Property Rights in Water Quality

A Review of Stakeholders' Understanding and Behaviour

Report prepared for the
Ministry for the Environment

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Executive Summary

1. Property rights have been broadly defined as the social pattern of rights and duties established through custom, convention and law. In this study, the term "property right" is used in its broader social and economic context, rather than as a pure legal term conferring ownership.

2. *The key issue with a property rights framework is that it is not the property which is owned, it is the rights to use the property which are owned.* The nature of the rights affects the behaviour of people managing and using a resource. Importantly because property rights distinguish the rights of an individual from the rest of society, they have scarcity and therefore value. Rights are typically defined and enforced by the State, and in the case of water we are interested in the set of private property rights which have been created in public property (the water resource). Property rights are an integral element in the management and use of these resources.

3. The government's Sustainable Development Programme of Action has identified problems with water quality in New Zealand associated with non point source (NPS) discharges. NPS discharges contaminants arise across a more diffuse area, and it is not possible to point to a single location from which the discharge is derived. Agriculture is considered to be the primary source of NPS discharges because materials used in agricultural production, such as fertiliser and pesticides, as well as discharges from the soil and animals, move into both surface and groundwater systems at higher rates than would be observed under a natural system.

4. Management of water quality occurs through the RMA (1989), where contaminants can be managed through discharge permits (S15) or potentially through land use controls (S9), and it allows for regional councils to develop plans to manage water quality. Government also has the option of using subsidies to achieve water quality aims, such as is observed in catchment control schemes which subsidise plantings and fencing in order to protect water quality. Property rights to NPS discharges are not well defined in the NZ context, and the approach which is chosen to manage NPS discharges will determine the nature of the property rights which are assigned to different groups.

5. This study was commissioned as part of that programme to address the practice and perceptions of property rights in water quality as it relates to NPS discharges. The study involved focus group meetings and individual interviews. Three focus group meetings were undertaken for landholders, in Waikato (Matamata), Bay of Plenty (Edgecumbe) and Canterbury (Irwell). Regional council staff in each of these areas were interviewed regarding plan status. Individual interviews were undertaken with other stakeholders with an interest in water. The results discuss the nature of the landholder's beliefs about their impacts, their perceptions of responsibilities and rights, and the impact of their perceptions on behaviour.

6. The results showed that landholders generally understood and accepted that land use activities have an impact on the environment. However this understanding is probably limited in respect of NPS discharges, and the participant's appeared to have a greater consciousness of impacts on the near environment than on more distant environments and communities. There was a general theme that it was a small proportion of other landholders who were creating most of the problems. This largely tallied with other stakeholders' view of landholders' understanding.

7. The landholders do not see themselves as having an unconstrained right to pollute – the groups were all open to the concept that they had a responsibility to minimise their impact on the environment, and accepted the need for constraints on their rights based on regulation. By many this was simply seen as enforcing the responsible approach to management, which embodies concepts of stewardship and sustainability. There was a strong view that any constraint had to be scientifically proven.

8. The landholders see their key right as an ability to making a living off the land. They were largely reasonably accepting of the need to constrain their rights to mitigate scientifically proven affects, and they did not see a specific right to continue a particular land use, nor to be able to discharge at a particular level. However the limits of acceptable regulation were the envelope of an ability to make an income, provide for their families, and provide opportunities for growth off the property. This was the basic right they believed they gained with the decision to purchase the land and live in the area.

9. The other stakeholders spoken tended to regard the community's values as paramount. However the differences between the landholder view and the other stakeholders' view was more about where in the scale of a continuum the rights should be constrained. Even among the other stakeholders there was a considerable spread of views about the level of rights that landholders have. We feel positive therefore about the potential for a consensus view to emerge about the nature of those rights.

10. Our overall impression is that there is no significant impact from the current situation on firm management and behaviour, despite the lack of certainty as to their current rights. Participants appear to regard the potential for changes to their rights as a risk that is understood, but too remote at present to be worth considering. This attitude also led to a strong desire to avoid changes which involved further regulation, even where they increased certainty.

11. The study gave some important pointers in the development of tools for developing management regimes for NPS. The discussion pointed to the need for flexibility in the development of regulatory tools, with participants valuing the ability to innovate and develop their operations within the context of responsible or sustainable impacts. A number of factors such as the high regard for stewardship of the land held by participants, and low awareness of NPS discharges points to the potential for approaches which raise awareness of NPS issues and the impacts of discharges at a distance from their property, expand the concept of responsibility and stewardship to a wider social and geographic landscape, and use the peer group concept to assist management of NPS discharges through community based solutions.

12. Government needs to be aware of the precedents it is setting in the Lake Taupo and Rotorua Lakes approaches to managing NPS discharges. These situations will act as important test beds for approaches to regulation and will also establish precedents in terms of property rights. In particular payment of compensation implies existing use rights for established landholders. The wider implications of any actions in these cases needs to be explored before programmes are implemented, and incentives to change could be packaged as transitional measures to assist with rapid change rather than compensation.

1 Background

Property rights are an integral element in the management and use of resources. Property rights define who has an interest in a resource, and the extent or nature of that interest. They are defined by custom, convention and law and they affect the behaviour of people managing and using a resource. Property rights assigned to economic goods determine the way they are produced and managed.

Water quality is an economic good because it is valued and used by a number of parties. Activities which affect water quality therefore have a potential benefit or disbenefit to the extent that they have an impact. Where these benefits or disbenefits occur to parties other than the person making the decision, they create what are known as externalities. Because of the nature of water most activities which affect water quality do so adversely and this adverse effect is a negative externality for other parties. These negative externalities represent key public policy issues.

The Sustainable Development Programme of Action has identified problems with water quality in New Zealand associated with the impact of human activities. Discharges which affect water quality are generally divided into point source and non point source. Point source (PS) discharges can occur from effluent treatment plants or stormwater, factories and a large range of domestic or other industrial sources. They are distinguished by an easily identifiable source and point of discharge. These discharges are considered to be generally well controlled in New Zealand now, and there would be few significant PS discharges remaining which are not directly regulated under the RMA (1989).

Despite this level of management there is concern about the continuing degradation of New Zealand's water resources, and attention has moved to non-point source discharges (NPS). These contaminants arise across a more diffuse area, and it is not possible to point to a single location from which the discharge is derived. Agriculture is considered to be the primary source of NPS discharges because materials used in agricultural production, such as fertiliser and pesticides, as well as discharges from the soil and animals, move into both surface and groundwater systems at higher rates than would be observed under a natural system. There are two high profile examples where resources are affected by NPS pollution are Lake Taupo, and the Rotorua lakes. It is estimated that 50% of the nutrient load into Lake Taupo is derived from the 22% of the catchment in pastoral agriculture (EMS 2003b).

The Water Quality project team has developed a plan of action, and the focus for work in on water quality is rural land use impacts on waterways and water quality. The programme recognises that a critical first step is understanding the extent to which the current set of property rights restricts or encourages desired behaviour needed to underpin sustainable development. MFE wishes therefore to understand the way in which stakeholders view their property rights, and whether this restricts or encourages desired behaviour. They have commissioned this study to investigate the nature of property rights associated with NPS discharges to land. The study aims to develop an understanding of the way in which stakeholders view and act upon their property rights to activities undertaken on their land which have water quality impacts.

Note that this study is confined only to impacts on water quality which result from the discharge of contaminants. It does not consider the impacts of land use on matters such as erosion nor the way in which land management impacts on water quantity and thereby quality in affected bodies. The work does not directly address issues of water quality and property rights as they affect Maori. It is intended that the study will run in parallel with a study addressing legal aspects of water quality management.

The following sections discuss:

- the characteristics of property rights
- the characteristics of NPS pollution and the framework for property rights to water quality in New Zealand
- the study approach
- the results
- the implications of the results for understanding behaviour in relation to NPS discharges.

2 Characteristics of Property Rights

Ownership of property is an everyday fact of our society, yet it is rarely that we think about the different types of ownership that exist. We can have a piece of clothing, a block of land, or we can buy a fishing licence, and in each case we may think of ourselves owning something. In practice however our ownership is markedly different for each. We use a property rights framework to understand the different types of ownership, and how they affect behaviour. Property rights are broader than ownership, and the use of the term is not intended to convey ownership in a narrow legal sense.

We can define 'property' pretty much as anything that we find useful. Property can be something tangible, such as the piece of clothing or land. It can also be intangible, such as ideas and intellectual property[1]. We establish rights over that property – hence 'property rights'. The rights operate in a number of dimensions – such as the ability to prevent someone else using the property, to sell it, to use it in various ways etc. Our rights to a chattel such as a piece of clothing is the closest to a pure set of property rights, as we can use the clothing as we wish, prevent anyone else from using it, and dispose of it as we see fit. In the case of freehold land we hold "Estate in Fee Simple". This gives us a bundle of rights to the land, which allows us to use the land in a number of ways, largely to dispose of it as we see fit, and mostly exclude people from it. The fishing licence gives us a right to use the fishing resource, but we can't exclude anyone else with a licence from doing so, and we can't sell the licence to anyone else.

The key issue with a property rights framework is that it is not the property which is owned, it is the rights to use the property which is owned. The nature of the rights that we have to the property determine the way that we use it. Importantly because property rights distinguish the rights of an individual from the rest of society, they have scarcity and therefore value.

There are four broad types of property – private, common, public and open access. We can define these according to the ability to control access and management of the property as shown in Table 1 below. Problems arise with property which is not owned or managed by an entity. Because no-one can be excluded the intensity of use can rise to the point where the resource is destroyed – the so called "tragedy of the commons". Economists consider therefore that the establishment and vesting of property rights over a resource is a more efficient means of management than open access, even though it may fully or partially alienate the resource from parts of the community.

[1] For example Johnny Wilkinson is said to be trademarking his characteristic kicking stance.

Table 1: Types of property ownership[2]

	Owner	Example	Access	Management
Private	Private	Freehold land	By owner	**By owner**
Common	Group	Common land	By joint owners	**By joint owners**
Public	State	National Park	State	**State**
Open access	**No-one**	**Open ocean fishery**	**Uncontrolled**	**None**

The characteristics of the property right are of key importance in the way the resource is managed by the right holder. For example a short duration property right does not encourage a long term view of investment in and sustainability of the resource because the owner has to extract maximum value from the resource in a shorter period of time, and this may lead to management strategies which differ from those of a rights holder who is able to extract value over a longer period of time.

Johnson (2003) reviewed the conceptual frameworks for addressing property rights. He describes frameworks such as that of "attenuation" and "efficiency" in property rights. The concept of attenuation is based on property in an ideal, unattenuated state, such as private chattel ownership. The owner has completely free rights of use, exclusion of all others, to any use, and complete alienation. Any attenuation of the rights of the owner from this state will reduce the value of the property.

The concept of efficiency of property rights takes into account the costs of negotiating rights, the costs of policing, the costs of establishment, and the costs of litigation. The set of property rights which minimises these costs is an efficient set. In this context Anderson and Hill (1975) note the way that willingness to invest in the development and protection of property rights in the American West varied with competition for the resources and technology[3] which enabled their protection.

Guerin (2002) uses a detailed breakdown of property rights based on Scott (1988). The characteristics of the property rights of key interest are:

- flexibility: the extent to which the owner can change the mode or purpose of resource use without forfeiting the right
- divisibility – the ability to create joint ownership, to divide the asset spatially or by function, to construct temporal succession of rights
- quality of title – enforceability, certainty, security, ease of establishing ownership. Defines how secure the property holder can feel that the specified property will continue to be available in the future
- exclusivity – specificity, excludability, how many other parties to agree with on use
- duration – permanence, length and arrangements for renewal
- transferability – assignability, exchangeability, tradability.

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[2] From Guerin, 2002.

[3] Such as barbed wire which enabled low cost fencing of previous rangeland.

These categories are not completely independent or exclusive. For example the value of all the other characteristics is enhanced as duration increases (Scott 1988), and an increase in flexibility enhances the value of divisibility and transferability. The aim of a property rights regime is to maximize the incentives for property owners to maximize the long term value of the resource. This produces the most efficient outcome for society. Conceptually using the Scott approach the incentive for long term efficient management of the resource are maximized when the right exists in perpetuity, is completely flexible, certain and secure, can be simply and costlessly transferred, and where others can be completely excluded from the use of the right.

Note that the aim is to maximise the property owners' efficiency of decision making, which relates essentially to *private* goods. Water, as with many other property types, is subject to both public and private rights. The private property right must therefore be structured within a framework which takes into account the externalities which the use of the resource may generate to other stakeholders' rights.

The following section describes the framework for property rights and water quality in New Zealand.

3 NPS Characteristics and their Management in a Property Rights Framework

Characteristics of NPS discharges

Agricultural NPS discharges are highly complex and variable. Ribaudo et al (1999) describe five links an agricultural NPS system:

1. The link between production practices and movement of pollution off a farm, with variables of rainfall, soil characteristics, slope, management, and conservation practices.
2. Pollutants moving from the field to water resources, with the amount of pollution reaching the resource depending on distance, rainfall, slope, vegetation, the properties of the pollutant, and conservation practices.
3. The relationship between the discharge and water quality.
4. The effect of the change in water quality on the ability of the resource to deliver services (both use and non use) of value.
5. The value placed on the services (use and non-use) from the resource.

These authors discuss the difficulties which NPS poses for policy design. These include:

- the observability of the runoffs and pollutant loadings – monitoring of all NPS is impractical and would be prohibitively expensive. Furthermore there are no reliable proxies which can be used to substitute for direct monitoring, because of the poor correlation between ambient quality and aspects of production
- natural variability as a result of weather related events
- the heterogeneity of geographic impacts. Even in relatively small areas farming practice, land forms, climate and hydrological characteristics can be extremely variable. Even if models were able to be developed which catered for this heterogeneity, they would need to be calibrated and applied to each site
- transboundary effects – the impacts of NPS can occur at some distance from the source
- time lags – the time between the discharge of a NPS pollutant and its arrival at the location where it causes an externality can be measured in decades. For example it is estimated that it will take 30–50 years between changes in land use and adjustment in nutrient loads in Lake Taupo (EMS 2003b).

To these should be added the cumulative nature of the impacts. Although only a relatively small amount of discharge occurs from each site, the cumulative impact of a large part of a catchment with these discharges can be significant on a receiving body, which as noted above could be some distance from the discharge site.

These characteristics make policy development to manage NPS pollution extremely difficult.

Property rights framework

Originally water quality issues were managed under riparian law, inherited from English law. Riparian law enabled those with riparian rights the use of water from the stream or river, including rights to discharge into the water body. However this right was modified by the common law maxim "*sic utero tuo ut non alienum laedas*", which holds that the right to use is only to the extent that the use does not interfere with the rights of others. The concept of "natural flow" under English law also enabled those with riparian rights to receive the water in its accustomed quantity and quality (Paavola J, 2002).

Some commentators (e.g. Brubaker, 1996) regard common and riparian law as superior to regulation in protecting water quality because:

- it allows those with affected property rights (e.g. affected parties) to take direct action thus placing the right to act with those who have the economic incentive to do so, as opposed to weak and politically influenced regulatory regimes; and
- the common law and riparian law has no balancing act within it – i.e. no diminution of the riparian right to water in its accustomed state is allowed.[4] Most regulatory mechanisms, including the RMA, include an aspect of balancing of different costs and benefits which in some circumstances will result in a loss of water quality.

While this may be argued for PS pollution, regulation of NPS through common law or riparian law would appear to be problematic because of the difficulty in specifying the polluting party and the extent of their contribution. It is also questionable whether individuals would consistently have sufficient resources to pursue the necessary legal remedies.

This common law right has been extinguished in New Zealand with the passage of numerous pieces of legislation. The RMA 1989 now holds primacy as the legislation under which water quality is managed.[5] The RMA provides for management of water quality primarily through controls on contaminants as discharges (S15), or potentially also through controls on land use (S9).

Regional councils can establish management plans for water bodies. These plans can set standards for water bodies or adopt those from the third schedule of the Act. Any standards may not allow for a deterioration in water quality unless it is consistent with the purpose of the Act to do so.

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[4] Although in the US a doctrine of utilitarianism was adopted by courts for a time in the late 19th century, but this was subsequently rejected.

[5] Although other pieces such as the Health Act 1956 regulate aspects of quality through drinking water standards.

Government (local and central) also has the option of using subsidies to achieve water quality objectives with respect to NPS contamination. This occurs already with a number of catchment control schemes, where property owners are subsidised to undertake plantings and retire riparian areas. As noted by Ribaud et al (1999) the use of subsidy implies that the polluting party has a property right to pollute, and that right is being purchased by the state.

There is little prior case law or even regulation to go by in the New Zealand situation. EMS (2003b) discusses the development of potential rules for managing NPS pollution in the Lake Taupo catchment, and notes that no rules have yet been developed here for this type of problem. EMS (2003a) addressed the application of regulation to stock crossings, an analogous but more tractable issue, and noted that only 5 councils had attempted to develop rules for this type of pollution

Private and public property rights

Private property rights

As noted above private rights to pollute have not been established by the state in respect of NPS pollution in NZ. In the three regions investigated in this study no current rules are in place for NPS discharges, but all three are moving toward a regime of permitted status for NPS related activities which are undertaken in accordance with specified practice. EW and EBOP have developed or are developing rules to cap NPS discharges in sensitive areas (Taupo and Rotorua Lakes). In the case of EBOP they are likely to regulate through Section 9 (land use) limitations. In both these cases where property rights are being established in respect of NPS discharges, they appear to be recognising a level of existing use rights for landholders. NPS discharges are to be capped, with other approaches such as purchase of rights of subsidies are being considered to reduce discharges It is unclear however whether this will extend beyond these two special case scenarios if regulation is needed more widely.

In other jurisdictions private property rights to NPS have been established – for example in the US case there have been some catchments where plans have been put in place which limit the total contaminant loading on a water body, with the aim of setting in place limits, and therefore rights, to discharges for the various polluters in the catchment (Faeth, 2000).[6]

[6] This system has been extended in two cases to allowing for trading between different polluters, although trades have not yet been undertaken. Even in this case however it is not clear how closely NPS polluters have been limited in their activities, with trades taking place between point source discharges and NPS discharges (who are paid to undertake best management practice).

Public property rights

In practice the rights to maintain a particular level of water quality have been retained by the state, as representative for those values which stakeholders in society have an interest – such as the ecological values, the fishery, amenity values etc. These are generally allowed for in the RMA as effects which need to be taken into account in the management of the water resource.

Some of these effects have a higher status, such as those in section 5 (environmental and sustainability issues) and section 6 (matters of national importance). Other matters in Section 7 such as kaitiakitanga, amenity, intrinsic ecosystem values, environmental quality, and the trout and salmon habitat would appear to have lower status under the act as matters to which the consenting authorities should have "particular regard" rather than matters which must be provided for.

The stakeholder rights are therefore strongly related to the effects based regime. These rights are generally exercised through the planning and consent hearing framework. There do not appear to be many cases at present of water bodies with set standards for required quality, and thus the status of the public right to water quality is unformalised.

Property rights of Maori have not been explored in any depth in this study.

Summary

The rights to water quality in relation to NPS discharges can be represented as the private right to discharge and the public right to clean water. These are both very poorly defined, with the status of neither water quality nor NPS discharges formalised.[7] The way in which these rights are ultimately defined and managed will determine the nature of the rights which landholders will have to NPS discharges.

[7] Although the regions visited as part of this study are all proposing rules in their plans which will formalise the status of both public and private rights.

4 Approach

Three focus group meetings were undertaken for landholders, in Waikato (Matamata), Bay of Plenty (Edgecumbe) and Canterbury (Irwell). Regional council staff in each of these areas were interviewed regarding plan status. Other stakeholders with an interest in water were covered by individual interviews rather than focus groups because it was considered that their issues would be sufficiently different from those of other extractors that combining them would be counter-productive.

The focus group meetings and interviews had two objectives. They aimed to:

- identify the beliefs of the groups about the nature of the impacts on water quality of their current land use and management programme
- identify the nature of their beliefs regarding their right to undertake their current land use and management programme
- identify their beliefs about their rights to change land use and management
- identify the way in which those beliefs affect behaviour in relation to the resource.

The aim of the meetings and interviews was to understand the situation as reported by participants. There may therefore be some reporting bias associated with the results to the extent that this was not able to be isolated by questioning. Responses were not validated through any other formal means.

The focus group meetings were undertaken in a structured way, with introductions, general discussion and small group consideration of scenarios. A template for the focus group meetings and the questions worked through with the small groups is shown in Annex 1 below. Each focus group had 9–12 participants. Individual interviews followed a semi structured format, with questions tailored to the circumstances of the interviewee.

5 Results

The focus group participants were chosen on the basis of recommendation from regional councils, dairy industry representatives, and local knowledge. The selections aimed for a spread of land use types, but no particular emphasis on understanding of water quality issues. The Matamata group appeared to have a bias in membership toward those with a stronger environmental awareness. The Canterbury group appeared to have a low relative awareness of water quality issues, but we could not say whether this is reflects a lower profile for NPS discharges in Canterbury, or whether it reflects a selection bias in the group. Despite this the spread of views across the three groups was very good, and we believe the results are able to reflect the range of opinion among landholders.

The results have been described in four subsections:

- beliefs about impacts on water quality
- perceptions of responsibilities
- perceptions of rights
- impacts on behaviour.

Beliefs about impacts on water

At the beginning of the meeting every participant was asked to introduce themselves and their operation, to comment on whether they believed they had an impact on water quality, and to give one particular issue they wished to discuss. The comments at this initial stage divided in the following ways:

- Sheep and beef farmers generally believed they were not having an impact or were having a minimal impact
- The farmers in the Matamata group, who generally appeared to have a high level of environmental awareness, largely believed that farming had an impact, but most believed that for various reasons, such as mitigation measures or the type of operation (biological husbandry), their operation did not have an impact.
- The Edgecumbe group were also aware that they did have an impact, with a very high proportion answering yes or probably as to whether they had an impact.
- The Canterbury group responded mostly in the negative (with only one giving an indication that he may be having an impact but that his operation was as good as it could be). We suspect that the high negative response rate here was partly driven by a suspicion of the reasons for the research and concern over the potential for further regulation.
- Several of the negatives based their comments on monitoring of water bodies within and downstream of their properties.

These responses are not an independent sample – for example later introductions would have been influenced by hearing earlier comments. We believe however that they are indicative of a fairly high level of acceptance of the impact of farming activities on water quality.

In general discussion the acceptance of the impact of general farming activities on water quality was even higher, with comments pointing to circumstances in which farming operations impacted on water quality in a variety of ways:

> *"You would have to be brain dead to think that you did not have any impact on water quality."*
>
> *"The question really is does your operation affect water quality. I've got to say yes because at the moment you've got track up the yard, you've got tracks running into your operation, you get run off from that, so really yes we do. I mean everybody in New Zealand running an operation has got to say yes."*

The implied belief about impacts on water quality was that the impact should be seen in the light of best management practice (BMPs). That is to say that their responses were framed such that if they were operating within best practice, then they could effectively be deemed to be having no impact. It appeared that for many responding to this question, they were responding on the basis of what could be considered to be a reasonable impact. This was often stated more explicitly later in the discussions after further exploration of the issues:

> *"I don't think that we can pretend that an economic activity like farming has zero impact. You cannot aim for a zero impact position. You aim for a position that you believe is sustainable and in constant improvement."*

The groups all strongly expressed the opinion that farming was being unfairly targeted, with other parts of society also causing problems with water quality:

> *"If you put that number of houses on my land I would say there would be more environmental problems with it in houses than it would be as a dairy farm."*
>
> *"One of the biggest issues for me in water quality is the cities themselves. There are streams ... closer to Christchurch which are probably carrying large amount of pollutants into the lake, and into other areas like estuaries, and nobody is making a big song and dance about that – I think it's a terrible state of affairs."*
>
> *"The council had a problem in town with a sewerage system that overflowed and went into the estuary ... so it got in the paper but nothing else happened about it. Are they going to get prosecuted? We would be ..."*
>
> *"A law for them and a law for us ..."*
>
> *"I also wonder ... how much pollution goes into the lake from ... the wildlife that is there."*

"It's an issue that it's easiest to blame the person that its easiest to blame and sit there and try and make him do it right and you feel someone else could be better for doing that ... and not doing their bit – but it's only a quarter of the problem."

Other stakeholders considered that landholders largely didn't understand the impact of their operations on water quality. They considered that there was a growing awareness, particularly with the high profile attention on the dairy industry and the Clean Streams accord. However several mentioned that many farmers still didn't consider it applied to them personally, and that it was largely other farmers causing the problems.

We believe the results point to an understanding that land use activities impact on the environment. However this understanding is probably limited in respect of NPS discharges, and the participant's appeared to have a greater consciousness of impacts on the near environment than on more distant environments and communities.

Perceptions of responsibilities

The participants almost universally expressed the concept of stewardship in the way that they managed their land. Typically:

"I see myself not as an owner of land with rights, but rather a steward of the land, a custodian, with some responsibilities, even it is just to ones kids. I think a bit broader than that, but others don't think like that."[8]

"90% of farmers realise they are here as caretakers of the land, and that is the basic tenet that they farm by. They didn't deliberately set out to walk over everything for their own benefit – they always want to leave it better than they started ..."

One participant noted that at present, there were actually very few controls on non-point sources, but he was one of the few who saw the issue in this light:

"Really speaking, I could behave in a very irresponsible manner ... and quite frankly get away with it ... I mean there are rules but ... there is nothing really stopping me."

The concept of this responsibility was extended to impacts on neighbours and the environment, but this concept was probably limited, even among the more environmentally aware group in Matamata:

"When thinking about responsibilities, [we] tend to think of point sources rather than a broader impact across the landscape."

[8] This type of response tallies with the findings in the AgResearch survey (Parminter et al, 2002) on riparian management, where farmer respondents on average rated other farmer impact on waterways as worse than their own.

Interestingly in Canterbury the impact on neighbours was discussed in greater depth than the impact on water quality, which was partly influenced by a topical concern over impacts of new wells on neighbouring irrigation takes. Their concept of the extent to which this responsibility to minimise external impacts extended was perhaps limited:

> *"Your activities shouldn't impact too much on either a neighbouring farmer or an area farmer."*
>
> *"It [spraying] relates to what we can do that affects our neighbours ... and the same with the sprays – [we] have to be careful that they don't get into waterways. You don't spray around the fenceline or put the boom over the creek, put chemicals in the creek and things like that. That does affect our water quality."*

The Edgecumbe group had an interesting discussion about their core beliefs in relation to water quality in New Zealand, in which they expressed a set of beliefs about the state of water quality outcomes they would like to see:

> *"There are some issues you know – like Lake Taupo – we don't want that to turn to custard like Lake Rotoiti ... nobody would like to see something happen to it ..."*
>
> *"The right of a New Zealander I guess is to go to any tap, no matter where that tap is, and get clean water ... practically any sort of waterway, river, lake, sea – anything, drop their trousers and leap right in sort of thing ... without any side effects whatsoever ... I think everyone would like to head down that path and do their bit to achieve that ..."*

Based on the focus group discussions we believe that the participants have a strong ethic of minimising damage to their property, and that this extends to minimising impacts outside their property. Some of them expressed beliefs about water quality from their perspective as general members of society rather than as farmers, which pointed to strong environmental ethic. The extent to which this can be extended to all farmers is uncertain, and its extendability to NPS discharges is perhaps limited because of lower awareness of NPS issues as exhibited among the group participants. Again the sense of responsibility appeared to be greater in respect of impacts on neighbours and local area than was exhibited for more distant communities and environments.

Perceptions of rights

The groups' conceptualisation of their rights is perhaps the most interesting part of this research, and was the part on which the group facilitators tried to keep the group exploring. The concept of rights was difficult to define, because of the lack of legal formalisation in the area. It was initially easier to define how they did not see their rights.

The groups all recognised and accepted that their ***right was constrained in terms of impacts on neighbours and the environment*** – this tallied with their concepts of their responsibilities. All groups tended to use the word "sustainability" to describe the way in which these rights and responsibilities should operate. This concept was not defined, and was often accompanied by a comment such as *"whatever that means"*.

Their ***rights did not necessarily apply to an existing land use***. Many of the participants accepted that if a particular land use could be shown not to be within that "envelope" of sustainable use, then it should be discontinued. However others were resistant to the concept of banning land uses outright, and preferred to see lower stocking rates or other constraints on land management.

The groups ***accepted the need for regulation to manage the impacts of farming***. While all participants saw themselves as responsible, they accepted that there were the *"1%"* who were not, and who caused most of the problems. Thus regulation was needed to control these people. The Canterbury group was particularly keen that this regulation be confined to the local level, and that further levels of bureaucracy not be added.

There was a consistent theme through all the groups that they did have a fundamental right, that their fundamental ***right related to their ability to make use of their land to provide and income, profit, opportunities for growth, and a lifestyle***:

> *"[We] have a right to make a living off [the land] ... by using responsible methods of utilising that property that you own."*
>
> *"... have a perceived right that when you buy land you can manage it in such a way that you can make a financial return, providing you are farming in a sustainable way."*
>
> *"I believe we have a fundamental right ... I don't know what the fundamental right is, but there is certainly an erosion of it."*
>
> *"You perceive your right is to farm in a sensible manner and with that you can do what you wish on your farm, provided it doesn't impact on neighbours, other people."*

This right was seen in the context of sustainability. The concept appeared to be that the landholder has a right to do what they want as long as they are operating within the concept of an envelope of responsible or sustainable use. The definition of sustainable use was seen as having a number of dimensions, and would vary according to geography, type of land and size. Thus:

> *"Some blocks are never going to be sheep and beef and be sustainable- be fine for vegetable grower, be pretty big for a fruit grower."*

Sustainability was seen as including income, profitability and opportunity for growth.

> *"Part of that [sustainability] is you making enough money to stay on it – that is really important."*
>
> *"Something which gives growth and lifestyle that you desire."*
>
> *"Has to be monetary too because if there was something that was a hell of a lot better than dairying we'd all be doing it ..."*

Our perception was that the conflicts between environmental outcomes and their farm operations were by and large not seen by the participants as direct conflicts, but something that could be managed. Where there were direct conflicts, the issues of scientific proof, and the need for trade-offs were raised. The groups were adamant that any constraints on their rights had to be based on proper scientific evidence, which many participants believed was not available at present.

> *"It has to scientifically proven ... if they can scientifically prove to us that what we do is not right, what would we do?"*
>
> *"We don't want any restrictions or controls unless it can be positively proven that its detrimental to either to your neighbour or to the waterways or that sort of thing – there's got to be proof before restrictions come on a person doing what they want to with their property"*

The issue of trade-offs was also presented by all groups. The participants saw that there would never be zero impact from operations, and that the harm that farming did needed to be seen in the context of:

- the economic importance of farming to the economy
- the alternative land uses
- the impact of other parts of the community
- the values being affected.

> *"People are going to have to be educated so that we have the right to actually run a business."*
>
> *"If you put that number of houses on my land I would say there would be more environmental problems with it in houses than it would be as a dairy farm."*
>
> *"That is the end point we've got to look at, [what] is the end land use?"*
>
> *"What is the alternative?"*
>
> *"... should relate to the expected use of that stream. I think a small minority of people swimming in one little spot may not have the same rights as a major business upstream."*

The other stakeholders interviewed were questioned about their perceptions of their rights and landholders' rights. Almost all the other stakeholders saw the individual rights as being subordinate to the community's rights. Some saw the environmental impacts as an absolute – i.e. if they occurred then landholders would need to change their practices, while others saw the process as a "community judgement" about what sacrifices it was prepared to make – economic or environmental.

Those other stakeholders spoken to were divided on the subject of existing use rights. Most tended to support the view that there were no existing use rights – that current practice was an environmental subsidy of commercial activity, some saw the need for compensation payment not as a recognition of existing rights but as a practical political means of achieving the desired outcome or as a transitional measure to assist in coping with change, and others while not fully supporting existing rights saw moral difficulties in making people change who had been undertaking the same activity for generation.

These other stakeholders had a similar evidence based view on impacts as participants in the focus groups, but differed in that they strongly supported a more precautionary approach than was being adopted at present.

Impacts on management and behaviour

In general the study process did not work as well in terms of determining the way in which landholder beliefs about their property rights affected behaviour in relation to the resource. We believe that this is because the nature of their current property right is too diffuse, and their behaviour is essentially tied to their current management of the property. We attempted to clarify this further by presenting scenarios in which these rights were altered in some way, but the responses tended to relate more to the impact of additional regulation rather than the change in property right. For example one participant, responding to a scenario where regulation might be introduced, made it quite clear that the first management response would be too increase production prior to the introduction of the measures to ensure that they were grandfathered in at the highest level possible! We believe that the concepts were probably too hypothetical for the participants to relate to their current circumstances. It is likely that in order to work further with this aspect of the programme it would be necessary to choose a group which have greater experience of regulation or potential regulation of NPS discharges – such as the Taupo or Rotorua lakes situations.

However despite the problems encountered there was sufficient information gained from the research process to develop some useful conclusions.

Our overall impression is of ***no significant impact from the current situation***. Despite the lack of certainty as to their current rights, our primary impression is that this is not causing significant impact on management of their operations. Participants appear to regard the potential for changes to their rights as a risk that is understood, but too remote at present to be worth considering. This attitude also led to a strong desire to avoid changes which involved further regulation, even where they increased certainty.

An emphasis on the need for flexibility – many comments pointed to the need for flexibility in managing constraints on properties. Scenarios which had the potential for management innovation were preferred to those where particular activities were fixed. The participants in one group immediately noted the potential for trading of N discharge permits under one scenario, and considered this would be highly beneficial.

> *"The worst that could happen is to get really prescriptive – so many kg of N per ha."*
>
> *"There are some people who can push the boundaries and still be sustainable and not do any damage."*

Compliance costs – there was extensive discussion in both the Edgecumbe and Irwell groups about the costs of compliance associated with more regulation. When combined with the comments about flexibility, these comprised 80% of discussion regarding hypothetical scenarios where property rights were formalised in respect of NPSs. These compliance costs and hassles associated with consents could produce perverse results in terms of water quality:

> *"We are price takers largely, and we've got to drive our costs of production down, [compliance costs] just keep going up and we've got to go to the next level of intensity."*

> *"If you have to apply for a resource consent it can be that difficult that you think "stuff it, I'll just go and do it anyway" and if they catch me the fine is cheaper ... than it is to go through the process of engineers and council and all that crap and the time delays."*

Non regulatory pressure – there were several comments regarding the impact of non regulatory pressure on farming operations. These were most evident in the Edgecumbe group, with the encroachment of lifestyle operations and impact on farming operations:

> *"... [we have] main roads operating through one of our dairy farms – frankly we've had enough of the hassle, and along with other reasons we're shutting the dairy shed this year. You know the public pressure and perception whether its right or wrong in the end starts to wear on you ... [explanation of problems] ... The pressure and crap that you have to put up with means ... eventually it will get to you ..."*

6 Discussion

The lack of formalisation of property rights in respect of NPS discharges has made this research a difficult undertaking. The focus groups were unable to progress significantly beyond first order discussions about the nature of rights, simply because much of the discussion became hypothetical in nature.

We feel comfortable based on the research undertaken to draw the following conclusions about the nature of the rights as seen by the landholders:

They do not see themselves as having an unconstrained right to pollute – the groups were all open to the concept that they had a responsibility to minimise their impact on the environment, and accepted the need for constraints on their rights based on regulation. By many this was simply seen as enforcing the responsible approach to management, which embodies concepts of stewardship and sustainability. They were adamant that any constraint had to be scientifically proven.

They see their key right as an ability to making a living off the land – the participants were largely reasonably accepting of the need to constrain their rights to mitigate scientifically proven affects. In the group meetings we pressed them to discuss the limits of when these constraints may no longer be acceptable. Interestingly they did not see the limits being in terms of an ability to continue a particular land use, nor to be able to discharge at a particular level. They saw limits of acceptable regulation being the envelope of an ability to make an income, provide for their families, and provide opportunities for growth off the property. This was the basic right they believed they gained with the decision to purchase the land and live in the area.

The acceptability of attenuation of this right differed from participant to participant. For some their rights should be subject only to a small amount of attenuation to prevent environmental damage from NPS discharges, and others appeared more accepting of greater attenuation. However universally the group participants appeared to believe that their core rights should be balanced against the environmental outcomes, with the economic dimension seen as an important part of sustainability, and that some damage to the environment would have to be accepted.

In the context of the RMA, the landholders' perceptions of their rights could be seen not so much Section 9 rights (continuing a existing land use) or Section 15 (right to discharge at a particular level) but more Section 85 (reasonable use) rights.

The other stakeholders spoken tended to regard the community's values as paramount. However the differences between the landholder view and the other stakeholders' view was more about where in the scale of a continuum the rights should be constrained. Even among the other stakeholders there was a considerable spread of views about the level of rights that landholders have. We feel positive therefore about the potential for a consensus view to emerge about the nature of those rights.

We have not found the frameworks reviewed in Section 2 above very useful in developing an understanding of the rights in relation to NPS discharges. Using the different frameworks identified we would describe the current rights as:

- significantly attenuated
- they are probably inefficient in the long term in some areas because of the "tragedy of the commons" situations with cumulative impacts of many users of the resources causing significant degradation. However from a landholders' point of view the increases in costs (regulatory) associated with defining their property rights was not seen to be creating a net benefit, even with the increased certainty this would bring
- in the context of a Scott (1988) framework they have good flexibility, divisibility and transferability, but poor quality of title, no exclusivity, and poor duration.

The study gave some important pointers in the development of tools for implementing management regimes for NPS.

Flexibility

The participants in the focus groups repeatedly stressed the importance of flexibility in any constraints placed on their rights. They valued the ability to change and to respond to different circumstances, and to allow innovation and development of operations within the envelope of responsible or sustainable impacts. In presentation of scenarios involving a cap on discharges, some participants could see the advantages in terms of flexibility this provided, whereas the constraints on land use were tended to be seen as disastrous. From our observations any system which maximises flexibility for land managers is to be preferred.

Non-regulatory pressure

The discussions in Edgecumbe pointed to the pressures exerted on farmers by perceptions of non farming neighbours and urban people on farming practice. This was cited by a participant as a significant factor in deciding to quit dairying on a block by the main road, and other examples were given of negative impacts of these pressures. The interesting feature about these pressures was that there was no regulatory involvement, other than response to unfounded complaints, yet the impact on the farm operations was real. The group participants appeared to be saying that weight of opinion was a significant pressure to have to deal with. This was backed up by a generally defensive approach in the Canterbury meeting regarding their impacts on water quality. There was considerable discussion of the polarisation of the community that was perceived by these participants.

> *"What we've created with these things is we've created the opportunity for spitefulness and that goes beyond people's rights and us impinging on their rights and we have to be careful about that ... I think a lot of this environmental stuff has created divisions in the rural communities when it didn't need to ..."*

Agencies involved in the management of resources and the environment need to be careful in the targeting and clarity of their messages, as it is not in the interests of society nor of the economy to have unnecessary friction within the community, nor to have business decision making distorted by unfounded community perceptions.

Compliance costs

The relatively brief discussion in the results section was based on extensive commentary on compliance costs in the groups. This was brief because compliance costs are not a key objective of the study. However the potential for compliance costs to produce perverse environmental outcomes is an important consideration. The need to intensify to meet compliance costs or ignoring the need for consents were both cited by participants. The regulatory system as it currently operates relies on largely voluntary compliance – that is the acceptance of the governed – or it would become unworkable. The concern is that continued increases in compliance costs will result in more perverse incentives or more widespread ignoring of regulatory requirements.

The most effective system is a consensus approach where the landholders accept the need for regulation, and most comply with it. Building this consensus involves a movement of the concepts of what is normal and responsible land management practice, and approaches which minimise the costs of compliance for landholders. This will not be a simple task in respect of NPS discharges.

Landholder perceptions of the environment and their responsibilities

The research has found some interesting points of leverage for those wishing to address NPS through non regulatory means. For example:

- the high regard that all held for the concept of stewardship, although it was noticeable that participants tended to discuss stewardship of their land first, with stewardship of the environment coming in later comments
- similarly participants aimed to avoid impacts off the farm, but it was impacts on neighbours which were often discussed first, with impacts on the wider environment commented on later
- participants all regarded themselves as responsible in respect of their environmental management, to the extent that is possible. They were unhappy about those who didn't behave well, variously described as the 1% to 10% of farmers. They disliked the damage to the environment and the bad name this gave to farmers
- some participants reported non regulatory pressure as a significant factor in management decision making
- awareness of NPS issues was probably reasonable low. *"When thinking about responsibilities, [we] tend to think of point sources rather than a broader impact across the landscape."*

We believe that these point to a hierarchy in awareness of environmental issues. The more immediate the impact the greater the awareness. Unfortunately with NPS effects often distant physically and with the impacts on the values of socially distant communities they are unlikely to be high priority issues for landholders. Where regulation is envisaged for NPS discharges the research points to positive dividends from approaches which:

- raise awareness of NPS issues and the impacts of discharges at a distance from their property
- expand the concept of responsibility and stewardship, so that landholders see themselves as stewards of a wider area than their land holding
- uses the peer group concept to assist management of NPS discharges through community based solutions.

Precedents

The Lake Taupo and Rotorua Lakes approaches to managing NPS discharges are the first attempts to do so. As such they act as important test beds for approaches to regulation, which as noted earlier are very difficult to manage. They will also establish precedents in terms of property rights. The potential for payment of compensation to landholders in the Taupo area sets an important precedent as to landholders' rights, and it implies existing use rights for established discharges.

The staff at one region expressed some concern at this precedent, since it will clearly not be sustainable across the whole country – when regions need to manage more local issues, they are unlikely to be able to afford compensate landholders to reduce discharges. For regions this would create political difficulties in proceeding with regulation without compensation, but also raises the unusual situation of landholders who are lucky enough to be damaging a national icon being paid to stop, while others damaging resources with only regional value are not paid. Some care should therefore be taken at a national level in dealing with NPS issues. For example it may be that structuring the payment a transitional measure such as an incentive for early change rather than compensation would send a different signal. This would be consistent with the views of some other stakeholders expressed regarding compensation for existing use rights.

7 Conclusion

1. Discussion and research about NPS discharges and associated property rights has proven difficult because of a relatively low level of awareness of NPS impacts and a lack of formalisation of rights.

2. Landholders are aware of impacts from their operations outside their property, but this awareness appears to be:
   - greater for local impacts that for more distant impacts
   - greater for point source discharges than non point source discharges.

   There was considerable defensiveness in responses on NPS impacts, with a feeling that farming was often being unfairly singled out.

3. The landholders see minimising impacts through NPS discharges on the environment as part of their set of responsibilities, but again this appears to be a hierarchy of stewardship for their own property > neighbours > local environment > distant environment.

4. The participants saw their core rights in the context of making a living off their property. They were prepared to accept some level of constraint on their operations, but not to the extent that it impacted on this capability. They did not express a right to continue a particular land use, nor the ability to continue with existing levels of NPS discharges if these were proven to be damaging to the environment.

5. The current lack of formalisation of their property rights in respect of NPS discharges did not appear to be significantly affecting investment and management on their properties. Issues were raised with compliance costs and over-regulation. Regulatory approaches which maximise flexibility were clearly preferred.

6. Other stakeholders spoken to were largely clear about the paramount nature of the community's right to water quality which would override landholders' rights to NPS discharges. There was a wider spread of views about the nature of any existing rights which would need to be considered or compensated in achieving a desired level of water quality, with some tentatively recognising some level of rights but others rejecting them.

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Appendix 1: Focus Group Meeting Summaries

Matamata

Environment Waikato perspective

EW has two main sets of regulation addressing NPS. There is a requirement in the proposed plan for all landholders wishing to apply over 60 kgN/ha/year to have used a nutrient budgeting model. There is however no requirement that the recommendations of the budgeting model have to be adhered to, and no specific model is required to be used (although guidance notes are included in the plan).

EW has rules for stock crossings, and clearance of forestry >1 ha requires a resource consent. In high risk erosion areas a setback of 10 m from the waterway is required, which increases to 100 m in very steep land. Cultivation is prohibited within 2 m of a water body.

EW regards itself as having put a lot of emphasis on education and incentives. They see their regulation as trying to embody BMPs, and the level at which regulation is set is a subject of extensive consultation with the community. Their regulatory approach is based on a classification of water bodies, with more pristine bodies having tighter rules.

Regulation is being considered to deal with the increase in N contaminants in Lake Taupo, but it has not yet been determined whether this will be a Section 9 or 15 based regulation. EW has stated that it does not wish to compromise landholders' livelihoods in respect of changes which are made to the NPS regime in that area.

Landholder meeting

Farm type

Dairy: 3
Sheep and beef: 3
Horticulture: 3

Key issues

- Water quality for irrigation and effects that land use has
- Urban versus rural perceptions
- Realistic rate of improvement in water quality
- Impacts on drinking water and the biology of the soil
- Water quality for irrigation and drinking
- Need to improve water quality
- What restrictions will be brought in the future

Proportion believing they had an effect on water quality

Yes, but try and minimise: 4
Minimal (various reasons): 3
No (type of biological system used): 2

The facilitators felt that the group composition was probably skewed towards those with greater environmental awareness, probably through unconscious selection by those asked to contribute names.

Discussion on rights and responsibilities

The group expressed some surprise at the use of the term rights, in that they believe they experience restrictions rather than had rights. This was expressed a number of ways through the meeting, yet there were some contradictory messages. One person noted that at present there wasn't anything that actually stopping him doing what he wanted:

> *"Really speaking, I could behave in a very irresponsible manner ... and quite frankly get away with it ... I mean there are rules but ... there is nothing really stopping me."*

The farmers saw regulation coming through the councils, through peer pressure, through industry initiatives, and through their own sense of stewardship:

> *"I see myself not as an owner of land with rights, but rather a steward of the land, a custodian, with some responsibilities, even it is just to ones kids. I think a bit broader than that, but others don't think like that"*
>
> *[Responding to a comment about another non-group farmer's approach] "That's an old attitude, a Victorian attitude, "it's there for us to take" ..."*

Although this was tempered by one's view that:

> *"When thinking about responsibilities, [we] tend to think of point sources rather than a broader impact across the landscape."*

Industry regulation was seen as more desirable than outside regulation, since it was related to the marketplace.

> *"We do not want the Director General of DOC, say, to write what the conditions are. I think they need to be somehow industry self imposed."*

However discussion on the usefulness of education was mixed. Most seemed to believe that there was a small minority who would try to get away with what they could, and that there was a need for regulation to control those people. This group however appeared to believe that regulation to date had merely been best practice, and that it was not too intrusive. They saw the need for flexibility in regulation:

> *"The worst that could happen is to get really prescriptive – so many kg of N per ha."*
>
> *"There are some people who can push the boundaries and still be sustainable and not do any damage."*

The facilitation aimed to bring the discussion back to the concept of what rights they believed they had. This concept of what rights they did hold was reiterated and discussed several times. After some discussion where one person indicated that he didn't believe that he had any rights (*"[We] haven't got a right – it is a perception"*), another responded by stating that he believed their core right:

> *"[We] have a right to make a living off that ... by using responsible methods of utilising that property that you own."*

This seemed to get general acceptance in the group, and was then repeated on other occasions:

> *"... have a perceived right that when you buy land you can manage it in such a way that you can make a financial return, providing you are farming in a sustainable way."*

This concept of a core right had components of a right to use the land, to make a living off the land, but to do so in a manner which was responsible. Taking each concept in turn:

Right to use the land and make a living – the economics of farming was seen as a key component of sustainability:

> *"Part of that [sustainability] is you making enough money to stay on it – that is really important."*

The concept of a living was also related to the size and type of property:

> *"Some blocks are never going to be sheep and beef and be sustainable – be fine for vegetable grower, be pretty big for a fruit grower."*

Responsible use – the meeting generally agreed that sustainability was the aim. They had greater difficulty in defining this though.

> *"I'd contend that you cannot define for all time what it is, that [sustainable management] is a moveable feast."*

There was general agreement that it was not appropriate to have adverse impacts on neighbours or the environment, but this was tempered by a belief that the impacts had to be scientifically proven

> *"We don't want any restrictions or controls unless it can be positively proven that its detrimental to either to your neighbour or to the waterways or that sort of thing – there's got to be proof before restrictions come on a person doing what they want to with their property."*

and that there had to be an acceptance that there would never be no impact:

> *"I don't think that we can pretend that an economic activity like farming has zero impact. You cannot aim for a zero impact position. You aim for a position that you believe is sustainable and in constant improvement."*

Implications for management

The tools developed to assess management and investment impacts of the property rights did not work particularly well, because of the lack of current formal property rights. The situations posed therefore proved too hypothetical, and much discussion focused on what the regulations/consents would involve, the fact that being controlled would have a serious impact, whether the regulations would be practical, and what the tactical responses would be (e.g. increasing production prior to the introduction in order to be grandfathered in at a higher level). There was some recognition that formal regulation may have some advantages, such as the ability to sell part of the consent, but generally the consents were seen in the context of greater regulation rather than increased security of property rights. There was considerable scepticism about the security of any consents, with the consensus generally held that certainty would only decrease over time even with a formal right.

In general discussion there was recognition of the benefits of a more flexible regulation system, which was seen as encouraging innovation. The participants recognised the ability of some farmers to perform at the outside of the envelope in terms of production at low nutrient discharge, and this was seen as something to be encouraged.

There were no comments from this group that the level of regulation and change in regulation had significantly altered long term investment behaviour, although obviously it had altered management to the extent that was required. Among this group the EW regulation introduced appeared to be regarded as formalisation of what they were already doing or should be doing, confirming the EW view of their regulation formalising BMPs.

Summary

This group were had a strong environmental ethos and saw their impacts and constraints in terms of responsibilities. They recognised the need for regulation, and in some situations saw the need for more regulation. However they regarded themselves as having a fundamental right to farm the property, as long as it was in the context of sustainable management. They saw the concept of sustainability having a strong economic component, and that this would vary depending on circumstance. Their view of rights did not necessarily extend to continuing doing what they were doing, and the bottom line was more associated with the ability to make a living off the property.

Edgecumbe

Environment Bay of Plenty discussions

EBOP operate a stratified regulation regime in relation to NPS discharges. In very sensitive areas, (currently restricted to the Rotorua lakes area), there are stringent rules on NPS discharges, and elsewhere there are effectively no rules on discharges. The plan does however allow for animals to be fenced out of waterways, and most dairy shed effluent disposal has been moved to land spray systems.

The council sees that landholders have the right to use their land provided they are not having an adverse impact. They do accept that there will be some effect, but the aim is to reduce the effect in line with what can be reasonably achieved with good management practice.

In the very sensitive areas of Rotorua lakes the plan will cap the discharge of nutrients from farms, with no net increase in discharges allowed over the period of the plan. EBOP is using a Section 9 approach, with discharge levels established through a model of land use.[9] It is intending to allow transfer using off site mitigation as the means of achieving transfer.[10] They recognise a number of issues in this, such as impacts on Maori landholders who haven't had a chance to develop their land yet, and the issue of how to grandfather discharge levels. Their intention is over time to reduce the discharges in this area by purchasing properties.

Landholder meeting

Farm type

Dairy: 8
Sheep and beef: 2
Deer: 1
Horticulture: 3
(Some landholders had more than one property.)

Key issues

- Dairy farmers in the gun – urban populations have an effect
- Science isn't robust
- Property rights under threat, legally and morally
- Rules to fence streams – would require 18 km of fencing on property
- Water quantity and impact on dilution of effluent and runoff
- Urban discharges
- Impact of spray irrigation systems for dairy shed effluent disposal
- Influence of small block holders
- Tourism impacts on water quality
- Costs of regulation and where does it stop
- Spraying of waterways
- What does sustainability mean? Balance between living today and tomorrow

[9] ENPLAS written by NIWA.

[10] That is, in order to undertake a transfer one farmer increases their discharge, and is consented to do this by purchasing off site mitigation in the form of reduced discharges at another property.

Proportion believing they had an effect on water quality

Probably: 2
Yes: 8
No: 4
(Some answered differently for different farm types.)

The facilitators felt that the group composition was broadly representative of a cross section of farmers.

Rights and responsibilities

The group focused heavily on the constraints on farming which were being caused by a raft of regulation from a number of sources. The group considered that they were driven largely by a sense of responsibility, seeing themselves as caretakers of the land:

> *"90% of farmers realise they are here as caretakers of the land, and that is the basic tenet that they farm by. They didn't deliberately set out to walk over everything for their own benefit – they always want to leave it better than they started ..."*
>
> *"It's pride in what you do so you are not going to stuff it up ..."*

but that there are a few mavericks who influence public perception. There was a sense that EBOP should be targeting these mavericks rather than going after everyone.

Despite this group not being as environmentally active as perhaps the Matamata group was, they expressed a strong concern for effects on the environment:

> *There are some issues you know – like Lake Taupo – we don't want that to turn to custard like Lake Rotoiti ... nobody would like to see something happen to it ..."*
>
> *"The right of a New Zealander I guess is to go to any tap, no matter where that tap is, and get clean water ... practically any sort of waterway, river, lake, sea – anything, drop their trousers and leap right in sort of thing ... without any side effects whatsoever ... I think everyone would like to head down that path and do their bit to achieve that ..."*

The tension between this desire and the financial and time pressures was also recognised.

The group generally recognised that farming has an impact on water quality, but were quite defensive. They tended to see farming as being unfairly singled out:

> *"The question really is does your operation affect water quality. I've got to say yes because at the moment you've got track up the yard, you've got tracks running into your operation, you get run off from that, so really yes we do. I mean everybody in New Zealand running an operation has got to say yes. I mean look at tourism ... well look at all the run off from our main highways, from every road in New Zealand, so everybody does create pollution."*

Considerable time was spent discussing the way that regulation and societal pressures are building on farmers. These include issues such as small block holders bringing urban values into a rural setting:

> *"With the increase of smaller blocks we get more and more complaints. We, last couple of months have done a couple of hundred bales of silage and as soon as I started to stack them the neighbour said "I hope you aren't going to stack them there – they might bring flies into our house."*

> *"It seems that all existing use holders have to justify their existence against anyone else that questions any part of our operation at all."*

The problems of increased industry and market regulation were also discussed, with some unhappy at a perceived giving away of our rights and increased Europeanisation of environmental management.

In being questioned about whether they had a fundamental right in respect of water quality, rather than just constraints, there was a mixed view. One participant was adamant that he didn't have any rights:

> *"I don't believe you have one any more because with the stroke of a pen you so called perceived fundamental right can change overnight ..."*

However most did believe that they had a fundamental right, although some found it hard to express:

> *"I believe we have a fundamental right ... I don't know what the fundamental right is, but there is certainly an erosion of it."*

> *"A lot of it is traditional, in the way you farmed, and you know it is sustainable."*

> *"To me a lot of the rights would be traditional, that's the only word I can think of."*

> *"You perceive your right is to farm in a sensible manner and with that you can do what you wish on your farm, provided it doesn't impact on neighbours, other people."*

> *"Something which gives growth and lifestyle that you desire."*

> *Has to be monetary too because if there was something that was a hell of a lot better than dairying we'd all be doing it ..."*

The group spent considerable time discussing the trade-offs involved in defining what is societally acceptable in terms of impacts. They saw the need to put sustainability in perspective, that some impacts are inevitable, and that the impacts should be seen in light of the alternatives:

> *"People are going to have to be educated so that we have the right to actually run a business."*

> *"If you put that number of houses on my land I would say there would be more environmental problems with it in houses than it would be as a dairy farm."*

"That is the end point we've got to look at, [what] is the end land use?"

"What is the alternative?"

The group was also keen that impacts should be scientifically proven before the rights of farmers were constrained:

"It has to scientifically proven ... if they can scientifically prove to us that what we do is not right, what would we do?"

"... should relate to the expected use of that stream. I think a small minority of people swimming in one little spot may not have the same rights as a major business upstream."

Impact on management

The group were very concerned about the impact that further regulation for water quality would have on their business. The scenarios used worked very poorly with this group, and there was general scepticism about either of the approaches to regulation would increase the security of their property right.

Issues of compliance costs kept arising, and although they were not always associated with water quality, the comments were illustrative of the general concerns:

"Compliance costs are just going to drive the costs of food up and up."

These compliance costs and hassles associated with consents could produce perverse results in terms of water quality:

"We are price takers largely, and we've got to drive our costs of production down, [compliance costs] just keep going up and we've got to go to the next level of intensity."

"If you have to apply for a resource consent it can be that difficult that you think "stuff it, I'll just go and do it anyway" and if they catch me the fine is cheaper ... than it is to go through the process of engineers and council and all that crap and the time delays."

One participant illustrated the way in which the combination of pressures on a property, which include regulations and public pressure, can affect the management and investment:

"... [we have] main roads operating through one of our dairy farms – frankly we've had enough of the hassle, and along with other reasons we're shutting the dairy shed this year. You know the public pressure and perception whether its right or wrong in the end starts to wear on you ... [explanation of problems] ... The pressure and crap that you have to put up with means ... eventually it will get to you ..."

This was echoed by others who saw themselves selling up if the pressures or regulation meant that it was not possible to farm their current operation.

There were also concerns expressed about the way in which issues such as water quality were affecting us culturally:

> *"I think we've lost part of the reason why people came to New Zealand and that was to get away from all this crap ... we're becoming more like Europe again, you look at land values and properties held by families…we're in danger of becoming like Europe all the time and we are going to drive our young farmers away."*
>
> *"What we've created with these things is we've created the opportunity for spitefulness and that goes beyond people's rights and us impinging on their rights and we have to be careful about that ... I think a lot of this environmental stuff has created divisions in the rural communities when it didn't need to ..."*

Summary

This group were more focused on the negatives associated with environmental regulation. They did however still express a strong environmental ethos, and saw their farming operations needing to operate within a sustainable framework minimising impacts on neighbours and water. They (largely) saw their rights as being based on using the property responsibly to make a living for their family and allow some growth. While they accepted the need for regulation, they were concerned about the need for a scientific basis for it and the costs of compliance. They also saw the need for sustainability to be put in the context of impacts from other businesses, the role of farming in the economy, and the alternative land uses on the property.

Irwell

Environment Canterbury perspective

Environment Canterbury have no rules in their plan currently to manage NPS discharges. They do spend considerable resources in the area through the Living Streams programme, monitoring, and sediment investigations.

The proposed plan is moving toward a regime which manages NPS more comprehensively. This involves:

- establishment of water quality objectives for all resources, including drinking water sources
- legitimises NPS activities such as fertiliser application as permitted activities subject to performance standards
- makes N discharges at a specific level a permitted activity. Above this level landholders must undertake nutrient budgeting (with no performance standard), and above a further threshold landholders are required to put in place a programme of action to reduce leaching over time.

Water resources have specific numerical targets for a range of nutrients. Where these are not achieved the regional council is likely to introduce land use controls.

The council noted concerns about the precedent implications of the proposed management of Lake Taupo, and also expressed concern about the lack of thinking about the issue at national level. They particularly noted the powers that MFE has to drive water quality through standards, which make the regional job of regulating much simpler.

> *"When is the Ministry going to step up to the plate on this one?"*

Their perception was that land use impacts on groundwater were generally underestimated by landholders and that awareness of NPS issues was low.

Landholder meeting

Farm type

Dairy: 4
Sheep and beef: 1
Mixed cropping: 4
Horticulture: 1
(Some landholders had more than one property.)

Key issues

- Have had water tested regularly – doesn't seem to be a problem
- Drinking water supplies and iron problems
- Impacts on water quality from other sources
- Run off from cropping farms, and their impact on soil structure and fertility

Proportion believing they had an effect on water quality

Good as can be: 1
No: 9
(One not relevant.)

The facilitators felt that the group composition was broadly representative of a farming type in the area, although the group was predominately owner operator by long-term farming family.

The group was largely very sceptical of their impact on water quality.

> *"I don't think that what we are doing as farmers is really affecting the quality of the water. In the winter time we get runoff off the land but that is something that has happened for hundreds of years."*

> *"It is natural that sheep manure is going to end up in the waterways but if they are going to let allow us to carry on farming, well ..."*

> *"How do we know there is a problem ... We only know what we are fed in the paper ..."*

"That's why I am asking for real data – what real information have you got, or are we all just here saying the status quo is fine, we don't have a problem, let's keep it that way."

One participant had funded his own monitoring of a stream running through their property and was satisfied that the quality was high and that they were not having an impact. However two in the group were aware of ECan monitoring results from a local stream, which indicated poor quality and the influence of farming activities. No participants were directly involved in Stream care or other water quality associated activities.

Rights and responsibilities

The initial feeling from individuals in the group was of unfair finger pointing at farming or their operation. Dairy farmers pointed out the high potential impact of cropping farmers, and all pointed to the impacts of urban and other activities on water quality.

"One of the biggest issues for me in water quality is the cities themselves. There are streams… closer to Christchurch which are probably carrying large amount of pollutants into the lake, and into other areas like estuaries, and nobody is making a big song and dance about that – I think it's a terrible state of affairs."

"The council had a problem in town with a sewerage system that overflowed and went into the estuary… so it got in the paper but nothing else happened about it. Are they going to get prosecuted? We would be ..."

"A law for them and a law for us ..."

"I also wonder ... how much pollution goes into the lake from ... the wildlife that is there?"

"It's an issue that it's easiest to blame the person that it's easiest to blame and sit there and try and make him do it rights and you feel someone else could be better for doing that ... and not doing their bit – but it's only a quarter of the problem."

However there was recognition of the basic tenet of stewardship of the land which has been expressed in other groups. This includes the concept of leaving the land no worse than one found it, being able to make a profit but not having an impact on neighbours or the water quality. The discussion in the impacts regard was primarily about impacts on neighbouring farmers, because the issue of irrigation takes having offsite impacts on other irrigators was particularly topical in the district.

"We must leave the land in as good as when we first had it – that is your right that goes through all farmers."

"[You have] a right to make a profit."

"We haven't got the right to make an income at the expense of the land."

"Your activities shouldn't impact too much on either a neighbouring farmer or an area farmer."

"It [spraying] relates to what we can do that affects our neighbours ... and the same with the sprays – [we] have to be careful that they don't get into waterways. You don't spray around the fenceline or put the boom over the creek, put chemicals in the creek and things like that. That does affect our water quality."

As with other groups they saw their responsibilities being embodied in the concept of sustainability, although definition of this was seen as difficult.

When pressed on the reasons for this right existing, on member of the group saw the right coming from the original decision to live there and buy land there. They saw that the right comes with the resource, and they should be able to use it to the best of their abilities. Whilst recognising that there were a small minority of farmers who gave problems, the group was varied on the need for regulation. The main part of the group was strongly opposed to it, but there were some expressions of unease. These arose from a belief that there were farmers out there who acted stupidly in respect of the land and downstream impacts, and should be controlled. Even those who identified this problem however had a problem with further regulation, and expressed some unease with what they were themselves proposing:

"There are two ways of thoughts – do we have a free market where we just go along, or do we have like ECan come on and say "No you can't do that"?"

They recognised the difficulties in legislation because of the geographic variation, and generally approved of more local regulation rather than "another layer of bureaucracy" by involving central government. Some saw market driven regulation (the Clean Streams Accord) as being preferable to bureaucratic regulation. The theme of further regulation turned the discussion to the difficulties of dealing with the various bits of red tape, the difficulties of being a small business person, and the lack of recognition of farming's role in the economy.

The group expressed strongly a need for any regulation to be driven by monitoring and facts. They saw a great deal of emotive comment being passed, and some systems, such as organics, being accepted as sustainable despite their own reservations about the sustainability of copper sulphate and energy use. One individual saw that the key issue was to allow a few mistakes to be made, since there was no precise definition of sustainability and impacts, as long as the mistakes could be caught before things got too bad. There were also a number of comments about the issue of being guilty until proven innocent instead of the other way around, and the cost of establishing innocence.

Impact on management

In this group the scenarios used for the previous two groups were changed to two questions. These addressed directly the issue of what would happen if their non point source discharges were converted to a formalised consent, and the differences between a consent for land use and a consent for discharges. This had mixed results. Whilst there was some consideration of the added security a consent would give, in general the responses were driven by the dislike of further regulation, considering that present legislation was adequate to penalise those who do pollute. The key features of management impacts were the limitations on ability to farm, costs of implementation, and constraints on flexibility. In general the consent for discharges was preferred (to the extent that further regulation could be said to be preferred!) because of the greater flexibility this allowed.

It seems that the participants in this group did not see the current situation of property rights as significantly impacting on their management and investment programme. The lack of certainty was seen as a risk, but as a risk which was to be considered rather than a constraining risk.

Summary

This group largely did not consider that water quality and NPS discharges were a major issue, and this position drove much of the discussions, with a general tenor against further regulation and interference in their affairs. The group had a strong ethic of stewardship and maintained the principle of not impacting on neighbours. The principle of not impacting on neighbours was extended to not impacting on the water and environment, but this did not come out in the discussion until later.

The group saw their primary right as being able to use the land to make an income, and this right derived from the purchase of the land and the decision to live and farm there. The rights were constrained by the concept of sustainability, although this was not well defined. There was a strong feeling that further constraints on their operations should be based on proof of impacts.

There was not a strong sense that the current situation of poorly defined rights in relation to NPS discharges was a constraint on their management and investment operation.

Appendix 2: Focus Group Meeting Plan

Time	Objectives	Content/topic	Technique	Facilitator notes
1.00	Welcome Facilitator introductions Background the project Confirm the focus for the discussions	Lynette/Sue and Simon introductions Subject matter of the focus groups What MFE wants out of this exercise What we expect out of the discussions Brief – not discussion Focus group process	Address the whole group Lynette/Sue – welcome and facilitator's role Simon – Background and expectations 1 Government interest in water 2 Group formed to examine policy position 3 Want information Lynette/Sue – meeting programme	Refer to prior letters – we're just reinforcing the focus Reassure of anonymity
1.10	Identify who is present and any key issues for them in relation to the focus for the discussions Gather individual information	Participant introductions Background information Burning issues	Participants introduce themselves and answer the following three questions: 1 main types of farming/growing activity on your property? 2 Does your operation affect water quality? 3 Do you have <u>one</u> burning issue related to our focus group? What is it?	Simon to write individual information Lynette/Sue to record issues Separate sheet for "other issues"

Time	Objectives	Content/topic	Technique	Facilitator notes
1.20/ 1.30	Understand participants' current practices/behaviour/ decision making Identify participants understanding/beliefs about the nature of their property rights	Participants' current practices and recent experience	Whole group discussion prompted by questions Water quality and Rights and Responsibilities Keep at higher level Focus on general impacts of farm operation and land use Focusing mainly on non consented rights Use as prompts • What are your rights to do what you do? • Can you change what you do? • Can your rights change or be taken away?	Record on flip chart
1.50??	Take a break???			
2.00	Management Behaviour in relation to property rights: participants discuss and complete water quality scenarios	Participants solution/outcome	Small group discussion (10 minutes) – groups of 3–4 1–2 questions per group Write response to question/scenario onto flip-chart paper	Have butchers paper and felt pens ready
2.20	Summarise and check back Clarify any issues	Review key outputs of discussion	Address whole group with summary – key points recorded Ask for any additions or changes now they've been through the whole process	

Time	Objectives	Content/topic	Technique	Facilitator notes
2.55	Make sure participants know what happens next Availability of report/ summary	Overview of process Closure and thanks	Address whole group Short summary of report will be sent out Full report will be available on the MFE website Meeting notes are available to participants on request	
3.00	Close			

Appendix 3: Discussion Frameworks

Other stakeholder interview framework

Do you think farmers are aware of their NPS impacts?

What rights do farmers have to make NPS discharges?

What rights should they have?

What rights do they have to change their system? What rights should they have to change their system?

What rights do you have in the system?

Scenarios for focus group discussion regarding impacts on behaviour and management

Version 1 (Matamata and Edgecumbe)

Scenario I

(a) You are given a consent which allows you to continue your current operation, but you are not able to make it more intensive. The permit lasts forever.

How would this affect your management and investment programme?

(b) As above, but the permit lasts only 10 years, with the possibility that from then you have to move to a less intensive land use.

How would this affect your management and investment programme?

Scenario II

(a) You are given a consent to discharge nitrates at your current level but with no limitation on land use. The permit lasts forever.

How would this affect your management and investment programme?

(b) As above, but the permit lasts only 10 years, with the possibility that from then on discharges will have to decrease.

How would this affect your management and investment programme?

Version 2 (Canterbury)

1. Do you think there would be advantages or disadvantages to having your rights to non-point source discharges formalised – say as a consent? How would it affect your investment and management?

2. If non-point source rights were made into a consent, what differences would there be between a consent for ***land use*** and a consent for ***discharges***? What differences would they make to your management and investment programme?