

Governance of the Rural Environment – Are Existing Approaches Working?

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The central issue: uncontrolled land use intensification

One good measure of the sustainability of a land use is the quality of the water that flows off the land. In New Zealand, while progress has been made in cleaning up point source discharges such as those from factories and municipal sewerage systems, key aspects of water quality are getting worse in areas that are dominated by intensive land use (Ministry for the Environment 2007).

Nitrous oxide emissions from agricultural soils are an important greenhouse gas in New Zealand. They reflect high nitrogen fertiliser use and high levels of faecal deposition from livestock on wet soils. These emissions are also getting worse – up 27 percent since 1990, a faster rate of growth than New Zealand's total greenhouse gas emissions (Ministry for the Environment 2007).

Our soils themselves are deteriorating under more intensive land uses. More than half the pasture soils under dairy farming, and soils used for mixed cropping, are suffering from soil compaction beyond recommended limits (Sparling et al 2001). This may be taken as an indication that current land use practices are approaching their limits.

Growing for Good, the Parliamentary Commissioner for the Environment's report on agricultural intensification released in November 2004 (Parliamentary Commissioner for the Environment 2004) pointed to the adverse environmental implications of continued land use intensification in New Zealand agriculture. The trends it warned of are not new. The report was in effect a warning to avoid the mistakes that have already been made in Europe, North America and North Asia.

The unpaid external costs of UK agriculture in 2000 were estimated at NZ \$610/ha/year, which was 89% of average net farm income in that year (Pretty et al 2000). This study's treatment of water pollution damage was confined to costs associated with remediating human drinking water sources and dealing with about 2,600 acute pollution incidents per year. In a significant omission from a New Zealand perspective, the cost to recreational users of degraded water and eutrophic conditions was not estimated. Had it been included, the total unpaid external costs of UK agriculture might have been shown to exceed total farm income.

Once land use intensification has severely degraded water quality, the effects are slow, difficult and costly to reverse, as is shown by the experience of Denmark (Salmon 2006). That country adopted its first Action Plan for the Aquatic Environment in the mid-1980s with the objectives of reducing national

phosphorus flows to waterways by 80% and reducing national nitrogen flows by 50%. Twenty years later, those objectives appear to have finally been achieved, but it required stringent, sustained, intrusive and costly environmental regulation of agricultural activities. Even now, because of ecosystem lag effects, 70% of Denmark's lakes and 56% of its rivers and streams still fail to meet the water quality objectives established in regional plans. Persisting eutrophication means the abundance of crustaceans in Danish coastal waters is still at only half their 1980 level.

New Zealand's resource management system, as discussed further below, does not generally seek to control the adverse effects of agricultural land use intensification. There is a prevailing, complacent view about the environmental risks, in part because of a mistaken belief that serious damage is only likely to occur in countries where agricultural output is subsidised. However, international prices for major agricultural commodities have now reached levels at which New Zealand farmers face the same incentives to over-intensify as European farmers have done in the past.

Growing for Good highlighted that for many years, New Zealand has been heading down a similar path to European countries, notwithstanding our emphasis on grassland agriculture, and our apparent lack of farm subsidies. In fact, an absence of subsidies cannot really be claimed for New Zealand, since failing to charge farmers for external environmental costs is in itself a form of subsidy. This reality has recently become more transparent with the explicit valuation of New Zealand's Kyoto Protocol liability in the Crown Accounts, a liability to which the growth of dairy farming in particular has made a major contribution.

Institutions influencing the impacts of NZ agriculture

Institutions are sets of rules, processes or norms that guide human behaviour (Connor and Dovers, 2002). Individual and group choices are determined by the structure of institutional arrangements, consisting of both conventions and entitlements (Bromley 1989). The institutional framework governing agriculture creates a series of incentives and disincentives that strongly influence agriculture's environmental impacts.

Analysis of the institutional architecture in New Zealand suggests that key elements function to privilege agriculture by exempting it, partially or wholly, from the sustainability constraints which are applied to other economic activities. The results are that agriculture is less accountable for its environmental externalities, and its resource uses, than are other sectors.

Key relevant institutions, discussed further below, are these:

- the privileged general exemption from regulation of diffuse source discharges to the environment, a privilege that is not extended to point source discharges;
- the general failure to charge for environmental externalities;
- the entitlement to use water resources free of charge;
- the non-taxation of capital gains from investing in land.

What is especially important is the impact which this situation has on the pattern of investment going forward. It suggests that the growth of types of agriculture with high environmental impact will be encouraged relative to agricultural and non-agricultural activities of lower environmental impact. Our current institutional framework creates a systemic risk that New Zealand will over-invest in land use intensification, and will become over-reliant on this form of export growth and economic development, at the expense of other opportunities that are less favoured by our institutions.

It should be recognised that this analysis is not about “blaming” farmers. Most farmers are well-motivated toward the environment and will do what they can afford to minimise their impacts. However, farmers are running a business, and they must respond to the incentives they face. Those incentives include global market prices, over which we have no control; and the incidence or non-incidence of rules, costs, rents, and taxes, which are determined by our institutions. These institutions reflect the balance of power in New Zealand at the time they became established – generally a long way back in our history. They date from an era when farming interests effortlessly dominated government, and little consideration was given to wider public interests.

The four key institutions identified above are addressed in more detail in the next four sections.

Privileged exemption of diffuse source discharges from regulation

In New Zealand, pollution is controlled by the Resource Management Act 1991. Section 15 prohibits the discharge of any contaminant into air or water, or to land (in circumstances which may result in that contaminant entering water) unless the discharge is expressly allowed by a rule, a resource consent or regulations. Accordingly, point source discharges are, in general, regulated by regional councils, and good progress has been made in cleaning these up.

In contrast, over most of New Zealand, activities giving rise to diffuse source discharges, such as fertiliser applications, allowing farm livestock access to waterways, and allowing agricultural land uses which do not comply with land capability parameters for highly erosion-prone land, are commonly facilitated as permitted activities in regional plans. Conditions may apply to these permitted activities, but where such conditions exist, they are rarely monitored or enforced.

There have always been technical challenges in holding farmers accountable for diffuse discharges. However, the difficulty of getting even a stream fencing rule into plan documents highlights that the main barrier has always been political. Today, the technical barriers are receding, with the availability of modelling tools like Overseer, telemetering and remote sensing technology and even the use of helicopter monitoring potentially enabling a much higher level of practical accountability.

Even so, only in the catchments of a handful of iconic water bodies, notably Lake Taupo and the Rotorua Lakes, has the exemption of diffuse source nutrient discharges from regulation been reversed. Elsewhere, this exemption, essentially a privilege to agriculture, arguably presents the principal barrier to restoring fishability, swimmability and good ecological health to New Zealand's lowland waterways. Accordingly, the Government's Sustainable Water Programme of Action has identified as a 'key outcome' the need to improve the management of the undesirable effects of land use on water quality (Ministry for the Environment 2006).

Failure to charge for environmental externalities

The polluter-pays principle has long been recognised throughout the OECD as a key regulatory principle. Full implementation of the principle entails making the polluter pay both for the practical measures required to curb pollution, and for offsetting any residual pollution that could not be eliminated by these measures. In New Zealand, point source dischargers must always meet the costs of pollution control required by their resource consent conditions, and in many cases (though not all) they are also required to make financial contributions under RMA section 108 in respect of any residual discharges.

In contrast, non-point source dischargers in the farming sector are in several regions paid subsidies to induce them to undertake pollution-reducing activities such as riparian fencing and erosion prevention plantings. Other than in the proposed plan for Lake Taupo, there are no charges currently imposed for discharges to water from agricultural activities. Even at Taupo, only those expanding their diffuse discharges above present levels will face any cost, with public authorities picking up an \$81.5 million bill, effectively to cover the cost of farmers' existing discharge "rights".

Similarly with the Government's proposed emissions trading scheme, taxpayers will bear the cost of growing agricultural emissions through the first commitment period to the end of 2012. This direct subsidy to agriculture, valued at \$1.31 billion (Bertram & Terry 2008), will fuel the accelerated expansion of emissions-intensive dairy farming over that period. Beyond 2013, taxpayers will pay for a free allocation of emission permits to farmers at 90% of their 2005 emission levels, a subsidy which is scheduled to taper off gradually between 2018 and 2030 under the latest announced concession to farmers (Clark 2008).

Entitlement to use water resources free of charge

Water users are generally expected to pay the infrastructure and pumping costs of water, and in some cases, they also pay the administrative costs of water management by regional councils (though these latter costs have often been met from general rates, rather than by water users). Nowhere in New Zealand however, do water users pay a rent for the use of this valuable resource, notwithstanding that there are strong public policy reasons for charging rent for water resources (Scherzer and Sinner 2006).

Water is not a major input into most economic activities, but it is a major input into irrigated agriculture. The agriculture sector accounts for an estimated 77 percent of all water allocated for consumptive use in New Zealand (Statistics New Zealand 2004). The exemption from paying rent for water applies generally, and is not specifically directed at agriculture, but the major beneficiaries of this policy are irrigators. Accordingly, the major practical consequence of maintaining a 'free water' policy is to encourage land use intensification, with its associated (largely unregulated) environmental impacts.

Analysis of the effect of adding irrigation water to Canterbury land during the period 2000-2003 identified that land values were boosted by between \$5,000 and \$6,000/hectare (Crighton Anderson 2004). This change in the net worth of the land owners is an important consideration in irrigation conversion (The AgriBusiness Group 2004). On a 200ha property, it represents a wealth transfer to the landowner of at least a million dollars.

In effect, in the absence of any water rents, the value of the water becomes captured in the value of the land. All of the benefit of irrigation is captured by the owner of the land – none is shared with the owner of the water. As water becomes a scarcer resource, and as the public becomes more aware of its effective privatisation, the inequity of not charging any rent for it will increasingly come under challenge.

Non-taxation of capital gains

New investments in intensive dairying appear to be driven not by operating profitability, which for the average New Zealand dairy farm owner-operator was only just over 3% during 2003-05, but rather by capital appreciation, which when included yielded a total return on equity of 17% in 2003-4 and 32.5% in 2004-05 (Dexcel 2006).¹ New Zealand is unusual among OECD countries in exempting capital gains in property from taxation (Tax Review 2001). Since 1990, average dairy farmers have received about two thirds of their returns from appreciating land values (Watters 2005). This trend has increased in recent years. In the five years to 2006, the average farm dairy owner-operator increased his or her equity by \$1.43 million, 95% of which has come from growth in capital value (Dexcel 2007).

The fact that these returns are tax-exempt is likely to have distorted New Zealand's investment patterns toward the dairy sector, and further stimulated the strong recent increases in land values. Obtaining an adequate return where higher land values prevail requires more intensive land use practices; and when irrigation water is also free of rents and environmental impacts are

¹ The latest available figures are for 2005-06 but in contrast with previous years' figures they are based on voluntary farmer registrations which may not be representative of the industry as a whole. Data for previous years used a random sample stratified by region and herd size. However, the picture is similar, with return on operating assets at only 3.4% and total return on equity, including capital gain, at 14.4% (Dexcel 2007).

not charged for, intensification of land use is more likely to occur, and to translate into environmental degradation.

Soaring land values in New Zealand's hill country are one of the factors, along with a lack of accountability for accelerated soil erosion, which explain the failure of commercial forestry to displace pastoral agriculture from many erosion-prone hill country sites in recent years. This is unfortunate, as moving more erosion-prone land into forestry would provide a range of environmental benefits.

The ability of high-earning dairy farmers to take 95% of their returns through tax exempt channels raises equity issues. The associated inflation in rural land values, relative to comparable land in other countries, may also pose a competitiveness threat for New Zealand agriculture, although this issue is obscured by the current global commodity price boom.

These institutions are unstable

In the field of climate policy, both main political parties are publicly committed to an emissions trading scheme which includes all sectors and all gases. Notwithstanding the huge gifts to agriculture at taxpayers' expense described above, this political situation clearly signals that at least one of the institutions which confer a privileged status on agriculture is in an unstable state. The political willingness in principle to put a price on agriculture's greenhouse gas emissions, and to make individual farmers accountable and responsible for the social cost of these emissions, are the first steps in an institutional transformation that can be expected progressively to have a major impact on the other main areas of agriculture's environmental footprint: the degradation of water and soil resources.

Growing technical capability to hold land users accountable for the effects of their actions on natural resources is making an important contribution to these institutional changes. But probably the most important factor is that the foundations of agriculture-privileging institutions in New Zealand's popular culture are now shifting. As in Europe and elsewhere, agriculture in New Zealand is losing its 'sacred cow' status. It is increasingly expected to meet the same social and environmental obligations that society places on other economic activities. An interesting question is how this change will be effected in New Zealand.

Over at least the last half-century, economic and environmental reform in New Zealand has proceeded through prolonged periods of entrenched refusal to change, followed by polarised debate and sudden lurches of reform. Carefully planned transitions have been rare, let alone the sort of continuous, collaborative policy innovation that enables progressive countries to adapt to circumstances, seize opportunities and safeguard the long term interests of all sectors of society.

In the Nordic countries, such continuous policy innovation is facilitated by a collaborative style of governance (Salmon and Zilliacus 2007). Some

adaptation of this approach may be the most appropriate way for New Zealand to move toward a sustainable agriculture sector. Especially from Finland comes evidence that collaborative practices can, over time, be learned and institutionalised.

New Zealand is not without experience of such practices. While there are few examples of national policy-making by collaborative governance, there are some regional successes, and we have also built up skills and experience at collaborative work with farmers at the individual and community level. From the experience of the NZ Landcare Trust and several regional councils we can see that most New Zealand farmers, when given information about their environmental impacts, hold personal values which lead them to respond positively in terms of improved practices – within the constraints of running a farm business.

But arguably, there is also much evidence that we will not succeed in moving New Zealand agriculture on to a sustainable footing until we address the four institutions described above, which control the business incentives facing farming. Changes to the four institutions will need to be initiated at the national level – ideally through a collaboratively agreed, managed process of change over time. If it succeeded, the probable outcome of such a process would involve a mixture of regulation, audited self-management and transitional public funding to support change.

Role and future of regional councils

Such a vision does however raise questions about the role of regional councils. At present, under the enabling mandate of the RMA, and in the absence of relevant national policy or standards, the councils have the *de facto* power to define property rights. The right to pollute waterways and erode soil is not established in law – it comes from gaining and retaining control of the regional council. Farmers take a keen interest in regional council elections and policy-making; most other New Zealanders have a low awareness of them. In addition, regional councils are often resented or mistrusted by other public entities in the region. Both factors undermine the legitimate authority of regional councils.

Environment Canterbury (ECan) provides an interesting example on both counts. A series of public awareness surveys conducted every two years since ECan's formation show a fairly consistent pattern: only about two percent of Canterbury residents can name their local, elected ECan councillor, and only about ten percent can name the chairman of the council. ECan has also been hampered by frequent opposition and criticism from the Christchurch City Council, and it has faced successive break-away attempts on the part of south Canterbury district councils. These are not strong foundations for the exercise of legitimate authority by ECan to improve the region's environment.

Unsurprisingly, many regional councils have found that doing very little to manage the environment is a good formula for avoiding trouble. Hence the

emphasis on permitted activities in most regional plans, the long delay in producing other plans, and the associated decline in water quality in intensively farmed catchments. Most regional councils appear to lack the legitimate authority they need to achieve the sustainable management purposes of the RMA. In the worst cases, regional councils have become captured by those they should be regulating, and have become an obstacle to delivering sustainable management. The councils' overall failure to act effectively has led to the need for initiatives by others, such as the Clean Streams Accord, the Primary Sector Water Partnership, and the Sustainable Water Programme of Action.

By next year, the regional councils will have been in existence for 20 years. It will be an appropriate time to take stock of what they have achieved, and whether there is a need for change. While there is a strong case for regionally-located cores of expertise in environmental management, the evidence that the elected regional layer of governance is adding value to the system is much more questionable. One option would be to do away with the latter, and revert to the type of situation one typically finds in Australian states which are of comparable population size to New Zealand, namely a network of regionally-based resource management expertise which is politically accountable to a Minister at the State level.

An alternative approach would be to stay with the regionally elected councils, but try to find ways to improve their legitimate authority to act as effective environmental managers. There are a number of options, not mutually exclusive, but each has its limitations.

Options for strengthening the legitimate authority of regional councils

We could claw back some of the power that has been devolved to regional councils, by making greater use of national policy statements and national environmental standards. Unfortunately, our track record over the years in actually getting these written, especially in a form that ensures they are effective instruments, is not at all encouraging.

We could change the electoral system for regional councils to a proportional system, thereby opening the door for the election of Maori and green-minded councillors who might ensure issues were not pushed so readily under the carpet. But there seems to be little public appetite for changing electoral systems at the regional level. Alternatively, we could change to a mixture of appointed and elected councillors, along the lines of the old catchment and regional water boards, although it is not entirely clear that such a system has worked well for our current district health boards. But neither of these approaches would necessarily strengthen the authority of the regional councils.

We could broaden the functions of regional councils, giving them wider responsibilities. This would give councillors higher prominence and accountability in the community, and thus a stronger base of personal authority with which to act for the public good. Something of this kind may

emerge in Auckland and Wellington; but in most regions it is difficult to see that city council and regional council entities could be merged into one, and there is likely to be a reluctance to give regional councils other large functional responsibilities such as health or education.

Improving the funding base of councils might help them to get things done, as it is always easier to get agreement on taking action if you are able to offer to pay resource users for behaviour change. Existing regional councils are quite unequally endowed, with their capacity to do things on the ground being more related to the circumstance of whether they inherited port company shares than it is to the size of the environmental tasks they face in their regions. However, significantly changing the funding base of regional councils is not on the agenda following the recent rates inquiry. In any case it is doubtful how far New Zealanders would or should go down the European Union track of paying farmers to meet their environmental responsibilities on an ongoing basis.

Another option, beloved of democrats, would be to try and revitalise the electoral processes for regional councils by achieving quantum increases in public awareness and informed participation. There are certainly encouraging signs from the recent ECan elections that the public can be aroused to take a keener interest in environmental degradation. But it has taken many years to build public engagement in Canterbury to a level to achieve such results; and in the meantime a countervailing concern about rate increases in Waikato has led that regional council's composition to change just as decisively in the opposite direction, despite the looming urgency of Waikato's environmental problems.

Yet another option is to build the legitimate authority of the regional councils through encouraging them to follow collaborative governance processes, building commitment to action through bringing all main stakeholders to a point of consensus about the need for it and about what should be done. But two features of the New Zealand scene make this difficult in practice. One is the traditionally combative style of leadership of some of the main relevant stakeholder groups. The other is the difficulty of reconciling a devolved, open, participatory policy-making process with the ideal of deliberative democracy through collaboratively agreed outcomes (Salmon et al 2008). But these are not insuperable problems if there is the political will to make it happen.

Arguably however, the same collaborative governance processes might most effectively be used initially at the national level where, with the right leadership, pressure to make progress might more effectively be brought to bear on the participants. Of particular interest in this regard is another Nordic innovation, namely, the experience of the Swedish Parliament in working with stakeholders to build a consensus around a set of national environmental objectives to drive forward action by central, regional and local government agencies.

Sweden's national environmental objectives

In Sweden during 1999-2000, the 15-member Bergqvist Committee provided a collaborative process through which all seven of Sweden's political parties working together with government officials, business, trade union, local government and environmental representatives reached agreement on 15 national environmental quality objectives to be achieved by 2020, along with 71 interim milestones, all supported by a range of agreed indicators (Committee on Environmental Objectives 2000). This framework of objectives was then adopted by an overwhelming majority of the Swedish Parliament.

Also agreed was the establishment of a multi-stakeholder council to monitor progress and report regularly to the Parliament, with a major review every four years. This is a results-oriented public process, which puts the spotlight on any public agency which fails to perform in relation to the environmental objectives for which it has responsibility. The review process has led to refinement, especially greater clarification and specificity, of the milestones over time. The latest report on progress is encouraging regarding the milestones, while warning that further measures will be needed to achieve the ultimate objectives (Miljömålsrådet 2008).

Sweden's environmental objectives are not legally binding and so cannot be enforced on holders of resource consents. However, they do impose duties on public authorities including regional authorities, which have the principal responsibilities for environmental management in Sweden. Also, adoption of the objectives was accompanied by large increases in public expenditure to achieve them. Our assessment was that the non-legally binding character of the objectives was important to the ability to achieve broad consensus around a relatively visionary set of objectives in the first place, and it has not undermined the capacity of the objectives to drive forward real improvements in Swedish environmental performance (Salmon 2007).

Moreover those we interviewed in connection with the objective-setting and review process had faith in the power of the process itself to address difficult, emerging issues in the future. Already, following the first review in 2004, the parliament agreed to add a sixteenth objective covering biodiversity, as well as five new interim milestones, and changes to 18 others to reflect new scientific findings. A budget boost was also agreed. All of Sweden's regional authorities have conducted public processes in their own areas to establish objectives and policies to implement those set at the national level.

Here in New Zealand, the National Party has signalled a clear interest in implementing a Swedish-style, environmental objective-setting process (Smith 2006). If this is implemented during 2009, and effective objectives and milestones are established, an important step will have been taken toward improving the accountability and legitimate authority of New Zealand's regional councils.

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