

# Principles for Royalties on Non-Mineral Natural Resources in New Zealand

*Kevin Guerin*

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Natural Resources in New Zealand

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**AUTHOR**

Kevin Guerin  
New Zealand Treasury  
PO Box 3724  
Wellington 6015  
NEW ZEALAND

Email kevin.guerin@treasury.govt.nz

Telephone +64-4-917 6092

Fax +64-4-473 1151

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**NZ TREASURY**

New Zealand Treasury  
PO Box 3724  
Wellington 6015  
NEW ZEALAND

Email information@treasury.govt.nz

Telephone +64-4-472 2733

Website www.treasury.govt.nz

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## Summary

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Managing the increasing pressures New Zealand is facing on its natural resources is already focusing attention on the use of royalties on “Crown” or “public” natural resources; i.e. those resources owned or managed by central government on behalf of New Zealanders, such as freshwater and coastal space.

A core set of principles is desirable to guide the design of natural resource royalties in New Zealand.

Such a debate needs a sound foundation in terms of what a royalty regime would be intended to achieve. The goal proposed here is to maximise the net benefits to New Zealanders from use of public resources.

This goal leads to a working principle that the allocation and management of rights to use resources should reflect the highest value use, and allow for change over time. Highest value use encompasses all aspects of sustainable development: environmental, social, cultural and economic. Any royalty proposals should be consistent with that principle.

Policies should explicitly identify where a royalty may not be appropriate and rigorously assess whether that is actually the case before granting any exemptions, or considering application of a subsidy.

Revenue raised from such a regime should generally not be automatically funnelled to related activities but applied to the highest priority public use as for revenue from other sources.

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# Principles for Royalties on Non-Mineral Natural Resources in New Zealand<sup>1</sup>

## Introduction

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There is currently no substantive general guidance on the design of royalties in New Zealand.

The focus of this paper is to identify principles for where and how the Crown<sup>2</sup> should charge for the use of natural resources that it owns or manages (see Appendix 1 for examples), along with a brief discussion on how the revenue from such charges should be used.<sup>3</sup>

The reason for writing the paper is the inadequacy of current guidance, in particular the lack of generally accepted goals or design principles. This lack stands in sharp contrast to the formal guidance available for cost recovery arrangements, which can overlap with royalties.

The paper also briefly notes the types of charges that may be levied on natural resources and Appendix 2 summarises a range of such mechanisms.<sup>4</sup> The focus, however, is on designing royalties to optimise incentives for resource use, with some discussion around how revenue is used, specifically arrangements that tie revenue to certain activities.

Alternative definitions exist for royalties and resource rentals. A summary version is that royalties are payments for extraction or depletion of a finite resource, while resource rentals are payments for non-depleting use or

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<sup>1</sup> Referee comments from Jim Sinner and Mike Jebson were appreciated. All errors remaining and opinions expressed are of course my responsibility.

<sup>2</sup> There may be circumstances where the interest in a resource is particularly local, or for specific reasons a resource is deemed to be held at the local government level. In such circumstances, the arguments in this paper would apply within that local area.

<sup>3</sup> An outline of how natural resources are broadly managed in New Zealand can be found in previous papers: Guerin, K. 2003. Property Rights and Environmental Policy: A New Zealand Perspective. Wellington: New Zealand Treasury, Guerin, K. 2004. Theory vs Reality: Making Environmental Use Rights Work in New Zealand. Wellington, New Zealand: New Zealand Treasury.

<sup>4</sup> A separate note, available on request, "Specific revenue mechanisms in environmental policy – 22 September 2006" describes the range of environmental revenue mechanisms available and factors relevant to their application. Its focus is practical rather than theoretical, dealing with feasibility, objectives, mechanisms and uses of revenue.

occupation of a resource. The distinction is relevant to some policy discussions but for simplicity this paper uses the single term '*royalty*'.

Natural resource ownership is outside the scope of this paper.

The paper does not distinguish between Crown ownership or management of a resource, or discuss arguments for or against outright sale of natural resources. Those arguments are typically based on social or economic considerations outside the scope of this analysis. The assumption here is that Crown ownership or management will continue for some time at least.

The following proposed goal and design principles are not intended as formal guidance, but rather to support an explicit debate that should improve the final outcome in this important policy debate.

## Customary and Treaty Rights

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There are situations where, due to issues of possible remaining customary rights or Treaty of Waitangi claims or settlements, the underlying ownership of resources is either in question or held outside the Crown or the standard private title system. In such circumstances, there will be questions regarding the availability of access to those resources and the terms on which such access will be granted. How such questions are answered will be shaped by generic considerations of public expectations and Treaty obligations, as well as by the specific circumstances.

Approaches to managing Maori interests in natural resources are varied and evolving, and will influence royalty design.

Arrangements for Lake Taupo and the Rotorua Lakes have demonstrated some approaches to managing these issues. Agreements have included acknowledging underlying ownership by iwi, confirming existing rights, defining how future access will be managed, and identifying where and how iwi can control and charge for certain types of access.

The Crown can either act as an intermediary in managing access rights, and build associated costs into its own funding and cost recovery arrangements, or step aside. The final outcomes of the foreshore and seabed process will offer further examples and lessons. Solutions may vary widely.

# Proposed Goal and Design Principles

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The proposed goal and design principles for royalties are given below.

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<b>Goal</b>	Resources owned or managed by the Crown should be used in a manner that maximises the net benefits to New Zealanders.
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## Design principles

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- |   |   |
|---|---|
| 1 | Any royalty regime should aim to ensure that any given resource is allocated to its highest value use (in the widest sense of value) and allow for that allocation to adjust over time as appropriate.  |
| 2 | The Crown may determine that a financial return is either not required or can be reduced, or a subsidy applied, in circumstances where: <ul style="list-style-type: none"><li>i) a particular use of a resource has wider community benefits (i.e. positive net externalities) that exceed alternative uses;</li><li>ii) use is non-competing and/or non-exclusive;<sup>5</sup></li><li>iii) charging is not cost-effective;</li><li>iv) charging would breach New Zealand's international commitments; or</li><li>v) other methods of achieving the goal are more efficient.</li></ul> |
| 3 | Any charging regime should aim to: <ul style="list-style-type: none"><li>(a) minimise administration, compliance and transaction costs, including being as uniform as possible across locations, users and uses;</li><li>(b) provide certainty for investment and include fair transition provisions where relevant.</li></ul>  |
| 4 | The revenue from a royalty regime should generally be used in the manner that will obtain the greatest benefit for New Zealand or the local authority area in question, whether or not that relates to the activity being charged for; [in most cases this will probably mean treating it as general Crown revenue to be allocated through the Budget process].   |
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The remainder of the paper describes different charging mechanisms and the role of royalties, and then works through the reasoning behind the above goal and principles.

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<sup>5</sup> i.e. use of the resource by one person does not reduce the ability of any other person to simultaneously use it; many resources can meet this test only up to a certain threshold; e.g. a beach until too many surfers arrive, or air quality in a city until too many cars are in use.

# Royalties - theory

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To introduce a discussion about royalties it is helpful to outline what other charging mechanisms exist. This is followed by a brief review of the theoretical foundation underlying royalties, a discussion of possible policy rationales, and reasons for waiving royalties in specific circumstances.

## Royalties and other charging mechanisms

There are a range of charging mechanisms and a range of reasons for charging. It is important to distinguish between these mechanisms and purposes to ensure that each regime is correctly focused and to identify any gaps. The table below summarises reasons for charging, which can overlap.

We charge in order to:

- fund activities ;
- recover costs; and
- achieve a return on assets and create incentives for efficient use.

**Table 1 – reasons for charging for resource use**

funding / general revenue	<p>Funding government activities which may or may not be related to the resource use.</p> <p><i>Main objective is to raise revenue in the least economically distorting manner, while taking equity issues into account (examples include income tax or goods and services tax as applied to individuals or businesses using a resource – such taxes typically do not vary depending on the resource used and are not directly related to the level of resource use).</i></p>
cost recovery	<ul style="list-style-type: none"> <li>• ensuring those who directly create the need for, or benefit from, spending meet the cost;</li> </ul> <p><i>Meeting the administrative costs of planning, approving and monitoring resource use. Failure to recover costs from users where feasible encourages over-use and limits funding to support administration and enforcement.</i></p>
economic	<ul style="list-style-type: none"> <li>• capturing a share of economic rent for owners of a resource;<sup>6</sup></li> <li>• ensuring that positive or negative externalities of use are reflected in decisions (such as tobacco or alcohol excise, or a carbon tax).</li> </ul> <p><i>Addressing the interests of resource 'owners' and encouraging efficiency in resource use. Need to account for indirect benefits and ensure not unduly discouraging or encouraging use. Royalties, or subsidies, may or may not be appropriate given specific circumstances.</i></p>

Principles of general tax system design are well established.

Royalties primarily address the first item under the economic category, but can address externalities if structured appropriately.

General revenue related charges fall outside the scope of this paper (except for defining categories as above) as the Government's overall tax policy focus is to raise revenue at the lowest economic cost. Although there may be exceptions, it is generally accepted that taxes levied on specific activities or commodities (to the extent they exceed economic

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<sup>6</sup> See next section for discussion of economic rents and externalities.

There is adequate high-level guidance on cost recovery, and successful systems are in place.

rents) have a higher economic cost than broad based taxes such as income tax or Goods and Services Tax.<sup>7</sup>

Cost recovery principles are already well understood in both theory and practice in New Zealand. “Treasury Guidelines for Setting Charges in the Public Sector” were issued in 1999, revised in 2002, and have been endorsed by the Government (Treasury, 2002). They focus on recovering costs rather than encouraging efficient use or creating a revenue surplus.<sup>8</sup> Significant cost recovery systems already in place include those for fisheries research and biosecurity.<sup>9</sup> Cost recovery as such will not be discussed here in any detail because the current situation is well settled.

As noted above, there are no equivalent general principles for royalties in New Zealand so this paper addresses that gap in relation to the use of natural resources (other than minerals) owned by the Crown or otherwise managed by the Crown on behalf of New Zealanders (major examples are freshwater, coastal space and Crown land).

Minerals are excluded because a comprehensive regime exists for Crown minerals but only within the objectives of the Crown Minerals Act (CMA). Minerals programmes are intended to provide for the efficient allocation of rights in respect of Crown owned minerals and the obtaining by the Crown of a fair financial return from its minerals. That is consistent with the approach proposed in this paper to the extent that extraction is the highest value use of the resource.

## Economic or resource rent and externalities

As noted above royalties can serve as a way of collecting economic rent or taking account of externalities.<sup>10</sup>

Economic rent in broad terms is the margin between the income realized by an owner of a factor of production (such as land, minerals, or water), and the cost of development, including financing costs and compensation for risk. This margin can vary dramatically. For example, it may cost the same to run a marine farm in each of two bays but the return on one is

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<sup>7</sup> This is because the narrow taxes affect choices on which specific activities to undertake or commodities to purchase, while broad taxes affect only overall decisions (such as how much to spend in total). See the New Zealand Tax Review 2001 chapter 3, <http://www.treasury.govt.nz/taxreview2001/finalreport/index.html>

<sup>8</sup> Recovering the cost of administering a resource regime from users can eliminate cross-subsidies such as from general taxpayers to resource users. It can also have a secondary benefit through encouraging greater efficiency of use, particularly if the structure of the charges is related to the level of use. That benefit tends to be limited, however, by the absolute level of the costs being recovered. This is because although the structure of the charges may be use related, the total amount charged generally cannot exceed the costs of administration; e.g. under the RMA you can't charge more for a water resource consent than the cost of administering it even if that cost is insufficient to drive the desired level of efficiency. User charges are therefore unlikely to fully reflect the value of the water in alternative uses, or economic, social, cultural or ecological externalities of use.

<sup>9</sup> See Appendix 1 for a note on royalties in the fisheries area.

<sup>10</sup> Again input from Jim Sinner on this point was appreciated.

much higher because of natural productivity due to sea currents or river flows. Rent may also be driven by scarcity: for example where demand grows for a naturally occurring resource but the supply cannot be increased as much or at all, the rent increases as the price rises.

In strict theoretical terms, collecting economic rent can be seen as the sole justification for charging a royalty. Other arguments for charging or not charging are discussed in the paper.

Collecting economic rent is one possible rationale for imposing royalties, either for equity (fair distribution of returns from public resources) or efficiency reasons (achieving optimal resource allocation or avoiding resource dissipation). Whether collecting economic rent is desirable will also depend on social objectives and efficiency considerations such as the cost of collection.

This paper does not attempt to evaluate the presence or size of any economic rents on natural resources owned or managed by the New Zealand government.

Externalities of resource use (effects of use that are not reflected in market prices) can be an important consideration in design of regulatory regimes. Examples include runoff from farms or sewage that pollutes marine farms, air pollution from a power plant, or, on the positive side, any enhanced public ocean access from a wharf built for business use.

Applying a royalty is one means of ensuring users take into account the externalities created by their decisions.

Whether externalities can be practically identified and addressed will vary. Where they can be addressed the appropriate response may be anything from quantity constraints to behavioural constraints or a charge on inputs or outputs. No general conclusion is possible on whether a royalty will be an appropriate tool to achieve this response, but externalities should be considered when a royalty is being designed.

## Goal of natural resource ‘royalties’

*Why do we need to set out a goal?*

Having a defined goal helps design and application of a regime, and measurement of success or failure.

As with any regulatory regime, policy or other decision, it is important to be clear about why we are doing it. In the absence of clear goals, design principles and problem definitions, it is difficult to make up-front decisions about design or develop criteria by which to measure success. Subsequent regime reviews are similarly compromised and changes to established practice can become difficult to achieve.

*So what are our reasons? Are they adequate?*

The only existing guidance as to why ‘royalty’ type charges should be levied for use of Crown owned or managed resources (other than minerals) in New Zealand is section 64A of the Resource Management Act (RMA) which is specific to coastal charging only.

That section says that regional councils must consider whether to apply a charge after having regard to “(a) the extent to which public benefits from the coastal marine area are lost or gained; and (b) the extent to which private benefit is obtained from the occupation of the coastal marine area”.

It does not, however, give any guidance as to what the intent of the charge is or what its level should be, or how to balance private versus public benefits. Council decisions are presumably expected to be consistent with the purpose and principles of the RMA (see part 2 of that Act) but those are fairly broad.<sup>11</sup>

Charging because people are getting a benefit from a public resource provides little guidance on where or how much to charge.

This central government guidance shortfall leaves councils basing their policies on incomplete principles such as “the need to charge for the occupation in recognition of the fact that the private users are gaining a benefit at the expense of the public”.<sup>12</sup> Such a principle does not adequately draw out the reasons why charges should or should not be applied overall or in particular circumstances.

For example it gives no basis for determining which benefits ‘gained at the expense of the public’ should be charged for or what level of return should be sought. When should use of space for a wharf be charged for, and when should allowing public access be a factor? Guidance on these points would help decision-makers.

Charging for use of a public resource simply because a private benefit exists also does not address positive externalities from activities: for example, situations where society might want to encourage an activity because of benefits to the public. Examples include allowing a private wharf or path to be built without a royalty in exchange for public access that will let people reach an otherwise inaccessible scenic site.<sup>13</sup>

#### *What would better reasons look like?*

Charging to maximise net benefits provides a clear goal, while allowing for a range of goals and effects to be taken into account and balanced.

Better guidance for decision makers on designing royalties could be linked to existing goals and design principles, set out in legislation such as the RMA and in processes such as the Sustainable Development Programme of Action, which recognise the overlapping goals society has for natural resource use.

Those processes have adopted an approach that where the Crown owns or otherwise manages natural resources on behalf of the people of New Zealand, the goal is to ensure that the resources are used in a manner that

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<sup>11</sup> Section 5 sets the purpose of the RMA as promoting sustainable management of natural and physical resources and defines sustainable management. Sections 6 to 8 list matters to be recognised and provided for, or have particular regard to, and the need to take into account the principles (undefined) of the Treaty of Waitangi.

<sup>12</sup> Page 3, “The options and basis for a coastal marine occupations charging regime”. Report Prepared for Environment Bay of Plenty by Property Solutions BOP Limited. February 2005  
<http://www.boprc.govt.nz/coast/media/pdf/CoastalChargesOptionsandBasisReport.pdf>

<sup>13</sup> Existing regional council practice for coastal occupation charging in New Zealand appears to explicitly exclude these kinds of factors; e.g. charges do not relate to the effects, value or nature of the use, are not an allocation tool and must relate directly to the degree of public loss (without allowance for possible public benefits). Such an approach is unlikely to result in an economically or socially efficient charging regime.  
<http://www.boprc.govt.nz/coast/media/pdf/CoastalChargesOptionsandBasisReport.pdf>

maximises the net benefits to New Zealanders. In practice this means allocating, for example, the flow of water in a river between environmental, recreational and farming uses so as to deliver the greatest total margin between the benefits obtained and costs incurred (monetary and non-monetary in both cases).

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**Goal** Resources owned or managed by the Crown should be used in a manner that maximises the net benefits to New Zealanders.

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Applying such a goal in practice requires decision makers to weigh both the costs and benefits of alternative uses, or of alternative packages of uses, and come to a decision based on net national benefit. This is consistent with the broad purpose and matters set out in Part 2 of the RMA.

For example, instead of saying simply that a river should be locked up for environmental protection or abstraction allowed to boost local communities, the relative benefits of different levels of abstractive and in-stream uses can be compared and optimised (to the extent that information is available). Alternatively the charge for private use of marine space can be adjusted to reflect the level of public benefits created or foregone.

A royalty regime needs to allow for and enable changes in use (to achieve highest value use).

The above goal does nevertheless remain a fairly vague directive. It can, however, be translated, as in the Sustainable Development Water Programme of Action, to a usable design principle that any royalty regime should ensure that a resource “is made available over time for its highest value use”.<sup>14</sup>

This does not require predicting up front what that use will be, but creating a combination of regulation and markets that allows resources to move to higher value uses as they emerge, while managing the environmental and social impacts of change (the balance required under the RMA). An example could be a regulation which caps water pollution in a catchment, but does not specify how, where or by whom reductions should take place, leaving those decisions to users and allowing scope for innovation.

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1 Any royalty regime should aim to ensure that any given resource is allocated to its highest value use (in the widest sense of value) and allow for that allocation to adjust over time as appropriate.

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Such a goal and principle would help decision makers to determine whether or not to apply a royalty, and of what type. Such a decision could take into account a range of factors such as the nature of the use; does it deplete the resource, does it temporarily or permanently prevent other uses, does it have positive or negative externalities etc.

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<sup>14</sup> Value is defined “in its holistic sense and not just in reference to economic value. Highest value use encompasses all aspects of sustainable development: environmental, social, cultural and economic.” <http://www.mfe.govt.nz/publications/water/freshwater-issues-options-dec04/html/image-principles.html>

Allowing flexibility for uses to change over time as the highest value use changes helps achieve dynamic efficiency. The extent to which changes can occur without compromising key objectives will vary depending on the resource and the use in question. It may not matter who takes water from a river or who uses it, but where it is applied and the nature of the application (irrigation vs hydro generation for example) may be significant.

The importance of an initial resource allocation will be reduced as the ability to make subsequent transfers increases. Conversely, as transfer becomes easier, the need for ongoing environmental planning and monitoring will increase to manage risks that would otherwise arise only at times of plan reviews. There is a trade-off between risk and opportunity.

More generally, it can be considered whether simply making a resource freely available would distort behaviour such as by encouraging waste or diverting investment from other activities. If so then the decision is whether a royalty or other mechanism should be applied to ensure that use occurs at a desirable level (desirable economically, socially, culturally and environmentally). This is part of the overall goal of ensuring highest value use.

## The case for not applying 'royalties'

The above arguments around when to impose a royalty are also relevant to any decision to waive a royalty. Such a waiver would require proof that it would help achieve efficient use of the resource, not create distortions elsewhere and otherwise be consistent with the various duties of the Crown to those on whose behalf the resource is owned or managed (which may be taxpayers, citizens, native title holders etc).

Operating a queuing system for certain resources (such as bush tracks) instead of charging a market-clearing price represents such a choice. It achieves the goal set in this paper but by a means other than a royalty. Consistent application of waivers would be important.

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- 2 The Crown may determine that a financial return is either not required or can be reduced, or a subsidy applied, in circumstances where:
- i) a particular use of a resource has wider community benefits (i.e. net externalities) that exceed alternative uses;
  - ii) use is non-competing and/or non-exclusive;
  - iii) charging is not cost-effective;
  - iv) charging would breach New Zealand's international commitments; or
  - v) other methods of achieving the goal are more efficient.
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Obtaining a return should be a default with exemptions to be justified, to minimise behavioural distortions.

There may even, in very special circumstances, be a case for not only waiving a royalty but actually subsidising access to a resource which would otherwise be under utilised but for which no economic rent exists.

This may be due to significant positive externalities from use of the resource but limited or no potential (or willingness) to capture rents from users. One example might be encouraging the building of new track and hut facilities to both open up new wilderness areas and take pressure off

existing ones, in situations where rationing the first area by price would undermine other objectives, such as equity, or breadth of access.

Either waiving a royalty, or providing a subsidy, would also require proof that the desirable level of use would not occur otherwise, and that the subsidy or waiver represented high priority expenditure.

Finally there are questions of whether a royalty is administratively feasible at a reasonable cost. The following section addresses this and other practical implementation questions that also arise for cost recovery charges and have been covered in the official guidelines for that regime.

## Royalties - practice

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So far the paper has focused on the principles for a royalty regime. This section discusses practical policy and implementation issues, with most of the discussion based on the official guidelines for cost recovery charges (Treasury, 2002).

### Setting a royalty

Determining the size of a royalty can be done in various ways depending on the goals being sought and their relative importance, the information available and the risks faced.

An obvious option is to attempt to estimate the appropriate rate to achieve the specific goals being sought. This could mean determining the level of economic rent available and fully capturing that from users, or calculating a royalty that will ensure a resource is depleted over an appropriate timeframe. The ability to follow such an approach will depend primarily on information availability.

The other primary option is an auction methodology where potential users bid (based on, for example, lump sums, time payments or profit shares) to use the resource. Auction approaches have the advantage of implicitly revealing information held by bidders, and over time can both evolve towards the optimal level and take into account changing circumstances. Risks here include collusion or asymmetric knowledge between bidders. Whether those risks matter, other than for initial distribution of economic rents, depends on circumstances.

Under either option there is the risk that the resulting royalty rate will not achieve some elements of the goals sought. For example, the royalty may be so high as to limit access by some parts of society, or so low that it encourages excessive use of the resource. On the former issue, any decision to reduce the rate will require decision-makers to determine whether greater intensity of use is acceptable, or consider an alternative or supplementary rationing system such as queuing.

Estimating a royalty in advance is information intensive. Auction or tender approaches require a functioning market.

Investment risk and resource damage are the main constraints on initial rate setting and later adjustments.

The importance of getting the royalty “right” first time will also depend on factors such as the nature of any associated investments. Would a resource user incur large fixed costs that would be jeopardised by a rate change? Could an initial rate that was set too low lead to irreversible damage?

Where there is scope for allowing the rate to evolve, there may be long-term advantages from doing so. Conversely where significant risks exist, such as of environmental damage, there is a case for setting a conservatively high royalty rate which can then be lowered as appropriate. The process for making such decisions should, however, be as clear and certain as possible.

## Balancing multiple reasons for charging

Complications arise when there are multiple reasons for charging; e.g. example) to recover the costs of providing services, capture a share of the benefits received from private use of a public resource, fund general activity related to the resource (such as planning, conservation or education) or encourage or discourage an activity based on the externalities it creates.

These different purposes can call for a variety of responses which may vary in magnitude or even point in different directions.

Trying to deliver multiple goals with one instrument requires trade-offs that can compromise some or all of the goals.

One major risk is that the combined charge will be set at the wrong level. It is unlikely for example that the level of charge appropriate for encouraging efficient use will match the costs of managing a resource. This risk can be addressed by separating decisions on achieving a return from assets, recovering the costs of services, and reflecting any externalities of use.

Incentive problems can also arise where continued funding of desirable activities (such as marine education) depends on continued use which may not be sustainable (leading to collapse of a particular fishery), or may have undesirable external effects (such as loss of biodiversity through habitat damage).

In such cases there can be a perverse incentive to encourage resource use beyond the point of net national benefit. The best answer to such an incentive risk would probably be to separate the expenditure and revenue decisions. Whether any given divergence between purposes is sufficient to require such separation, will be a matter for judgement. Potentially conflicting purposes should, however, be evaluated and trade-offs explicitly made.

It is generally possible to identify cost recovery charges separately as they can be tracked and linked to specific activities, and doing so is central to their intended incentive effects on users and providers. This is consistent

with the principle that “rentals for access to a resource are separate from charges for the management of the resource. To combine the two is to mix a return for the owner with a charge for a service. This would send confusing signals ...”.<sup>15</sup>

Charges for other purposes (such as general revenue or royalties) should be separated out from cost recovery as far as is consistent with reasonable costs. This is to help ensure that each charge achieves its own intended purpose.

## Administration

The core administrative goal is to minimise transaction costs (namely, the costs of collection, compliance and enforcement) without generating excessive levels of evasion. At one extreme it may not be practicable to exclude users from benefiting from an activity. Conversely, the ability to exclude implies the feasibility of a charge.

Administrative design balances purity against practicality – what is worth doing and what is most important?

Other factors relevant to detailed charge design include allocative and administrative efficiency at a given time, dynamic efficiency over time, accountability and due process; equity, the robustness of the revenue base, local/central government responsibilities and the split between those who benefit from expenditure (beneficiaries) and those whose behaviour makes it necessary (exacerbators).

There can be a trade-off between monitoring and enforcement costs and the level of a charge. For example a low level charge may not cover the cost of the necessary monitoring and enforcement to ensure compliance. In such circumstances it may be better not to charge at all rather than introduce a regime that will be ineffective and potentially undermine public trust and compliance behaviour. In the example of irrigation, any change to policies must consider whether it will require greater measurement of water take and use, and the capital and operating costs of doing so. Conversely once a decision is made that requires such measurement, the range of available policy tools is wider because of the improved information and the low marginal cost of using it.

In competitive situations, it is generally desirable to avoid distorting behaviour. This could happen if charges for Crown managed resources were set below market rates in situations where private competition existed; e.g. for gravel extraction.

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<sup>15</sup> “Inquiry into the Government’s Fisheries Cost Recovery Regime”, report of the Primary Production Committee, Forty-Fifth Parliament, April 1998. I. 10A

Flexibility is important in regime design as long as principles are not compromised.

Those affected by a regime will tend to seek certainty on their obligations but flexibility regarding their compliance. Certainty is important to support investment decisions. Flexibility in administration can be valuable but is not a goal in its own right. Ongoing negotiations or frequent changes, however, can increase uncertainty and transactions costs. Also more discretion means more scope for lobbying and corruption. The balance between certainty and flexibility should take into account how long the regime is likely to be in place and the period for investors to earn a return on associated investment.

Access to water is a classic example of the certainty/flexibility trade-off. It is a limited resource that can be applied to multiple beneficial uses. There are major long-lived investments required in taking and using it. The planning issues are complex, involving multiple potential uses, and there are long time horizons to determine impacts. The benefits of both flexibility and certainty are high for both regulators and users.

Building in assessment criteria from the beginning can avoid unnecessary difficulties later.

Success criteria should be set up front. Unclear objectives or failure to define what will represent success can undermine any regulatory regime before it begins and prevent subsequent effective evaluation. Adjusting incentives within an existing regime is typically harder than building in appropriate incentives as part of the initial regime design.

## Transition

Transition arrangements are often significant. Introduction of a regime needs to take into account the extent of existing rights and therefore where and when a royalty can reasonably be imposed. There may be historical factors that argue against a royalty regime such as residual rights (mining privileges for water take in Otago), previous ownership interests in a resource, or offsetting arrangements about cost recovery or the terms of access (fishing quotas).

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|-----|---|
| 3   | Any charging regime should aim to:  |
| (a) | minimise administration, compliance and transaction costs, including being as uniform as possible across locations, users and uses; |
| (b) | provide certainty for investment and include fair transition provisions where relevant.   |
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Also, regardless of the terms on which access was originally obtained, existing users may sometimes have since effectively paid the cost of accessing the resource as part of the market price for acquiring land or a business. For example, access rights from a house to the beach may have been acquired without charge, but any subsequent purchase of the house would have paid a price reflecting the existence of those rights.

Windfall gains and losses may not fall to current users, and need to be considered alongside ongoing incentives.

In such circumstances arguments about the social equity of ‘giving’ them “free” access are by no means straightforward. There are equity and efficiency considerations in imposing a royalty after the fact, including the risk of “stranding” investment in existing assets when alternative uses may require equivalent investment from scratch.

Overall, therefore, it is necessary to carefully consider how to treat “windfall” gains to existing rights holders (from resources becoming scarce and/or tradable), and consider that issue separately from the question of creating better incentives for future use.

## Using revenue from royalties

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Decisions about royalties for Crown natural resources are inevitably linked with discussions about how the revenue should be used, whether or not a linkage is appropriate. A discussion of this issue is therefore included here.

Charge design and revenue use can be interlinked. For example in cost recovery for fisheries research, goals include ensuring that taxpayers aren’t subsidising research from which the industry captures all the benefits, and that the government isn’t undertaking unnecessary research activity. For royalties, however, that direct link between funding and expenditure generally does not exist.

Where royalties are earned on a resource which is owned by or managed on behalf of a specific group (such as iwi or hapu) there is an obvious rationale for using the revenue to the benefit of that group. Royalties on an asset owned or managed by the Crown on behalf of all New Zealanders, however, are more of the nature of general Crown revenue, so should generally benefit all New Zealanders.

Linking revenue gathering directly to expenditure decisions can compromise both sets of decisions.

The general principles of fiscal management in New Zealand involve raising such revenue in the most efficient manner, and spending it in the way that maximises national welfare. This generally argues against “tying” revenue raised from a given source to related expenditure.

Such tied (or “earmarked” or “hypothecated”) revenues tend to increase overall administration costs, reduce flexibility on the overall mix of taxes and the redistributive impact of the tax system, and reduce the efficiency of expenditure over time due to lack of scrutiny and reprioritisation.

Also it is difficult to maintain the direct relationship between expenditure and revenue over time, and unlikely that revenue will remain consistent with the appropriate level of expenditure. If revenue from a tied tax exceeds expenditure, then expenditure tends to rise in response. On the other hand if tied revenue falls short of required expenditure, then general revenue tends to be called on as a supplement. Tied taxes also tend to remain in force after the expenditure for which they were intended ceases.

Studies have also shown that providing decision makers with tied revenue to increase funding for a specific activity tends not to achieve its purpose. Instead general revenue that was previously spent on that activity may be diverted to other purposes, effectively reducing or eliminating the intended effect of introducing the tied revenue (Pickernell, 2004).

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- 4 The revenue from a royalty regime should generally be used in the manner that will obtain the greatest benefit for New Zealand or the local authority area in question, whether or not that relates to the activity being charged for [in most cases this will probably mean treating it as general Crown revenue to be allocated through the Budget process].
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Tied taxes may be called on where there is political resistance to increased general taxation or specific charges to fund a specific activity, or a lack of trust that an activity will be supported in the longer term.

Responses to such a situation can include arranging for a charge to be imposed from a higher level of government (which reduces local scrutiny of the revenue), or guaranteeing that revenue will only be used for a specific purpose (i.e. it will be tied). Such arrangements raise all the problems identified above for a tied tax but may be seen as the only viable funding option.

Overall, therefore, although tied revenue regimes may be created in order to limit the Crown's fiscal exposure or guarantee adequate funding for specified activities, these goals may not be achieved over time.

## Conclusion

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New Zealand is facing increasing pressures on its natural resources and will need to use a wider range of tools to manage conflicting demands. Those tools will include the charging of royalties on "Crown" or "public" natural resources; i.e. those natural resources owned or managed by central government on behalf of New Zealanders.

Applying such tools requires a clear goal such as to ensure that New Zealanders receive maximum net benefits directly or indirectly from the use of their resources. This logically translates to an overall design principle that a royalty regime should aim to ensure that any given resource is allocated to its highest value use (in the widest sense of value) and allow for that allocation to adjust over time as appropriate.

More detailed design principles include avoiding distorting the behaviour of resource users, reflecting externalities in decisions, being fair and consistent, and explicitly identifying circumstances where charging may not be appropriate and rigorously assessing whether that is actually the case before granting exemptions.

Whether or not the goal and principles proposed are generally accepted, an explicit debate should improve the final outcome in such an important policy

debate. Another explicit debate would also be desirable on proposals to tie the resulting revenue to specific activities, given the long-term costs of such arrangements but the ongoing demand for them.

# Appendix 1: Current ‘royalty’ regimes in New Zealand

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## Resource Management Act

The RMA provides a generic regime for royalties on some resources but is not applied effectively.

The RMA provides a general regulation making power [360(1)(c)] on prescribing “the amount, methods for calculating the amount, and circumstances and manner in which holders of resource consents shall be liable to pay for the occupation of the coastal marine area, the bed of any river or lake which is land of the Crown, and the extraction of sand, shingle, shell, and other natural materials from lands of the Crown, and the use of geothermal energy”. Council practice is inconsistent.

## Coastal occupation charges and oceans policy

Section 64A of the RMA specifies that regional councils, in preparing or changing a regional coastal plan or proposed regional coastal plan, must consider whether a coastal occupation charging regime should be applied. They must have regard to the extent to which public benefits are lost or gained; and the extent to which private benefit is obtained. A charge cannot be imposed in respect of a recognised customary activity. Revenue must be used to promote the sustainable management of the coastal marine area so this is a tied tax structure.

Coastal occupation charges have never been generally applied.

From 1987 to 1991 coastal occupation charges and royalties were set by the Department of Conservation under the Harbours Act. In 1991, under the new RMA, the occupation charges and royalties were to be set by the Minister for the Environment by regulation, collected by regional councils (with no cost recovery mechanism) and paid into the Crown Bank Account. Most councils did not collect the payments. A 1993 review of coastal occupation charges led to the 1997 regime where councils retain revenue for coastal management purposes, but the default is a zero charge so councils have to justify charges through the regional coastal plan process. Application of coastal occupation charges has, however, been hindered by lack of national guidance, cost and complexity of the plan change procedure to introduce them, and resistance of affected interest groups.

Oceans policy can operate outside the RMA structure but should be consistent if possible.

Work on a New Zealand Oceans Strategy has been underway since 2000 including issues such as ensuring optimal resource use and, where appropriate, recovering government costs of managing those resources.

Fisheries resource rentals were imposed on introduction of the quota management system in 1986, although quota was allocated to incumbents free of charge. The rentals were set administratively based on profit which was complex and created perverse incentives to avoid or disguise profits and limit non-commercial fishing. Quota moved from fixed quantities to proportions of allowable catch in 1990 with compensation from 1989 to

1995 equal to the level of resource rental. In 1994 the Government agreed to revoke resource rentals at the end of the compensation period.

### **Minerals and coal**

In New Zealand, the Crown owns, by statute, petroleum, gold, silver, and uranium in its natural condition in land, and other minerals under its land and in some cases under other land. For permits with production valued at more than \$100,000 per year there is a requirement to pay a royalty. The underlying principle was sharing income and profit between permit holder and owner, with a balance between a fair financial return from Crown assets and prejudicing new projects. The Energy Resources Levy (ERL) on domestically produced coal (not all of which is Crown owned) and gas was introduced in 1977 to prevent wasteful use. The ERL now applies only to pre-1986 discoveries (at a lower royalty rate) and opencast coal.

### **Freshwater and Geothermal resources**

The Crown owns some resources but only claims management rights over others.

The Crown vested in itself in 1903 the sole right to use water to generate electricity and in 1967 the sole right to use all natural water, but does not claim ownership of water and no royalties apply. The RMA provides the management regime for freshwater without any royalties. The Crown also vested in itself in 1952 the right to use geothermal steam to generate electricity, and in 1953 extended that to tapping, taking, use or application of geothermal energy. Uses could be subject to rental. The RMA superseded this regime (again without any royalties) but transitional regulations continued for Rotorua to manage depletion and extract a resource rental for the Crown.

### **Concessions regime for the conservation estate**

The Department of Conservation (DoC) manages a significant proportion of New Zealand's land area for a variety of purposes – species preservation, recreation etc. Where third parties provide services or undertake activities within that area, this is managed through a “concession” such as a lease, licence, permit or easement. Examples include accommodation facilities, ski fields, shops, and grazing. Different authorisations are required for mineral exploration, mining, tourism activities involving marine mammals, and hunting for commercial gain. Negotiated fees are charged to reflect benefits from using public land but most concessions are initiated by a private individual or firm approaching DoC, rather than being tendered.

### **Bioprospecting**

Policy work is underway on bio-prospecting issues including access on Crown owned/managed areas and capturing and sharing benefits.<sup>16</sup>

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<sup>16</sup> (<http://www.med.govt.nz/ers/nat-res/bioprospecting/review/index.html>)

## Appendix 2: Summary of charging mechanisms

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	Possible characteristics	Examples
<b>General taxes</b>	Can be lawfully levied only by or under an Act of Parliament. Compulsory, for public purposes, enforceable by law. Compulsory unrequited payment to government.  Revenue goes to a general fund.	Income tax.  Goods and Services Tax.  General local government rates.
<b>Tied taxes</b>	Can be lawfully levied only by or under an Act of Parliament. Compulsory, for public purposes, enforceable by law. Compulsory unrequited payment to government.  Revenue used to fund specific activities.	A proportion of petrol excise.
<b>Duties and Excises</b>	Taxes collected solely at the border or otherwise by the Customs Service. Commodity specific. Usually fixed rather than proportional to value.  Revenue goes to a general fund.	Alcohol, tobacco, petrol excises.  Customs duties.
<b>Levies</b>	Collected under statutory authority but not necessarily by government. Can be used to fund “club goods” where benefits flow to small group of people but are not excludable within the group. Both “free rider” and “forced rider” risks arise. <sup>17</sup>	Commodity levies.
<b>Fees and charges</b>	Levied more or less in proportion to services provided.  Revenue tied to fund specific activities.	Fisheries user charges.
<b>Royalty</b>	Charged in relation to resource use.  Revenue may go to a general fund or to fund specific activities.	Oil and gas royalties.  Auctions of rights to use marine space for fixed periods for specified uses – payments may be lump sum or periodical.

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<sup>17</sup> A “free rider” problem is where consumers have an incentive to hide true willingness to pay since they will still be able to consume the good. This may mean goods or services are under-provided. Compulsory payment can create a “forced rider” problem where consumers bear a cost that exceeds the benefits they receive.

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