

Will ingenuity feed Australia's future?

David Cooney

Four prominent Australians discuss Australia's future 'carrying capacity'. Are new technologies all we need to cope?

The ability of western society to continually refine its production methods to meet the demands of increasing population is often overlooked. Senior Fellow with the Institute of Public Affairs, Des Moore, and CRA vice president — external affairs, George Littlewood, presented this view at a seminar held at the National Press Club in Canberra earlier this year.

Moore and Littlewood, along with CSIRO chief executive officer, John Stocker, and chairman of Greening Australia, Winsome McCaughey, were keynote speakers at the event, which examined the topic 'Australia's carrying capacity: how many people to the acre?'. The seminar was organised by CSIRO.

Moore and Littlewood said human ingenuity and the application of new technologies to solve problems as they arose called into question the logic behind forecasting on world resource potential.

Moore, an economic rationalist, argued that Australia's carrying capacity was closely related to human adaptability and the extent to which market forces were allowed to respond to circumstances, free of government interference.

The Australian continent, was, despite popular impressions, water-rich and while mostly desert, had by far the

highest availability of crop land per capita in the world, he said. It also had the lowest density of population of any OECD country with about 2.2 people per square kilometre. The number of inhabitants here was only limited by world resource environmental constraints, as carrying capacity was related to the potential for foreign trade.

Moore said Australia, like the United Kingdom and Japan, could even become a net importer of food to cope with a population of more than 100 million. Another possibility was that, as domestic food consumption increased, the price of food would rise and investment would be attracted to agriculture to remedy deficiencies in soil and water supplies.

'Increased investment and the likelihood of technological innovation in the changed circumstances, would almost certainly substantially increase the domestic production of food, and hence, at least postpone the need for imports,' Moore said.

Government policies, a major cause of the wastage of soil and water, would also need to change.

'For example, the fact that so much of Australian land remains under government ownership gives an inadequate property interest in soil conservation and improvement; without adequate property rights, there is a much reduced incentive to invest in soil conservation and other longer term capital improvements,' Moore said.

'The under-pricing of water, both for irrigation and for domestic purposes, has also led to waste and contributed to salinity problems,' he said.

Moore said this led to the more general point concerning market forces and resource usage: the market would tend to produce responses that overcame or alleviated shortages.

'As a commodity becomes in short supply, its price will rise relative to other prices,' Moore said.

'This will tend both to moderate demand and to encourage investment in the production of additional supplies of that commodity or of near-substitutes.

'Technological innovation will also be encouraged to that end.'

Moore said sections of the scientific community seemed unable to comprehend these 'response mechanisms', which was surprising given that scientists had been responsible for many of the technological breakthroughs which had led to massive increases in world living standards.

'Economics is often called the dismal science, yet it economists who are, by and large, the optimists when

considering predictions of a world over-population problem,' Moore said.

'A certain section of the scientific community seems to be burdened with an apocalypse syndrome that fastens onto some particular relationship, projects that forward into the indefinite future on a linear basis, and concludes that some environmental bomb or other will explode in, say, the year 2000.'

Moore argued that the vast majority of environmental constraints to growth in Australia were due to government intervention.

'In Australia's case, there is considerable evidence to suggest that the great majority of existing environmental problems arise from the combined effects of inadequate recognition by

With only 17 million people occupying 5% of the world's land mass, the question for Australians was a moral one. While mass immigration to Australia would not solve world population problems, this country had an allied role in terms of the world's carrying capacity: to become a greater provider of resources to help improve world living standards.

Littlewood said the population of developing nations was expected to increase from 2.8 billion in 1975 to 8.2 billion in 2050. If these nations were to attain 75% of the 1975 per capita GDP of the industrialised nations by 2050, then their current GDP would need to increase by more than 20 times.

'Can Australia's carrying capacity be

Des Moore (left) and George Littlewood.



government of property rights and inadequate resort to the principle of user-pays,' he said.

Governments were also responding to populist pressure to maintain 'excessive environmental standards', such as those imposed in the Wesley Vale pulp mill decision, he said. The result was that investment was deterred.

Response to change

Littlewood, in a paper entitled 'A view from business' supported Moore's contention that forecasting about carrying capacity ran the risk of under-estimating the ability of humans to respond to changed circumstances.

'Attempting a finite answer is bound to lead into yet another unwanted burst of neo-Malthusian prophecy or a repetition of the Club of Rome fiasco,' Littlewood said.

'So often in the past, carrying capacity has been vastly underestimated as a result of straight-line projections, which fail to recognise the capacity of humankind to find better and more efficient ways of production.'

Littlewood said Australia's carrying capacity had to be discussed in the context of the world's needs.

thought about without taking that into account, from both a humanitarian and a trade opportunity basis?' he asked.

Littlewood said technology could not be under-estimated in addressing this problem.

'The most important resource on the face of the earth is human ingenuity,' Littlewood said. 'The ability of technology to make an impact - thereby influencing carrying capacity whether in Australia or globally, must not be underestimated and has already been demonstrated through more efficient and productive farming practices, more skills, and therefore savings in resource usage and reductions in pollution burdens on local environments,' Littlewood said.

Like Moore, Littlewood said he believed extreme conservation policies, which had gone beyond sustainable development, must be removed if this goal of growth was to be achieved.

He said he favoured the approach to resource management which had been jointly developed by chief of CSIRO's Division of Wildlife and Ecology, Dr Brian Walker and director of the Centre for Resources and Environmental Studies at the

Australian National University, Professor Henry Nix.

Littlewood said Walker and Nix were proposing a database system for establishing options for land use. Three of the eight guidelines expounded by Walker and Dix were:

- Environmental domain analysis had to be pursued within the framework of ecologically sustainable development. In other words, said Littlewood, 'choices will have to be made which seek to integrate environmental and economic objectives'.
- Multiple land use needs to be given greater priority. 'They point out, for example, that a strong reliance on complete reservation of land solely for biodiversity purposes will not achieve

- Resettlement of more people in Australia would have minimal impact on relieving world population pressures.

Stocker said since the main concern about increasing population was about pressure on the environment, Australia needed to start developing 'environmental indicators' to warn of potential problems much sooner.

'This must not become an over-management of the development process — a proliferation of red tape,' Stocker said.

'What it must do is improve the information available to both public and private planners about what is happening in the local environments they are managing.'

He said that as wilderness areas

McCaughey said the three points that needed to be taken into account globally were the continuing loss of productive land and top soil; expanding population and increasing resource usage to meet rising levels of consumption.

If Australia were to meet its 'global' obligations a number of factors had to be addressed here in the debate on carrying capacity.

The first was a re-assessment of the nation's primary products and associated production processes. Statistics already revealed these processes were not sustainable economically or environmentally, she said.

Topsoil loss, land degradation, and the disappearance of forests indicated there were serious environmental problems needing attention.

Like Moore, McCaughey argued that the cost of environmental maintenance had to be built into market prices for water, housing, food and other necessities.

McCaughey also supported the contention by Moore and Littlewood that human ingenuity and a sensible response to market needs could bring more efficient use of resources.

An example was the development of alternative products from Australia's own biological resources — its unique plants, animals, insects, birds and marine life.

Australians had tended to overlook the wide range of primary products, which, after value-adding, could be sold on world markets. Processes which could help restore degraded farmland, could also have economic benefits, she said.

Other factors which needed to be addressed in the quest for sustainability were:

Education: like Stocker, McCaughey argued that there was a need for technical expertise and research results from bodies like CSIRO to be gathered into a database so that more land managers have access to information which will encourage sustainable agriculture.

Landcare: the 1400 landcare groups in Australia needed to be strengthened.

Recycling: wastes: these should be reduced by better use of resources. An example was stubble retention in crops.

Consumption: the per capita level of resources consumed in Australia needed to be critically assessed. Statistics showed that 17 million Australians consumed the same volume of resources as one billion Africans.



Winsome McCaughey (left) and Dr John Stocker.

the goals of biological conservation,' Littlewood said.

- Land use allocation should not be rigid.

Stocker argued that carrying capacity in Australia had to be related to the quality of life of Australians.

'Carrying capacity of a country may mean the maximum population which can be sustained indefinitely and be given the opportunity to live long, healthy, self-fulfilling lives,' Stocker said.

'Our approach to long-term population then, clearly needs to decide on whether or not additional people will add or subtract from the quality of life of the average Australian.'

Stocker said the problem for Australia was that it did not know whether a greater population would stimulate economic growth and what effect this growth would have on the environment. What Australians did know was that:

- The country already faced severe environmental problems, including land degradation, sewage and pollution problems.
- Technologies were emerging to redress these problems.

became scarce, GDP growth could not be regarded as the sole, or even best indicator of quality of life. At the same time, Stocker said he was not criticising economic growth per se or advocating 'zero growth'.

'The point is that we need a range of other indicators to consider alongside GDP to get a true picture of the state of the nation,' he said.

McCaughey, in a paper entitled 'A community perspective' said the concept of carrying capacity was interchangeable with the notion of 'sustainability'.

She used a 'populist definition' of sustainability: 'land managers putting in as much as they take out, and then some more, given the need to heal the damage already done'.

Global responsibility

Like Littlewood, McCaughey sees Australia having a global responsibility in terms of carrying capacity.

'In an overpopulated, resource-strapped and hungry world, we can retain our self-determination only if we are seen to be playing our role as good global citizens who are prepared to steward and share our resources wisely,' she said.