

## Science Funding in New Zealand

Until 2004 I worked on truffles and other edible mycorrhizal mushrooms for one of New Zealand's Crown Research Institutes (MoRST 2002). The research was exciting, and its aim, to establish new industries for New Zealand and the Southern Hemisphere, gave me the opportunity to leave something tangible behind rather than a host of scientific papers for other scientists to read – or not (Hall & Zambonelli 2009). When I started the work in the mid 1980s only two of the world's 900+ edible mycorrhizal mushrooms had been cultivated commercially and neither in the Southern Hemisphere. So the research was not without its challenges. However, the greatest challenge and the most stressful aspect of my research was the system used for funding scientific research. This will be *fully* outlined another day but the highlight was certainly the discontinuation of public funding for research on truffles the year after we produced the first commercial harvest in the Southern Hemisphere in 1997. So I think I am entitled to have my tuppence worth of input into the debate that reached new heights in New Zealand in 2008.

A competitive system has been used for the allocation of state sector funding in New Zealand since the late 1980s (Innovation Dynamics 2005; MoRST 1998-99). The reasons given for the introduction of this system have been discussed and summarised by Doug Edmeades (2004, 2006) derived from the Beattie Report (1986), Arbuckle Report (1988) and Hanzard (CRI Act:1st, 2nd and 3rd Readings, and the Report from the Education and Science Committee). These were:

1. Improved efficiency – remove duplication of research, large bureaucracy, inability to 'retire' old or ineffective staff.
2. Improved accountability – inability to control outcomes using the input lever.
3. Improved flexibility – science was captured by the science providers and the Public Finance Act restricted the mechanisms by which industry could be involved.
4. Improved alignment - better match with government policy and with industry.
5. End of uncertainty and instability in the science sector.
6. Improved technology transfer – i.e. better linkage between science and industry.

This led to the establishment of the Crown Research Institutes (CRIs) that were expected to be commercially viable companies and compete for public and private sector research contracts (MoRST 2002). Funding is administered by the Foundation for Research Science & Technology (Andrew Fletcher Consulting 2006; Ministry of Research, Science & Technology 2002), policy is set by the Ministry of Research, Science & Technology but is monitored by Treasury (The Treasury 2006).

The following 20 years saw various modifications to the scheme that were detailed by the Ministry of Research, Science & Technology. Some examples are:

- 1998 The foresight project - towards a knowledge [based] society ([www.morst.govt.nz/Documents/publications/discussions/MoRST-Building-Tomorrows-Success.pdf](http://www.morst.govt.nz/Documents/publications/discussions/MoRST-Building-Tomorrows-Success.pdf))
- 1998-99. Setting the scene. *In*: Report of the Ministry of Research Science and Technology. Pp. 21-22 (<http://www.morst.govt.nz/Documents/publications/annualreport/MoRST-Annual-Report-1998-1999.pdf>)
- 2000 Igniting the future - Strategic direction 2000-2003 ([www.morst.govt.nz/publications/corporate-reports/igniting-the-future/](http://www.morst.govt.nz/publications/corporate-reports/igniting-the-future/))
- 2005 Picking up the pace - intervention rationales for outcomes in research, science and technology ([www.morst.govt.nz/Documents/work/pace/Pace-Anchor-Paper-December-2005.pdf](http://www.morst.govt.nz/Documents/work/pace/Pace-Anchor-Paper-December-2005.pdf))
- 2006 Roadmaps for science ([www.morst.govt.nz/current-work/roadmaps/faq/](http://www.morst.govt.nz/current-work/roadmaps/faq/))
- 2007 Futurewatch ([www.morst.govt.nz/current-work/futurewatch/](http://www.morst.govt.nz/current-work/futurewatch/))
- 2008 Advanced skills action plan ([www.morst.govt.nz/about/consultations/asap/](http://www.morst.govt.nz/about/consultations/asap/))
- 2008 Changes to negotiated investment ([www.morst.govt.nz/Documents/publications/funding/MoRST-Treasury-Stable-Funding-Decision-2008.pdf](http://www.morst.govt.nz/Documents/publications/funding/MoRST-Treasury-Stable-Funding-Decision-2008.pdf))

However, generally funding was rarely for more than 1 to 3 years and redundancies were not uncommon with the most publicised the sacking of 48 HortResearch CRI staff in 2002 and 70 in Industrial Research Limited CRI in 2006 (Lancashire 2006, 2007).

To say that the system had its critics would be a gross understatement. The New Zealand Association of Scientists document "There is a better way" (2005), Doug Edmeades' article "Is the commercial model appropriate for science?" (2004), James Watson's paper "The road ahead" (2005), and John Lancashire's article "Can the New Zealand science system be saved?" (2007) covered the concerns of many scientists. A discussion document commissioned by MoRST from MDL (2005) showed that it too was not without concern for the effects the system was having on some scientists.

In 2007 an OECD report voiced diplomatically muted concerns which was followed by a more critical appraisal by the Public Services Association (2007). A comment from AgResearch (2007), one of the CRIs, was also critical of the system, "New Zealand persists in the view that head-on competition between research institutions, and between these institutions and universities, is the only way that scientists will be compelled to perform." Very recently criticism of the system reached a head when a panel of eminent scientists (National Science Panel) working under the banner of the Royal Society of New Zealand published "A science manifesto: or plan for the recovery of New Zealand science". This was endorsed by 2500 staff in the CRIs and the New Zealand Association of Scientists (2008) and put into context by the Listener article "Science solutions" (3 May 2008).

In 2006 systems were put in place to allow some research to be funded through negotiation, rather than through a competitive bidding process, which resulted in grants for a fixed period. While this demanded less time it did nothing to allay scientists' fears about the loss of funding and instead simply defined when the Sword of Damocles would or would not fall. However, the pattern of funding science in New Zealand has been evolving for the past 20 years and the recent document "MoRST-Treasury Changes to negotiated investment decision paper" (MoRST 2008a) suggests that it will continue to do so.

Some comfort to scientists may have come from the previous Minister of Science's direction that the allocation process must achieve (MoRST 2008b):

1. More consistent delivery of longer-term research, science and technology outcomes to the private and public sector that benefit New Zealand;
2. Reduced transaction costs and complexity for research organisations;
3. Enduring linkages and collaboration between research organisations and the end-users of the research; and
4. Greater clarity for research organisations to plan and develop strategies for the longer-term.

However, since then a Labour Party Government has been replaced by a National led one, the greed and incompetence of a few have plunged the world into financial chaos, and the ranks of the unemployed are swelling by the day. So maybe the voices of a few thousand scientists, who despite carrying much of the responsibility for the future prosperity of New Zealand on their shoulders, will continue to be ignored.

To come: "Effects of the New Zealand funding model on scientists", and "Issues faced by management".

## References

- Arbuckle, R.H. 1988. Science and Technology Review: A New Deal. Science and Technology Advisory Committee, Wellington.
- Beattie, D. 1986. Key to Prosperity. Science and Technology. Report to the Ministerial Working Party, November 1986.

- Edmeades, D.C. 2004. Is the commercial model appropriate for science? *New Zealand Science review* 61 (3–4): 85-92. [http://nzas.rsnz.org/publish/archive/NZSR\\_61\\_3\\_4.pdf](http://nzas.rsnz.org/publish/archive/NZSR_61_3_4.pdf)
- Edmeades, D.C. 2006. A response to the MoRST 'Sector engagement paper: A more stable funding environment', and related documents. *New Zealand science review* 63 (1): 30. [www.psa.org.nz/openletter/Comments%20-%20Stable%20Funding%20Env%20Engagement%20Paper%20-%202013-02-2006.doc](http://www.psa.org.nz/openletter/Comments%20-%20Stable%20Funding%20Env%20Engagement%20Paper%20-%202013-02-2006.doc)
- Innovation Dynamics. 2005. Overview of the Australian and New Zealand science and technology systems. [www.csta-cest.ca/files/overviewaustandnewzeal.pdf](http://www.csta-cest.ca/files/overviewaustandnewzeal.pdf)
- Lancashire, J. 2006. A more inclusive approach. *AgScience* 28: 24: 2. <http://www.agscience.org.nz/PDF/agscience-24web.pdf>
- Lancashire, J. 2007. Can the New Zealand science system be saved? *AgScience* 28: 3. <http://www.agscience.org.nz/PDF/agscience-28web.pdf>
- Editorial. Science solutions. *Listener* 3547, 3 May 2008, p 5. [www.listener.co.nz/issue/213/columnists/11004/science\\_solutions.html](http://www.listener.co.nz/issue/213/columnists/11004/science_solutions.html)
- Mckinlay Douglas Limited. 2005. Devolution: a think piece. Report prepared for the Ministry of Science, Research & Technology. [http://www.mdl.co.nz/library/librarydocs/public\\_mmt/Devolution.pdf](http://www.mdl.co.nz/library/librarydocs/public_mmt/Devolution.pdf)
- MoRST. 1998-99. Setting the scene. *MoRST Report of the Ministry of Research Science and Technology*. Pp. 21-22. <http://www.morst.govt.nz/Documents/publications/annualreport/MoRST-Annual-Report-1998-1999.pdf>
- MoRST. 2002. An appraisal of Crown Research Institutes. [www.morst.govt.nz/Documents/publications/discussions/CRI-Appraisal-1992-2002-report.pdf](http://www.morst.govt.nz/Documents/publications/discussions/CRI-Appraisal-1992-2002-report.pdf)
- MoRST. 2008a. MoRST-Treasury Changes to negotiated investment decision paper. <http://www.morst.govt.nz/Documents/publications/funding/MoRST-Treasury-Stable-Funding-Decision-2008.pdf>
- MoRST. 2008b. Stable funding environment Ministerial Direction. <http://www.morst.govt.nz/Documents/publications/funding/Stable-funding-environment-2008-Ministerial-direction.pdf>
- New Zealand Association of Scientists. 2005. There is a better way: eight recommendations on the science system in New Zealand. [www.morst.govt.nz/Documents/work/pace/Pace-Comments-NZAS-Recommendations.pdf](http://www.morst.govt.nz/Documents/work/pace/Pace-Comments-NZAS-Recommendations.pdf)
- New Zealand Association of Scientists. 2008. "Science for New Zealand" – towards collaboration and high morale in our science community, eliminating fragmentation and disillusionment. [http://nzas.rsnz.org/press/press\\_08\\_1.pdf](http://nzas.rsnz.org/press/press_08_1.pdf)
- OECD. 2007. OECD review of innovation policy New Zealand. [www.oecd.org/document/38/0,3343,en\\_2649\\_34487\\_39156838\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/38/0,3343,en_2649_34487_39156838_1_1_1_1,00.html) and [www.oecd.org/document/5/0,3343,de\\_2649\\_201185\\_39148805\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/5/0,3343,de_2649_201185_39148805_1_1_1_1,00.html)
- Public Services Association. 2008. OECD highlights impact of NZ scientists having to compete for funding. [www.psa.org.nz/library/psa/08%20Media%20Releases/2007/press%20release%20-%20Impact%20of%20scientists%20having%20to%20compete%20for%20funding%20-%2021-08-2007.asp](http://www.psa.org.nz/library/psa/08%20Media%20Releases/2007/press%20release%20-%20Impact%20of%20scientists%20having%20to%20compete%20for%20funding%20-%2021-08-2007.asp)
- The Treasury. 2006. Crown company monitoring advice to the Minister for Crown Research Institutes and Minister of Research, Science and Technology. [www.treasury.govt.nz/publications/abouttreasury/annualreport/05-06/26.htm](http://www.treasury.govt.nz/publications/abouttreasury/annualreport/05-06/26.htm)