

Comments on Colin Butler's report – Population and Environment in Australia: 2003
Barney Foran, 22 August 2003

Introductory Comments

The Butler review of population and environmental issues is well wrought. There are two areas where Australia's population debate could be augmented, the 'levels of population influence', and the 'relation of economic activity to the use of natural resources'.

Levels of Population Influence

Much of the discussion in the Butler review relates to notions of human populations and the economy within which they survive or thrive. The development of trade routes over the past 2,000 years or more, has allowed both the luxuries and necessities of life to be accessed if they were not available within a country. In this way the Roman Empire was able to augment its farming and resource base by conquest and sophisticated management. European countries used their own imperial conquests to escape the food requirements of their own population explosions set in train by factors including the industrial revolution. After the second world war, farming technologies (rust resistant varieties, nitrogen fertilisers and herbicide) allowed Europe to become self sufficient in food and export to the extent that today, EU food exports threaten the viability of farming systems in third world countries. Sophisticated modern economies are still prepared to use conquest by trade or war to access key resources such as petroleum, which is the key catalyst for current economic growth rates. The dynamics of trade thus confound simple notions of population carrying capacity. However, indicators of international trade and debt also present good long run indicators as to how well a population is performing in managing a sophisticated economy.

These issues, and many more such examples, show that trade allows a country to escape resource limitations in the short term. This emphasises that any discussion of population effect should be assessed with at least four levels of demarcation as shown in Figure 1.

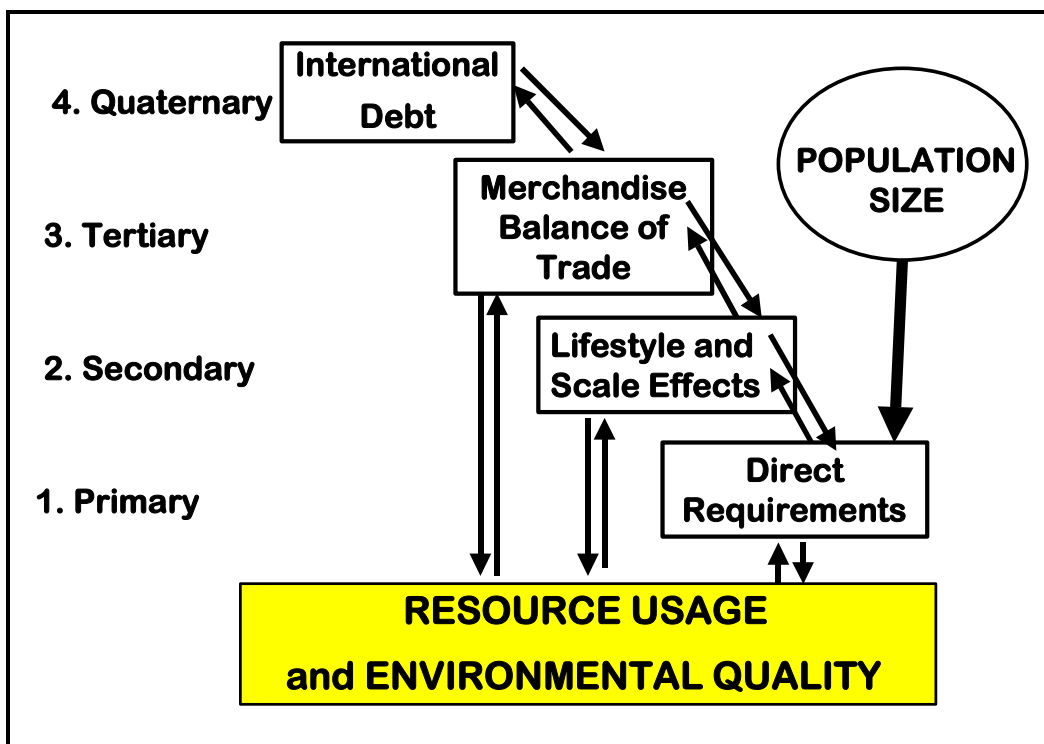


Figure 1. A schematic representation of the four levels of population influence from the direct (or primary level) to the macroeconomic level of international debt levels (the quaternary level).

Thus Australia can feed and water its people (level 1), provide a reasonable lifestyle (level 2), but it has a chronic international balance of payments problem (level 3) and an increasing stock of international debt (level 4). This leads to an assertion that Australia is *borrowing from its past and its future*, to sustain its current population and lifestyle. 'Borrowing from the future' refers to our imperfections in international trade balances and debt, although we are assured that these levels are sustainable, if current rates of economic growth are maintained. 'Borrowing from the past' describes the ruinous experience of our management of land, water, biodiversity and fish, and the rate at which we are using the key resources of oil and natural gas, the vital fluids that underpin economic growth.

It is only by linking and balancing these four levels of population effect over past and future timescales, that we will be able to participate in a sophisticated population debate. Thus the 'Boserupian principle' that human carrying capacity can be increased is true, at least in a timescale of decades or even centuries. Key indicators of future carrying capacity are thus our international balance of trade and our external debt levels. Both these indicators suggest that Australia is just making do. There is little room for complacency. However there is also room for concerted action to reform our export trade agenda, and to reduce our international indebtedness.

Personal Spending and Resource Use

That population growth is good for economic growth is obvious as higher populations require more houses and consume more goods. Whether population growth is good for *per capita* economic growth in real currency units (i.e. adjusted for inflation or the capacity to buy a basket of goods) is another matter. This per capita outcome relies on the relative rates of growth in population and economic productivity and there could be considerable lag times built into these dynamics. The current concern that population ageing will slow rates of growth in GDP is a good example of such a long-term lag. The environmental dimension of this question is whether population growth and the resultant economic growth are good for macro indicators of environmental quality and resource decline. Some of these concepts are shown in Figure 2.

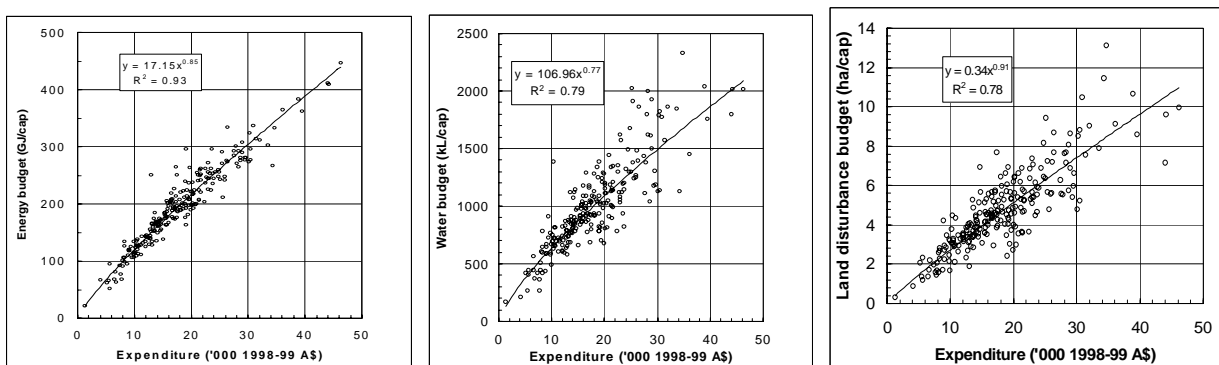


Figure 2: Relationship of per capita yearly expenditure to the per capita yearly requirement of energy, water and land in the Australian economy.

The three graphs show the energy use, water use and land disturbance that are derived from different levels of per capita expenditure from close to zero dollars per year to nearly \$50,000 per year. The key concept is that these graphs show the full life cycle effect of per capita expenditure. For energy use, this means that in addition to the direct use of petrol, electricity, oil, gas and wood, the indirect use of energy to make all the goods and services we consume, is also included. Thus the full production chain behind our individual consumption decisions is shown.

These graphs show a compelling and challenging picture of the consumption activities that each of us in Australia undertakes. The more we spend the more resources we consume. There is little indication of a plateauing of the relationship. It just keeps going up and up. The use of resources in itself is not an environmental bad. However these three resources are the key indicators for any 'state of environment report'. Most of the energy we consume in Australia is fossil energy, and we have a greenhouse gas emissions challenge. The water we use gives rise to the water quality problems that we have. The land disturbance we cause through our consumption activities gives rise to biodiversity decline, dryland salinity and downstream effect on water quality.

So what does population growth and economic growth mean for these three graphs. There are two obvious scenarios. At whatever point we enter the nation's consumption merry-go-round we would probably want to progress up the consumption chain, at least until we were comfortable and had 'enough'. The more of us that do this then the more and more resources we use, and the more we are all part of the consumption chain that puts more and more pressure on Australia's environmental quality. A second scenario of the 'haves' and the 'have-nots' could see a limited number of 'haves' clustered up at the top in the high consumption bracket, balanced by a majority of the 'have-nots' down at the bottom of the consumption league table. If we manage the second scenario diligently, we could probably stabilise resource use and pressures on environmental quality. Neither of these Australia's is particularly appealing. At the moment we seem to be firmly on course for the first scenario where Jack (or Jill) is as good as their master. The challenges of restructuring the relationships between personal expenditure and the 'full chain effect', is immense.

Concluding Comments

1. To fully analyse the 'Boserupian principle' we require at least four interlinked levels of population influence, particularly to take account of international trade and the way that it alters simple concepts of population carrying capacity.
2. The key indicators for population sustainability in this context are the yearly figures on Australia's international balance of payments and our net international indebtedness. On both these indicators, Australia sails in pretty stormy seas, but we are wise to be reasonably optimistic about our future.
3. Per capita personal consumption in dollar terms, is directly related to per capita energy use, water use and land disturbance over the full production chain, or life cycle. The challenge of restructuring these unfortunate relationships is immense in both physical and technological terms. A much greater challenge is that per capita consumption is the motor of economic growth. Without economic growth, the emperor and the emperor's believers, have no clothes. This is not a pretty sight!