‘Taking Sustainability Seriously’

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The title I chose for this address is ‘Taking Sustainability Seriously’. For ten years or so I have been giving occasional talks and writing occasional pieces on what seems to me the delusion that all of us can have swimming pools that are always clean and full, and that all of us can have as many cars as we can afford and drive them as long as far as we like. In one case the crucial element is water; in the other it is petrol. Both of these liquids are hugely important to our life in early 21st century Australia and, it seems to me, both are relatively scarce and likely to get scarcer, even if we change our patterns of behaviour. One reason is that each year the earth gains several score million more people, all of whom, in time, also want plenty of water and plenty of petrol, and see no great reason why they should not have it. I should add that I grew up during the second world war, the son of teachers who had endured the Depression of the 1930s, grew their own fruit and vegetables, made some of their own clothes, repaired everything that could be repaired, and saved for re-use later anything they could. By and large, I have adopted their outlook, to the occasional surprise of my wife and children. For me, then, the ideal is some kind of sustainable existence, where at the end of our days we leave the earth much as we found it, and our society wiser, more peaceful and more resourceful. This is not at all an easy task, partly because the rampant materialism of Western culture is so seductive, and partly because the earth does seem so often to be almost inexhaustible in its richness. What ‘sustainability’ might mean in practice, or in policy terms, is not much clearer to me now than it was in the 1990s, when I became interested in the notion, but it seems to me a matter of growing importance.

You will not be surprised, then, that I opened Tim Flannery’s current *Quarterly Essay,* ‘Now or Never. A Sustainable Future for Australia?’ with a sense of hope. As someone interested in sustainability, both intellectually and in practical terms, I am happy to read anything that adds to my store of knowledge. Alas, and despite its title, this is not at all an essay about a sustainable future for Australia. It proves to be a fundamentalist sermon on anthropogenic global warming. Its tones are those of the evangelist, its imagery is apocalyptic, and its message is Old Testament: ‘Repent, for the Day of Judgment is at hand!’ It represents for me the religious element in environmentalism, and I see it as a great distraction from the problems of the here and now, those concerning water, and oil and people, that I would like our society and our governments to come to terms with.

I have chosen in this address not to consider the arguments and evidence about the extent to which we human beings might be affecting the climate of the planet. There are other speakers who are closer to the science than I am, and in any case I have written about it in *The Australian Quarterly* (Jan/Feb 2008). My essentially agnostic position remains as it was: contrary to Professor Ross Garnaut in his many statements and reports, I am far from persuaded that we are having any appreciable effect on the climate of the planet. In

my view anyone attending this conference, almost by definition, is able and literate enough to form his or her own opinion on this issue. A warning: it is not something you can do in ten minutes. Those interested should go to the websites and work through the papers of Working Group 1 in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. People who support the IPCC's position can be dubbed 'upholders'. Readers should also summon up the reports of the Nongovernmental International Panel on Climate Change, the NIPCC, which argues that nature, not human activity, determines our climate. If you are of that opinion, you can appropriately be dubbed a 'dissenter'. I prefer these terms to the current mutual sledging of 'deniers' and 'warmistas'. Incidentally, scientists wrote all these papers. You may be left wondering which path to go down, but at least you will be able to spot what is wrong with Tim Flannery's essay, its statistics, and its appeals to the authority of the IPCC, James Lovelock and those with whom he agrees. And you will, I think, be scratching your head and wondering how we got into this semi-religious phobia about greenhouse gas emissions in a world where carbon dioxide is the stuff of life for all plants and animals.

I am philosophically an enquirer. When someone tells me that something is the case, and it is something that interests me, I want to know why he or she thinks so, and what the arguments and evidence are. I relish this approach, for I understand that it is what science is about. It is certainly what my own disciplines, history and political science, are about, and you could argue that this approach underlies the best thinking of our whole civilisation. It is an approach inherently sceptical about claims to truth. For Thomas Huxley, Darwin's contemporary, scepticism was the highest intellectual duty, and he also commented that science commits suicide when it adopts a creed. I like Huxley's aphorisms, and note appreciatively that he invented the word 'agnostic', which now has the ordinary meaning of someone who isn't sure about whatever is said to be the case, and awaits more evidence and argument. I recommend his approach to you all.

My interest, to repeat, is in how to improve the sustainability of our way of life, which I value and enjoy. I recognise that it is threatened, and that in some respects we may have passed the point at which we can have everything we want without thinking of the morrow. The reasons are straightforward. In its liquid form, good fresh H_2O is not abundant on the planet, and Canada has much of it, which is of little help to equatorial Africa. Oil is a finite resource, and while there is great disagreement about whether or not we have passed the 'peak oil' moment, I know of no respected writer who is arguing that oil will ever return to a low price level and stay there. At the moment in Australia petrol hovers around $1.50 a litre, and has been higher. Most of us, I think, assume that its price will continue to rise. Yes, most of the price consists of tax, but reducing the tax on oil will simply push governments into raising taxes elsewhere, while having no effect on the supply of oil, which is the long-term problem.

The elephant in the sustainability room is the world's population. There are very many human beings, and they would all like to live in the style enjoyed by most Australians and most of the citizens of other developed countries. Once upon a time we might have just shrugged, and noted that we were either cleverer or luckier than them. Today we know that our standard of living is not a trick known only to us, but is in principle

possible for everyone. I can see no good reason for denying others a similar lifestyle to my own. What has been achieved in the last twenty years by China and India, and earlier by Singapore, Taiwan, Malaysia, South Korea and Thailand, makes it clear that any society can do it if achieving a very much higher standard of living is genuinely the number one priority. Human knowledge is quickly available to those who seek it, and it is now knowledge, not resources, that forms the basis of a high standard of living.

So the catch to sustainability is threefold: people, oil and water. Houses that have a separate bathroom for every occupant, or for most of them, a swimming pool, computers everywhere, two cars in the garage, a pair of return overseas air tickets in the study and all the other accoutrements of contemporary comfortable Australia require very much larger amounts of water and energy than was the case for our parents, let alone our grandparents. Potable water and portable energy, to say it again, are not abundant. As more people want them, their availability will decline and their price will go up. This simple market truth, already obvious to us, will be even more apparent if the world's population does in fact pass the projected 9 billion for 2050. What should we do about it? It seems to me that we will need to manage our water supplies much more efficiently than we have done in the past, find alternatives for oil and gas, and do our best to keep the world's population, and our own, within manageable limits.

This inter-related set of problems would remain central in working towards a sustainable future whether or not we reduce greenhouse gas emissions. Indeed, what Australia does in reducing greenhouse gas emissions will have no effect on the importance of these problems at all, or indeed on what happens in the rest of the world, since our contribution to these emissions globally is minuscule. Tim Flannery does get into the energy wing of the problem in his *Quarterly Essay*, and I would agree with him that we should explore geothermal energy (an area in which, he says straightforwardly, he has a financial interest) as well as solar energy. By that I mean that we should fund more and more research in these areas, as we did in the 1980s in the solar energy domain. But about water and people he is silent.

Let me then suggest some things that we might do, in the interests of a more sustainable existence for all human beings, but especially those in Australia, and without reference to greenhouse gas emissions.

Water

Australia is the driest inhabited continent, and we do seem to have a lot of dry years. Long runs of dry and then runs of wet years (Dorothea Mackellar's 'droughts and flooding rains' in the sunburnt country she loves) seem to have been the case for the last 150 years, as farmers and graziers who have long-established properties can attest from their meteorological records. These cycles are connected to what we all know as the El Nino Southern Oscillation (ENSO) and the longer cycle called the Pacific Decadal Oscillation. Though what happens in these cycles can be described, what actually causes the oscillations is not known; there are several theories. I mention this because there seems to me to be a tendency for people to romanticise the past as having had something

called 'normal' climate, which presumably had heavier rainfall. One reason for people's thinking so is that, indeed, the second half of the 20th century in inland eastern Australia was on average wetter than the first half of the century, and most of us with long memories can't go back much before 1950.

In fact, we seem to be in or at the end of the third great drought in the last century or so. On the evidence they come every fifty years to south-eastern Australia, and we might have some more dry years before we get a return of the 1950s floods that I remember well. To say it again, droughts — long periods of less than average rainfall — ought to be familiar, not strange. Today, however, we have more than four times as many people living in Australia as we had in 1900, we use a lot ore water per head, and we have dammed most of the rivers, extracted much of the water for irrigation, and squabble about whose fault it all is. To grow rice or cotton on irrigated land in inland Australia seems to me almost a profligate use of water, since both products are easily obtainable overseas. If I'm wrong in my sums it would be useful to have some good data that reassure me. As for urban water, we could be, and many are, moving to less water-intensive gardening and household use; recycling water (familiar in Europe for more than a century) will become steadily more available. Our water-storage and urban sewerage systems are much the same in their technology as they were when they were first developed in the 1840s. But composting toilets and non-flushing (and quite aesthetic) urinals are now readily available and being used. We do learn, and are demonstrating it. In my judgment we could do a lot more of both.

There are separate domains of water management, those for the Murray-Darling (and by extension, all inland) river systems, and that for urban water. There has been a great deal of political fuss about the Murray-Darling system over the past decade, but not a great deal of action, other than symbolic. The recent purchase of Toorale station, however, and the proposed release of its stored water into the Warrego and Darling Rivers, is at least a beginning. I recognise that there are towns that depend on irrigated agriculture, and indeed that there is a whole network of rural life that depends on the use of river water. But we need to develop a general conversation about the interaction of climate and water use in which country people do not feel either that they are victims or that city people see them as exploiters of a great natural resource. Managing the Murray-Darling is a tricky business, but it will be a test of the capacity of our governments to think about inland water sustainability as a problem of the here and now.

Our urban water systems are of great age, at least in Australian terms, and some of them are also in great need of renovation, as Sydney-dwellers can attest whenever there is a spectacular burst from the mains. It is not clear where further water will come from to supply Sydney, since the useful rivers are dammed, and are rarely if ever full. Building a new dam is not obviously an optimal solution. The major cities are at least thinking about desalination, and Perth's system is already operational. The harvesting of stormwater, the recycling of household water and the storage of rainwater in household tanks are all familiar and increasingly practised strategies. It is worth noting that all these practices have in the past either been frowned upon or forbidden, which tells you something about our fear of being without water. Again, I would like to see a public conversation about

the best ways to ensure that we have adequate water in our cities. We are a well-educated society, and the issues are important to everyone. That is another test of the resolve of our various levels of government, because water policy has effects and origins in local government, state government and federal government.

Oil

Twenty years ago, as Chairman of the Australian Research Council and a member of the Australian Science and Technology Council, I was one of those who felt that there was a clear place for 'priorities' in national research funding. One of my clear preferences was for attention to solar energy, for all the reasons that are obvious today. The passage of time has made that priority only sharper. Even earlier, in 1970, as a member of the Telecom Australia 2000 study, I felt that a powerful portable fuel cell and cheaply desalinated water were the most important technological discoveries that could be developed in Australia by 2000. The reasons were obvious to me: Australia was a dry continent, and while we had our own oil supply, it was not large and was likely to decline in importance. I assumed that the portable fuel cell would somehow store solar energy, though I did not know how. The bits and pieces of that technology have become more obvious, and I see them as at least highly probably by 2020. In Denmark motorists will soon be able to drive electric cars that have about 150 kms in their battery, and can be refuelled whenever they are at rest near a power point. Our distances are much longer, and a combination of solar, battery and petrol should enable us to drive much longer distances before refuelling, at least in daylight.

In principle, I am not opposed to coal-fired power stations until it is conclusively shown that CO_2 is a genuine problem for global warming — and even then I am not convinced that global warming is as serious a problem as global cooling could be. But these are issues for other speakers. I introduce coal only to say that we have a lot of it, and I see no reason not to use it. It is oil, and the need for portable energy, that form the crucial issues for a large, sparely populated continent. At the same time, even coal is not an inexhaustible resource, and I would put serious research dollars into looking for at least an allied source of grid energy, like massed solar collectors, or geothermal power stations. From my perspective, which is not that of the IPCC or Ross Garnaut, we do have some time, and we should use it profitably. The time to start is now.

People

The growth in the world's population since 1800 has been almost exponential. The growth is due to human capacity to grow more food, and rapidly increasing human knowledge about disease and how to counter it. The rise in human population has been in large part a natural one, though assisted by human delight in the arrival of babies and the view of the state that a larger population is a good thing in itself, since it implies more workers and more soldiers. Only in recent times have any governments frowned on population increases, China (in 1979) and Singapore (in the late 1960s) being the obvious examples. But Singapore has now moved to encourage larger families, while China's government is at least thinking about altering its 'one-child' family policy.

Birth-rates have fallen in most Western countries over the last forty years. Australia's peak postwar birth-rate, 3.55 in 1961, had more than halved to 1.73 in 2001. European countries, notably those whose population is predominantly Catholic, have even lower birth-rates than ours. The causes start, at least in my opinion, with easily obtainable and readily available contraceptives, the education of girls, and the entry of women into the workforce. Were it not for immigration the populations of Australia and most EU countries would have fallen.

A falling population worries governments, for reasons already mentioned, and it worries those who need workers at any time, so our general tendency is to keep enlarging the population without appearing actually to have a policy with this intention. In my view there ought to be another general conversation about population size, because it is in the long run the most fundamental element in human existence. If you worry about how 6.5 billion of us can exist comfortably on the earth's surface now, how do you suppose that 9 billion will do so in 2050? Most of us, most of the time, don't ask that question, and don't want to think about its implications. I suggest that we ought to do so. From my perspective we should look very hard at incentives to increase the population, like baby bonuses, or the vocal encouragement of people to have more children, let alone for building up our society through large-scale immigration. In the long run, however unpopular such a policy may appear now, we will have to learn how to live with a static population. To do so will require a change of culture, and a re-assessment of the conditions and the importance of 'economic growth'. I remind you that Singapore did it for a generation, and so did China, and in the latter case it is estimated that the policy reduced the total Chinese population by some 300 million.

But of course Australia represents only a tiny proportion of the world's population. How could we affect that? One way concerns our foreign aid policy. Some years ago the Howard Government struck a deal (one of many) with the then Senator Brian Harradine, whereby he supported government policy in an area dear to Mr Howard's heart, while the Government agreed that it would not encourage family planning in its foreign aid, nor issue birth control devices in developing countries. When you consider that Somalia has had a birthrate of around 8.00, the Harradine deal was dire — if, of course, you regard uncontrolled human births as a problem. Senator Harradine didn't. With his departure and a change of government the Harradine deal has effectively lapsed, but I would like the Australian Government to go on to the front foot, and supply information on birth control to countries that manifestly need it, insist that Australian education aid funding go equally to girls and boys, and promote the view that all human beings are of equal value, and that women are never the property of men, whether as fathers or husbands.

Will all this make Australia or the world sustainable quickly? No, but it seems to me the right way to go. These three issues seem most important to me, and they are issues of the here and now. If you want a sustainable Australia, even more a sustainable world, questions of water, oil and population are central. Even more, in countries like Australia, people now take the availability of water and oil, and the creation of new human beings almost as basic rights, so that developing the general conversations that I have proposed

is not an easy thing. Governments have to take a lead, because they are responsible for what passes for long-term planning in our society. I can hear them say that they are doing this, and to a mild degree they are: we did have a noisy discussion of inland water a couple of years ago, and the price of oil at the bowser is, courtesy of the NRMA and TV stations, very often a daily matter. About population, governments are silent most of the time, but they do commission studies of population trends.

What we do hear, day after day, both from government and the media, are scary stories about global warming. So many of them are plainly under-researched, and even tendentious — that is to say, written from a particular point of view so that contrary facts are ignored. Even worse, some of what is said is almost religious in its intensity and force. Professor Garnaut's statement which I caught on television that if we do not do what he proposes, humanity will regret it until the end of time (I know that I have not exactly rendered his words, other than the last five) is an extraordinary statement for a government adviser to make, the more extraordinary because he quite deliberately did not explore the accuracy of the IPCC's reports, and thus has not taken account of the weaknesses in its arguments and handling of evidence.

The Tim Flannery *Quarterly Essay* to which I referred at the beginning of my address, an essay that was apparently about sustainability, is another case in point. In one paragraph he dismisses all criticism of the IPCC position. 'All but the most ignorant and biased of sceptics' he says, 'now admit [the] truth' that 'the warming trend is real and accelerating'. A bald statement like that is meaningless, even to the ignorant and biased, let alone to those well informed. What trend? Global average temperature appears to have fallen from 1940 to 1975, rose from 1975 to 1998, but has not passed the 1998 level in the last ten years. What does that imply? Your guess is as good as anyone's. Climate science hardly exists as a discipline, and practitioners come from all over science; Tim Flannery himself has a first degree in English and a doctorate in Zoology. It would be much more accurate for him to say that there is a good deal of uncertainty in the whole domain, but that he has his hunches. Talking down to us from the pulpit and invoking a kind of divine wrath if we don't mend our ways, as both Professor Garnaut and Dr Flannery have done, smacks of the bible-thumpers of my youth. I didn't need them then, and don't want them now.

What I want, and I would suppose what those present here want, is a respect for the inherent uncertainty of scientific knowledge, due diligence on the part of those making important decisions, and decent open-ness in debate. There are others speaking today whose message, based on science, is that a certain scepticism about what the IPCC calls 'human-induced climate change' is perfectly justified, and I join with them. Even with respect to what I see as the central issues in sustainability — water, oil and population — there is a lot that has to be quantified, understood and resolved, and every year we know a little more about this aspect, and, almost by extension a little less about that aspect. We must keep studying, learning and discussing. A sustainable future is, at least in principle, available to us, but it won't come without these essentials.