while the services sector received around \$800 million. The housing industry has also received a \$5.2 billion boost since the Government introduced its First Home Buyer's grants. NSW Farmers president Mal Peters says this compares with \$79 million a year in direct business support to drought-affected farmers, and \$137 million in welfare support.

China's water crisis

MOST OF the Yellow River, the second-longest river in China, is so polluted it's unsafe for drinking or swimming, says a government report. Nearly 75 per cent of the river, which supplies water to 12 per cent of China's 1.3 billion people and 15 per cent of its farmland, is polluted by sewage, industrial waste and fertilisers. China faces a severe water crisis — 300 million people do not have access to drinkable water — and the government has been spending heavily to clean major rivers. There are ambitious plans to pump 45 billion cubic metres of water from southern rivers to parched areas of northern China. But China's environmental protection agency warns that unless local governments and industries begin making a serious effort to tackle pollution, most of the water shipped north will be unfit to drink.

Gardeners beware

HORTICULTURAL pesticides may be linked to Parkinson's disease, according to Scottish scientists. Researchers at the University of Aberdeen have discovered that gardeners exposed to pesticides are more likely to develop the degenerative brain disease, and have urged amateur gardeners and farmers to wear protective clothing when spraying pesticides. The scientists interviewed 767 Parkinson's sufferers and 1989 healthy people about disease risk factors. They found amateur gardeners who used pesticides were 9 per cent more likely to suffer from the diseases. The figure was far higher for farmers — 43 per cent.

Birds under threat

THE RED KNOT, a migratory shore bird that rests and feeds on New Jersey's beaches enroute from Argentina to the Arctic, may be extinct within five years, say ecologists. A decline in red knot numbers is due to a shortage of its favourite food — the eggs of the horseshoe crab. The crabs have been over-harvested by fishermen using them as bait. An annual bird count found only 15,300 of the birds on the state's beaches — well below the level at which the population is judged to be sustainable. The species is in danger of being wiped out altogether by natural hazards such as an extreme cold snap during breeding season, say scientists. Weighing only 142g, the red knot depends on the horseshoe crab eggs to gain the energy to complete its 16,093km migration from Tierra del Fuego to its Arctic breeding grounds. A count at the bird's South American wintering grounds showed a 50 per cent decline in numbers over the past year. The bird could be saved by banning harvesting of horseshoe crabs and reducing disturbances on the beaches where it feeds and rests.

THE ENVIRONMENT

Counting the ecological cost

It's time to think beyond the shopping trolley as a new report charts the real ecological, social and financial costs of Australia's consumer choices at the supermarket. **Rosslyn Beeby** reports

MARKET prices for beef do not reflect the full environmental costs of production, margarine is a high greenhouse polluter and the Aussie meat pie certainly contributes its share to climate change and land clearing.

These are some of the revelations contained in a new report that charts the real ecological, social and financial costs of Australia's consumer choices at the supermarket.

Methane emissions, inefficient irrigation, waste products and road transport all contribute to the hidden ecological cost of the items we buy.

We also need to consider the environmental impact of clothing and footwear when shopping. Wool, cotton, leather and other fibres, yarns and fabrics all consume water (irrigation and wool scouring), land and energy.

Instead of being influenced by high-powered advertising, celebrity endorsement, habit or cheapness, we should be making choices based on minimising our contribution to land degradation, excessive water use and climate change.

"We need to be a lot better educated about what we buy," says CSIRO researcher Dr Barney Foran.

"It's our consumption that drives the economy. We cannot blame governments all the time, when we are part of the equation."

Last week, Foran and colleagues from the University of Sydney delivered a hefty four volume analysis of 135 industry sectors in Australia. Each industry's performance was assessed against a set of 10 social, financial and environmental indicators — a system known as triple bottom line accounting.

For each of the 135 sectors, every indicator is measured against \$1 of final demand or \$1 spent for consumption in daily life.

The result is a life-cycle analysis of the Australian economy, that analyses the chain of production for commodities.

"What we've done is prepare a set of numbers which allow us to compare and contrast all the different parts of the Australian economy," Foran says.

It's taken 10 years to collect and assess a huge amount of data and to scan "a mountain of scientific literature" outlining concerns and challenges for each industry.

But the four-volume set, titled *Balancing Act*, is not just aimed at government policy makers and resource analysts. Foran says it can be used by "John and Myra Citizen" to gain an idea of how much water, greenhouse gas, land disturbance (clearing, pesticide use, soil loss) and energy use are embodied in products on the supermarket shelves.

It's now possible to check the ecological credentials of everything from confectionery and cooking oils to mining and museums.

The report's environmental indicators are water use, land disturbance, greenhouse emissions and energy use. Social indicators are employment, government revenue and income, while financial indicators are profits, exports and imports. "We also hope the report will be used by



SUPPLY AND DEMAND: The four-volume *Balancing Act* report analyses 135 industry sectors in Australia. Each industry's performance is assessed against a set of 10 social, financial and environmental indicators.

businesses to try to improve their supply chain.

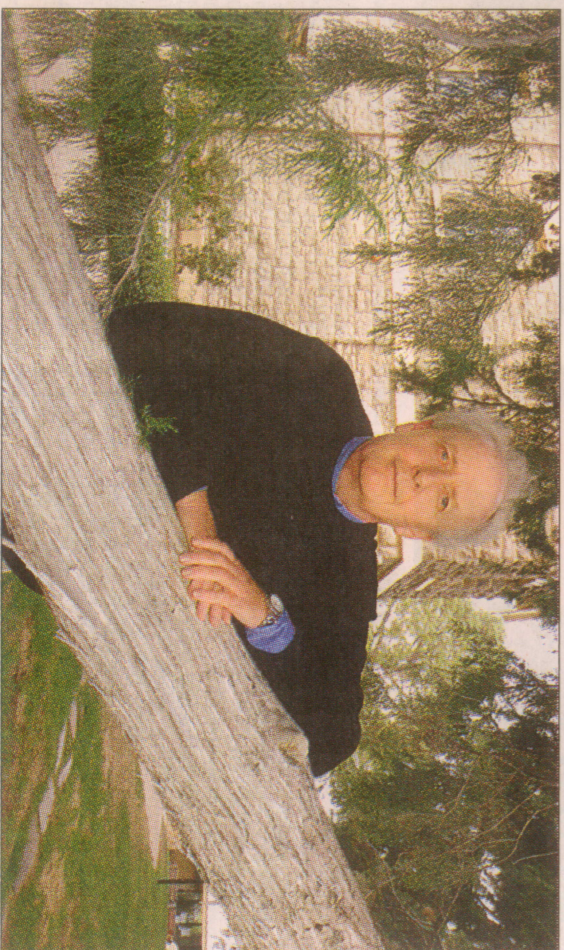
"What sets this study apart is that it's a life cycle analysis of the whole economy, right through the production chains, up to the supplier of the supplier."

Judging items on price alone, without understanding the production chain "and all the things in it" is not responsible — or educated — consumerism, says Foran. "We need to get away from an obsession

with cheap prices and look at the physical reality underneath the current dollar cost of products.

"We've got to become more aware of quality and get used to having less, but of a higher quality, and be prepared to pay for it."

The report suggests product labelling detailing the environmental resources used in production may be required to make consumers aware of the need to pay for "whole-of-system" production costs.



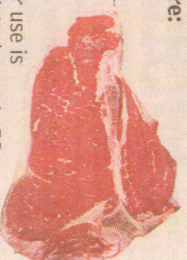
FUTURE DRIVEN: CSIRO researcher Dr Barney Foran says the choices that Australians are making are not leading toward the revolutionary changes needed to create real sustainability.



HOW THEY RATE

The *Balancing Act* report reveals some of the hidden environmental costs of common consumer items are:

BEEF



Greenhouse emissions are 26 times the economy-wide average, water use is 18 times and land disturbance is 58 times the average. Expanding demand for beef in Asia is driving expansion of Australia's cattle herds. Grazing is currently more ecologically sustainable than feedlot farming. The report suggests that in future, beef could "become a boutique dietary item attracting high prices and sourced from environmentally certified farming systems" – a move which would cut the environmental indicators for beef to between five and 10 times the national average.

MILK

Land disturbance is three times the national average, greenhouse emissions four times, but water use 35 times the average. Effluent and pollution from intensive dairy systems is high and dairy cows produce 150kg of methane per year (from ruminant digestion or "burping", not flatulence as commonly believed). High quality feed, engineered to reduce rumen methane, may cut greenhouse emissions.

PORK

Despite a low environmental account, greenhouse emissions are three times the average, water use four times and land disturbance equal to average. The report notes that animal welfare and diseases like swine fever are issues of concern. Organic and humane production systems are being introduced in Europe, and this may lead to a boutique pork market and "a downgrading of the bulk consumer product". Branding of pork may be driven by "bio-ethical and philosophical considerations, as much as by its production economics".

FRUIT AND VEGETABLES



Greenhouse emissions are 40 per cent above average, water use eight times, and land disturbance 75 per cent below average. High greenhouse emissions are caused by energy use, land development, fertiliser manufacture and road transport. Consumer concerns are driving demand toward organic fruit and vegetable production, but it's not known if this will improve the industry's ecological account.

BREAD, BISCUITS, CAKES AND PIES



Greenhouse emissions are 15 per cent higher than average, water use three times higher and land disturbance 40 per cent above average. Most bakery greenhouse emissions (33 per cent) are due to the use of beef in meat pies.

BEER

Greenhouse emissions 20 per cent below average, water use 20 per cent higher and land disturbance 25 per cent above average. High water use and land disturbance is due to irrigated barley.

WINE

Greenhouse emissions are 15 per cent below average, land disturbance 65 per cent below average and water use 12 times higher than average. Wine can require 2000 litres of water per tonne of grapes crushed, mainly to wash down equipment.

RICE

Water intensity is over 200 times the national average or 8400 litres per dollar of final consumption. Greenhouse intensity is four times the national average due to methane production and fossil fuel use. Land disturbance is 50 per cent above average.

OUR CHOICE: It's now possible to check the ecological credentials of everything from confectionary and cooking oils to mining and museums. Researchers say that instead of being influenced by advertising, celebrity endorsement, habit or cheapness, we should be making choices based on minimising our contribution to land degradation, excessive water use and climate change.

"One of the insights emerging from this analysis is that the prices consumers pay for primary production items do not reflect the full value of the natural resources embodied in their production chains," says the report.

"We should be paying more for products that have a high environmental account balance," says Foran.

"The consumer should be expected to pay a realistic price for food so that we play a part in fixing up the bush, instead of

sitting in town and wringing our hands about it."

An emerging issue is "industrial ecology" — the argument that factories will need to be located to maximise recycling, eliminate waste, reduce energy consumption for processing and cut greenhouse emissions.

The next project for Foran is a 40-year analysis of each of the 10 triple bottom line indicators for each of the 135 industry sectors.

"We can take figures back to input and output tables from 1969, and roll it forwards to the latest national accounts.

"This report has been a great first stab but a 40-year trace will reveal a much more complex picture."

■ *Balancing Act* can be read or downloaded from CSIRO's web site. The four volumes are available for download as separate Adobe Acrobat pdf files. See www.cse.csiro.au/research/balancingact

Q&A

He's written reports on Australia's future population dilemmas and the need to curb our wasteful lifestyle choices. CSIRO senior analyst Barney Foran explains why bottling your own jam is a revolutionary act.

TT: Did writing *Balancing Act* make you change any consumer habits?

FORAN: It made me more aware. We're moderate consumers at home and most of my extra income goes into education which has good employment generation and a fairly low environmental trace.

TT: Did it inspire any changes around the home?

FORAN: When I came to this job 10 years ago and bought a new house, the first thing I did was to get our house as energy and greenhouse efficient as I could. But I guess working on this report has given me an idea of how I want to live my next life, which will be beyond Canberra's suburbs.

TT: You helped plot Canberra's ecological footprint — the ratio of land use to resource consumption. It's an industrial shoe-size imprint. Any tips on dropping a boot size?

FORAN: You could halve the seven hectare footprint of the single person household, if you got rid of all animal products and fossil fuels. It's a big ask, but you could do it.

TT: Can the sustainable life also be the good life?

FORAN: We've always had a good orchard at home and this year there was an abundance on the trees, so we've got about 40 jars of plums and apricots. A jar a week will keep us going for a lot more of that sort of thing.

TT: What about home energy consumption?

FORAN: I'd like to work out the optimal mix of firewood, photovoltaic, a bit of gas, a bit of electricity. But I must admit our biggest energy

use would be the car, and getting ourselves and our kids around. In a place like Canberra it's hard to change that — you can't get a bus to rowing training at five o'clock in the morning.

TT: How can we change that? Is it possible?

FORAN: There is a real challenge to restructure cities into being able to use low carbon forms of transportation. There are no shortage of ideas of how to do it, but they all cost scores of tens of billions. The very fast train on the eastern seaboard will cost \$60 billion over 20 years.

TT: Is that cost prohibitive?

FORAN: No, it's not a lot of money — not when you consider that we put \$14 billion a year into gambling or \$10 billion through the pokies. It's not that we're faced with a lack of money in Australia to make these major changes. It's just that the choices we're making at the moment are not leading toward the revolutionary changes needed to create real sustainability.