

Talking and Walking Sustainability

Yvonne Curtis

It is now over thirty years ago that a number of insightful people realised that the human use of natural resources was based on the false assumption that these resources would always be freely available and inexhaustible. They also realised that some human activities were causing possibly irreparable damage to the natural environment. Since then the number of people who realise that there is a need for a drastic revision of the use of natural resources has grown slowly, but has now, perhaps, reached a critical mass. The issue of human exploitation of natural resources is now being discussed and debated globally on a daily basis. This interest has been intensified by the related issues of “global warming”, “ozone depletion”, and “peak oil”.

Engineers have been one of the professions who have taken sustainability seriously and many have been using the concept practically in their every-day projects. The 2nd International conference organised by the New Zealand Society of Sustainability Engineering and Science (NZSSES), (with the theme “Talking and Walking Sustainability”, is a good example of their commitment. The number of international and local presenters (80 presentations and 12 invited keynote speakers) and the scope of the papers presented is an indication of people’s interest in, and the complexities of, the topic.

This article will briefly highlight some of the papers to give an indication of the wealth of information that the proceedings of the conference (available on CD and from the website, see below for details) has generated for people interested in the long-term future of New Zealand and those wanting examples of practical action they can take now.

An overarching issue that is causing a lot of discussion and dissention is agreeing on a definition of “sustainability”. This confusion of the definition, coupled with human reluctance to change and human self-interest has, according to some, significantly slowed many individuals, businesses and governments from taking actions that others see as urgent and necessary. It has also meant that there is rarely sufficient agreement about what action should be taken and therefore many initiatives fail to achieve any real change.

Another important aspect of sustainability is that as this is an issue of survival, we tend to be unable to be completely rational or logical in our thinking when assessing scientific data. Our passion and cultural heritage can strongly influence how we react to this data.

Several of the papers give interesting perspectives on this confusion, including the key note address by Simon Upton, who has been involved in the issue at New Zealand governmental level and at the international governmental level in his time with the OECD for many years. He gives a good overview of the past and points out some barriers to “sustainable progress” and some possible future actions that could mitigate these.

Similarly, the well-known Australian environmental scientist, Professor Ian Lowe (“Shaping a sustainable future – an outline of the transition”) also gives his historical account of sustainability and formulates a set of foundation principles underlying “sustainability” to assist the transition to a sustainable future.

D B Willmott’s presentation “Sustainable Progress” considers the dangers of irrational expectations. His theme is that value-driven and politically driven scientific statements are not helpful. He states that: “This paper holds that, to ensure science’s survival and increased contribution to the sustainable progress of humanity, it is essential that science-based professionals maintain strict professional impartiality by excluding personal, societal and even professional

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institutional values from that part of our persona we would call “scientific”.

Despite the lack of consensus about the definition of sustainability the bulk of the conference was devoted to practical ways of progressing the ideas of sustainability into significant actions in policy-making at global, national and individual every-day living levels to change how humanity interacts with the rest of the planet.

It is beginning to be understood that many of our earlier patterns of research and policy-making did not provide helpful answers for such a complex all-embracing issue as “sustainability”. Australian futurist, Dennis List’s paper “From scenario planning to scenario network mapping” is a good example of the efforts that futurists are making to build on earlier techniques to find new ways of dealing with the new challenges.

Susan Krumdieck and Mohammed Imroz Sohel (“Strategic Analysis Adaptation Assessment: An Alternative to the Storyline Scenario”) have researched ways of adapting futuring techniques so they can be used to inform engineering research, innovation and design and have applied these techniques to a case study of transportation fuel supply in New Zealand.

For a solution to gain acceptance and support it is very important that credible methods and standards are developed to measure the effectiveness of the method. Because of the lack of consensus on what is really “sustainable” many different models are being proposed and trialed. The fact that there are many models may not be a negative factor overall, as with such a broad scope of factors needing to be considered, it is most likely that a variety of solutions will be needed in the very different situations.

The paper presented by a team of Landcare Researchers lead by Dr Bob Frame, “Experiences of applying a sustainability assessment model” is a good example of the research needed in New Zealand to give policy-makers some sound research to work with.

Dr David Kettle (“Measuring Real Wealth in New Zealand”) reports on progress towards developing a comparable system of accounts based on Genuine Progress Indicators that can be used globally to replace the narrow GDP measure used at present.

On a more general level a paper by Kerry Griffiths, (“Project sustainability Management in Infrastructure Projects”) explores factors that need to be considered from the outset to build a sustainability framework for a project.

There are also a number of papers addressing more specific areas.

Sustainable energy supplies are a very important factor for future prosperity. Again there are many different opinions regarding the best way to achieve the most efficient supply. A paper entitled “Tools For Sustainable Best-Practice Energy Management” by Grant Curtin and Hitesh Patel outlines a working model and software program that has been used by organisations in New Zealand to manage their sustainable energy management programmes.

Sustainable agriculture is another vital component for a prosperous sustainable future for New Zealand and Misty Skinner’s research (“Applying International Policy Lessons for Sustainable Agriculture to New Zealand”) is an example of the research needed to enable policy-makers to use the most appropriate tools to achieve the desired outcome.

A paper that looked at the historical experience of urban public transport versus the car by Vince Dravitzki and Tiffany Lester (“Economics drove our first sustainable urban transport system and the unsustainable one that followed”) provides an interesting picture of urban public transport from 1900 to 2005. It shows that historically economic factors rather than emotive factors are important in determining the form of transport preferred and that is likely to continue in the future.

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A number of case studies about sustainable communities are reported. eg Devonport ("Devonport: A Sustainable Community" by John Duder and assisted by Lesley Jenkins.); Dunedin ("What do New Zealanders Want from their Cities? Results from Dunedin" by Anna Johnson and Sarah Weller); Huntly ("Changing Communities through practical Energy Efficiency: The HEET Experience" by Pamela Storey)

Another tool for changing community attitudes is appropriate education. Rhys Taylor and Dr Will Allen ("Behaviour change for sustainability - exploring a role for community education") report on an action research collaboration between 20 city and regional councils that has created the Sustainable Living community education programme. As the programme is used it is modified and updated and it is hoped to eventually be available nationally.

The sustainable built environment is the topic of another series of papers from different angles. For example, the work of Beacon, a FRST funded research consortium, which aims to see the majority of New Zealand homes achieve a high standard of sustainability by 2012, is reported in "Beacon's High Standard of Sustainability - implications for the sustainable development of the residential built environment" by Lois Easton and Nick Collins. The group are developing a set of benchmark standards for such items as energy and water use, materials used, waste management etc. These are just some of the papers that are of interest to a wide audience and I can highly recommend the website and CD as a valuable resource for those who are interested in being involved in creating the New Zealand to be.

Proceedings of the 2nd International Conference on Sustainability Engineering and Science, Auckland, NZ, Feb 21-23, 2007. General papers are from the CD and keynote papers downloaded from the website <http://www.nzsses.auckland.ac.nz/conference/2007/keynotepresentations.htm>

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