



# Fertiliser Matters

New Zealand Fertiliser Manufacturers' Research Association Newsletter

## National strategy next target for cadmium working group

*A working group made up of representatives from Government agencies, regional councils and farmer organisations, including the fertiliser industry, is preparing a unique New Zealand response to the slow build up of the heavy metal cadmium in our soils.*

Cadmium levels in agricultural soil is recognised as a world-wide developing issue, as cadmium has the potential to enter the food chain through crops or the livers and kidneys of grazing animals.

The Cadmium Working Group issued a summary report\* in December 2007 and its comprehensive report in September this year, finding that cadmium represented "no immediate risk" to human health.

The Group is now moving to the second phase of its work, which will see it develop a *National Cadmium Strategy*. Essentially, this strategy will look at prevention, mitigation, education and monitoring, with the aim of preventing cadmium accumulation in New Zealand soils ever becoming an issue in the future.

The *Strategy* will also

- look to the Ministry for the Environment to give greater guidance to local authorities to ensure that soil cadmium levels are assessed and evaluated in a consistent and appropriate manner and;
- consider approaches and options to manage cadmium levels.

In addition to having implications for human

health, cadmium has the potential to provide barriers to market access for our exports, and restrict land use flexibility.

At present, cadmium in the food chain is managed through

- regular monitoring of levels in foods by the Food Safety Authority. Testing shows that cadmium levels in our diets are declining, and are about a third of World Health Organisation's tolerable intake levels
- fertiliser companies voluntarily holding the maximum level in single superphosphate below 26 parts per million (levels in fertiliser are independently audited)
- restricting the sale of offal to that from animals younger than 2.5 years.

In New Zealand, the main contributor to the build up of cadmium levels in soil is through the use of phosphate fertilisers. In more industrialised nations, manufacturing also adds cadmium to the environment.

There is no practical method of eliminating cadmium from phosphate rock, and its level is managed through the use of phosphate rock which has low levels of the naturally occurring heavy metal.



Research has shown that there is no direct correlation between the level of cadmium in soils and its uptake by pasture or food crops. Factors such as soil acidity, chloride, clay and organic matter content, as well as the propensity of specific plant types to take up cadmium, all play a role.

Cadmium does not enter the food chain through muscle meat or milk.

Fert Research has committed to being a contributing member of the Cadmium Working Group, which operates under the auspices of MAF.

\* Report One: Cadmium in New Zealand Agriculture, Cadmium Working Group, September 2008. See [www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/land-management/cadmium-in-nz/risks/page-06.htm](http://www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/land-management/cadmium-in-nz/risks/page-06.htm)



# editoria

by Dr Hilton Furness – TECHNICAL DIRECTOR

## Overstating case harms better understanding

One of the bigger barriers to individual New Zealanders being able to reach an informed position on climate change and greenhouse gas issues can be the passions and actions of those at the two extremes of the debate.

Some within the environmental movement will immediately paint doomsday scenarios around any data or survey released that appear to support their position, while the sceptics just as quickly treat all potentially negative reports as 'humbug'.

There is this constant attempt by these extremes of viewpoint to draw us towards the 'An Inconvenient Truth' or 'The Great Global Warming Swindle' camp.

In October, the majority of New Zealanders would have been taken aback by media headlines proclaiming that 'New Zealand's eco footprint was the sixth largest in the world'. Or, in more blunt language, we are the world's sixth worst nation for making demands on the planet.

The base for this headline was the World Wildlife Fund's Living Planet Report 2008, which measures the demand a country makes on the land and sea in terms of the resources it uses, and the waste it creates.



While this was music to the ears of 'I told you so' environmentalists, the average Kiwi was baffled and prone to thinking 'how come?'

On digging into what the 'eco footprint' means, light bulbs start to go on when it's realised that this is because of our extensive use of our land for grazing, thereby producing food for more than 10 times our population, and our seas for fishing.

This is demonstrated if you look at the carbon footprint measure within the report in isolation from the other five measures used.\* Based on the amount of greenhouse gases our activities produce on a per capita basis, we suddenly slide down the league table to 30th, equal with Poland, Kazakhstan and Lebanon.

When we look at our biocapacity, we find that it is in credit to the tune of 50 to 100 percent of our natural footprint. This indicates an ecological reserve – a biological wealth that

is an asset. We should aim to use this asset as a competitive advantage. It is also evident that countries with a low carbon footprint are mainly poor and less politically stable.

Then in November, the United Nations released a Climate Change report\*\* on the percentage changes in emissions by country. If you excluded land use change, New Zealand ranked as the sixth worst performer of 41 countries. If you included land use change we were the fifth worst performer.

However, if you look at the volume increase in emissions, some 11000 GgCo<sub>2</sub> equivalent, we ranked 16th.

In reality, our greenhouse gas emissions amount to only one tenth of one percent of world output, and as such we barely register as a footnote. We rank 65th equal\*\*\* with 22 other countries in terms of total greenhouse gas emission (which means there are 91 countries with greater or equal emissions to us).

Measures such as our 'eco footprint' and 'percentage emissions increase' provide us with interesting data, but only that, and certainly not proof of us being a profligate nation for which we must immediately make amends.

It would be more constructive if comments around measures such as these were balanced, and sought to explain what it is saying and what it means in context.

Most people do not have a sufficient understanding of science to know whether what is being claimed is valid, selective or distorted use of data. In such a situation, there is a greater responsibility on those with the knowledge to choose the positions they take with great care.

As a nation, if we want to achieve buy-in to sound environmental initiatives scientists, researchers and policy makers have a responsibility to be honest with the public, and gain their trust.

There is a greater chance of doing this if the option put before the public has been arrived at through the collaborative efforts of those that have similar end goals, but different ways of achieving them.

\* Built up land, fishing ground, forest, grazing land and crop land

\*\* National greenhouse gas inventory data for the period 1990-2006, United Nations, FCCC/SB1/2008/12, November 2008

\*\*\* [http://en.wikipedia.org/wiki/List\\_of\\_countries\\_by\\_carbon\\_dioxide\\_emissions#List\\_of\\_countries\\_by\\_emissions](http://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions#List_of_countries_by_emissions)

# Focus on collaborative governance

## Adversarial approach has its supporters, but is collaboration a better way forward?

New Zealand's governance structures at national and local levels have at their heart the 'adversarial' approach, where one side takes a position, and then invites others to convince them to change their mind.

It can be argued that this approach has served us well, and leads to well researched and scrutinised laws and regulations.

Conversely, it also leads to the entrenchment of views and protagonists 'debating' issues rather than taking the trouble to listen to the concerns of others, and seeking a pragmatic resolution. In day to day life, it is akin to the difference between seeking redress through the courts, rather than through mediation.

In his article *Collaborative governance – could it make a difference in New Zealand?*, guest columnist Guy Salmon examines an alternative approach, that of collaboration, and finding answers that meet the main requirements of opposing viewpoints.

Certainly in our activities around the Resource Management Act, water quality and greenhouse gas emissions we have felt on many occasions a greater commitment to collaboration from all concerned would have produced better outcomes.

A good example where the collaborative approach can achieve results is the work being undertaken by the Cadmium Working Group, which involves representatives from Government agencies, regional councils and the primary sector. This group is learning how to better work together, and is now developing ways to ensure cadmium levels in soils never become a problem in New Zealand. (See article *National strategy next target for cadmium working group.*)

Topics that would benefit from non confrontational engagement are improving nutrient use efficiency and water quality. If we can find common ground with the wider community and regional councils over the initiatives we are taking, we are convinced that this will lead to farmer benefits, an improvement in water quality (through less loss of nutrients to waterways) and also lower greenhouse gas emissions from animal urine and dung patches.

If two parties have the same goals, even if for different motivations, then there seems no reason why they would not work together.

## COLLABORATIVE GOVERNANCE – COULD IT MAKE A DIFFERENCE IN NEW ZEALAND?



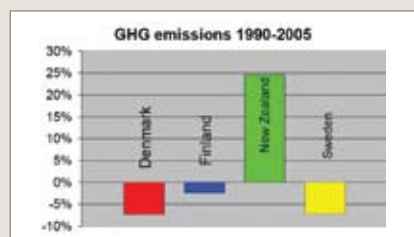
**GUEST COLUMNIST**  
**GUY SALMON** shares his views on a possible approach to achieving agreement between the interests associated with the primary sector and environmental protection.

Incentives facing farmers are shaped by long-established social institutions which, among other things, have partly or wholly exempted agriculture from regulatory controls over diffuse source discharges; from the polluter pays principle; and from the payment of rent for scarce resources like water. With the rise of contemporary environmental concerns, these traditional institutions have become unstable. Change is now emerging, for example in proposals to cap nutrient inflows into sensitive lakes; the Kyoto-based emissions trading scheme; and the controversy over water permits in Canterbury. An important question is how these changes are managed by central and regional government agencies. New Zealand's record – from Rogernomics to environmental debates like those over native forests – has been often characterised by resistance to change, followed by polarised, politicised arguments, and then lurching episodes of dramatic change. Could we manage change better?

Ecologic's studies in three Nordic countries – Finland, Sweden and Denmark – have documented the use of collaborative governance processes to reach agreement between primary sector and environmental interests, creating a managed process of change. Stakeholders, under the leadership of a strong chair, work together over a period of one to three years with the aim of finding a consensus on a way forward. An important learning process takes place as the participants immerse themselves in technical information, and come to properly understand the viewpoints of those on the other side of the table. Scientific disputes – so often rooted in differences over how to treat risk or uncertainty – can also be resolved in this roundtable setting. A research budget allows the group to commission independent advice on questions such as the cost-benefit of competing policy proposals.

What motivates the participants in these processes to exchange compromises with each other? Our interviews highlighted the motivating power of established conventions: that consensus decisions will normally be implemented; and that those organisations who participate responsibly are invited back to do it again on the next round of issues. Thus, those who play the collaborative game can gain a valued degree of control over the destiny of their members' vital interests. The participants also valued the durability of what could be agreed consensually, as against the risks of lurching policy change over the electoral cycle.

For New Zealand, the benefits of this collaborative approach are worth thinking about. There is evidence that the decisions flowing from these processes are not just more integrated between environmental and economic factors: they are also more technically informed, scientifically grounded and economically rational. In multi-layered governance systems (central, regional and local government), there is better commitment through the system to policy implementation, and more certainty for investors. Progress toward environmental goals, although perhaps robbed of 'dramatic' short-term victories for environmentalists, shows better progress over a fifteen-year perspective (see graph).



Guy Salmon is executive director of the Ecologic Foundation, a think tank focused on sustainable development ([www.ecologic.org.nz](http://www.ecologic.org.nz)). Ecologic has implemented FRST-funded research programmes on comparative studies of resource management in New Zealand and the Nordic countries, and on market-based policy instruments for environmental management. Its latest research project is looking at how to adapt and develop collaborative governance approaches in New Zealand policy-making. This work is funded by a consortium of public and private sector organisations including FertResearch.

# Agricultural emissions trading – second look wise initiative

*The National led Government has stated it will completely review the Climate Change Response (Emissions Trading) Act 2008, including the merits of replacing the emissions trading scheme (ETS) with a carbon tax, and even the science that says humans are to blame for climate change.*

**I**n making that announcement, the Prime Minister said he remained confident an amended ETS will be passed into law before the end of next year.

Immediately the announcement was made, interested parties praised or renounced the decision.

The forthcoming select committee process and final decision, whatever it is, promises to be no less divisive as the original debate and decision.

Fert Research welcomes the review, although we remain committed to our original position that a properly designed ETS is the best option, and the inclusion of agriculture, although desirable, needs international consensus.

We also believe that a carbon tax is preferable to a poorly designed ETS.

An idea worthy of consideration is that rather than going it alone with an Emissions Trading Scheme, New Zealand should look at aligning or making the scheme it adopts generally compatible with that of Australia.

This would be particularly useful from agriculture's perspective because at least the inevitable costs associated with any emission scheme would be similar for both countries, an important consideration given Australia is one of our great competitors in primary export markets.

In July this year, the Australian Government published a Green Paper on a possible scheme, and sought feedback from interested parties. That paper noted

agriculture accounts for 16 percent of Australia's greenhouse gas emissions, and the proposal is that if emissions trading is introduced in Australia, agriculture should comply by 2015.

One of the submissions received\*, from the Australian Institute (an independent public policy research centre funded by grants from philanthropic trusts, memberships and commissioned research), labelled the concept 'the impossible dream'.

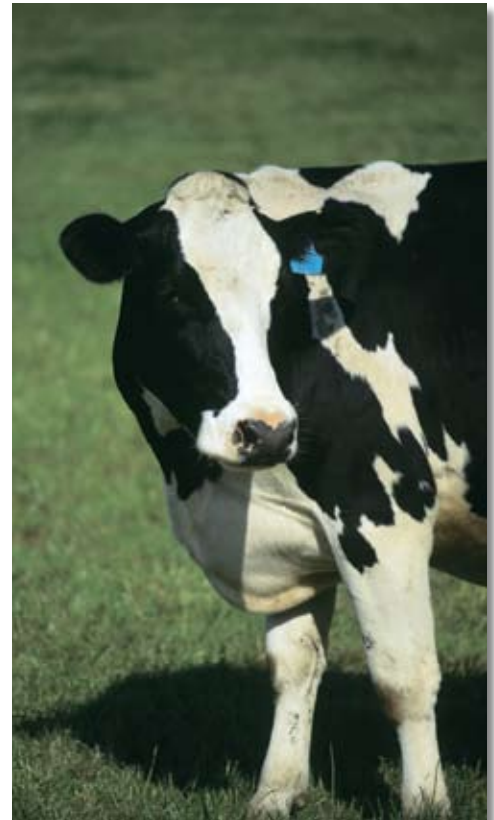
The Institute's three key objections to introducing a scheme covering agriculture were based around

- agricultural emissions cannot be measured accurately and cost effectively
- it would be difficult for farmers to establish practical abatement systems and;
- the vast numbers of individual farmers and the administrative burden involved.

It does not appear to be commercially smart for New Zealand to include agriculture in an emissions trading scheme if Australia was to exclude its agricultural sector from its scheme. It would lead to our exports being commercially disadvantaged.

If New Zealand's scheme does proceed unchanged, we believe the three key objections The Australian Institute has to emissions trading can be addressed.

Through the computer modelling system



Overseer, it is possible to achieve a reliable estimate of each farm's greenhouse gas emissions, and as the data required to estimate emissions is already collected to develop nutrient management plans and budgets, collecting and administering the data need not necessarily be an administrative nightmare.

Now that New Zealand's elections are behind us and the shape of the new Government has been determined, the idea of working with Australia to develop a compatible or similar trading scheme is one that should gain renewed momentum.

We need to get our response to agricultural greenhouse gas emissions dead right, and there is everything to be gained from our policy makers taking another look at the entire issue.

\* The Australian Institute, Agriculture and Emissions Trading, discussion paper 102, October 2008



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