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Regional Councils in the Creation of Social Capital

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Regional Councils are primarily responsible for environmental management, as specified in the Resource Management Act (RMA), 1991. The Local Government Act 2002 has an integrative component, requiring consideration of social, economic, environmental and cultural well-being of their communities. These two Acts are interesting, as their combination is shaping new governance structures within New Zealand. Different types of policy instruments are available to Regional Councils while carrying out their functions: regulatory, economic and voluntary. The 1990s are characterized by 'first generation Plans' of the RMA, which were highly rule focused. In the 2000s a marked shift occurred, mainstreaming 'community' and participative approaches to policy. This increased levels of trust between communities and the Regional Councils, and can be seen as building blocks in the formation of social capital. Where rules were not achieving particular policy objectives, interesting new hybrid forms of governance emerged.

This paper looks at these newly-formed partnership approaches in New Zealand. The paper traces the emergence of partnerships as a collective form of action, and analyses them from an economic governance perspective. In so doing, the fundamental role of social capital is explained, as a rational economic concept. Regional Councils are centrally placed to anchor partnerships and strengthen their formation, hence strengthening social networks within the regions. The issue of riparian management is explored as a case study to inform how this could occur.

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Disclaimer: All opinions in this paper are those of the author.

INTRODUCTION

As with management of most natural resources, the issue of freshwater quality is inherently complex. It involves a diverse set of freshwater users, land owners, stakeholders and regulators. In May 2011, a National Policy Statement for Freshwater Management was issued in New Zealand. This requires regional councils to change their plans in line with a set of freshwater objectives and quality limits, to be defined at regional level. A significant problem in many areas of New Zealand with regard to freshwater pollution relates to livestock having access to streams. This is largely as they are unfenced, and do not have riparian zones along the waterway, which act as a buffer between land related activities and the fresh waterway.

Regional councils have a range of policy options to tackle resource management problems. This paper explores the approach taken in different regions, with a particular emphasis on voluntary approaches to riparian management. Recent developments in the literature on governance of natural and common pool resources stress localised collective action as a policy solution (Ostrom, 2005; Bowles and Gintis, 2002). By bringing together local stakeholders in a participative and inclusive format, social capital can be created. Despite the numerous definitions of social capital, this paper looks at the pivotal role of government agencies in the formation of social capital – the ‘linking’ social capital between citizens/communities and state.

This paper looks at newly-formed partnership approaches in New Zealand in the riparian management area. The emergence of partnerships as a collective form of action are traced, and analysed from an economic governance perspective. In so doing, the fundamental role of social capital is explained, as a rational economic concept. It can be an efficient means of achieving policy objectives. It also may avoid the transaction costs that are associated with a regulatory process, involving the judiciary.

Social capital does not spontaneously emerge within the economy. It may exist, but not be utilised or used for productive purposes. The importance of lead agents is highlighted in this paper, and case studies of ‘active’ voluntary approaches by regional councils illustrate the pivotal role that regional councils can play in anchoring civic relations.

The paper introduces the literature on social capital (section 1), with particular focus on the three types: bridging, bonding and linking social capital. It is linking social capital that overcomes vertical ties that people form with political or economic agencies. It encourages real civic participation and builds trust between government agencies and communities (section 2). The responsibilities of local government are briefly introduced in section 3, particularly the Resource Management Act (RMA) and the Local Government Act 2002 (LGA). These illustrate a dual approach of establishing rights and proving effects in the RMA, and a more integrative and well-being focus in the LGA. What has resulted is a new direction in local government processes, with interesting outcomes. A typology of policy approaches is presented in section 4, namely regulatory, economic and voluntary approaches. These are used to classify the different

approaches taken in various regions regarding riparian management – the subject of the case study in section 5. This is followed by a discussion on voluntary riparian management approaches and social capital formation (section 6). This paper stylises the voluntary approach as being an inherently appropriate governance structure. However, without rose tinted glasses, it is recognised that voluntary approaches to resource management are not suitable for all regions or cases. The biggest hindrance is if farmers cannot afford to implement best riparian management, including fencing, planting and providing alternative water stations for stock. Nevertheless, the paper argues that there are rational arguments for voluntary approaches, which can be used with other policy approaches.

A voluntary approach seeks to establish social acceptance of a practice, such that the practice will be implemented by the respective stakeholders involved. The advantage of a voluntary approach is that it is unobtrusive, landowners that modify their behaviour would do so willingly and the perceived control or power balance does not shift from the landowner/user to the regulating authority.

Social capital is formed when networks of individuals form a common bond or interest between them. In society many networks exist, ranging from social friendships to formalised business groups. This is a form of capital which can be used for productive purposes. As yet, it remains largely untapped in the governance of natural resources. There is potential to use existing and create social capital through processes of well-designed environmental partnerships. Regional councils have a role to play in this regard, as they are centrally placed to anchor partnerships and strengthen their formation, hence strengthening social networks within the regions.

1. SOCIAL CAPITAL FORMATION

Social capital has many definitions. It is used as an indicator for the general health of a democratic market economy – with links established between social capital and economic growth or development (Knack, 1999; Healy, 2002). From a traditional economic perspective ‘capital’ is an input in the production process, which contributes to the realisation of profits at a firm level. Social capital is seen as a ‘soft’ input in this production mix; not because its contribution to the productive process is in doubt, but because it is difficult to measure and include in economic models, as more physical and tangible capital are. Social capital is seen by rational choice theorists as the norms and sets of behaviour that enable market transactions (Fukuyama, 2000). The more people trust each other, the more they are able to establish contracts with each other, and markets are based on contracting (Coase, 1937; Williamson, 1985). Ostrom and Ahn (2003) define social capital as rules used by those governing, managing, and using the system and those factors that reduce the transaction costs associated with the monitoring and enforcement of these rules. Harnessing positive benefits led Putnam (1995: 67) to define social capital as ‘the norms and networks of civil society that enable groups of individuals to cooperate for mutual benefit (and perhaps for broader social benefit) and may allow social institutions to perform more productively’. From a sociological perspective, social capital is viewed as social ties between individuals, or communities of association. Bourdieu (1986) stressed the networks of interaction that constitute social capital. Location and position within the network is important, while the network itself provides opportunities for individuals to exploit resources which their social relations give access to.

Levels of trust within the group or network increase over time, otherwise group members will exit or will be expelled from the group. The group coalesce or come together for the mutual benefit of the members. There are benefits from collectively working together or associating with the group. Members of the group cooperate with one another. Despite variations in the origin and differing definitions of social capital, the concept has common characteristics based on the formation of social networks. Social capital is dependent on the nature of the relationships between people, the motives for group formation and the social networks they form.¹

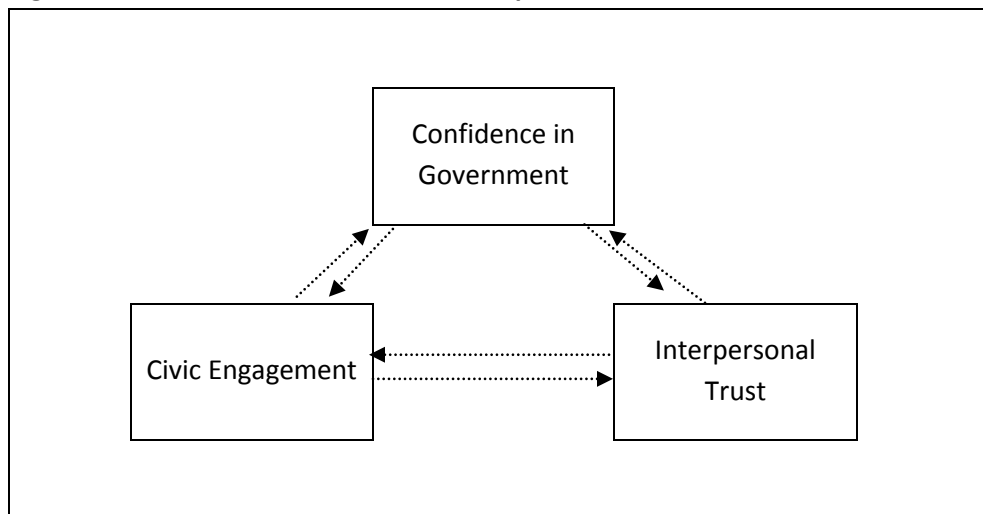
Three forms of social capital are classified: ‘bonding’, ‘bridging’ and ‘linking’. The typology is defined by the way individuals or groups are connected through social ties (Grootaert *et al.* 2003: 6). ‘Bonding’ social capital refers to relations among people with a similar background and interests, and the interaction of a group network bonds the social capital between them.

¹ This can also be used for group motives that are undesirable to society – such as crime. The payoffs for the members may warrant the formation of the group, despite it being considered negative social capital. See Portes (1998) for a fuller description of negative social capital.

'Bridging' social capital connects groups of differing characteristics, and relates to relationships outside the group. 'Bridging' and 'bonding' types of social capital refers to horizontal relations in or between groups, while the more recent term 'linking' denotes the vertical ties people have formed with political or economic authorities. The term, thus, denotes connections across power differentials.

Brehm and Rahn (1997) developed a framework for understanding social capital, and it is a useful basic departure for analysing the process of social capital formation in a regional council context. It shows a reciprocal relationship between civic engagement, interpersonal trust and confidence in government. The more that individuals participate in their communities, the more they learn to trust others; the greater the trust that individuals hold for others, the more likely they are to participate, which in turn leads to civic participation with the State. Putnam (1993) is credited with operationalising the above concept of social capital for empirical analysis. He saw it as being 'embodied in forms such as civic and religious groups, bonds of family, informal community networks, kinship and friendship, and norms of reciprocity, volunteerism, altruism and trust' (ibid: 67). His most acknowledged contribution to the theory is the proxy indicator that measured the density of voluntary organisations, termed the 'Putnam instrument'.

Figure 1 Structural framework of social capital



Source Brehm and Rahn (1997:1002)

It is through civic engagement and confidence in government where regional councils can influence the formation of social capital, particularly 'linking' social capital. The LGA has strengthened the community involvement in decision making processes (see Section 3) – thereby an attempt to align the private good with the public good. There is potential to anchor the partnerships that form at a community level and strengthen the ties to local government in New Zealand. Social networks can be strengthened within the regions, with the regional councils acting as a medium and perhaps taking the lead on this process. The study of leadership in social networks was often ignored in the literature, but studies have stressed the pivotal role played

by leaders in group formation (Hurrelmann *et al*, 2006). Beneficial cooperative behaviour within a group does not spontaneously emerge, but requires strong agents to drive the process. In the New Zealand context with mandatory partnerships that resulted as part of government process, these agents have been termed 'strategic brokers' (Larner and Craig, 2005). The extent to which individuals and communities actually influence decision making processes requires further investigation. It would require an analysis of the effectiveness of consultation (that is whether it was used as a 'process' only, or whether meaningful dialogue resulted). Other group processes are important, such as antisocial punishment (Rand and Nowak, 2011) whereby non-co-operators punish co-operators in public good games. These may explain why social capital does not form as expected, but are beyond the focus of this paper.

Healy (2004) identifies the role of the State to be that of supporting rather than controlling networks. This can be applied to the local government context, as they create rules and govern, particularly natural resources. He outlines a number of important design principles useful to consider in a social capital policy framework. These are summarised as:

1. Cultivating mutual help and self-help;
2. A movement away from identifying 'needs' only to identifying unique community 'capabilities';
3. Promoting trust through equality and respect for rights;
4. Letting go of excessive and over-detailed control (empowering and trusting communities to be responsible);
5. Valuing, rewarding and recognising voluntary effort and achievement.

It is important to examine the ways in which the design of public policies contributes to social capital or not, and this paper focuses on the 'linking' role of local government in New Zealand. In any society, distance from power, lack of meaningful consultation, absence of deliberative mechanisms and a general sense of not being included in key decisions would create a lack of trust and engagement in the long-run. Letting go and empowering emerge as crucial areas for policy examination (Healy, 2004). The following section gives an overview of the level of civic engagement in local government, followed by an exploration of how this theory aligns with the New Zealand local government jurisdiction.

2. CIVIC ENGAGEMENT IN LOCAL GOVERNMENT

Civic engagement can take on many forms – membership of interest groups, sports clubs, voluntary associations and political groups are examples of a few. Putnam (1993) advanced knowledge and practical measurement of this concept. Civic engagement also takes the form of participating in the formal institutions of a country. In a representative democratic political

system, one form of civic engagement is the interaction of citizen with central and local government. A partial measure of this civil engagement is participation in the voting system.²

Voter turnout for local government elections peaked in 1989, and have been declining between then and 2007 (DIA, 2011). It is significant that there was considerable reform and amalgamation of local authorities in 1989. There was an increase in voter turnout for local government in 2010, largely attributed to increases in Auckland and Christchurch. Again there was considerable reform in both regions during this year, which increased awareness of the roles and functions of local government.

Table 1 Voter turnout by type of body, 1989-2010

% Year	1989	1992	1995	1998	2001	2004	2007	2010
Regional Councils	56	52	48	53	49	45	43	47
Auckland Council	-	-	-	-	-	-	-	51
City Mayors	52	48	49	51	45	43	41	46
District Councils	52	48	49	51	45	43	41	46
Community Boards	54	49	50	50	46	42	41	50
DHBs	-	-	-	-	50	46	43	49
Trusts	55	-	-	-	-	48	43	47

Source: DIA 2011:23

In terms of voter turnout Vowles (2004) traces the decline of civic engagement in New Zealand (although not specifically looking at local government). While acknowledging that there is not a lot of information on this component of social capital, his research showed that participation in elections was largely dependent on age cohort; those born after 1974 were less likely to participate. This trend in voter turnout is described as a 'decline' rather than a 'demise' of civic engagement, given that New Zealand's participation rates were still above comparator countries.

There are many contributing factors to a decline of civic engagement, and Vowles (2004) describes the 'democratic phoenix', whereby there are new forms of participation emerging to take place of the old. These could include signed petitions, letters to paper, boycotts, demonstrations, talk-back radio, internet based association and blogging to name a few. Also if the functions of local government become less relevant to people, there is little incentive to engage.

Local government traditionally provides services such as providing water, wastewater treatment, refuse collection, local infrastructure and environmental services (in the broadest sense, as defined by the RMA). These services put financial pressure on councils, and ultimately

² It is described as partial, as the level of engagement between citizen and State organization depends on the levels of service delivered by the State, and the opportunity to engage with policy and government programmes.

on rates. Dollery (2008) recognised the need for new funding sources for the activities of local government, largely focusing on strengthening the working relationship between local and central government. Little mention is made of using and capitalising on the resources within the regions themselves, and in particular harnessing the existing networks and social capital that exist. The following section gives an introduction of the functions of local government, to illustrate the areas for potential harnessing of social capital.

3. REGIONAL AND LOCAL GOVERNMENT RESPONSIBILITIES

New Zealand is divided into sixteen regions, with eleven regional councils and five unitary authorities.³ This section focuses on two pieces of legislation that govern regional councils in New Zealand, and summary components of the two Acts are presented to illustrate the potential use of the Acts for the development of social capital.⁴ The Local Government Act (LGA) introduced in 2002 was a comprehensive overhaul of the law relating to local government, as introduced in 1974. Notably the LGA2002 challenges local government in New Zealand to rethink the way it manages what it does, and how it does it (Houston and Katavic, 2006). The Resource Management Act (RMA) introduced in 1991 is the main piece of legislation in New Zealand governing sustainable management of the environment. These two Acts are the dominant statutes guiding the functions of the regional councils in New Zealand. Both are interesting, as their combination is shaping new governance structures within New Zealand, manifest at a local government level. New Zealand local government is a creature of statute, but is autonomous and accountable to its communities and ratepayers (Houston and Katavic, 2006). Therefore it plays a pivotal role in the nexus of civic engagement. New Zealand local government have fewer functions than many of their counterparts overseas, who are responsible for social services such as housing and health and in some cases where functions such as policing and education are devolved to the local level.

Two important features of the RMA are that controls are intended to be effects-based rather than activity based and environmental management responsibilities have been largely devolved to regional government. Under RMA 'sustainable management' means:

'..managing the use, development, and protection of natural and physical resources in a way, or at a rate which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-

³ A unitary authority is responsible for also carrying out regional council functions alongside their more localized territorial authority functions.

⁴ Components of these Acts were chosen to explain the issue of riparian management which this paper uses as a case study.

- a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment'*

The RMA makes reference to some 'Matters of National Importance', for example:

'The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.'

The decline of civic engagement in New Zealand (see previous section) contributed to the *zeitgeist* when local government was being reformed in 2002. Particularly there was concern over lack of grass-roots community participation in decision making. What resulted was a strong focus of community participation in the ensuing local government reforms.

The purpose of the LGA was to provide for democratic and effective local government that recognised the diversity of New Zealand communities. The Act:

- a) *stated the purpose of local government; and*
- b) *provided a framework and powers for local authorities to decide which activities they undertake and the manner in which they will undertake them; and*
- c) *promoted the accountability of local authorities to their communities; and*
- d) *provided for local authorities to play a broad role in promoting the social, economic, environmental, and cultural well-being of their communities, taking a sustainable development approach.*

Explicitly, the LGA outlines the guiding principle of 'well-being', with four types specified: cultural, environmental, social and economic. Well-being is associated with a healthy functioning system. Therefore the LGA had a holistic view of the contribution made by people, households, businesses and communities to the economy and society, while by necessity having an integrative component – as the well-beings do not operate in isolation. Consideration of social, economic, environmental and cultural well-being of communities became mandatory.

This is interesting for resource management – and 'well-being' aligns with a healthy, hence sustainable, resource management system. Yet the two Acts are independent of each other, but regional councils adhere to both in the policy making process.

4. POLICY APPROACHES IN REGIONAL COUNCILS

Three types of policy instruments are cited to achieve the objectives of regional councils: regulatory, economic and voluntary (Stavins, 2004). All three are discussed here in the context of the two Acts, largely governing regional councils – however the focus is between regulatory approaches and voluntary, as these are more akin to the philosophy and resulting policy processes of the RMA and LGA respectively.

Regulatory, sometimes labelled command-and-control policy instruments include: ownership and property right assignments, determination of whether rights exist; compulsory regulations; and compulsory technology based standards. The introduction of regulation does not guarantee a success in policy outcomes. Problems of state regulation have been attributed to ‘weak political commitment and accountability, inadequate resourcing and staffing, poor policy design and/or weak monitoring and enforcement’ (Bennett, 1999). The RMA is an effects-based approach to environmental management and frequent use of regulatory instruments has been the norm over the last 20 years. In particular, the RMA resulted in the specification of rights along a hierarchal scale of:

- permitted activity - allowing activity to be carried out as a right, unless a plan or legislative rule restricts that right – no resource consent is required;
- controlled activity – requiring consent, which cannot be refused for a controlled activity which meets the standards set out in the Plan; Conditions may be imposed on matters where the Regional Council exercise control. If it does not meet the standards, the activity falls back into either a discretionary or non-complying activity;
- discretionary activity - requiring consents as per the title, with the Regional Council having discretionary right to grant a consent or not. The Council can impose conditions on a discretionary activity;
- non-complying activity – is outside of permitted activity in a plan, but with a possibility to apply to undertake the activity. The applicant must apply for a consent whereby the Council exercise full discretion on whether the consent is granted or not;
- prohibited activity – no application can be lodged to undertake an activity that is listed as a prohibited activity in a regional plan.

Economic policy instruments make use of financial incentives/disincentives such as subsidies/taxes, and more innovative performance based instruments such as tradable pollution permits. There have been many innovative approaches undertaken with economic policy instruments worldwide (Greenhalgh and Selman, 2005), and indeed in New Zealand, many of which are carefully designed modifications of basic instruments. Taxes place a financial burden on polluters. Subsidies provide incentives to implement best management practices, aimed at

providing public goods such as environmental benefits. Subsidies offer positive incentives to modify behaviour. Many other economic policy instruments exist, but are beyond the discussion of this paper.⁵

Voluntary policy instruments attempt to motivate action or behavioural change through education or extension. Clearly, voluntary/advisory policy is not sufficient to change the behaviour of all actors. The question arises as to whether it is in a business's self-interest to move beyond compliance with existing legislative requirements and adopt a 'proactive' stance on a particular matter (e.g. environmental management), voluntarily exceeding mandated minimum performance standards (Gunningham and Sinclair, 2002). The cleaner production literature proposes an integration of sound environmental process, pollution prevention and waste reduction activities into a firm's core decision making strategy in order to maximise profit on environmental grounds, effectively becoming environmental leaders (see Box 4).

Despite apparent benefits, along with the virtues of being non-coercive and unobtrusive, voluntary schemes have low reliability of achieving outcomes. Their success depends on the extent of the gap between the public and private interest, and the ability of the business to pay for the environmental improvements. Voluntary policy approaches rely on a degree of trust between the targeted stakeholders of that voluntary policy and the government agency. It relies on well-informed stakeholders acting in the public/common good, once they are made aware of the public benefits that would result from a certain type of behaviour. The advantage of a voluntary approach is that it is non-obtrusive, behaviour is modified willingly and the perceived control or power balance does not shift from the compliant stakeholder to the regulating authority. This builds social capital between regulating agency and individual stakeholder/ratepayer.

In practice, no policy solution ever relies purely on one type of instrument, and the case study of riparian management in New Zealand is explored for evidence of each type of policy approach. Problems of water quality are complex and no one policy solution fits all – particularly given that farm systems are not homogenous, grazing patterns are unique to each farm and the physical attributes of each farm need to be considered when designing a policy response.

5. CASE STUDY – RIPARIAN MANAGEMENT IN REGIONAL COUNCILS

This section introduces the case study of riparian management in New Zealand. The issue of freshwater quality is inherently complex, as the actions of one user are felt by those downstream and effective management requires the commitment of many land owners and

⁵ Economic instruments are not the focus of this paper, but interested readers can look to the NZARES Conference papers from 2008, which were dedicated to 'Economic Instruments – an idea whose time has come' which give an overview of their use in New Zealand.

land users. Of particular concern in farming regions throughout New Zealand is the damage to the freshwater system caused by livestock having access to streams and rivers. The main issues are (Davies-Colley and Parkyn, 2001):

- Remnant native vegetation in the riparian zone is degraded by livestock access to the stream.
- This leads to reduced shade and shelter, resulting in drying of soils in riparian zones.
- Compacting of soils and damage to their structure reduces infiltration capacity and reduces contaminant trapping capacity.
- Destabilised stream banks and channels result in erosion, streambed siltation and water turbidity.
- Temperature, river flows, streambed substrates, food resources are adversely affected.
- Results in reduced water quality from sediment inputs, overland flow of nutrients and microbial contamination from animal waste.
- Removal of the function of a riparian 'sink' to trap contaminants off the land.
- This leads to degraded stream habitat and reduced stream health resulting from the above damages as indicated by changed composition of aquatic invertebrate animals, and reduced abundance of certain native fish.

Optimal riparian management, for good environmental outcomes, requires livestock exclusion from waterways and the planting of restorative vegetation in riparian zones.

5.1 GOVERNANCE AND LEGISLATION

Water quality and management of the freshwater resource is one which is governed by regional councils through the RMA (Box 1). Local government is responsible for implementing these policies in a way which is consistent with the set national policies (see Box 2) and also respects the nature of local riparian areas as well as the values and needs of their communities. The most recent change in legislation relates to the National Policy Statement for Freshwater Management (NPS), introduced by the Ministry for Environment in 2011.

Box 1 Riparian and Freshwater Management in the RMA

In respect to lake beds and rivers the RMA restricts reclaiming or draining the bed and depositing substances, as well as introducing plant material. The RMA also protects riparian habitats by forbidding the damage or disruption to habitats of animals and plants, requiring resource consent or meeting certain criteria for these actions to take place (Section 3.13).

Sections 3.14 and 3.15 of the RMA also include restrictions on the use, taking, damming, or diversion of water and as well as the discharge of water and contaminants into waterways.

Section 15 of the RMA provides the legal sanctions for controlling discharges of contaminants into water, or onto land. The presumption in Section 15(1) is that a discharge is prohibited unless it is expressly allowed by resource consent, a rule in the plan, or regulations.

Section 17(1) addresses externalities as it states that "every person has a duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of that person."

Box 2 National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management requires regional councils to change plans as required to: 'establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions'.

The National Policy Statement does not set minimum quality requirements or discharge limits. Each regional council can choose how to implement the NPS.

Councils are required to impose discharge permits to ensure freshwater objectives are achieved. Councils have two options to give effect to the NPS: a 'go-early' timeframe of December 2014; or to wait until 2030 to give it effect. Therefore there is considerable time available to regional councils to give effect to it.

The devolution of setting water quality standards to regional and local government require local/regional funding of measures to address water quality issues. Local/regional funds are most commonly raised from property taxes (rates) with part of the costs paid by farmers and rural landowners, part from industry and business and another component paid from urban households. Hatton MacDonald (2004) observes that there appeared to be some political aversion to environmental charges that involve differentiated charge rates based on the polluter pays principle – hence landowners did not have to internalise their water pollution costs. Given the increased understanding of our environment and an awareness of effects, if we were to design a system of rules 'from scratch', society would expect that polluters would pay for the consequences of some or all of their actions. However, regional councils approach the problem with an existing set of behavioural 'norms' from landowners. The problem faced by regional councils is to design freshwater policy that changes the behaviour of landowners.

5.2 BENEFITS AND COSTS OF RIPARIAN MANAGEMENT

Optimal riparian management creates benefits for the land owner, but also has public benefits to society – in the form of stream health impacts, recreational and amenity benefits and knowledge that the waterways are kept clean for future generations. There are public and private benefits to effective riparian management, shown in Table 2. Hence it seems logical that there would be action to realise these joint benefits. Cost is a major limiting factor. The costs of restoring riparian zones include loss of productive land and the cost of providing alternative stock drinking stations which are borne by the land owner. There are also costs of fencing, the time and labour required to restore riparian zones, the cost of the plants/grasses/trees which are met either by the land owner or the public – depending on the policy chosen to address riparian management. They are termed distributed costs in Table 2.

Table 2 Summary of Public and Private Costs and Benefits of restoring Riparian Zones

	Private (including downstream farmers)	Public
Benefits	Improved stock health Improved water quality Soil improvement Increased land values Production of marketable products (e.g. carbon credits, harvestable products) Marketing on environmental grounds	Amenity value of landscapes Ecosystem restoration and Ecological benefits Bequest of integral ecosystem to future generations
Costs	Loss of productive land Capital costs for alternative stock drinking stations	Indirect economic losses from change in production process
Distributed Costs	Capital costs of fencing Labour costs for fencing/planting Cost of plants/shrubs/trees Ongoing maintenance costs	

5.3 EXAMPLES OF APPROACHES TAKEN TO DATE

To develop a policy addressing water quality and freshwater management, regional councils have to assess the extent of their localised environmental problem (if any) and tailor the policy to suit the expectations and norms within their region, while also complying with the local government legislation. Table 3 gives some examples of how regional councils approached the problem, to date. To give effect to the National Policy Statement on Freshwater Management, each region will have to set targets and create policy, and there will be increased focus on this issue in the coming years. The examples cited below are classified according to the type of approach discussed in the previous section – regulation, economic or voluntary policies. All case studies relate to freshwater quality and action that was taken to mitigate pollution effects on the freshwater system. A brief description of what the main policy issue in each case is given. Two of the voluntary approaches are discussed in more detail – one instigated by the regional council itself, the other by industry.

Given that policy intervention requires a change in the rights and privileges of landowners with regards riparian zones, most regional councils choose to use a combination of complimentary responses using a mix of the three types of tools, and a focus on good communication between regulators and landowners at all stages.

Table 3 Summary of Case Studies and main issue the policy addressed⁶

Region/Name	Main Issue	Policy Approach
Waikato region	Livestock access in waterways	Regulation , in targeted streams/ vulnerable areas, accompanied with information and advice.
Southland	Deteriorating water quality due to livestock (especially cattle and deer).	Regulation with limited financial assistance for riparian planting. Partnership between dairy industry and Regional Council.
Lake Taupo	High nitrogen levels in lake	Market based instrument: nitrogen trading scheme.
Horizons: Manawatu River	River contamination	Partnership approach in form of Manawatu River Leaders' Forum and targeted subsidised riparian fencing and planting in the Tararua District.
Nationwide/ Dairying industry "Clean Streams Accord"	Promotion of sustainable dairy farming, reducing the impacts of dairying on the quality of NZ streams, rivers, lakes, groundwater and wetlands.	Voluntary approach and partnership between industry and Regional Councils.
Taranaki	Riparian management – stock exclusion and planted riparian zones	Voluntary approach – partnership between landowners and regional council. Cost neutral scheme for provision of plants at cost price (economies of scale of bulk buying).
Horizons: Sustainable land use initiative	After soil erosion and damage from the 2004 floods especially in the hill country.	Voluntary approach to develop "whole farm plans".

Regulatory responses involve changing the property rights structure around pollution and the activities allowed on properties. This is done through the rules and regulations allowed for under the RMA (Section 4). Planning rules can change pre-existing individual property rights, or indeed determine them. Zoning and environmental regulations are a common sense response to pollution problems (Wills, 1997), as they reduce the costs of private negotiation between neighbours, stakeholders and affected parties of a pollution problem. Planners and local government have the power to change property rights which means that there is not an absolute immutable set of rights with property ownership. In order to ensure compliance,

⁶ The case studies formed part of a study undertaken by Market Economics Ltd for Auckland Council in 2011, looking at the public and private benefits of riparian management.

regulatory responses require an enforcement mechanism. Indeed it is for this reason that Bennett (1999) argues that regulation can exacerbate the 'tragedy of the commons', as it discourages relationships of mutual responsibility between private actors and regulating agency. This is an erosion of 'linking' social capital. Regulation change in the RMA can be a litigious process.

Economic policy instruments or market based instruments try to bring market advantages to situations, where private actions do not lead to socially optimal outcomes. Examples of economic policy instruments used by regional councils include nitrogen trading on Lake Taupo, and subsidisation of the costs of stream fencing and riparian planting on particular areas of the Manawatu river.

Voluntary approaches seem to be the default course taken by many regional councils, when the political will or environmental pressures were not great enough to use regulatory or economic instruments. For example, Auckland published best practice guidelines for riparian management (Auckland Regional Council, 2001) but had little influence over water pollution brought about by livestock accessing streams. Nor were they able to ensure that stream banks and riparian zones were taken care of. This is an example of a 'passive' voluntary approach. There were instances of 'active' voluntary approaches to riparian management, as in the Taranaki region (Box 3). It is these 'active' voluntary approaches that offer interesting governance opportunities for regional councils, and the potential to enhance social capital.

Box 3 Management of riparian margins in Taranaki

The Taranaki region is seen as a leader in terms of successfully implementing a voluntary scheme through its Riparian Management Strategy. Taranaki Regional Council has no rules in any of the regional plans that specifically address riparian management. Instead, the Taranaki Regional Council takes an advocacy role, and promotes good practice through education and implementation of the Riparian Management Strategy.

This approach has been underway since 1993, and it is definitely a forerunner to other voluntary schemes that came into operation. The Taranaki Regional Council works alongside landowners to improve riparian management in the region, with the focus being on properties clustered around the base of Mt Taranaki (the ring plain catchment). This area is where the region's land use is concentrated in dairy production, and the ring plain is bisected by more than 300 streams and rivers, which flow off the mountain. Nearly all farms in this area have some waterway running through the farm. In general, the quality of fresh water was relatively good, given high rainfall flushing out the streams.

A collaborative strategy has been developed for nearly twenty years, where the Council has helped raise awareness of the importance of effective riparian management and provides information and advice to the public and landowners about this issue.

Since the introduction of the Fonterra Dairying and Clean Stream Accord, the Council has worked closely in this partnership approach (although Taranaki's approach included dry stock

farms from the outset). The Taranaki Riparian Management Strategy introduced the staged targeting process for fencing and planting, which the Accord adopted.

While implementation of these plans is voluntary, the Council has put in place policies to encourage uptake. As well as providing information about the benefits of riparian planting, the council has helped to lower the costs of implementation by contracting with nurseries to buy plants in bulk and selling them at cost to farmers, which is a cost saving for farmers and revenue neutral for the Council. The Council has also worked with companies like Fonterra to offer prize draws for farmers taking part in the programme.

So far the Council has sold over 2 million plants with 12 per cent of its target riparian areas planted to date. The Council's focus is now shifting from providing riparian management plans to ensuring that they are implemented, they aim to have 90 per cent of target riparian areas planted by 2015 (Taranaki Regional Council, personal communication).

The emergence of partnerships in New Zealand has not gone unnoticed, and is described by Larner and Craig (2005) as moving social governance well beyond the narrow, market-oriented contractualism of earlier forms of neoliberalism, to a new era of joined up, inclusive governance. New Zealand's largest company in terms of exports and share of world market (in its industry classification) is Fonterra, which is a cooperative. A cooperative is a business partnership, and of interest in its own right, in terms of the formation of social capital. Fonterra instigated a voluntary approach to stream management, largely centred on farm effluent rather than stock accessing streams and waterways (Box 4).

Box 4 Dairying and Clean Streams Accord

The Dairying and Clean Streams Accord was signed by the Minister of Agriculture, the Minister for the Environment, the Chairman of Fonterra Co-operative Group and the Chairman of the Regional Affairs Committee, Local Government New Zealand (on behalf of Regional Councils) in May 2003. The Accord reflects an agreement between these parties to improve the environmental performance of dairying and it establishes a goal of achieving "clean healthy water in dairying areas".

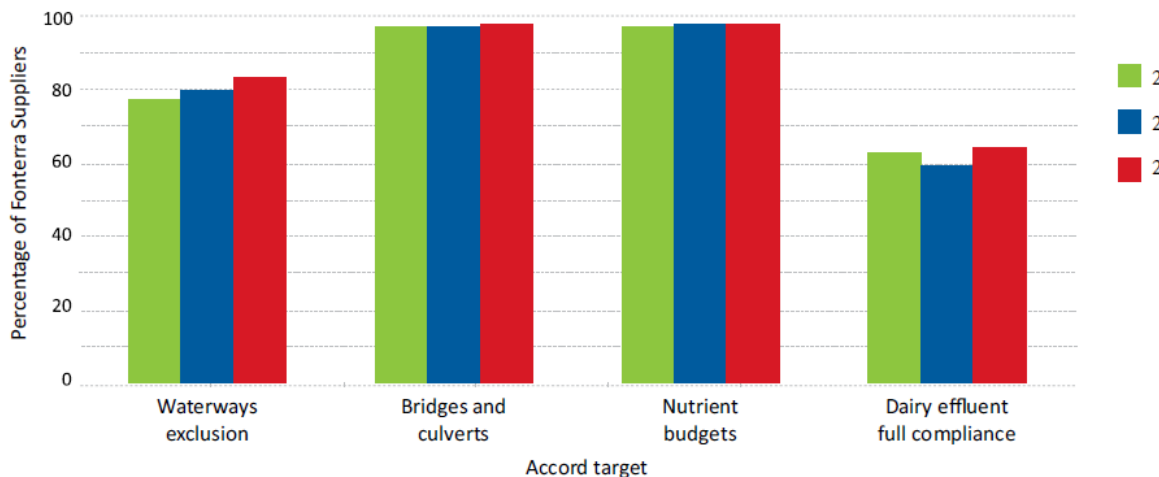
Five priorities for action are identified in the Accord to reduce the impact of dairying on streams, rivers, lakes and wetlands, as follows:

- dairy cattle to be excluded from 90 per cent of Accord-type streams (defined as deeper than ankle deep, wider than 1metre and permanently flowing), rivers and lakes by 2012.
- ninety per cent of dairy cattle stream crossings to have bridges or culverts by 2012;
- dairy shed effluent to comply with resource consents (supposed to come into effect immediately in 2003);
- dairy farms to have nutrient management plans in place; and

- regionally significant or important wetlands to be fenced.

Fonterra monitor the progress of dairy farmers toward the goals, with regional councils monitoring the compliance with regional plans and resource consents for dairy effluent disposal. The progress in 2010 is shown in Figure 2 below. Of note is the staged approach to water exclusion, the bridging of crossings and streams (which are costly, in terms of both labour and capital) and relatively good progress toward these aims. However, only 63 per cent of the monitored farms complied with existing regional council consents regarding dairy effluent.

Figure 2 Progress of the Dairying and Clean Streams Accord targets 2007/08-2008/10



Source: MAF, 2011.

This is a regulation, a pre-condition to getting a permit to farm. Yet one in three dairy farms are not complying with this, and are not internalising the costs of effluent ponds, showing that regulation is not always successful at achieving objectives. It shows that dairy farmers are not prioritising the costs of regulatory compliance. Yet the resource consent enables the farmer to conduct dairying activities, and hence this non-compliance is of concern.

Fonterra is concerned with this non-compliance, and in August 2010, introduced a new national initiative – Every Farm, Every Year. This will mean Fonterra checks every farm’s dairy effluent system annually – and they have ten Sustainable Dairying Specialists to support this programme. This is in addition to the Environmental Programs Specialists that work with farmers on the Clean Streams Accord.

In terms of policy adoption, there usually are policy laggards – people who resist change. Equally there are environmental innovators, and the Fonterra Stream Accord is a good mechanism to share best-practice approaches between farms.

The devolution of water quality to the regions through the RMA has resulted in a variety of policy approaches throughout the country. Some regional councils are progressive and active in management of riparian zones, especially regarding stock access to streams. A mix of regulatory, economic and voluntary approaches are evident, tailor made to suit the priorities in each region. This section has focused moreso on the voluntary approaches, and are discussed further in light of the potential for social capital creation, in the following section.

6. VOLUNTARY RIPARIAN MANAGEMENT AND SOCIAL CAPITAL DISCUSSION

Freshwater management is an example of a common pool resource problem. The solution to such problems is effective governance of the resource, oftentimes through mobilising the local stakeholders of that resource (Ostrom, 2005). In so doing groups of individuals cooperate and networks are formed, based around a shared problem. Water quality management along a stream network involves a set of landowners who may not know each other. They all are involved in governing the freshwater resource (along with other stakeholders, such as environmental and interest groups and the regulating agency), but may not have contact with one another. The regional council has a role in 'bonding' this set of stakeholders so they can help design and take control over the governance of their natural resource.

An 'active' voluntary approach to a group problem seeks to establish social acceptance of a practice, such that the practice will be implemented by the respective stakeholders involved. This requires 'social learning' for stakeholders and sharing a common set of values. In terms of riparian management, the landowner and the public interest need to be aligned. This requires an understanding of the public benefits associated with maintaining riparian zones and restricting stock access to the waterways. This paper has shown the joint benefits, for society or the common good and for private landowners. Education, information and extension activities are important instruments to increase awareness. Raising awareness of pollution issues, involving stakeholders and trying to develop ideas on the basis of meaningful dialogue are means of achieving social acceptance of principles. For riparian management, this could include the establishment of demonstration sites in public parks and reserves, with clear interpretation of the science behind the riparian zone, including most appropriate plants, the timing for their planting etc. It also includes the regulators understanding the constraints at a farm level, and trade-offs that are made. Education programmes within schools are another means of influencing future behaviour, and could also be undertaken as part of community involvement in riparian planting.

Voluntary policy encourages personal responsibility, and marks a radically different approach to strict regulation. It marks a progressive departure of how policymakers think about the division

of responsibilities between the individual and the state. There are strong moral and political arguments for protecting and enhancing personal responsibility. This places a value on individuals' and communities' ability to take control and act in their own best interests (Halpern *et al.*, 2004). Ideally this best interest should coincide with society's best interest once there is awareness of the effects of the damaging effects of stock access to the waterways, as in the case study used in this paper. There is a mature and growing body of knowledge in psychology offering a more sophisticated approach to behaviour and behavioural change, which can be used as a valid policy approach. The simple economic theories see people as rational economic actors, maximising welfare through making perfectly informed decisions based on complete data. Real human psychology is more complicated and involves many other factors: cultural, social, community networks, physical environments, genetic predispositions and so on (Bowles and Gintis, 2002). The drawback is that a successful voluntary approach needs to be well designed, so as to engage the farmers and landowners in an empowering way, where they perceive they retain control over their actions. This is not necessarily the case when adhering to regulation, as they must comply to a rule which is mandatory. However, an active voluntary approach does not guarantee that the principles will be implemented or acted upon. This lack of certainty in outcome is also pervasive in regulating the pollution of waterways. Detection of non-compliance is difficult in a non-point stream network, although not impossible (although monitoring systems can be very expensive).

If regional councils adopted an 'active' voluntary approach to riparian management, a process of 'bridging' the groups and networks could take place. This would involve sharing best practice and learning from the actions of other groups in different regions. Social learning would occur at this point, with the regional councils acting as a catalyst in the process.

The establishment of environmental partnerships plays an important role in 'linking' social capital. In particular strengthening the relationship between individuals, ratepayers and communities (broadly defined) with the formal governing authorities (local government). If the functions of local government are pared back to core services and stringent environmental regulation, there is little scope for the creation of trust between individuals and governing agencies. This is an opportunity lost, as it disables the use of a valuable resource which is present in all regions of New Zealand: that of social capital.

7. CONCLUSION

The issue of freshwater quality is inherently complex. The actions of one user are felt by those downstream and thus effective management requires the buy-in of many land owners and land-users. The issue also involves a range of regulators and policy makers in nested areas of

jurisdiction tailoring policies to suit the differing physical nature of the freshwater system and the stressors that pervade in that area/region.

This paper recognised that effective riparian management offers benefits which will be enjoyed by the wider public as well as privately, by the property owners involved. Public benefits include health effects of clean streams, 'non-use' values as well as the knowledge that the waterways will be kept for future generations. Private benefits include a retention or increase of land value, retention of productive land and water resources and aesthetic benefits amongst others.

When public and private benefits are aligned there is scope for collective action for all stakeholders. This requires the formation of a network, with inclusive membership. Such a network builds social capital, and strengthens the bonds between the stakeholders. Formation of the group is not spontaneous, and may require coordination. It is at this point that the regional council can act as a catalyst in social capital formation, facilitating the actions of the group. This paper explored the emergence of such groups with regard riparian management, satisfying requirements for managing the freshwater system under the RMA and the integration of four well-beings under the LGA.

Voluntary approaches to riparian management have worked well in some regions of New Zealand, but if the landowners are simply unable to meet the costs of fencing and planting the waterways, the desired outcome of restoring riparian zones will not be achieved, and indeed the amenity value of farmed landscapes may disappear – it may be more profitable to use the land for non-farming activities. Therefore voluntary approaches are not suitable for all situations, and require careful design. This paper highlighted benefits relating to social capital formation that are associated with voluntary approaches, while recognising its limitations.

A voluntary approach seeks to establish social acceptance of a practice, such that the practice will be implemented by the respective stakeholders involved. The advantage of a voluntary approach is that it is unobtrusive, landowners that modify their behaviour would do so willingly and the perceived control or power balance does not shift from the landowner/user to the regulating authority. In the Taranaki case study, a partnership approach emerged as being acceptable to farming communities, given that the landowners retain a sense of control over their actions. This can take a hybrid form of governance – with shared decision making powers vested in the community, landowners and authorities. This requires social learning and sharing a common set of values. It is a more conciliatory approach than contesting rights through the judiciary system, and possibly more cost effective as it reduces the transaction costs of the judicial process, commonly associated with the RMA.

Social capital is formed when networks of individuals form a common bond or interest between them. In society many networks exist, ranging from social friendships to formalised business groups. This is a form of capital which can be used for productive purposes. As yet, it remains

largely untapped in the governance of natural resources. There is potential to use existing and create social capital through processes of well-designed environmental partnerships. Regional councils have a role to play in this regard, as they are centrally placed to anchor partnerships and strengthen their formation, hence strengthening social networks within the regions.

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