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# Devolution and the New Zealand Resource Management Act

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**ABSTRACT**

Many past and potential New Zealand reforms involve significant devolution, i.e. the transfer of authority to make decisions on behalf of society from a higher to a lower level of government. In particular the Resource Management Act (RMA), the health and education reforms, and decisions about the institutions for addressing Maori issues have led to significant devolution of authority. Employment policy and social welfare are areas where devolution is an important policy option. The role and function of local government also is inherently an issue of the appropriate level of devolution. Many of these reforms have now been in place for a number of years, so it is appropriate to review our experience of devolution, identify the successes, and attempt to address the problems that have arisen.

Two papers address issues of when and how we should devolve authority from central to local government. This paper looks at devolution both from a general theoretical standpoint and from the perspective of the New Zealand Resource Management Act 1991 (RMA), with residential land use as an illustration. Although the RMA is discussed throughout both papers, the framework developed applies to any area of policy for which devolution decisions are being considered. The second paper, Treasury Working Paper 98/7a, applies the framework to the optimal pattern of devolution for policies relating to kiwi protection.

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## EXECUTIVE SUMMARY

This paper addresses issues of when and how we should devolve authority from central to local government. It develops a framework to help answer the following three questions:

1. What level of government should make social and political decisions about policy objectives?

2. What level of government should bear the costs of these decisions?

3. What level of government should implement them?

The paper looks at devolution both from a general theoretical standpoint and from the perspective of the New Zealand Resource Management Act (RMA). Although the RMA is discussed throughout, the framework will apply to any area of policy for which devolution decisions are being considered.

The Resource Management Act is based on a very devolved framework. There is a role for national government but in practice, most decisions and implementation occurs at regional and local government level.

Devolution issues are complex and there are seldom 'pure' results, particularly in the case of such a wide-ranging policy area as resource management. Our conclusions about the RMA offer a mixture of solutions, from legislative adjustments to change the level of government, to complementary policies that support the current structures.

We regulate resource use for a number of reasons. Where public goods and commons issues are significant we provide and protect the resource through regulation. Where externalities that affect few people are significant, we most appropriately provide a clear definition of property rights and a process for negotiation and dispute resolution. Where there are significant information failures we might set and enforce national standards, and provide public education.

The paper accepts that we *are* going to regulate resource use and focuses on the issue of *how* we best achieve this. In addressing the three devolution question listed above, the paper divides up analysis into decision making and cost bearing (section 4), implementation (section 5) and the relationship between the two (section 6). What are the criteria for devolution?

### Social Decision Making and Cost Bearing

The problem with efficient public good provision is that the government is unable to reveal private preferences in any exact manner.

People reveal their preferences through two imperfect mechanisms: voting with their feet (Tiebout model of mobility) and social choice mechanisms (involvement in political processes). We concentrate primarily on social decision making processes.

Does devolution improve social choice mechanisms and lead to better preference revelation? We have identified three principles and criteria for deciding when devolution of decision making is appropriate.

*1 Informed decision-making.*

The best decisions reflect all the relevant subjective and objective information. Those who experience the effects should make the decisions, since it is they who have subjective preferences about the issue. People with the skills and resources to access objective information should also be involved in decision making.

*2 Balanced decision making.*

If people within the jurisdiction that makes the decision bear all benefits and costs, there are no interjurisdictional externalities that could lead to over or under-provision of the public good. Decisions should therefore be located, where possible, with the jurisdiction of effects and costs. People who make decisions should be those who receive benefits, and bear costs.

*3 Cost effective decision making*

Where costs of decision making are high and preferences are relatively homogeneous, national policies can save considerably on duplication costs. The location of decision making must be informed by considerations of cost effectiveness.

The Tiebout model suggests that having multiple jurisdictions is valuable for better reflecting heterogeneous preferences and improving accountability. The possibility of mobility makes it more important to match costs and benefits within a jurisdiction so that people cannot avoid costs while still receiving benefits by moving out of the jurisdiction. Mobility also has implications for the government role at the local level. Local governments cannot effectively redistribute income without inducing out-migration by rich people and in-migration by the poor.

**Implementation**

We define implementation as activities aimed at achieving non-discretionary goals set by social decision-makers. The relative advantage of central versus local implementers depends heavily on the balance between locally and centrally held information. Local government can most easily access local information, such as monitoring of compliance and knowledge of specialised

conditions. General technical information may be most available to central government.

Economies of scale may lead to implementation being achieved most efficiently at the central level. For other activities where flexibility is important, local implementation may be more effective.

**Separability of Implementation from Decision-Making?**

How should the contract be written between the political decision-maker and the implementer if they are not the same? Clear objectives and lines of accountability are essential. However, this can be difficult to achieve in the case of an arms length contract between central and local government. The relative advantages of the different potential decision makers and implementers should be weighed against the degree of difficulty in contracting before a decision is made to separate decision-making from implementation.

**Accountability of Government**

When we have decided the most appropriate political decision maker and implementer, we need to consider how this fits with the current accountability structure. The question is whether local or central government political structures are more accountable for political decisions. If, for example, we consider local government to be less accountable, we may prefer central implementation despite the other advantages of local government.

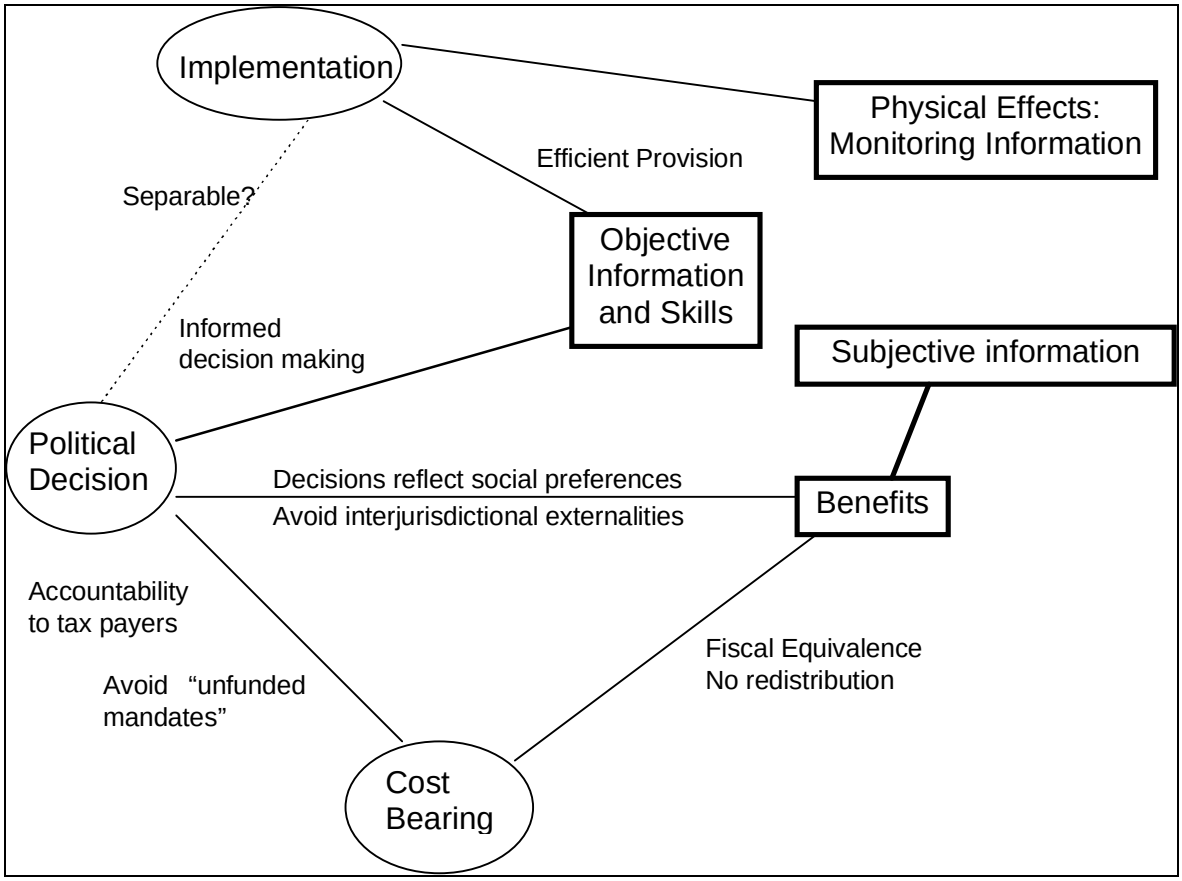
**Sovereignty**

Conversely, in spite of the many arguments in favour of centralised decision making and implementation we may still bias toward devolving decision making to local communities if the social importance of local identity and control outweighs the social choice and efficiency benefits of more centralised control.

**Framework for Analysis of Devolution**

Figure 1 gives a stylised representation of the different decisions and tradeoffs discussed above. The boxes on the right represent the facts relating to a specific issue, the importance of different types of information and their location. The ellipses on the left represent decision nodes. Implementation, political decisions, and cost bearing can be borne in different “locations”, ie. different jurisdictions or levels of government. Matches in terms of location, between ellipses, and between ellipses and boxes generate benefits, more efficient implementation, reduced contracting difficulties, more balanced decision making, and more equitable cost bearing.

**Figure 1 Devolution Framework**



# 1 INTRODUCTION

## *Devolution and decentralisation*

Devolution is defined as the transfer of authority from a higher to a lower level of government. The objective of this paper is to establish criteria for when this should occur. When should we devolve authority to regulate externalities and public goods from central to local government?

In considering devolution, there are three questions that need to be answered.

1. What level of government should make social and political decisions about policy objectives?

2. What level of government should bear the costs of these decisions?

3. What level of government should implement them?

Devolution of authority must be considered together with arguments for and against decentralisation of implementation. Decentralisation can be defined as the use of a lower level of government as an implementing agent for central government policy. In a pure decentralised system, local government merely carries out the instructions of central government in a non-discretionary way. In reality these are not usually clearly distinguished. Nevertheless, they are conceptually distinct and to understand the optimal allocation of authority and responsibility and the tradeoffs involved in choosing them, we must keep them clearly separate in our analysis.

Many past and potential New Zealand reforms involve a combination of devolution and decentralisation. In particular the Resource Management Act (RMA), the health and education reforms, and decisions about the institutions for addressing Maori issues have led to significant devolution of authority. Employment policy and social welfare are areas where devolution is an important policy option. The role and function of local government is also inherently an issue of the appropriate level of devolution. Many of these reforms have now been in place for a number of years, so it is appropriate to review our experience of devolution, identify the successes, and attempt to address the problems that have arisen.

The issues involved in devolution are complex. Different public good issues have different characteristics that lead to different optimal policy structures. A case by case analysis is required. Nevertheless, we hope that we are able to uncover general principles to help guide us in making sensible devolution decisions.

This paper addresses the issue of devolution both from a general theoretical standpoint and from the perspective of the New Zealand Resource Management Act. Applying theoretical principles in a particular policy context

throughout the paper helps make the developing framework more concrete and tests its principles.

### *The Resource Management Act*

The Resource Management Act 1991 is the principal legislation governing the use of New Zealand's land, air, water, ecosystems, soils, geology and the built environment. It also controls noise, pollution and geothermal activities. The RMA integrated resource and environmental management by combining 59 separate statutes. A fuller description of the major features of the RMA, and what it replaced, is contained in Appendix One.

The RMA is based on a very devolved framework. A central underlying assumption is that governing bodies closest to resources are the most appropriate to govern the use of those resources. Although a role for national government is specified, in practice, most decisions and implementation occur at the level of regional and local government. Resource management reform in New Zealand was related to local government reform. The Local Government Act 1989 laid the foundation for the amalgamation of over 800 local authorities, boards, boroughs etc into the 86 local authorities existing currently.

The RMA has been promoted internationally as a leading example of integrated, enlightened resource management. Its structure contrasts significantly with systems such as that in the United States that combines federal and state, and with many European systems that are heavily national and to a certain extent Europe-wide through the EC.[1] Understanding the effects of New Zealand's chosen form of regulation has implications within and beyond New Zealand.

As mentioned above, there are no easy answers to devolution questions. The RMA covers such a wide range of issues with different geographical boundaries, and varying levels of scientific complexity and preference heterogeneity that we will not emerge with one 'pure' result. New Zealand is a very small country and cannot hope to perfectly solve each issue separately.

With regard to the RMA, in some cases the current level of devolution, and the concomitant funding and implementation structures, creates serious problems that need to be addressed by changing the level of government that addresses the issue. However, this paper concludes that the overall institutional structure is broadly appropriate for core land use, built environment and air and water quality issues. In many other cases no optimal, problem-free structure exists, or that achieving it would damage the cohesion of the overall regulatory structure. In these cases we can identify the inevitable conflicts and problems and propose policies complementary to the RMA to encourage the flow of

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1 The US system combines a federal agency, the Environmental Protection Agency, and national environmental legislation such as the Clean Air Act and Clean Water Act, with implementation at several levels, state, region, and local community.

information, skills and resources, reduce duplication of effort, and improve accountability and cooperation.

### *Aims and structure of this paper*

The paper provides a methodology to analyse devolution, both in the context of the RMA, and any other devolved areas of government business, actual or proposed. The methodology can be used to assess the successes and failures of devolution to date, to identify options for policy reform and to analyse the likely effects of any potential policy reforms.

Section two of the paper discusses the justification for government's role in regulating where there are externalities, public goods and information failures. For those externalities that government does decide to directly regulate, the question of how to regulate remains. Of particular interest in this paper is how the level of government that makes and implements decisions affects the choices made, and their efficiency and fairness.

There are three essential issues that have to be confronted in making policy about the efficient regulation of externalities and public goods.

1. Social and political decisions need to be made about what society's objectives should be. What is the optimal level of public goods?

2. Costs need to be borne appropriately.[2]

3. Decisions need to be implemented and objectives achieved efficiently.

For each of these functions we need to consider which level of government is best equipped to carry them out. Who should make the political decisions? Who should bear the costs? Who should implement?

The choice may be between several levels of government – the RMA has roles for central, regional and district bodies. Our analysis simplifies this into a discussion of central vs. local government. The arguments and principles can be applied to a more multi-tiered structure because we uncover criteria for deciding the optimal level of government.

In addressing the three devolution questions listed above, the paper divides analysis into decision-making and cost bearing, implementation, and then the relationship between the two.

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2 It is important to mention at the outset that this paper considers cost bearing primarily in so far as it relates to *efficiency* of decision-making. There are many more issues to do with equitable cost bearing that are important but, although touched upon, are not the focus of this paper.

Section 3 discusses political decision-making and cost bearing together. When thinking about efficient decision making, cost bearing is a factor that cannot be separated out, so it is useful to consider them both at once.

Section 4 considers the third of our devolution questions: which level of government is the most efficient implementer?

In some cases it is difficult to separate political decisions from implementation; devolution and decentralisation are intrinsically linked. Section 5 discusses the problems which arise when there are conflicts between optimal devolution of decision making and cost bearing and the optimal level of government for implementation.

As we proceed we will build up a diagram, that represents a framework summarising the complex interrelations between factors that influence our decisions. This framework provides a useful and relatively simple way of applying our theory of devolution to real RMA situations.

Section 6 deals with accountability and sovereignty issues. Conclusions and recommendations follow in section 7.

A companion paper (WP 98/7a) illustrates how the framework applies to an actual RMA problem. It deals with significant natural areas and the provision of kiwi habitat in the Far North. This draws out issues of balanced social decision-making and efficient provision when both local and central government input are essential.

The paper is long. Readers may wish to be selective in the aspects they read. The companion paper (WP 98/7a), for example, can be read independently of the main theoretical section. We hope that the links between the theory and companion paper are clear, so the reader who wants more detail on the concepts used in the case can easily find the relevant theoretical section.

## 2 WHY AND WHAT SHOULD WE REGULATE?

The main purpose of this paper is to address questions about *how* we regulate. However, before we begin we need to briefly remind ourselves of the reasons why we regulate at all, and the rationale behind what we decide to control. A fuller exposition of these arguments is given in Appendix Two.

**"The purpose of this Act is to promote the sustainable management of natural and physical resources." (Section 5, RMA 1991)**

Why is special legislation needed for the management of natural and physical resources?

### Externalities and Public Goods

The fundamental problem with resources is that many of the property rights are not fully allocated and enforced. Property rights need to be defined, transferable and enforceable for efficient markets to function. Whenever property rights are incompletely defined or enforced, externalities and public good situations arise and resources can be allocated inefficiently without intervention. In addition, some agents will be able to claim the unallocated resources for their own use. This is an undemocratic, inequitable way to allocate resources that were previously held in common.

In many instances private solutions are possible. The Coase Theorem suggests that, where transaction costs are low, all that is necessary is for the State to define and enforce property rights, and negotiation and the common law system will allocate resources efficiently. This is a very unintrusive form of regulation.

Regulation of non-public externalities (e.g.: obstruction of private views) could be limited to defining property rights and facilitation – also relatively unintrusive. Local government should be able to facilitate agreements on externalities that affect very small numbers of people. Their role should be limited to mediation, and recording and enforcing agreements among affected parties. Elsewhere they can reduce transaction costs by certifying the credibility of information, and providing a forum for discussion.

There are, however, limits to private solutions that call for more invasive regulation by government. For which issues are the failures of private solutions to externalities sufficiently great that further government regulation is needed? Theory suggests government should focus on regulating externalities that affect public goods and common property resources, particularly those that have the following characteristics:

1. Transaction costs are high due to information asymmetries or costs of coordination. This is often the case when an externality affects a large number of people, comes from several sources, or has effects over a

number of years. Air pollution is a good example. In this situation it is unreasonable to expect all the affected parties to negotiate successfully.

2. Property rights can not be allocated or enforced adequately. Some goods are inherently difficult to allocate (e.g. fish that migrate). Some property rights are difficult to enforce (e.g.; limited liability companies, dealing with risks of pollution rather than actual pollution, may not take adequate precautions).

3. Some interests are not represented. This occurs with high coordination costs and large imbalances in resources for negotiation (it is likely to affect environmental groups, Maori, community groups etc who are negotiating with business). Furthermore, future generations are unable to represent themselves and government may need to act as their agent.

**Information failures**

Imperfect information about the effects of resource use is another important market failure in the allocation of resources; it may also warrant government intervention.

Issues may be new which means that individuals have not developed experience, and institutions to disseminate information are poorly developed. Effects may be unobservable, uncertain or occur over a long time frame. Understanding the effects may require specialised expertise or scientific knowledge.

There is a role for government regulation in areas where there are critical information problems. These could be situations where the potential harm is great, costs of avoidance are low relative to the harm, and individual information is poor.

It is reasonably uncontentious *that* there is a role for government regulation in some cases of public goods, externalities and information failures.[3] Let's return to our central concern. Given that we are going to regulate some goods and activities, what level of government is best placed to do it?

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3 Much debate rages as to the nature and scope of that role. Almost everything produces externalities – smiling, dress sense, old cars on front lawns, aesthetics of buildings. Which externalities and public goods should the government care about? How much regulation should there be? Where is the limit of government involvement? It is important to keep in mind that this is ultimately a political question and the most basic one that must be decided by whatever level of government makes decisions. People have strong and diverse subjective preferences about this. While logic and analysis can clarify the issues and empirical evidence can inform them, questions about the role of government are, ultimately, a matter of preferences and judgement, not an objective issue.

## 3 POLITICAL/SOCIAL DECISION MAKING AND COST BEARING[4]

When the American settlers rose against the British in the War of Independence, their catch cry was “no taxation without representation”. One argument for devolution of resource management is based on a similar concern: concern that those who are affected, both positively and negatively, by a regulation are those who are able to control that regulation. If an activity has only local effects, there is no call for allowing the preferences of distant actors to have any play or for forcing them to bear any of the costs.

### The Problem with Public Goods: Preference Revelation

The fundamental problem with efficient public good provision is that government is unable to reveal private preferences for public goods. The value of many consumption goods, both public and private, is largely subjective, and dependent on individual preferences rather than having objective productive value. However, in the case of private goods, consumers reveal their private preferences and marginal valuations through their purchases. The level and allocation of private goods is pareto efficient in a well functioning market. No equivalent market mechanism exists to provide public goods, which makes it difficult to decide the efficient level of public goods. In addition, no market forces provide incentives for efficient production.

At the optimal level of public good provision, the sum of all marginal valuations is equal to the marginal cost (Samuelson, 1955). If individuals’ shares of the costs of providing a public good are related to their stated valuations, then individuals have an incentive to understate their marginal valuation. This occurs because a decrease in an individual’s stated valuation will have a small impact on the level of provision. She will, however, pay a lower share of cost for all units of the good. People will choose to understate their valuation and free ride on other’s contributions (Bergstrom, Blume and Varian, 1986). In contrast, if cost shares are not linked to people’s responses, it costs a person nothing to

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4 The arguments outlined in this section all deal with issues of efficiency. If preferences are not well represented and/or decisions are unbalanced, there may be opportunities for pareto improvement. Cost bearing also has ethical implications although discussion of distributional issues is outside the scope of this paper. One point to note for our purposes, however, is that national government is better at redistribution. Local governments cannot redistribute income between or even within the jurisdiction. National government could impose high costs on one jurisdiction or group (a minority of any type) particularly if decision making is unbalanced. Discussion of this can be found in Appendix Five.

overstate their valuations in an attempt to gain more of the public good. These forces imply that the costs of providing public goods will not relate closely to the benefits individuals receive from them.[5]

Despite these difficulties in making an objective analysis, governments do in fact have to make decisions about public good provision based on assessments of this private, subjective information. This inevitably involves social processes that are inconsistent, inefficient and possibly unfair.

People can reveal their preferences in two ways:

First, devolution allows people to 'vote with their feet'. If bundles of taxes and public goods vary among jurisdictions, people can reveal their preferences by choosing where they live. This form of preference revelation is captured in the Tiebout Model (Tiebout, 1956). It is particularly effective for decisions such as choices of school. It puts pressure on local authorities to offer public goods people want and to be efficient. The mechanism is limited by the costs of mobility, the limited number of choices available and the many other limitations on location choice, such as job locations.

The second way people reveal their preferences is through social choice mechanisms. People express their preferences through voting or direct involvement in political processes, submissions, lobbying etc. Lets look first at these social choice mechanisms before considering under what circumstances devolution may improve them.

**Social Choice Mechanisms**

Political or voting mechanisms for choosing levels of public goods are always imperfect. Arrow's Impossibility Theorem indicates that no social choice rule consistently satisfies basic conditions.

Any unweighted voting rule leads to poor social decisions when there are differences in the intensity of preference. People with a large stake in the issue (e.g.: landowners who might have to bear significant costs, or people strongly affected by pollution) have the same votes as people with little direct interest.

In a system with majority rule, the 'median voter' determines the outcome. If preferences are not 'single peaked', this can lead to particularly poor decisions. On most issues there is a spectrum of choices about how much of the good to provide. If preferences are single peaked, the density function has a single maximum and the mean, mode and median are reasonably closely related. On

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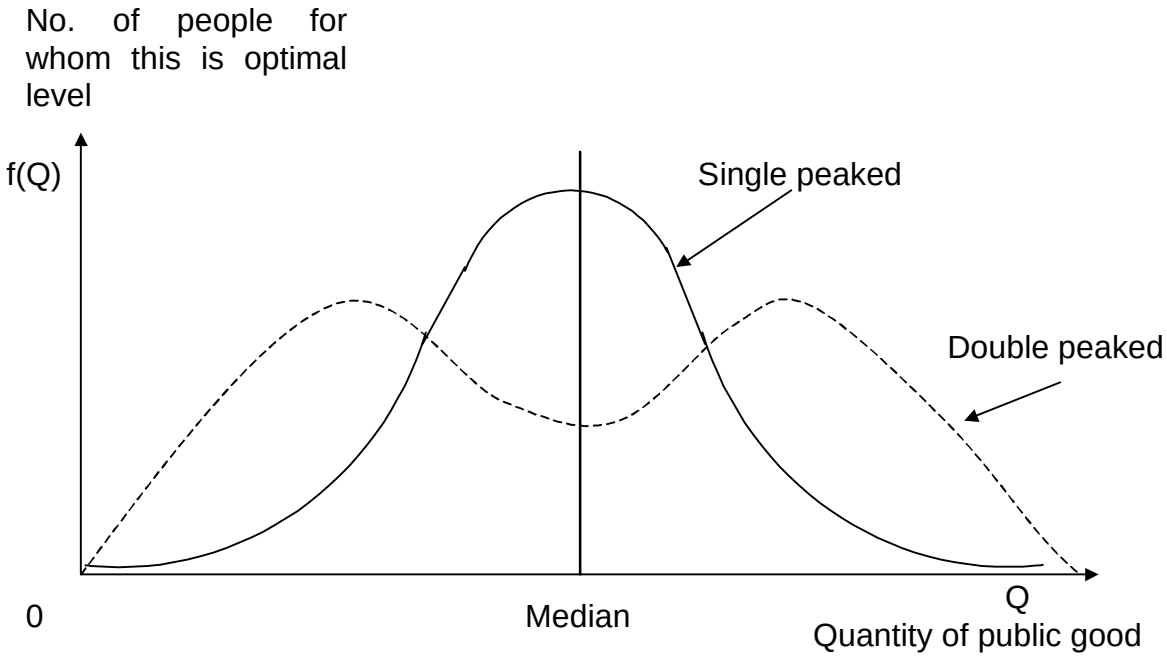
5 Some theoretical mechanisms will lead to perfect preference revelation. These have problems, however, both theoretically and in reality. Incentive compatible mechanisms such as the Clark-Grove mechanism yield revenue that cannot be used without violating incentive compatibility. They are also vulnerable to manipulation (Tidemann and Tullock). On the practical side, because of their complexity, they are infeasible for large groups or large numbers of issues.

some issues, however, voter preferences are likely to be double peaked. One group of people will prefer a low level of provision and another will prefer a high level. Few people want an intermediate level but this is the level that is chosen in a majority vote.

**Figure 2 Single and Double Peaked Preference Density Functions**




An individual could also have double-peaked preferences. An example may be sewage control in a city. If sewage is poorly treated, people simply don't use the beach. Mediocre control has some cost but is insufficient to allow beach use so is of no value to many people. However, excellent sewage treatment would allow full use of the coast so people would value it. An individual would either prefer no sewerage control, or very good control. Mediocre control, however, is the level that will be chosen in a majority vote. In cases with double peaked preferences, majority voting may lead to an outcome that no one wants.

Another common problem with majority voting is that where 'voting cycles' exist (no one option is preferred by a majority to all others in pairwise votes), the outcome in a series of votes may depend on the order in which voting occurs. This means that whoever sets the agenda has considerable power.

In reality we do not vote on every issue. We vote for agents who make the detailed decisions on our behalf. When there is a wide range of issues, any agent is unlikely to truly represent any individual's basket of preferences let alone the preferences of society as a whole. In a large jurisdiction, each vote has little impact.

Social choice is clearly an inexact process. The key issue of relevance to this paper is whether devolution improves social choice mechanisms and leads to better preference revelation.

**When does Devolution Improve Social Choice?**

Will devolution mean that individual preferences are better reflected in decisions? The answer is not simple. Sometimes local government is a better decision-maker; sometimes central government is. It depends on the details of the issue under consideration. What the following sub-sections aim to uncover are the *criteria* that it depends on. What are the principles for social choice mechanisms working well?

We have identified three principles for efficient decision making:

1 *Informed decision making*
The best decisions reflect all the relevant objective and subjective information.

2 *Balanced decision making*
The best decisions take into account costs and benefits.

3 *Cost effectiveness*
Duplication should be avoided where decision-making costs are high and preferences are homogeneous.

***Informed decision making***

Good decisions reflect all the relevant objective and subjective information.

People reveal their subjective preferences by participating in the political processes in their jurisdictions. If decisions are made by jurisdictions that do not include all affected people, there is no mechanism for the affected people outside the jurisdiction to reveal their preferences. Thus, when the jurisdiction is smaller than the area of the externalities, even with benign political processes, not all preferences will be reflected in decisions.

The importance of subjective preferences in making efficient decisions depends on the nature of the issue. In some issues most benefits are subjective, for example, the number of trees in an area, preservation of the historic character of an area. Preferences on these issues are likely to be very heterogeneous. In other issues, the benefits are more objective, for example, health effects from local air pollution. Educated preferences on these issues are likely to be more homogeneous.

If the decision-making jurisdiction is larger than the area where effects are felt, preferences can be revealed but other problems arise. If central government makes policy it tends to have one policy, which applies to the entire country

even where multiple policies are possible. For perceived equity reasons, it is difficult for central government to differentiate policies. It would be even more difficult for central government to tax differently in different areas. People would not make a clear connection between the variance in tax and the variance in regulations and public services. Central government has a heterogeneous constituency, so if preferences are also heterogeneous, few people will be highly satisfied by the level of public good chosen.

As jurisdictions become geographically smaller, the constituency will tend to become more homogeneous so that the outcome converges toward the interests of each individual. In situations where distinct groups have strong preferences, it may make sense to design the jurisdiction around this group to minimise internal heterogeneity. (Olson, 1980) For example, iwi could be argued to have distinct preferences for resource management that suggests separate iwi authorities on some issues. With local government the connection between rates, regulation and services is transparent. If preferences for regulation and public services are very heterogeneous among local jurisdictions a national policy will be much less efficient than a multitude of local policies.

Many decisions also involve objective facts and complex processes. In these cases, if decisions are made without access to good objective information and skills for analysing complex processes, results may be poor. If decision-makers realise their lack of information, they may seek it from elsewhere. Frequently, however, they may not be aware of the information and skills needed, or be able to contract for it effectively. Effective contracting for advice requires some understanding of the nature of advice required, and an ability to assess the quality of information received.

In reflecting all the relevant information, then, it is important to consider the following:

- Where is the subjective information held? This will require determining where the effects are felt, since it is those affected that will have subjective preferences. Are these preferences relatively homogenous or extremely varied?

- Where is the objective information held? How easily can it be transferred?

- What is the relative importance of subjective and objective information?

As a general principle, decision making should rest with the level of government that can access the greatest amount of relevant information.

***Balanced decision making***

When public goods are provided out of tax revenue, the concern that those who are affected by a regulation also control it is expressed as Fiscal Equivalence, “a match between those who receive the benefits of a collective good and those

who pay for it".[6] Decisions can be inefficient when the costs are borne by either a larger group than receive the benefits, or a smaller group.

*Within Jurisdictions*

One specific public choice problem in the RMA, is that the primary method of provision of public goods, and prevention of externalities, is regulation. Purchase of the public good is not generally an option. Therefore all costs are borne by land/resource owners, not shared across the jurisdiction. This leads to over-provision in a democracy because government (taxpayers) do not bear the costs of their decisions (Epstein, 1995). After the regulation has been imposed, the land will be used in a constrained efficient way.[7]

The public choice and efficiency problems created by uneven cost bearing within a jurisdiction are probably lessened by devolution because the afflicted agent is 'larger', in a political sense, in a local jurisdiction that in central government. Because agents are more homogeneous in a smaller jurisdiction, those who are forced to provide the public good will be a larger percentage of the population on each issue. On the other hand, in central government, similar situations will occur frequently so there may be more pressure to have fair, consistent decisions.

*Between Jurisdictions: Interjurisdictional Externalities*

The same public choice problems that occur within a jurisdiction will occur between jurisdictions if the costs and benefits are not borne/received by the same people. Any form of devolution leads to a limited number of government bodies, each of which deals with a range of issues and a fixed geographical area. In New Zealand 74 territorial local authorities and 12 regional authorities cover resource management issues in their jurisdictions. This means that for almost every individual issue there is a mismatch between the jurisdiction and the spatial distribution of the effects. When the jurisdiction is smaller than the area affected an interjurisdictional externality is created.

*Sources of Interjurisdictional Externalities*

<u>Environmental externalities</u>

The most obvious externality is where an environmental benefit or harm goes beyond the jurisdiction. E.g.: nation-wide benefits from biodiversity protection.

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6 Olson, 1980 p. 30

7 However, uncertainty about the possibility of future takings can lead to significant distortions in behaviour. For example, a landowner who discovers a large stand of rimu on his property would not want to notify the government, because he may be constrained from felling it. If he thinks government will discover it, he will fell it quickly before a regulation can be imposed, even if he would not have chosen to in the absence of regulation.

Decision-makers will tend to under-supply the environmental benefit because all the costs are borne inside the jurisdiction, but only the fraction of the benefits received within the jurisdiction will be taken into account. The decision-makers will allow over-production of polluting activities, because the benefits from the polluting activity are contained inside while some of the harm is suffered outside.

Network extemalities

A network externality arises when adding another agent to the network not only provides service to the agent added but also improves services to all others in the network. For example, providing telephone service to another community helps those in that community and also benefits others who want to communicate with them. Extending a network may also lower the costs of the next extension. If linking decisions are all made separately they may not be individually rational even if they would be jointly efficient. If some agents provide significant network externalities because of critical location or size of population it may be worth subsidising their connection. Conversely, they may want to exploit their position of strength to extract the value of those externalities. The transaction costs of coordinating a network may be high enough to justify central control on network issues.

Pecuniary externalities

A decision within a jurisdiction may restrict resource use in such a way that it diminishes the opportunities for capital and labour looking to migrate into the jurisdiction. It is sometimes argued that strong regulation disadvantages businesses that wish to locate in an area, and therefore it should be constrained.

There are externalities from the decision but they are “pecuniary externalities”. Pecuniary externalities are simply the operation of the price system; they are an efficient part of the market’s response to scarcity. Assuming there are no other interjurisdictional externalities, and the public choice mechanism operates effectively, these decisions are disappointing for agents who would like to use the resources, but not inefficient. If people wish to constrain the use of their own resources they should be allowed to. The jurisdiction is deciding to use the scarce resources for conservation or local public goods rather than gaining their commercial value.

This needs to be distinguished however from the use of the RMA by existing businesses to prevent entry by competitors on the ground that the entrants will lower the profits of existing businesses. The adverse effects of the entrants on the local businesses is merely the operation of the market, these adverse effects will be offset by gains to local consumers and workers. Use of regulation to prevent entry occurs only because of failures in the local social choice mechanism. There is no role for government intervention on the grounds of pecuniary externalities. However, if regulation to address public

goods problems creates a pecuniary externality as a side effect this is not inefficient.

Other, more subtle instances of externalities between jurisdictions include tax externalities, deleterious interjurisdictional competition and the "not in my backyard" or NIMBY phenomenon. These are discussed in Appendix Four: Other Externalities. Risk sharing is another form of cost bearing. The optimal allocation of risk in regulation is discussed in Appendix Six: Risk Bearing.

Balanced efficient decisions occur when decisions, costs and benefits are all located in the same jurisdiction. When benefits and decision making have the same jurisdiction but this jurisdiction is mismatched with the cost bearing jurisdiction, fiscal externalities occur; when decision making and cost bearing have the same jurisdiction but this jurisdiction is mismatched with the benefit jurisdiction, environmental externalities occur. Externalities of either type lead to unbalanced decisions. Matching the level of decisions to the level of benefits allows appropriate diversity in policies; it permits heterogeneous local policies where applicable and avoids them where they are inappropriate. Table 1 summarises the effects of mismatches.

**Table 1 Social Choice and Devolution**

| Local Decisions | | | **Benefits** | |
|---|---|---|---|---|
| | | | *Local* | *National* |
| **Costs** | *Local* | *1* | • Balanced<br>• Efficiently diverse | • Under-provision<br>• Inefficiently diverse |
| | *National* | *2* | • Over-provision | • Balanced<br>• Inefficiently diverse |
| National Decisions | | | | |
| **Costs** | *Local* | *3* | • Balanced<br>• Inefficiently consistent | • Over-provision |
| | *National* | *4* | • Under-provision<br>• Inefficiently consistent | • Balanced<br>• Efficiently consistent |

*Local Decision Making*

If the benefits are received by a larger group than the decision makers, and costs are borne by the decision-making group, public goods will tend to be under-provided (row one, right column). Where the same or similar externalities are produced in every jurisdiction, however, local authorities may cooperate to all increase/reduce externalities to the efficient level. This especially occurs

where they see it as a repeated situation. They may believe that if they behave cooperatively this period, others will reciprocate in the next.

Another clear source of poor decision making arises when the decision making group is able to impose part or all of the costs on another group (row two). If the costs are borne by a larger group than the decision-makers (e.g.: local decision making but national cost bearing), and the benefits from the public good are primarily local, public goods will tend to be over-provided. The government is not accountable to its "taxpayers". If benefits are also national, the decision will only reflect local interests and the decision will be inefficient but not systematically biased.

*National Decisions*

Consider the contrasting case, where central government determines a policy for the benefit of the nation, and then requires local government to implement it and bear the costs (row three, right column). This situation is referred to as an 'unfunded mandate'. Unfunded mandates can lead to inequitable cost bearing, and inefficient financing.[8] Although all affected agents are located in the central government jurisdiction, costs are borne by a minority so public choice is unbalanced. Public goods will tend to be overproduced.

If the decision making jurisdiction is larger than the area of the effects, and costs are shared throughout the jurisdiction, those outside the area will lose from a provision to address the externality that involves public expenditure (row four, left column). Representatives of these outsiders will vote against the provision, unless regulators make deals across areas so all locally efficient outcomes are supported.[9] In addition, voters with little direct interest in an issue may seek to impose their preferences on other groups and areas, particularly where they bear no direct cost.

To summarise, balanced decisions require that those that make the decisions are those that receive the benefits and bear the costs. This avoids interjurisdictional externalities that could lead to under or overprovision of the good. There may still be uneven cost bearing within a jurisdiction.

In considering whether to devolve decision making the following questions need to be considered:

- Where are the benefits/effects felt?
- Who bears the costs currently? Is it the same area that receives the benefits? Where could costs more appropriately be borne?

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8 An example of this arises in the case of significant natural areas in Northland. See Case Study II.

9 Olson, 1980

### *Cost effective decision making*

One national policy requires only one decision-making process, so if the costs of decision making are high, national policies save considerably by cutting out duplication. Costs will be especially high where issues are publicly very contentious or involve complex information and analysis.

Even if national decision making is more expensive, a national decision only needs to be made once, while a regional decision must be made 16 times and a territorial local authority decision must be made 78 times. If preferences are nationally homogeneous, e.g.: an issue such as drinking-water quality standards, this duplication is wasteful even if each jurisdiction makes an appropriate decision. In contrast, making multiple decisions on whether to constrain the style of residential development, and if so how, is expensive but worthwhile if preferences vary significantly among jurisdictions. One national decision will lead to poor representation of preferences.

The following are central in assessing whether cost effectiveness issues will form part of the decision of whether to devolve decision-making:

- Is the cost of decision making high?
- Is there homogeneity or heterogeneity of preferences?
- If there are high costs and heterogeneous preferences, how do we trade these two off? i.e.: how do we assess which point on the graph we are at?

A case study that highlights these issues is that of cell phone tower placement.

**EXAMPLE: THE PLACEMENT OF CELL PHONE TOWERS**

The placement of cell phone towers in the community has been a controversial issue over the last couple of years. Many members of the public have perceived the level of health risk imposed by these towers to be significant. However, The weight of scientific opinion is that the risk of health problems occurring as a result of exposure to radiofrequency fields complying with the New Zealand standard is negligible[10].

Telecommunications companies that wish to place a cell site in a community are required to apply for a resource consent from the local authority. Any member of the public can make a submission on a provision of a district or regional plan dealing with cell phone towers or on any particular cell phone tower resource consent application. Consents can also be appealed to the Environment Court. The public concern regarding perceived health risks has manifested itself in continued submissions opposing the granting of resource consents for cell sites and a number of petitions to the Environment Court.

The judgement that needs to be made in this case study is the weighting which should be placed on ensuring that local preferences are included in the decision making process, based on the costs and benefits of their inclusion. The benefit of considering local preferences is that the resulting regional standard is more likely to be a genuine reflection of the preferences of the members of that community. The costs of considering local preferences are that an issue has to be considered many times, multiplying decision-making costs. Figure xxx illustrates the nature of this trade-off.

On Figure xxx, we have indicated that the issue of cell sites could be placed on the left end of the spectrum for heterogeneity of preferences. This represents the judgement that, if people are exposed to the relevant objective information on the health risks of cell-sites, there is likely to be a low level of variance across communities for the levels of risk from radiofrequency exposure that people are willing to accept.

Figure xxx also shows that there are high fixed costs of local decision-making. These are costs to the applicant in defending each individual cell-site application, and administrative costs for each separate local authority, and for the Environment Court when local decisions are appealed.

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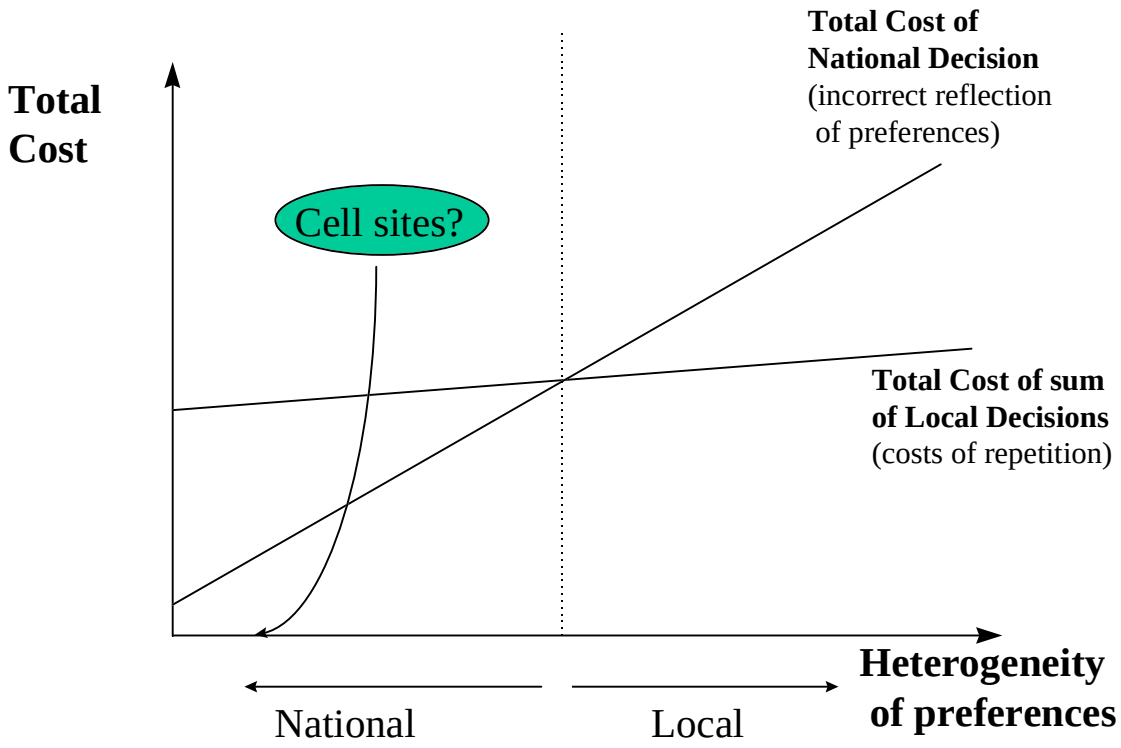
10 Cell sites generate a radiofrequency field. At very high levels of exposure to these fields, adverse effects on humans have been observed. The New Zealand voluntary standard, produced by Standards New Zealand, recommends that exposure limits for the public should be at least fifty times lower than the levels at which adverse effects have been identified and cell sites operate at levels of only a few percent of the limits stated in the standard.

**EXAMPLE: THE PLACEMENT OF CELL PHONE TOWERS CONTINUED**

**Figure xxx**




The low level of heterogeneity means that any welfare costs generated by imposing one decision on a range of different communities is low. Meanwhile national decision making greatly reduces the administration costs of repetitive decision making. Therefore our view is that decisions on the health effects of cell phone tower placements should be made at the national level.

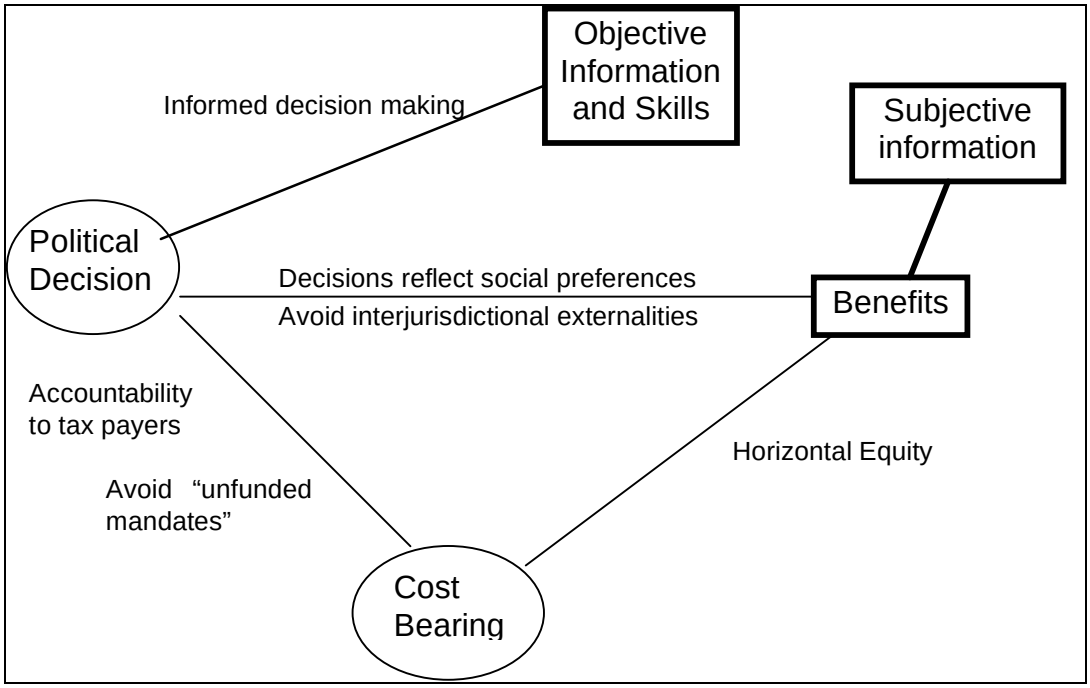
The RMA does provide for national policy setting. Central government can make national policy statements (sec 45-55) or set national environmental standards (sec 43) requiring local government to deal with this issue in a certain fashion.

The likelihood that individuals are not accurately estimating the level of risk involved indicates that information campaigns or guidelines may be valuable to ensure that individuals' preferences are based on full information. Better information may lead to a decrease in the propensity of people to continually oppose resource consents.

**The Framework: Political Decision Making and Cost Bearing**

**Figure 3** offers a framework that summarises the key points from the previous discussion. The framework can be used in two basic ways: to understand problems in current government structures, and to predict the benefits and drawbacks of options for reform.

**Figure 3: Devolution and Political Decision Making**




The boxes on the right represent factual characteristics about the issue of concern - their locations are given. The oval bubbles on the left represent decisions to be made - their locations are choices that we must make. Matches between the location of boxes or bubbles indicate elements of efficiency in social decision making. Mismatches represent problems that are likely to arise and need to be addressed. We'll use the example of subdivision to illustrate the way the diagram works.

*Illustration: Social choices about Subdivision and Local Land Use*

To analyse a particular issue, we first need to identify the community that directly benefits from regulation. In the case of the subdivision question, this is the owners of the land that borders the proposed subdivision and the local neighbourhood, and to a lesser extent the city where the subdivision is located. The people in these areas will have unobservable subjective preferences about the value of the benefits of the regulation. People care about the physical effects and have views about the appropriate definition of property rights. Some people believe communities have significant rights to control private land use

because it affects the community as a whole, whereas others believe in the predominance of private property rights. For issues such as subdivision these preferences are critical information for good decision making. For other issues they may be less important.

The other characteristic we need to determine is the location and importance of observable, objective information. In the case of subdivision, objective information, such as knowledge about road design, siltation problems, drainage and so on, is available locally because of local experience but also could be gained at the national level.[11] In any case, for this issue the critical information is the local people's preferences about the nature of the community they live in.

Once we have established the nature and location of the fixed aspects of the subdivision issue we can turn our attention to the variable elements. The bubbles indicate the 'location' of political decision-making and cost bearing. In the case of subdivision under the RMA, both political decisions and costs are local. Given that benefits are local, and subjective information is more difficult to obtain than objective for this issue, the institutional structure is well aligned.[12]

Matches or links between the loci, boxes and bubbles, bring improvements in the efficiency of social decision making. In the case of subdivision, where benefits, costs and decisions match, preferences will be represented, and decision making will be relatively balanced. There are few interjurisdictional externalities, and the neighbourhood bears all costs. If citizens think decisions are poor, they can vote against council members or be more directly involved in influencing local policy.

It is possible that the jurisdiction for subdivision is still too large although people throughout the Territorial Local Authority (TLA) could be argued to have a legitimate interest. Relatively uninterested parties may seek to impose their preferences on those directly affected. Ideally, in this case, the TLA will primarily act as a facilitator for neighbourhood decision-making on issues with very small externality boundaries such as fences, house colour and distance from boundary.

The diagram only captures two of the three criteria for good decision making. One remaining issue that must be considered is whether the costs of duplicating objective information outweigh the benefits that arise through local control of a local issue. In this case they don't. Subjective preferences are very important

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11 A contrasting example would be deciding appropriate levels of drinking water treatment. Here knowledge about the costs and physical effects of different systems is more important than variance in preferences about water quality. Preferences are probably fairly homogeneous.

12 In the case of drinking water quality, benefits are at the regional level and objective information is critical. Under the RMA, regional councils make decisions about drinking water provision. Regional council boundaries roughly match watersheds. Water users and ratepayers bear costs. Again, decisions, benefits and costs are aligned.

and likely to be extremely heterogeneous, so any advantage of lack of duplication through one decision being made centrally is likely to be outweighed by the advantages of maximising preference revelation through localised decision making.

**Mobility and Devolution**

Mobility has some positive effects on the efficiency of public good provision. When there are multiple jurisdictions offering a range of packages of taxation/regulation and public services, a pseudo market emerges. People will reveal their preferences for public goods by choosing the jurisdiction in which they live. More jurisdictions imply greater choice and more competition to provide both the packages people prefer and to provide services in an efficient way. The Tiebout model, which formalises the operation of this pseudo market, is discussed in more detail in Appendix Three.

New Zealanders are a relatively mobile people. Between 1991 and 1996, 24% of New Zealanders chose a new jurisdiction to live in. Different TLAs do have different "cultures" to a certain extent, e.g.: Waitakere City and Manukau City have very different characters, so people have some choice. Although location decisions are heavily dependent on job opportunities, this mobility still allows some preference revelation and puts some pressure on local jurisdictions.

Mobility also causes some significant problems with regulation. Any interjurisdictional externalities are exacerbated when people can move away from the areas bearing costs and into the areas receiving benefits. Decision-making is not only unbalanced, but can also lead to unstable communities. We probably do not want to directly restrict mobility on the basis of these problems, but we do want to be aware of them to understand the detrimental side effects of certain policies.

Mobility limits the ability of local governments to redistribute income either directly or through services. A jurisdiction that redistributes from high income to low income will tend to lose high-income people and gain low-income people. As they lose the high income, high tax paying people they become unable to support their previous level of service provision. It also becomes more difficult to support diverse communities.

When economies of scale in public good provision exist, small communities may suffer from out migration because of tax externalities. A person leaving a small community lowers the cost of public services by less than the loss of revenue. Thus the migrant imposes an externality on the remaining community. Conversely, where diseconomies of scale arise in large communities, a person entering a large community may increase that community's tax take by less than the cost of providing additional services. This problem could be addressed by making communities more similar in size to make best use of any economies of scale and avoid diseconomies. Alternatively larger communities may want to

subsidise small communities, or tax new development in large cities to prevent inefficient migration toward overcrowded cities.

Thus mobility complements devolution by improving preference revelation, but also makes appropriate handling of interjurisdictional issues and redistribution critical. Institutional structures need to take into account the dynamic impact of mobility.

# 4 IMPLEMENTATION

We have considered social decision making and efficient cost bearing together. Implementation is the third function for which decisions about level of government need to be made.

We define implementation to be the activities to achieve non-discretionary goals set by social decision-makers. Implementers may need to make decisions about the most efficient approach to achieve the goals but these decisions will be based purely on objective criteria, not preferences. If society has preferences about the type of instruments used to achieve outcomes, these should be specified as part of the goals given to the implementers.

In common parlance 'implementation' usually combines objective decisions and some subjective decisions, but separating the two roles makes analysis clearer. Even if central government made the key decisions about objectives there might be reasons why you would want to devolve choices about how to get there. In this situation two types of social decisions must be made. First the macro decisions about environmental outcomes, and second the micro outcomes about regulatory instruments and local cost sharing. Different levels of government may make these. In our analysis these should be looked at as two distinct social decisions and separated from the actual implementation of the regulatory instruments once the social decisions are made.

If central government implements its own decisions it could use a series of local agencies. For example, although the Department of Social Welfare has local offices, they are controlled under centralised policies. In contrast, where central government decides to decentralise implementation it can write contracts with local providers. For example the national government contracts with hospitals to carry out certain numbers of heart operations. The hospitals decide how to do the operations and run the cardiac unit but do not decide how many patients to operate on or which patients to choose.

If the national government issues a national policy statement, it mandates local government to carry out this mandate. National government sets the objectives and local government implements them. If the local government wants to use national government services and skills to implement its own policies, it writes a contract with the appropriate national government agency. When local government makes and implements decisions the two roles may be indistinguishable.

Under the RMA, local government is providing a process for public participation and mediation, regulatory decision making (i.e.: plans), and implementation of regulations through decisions in individual situations (for example: resource consents). Government's other role in the RMA is the collection, analysis and provision of information. The appropriate level of government for this function is discussed in Appendix Seven.

Local government may regulate externalities and provide public goods more efficiently than central government or less efficiently. Its relative efficiency varies by issue and depends on the location of relevant information, the skills and resources of each body, and the potential for co-ordination of local and central information and decisions. As in the previous section, we are looking for criteria or principles that will help guide the decision about the most appropriate level of implementation.

Let's look at what theory might say about which level of government is the most efficient implementer. We have identified three criteria or principles to guide implementation location decisions.

1 *Diseconomies of scale: flexibility*
Where local circumstances are diverse, the best implementation will tailor diverse solutions.

2 *Economies of scale: efficiency*
Economies can arise through providing more of a given good or avoiding duplication of objective decisions.

3 *Information*
Implementers need to access the relevant information about local conditions and actions and technical/scientific aspects of the issue.

*4* *Innovation*
New ideas can occur anywhere, but the skills to develop them and resources to diffuse them may be more available nationally.

When flexible policies are optimal, or if good local information is essential to efficient implementation, local implementation will tend to be more efficient. However economies of scale regarding specialist skills, operational capabilities and information create a case for centralised implementation. Who the best implementer will be will vary case by case depending on the trade-off among these considerations. In some instances the advantages of bigger size will be more crucial. In others access to local info and flexible local solutions will be more pertinent.

### *Diseconomies of scale: flexibility*

The RMA focuses on outcomes rather than fixing rules. This flexibility, where a range of behaviours may all achieve the desired objective, is crucial. It allows tailor made solutions to local conditions. Local government may be able to achieve desired outcomes in a more flexible way. If there are diseconomies of scale in the number of different decisions an authority must make, a smaller jurisdiction, which deals with fewer situations, can make more diverse decisions on those situations. A larger authority may resort to fixed rules that cover a range of situations. More diverse decisions allow focus on achieving given

environmental outcomes rather than fixing rules for the way those outcomes are achieved.

Of course the price of flexibility can be uncertainty for businesses and individuals about how regulations will affect them. This uncertainty could be dealt with by working out solutions to all future situations in advance. This is extremely costly. Solutions must be negotiated for situations that may not occur for many years if at all.[13] Alternatively the jurisdiction can set up some general guidelines in advance to reduce uncertainty but then deal with individual situations as they arise. This saves up-front costs but does leave some uncertainty and scope for strategic behaviour to alter future decisions.[14]

Diseconomies of scale in the organisation of decision-making processes may also arise if bureaucracies get beyond some critical size. Small jurisdictions may be more flexible and less bureaucratic.

### *Economies of scale: efficiency*

As was the case with cost-effective decision making, to the extent that problems and situations repeat, central implementation benefits from economies of scale. This is particularly true where decisions are heavily based on objective rather than subjective factors. For example, hazardous waste management, such as the appropriate design of landfills, is a problem in all jurisdictions. This is not an area with large differences in preferences. No one wants to be exposed to dangerous chemicals when they can fairly cheaply avoid it. Designing appropriate rules for landfill design does, however, require a high level of technical information and skill. Having one set of rules on storage of hazardous waste avoids unnecessary duplication. In cases like these, decisions and implementation are best carried out centrally.

Economies rather than diseconomies of scale may exist for provision of some public goods. For example, in Auckland, sewage management, landfills, and transportation management, are all more efficiently provided at a regional scale rather than very locally. However, we can only exploit economies of scale if the jurisdiction that provides the good can be expanded without violating fiscal equivalence. (Olson, 1980) Sewage treatment in a sparsely populated region will not necessarily be made more efficient by combining that region with another. Sewage still needs to be treated close to its source.

Some regulatory instruments may be only available to central government. This could be because of links to other central government institutions; for example

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13 This is the route Northland chose with its plan for Significant Natural Areas. See Case Study II.

14 In the economics literature this is referred to as an incomplete contract. One key problem which arises is “hold up”, where the investments, or information revelation of one party reduce their bargaining power in future negotiations.

central government could implement environmental taxes through the existing tax structure. Arbitrage can limit the use of some instruments at a local level. For example, a petrol tax in region will be ineffective if people are easily able to drive to the neighbouring jurisdiction to buy petrol. In a different example, local governments cannot effectively regulate transportation of hazardous waste because many jurisdictions are affected by one load. The obvious monitoring points are at the points of loading and unloading which could be in different jurisdictions.

Thus in some situations central government has capabilities that offset their lack of flexibility and larger bureaucracy.

### *Information*

Objective information includes both specialist scientific and technical knowledge as well as monitoring information about what the physical effects of the regulation at issue are.

Local regulators are likely to have better access to local information relevant to efficient implementation. They can better access local objective information about physical effect. Local actors may also be more likely to reveal their information to a local regulator whose decisions they can influence, rather than a distant central government. Local decision-makers may directly observe local information and actions and therefore obtain monitoring information more effectively. Their good local information may enable local decision-makers to tailor solutions to problems effectively and at low cost, and to enforce these solutions.

On the other hand, centralising control has advantages. Central decision-makers benefit from economies of scale in information, such as scientific knowledge, that is relevant to a range of similar problems. They can also employ people with specialised skills, e.g.: understanding of RMA legislation and its intent.

### *Innovation*

Innovation is also important to consider when thinking about which level of government should implement. In the medium to long run, the ability and incentives of local and central governments to be dynamically efficient may be as significant as the static differences.

‘Technology change’, or change in policies used, consists of innovation or invention, followed by initial adoption (application to a real problem) and then diffusion to similar problems in different organisations. Efficient execution of each of these steps requires appropriate skills and aligned incentives. The development and diffusion of new policy approaches suffers from the same market failures as any other form of research and development. The new knowledge is a public good. The inventor cannot reap all the benefits of his

activity so has diminished incentives. Although society wants to encourage innovation by improving these incentives, once an innovation is created society wants to charge nothing for its diffusion.

Effective innovation requires high levels of capability but may not intrinsically require scale. Small units may be innovative and free to experiment with low aggregate risk. If small units do experiment and discover effective new regulatory techniques, communication between units is essential for effective learning. On the other hand, the Schumpeter hypothesis suggests that large monopolies (and hence large governmental units) are most likely to be innovative because of their supernormal profitability, and ability to capture the benefits internally. Empirical evidence on this is mixed[15].

Adoption and diffusion may be more effective in larger governments. Empirical evidence suggests that small companies (and hence small jurisdictions?) are less likely to adopt new technologies.[16] This is probably due to lack of technical capacity, higher risk aversion in small companies, lower profitability of a given innovation because of smaller scale, and possibly lack of access to the necessary capital. Although this literature has developed in the context of private sector activities, many of the lessons probably also apply to government.

Central government may have more capability and incentive to innovate and diffuse new ideas, but may not want to experiment on a nationwide scale because of the large risks. Maybe an appropriate compromise is for central government to facilitate experimentation at the local level. One example where this has occurred is with the development of tradeable water markets in Taranaki where a number of central government officials have provided assistance in the design of a locally administered system which is seen as a pilot for possible broader implementation.[17] Diffusion of new ideas may similarly need to be motivated and assisted from the centre.

In conclusion, national government may have advantages in funding and providing the skills for innovation and diffusion of new ideas but may want to facilitate experimentation at a local level rather than risking applying a new untested idea to the whole country at once. Where policies must be locally differentiated, the national government cannot effectively innovate but may still have a role in facilitating local innovation.

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15 For discussion and empirical evidence on the Schumpeter Hypothesis, see Cohen and Levin, in the Handbook of Industrial Organisation (1989). For discussion on the relative timing of innovation, adoption and diffusion across different firms within an industry see Reinganum, in the Handbook of Industrial Organisation (1989).

16 For details on the empirical literature see Karshenas and Stoneman (1995).

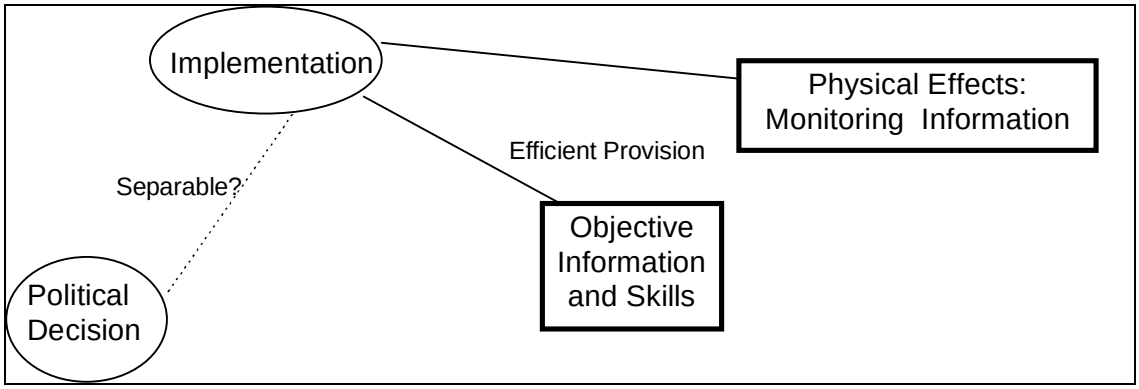
17 Personal Communication with Ross Phillipson, NZ Treasury.

**The Framework: Efficient Implementation**

The appropriate level of implementation and provision of public goods depends on the need for diverse solutions across jurisdictions and the extent of economies of scale in the specific output. It also depends on the need for and location of objective information, skills, and resources, the importance of locally observable information, and the ability to access the skills and resources held by others. The importance of these factors will vary from issue to issue.

**Figure 4** illustrates the important linkages for efficient provision. This is the second half of the devolution framework. The boxes again represent the fixed characteristics of an issue, while the bubbles represent institutional choices.

**Figure 4: Devolution and Efficient Provision**




Let's continue with the subdivision example. To implement subdivision decisions, objective information is important for good design. Most local governments have access to this information because subdivision control is one of their core functions. Local information, such as on specialised land conditions, is necessary for appropriate design of regulation to deal with environmental effects. Local officials have relatively easy access to this information and have experience with dealing with similar land nearby. Monitoring information, to ensure that developers have followed the regulations, is essential to good enforcement. Because local conditions and social decisions are widely varied, the flexibility to match subdivision designs to specific situations rather than using broad rules is valuable. In this case the local advantages clearly outweigh what national advantages may exist in implementation.[18]

However, to the extent that experimentation with new subdivision designs, or new procedures for processing applications, for example to allow more flexibility and more rapid resolution, are important, national government facilitation may be valuable. Even if a local government does successfully innovate, they will

18 A contrasting case is given in Case Study II where local governments are trying to protect kiwi habitat.

not easily transfer their experience to other local governments. In particular, the national level government may have backed too far out of the implementation of the new mandate for outcomes based rather than rules based regulation. Local governments are having trouble developing and adopting new practices.

For many issues, both local and central involvement in implementation would be optimal. This requires good co-ordination, regardless of where final accountability lies. The agent chosen to be ultimately responsible for implementation should be the one with the most advantages, and/or the ability to contract for the other's skills. Whatever we choose, the most important thing is to make one agent ultimately accountable so that incentives are clear. This avoids the 'team' problem where no agent is fully in control, and hence no agent is fully accountable.

Unfortunately, it is not always possible to separate the level of provision from the level of political decision making. A trade-off frequently exists between the desire for efficient provision and the desire for local control. In some cases, it would seem that one level of government should make political decisions and another should implement them. Can political accountability and accountability for efficient implementation be separated?

## 5 CAN WE SEPARATE DECISION MAKING FROM IMPLEMENTATION?

We have now considered the appropriate level of government separately taking into account the desire for balanced effective social decision making, and the desire for efficient implementation. In some situations these two objectives will lead to choices which are in harmony. In the case of subdivision, both social decision-making concerns and implementation suggest that local government should make decisions about regulation. In other cases conflicts arise and we would like to have one level of government make decisions and another implement them. For example, national government may want to set minimum air quality standards, but local governments are able to use a variety of instruments to effectively implement them where problems arise. Separating these two roles requires some form of contract between the agents.

A contract specifies what the 'principal' wants the agent to do, and how they will be rewarded and/or punished in relation to this. In the RMA, two scenarios arise, the principal is central government and the agent is local, or vice versa. An example of the first arises in companion paper WP 98/7a where local government is providing kiwi habitat, a national public good. An example of the second is allocation of water rights through a tradeable water rights regime, where local government makes decisions but needs central assistance through changes in legislation and technical support. In most contracts the rewards are financial. In the RMA, most are more amorphous. They could be moral or financial support for the local jurisdiction, better relationships among agencies, or legal sanctions through the Environment Court if the contract goals are not met.

The rules of good contract design apply to contracts between levels of government. Clear objectives and lines of accountability are essential. If they are unclear, it is impossible to effectively reward and punish.

### *Contracting problems*

Three basic problems arise in contracts:

- private information about cost and quality
- private information about effort to achieve goals effectively
- limitations on rewards and punishments.

If the agent can observe costs or quality and the principal cannot, i.e. adverse selection, the principal may reward more than necessary or set punishments inappropriately low and end up with an inferior product. Cost may be higher and performance lower. For example, suppose central government pays local government to protect kiwi habitat. It may not know how much farmers really need to be paid to restrict their land use, or how much local people politically oppose (and therefore raise the political cost of) land use restrictions. Central government may not be able to observe the quality of habitat chosen for

protection. This is a particularly visible problem when the agent is paid to carry out the tasks.

If the agent can observe the care with which decisions are made, and the effort put into implementing them while the principal cannot, i.e. moral hazard, it is difficult to provide appropriate incentives for effort. For example, if the central government set air quality standards and Christchurch fails to meet those standards in a particular year it is hard to tell if this is because of insufficient effort, or uncontrollable factors such as weather, or unexpected economic growth.

The third contracting problem that is prevalent here is that rewards and punishments are limited. In general, the RMA does not provide central funding for the activities it requires of local authorities. The punishments for non-compliance through the Environment Court are uncertain, slow and limited. The informal punishments, e.g.: risk of local government reform, are extremely uncertain. Local government is extremely limited in its ability to reward central government agencies for their assistance. They have limited financial resources, and very little political power.

***Solutions to contracting problems***

There are three possible solutions to the adverse selection problem. First, if we believe the capability to produce at low cost is positively related to the ability to produce at scale, jurisdictions may be able to be induced to reveal their costs. They could be offered a choice between a large quantity of output at a high total price and a smaller quantity of output with a lower total, but higher average, price. The less efficient jurisdictions will choose the higher average price and lower output, while the more efficient will find the larger contract more attractive. This only works where outputs from different jurisdictions are substitutes. Second, we can compare productivity and costs across jurisdictions. To the extent that costs are similar among different jurisdictions, observing relative costs produces information about each jurisdiction's true costs. This is particularly useful for adjusting payments over time. Finally, where the private information is about quality, although quality may not be immediately observable or rewardable, it may become obvious over time. Future contracts may depend on the good reputation high quality outputs generate. If creating reputations is important it is critical to maintain and develop institutional memory.

When it is difficult to observe effort, effort is often rewarded indirectly through rewards for observable outputs.[19] Politically desired outcomes are ideally achieved by contracting for specific non-discretionary outputs. Unfortunately measurable outputs, that relate clearly to outcomes, are frequently not available. Definition of some outputs, that are part of the efficient production of outcomes, without incentives for the other non-measurable outputs tends to

19 This is the standard problem of moral hazard.

lead to serious misallocation of effort toward measurable, rewarded outputs. It may be preferable to reward on the basis of a measure of the outcome of interest. Here a tradeoff arises between giving unbalanced incentives, and giving weak incentives and forcing agents to bear risk when they are rewarded on the basis of outcomes they only partially control.

The inability to reward or punish sufficiently has no direct solution other than finding additional resources to increase incentives. Non-financial incentives to encourage voluntary compliance may be worth exploring. Otherwise realistic limits should be put on expectations so that limited resources are used as effectively as possible. Unrealistic, unenforceable mandates may backfire and make future action even more difficult.

*Informal / Non-financial contracts*

A contract does not need to be a written, strictly enforceable document. A contract in many cases is more of a relationship. When the contracting problems above cannot be clearly solved the informal elements of a contract become more important. Personal relationships between officials at central and local government levels, concern by implementers for their reputation, promotion incentives, and publicity for successes and failures all provide more diffuse incentives for good performance. Building a good "corporate culture" may be as important as the formal rules for encouraging pride and high productivity. These aspects cannot be created overnight but can be destroyed. Any reform should pay attention to preserving beneficial relationships and practices and maintaining good aspects of corporate culture, such as morale and team spirit. These aspects are less amenable to hard analysis but become critical when other forms of contract are weak. Non financial incentives are an area that, in the New Zealand public sector reforms, may have been under-exploited.

***Advantages of separating political and implementation roles: the regulator / provider split***

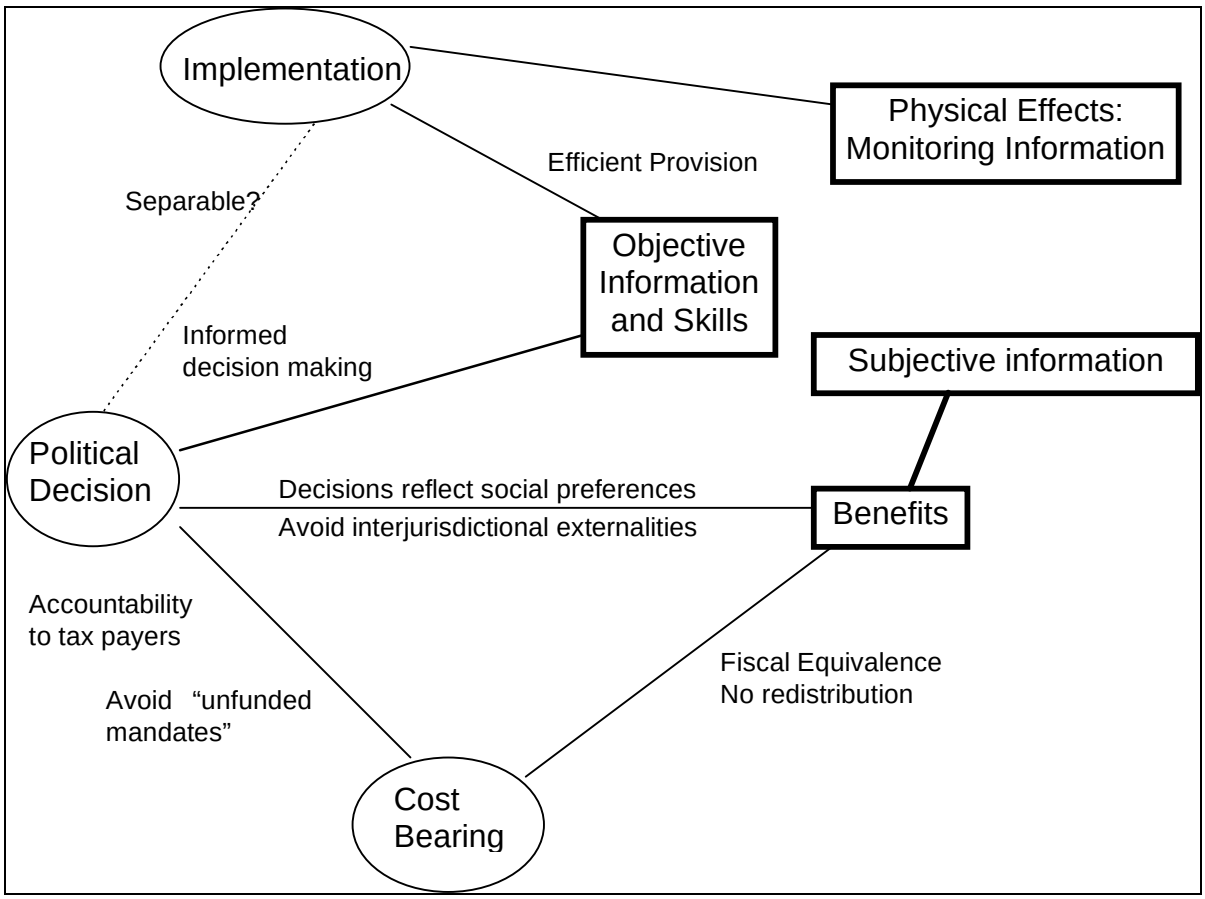
Combining the political and implementation roles can also create problems. For example, local governments may face a conflict between their decisions under the RMA and their provision of infrastructure. Local government provides local infrastructure services. It is difficult for them to plan the management of these assets (as required under the Local Government Act) when they cannot control where new development takes place. They therefore have a tendency to over-control commercial activity. This illustrates the advantages of a regulator / provider split. In some situations, if decisions are made by those dealing on a day to day basis with the landowners and industries they regulate, the regulator might be 'captured' and fail to represent the wider interests of society. The problem of 'capture' may be less acute in the RMA because we are dealing with directly politically accountable bodies although, given the failures of the democratic process, similar problems may arise. In addition, the problems of regulatory capture may sometime be overstated relative to the advantages,

trust, cooperation and good information flows, that close relationships can generate.

**The Framework: The Whole Picture**

**Figure 5** combines **Figure 3** and **Figure 4**.

**Figure 5 Devolution and Public Goods**




The framework can be used in several ways. The first is to analyse the sources of success and failure in current policies. For a particular issue, identify the location of benefits, and the location and importance of subjective and objective information and skills. Then from the policy, identify the location of political decisions, implementation, and cost bearing. Draw lines between the nodes where the location is the same. The lines indicate the advantages of the current policy structure. Where lines do not connect nodes, we might expect that problems will arise. We can compare these predicted advantages and problems with observable experience.

The second use would be to design new policy structures. Here we would start with the issue-specific location of benefits and information, and the importance of different types of information, and then try to choose the optimal location for

each bubble, making tradeoffs between the matches that are formed. In some cases, where no objective information or specialised skills are relevant, or they are held in the same location as the benefits, all nodes can have the same location and no conflict arises. Subdivision is an example of this. In other cases, effects are local but important objective information and skills are held centrally. Here conflict arises in choice of implementation location. Alternatively, implementation is ideally national, but political decision making is ideally local (or vice versa), and they are difficult to decouple. The decision on how to deal with this conflict feeds through to the choice of locations for cost bearing. An example of this situation is discussed in depth in the companion paper (WP 98/7a) on kiwi habitat.

The third use arises when there are unavoidable conflicts in choice of 'location'. If a link cannot be achieved, a problem arises. Alternative approaches may exist for achieving the benefit that the match between levels of jurisdiction achieves. If, for example, implementation is local but there is significant objective information and need for specialised skills which are held centrally, provision may be inefficient. If we develop effective means of communication between central information holders and local implementers, this conflict can be reduced.

The menu of locational choices for the choice nodes is limited in reality by our existing structures of government. We do not have separate government or even separate laws, for every issue, so it is rare that the area of effects exactly matches the jurisdiction of political decision making or the area where costs are borne. Most decisions are a compromise among various concerns. **Figure 5** helps clarify the necessary choices and the tradeoffs.

To this point we have looked at the choice of level of government for different functions in terms of fundamental characteristics of the issue and the capability of jurisdictions. We have implicitly assumed that each level of government is equally accountable both in terms of social decision making and for efficiency of implementation. In addition we have only concerned ourselves with the outcomes of the political process not the process itself. Relaxing either of these constraints might alter our conclusions.

## 6 ACCOUNTABILITY OF GOVERNMENT

Even where benefits, costs and decisions are all aligned social decisions and implementation may be poor if the government structure is inherently inefficient or unaccountable. Both local and central government face accountability problems. If local government is considered to be less accountable, it may be worth trading off the heterogeneity of local decisions, or the benefits of balanced decision making for improved political accountability by making decisions at the national level.

Governments are ultimately accountable to voters. Constituents vote based on their preferences, their beliefs about what MPs/councillors/political parties will do, and their observations about the outputs and outcomes achieved by government. To the limited extent that voting reflects past outputs and outcomes, individuals and governments are accountable for these. Media and citizen watchdog groups may be able to make them more directly accountable for particular outputs and outcomes by making these transparent.

*Local Government Accountability Advantages*

In some ways the problems from poor public choice mechanisms reduce as the scope and size of the jurisdiction falls. Voters express their interests more directly when the vote is over a narrow range of issues e.g.: water management. As preferences become more homogenous with smaller jurisdictions, voting cycles, and problems arising from differences in intensity of preference, or double peaked preferences become less serious. Taking the arguments for improving preference representation to an extreme, however, each individual would ultimately need to vote for a different organisation on each issue, and different organisations would operate for each externality boundary. This is clearly unworkable.

The larger the number of agents responsible for controlling a given resource, the harder it is to observe each agent's effort because the observable resource outcome is a poor indicator of the agent's effort. When information about agents' efforts is poor, agents are less accountable. Effective accountability structures balance the risk imposed on agents against the strength of the incentives they face. If the contract is based on poor information and hence imposes unreasonable risks on agents, in reality the contract will break down. They will not be held responsible for outcomes clearly beyond their control.

The link between constituent and agent is closer in local than in central government. The local constituents can more easily monitor the agents' provision efforts. The local official may have a reasonable level of control over the local outcomes, particularly process outcomes. In contrast, in central government, an individual official is part of a much larger bureaucracy and may have less discretionary power and hence less control over outcomes.

To the extent that constituents are mobile, the existence of multiple jurisdictions will make jurisdictions compete for constituents by providing good services more efficiently. This will lead to downward pressure on costs of provision. Local governments may be more accountable to constituents because of their small size, and their need to compete, but less accountable if local political structures are ineffective.

Local government is also accountable to central government. Central government defines the powers of local government and constrains their actions through legislation enforceable by the Environment Court. To a certain extent, local government is accountable to central government because of the threat of changes to their powers. Local governments may try to anticipate the concerns of central government to minimise this threat.

*National Government Accountability Advantages*

In the other direction, constituents have less control over a large number of governments. As the number of organisations grows, each one tends to become less accountable and more able to be manipulated by special interests.[20] Constituents who express political preferences bear costs of doing so. When an issue has a small impact on a large number of people, each individual will tend not to get involved; i.e. they will free ride on others' political participation. Only concentrated interests will express their preferences. Decisions will be seriously biased. In some ways this is what NZ moved away from with Local Government Reform.

Central government is a more sophisticated institution with better resources, including internal accountability structures. This may give it some advantage in social decision making and efficient provision. It is likely to be more politically accountable, to the extent that political pressure and lobbying is more sophisticated at the central rather than local level. Its disadvantages are distance from the affected community, and the fact that there are few mobility pressures on central government. Dissatisfied voters may express themselves more effectively through voting for central government than local government, but they cannot easily express their discontent by leaving.

These issues are beyond the scope of the current paper but raise a number of questions. Is local government more accountable and responsive than central government, or less? Do people vote in local body elections? Who controls local government? Will local governments become more accountable as they become more powerful? Do they represent the interests of all the people within them? What about the interests of potential migrants? Which element dominates in the tension between increasing accountability and improving public choice through greater observability of actions, and greater homogeneity on the one hand, and decreasing accountability through capture by specific local interests on the other?

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20 Tullock, 1980

### *Sovereignty issues*

People may believe that they can make better decisions in their own interests. In addition, however, the value of devolution may not be simply measured in terms of the outcomes, observed as changes in resource use and allocation, but also the process. The ability to control your own life and community has a value irrespective of the use made of it. Many people would prefer their own inefficiency to efficiency imposed by central government.

A critical example of this in New Zealand arises with Maori sovereignty. Maori do not want control over their lands and resources only because they think they will get greater value out of them, but also for reasons of mana and rangatiratanga. This concern also applies to many small communities who have a strong local identity or a distrust of central authority. This issue was epitomised by the bitter fight over the amalgamation of different local bodies during the local government reform.

## 7 Conclusions and recommendations

> *"God grant me the serenity to accept the things I cannot change,*
> *courage to change the things I can,*
> *and the wisdom to know the difference" The Serenity Prayer, By Reinhold Neibuhr*

The appropriate level of devolution varies depending on the characteristics of the issue and the nature of the institutions involved. When devolution decisions relating to a large number of issues are made simultaneously tradeoffs inevitably arise among issues. For a given set of institutions and jurisdictional boundaries options are more limited still. Nevertheless, by understanding the nature of the tradeoffs we gain insight into the situations where it is worth challenging the status quo, the situations where we should endeavour to improve the functioning of existing structures, and the situations where some degree of poor decisions and inefficiency are not worth addressing.

The RMA has been used to illustrate how the devolution framework may be applied to a particular area of policy. In many ways, the 1991 New Zealand Resource Management Act is a bold policy experiment. It is an integrated, relatively comprehensive piece of resource management legislation. It emphasises local public participation and has, on an international scale, a very high level of devolution.

Many problems have arisen since the RMA's inception. Many of these existed under prior legislation, and the amalgamation of many Acts has simply concentrated them, while others have arisen since 1991. The problems have three basic sources:

(i) a mismatch of the jurisdictions of political decision making, benefits, cost bearing, and implementation,

(ii) poor relationships among levels of government, and

(iii) poor institutional structures within jurisdictions.

This paper has focussed on the first two sources of problems. New Zealanders have a tendency to address problems with legislative and fundamental institutional reform. We conclude that the legal/institutional structure of devolution in the RMA is basically sound. Where devolution issues do arise there is a tradeoff between the value of comprehensive legislation and the costs of legislation that forces many very different issues to be addressed within the same structure.

The analysis in this paper suggests that effective devolution requires attention to the relationship between central and local government as well as attention to the ideal location of decision making. The recommendations below are likely to be helpful in guiding future policy on devolution:

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*(i) Clarify responsibilities*

Problems can arise when central government intends local government to make decisions but does not make this clear. Where it does want to influence local government, it should provide sufficient guidance. Lack of clarity over responsibilities leads to situations where local government does not feel empowered, and neither local or central government regards itself as fully accountable.

*(ii) Improve formal and informal contracts between Central and Local government.*

Where the political decision-maker is separate from the implementer of policy, or the implementer is separate from the holder of critical skills and objective information, the effectiveness of policy depends critically on the quality of the "contract" between the two. Attention needs to be paid to the incentives of each level of government to cooperate with the other and meet their needs. Central government agencies may need to be proactive in providing support to implementers who may not know what help they need and hence may be unable to contract for it. One aspect of the contract is the formal, written specification of expected outputs, monitoring responsibilities and rewards. Perhaps an equally, and under-utilised component of contracts is the informal contract that arises through long term personal relationships, corporate culture and morale, trust and concern for reputation. These aspects develop through repeated interaction, information sharing, participation in decision-making, and consistent, open honest behaviour on both sides. Some attention to preserving and developing these aspects of contracts may be rewarding.

*(iii) Reduce duplication of objective information and technical skills*

Central government can also contribute to effective devolution by retaining a role in providing easy access to technical information and best-practice techniques. In the case of the RMA, for example, one approach would be to provide standardised 'plans' for local councils that can be adjusted to local needs and interests. Make these simple and close to current practice rather than very ambitious. This will reduce the cost of council compliance with the Act and allow them to focus on specifically local concerns. It will allow incremental change and would help move the 'status quo' from Town and Country Planning Act type planning toward RMA based regulation. It will also make changes and variances in policy across councils more transparent.

*(iv) Facilitate communication*

Communication of experiences and practices between central and local government and among local governments will enhance learning and reduce the costs of experimentation. This can be done by focusing on developing relationships among key people, and by developing consistent information systems.

The central government may also have a role in improving the functioning of local institutions to make them more efficient and more responsive to local preferences.

*(v) Strengthen the political accountability of local government*

The key argument for local government's existence is that local government represents local preferences. Any improvements in the local political process will enhance the benefits of devolution. In some cases central government may decide that the poor political accountability of local government or their limited capacity makes it inappropriate for them to make certain types of decision. In this case it may be appropriate to limit the scope of local government activity as a last resort.

*(vi) Facilitate Innovation in local regulation*

Local governments may not have the skills and resources to innovate and adopt new practices. They may not take into account the benefits their experimentation could have for other districts.

In some situations the mismatches among locations of functions and characteristics are so egregious that the best solution may be to change the level of devolution. One example of this is Significant Natural Areas discussed in the companion paper (WP 98/7a). Central government can reclaim authority over issues by using the provision for National Policy Statements within the RMA. Other issues could be dealt with within the RMA but may benefit from separate treatment.

*Future Directions for Research*

In many ways this paper raises as many questions as it answers. Future research on devolution could usefully take a number of directions. It is inherently difficult to assess the quality of outcomes because part of the point of devolution is to allow heterogeneous outcomes to reflect unobservable preferences. Thus we can most effectively explore the efficiency of devolution in general, and the RMA in particular, by using indirect methods. A number of empirical and theoretical ideas could be explored further. We list a few questions below.

1. How heterogeneous are New Zealanders' preferences on different issues?

2. How well does local government reflect local preferences?

3. Can local government be made more politically accountable?

4. What compensation mechanisms could be developed between central and local government, and within local jurisdictions?

5. What are the capability limitations of local government? Should we try to improve their capability, limit their activities, or accept the inefficiency?

6. What incentives do central government agencies have to provide proactive and reactive assistance to local government?

7. How appropriate is the split, in the current RMA, between regional councils and territorial local authorities?

Finally we emphasise that effective policy making and implementation require more than correct levels of devolution. Many aspects of the RMA were beyond the scope of this paper. Other key issues for any review of the effectiveness of the RMA include clarity and consistency of the law itself, technical issues of how to integrate different environmental concerns, and the potential of alternative policy instruments for achieving the goals of the Act. All of these issues are important. By clarifying the issues related to devolution we hope that it will be easier to distinguish problems that arise from devolution, and problems that would arise in any structure. Analysts will be more able to understand the true causes of problems, analyse them in the appropriate context.

## APPENDICES

### Appendix One: The Resource Management Act 1991

The Resource Management Act 1991 (RMA) is the principal legislation governing the use of New Zealand's land, air, water, ecosystems, soils, geology and the built environment. Also controlled are noise, pollution and geothermal activities.

The RMA was intended to provide a framework for simplifying environmental management in New Zealand. In total it repealed 59 statutes. The most significant of the repealed acts were:

- The Water and Soil Conservation Act (1967);
- The Clean Air Act (1972);
- The Town and Country Planning Act (1977); and
- The Noise Control Act (1982).

Under previous Acts devoted to resource management in New Zealand there was widespread dissatisfaction. In many cases, the legislation was seen as conflicting, overlapping and confusing. Major problems identified at the time included:

- the collection of Acts did not have a standard purpose as they were written for a variety of purposes;
- there were a number of agencies involved in resource management, with overlapping responsibilities and poor accountability;
- consent procedures were lengthy and complex;
- enforcement and monitoring were weak; and
- the opportunity for the public to be involved was limited.

A more integrated and coordinated process for resource management was required.

#### *Major Aspects of the RMA*

The RMA is based on two major assumptions: that governing bodies closest to resources are the most appropriate to govern the use of those resources, and that it is more efficient to focus control and regulation on the adverse

environmental effects of some activities rather than the activities themselves. Therefore, authority for implementing the RMA is devolved to local and regional authorities.

### *Role of Central Government*

Central government has a role in setting policy on matters of national significance and monitoring the implementation of the Act. Central government may issue national policy statements, prepare national environmental standards, or call-in any resource consent application for a Ministerial decision. At this time, however, only one national policy statement, the Coastal Policy Statement, has been written.

The Ministry for the Environment makes submissions on draft regional plans and provides support and training via the provision of best practice guidelines and the provision of information documents.

### *Roles of Local Authorities*

Regional councils manage water, soil, geothermal resources, pollution, and land use that affects natural resources. Regions prepare regional policy statements and coastal plans which must be consistent with national policy statements. Regional councils are responsible for monitoring the state of the environment, consent compliance and plan effectiveness.

Territorial local authorities are responsible for land management, subdivision and noise control. They are required to develop district plans, which must be consistent with relevant regional and national plans.

All local authorities are required under section 6 of the RMA to provide for matters of national importance. These are defined as the protection or preservation of:

- the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers;
- outstanding natural features and landscapes from inappropriate subdivision, use, and development;
- areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- public access to and along the coastal marine area, lakes, and rivers; and
- the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

Local government agencies are required under Section 32 of the RMA to satisfy themselves that any policy proposed to achieve the purposes of the Act is necessary and is superior to any policy alternatives. They have significant flexibility to choose any policy mechanism they consider most appropriate. They may use rules, market mechanisms or education programmes as long as they avoid and mitigate effects on the environment. On private land, activities are allowed unless specifically prohibited in a plan or rule. For all other natural resources, activities are prohibited and require a consent, unless expressly allowed in a plan.

There are five types of resource consents, land use, subdivision, coastal, water and discharge. Activities are also classified into five categories ranging from permitted activities (where no consent is required) to prohibited activities (an activity is expressly prohibited). The three intermediate categories allow activities but with conditions. Regions issue coastal, water and discharge permits. TLAs issue land use and subdivision consents.

***Public Participation***

The public can make submissions on both the resource consent process and the planning processes for plans and regional policy statements. The public can also seek a declaration from the Environment Court on plan provisions. The Environment Court can impose enforcement orders to restrain environmentally damaging activities. Local authorities can issue abatement notices. Failure to comply constitutes an offence and can result in fines or imprisonment.

***Local Government Reform***

Resource management reform in New Zealand was related to local government reform, also occurring in the late 1980s, as local government is primarily responsible for implementing resource management initiatives.

Prior to reform, local government included more than 800 local authorities and special boards and elected boroughs. Following the enactment of amendments to the Local Government Act in 1989, local government had been transformed into 86 local authorities, made up of 12 regional councils and 74 local councils and four unitary authorities.

Government expected these reforms to improve the efficiency of local government, ensure clear accountability and allow local government to focus on resource management decisions. By reducing the number of councils, the reforms increased average council size and increased their capacity to effectively analyse resource management issues.

The conglomeration of the range of specialised boards, for issues such as pest control, into single council units may have also acted to set the RMA up as a lightning rod for complaints and frustration. Whereas in the past several boards

may have provided consents for one activity, after the reforms one dealt with all consents, thus concentrating any complaints.

## Appendix Two: Why and what should we regulate?

"The purpose of this Act is to promote the sustainable management of natural and physical resources." (Section 5, RMA 1991)

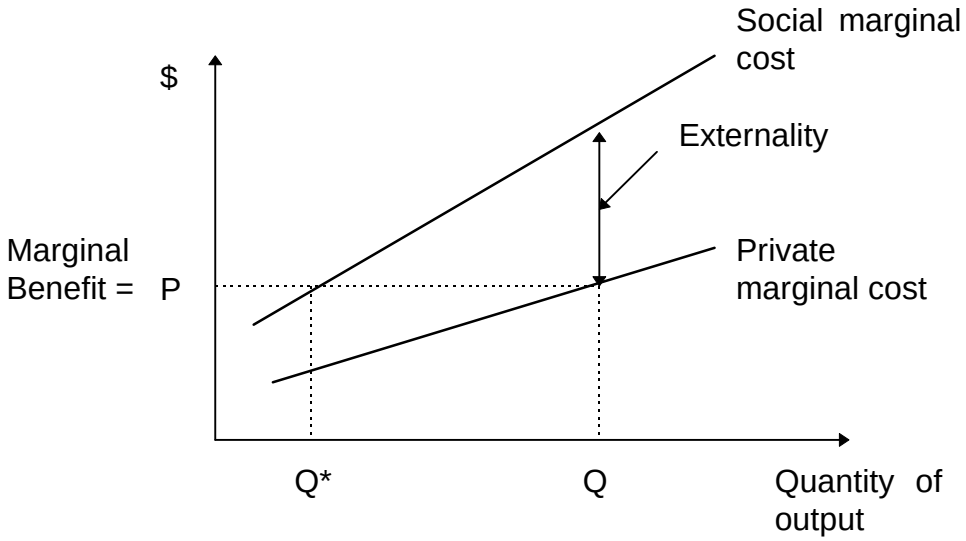
Why is special legislation needed for the management of natural and physical resources? The fundamental problem with resources is that many of the property rights are not fully allocated and enforced. Unregulated resource markets would lead to inefficiency because of externalities. They would allow some agents to claim the unallocated resources for their own use. This is an undemocratic, inequitable way to allocate resources that were previously held in common. Imperfect information about the effects of resource use is the other important market failure in the allocation of resources.

### *Externalities / Incomplete Allocation of Property Rights*

Whenever property rights are incompletely defined or enforced, externalities and public good situations arise and resources can be allocated inefficiently without intervention.[21] An externality arises whenever an individual does not bear the full costs, or receive the full benefits of her action. For example an unregulated factory which emits effluent into a river benefits from waste disposal, but does not bear the cost of downstream pollution. Externalities occur wherever there are incomplete property rights or missing markets. It is not sufficient that property rights exist, they must also be transferable. Negative externalities will be overproduced, Q rather than Q*, because the producer sets private marginal cost equal to the marginal benefit of the externality producing activity. Private marginal cost is below social marginal cost (taking into account self-protection / adaptive behaviour) by the amount of the externality.

21 For more detailed discussion see Baumol and Oates (1975)

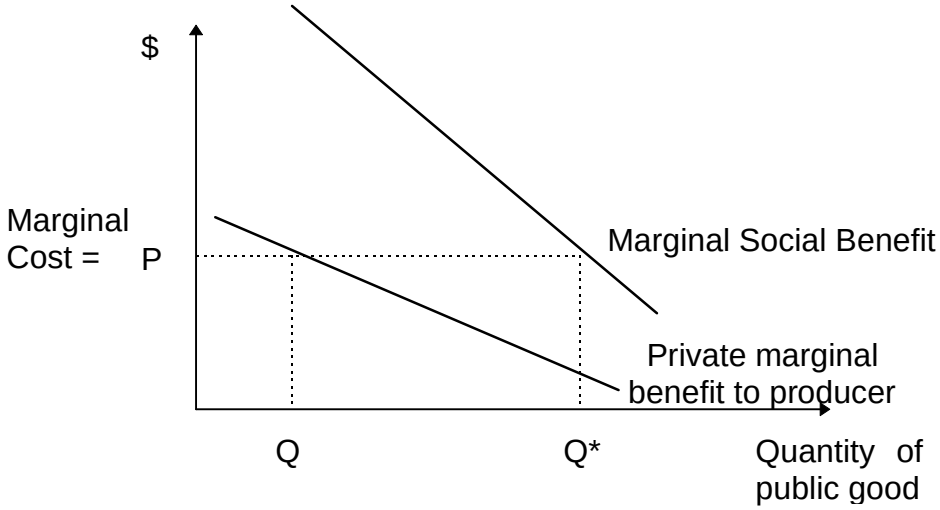
**Figure 6 Over-production of externalities**




Even where property rights exist, they may be unenforceable. A pure public good is a good that it is difficult to exclude people from consuming, and that has a zero marginal cost of provision to an additional person. For example, an attractive view from a public road. When an individual provides a public good, by for example maintaining an attractive property, they are generating positive externalities to all who enjoy that public good. The provider does not receive all the benefits. Property rights to public goods are impossible to enforce because people cannot be excluded from using the good. Public goods will be under-produced because the producer will set private marginal benefit equal to private marginal cost. For public goods, social marginal benefit is the sum of all private marginal benefits, not only the producer's benefit. The under-provision situation is even worse if there are several potential providers who each rely on the others' provision rather than providing the good themselves. With a large number of potential providers, almost no public good will be produced.

Where an activity or good has private benefits as well as public, the private benefits may be sufficient that at the level of private provision the marginal public value is zero. In this case there is no deliberate production of the public good but an efficient level is coincidentally produced. For example, attractive rural views will be well provided in areas where farming is profitable; native forest cover will be privately provided in areas where the current economic value from using the land for non-forest activities is zero.

**Figure 7 Under-provision of Public Goods**




A related situation is that of "common property resources". A common property resource is one that many individuals can partially control, for example a fishery with many fishermen. When an individual uses the resource he creates a negative externality for all other users. The negative externality leads to overuse of the resource, and an inefficient outcome for the whole group of common owners. This is known as the 'tragedy of the commons'.[22]

*"Private" solutions for externality problems*

Incomplete, unenforceable or common property rights lead to inefficiency in a purely individualistic world. Does this mean that government is needed to control these resources? The existence of a market failure does not mean that government should regulate. Government may not be able to solve the market failure, and could introduce failures of its own, "government failures" which could exacerbate the problem. One argument against intensive government intervention is that all that is necessary is to define the property rights, and negotiation and the common law system will allocate resources efficiently. This argument is based on the Coase Theorem (Coase, 1960) which states that when property rights are fully allocated, and transferable, and there are no transaction costs, resources will be allocated efficiently regardless of the initial allocation. The initial allocation will still have distributional effects.

The Coase Theorem suggests that many externality issues can be resolved privately. In fact this is what occurs whenever a new market is created for a good that was previously outside the market, e.g.: the recent development of private rubbish collection in Wellington. These private solutions still require some government involvement, government still needs to define and enforce

22 Hardin (1968)

property rights, but it is a very unintrusive form of regulation. In the rubbish collection case, the government establishes property rights to the use of land for disposal by banning dumping of rubbish, and other forms of inappropriate disposal. The limits to the use of private solutions depend on the existence of transaction costs, and the ability to fully allocate and enforce property rights. When can the Resource Management Act's role be limited to defining and enforcing property rights?

Transaction costs arise primarily from information asymmetries and costs of coordination among large groups. If the 'victim' of an externality is unable to observe its production, she is unable to enforce any agreement about the level of production. If either the victim or polluter cannot observe the other's costs and benefits from the pollution, bargaining to find the efficient level is costly and likely to end up at an inefficient level.[23] If transactions are costly, the use of resources will be biased toward the initial allocation, which then has efficiency as well as distributional effects.

Costs of coordination are low when an externality is limited to a very small number of producers and victims who are geographically, temporally and socially closely linked. When a pollutant affects a large number of people, comes from several sources, or has effects over a number of years, it is unreasonable to expect all the affected parties to negotiate successfully. Providing coordination is itself a public good and hence is under-provided.

The ability of government to fully allocate and enforce property rights come into play for common resources and public goods. Some goods inherently cannot be allocated because of their physical characteristics (e.g.: fish that migrate, oil fields and ground water, air). These may be most appropriately treated and regulated as common property. Pseudo property rights can be allocated through the creation of tradeable permits for use. Some level of government must enforce these. There are few incentives for permit holders to ensure enforcement through normal legal channels. The government cannot charge directly for the use of public goods because it is impossible to stop people using them and hence impossible to enforce payment. Government must regulate on the provision side not the consumption side.

In some cases communities do manage to agree on mechanisms to share common resources or provide public goods. Ostrom (1990) gives an example in Southern California where a community agreed on a system to manage groundwater. After making the agreement, the community appealed to the government to impose this as a regulation, to take advantage of the government's powers to enforcement, and to bind actors who may migrate into the area who were not party to the original agreement. In some other examples, the community designs and enforces the agreement. For example in Maine, local communities restrict access to lobsters by dividing the resource among the community and enforcing this with local community social pressure.

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23 Myerson-Satterthwaite Theorem

They are, however, occasionally forced to resort to violence against people from outside the community, to maintain their local control.

Ostrom also gives numerous examples where local control of common resources fails because the community is too large, too mobile, or simply fails to find an effective mechanism. Unfortunately this is the norm for valuable common resources in modern society. Private provision of public goods and protection of common resources generally fails.

Another enforcement problem arises with limited liability companies and externalities that involve risks of pollution rather than actual pollution. If, for example, a company is managing hazardous waste, it may not create day to day pollution. Each day they risk an accident and should take an efficient level of precautionary measures. If however a major accident occurs, the company will go bankrupt and will not be forced to bear all the costs they impose.[24] Knowing this, companies will take less than efficient measures to prevent major problems though they may deal efficiently with small day to day risks. Normal legal liability for damages will lead to inefficient outcomes. One way to deal with this problem, is to require a company to purchase insurance from a third party with the ability to cover the costs of the largest accident. The insurance premium will reflect the level of care the insurance company observes. The insurance contract will increase the level of precaution and will move some risk from the public to the insurance company; it will not perfectly solve the problem because the moral hazard problem remains.

A similar problem arises because damages can be hard to collect ex post, particularly when they are large. A common example of this is strip mining, which causes unsightly damage and runoff. Mining companies are required to restore the land but often do not do so in a satisfactory or timely way. Some companies dissolve after the mine is closed, making it difficult to punish them. One solution to this is to require the company to post an environmental bond equal to the expected cost of restoration. The bond would be returned when the company can show that it has either avoided or mitigated any damage.

Even when property rights are allocated, and relatively smooth negotiation does occur, the initial allocation of property rights still matters for efficiency if the parties actually negotiating do not represent all the interests. For example, when environmental groups are negotiating with oil companies and mining interests, because conservation is a public good, the environmental groups will tend to be inefficiently under-resourced. Although some efficiency gain can be realised, this lack of resources will inefficiently bias the outcome away from conservation.

When transaction costs are high, on efficiency grounds, government should endeavour to allocate property rights to those most likely to gain the greatest value to avoid serious misallocation. This probably implies that landowners

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24 Polinsky

should have the status quo property rights to alter private land (e.g.: through subdivision or building). This is consistent with the part of the Act, which states that activities on private land are permitted unless the plan expressly restricts them. However it may be in conflict with the right of any citizen to make submissions on and appeal consent decisions.

If one group faces higher transaction costs of initiating negotiation than the other, other things equal, it is better to allocate the rights to the group with high transaction costs. Negotiation will then be more likely to occur if resources are misallocated. In New Zealand, where non-governmental organisations are poorly developed and funded, they are finding the costs of full participation in the RMA process prohibitive. Tangata whenua are also finding participation costly. Large businesses may be able to provide information and set up processes to negotiate their bid or claim for resources more efficiently than community groups. This is consistent with the Act's provision that public resources cannot be used by private actors unless it is specifically allowed; the community has the status quo property rights, not potential users of public resources.

Finally, some groups are unable to represent themselves, e.g.: future generations. Government sometimes needs to act as their agents to protect their interests when intergenerational altruism is insufficient and current and future interests are misaligned.

Allocation and enforcement of property rights, and limited regulation (such as tradeable permit markets or environmental bonds) are sufficient to address some resource issues, but in other situations, direct government regulation and provision are needed.

### *Information Failures*

Resources, and especially environmental resources, such as clean air, are often unusual commodities. Many of their characteristics are unobservable by those who consume them. For example, many pollutants are undetectable by human senses even if they are causing harm. In addition, many of the resource issues we deal with today are relatively new issues so people are unaccustomed to them. The possible dangers from cell phone use and towers are only now becoming an issue. Many pollutants are only dangerous above a threshold that is only being passed now because of population and economic growth. Many common resources only become scarce with congestion and heavy demand. Some problems are old, but only now recognised, or concern has risen with higher income levels. Newness means that individuals have not developed experience, and institutions to disseminate information are poorly developed.

Because of the newness of the issues, and the lack of observability, and the physical nature of resources, understanding their effects often requires specialised scientific knowledge and understanding. The inherent complexity of

the issues is exacerbated because many environmental effects are on health of humans or ecosystems and involve risk rather than certain effects. If a pollutant only harms one person in a thousand it is difficult to observe its effect, and difficult for an individual to decide the appropriate level of protective action. Many effects only occur over long periods of time so by the time the effects are observed it is too late to prevent future effects, and also difficult to identify the true causes of the effects. The uncertainty and the time frame problems plague epidemiological studies and understanding of ecological stability, and make it impossible for any individual to learn from experience and observation.

These acute information problems create a potential role for government in information collection and dissemination, and possibly in setting basic standards of protection. Individuals need information to take efficient precautionary measures and to negotiate effectively with polluters of victims. Regulators, whether local or central, also need this information to make and implement regulations effectively.

***What is the role of the RMA?***

The RMA has a broad mandate across types of resources. For which issues are the failures of private solutions to externalities sufficiently great that government regulation is needed? Where can government regulation be limited to the definition and enforcement of property rights to facilitate private solutions? Theory suggests government should focus on regulating externalities that affect public goods and common property resources, particularly those that involve high ongoing costs, high risks or large one time damages.

Regulation of non-public externalities could be limited to a facilitation role. Local government should be able to facilitate agreements on externalities that affect very small numbers of people. Their role should be limited to mediation, and recording and enforcing agreements among affected parties. Where there are many similar situations, e.g.: minor house alterations, duplication of negotiations may be avoided by having rules of thumb for activities that are allowed without the agreement of other affected parties. Elsewhere they can reduce transaction costs by certifying the credibility of information, and providing a forum for discussion.

In terms of information, the government should focus on identifying critical information problems. These could be situations where the potential harm is great, costs of avoidance are low relative to the harm, and individual information is poor. In terms of devolution, the question is what level of government most effectively collects, analyses and disseminates data and sets standards.

## Appendix Three: The Tiebout Model of Mobility and Preference Revelation

The preference revelation problems ultimately arise because there is no market for public goods. This problem is unavoidable at a central government level, but, with a mobile population, can be argued to be less of a problem for local government. If mobility is significant, local governments can act as entrepreneurs that offer different packages of local public goods and taxes. Because of interjurisdictional competition, jurisdictions have incentives to provide the public good mix that agents, and particularly mobile agents, want. These entrepreneurs also have incentives to provide the local public goods in an efficient way. This leads to a strong argument for devolution of decision making on public goods.

The Tiebout model (Tiebout, 1956) is based on a competitive market analogy. Entrepreneurs create communities, provide local public goods and charge an access cost. Boundaries of communities are endogenous. Individuals choose jurisdictions / communities based on the level of local public goods they provide and the access cost. People reveal their preferences with their feet. Under strict conditions, outlined below, each individual will end up in a community that produces exactly the level of public goods she desires. All individuals within a community will be identical. Competition among communities will ensure that each community will be the size that produces the public goods efficiently. Thus the preference revelation problem and the efficient provision problem are solved. Public goods are produced efficiently. In this world, central government's role would be limited to giving local communities the ability to demand payment for services within communities, and helping local communities enforce such service contracts.

The Tiebout model is a theoretical construction not a model of reality. Its value in providing insight into the benefits of devolution depends partly on whether its assumptions have any relationship with reality.[25] Rubinfeld summarises the Tiebout assumptions as follows:

1. Individuals have perfect information.

2. Mobility is costless and is responsive only to fiscal conditions.

3. Public goods are provided at minimum average cost within each jurisdiction. Each new migrant to a community pays an access cost equal to the cost of providing public services to that migrant.

4. There are no interjurisdictional externalities.

5. There are a sufficient number of jurisdictions and a sufficient number of households of each type (in terms of tastes and incomes) so that each

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25 Rubinfeld (1987) p. 575

jurisdiction can contain identical individuals. Thus new communities can be developed costlessly.

6. There is no public choice mechanism other than the utility-maximising decision of an identical set of individuals.

7. All income is dividend income, not generated by private production. There is no labour market.

8. Public goods are financed by lump sum taxes.

9. There is no land, no housing, and therefore no capitalisation.

If individuals have any information about local public goods and are at all mobile, some preference revelation will occur and there will be some competitive pressures among jurisdictions.

The preference revelation benefits from devolution derive partly from the competition type mechanisms of Tiebout, that come through mobility, and partly from improved social choice mechanisms in smaller jurisdictions. Social choice is more important in the short run. Mobility takes effect over time.

***Mobility in New Zealand***

Mobility is not costless, and is determined by many factors other than the provision of public goods. People develop strong attachments to a community. When they do move, work opportunities are a major driver. Thus, not everyone moves whenever they are dissatisfied with their local public good provision. Those who do move may not get a level of public good provision they prefer. How mobile are New Zealanders?

24% of New Zealanders, living in New Zealand in 1996, had moved into their current territorial local authority since 1991 (NZ Census, 1996). 5% of these were coming from overseas, while 19% had moved from elsewhere in New Zealand. This means that approximately one in every four people had the chance, constrained by employment opportunities, to choose their level of public service provision over the five-year period 1991 - 1996.

New Zealand is a small country with few large cities so the potential for large numbers of jurisdictions offering a wide range of levels of public goods is limited. Many of the public goods in New Zealand, that the Resource Management Act is concerned with, are related to nature. Thus they are geographically constrained and may not easily be altered by local government action.

On the other hand, there are significant cultural differences between rural and urban areas, and among rural areas such as Northland, Waikato and Otago. There are differences in culture within cities, e.g.: the North Shore vs.

Waitakere. There are cultural differences between predominantly maori communities and pakeha communities. There is probably greater heterogeneity between communities than within them. These cultural differences are likely to be reflected in the nature of public goods chosen, and the attitudes to resource regulation. There also are significant income differences between communities which is reflected in the level of local public goods e.g.: Manukau vs. Auckland City. Over time, people (particularly the young and immigrants) move to new jobs and their choices of location are partly determined by the "culture" of the areas. Cities that provide an attractive "culture" will grow and be rewarded with larger revenue bases.

Gradual mobility, and existing clusters of similar people, means that devolution does have the potential to provide a wider range of public goods which satisfy diverse community preferences in New Zealand. However people who do move are not representative of the total population. For example, they tend to be younger. If the provision of public goods does respond to the demands of people who move, they will not reflect the preferences of the stable community members. Policies to increase mobility may improve the match between preferences and public goods, and will certainly lead to more efficient allocation of labour, but it also has social disadvantages. The social capital in communities may be one of their primary attractions, yet excessive mobility tends to destroy it.

### *Problems with Mobility and Efficiency*

*Effects of Financing Public Good Provision on Efficient Migration Patterns*

Public good provision, and the taxes associated with it, not only satisfies a static demand for services, they also generate a dynamic response. If unanticipated, this dynamic feedback could lead to damaging results. In the context of the NZ Resource Management Act, public goods are provided through regulation rather than government provision. Rates cover the administrative costs of designing and implementing regulations, but this is a small fraction of the total economic cost. Implicitly, local government finances provision by "taking" resources. Limiting the activities allowed on private land imposes costs. To the extent that this cost is correlated with property values, it operates in a similar way to a property tax. We will start by looking at the effects of property taxes on the efficiency of devolution, and then return to the difference between tax provision and regulatory provision.

When every person pays an equal amount for public services, poor people have no incentive to move from a homogeneous poor district with low public services and a low charge to a high-income district with high public services and a high charge. With property taxes, however, a poor person can buy a small house in a rich district, enjoy the better public services and still pay a low amount. If the cost of public services rises with the number of people (as a result of congestion, or private aspects of the public service), this disadvantages the rich people. They will either wish to move to another area as poor people enter, or

will try to exclude the poor people. One way exclusion is done is by zoning a minimum standard of housing so there is no low income housing available. If richer communities do not exclude poorer people, property taxes can make the composition of communities, and hence the level of public goods provided in them, unstable over time.[26]

This problem is reduced by the phenomenon of "capitalisation". The value of a house depends not only on its physical characteristics, but also on the bundle of public services ownership (or occupancy in the case of rental) entitles you to consume. A community with good public services will also have higher house prices. With perfect capitalisation, a poor person will be indifferent between the rich and poor neighbourhoods because although the rich neighbourhood has better services, the house prices are also higher. Capitalisation reduces the instability of communities, but does not ensure efficiency, either in production or in the level of public good, within heterogeneous communities.

How do these conclusions vary when provision is achieved by regulation not taxation? Cost bearing is not related now to the value of the property. It relates to the effects of private activities on that property on the provision of public goods. For example, think of a company that would like to pollute. By restricting its pollution the regulation imposes a cost on the company. The company can move to another area with less stringent regulation or can bear the cost and ultimately pass it on to their customers. If the land the company uses can be used for many purposes, its value will not be affected by this regulation. If there are other areas to produce, the cost of the regulation is low because the company will move. In any case this is an example of polluter pays, where an externality is internalised. This is efficient and often seen as equitable. No community instability issues arise.

A more complex case arises where an activity on a piece of land affects provision of a positive externality or public good. Two pieces of land could be identical except that one is chosen for environmental or historical conservation. The value of the chosen land will fall. The owner of the chosen land at the time of the regulation is harmed while the owner of the identical piece is not. This is called "takings" in the US. A small group of unfortunate landowners are bearing all the costs of providing a good, which we all enjoy. If each regulation has a small impact on each individual, and a large number of different regulations affect different individuals, this all comes out in the wash, but it is not always the case. Under the RMA, these land use restriction related costs are all borne through capitalisation. The owner of the house at the time of the regulation cannot avoid the cost of current regulation by moving away. Migrants into the area pay the cost of the benefits through higher house values. The RMA will not lead to unstable communities.

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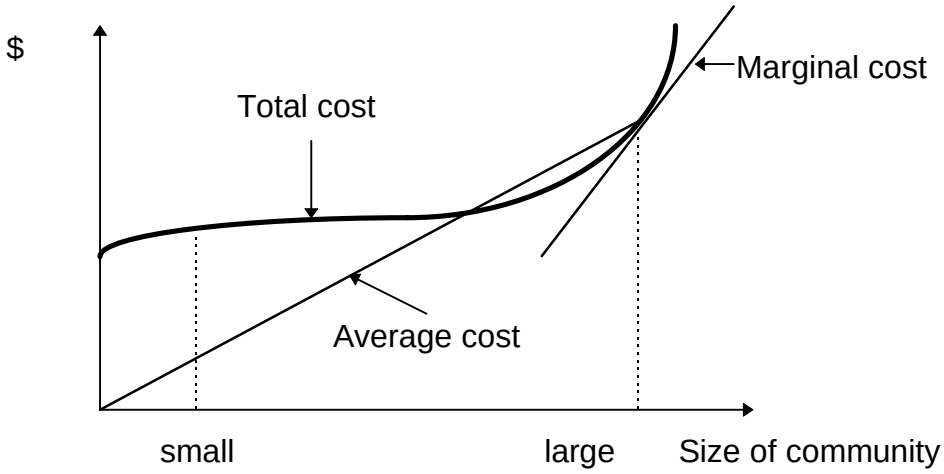
26 Another issue which can lead to zoning in rich areas is that poorer people are often associated with particular negative externaltities, such as untidy gardens, old cars etc. Rich people may try to indirectly control these externalities by raising lot sizes and hence excluding poor people.

## Appendix Four: Other Externalities

### *Tax externalities*

A similar issue to the effects of regulation on migration, is that of tax externalities. Where there are non-constant returns to scale in public goods provision, migration of individuals will affect the tax burdens in their origin and destination communities. Individuals pay the average, not marginal, costs of public goods. Because each individual regards the tax structure as fixed, inefficient outcomes could occur. Suppose an individual moves out of a small community with low marginal costs but high average costs. They raise the average cost of public good provision for the remaining community. If they move into a large community where average costs are low but public goods are congested so marginal costs are high, they will raise the cost there as well. The individual benefits from the move; society loses. Figure 4 illustrates the effect of community size on average, marginal and total costs.

**Figure 8 Economies and Diseconomies of Scale in Community Size**




When public goods are financed with property taxes (or other constraints, which affect richer people more) and there is congestion in public goods, a poor person moving into a richer jurisdiction creates a "fiscal externality" because they contribute less than the marginal cost of the public good.

Because resource related public goods are provided by controlling activity rather than by taxing, these tax externalities do not occur directly. However a related problem does occur. A migrant going from a low-density area to a high-density area reduces externalities very little by leaving the low-density area (marginal externalities are small). When moving into a high-density area, however, the marginal effect on pollution and other externalities could be much higher than the average cost the individual bears. Society may suffer from the move while the individual benefits. For example, an additional person moving to Christchurch increases air pollution, which affects every resident of Christchurch. As well as affecting many people, damage from air pollution

tends to be non-linear, so the extra pollution causes much more than the average damage.

Mobility and choice of jurisdictions are limited, and the group that does move is non-representative. Thus jurisdictions will be still be internally heterogeneous, and a purely entrepreneurial local government will misrepresent social preferences. Mobility can also reduce efficiency because of the externalities migrants create. The public choice mechanisms used within jurisdictions, and how well they reflect constituent preferences, are critical for assessing the effectiveness of devolution.

The effectiveness of decisions also depends on how well the political institution reflects benefits and costs, how well objective information is used to improve the quality of decision making, and how cost-effective the decision making process itself is.

### *Interjurisdictional Competition*

When there are heterogeneous regulations across jurisdictions, both labour and capital will choose the most attractive jurisdiction. This creates healthy competition among jurisdictions, but can also create two problems. The first problem arises if the supply of capital is very elastic to each jurisdiction, i.e. very mobile, and several jurisdictions try to attract it simultaneously. This can lead to a "race to the bottom" in local public good provision. Each jurisdiction offers slightly more attractive conditions to attract the elastic capital. Other jurisdictions respond with more attractive conditions still (lower taxes or more lenient environmental regulations) leading to a downward spiral. This can occur even if the jurisdiction has a government that represents the constituents' interests.[27] No jurisdiction benefits from this in equilibrium.

The second problem arises if the local jurisdiction acts as an entrepreneur, and maximises its revenue rather than representing constituent interests. If one factor is considered to be more mobile, the decision-makers may design regulations to attract that factor at the expense of the other. One example of this is lax environmental regulation to attract manufacturing. Labour will only respond slowly to the poorer environmental quality, while capital may flow in quickly, leading to short run revenue benefits. This can also occur at the national level and could be even more acute because internationally, labour is less mobile than capital.

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27 This can also occur on the national scale but may be less acute because capital is less mobile between than within countries.

***"Not in my backyard" NIMBY***

This is a commonly observed phenomenon where every community opposes housing an activity with negative local externalities, but positive net benefits for society as a whole. This problem does not arise because of the level of decision making, though it can be "solved" by central government fiat. It arises because existing mechanisms are inadequate for compensating the affected groups. Devolution makes these issues more visible, because local communities have more say, but may not worsen the outcomes. Although siting may be more difficult, and possibly less efficient, the outcomes under devolution may be fairer if compensating deals can be made.

A closely related issue is that of "environmental justice". This is a concern that local authorities place a disproportionate number of landfills, toxic-waste dumps, and other unattractive public facilities in poor and minority neighbourhoods. If this is true, (the evidence is mixed) and the community receives no compensation, it may be a failure of the local public choice mechanism. It is not clear whether devolution worsens or improves this problem. If devolution goes down to the level of the minority community, such facilities cannot be foisted upon them against their will. Minorities may have a stronger voice in a smaller community. On the other hand, central government is often a leader in vertical and racial equity issues.

## Appendix Five: Equitable sharing of costs and benefits

Local government is inherently bad at redistributing income, for a number of reasons. The analysis in the Tiebout framework and the public choice framework is concerned primarily with efficiency not equity. The literature on local public finance and redistribution deals with the effects of attempts to redistribute income through progressive taxes or provision of public goods in a location or of a type that makes them more valuable to poorer people. In the case of resource management we are not directly dealing with income redistribution, but resource decisions do affect the distribution of wealth and income, and the provision and protection of public goods and common resources could have similar effects to taxes.

Local governments have limited ability to redistribute within their community. If a community has more progressive tax policies than others, mobility will lead richer people to move out and poorer people to move in. More progressive policies are only possible where richer people have a preference for it, and there is limited inward mobility of poor people. New York City in the 1970s and 1980s is often cited as a case where progressivity failed. Poor people responded to generous welfare by moving in, and corporations moved out to the suburbs. If in some areas, the RMA provides public goods highly valued by poorer people at the expense of richer people, it could induce the same phenomenon.

If Tiebout-type mobility pressures make communities relatively homogeneous, serious redistribution requires inter-jurisdictional transfers. In the absence of strong altruism by richer communities, this requires central coercion.

Even where taxes are raised in richer communities to finance intra-jurisdictional redistribution, if this is not nation wide, mobility will lead to capitalisation of these tax increases and lower property values in the higher tax areas. Capitalisation ultimately defeats the redistributive goal.

On the other hand some evidence suggests that smaller communities that are more homogeneous on non-income grounds, e.g.: race or religion, may be more willing to redistribute income within the community. Altruism is more prevalent toward similar people, and where the effects are more visible. Local redistribution of this nature may avoid some of the efficiency, information (on who is really needy and what they need), and enforcement problems inherent in national redistribution programs. Businesses in small communities may be willing to comply with strict environmental standards to benefit their local community, where they are unwilling to make similar sacrifices for the national good.

In the context of the RMA, the people who lose are those whose activities are restricted more than they value the average benefits from the public goods created. Some literature suggests that common resources and public goods

disproportionately benefit poorer people who have less access to substitutes.[28] Thus they may benefit from the RMA more than high-income people. In addition, in a transparent setting, political processes tend to lead to increased progressivity. When benefits and costs are non-transparent, policies may not be progressive.

Some argue that poorer people benefit less, because environmental benefits are often luxury goods. If new housing developments are primarily supplying poorer people, the increased prices of new houses resulting from RMA constraints on land use and subdivision design, are heavily borne by non-homeowners who tend to be poor.[29] Non-homeowners also miss out on any benefits from RMA which are capitalised into house prices. On the other hand, the costs of many RMA constraints are also capitalised into the price of the land, and thus affect current landowners who tend to be better off. Homeowners bear costs and realise benefits at the point in time when unanticipated changes in the net value of public goods are announced or observed. The vertical equity balance depends on the nature of the public goods provided, and hence whom they benefit, and the net effect on house prices. This is an empirical question.

28 Reference from Rimjhim or Malgosia.

29 Owen Mc Shane (1996)

## REFERENCES


Alesina, Alberto and Enrico Spolaore (1995) “On the Number and Size of Nations” National Bureau of Economic Research, Inc. Working Paper No. 5050

Baumol, William and Wallace Oates (1975) *The Theory of Environmental Policy*: *Externalities, public outlays and the quality of life* (Prentice-Hall, Inc. Englewood Cliffs, New Jersey)

Bergstrom, T., L. Blume and H. Varian, (1986) “On the Private Provision of Public Goods” *Journal of Public Economics*, pp:25-49

Coase, R. (1960)“The Problem of Social Cost” *Journal of Law and Economics* pp:1-44

Cohen, Wesley M. and Richard C. Levin (1989) “Empirical Studies of Innovation and Market Structure” in *Handbook of Industrial Organization*, Vol. II eds. R. Schmalensee and R. D. Willig (Elsevier Science Publishers B.V.)

Dinan, Terry and Natalie Tawil (1997), “Federalism and Environmental Protection: Case Studies for Drinking Water and Ground-Level Ozone” U.S. Congressional Budget Office, November

Dormer, Alan (1994)“The Resource Management Act 1991: The transition and business” Report prepared for the New Zealand Business Roundtable. August

Epstein, Richard (1990) “Auckland University Seminar on Law and Resource Management” 24 July

Epstein, Richard A. (1995) *Simple Rules for a Complex World* (Harvard University Press: Cambridge, MA)

Ernst and Young (1997) “Case Study Assessment of the Impact of the Resource Management Act (1991) on Business” Final Report to NZ Ministry of Commerce, Resources and Networks Branch.

Frieder, Julie “Approaching Sustainability: Integrated Environmental Management and New Zealand’s Resource Management Act”, Wellington, N.Z.: Ian Axford New Zealand Fellowship in Public Policy, 1997.

Grewal, Bhajan S. Geoffrey Brennan and Russel L. Mathews eds. (1980) *The Economics of Federalism* (Australian National University: Canberra, Australia)

Hardin (1968) "The Tragedy of the Commons" *Science* 162: 1243-1248

Hartley, Peter (1997) *Conservation Strategies for New Zealand* New Zealand Business Roundtable

Karshenas, Massoud and Paul Stoneman (1995)"Technological Diffusion" *Handbook of the Economics of Innovation and Technological Change* ed. Paul Stoneman (Basil Blackwell Ltd.: Oxford) pp.265 - 297

McShane, Owen (1996) "The impact of the Resource Management Act on the "housing and construction" components of the Consumer Price Index" Report prepared for the Reserve Bank of New Zealand

Ministry for the Environment (1991) *Managing our Future*

Ministry for the Environment (1991) *Consultation with Tangata Whenua*

Ministry for the Environment (1993) *Section 32 - A Guide to Good Practice* prepared by Adrienne Young-Cooper, Bell Gully Buddle Weir (Ian Cowper and Rebecca Macky) and Dr Philip McDermott

Minstry for the Environment, (1998) Website on the Resource Management Act and Environment 2010 Strategy http://www.mfe.govt.nz/2010.htm

Myerson, R. B. and M. A. Satterthwaite (1983) "Efficient mechanisms for bilateral trading" *Journal of Economic Theory* 28: 265 - 281

New Zealand Business Roundtable (1990) "Resource Management Bill: Submission to the Select Committee of the House of Representatives on the Resource Management Bill" March.

Olson, M. Jr. (1980), "The Principle of 'Fiscal Equivalence': The Division of Responsibilities among Different Levels of Government" in Grewal, Bhajan S. Geoffrey Brennan and Russel L. Mathews eds. *The Economics of Federalism* (Australian National University: Canberra, Australia) pp. 25 - 38

Oates, Wallace (1998) "Thinking about Environmental Federalism" *Resources* Issue 130 Winter

Oates, Wallace "Environmental Policy in the European Community: Harmonization or National Standards?" Empirica, forthcoming

Ostrom, Elinor (1990) *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press)

Palmer, Geoffrey (1990), "The Resource Management Bill", *Environmental Politics: A Greenprint for New Zealand* (John McIndoe: Dunedin, New Zealand)

Pavletich, Hugh J. and Owen McShane (1997) “Taking the Heat off the RMA” Report for Hon. Simon Upton, Minister for the Environment, New Zealand.

Permit data from Councils (see Owen McShane (1996)p. 15)

Paul Peterson (1995) *The Price of Federalism* Brookings Institution

Polinsky, M. “The Coase Theorem” Chapter 3 and “First Application - Nuisance Law” Chapter 4. *Introduction to Law and Economics* 1989 pp.144 - 153

Putnam, Robert *Making Democracy Work: Civic traditions in modern Italy* Rober Putnam with Robert Leonardi and Raffaella Y Nanetti. (Princeton University Press, Princeton, New Jersey 1993)

Reinganum, J. F. (1989) “The Timing of Innovation: Research, Development, and Diffusion” *Handbook of Industrial Organization*, Volume I eds. R. Schmalensee and R. D. Willig (Elsevier Science Publishers B.V.)

Rondinelli, Dennis A. (1990) Decentralising Urban Development Programs: A *Framework for Analysing Policy* US Agency for International Development, Washington DC

Rubinfeld, Daniel L. (1987) “The Economics of the Local Public Sector” in Auerbach, A. J. and M. Feldstein eds. *Handbook of Public Economics* vol. II (Elsevier Science Publishers B.V. :North Holland)

Salmon, Guy (1991), “Resource management legislation in New Zealand: the first step to a green economy?” in *Environmental Resources and the Market-Place* Tasman Institute, Markets and Environment Project, (Allen & Unwin: Australia)

Samuelson, P. (1955) “Diagrammatic Exposition of the Theory of Public Expenditure” *Review of Economics and Statistics*, pp. 266-279

Tidemann and Tullock (1976) “A new and superior process for making social choices” *Journal of Political Economy*, 84, 1145-1159

Tiebout, Charles (1956) “A Pure Theory of Local Expenditures” *Journal of Political Economy* LXIV, October, pp: 416-24

Tullock, G. (1980) “Federalism: Problems of Scale” in Grewal, Bhajan S. Geoffrey Brennan and Russel L. Mathews eds. *The Economics of Federalism* (Australian National University: Canberra, Australia)