

Thoughts for the 2020 summit

A colleague who is a delegate to the 2020 summit, Lucinda Corrigan, offered her fellow directors on the Board of the Future Farm Industries CRC an opportunity to respond to the questions posed of all delegates in advance, the first of which is:

*If you could do one thing in your stream area, what would it be?
What is it that you think would make the most difference?*

Here is my response.

I agree with the late, great Peter Cullen who was fond of saying something to the effect that, as a country we should give knowledge-based approaches a try, because ignorance-based approaches have not got us very far, and have tended to cause all sorts of environmental problems.

For me, the big need is to develop a much wider and deeper environmental literacy throughout the Australian community, economy and society at all levels and in all sectors. We are already into a period of rapid environmental change that many people appear to assume will stabilise – i.e. that ‘the drought will break’ and things will return to ‘normal’. I’m convinced that they won’t, that change will accelerate and intensify for the long foreseeable future. Global emissions won’t stabilise until well after 2070 at the earliest, and the climatological, hydrological, ecological and geopolitical impacts of a probable doubling of pre-industrial CO₂ levels will keep churning long after that. Rapid adaptation is a given for the rest of this century at least.

If I’m wrong, and things do return to normal, then all the stuff I’m suggesting here will still have been worthwhile for food security, energy security and water security reasons.

A big risk with the torrent of climate change data is that individuals feel minute and impotent in the face of something that seems overwhelming. In my view we need to find ways of helping people to come to grips with the changes happening around them in their immediate environment. We did this well in the early 1980s with dryland salinity through programs like SaltWatch, Waterwatch, FrogWatch etc. I well remember in our district on the Dundas Tablelands in western Victoria in 1982, salinity was like foot rot – no-one admitted they had it. But when the local schoolkids put up a map of the district on the wall of the store showing the salt levels in everyone’s dams and creeks (from their Waterwatch project) suddenly it was obvious that the whole community had a salt problem, and we started to deal with it openly. The most eagerly awaited statistic in Britain each year now is the RSPB’s annual bird census, which shows species turning up much earlier each year in their traditional spots, and in entirely novel spots, and new species in old spots. One reason this data is of so much interest (and has credibility) is that it is tangible and literally hundreds of thousands of people are involved in collecting it. Both Britain and the US are moving to integrate the community science of bird watchers into their formal scientific monitoring systems.

The old mantra about “measurement becomes management” is true. We accept the need for good economic data without question, but seem to think we can respond sensibly to complex environmental challenges in the absence of good data.

We need to make more visible, what is currently invisible to most people, and we need to make it measurable and transparent. Further, we need to engage as many citizens as possible in doing so, in ways that are scientifically rigorous. This is doable, in Australia much more than in most countries.

Households with obvious, user-friendly energy meters or water consumption meters in the kitchen where everyone can see them, quickly change their behaviour. We need to think creatively about how to hard-wire such mechanisms throughout society. I see this as a natural fit with the Rudd government agendas in climate change, innovation policy and education. It should not be piecemeal, but a whole of government approach (delegates may be sick of that phrase by the end of the summit, but with the nature of the climate challenge it's unavoidable) starting from pre-school and extending through basic and applied sciences right to the old folks' homes. Done well, it would engage lots of innovative Australian small businesses working in the sustainability sector (which still does not rate a mention in ABS statistical categories so tends to be invisible as an economic sector, yet it is worth squillions and growing very fast) across climate, water, energy, green building, farming systems and so on. It would help to re-position Australia internationally in the climate debate and lead to lots of export opportunities for those SMEs. It would to develop a younger generation of people much better equipped to understand the world around them and to identify actions that can improve things – hopefully getting them on the front foot and feeling less helpless.

Australia is renowned internationally for innovation and excellence in environmental education and community engagement through initiatives like Landcare, Waterwatch, Coastcare and so on. These programs remain valid and still involve many thousands of people, but they are tired and have had no strategic attention over the last decade. They were never well-connected to science, and links now are patchy and threadbare. Individual teachers and some schools are doing a great job in environmental education, almost despite the system. A lot of work has been done on a new national strategy for environmental education with considerable stakeholder input, which was finished in mid-2007 and was then not announced, launched or responded to. The most recent State of the Environment Report concluded that it could not report authoritatively on trends in Australia's environment for lack of good quality time-series data. The overall monitoring and evaluation system is in terrible disrepair across the federation. But again, at officials level across all governments, there has been a lot of preparatory background design work (getting agreement on indicators and data protocols etc) for a world class system. Australia has some of the best applied ecologists in the world (6 of the current top 30 most cited researchers in the most respected international journals - hard to think of another field where we would be so dominant) and there are small pockets of brilliant research, but we are very poor at pulling all the disparate areas of knowledge together so that lessons can be learned more easily across the whole system.

An Australian Environmental Literacy initiative, which could be easily delivered by 2020 using resources already committed, could have seven core elements:

- A schools-based environmental education initiative, drawing on the recently completed (but un-launched) national strategy, consistent with the education revolution and the rollout of new technology into schools, and linked to;
- A national land literacy initiative, drawing together, expanding upon, and providing national support and coordination for all the community-based voluntary 'watch' programs (Waterwatch, Frogwatch, Echidna Watch, the National Bird Atlas, Saltwatch etc), that would in turn link to;

- A clearinghouse/national innovation centre for analytical tools, technologies and metrics – including tools such as carbon footprinting, life-cycle analyses, energy efficiency measures etc (especially those that can assist in integrating consideration of carbon, water and energy), and technologies such as sensing, metering and telemetry systems, linked to mapping systems such as GIS and GPS and user-friendly front ends like Google Earth – that would help schools, community groups, industries and governments at all levels to develop their own ‘sustainability dashboards’, that would in turn link to;
- A complete overhaul across the federation to create a single national system to monitor the status of and trends in the condition of natural resources like biodiversity, soil, land and water (complementing and to a degree unifying work already underway in the Bureau of Meteorology on water and in the National Carbon Accounting System), that would in turn link to;
- An Australian Ecosystem Observation Network (drawing on the best elements of the Environmental Change Network in the UK, the National Ecological Observatory Network in the US, the Integrated Monitoring and Assessment Network in Canada and the international networks for long-term ecological research sites) that would establish core scientific infrastructure based on a network of sentinel sites for monitoring environmental change at a continental scale and supporting research. This could be complemented by a Farming Systems Research Network with the FFI CRC projects at its core, and pulling in any long term data sets from agriculture department research farms to establish for each agroecological zone an equivalent of the environmental sentinel sites, but with a greater emphasis on adaptation than just tracking key parameters of change. These would in turn link to;
- A data and knowledge centre (distributed network across existing super computers) that would work with States, Territories, R&D organisations and other data custodians and providers to consolidate both existing and new data into much more accessible and tractable forms (again with front ends like Google Earth), that would in turn link to;
- An Australian Centre for Ecological Analysis and Synthesis (learning from the US National Center for Ecological Analysis and Synthesis at UC Santa Barbara that has generated more than 120 papers in *Science* and *Nature* over the last decade on a budget of around US\$4m per annum) that would analyse and synthesise data generated through all of the above mechanisms to provide big-picture analyses of trends and options for policy and other audiences.

For each of these elements, a great deal of preparatory thinking has been done, there are keen and knowledgeable stakeholders ready to go, and the States and Territories are largely already on-side. There is enough money already in the system to do most of it. What is needed is national leadership, an overarching vision based on a coherent narrative, and a COAG level agreement to get the federal machinery working cohesively rather than in the current state of fragmentation, amnesia, adhocery and confusion. Much of this is not sexy, but it could be marketed against a compelling, coherent background narrative. The “Natural Country” vision on my website is an example.

The outputs from such an integrated initiative would include:

- The capability to track key parameters in the Australian environment, like water, carbon, nutrients and biodiversity at a range of scales in a rigorous way (and thus to see if we are going forwards or backwards);
- The involvement of literally hundreds of thousands of Australians in practical, scientifically rigorous approaches to measure the condition of and trends in their local environment, using modern technologies and web-based tools to share data, knowing that their voluntary work contributes to the national picture;
- Greatly improved environmental literacy of a generation of students (many of whom would do work both in their school and in their community group), again with experience in new environmental technologies;
- Support and encouragement for innovative new environmental technology firms and industries in Australia with enormous export potential in rapidly growing world markets;
- Much better return on existing and new investments in monitoring and evaluation programs through consolidation of state and federal efforts into a single coherent national program with leading edge data management capabilities;
- A synergistic connection between the suite of monitoring efforts and leading researchers, with each informing and improving the other; and
- A world class capability to deliver elegant analyses and syntheses of Australian data for Australian policy and industry audiences and the wider community, providing collaborative opportunities for outstanding Australian researchers that at present they can enjoy only in the US or Europe.

An outcome of all of the above would be that governments, industries and communities should find it easier to make and to implement the difficult adaptation and mitigation decisions that lie ahead. Residents, voters and consumers will be demanding action rather than resisting or postponing it.

The rapid convergence of the food security, energy security and water security issues, against the backdrop of climate change, means that 'joined up' government has to become much more than just a slogan. COAG has to step up as a 'big C' coordination and leadership mechanism, with a much heavier apparatus servicing it, and with mechanisms for industries and the wider community to have input. Compartmentalised, disparate and fragmented approaches, across and within jurisdictions, will continue to fail dismally.

An intriguing element of the summit will be how it tackles the big cross-cutting issues that will emerge from across most of the ten groups.

In short, my one idea for the 2020 summit is that we should aim to improve the environmental literacy of the entire Australian population – helping people to read, understand and act on changes and trends in the world around them. We can easily do that by 2020, simply through smarter use of resources already allocated.

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