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Editorial Note

The team at IPS has been very encouraged by the positive response to the first issue of *Policy Quarterly* in February. It is clear that there is room for a publication which offers analysis, stimulus – and sometimes challenge – across a range of public policy questions.

As we go to press, the electoral cycle is entering the phase when debate on policy issues will be dominated by the need to win or retain votes. The campaign will encourage the tendency to oversimplify complex problems and reduce them to catchy slogans. An Institute of Policy Studies can only remind readers that nothing is that simple – a message which comes through in all the contributions to this issue.

Each article in its way reminds us that policy is a moving feast; in the years ahead New Zealand may need to revisit issues that once appeared fairly straightforward or are still thought to have been dealt with "once and for all". Richard Hawke's studious comparison of options for the provision of retirement income is one example. It draws on the publication which he produced last year as Henry Lang Fellow at IPS, and brings it up to date following the 2005 Budget.

In their treatment of fisheries management, Cath Wallace (our colleague and Senior Lecturer in the School of Government) and Barry Weeber (Senior Research Officer at Forest and Bird) bring theoretical depth and empirical evidence to support the case for a re-examination of the effectiveness of quota mechanisms. Their scrutiny of this topic over a period of years enables them to document the unresolved issues surrounding sustainable resource management in the deep-water fishery.

Aspects of this contribution may be seen by some as controversial, but as in other sectors, New Zealand has a collective need for solid debate and substantive answers. Only then can we move closer towards the abstract goal of "sustainability" as reflected in various statutes. For those who wish to take up the opportunity to respond, we can only say – "please do". We look forward to developing a "Readers Comments" section for the journal where your thoughts can be published.

In a similar vein, Nicola White and Andrew Ladley explore further some of the wider issues which flow from Andrew's treatment in *PQ1* of how Treaty issues, and claims to rangatiratanga in particular, fit within a democratic society. The authors attempt to demystify some of the swirling argument about Treaty rights, indigenous rights, and claims to rights in general. Nowhere could the perils of over-simplification be more apparent, or more dangerous, for New Zealand's emerging self-image and identity.

At times, a policy journal should also switch on the radar and try to detect emerging problems which might need attention in the near future. This is the reason for including the fourth item, which is not so much an article as a skeletal "draft agenda". It offers some initial guidelines for an approach to the phenomenon which is referred to as "Peak Oil" (and which has already been mentioned in pre-election positioning by two political parties at least).

Having carried out the editorial function for these first two issues, I now return to a narrower field of policy research with IPS and Waikato colleagues. Some exciting areas for debate have been opened up in *PQ1* and *PQ2*. For future issues, the task will be carried out by Jonathan Boston, newly-appointed Deputy Director at IPS. The only lesson I have to pass on is of an obstetric nature (and it may be useful to contributors as well as to those in the editorial team); when delivery is problematic, one should be equipped both with forceps and a sharp pair of scissors. Kia ora!

Ken Piddington
Managing Editor

Claims to Treaty and other Rights: Exploring the Terms of Crown-Maori Negotiation

Nicola White and Andrew Ladley

Introduction

In "The Treaty and Democratic Government", published in the previous issue of *Policy Quarterly*, it was argued that:

- All political power has limits, with neither the state (or any branch of it), nor any particular group within the state, being able to claim absolute power. Rather, balances of authority within a state are negotiated and re-negotiated over time.
- Claims by any institution (whether governmental or tribal) to possess "sovereignty" reflect historical rhetoric, but our constitutional system is one of government by consent, within limits.
- In this context, ongoing debates about rangatira-tanga (here, broadly meaning more tribal self determination) are a normal and healthy part of democratic process and the ongoing negotiation of the terms of government by consent.

This article delves further into that broad framework by considering the interplay between law and political negotiation, concepts of relationships between citizen and state, the role of rights in political debate, and the effect of concepts of indigeneity on all of these. The broad conclusion is that current legal and policy debates are constantly testing what is different about the state's relationship with indigenous people, and when, why and how any difference is relevant. The debate must take place, but it needs to be approached with care as it touches on matters that go to the heart of our traditions of democracy and equality.

Is there a special relationship with indigenous people?

There are three main ways in which it is argued that the state has a special relationship with indigenous people in New Zealand: as a result of the Treaty of Waitangi, as a result of common law doctrines of customary or aboriginal rights, and, increasingly, as a result of a quite distinct fiduciary relationship between a state and indigenous people living within it. Those strands are often inter-woven. A critical tension across all of them is the extent to which Maori can locate their claims in the field of "rights", and so claim the protection of the courts within the heritage of Westminster democracy. These three strands each need brief discussion.

The Treaty of Waitangi

Whatever the arguments over the exact status and meaning of the Treaty, it is accepted as a founding document for New Zealand, articulating the basis on which colonial government was established with the consent of the indigenous peoples – Maori tribes – and setting terms for the continuity of their chieftainships.

Legal developments since the mid 1980s, and the settlement process for historical grievances, have dramatically changed the recognition now given to the Treaty. The promises in the Treaty and the history of government inaction and direct breach are now much better understood. That history has begun to be addressed. But, however important, the settlement process is essentially backwards looking, concerned with the redress of grievance. The greater challenge today is to articulate and workably implement the ongoing responsibilities that the Treaty may place upon government.

That debate on what that might entail is being played out in many contexts. It is in the forefront in public debate around the stocktake of New Zealand's constitutional arrangements (currently being carried out by Parliament's Constitutional Arrangements Committee), in the foreshore and seabed policy, and in the politics triggered by the creation of the Maori Party to contest the next general election. It is implicit in many other policy, legislative and administrative issues that

have a Maori dimension, from climate change and aquaculture legislation to corrections and immigration policy. All are opportunities to raise the question of the balance of autonomy, the role that Maori might have in any decision-making process, and the question of whether there are any rights specific to Maori.

The question in all these contexts is what the basic Treaty promises might mean for ongoing government activity and policy making. There is now a substantial body of thinking and writing, in court decisions, Waitangi Tribunal reports and academic commentary, that can inform those discussions. That thinking has particularly developed through discussion of the phrase, "the principles of the Treaty of Waitangi". The phrase first appeared in legislation as the guiding phrase in establishing the Waitangi Tribunal in 1975, and has since been used in many other Acts of Parliament.

In developing the content of Treaty principles, both the courts and the Tribunal have in general stepped carefully. Although the Tribunal in particular has made strong statements over the years about the nature of the Treaty promises and the breaches of them, when taken to a conclusion about what is required of the state in a given situation, both the Tribunal and the courts have tended to make suggestions about the process rather than the substance of government decision-making. This can be seen as a manifestation of the general doctrine of deference between the branches of government, or a general awareness of the limitations of the role of the judicial branch in policy making and an acceptance of the need for Treaty-based considerations to be blended with the general governance obligations of the state.

The level of deference from both courts and Tribunal is less when an issue is focussed around individual pieces of property with clearly identified owners, reflecting not only our own 'Westminster tradition' but also the heritage of most 'rule of law democracies'. At that point the broad governance issues fall more into the background and one tends to see greater articulation of 'rights' from the courts and the Tribunal.

A key point from the exploration of this strand of activity is the emerging 'legalisation' of the Treaty, and the effect that is having on the terms of negotiation for Maori claims for autonomy and resources. 'Bargaining in the shadow of litigation' is common in our democracy – and Maori well understand this.

Customary rights

The common law has historically protected the rights of an indigenous people that existed when colonial government was established, and which have not been extinguished by any legal process since. The doctrine is well established in every common law country, but is particularly vibrant in Australia, Canada and the USA. The law has been closely tied to property arguments, rather than more general social issues. Thanks to the seabed and foreshore, New Zealand has heard much about customary rights over the last two years.

The emerging consensus in New Zealand is that there is now limited room for this line of legal reasoning to play out, for five main reasons.

- First, land-based claims have minimal potential for customary rights arguments, given the tiny amount of land that remains in customary title and the settled understanding that transformation from customary title to 'normal ownership' extinguishes all aspects of the customary title.
- Second, all claims based on customary fishing rights, whether commercial or non-commercial, were settled with the 1992 Sealord deal.
- Third, the exploration of customary rights over the foreshore and seabed will now take place within a contained legal framework that blends potential customary rights with the wider set of legal rules governing the use and management of this area.
- Fourth, the last remaining geographical context in which the issues might emerge is that of rivers. Court of Appeal comments have signalled that it should not be assumed that the application of English land law will necessarily have removed all customary rights over rivers and significant waterways. But past legislative vestings and and other actions are likely to mean that the issues, as they get explored, will prove to be more about historical loss than contemporary rights.
- Fifth, the continued existence of customary rights in New Zealand must face the common law requirement that the claimed rights must not have fallen into disuse. Outside of the areas already dealt with by settlement or statute (eg customary food gathering from the sea), this requirement of continuity is likely to be hard to satisfy.

Customary rights jurisprudence is squarely tied to property and natural resources. But it does link to 'self-determination' arguments, because managing property with a degree of exclusivity (the core of 'rights') has the potential to give a tribe an economic foundation. Again, one should therefore not be surprised that the language of 'customary rights' is becoming integral to the negotiation of rangatiratanga in New Zealand.

Putting aside property rights, there is no significant domestic legal argument at present for the recognition of equivalent customary rights at any broader level of social policy. Debates about the possible recognition of broader rights of indigenous people are taking place in the context of international human rights discourse, and in particular over the merits of the Draft Declaration on the Rights of Indigenous Peoples. It is logical that indigenous peoples everywhere, including Maori, attach great importance to what is otherwise a highly contentious and consequently very slow-moving international discussion.

A fiduciary relationship

The concept of a fiduciary operates in many different legal relationships, including the lawyer-client relationship, a trustee and beneficiary, and a company director and shareholders. The details of the duties differ, but there are some broad principles that allow all those relationships to be described as fiduciary.

- A fiduciary is not self-regarding, but acts strictly in the interests of the relevant beneficiaries.
- The person must exercise independent judgment, as well as meet duties of diligence and prudence in the way responsibilities are carried out.
- A fiduciary must also be open and accountable to the beneficiaries for whom he or she is working.

Does the Government of New Zealand owe Maori a special protective duty, similar to that of a trustee? Put the other way round, as compared with all other citizens, can Maori validly assert any "rights" for treatment and protection, simply by being indigenous?

Internationally, there is an increasing body of literature and case law on the notion of a special fiduciary relationship between a state and indigenous peoples living within it. That development is quite separate from the Waitangi Tribunal's consistent suggestion that the principles of the Treaty of Waitangi imply a special fiduciary duty on the New Zealand government to ensure the cultural (and perhaps land-based) viability of every hapu and iwi. The wider body of thinking has largely emerged from North American law and political discussion. But each context is specific and the arguments must be understood within the rest of the host legal system. Thus one should not assume that government fiduciary obligations relating to indigenous peoples are universal concepts that will be easily applied in New Zealand.

The original use of fiduciary language in this context was paternalistic, especially in 19th century United States cases that described the relationship between the state and Indian tribes as like that between a guardian and a ward – the state taking decisions for the good of a vulnerable child-like group. The duties created by courts were therefore strict about the content of decisions, in that they were to be for the benefit of the indigenous people, but had less regard for process and the idea that the 'beneficiaries' might have a role in decision making. This genesis is a long way from the contemporary hopes for how the Crown-Maori relationship might develop.

The Canadian courts have declared there to be a special fiduciary relationship between its aboriginal peoples and the state, but have made little progress in setting out its scope or consequences – when it might apply, and how sharp its legal teeth might be.

Both commentators and courts in North America have, however, identified a key difficulty with the notion of articulating a fiduciary duty of the state to a particular group. A fiduciary is bound to act strictly in the interests of the beneficiary group or individual. Yet the government owes responsibilities to the population at large. How can the two be reconciled?

From first principles, the general state-citizen relationship sees the government – through the mechanism of elections for a Parliament – put in office by the people. They give it a political mandate, based on leadership and policies put to the electorate, to govern according to law.

The political mandate is not of course absolute, especially in minority and coalition governments. The mandate is to seek to govern for all, informed by the principles and approach put to the electorate – and it is a mandate to govern according to law. The basic position

was articulated by Edmund Burke, back in 1774, to the effect that the task of an elected parliamentarian was to exercise unbiased opinion, mature judgement and enlightened conscience, for the general good, in the deliberative assembly of Parliament – not to be a delegate for a single party or interest group. One can see a loose parallel here with the broad concept of fiduciary responsibilities.

In matters of general governance it therefore runs counter to first principles of democratic theory for the state to owe a duty of this kind to just one group; the government must make decisions in the general public good. Put differently, general notions of non-discrimination in broad policy areas have come to underlie much of our legal (and political) system. This is completely different from the accepted notion that individuals and groups can have different property rights, and hence protection of those. And so, unsurprisingly, we see an emerging willingness in the court judgments to rely on fiduciary relationships to protect particular pieces of land or other property, but some reticence in using those concepts in any broader sphere.

Is the Crown-Maori relationship a legal or political construct?

This brief survey of the main areas of legal argument over the recent years shows that the boundary between the legal and political is fuzzy, and is constantly being pushed by one group or another. In particular, it is clear that claimant groups, unsurprisingly, consistently talk up this set of potential sources of responsibility into 'rights' - firm legal concepts that could create enforceable obligations through courts. This is so for any group seeking to make a distinctive claim, not just for Maori. Thus, parents of children with special needs might seek to found their claims to educational funding in terms of "rights" and the state's special protective obligations (deduced from the wording of the statute) to provide equal education for all.

Fiduciary relationships, with their foundation in equity, are in the realm of ethical and moral values. This strand illustrates nicely that this debate balances on a pivot point for the involvement of the law. Against the broad context painted by this and the previous article, it is unsurprising that indigenous claims have also turned to what one writer has described as the seductive lure of fiduciary law's "ample and flexible system".

> If one cannot find a specific doctrine appropriate to the circumstances, but if one is committed to exacting a protective responsibility, the siren song of the fiduciary becomes almost irresistible. If the remedy given by an available doctrine fails to meet the perceived needs of justice in a given case, again the temptation surfaces. So like an accordion the fiduciary principle may be expanded, or compressed, to maintain the integrity, credibility and utility of relationships perceived to be of importance in contemporary society. (Tan, 1995)

The role of the legal system in enforcing responsibilities in these relationships involves delicate and dynamic questions. There are no fixed answers, here or internationally. In a democracy of 'government by consent, within limits', this is an ongoing search for a reasonably acceptable balance between the ethical, social and legal that suits practical, political and constitutional considerations – for the time being.

How important are "rights"?

Why does all this matter so much? From a legal perspective the difference is between general claims (moral, ethical or political – however one wishes to describe them), and legal rights that create duties enforceable through the legal system. The first are 'soft' responsibilities - the general provision of a climate in which business might operate, or a stable society, or education and health services. Mostly, this is the stuff of general political debate and policy trade-off. But 'rights' are more hard-edged, and the holder of the duty will be held legally accountable in some way for their performance. Legal rights are not soft feel-goods, to be acknowledged or given by a cabinet or parliament in the ebb and flow of political influence. In legal terms, rights deserve capitals: a Right is a Big Deal, and can have Big Consequences.

For the government, if something is a right, it can act as a trump in the general round of negotiation and balancing of different group interests that are part and parcel of general formulation of policy. If the legal system declares an interest to be a right, it will carry significant priority in the policy world. Hence, the right to a fair trial requires that significant state resources be given to the provision of legal services for those facing imprisonment but unable to afford legal counsel, and to ensuring sufficient courts and judges so that cases

can be dealt with in a reasonable time. The 'right' has trumped other claims to resources. If the state chooses not to fund such rights, the courts will not convict people accused of crimes.

But whilst rights might trump other claims, the complexity arises in that there are always other rights in play. So the governing system, including executive, legislature and courts, has to find the appropriate balance and limits between competing rights.

The point here is that we should not be surprised to see, or be shy about naming, the same process in Treaty claims as we see across all other issues: that is, the tendency for claimants (or those favouring claimants) to "talk up" the language of rights. As argued throughout this paper, the language is important, as it vitally affects the negotiating process in a democratic government.

To take some specific examples in the Treaty context:

- There is a difference between saying that the relationship established by the Treaty of Waitangi is a fiduciary one, or akin to a fiduciary one. Crown lawyers put great weight on "akin"; claimant lawyers gloss over it.
- Internationally, states have been very cautious about signing up to the terms of the Draft Declaration on the Rights of Indigenous People, whereas the international indigenous community (including a strong Maori lobby) has resisted weakening the "rights" language of the draft.
- There is recurring debate about the way in which Bills introduced to Parliament refer to the Treaty. A dramatic debate in recent years was over the New Zealand Public Health and Disability Bill introduced to Parliament in 2000 (see below). Similar policy debates have taken place over the terms of local government, land transport, education and genetic modification legislation, to name but a few.

In all of these examples, what is being debated is the terms under which claims on the state are to be pursued, and the position of the indigenous claim relative to those of other groups in society.

This is an iterative and highly dynamic process, involving all of the different branches of government. A soft acknowledgement of interests in a policy statement or speech by one part of government might be used as foundation for an argument before a court to recognise an interest, give it form as a right and provide redress. The court's comments on that issue are used in the policy process to justify a broad reference in the principles of an Act. Which is then expounded upon in speeches and policy documents, which then founds another legal case... And so on, across a diverse range of policy topics and across domestic and international fora. In a developing and highly topical area of policy and law, with few fixed markers, the boundary between political, policy and legal spheres is highly permeable.

This dynamism, and the difficult line between legal and moral values, is not unique to New Zealand, or to Treaty issues. The same concepts have been debated for many years in the context of international human rights, and the question of whether different types of rights require different approaches in law and policy. There will always be questions about whether to characterise issues of this kind as legal, and hence which branch of government is best suited to take the lead on which issues. The baton changes regularly. It is a complex matrix.

Non-discrimination and special interest rights

We have argued that in large measure, Maori are simply doing what every other interest group is doing in the democratic process, namely bidding up their claims as "rights" under various headings (the Treaty, customary rights, fiduciary duties) and bolstering those claims by political representation aimed at furthering their interests. Those who assert the uniqueness of the Treaty will resist a view of Maori as simply claimants amongst many - and there is some force to that, of course. The purpose here is not to argue against all aspects of the special position of Maori groups, or the special place of the Treaty, but to see those claims in the context of an ongoing and largely healthy negotiation in this 'government-by-consent-within-limits' democracy.

But we need to be more explicit about the boundaries between the assertion of non-discrimination as a core value in the political and legal system, and the assertion of any special rights of Maori. To the extent that Maori claims are for protection of clearly defined and already existing property rights, as noted, there is little jurisprudential or political risk. Everyone understands, and the law certainly does, that property rights entitle a measure of special treatment for the holders. This generally does not raise issues of discrimination.

But for very good reasons, measured in war and bloodshed, democratic governments everywhere have, especially over the last half century, endeavoured to create governing systems in which certain criteria are not the basis on which people either claim rights, or are refused such. The initial flashpoints were on race/ethnicity and religion. Wars were – and are – fought based upon special treatment given or refused on such grounds.

The attempt to prohibit discrimination did not occur solely for 'moral' or 'fairness' reasons, or to pursue colonising agendas. It reflects a deep-seated realisation that basing core policy and government on group rights is a 'zero-sum game'. People who see the world thus are condemned to play it on its terms. If Jews win, Palestinians lose, etc. Democracies developed non-discrimination laws by exhaustion after centuries of conflict where power was based on certain characteristics. Thus, the attempt was to provide rules for competitive power struggle that gave better chances for all - not just for those who happened to be the holders of the characteristics that held power.

So, by 2005 the world has strongly affirmed the right to be free from such discrimination in successive human rights documents, and has celebrated milestones such as the UN Charter, the Universal Declaration on Human Rights, the successes of the black civil rights movement in the United States, and the ending of apartheid in South Africa. In New Zealand today, this right is affirmed in the New Zealand Bill of Rights Act 1990, and given protection through the Human Rights Act 1993.

The essence of the right, for government policy making, is that any differential treatment between ethnic groups, or the sexes, or age groups, must be for good reason. In the words of the Bill of Rights Act, it must be "reasonably justified in a free and democratic society".

The principle of equal treatment (or freedom from discrimination) goes to the heart of the values of this society. Its depth was shown by the heated reaction in 2000 to the New Zealand Public Health and Disability Bill as it was introduced: it was read by many as allowing (or even requiring) preferential access to health services for Maori, solely because of race. The Bill was amended before enactment to make very clear that this was not to be a possibility, and related policy changes to this Bill and other parts of government policy clarified that social services generally were to be delivered on the basis of need, not race. If statistics showed that the two coincided, so that a particular group in society had a clearly greater need for a service, then a targeted service could be provided. But without that concrete data, it was unlikely that differential treatment would meet the Bill of Rights Act requirement of being reasonably justified.

In practice, of course, this is complex. There is regular argument about whether any particular programme is just delivery of the same general service but targeted in a way that increases its effectiveness with a particular population group, or whether it is a programme provided exclusively to that population group – often as part of a claimed Treaty process.

Thus for the last few years, politics has been dominated by a potent brew of race, the Treaty, equality, differentiation, respect for difference, indigenous rights and affirmative action. The fuzziness of the lines between one type of treatment and another, in a complex world with imperfect information, means that there is no perfect solution that will hold for all time. There will always be debate about when different treatment is justified. It is a fine line for any government and society to walk.

Conclusion: distinguishing between law and leverage

This brief article has touched on many topics, and dealt in detail with only a few. It must be left to future pieces to explore such matters as:

- the past, present and future role of the Waitangi Tribunal,
- the swirling arguments about forms of ownership and attachment, both historically and now, including the extent to which it is appropriate to characterise those attachments as modern property rights,
- the types of policy and law where distinction based on ethnicity or indigeneity may or may not be problematic, and
- the consequences and appropriate treatment of different kinds of rights as international and domestic lawmakers give legal force to moral values.

The focus here has been on the broad pattern of engagement or negotiation of Maori claims, and the terms on which the negotiation is being constructed. In the end the messages are relatively simple. These issues

- at the heart of social and political debate in New Zealand – are at once both unproblematic and hard.

They are unproblematic where Maori claims, including self-determination, are seen as integral to the democratic process of negotiation in a rule of law democracy. The legal issues are the same as for all other claimants, and the claiming and framing of "rights" is central to that negotiation. This includes the claimed right to rangatiratanga, or tribal self-determination. In a government characterised by limited and relative degrees of institutional autonomy, it should not be threatening to negotiate special relativity for groups wishing to exercise such. Defining a group and confirming its authority over a specified set of issues or activities is something that Parliament does regularly, whether for professional bodies like Law Societies, for local government, or for incorporated societies and charitable trusts like squash clubs or the RSA.

But the issues will always be hard when the boundaries of differential treatment are based on race. The treatment of different groups of people by the state goes to the heart of some deep social norms of non-discrimination and justice. It is not surprising that their exploration is creating some heat.

By and large, all branches of government within New Zealand have - so far - managed to weave ideas of some special position of indigenous people within the fabric of the general social, legal, constitutional, and political framework of society. But this is undoubtedly a tightrope. There have been some wobbles. Avoiding more will require each step in this area to be taken carefully. A step wrong, on either side of the wire, could be uncomfortable.

To pursue the metaphor, each actor also needs to be aware that they are not the only ones on this particular tightrope. All of this debate takes place in the complex and multi-layered environment of tipping point between social, political and legal zones. The issues bounce constantly between the executive, legislative and judicial branches of government, with action by one often having immediate consequence for another.

Language is vitally important in this 'claiming context', as terminology, in particular the use of the language of rights, can push claims from the political into the legal zone. The line between 'soft' responsibilities and 'hard' legal rights is being debated and pushed every week, as these issues come to the fore.

It would therefore be naïve to see the law as a separate and pure source of absolute propositions, generally, and in this topic in particular. There is no hidden tablet of stone in the judicial common room. It has to be understood that these issues are being explored in New Zealand in a highly dynamic conversation. All three branches of government are taking part in this conversation, as are international fora. All parties to the debate are using all of these fora to promote and defend their own perspectives, more or less consciously.

If this is accepted, it becomes critical that all participants in this national conversation are aware of the use that will be made of any formal utterances, and aware of the overall broad social and political context into which their particular pebble will drop. Precise language is critical. So is basic respect between peoples. We are negotiating both dignity and claim. They deserve respectful, careful and deliberate discussion.

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Deep-Sea Fisheries: The Lessons of Experience

Cath Wallace and Barry Weeber

Background

This article draws on a comprehensive research paper "Between the Devil and the Deep Blue Sea" which we presented to the Deep Sea 2003 Conference in Queenstown. In that paper we set out to examine the New Zealand Fisheries Quota Management System (QMS) and its issue of property rights to commercial fishers in the deep-water fisheries within adjustable catch limits.

In the following pages, we argue that one should focus on the question; have property rights provided sufficient incentive to protect the resource and the host environment? If not, what adjustments might need to be made in the mechanisms through which the QMS was applied? Of these, the central features have been the Individual Transferable Quota (ITQ) and the setting of catch limits.

The central policy challenge is to understand the performance of the quota system and to consider it as an example of a market-based instrument which had been designed to reset incentives through a property rights mechanism. The evaluation then leads to identifying lessons to be learned. For example, we state below the need to focus on the precise nature of the "property" which this particular instrument assigns to the transferee.

Property rights issues have been advanced in the theoretical literature as a market-based mechanism through which over-fishing may be controlled in precisely this manner. As a lead nation in the experiment with ITQs, the New Zealand experience is important.

The case history of orange roughy is based on official figures and has been developed from the Queenstown presentation. As in other jurisdictions, the decline in stocks of this species has been very dramatic. In New Zealand, the failure of the ITQ device has led to some belated closures of fishing areas to allow recovery to take place – and arguably more are required. There is a significant international body of opinion that extensive marine reserves are needed as an "insurance" against fishery management failures. That discussion needs to be had, but we do not cover it here.

The switch to management by quota

It is now more than 20 years since a quota management system was introduced in order to control the harvest from New Zealand's deep-sea fisheries. This happened just five years after the declaration in 1978 of an Exclusive Economic Zone (EEZ) around New Zealand. This stretches from 12 to 200 nautical miles (nm) out from the territorial coastline (including offshore islands). Such a step was sanctioned by the negotiations leading up to the United Nation's Convention on the Law of the Sea (1982) and it brought about a dramatic expansion of the sea area and fisheries under this country's control.

At the time, an ineffective access regime had been in operation in the inshore fisheries. There was little doubt that it would have to be replaced by a better system. In some fisheries effective open access existed and it was well known that fisheries exposed to open-access extraction tend to be harvested at high levels and to become depleted far below the economic optimum. Attempts to control fishing effort were based on restrictions on the types of fishing gear, periods during which fishing was permitted, and the precise specification of equipment to be used, such as mesh size. Such restrictions, valid for biological protection, were also used, inefficiently, to control the amount of fishing effort. This led to higher costs than necessary, especially when compared to methods which set limits to the total harvest from a fishery.

Internationally, this dual problem of inefficiency and over-harvesting had become the subject of attention by economists to see if reliance on harvest limits, coupled with market-based instruments in the form of property rights to access the fishery, might provide an incentive for efficiencies and better biological outcomes. The quantity limit was seen as allowing fishers to achieve this by choosing their own methods, while still reducing over-fishing. The property right is no more than *a right to access the fishery to take a given quantity or share of the total allowable catch*. The property rights in New Zealand waters were expressed within a system of "individual transferable quotas" (ITQs). These were seen as providing fishers with an incentive to protect the value of their asset - they would enjoy the right to access the fishery (but not possession of the fish stock itself).

Ahead of most other jurisdictions, New Zealand placed its quota management system under an overall constraint on annual harvest (the "total allowable catch" or TAC) and proclaimed that this would be capped at a sustainable level. This TAC would then be shared among commercial, recreational, customary and science harvesters. Only commercial fishers were issued with quota, initially as a set quantity. Now this is allocated as a proportion of the commercial share, defined as the Total Allowable Commercial Catch (TACC). These limits are issued for each species, or species group, in defined zones known as "quota management areas" (QMAs). Other fishers, not within the ITQ system, are governed by other rules.

In the deep-water fisheries, New Zealand introduced a Quota Management System with a trial in 1983. The system was formalised and extended to inshore species in 1986, so we now have considerable experience with these market-based instruments. The security of the share of the fishery offered to commercial fishers by their individual quota was expected to remove the "race to fish" and to provide an incentive for fishers to protect the stocks, given that their quota values depend on sustainable stocks. This "race" occurs when fishers stuff their vessel with catching technology and proceed to over-fish, leading to biological losses and economic inefficiency.

Commercial fish quota owners have the ability to form a "club" of fishing quota owners. The theory was that such a collective would then form mutually enforceable rules. They would decide how much effort to put into self-policing. In fact, the major burden of compliance and enforcement has relied on efforts by government agencies responsible for fisheries control and scientific research.

There are some key lessons to be drawn from New Zealand's deep-water fisheries experience. With the benefit of hindsight, it is now possible to use stock assessment reports over a twenty-year period and attempt to answer some of the key policy questions. The record of the orange roughy fisheries provide a mixed but clearly discouraging picture, with assessed stocks ranging from 3% to an upper bound estimate of 54% of the original biomass for different stocks, on 2003 figures (see detail on pp14-15). Outcomes for other stocks in the deepwater, such as the oreo species, reveal significant and risky declines.

Appropriate techniques for environmental management were given little real attention from the outset. Protective measures, where they have been introduced at all, have been slow, piecemeal and reactive, rather than proactive. Nineteen seamounts were eventually closed to fishing in 2001, but there has been, over the 21 year period considered, no formalised and comprehensive standard environmental assessment process, and until April 2005 it appeared that any overall strategy for assessing the impacts of fishing was to be shelved in favour of single-stock management.

Harvesting theory, valuation, and property rights as a protective mechanism

Since the nation's fisheries represent both market and non-market values, it follows that the harvesting of marketable fish species will generate a range of external costs (which will not be reflected in market prices). By-catch is a very clear illustration. This results in the discarding of non-targeted non-quota species and, in some instances, a reduction in biodiversity (where fishing impacts on other species and communities). Similarly, when an operation such as bottom trawling crushes colonial corals and other benthic habitat, there will be costs external to any market transaction (comparable to some extent with the effects of clear cutting a native forest).

Economists use the concept of "Total Economic Value" to reflect the fact that the value of fish sold on the market is only one small part of the value that people attach to fish. Non-market economic values can include:

- the values attached to retaining an intact marine environment (including the stock of fish) for its own sake (existence value);
- the values of ecosystem functions and the services that these represent (in this case for instance, habitat, predator-prey relationships);
- the values of non-extractive uses (such as observation or scientific enquiry);
- the recreational and aesthetic values we attach to the marine environment and fisheries;
- the value society places on handing the resource on to future generations in good shape (bequest value);
- the value put on retaining options for all uses and benefits in future (option value).

In public policy terms, this particular mix means that market values cannot be the sole criterion for fisheries management. Economic efficiency requires that the sources of benefit in the bullet points above be made part of the efficiency equation. When all the instrumental values incorporated in "Total Economic Value" are considered, it is unlikely that optimisation of commercial market values will coincide with economic efficiency.

Core harvesting theory, on the other hand, considers only harvest values. It suggests that a single owner wanting to maximise market harvest values for a stock should optimise the level of fishing effort and fish stocks remaining by considering:

- the physical productivity of the fish stock;
- the impact on future productivity by current harvesting;
- changes in costs as a result of harvesting and other elements;
- future expected revenues, and
- the discount rate (reflecting preference for returns now rather than in the future and alternative options for investment).

The setting of catch limits (combined with the allocation of a property right) was designed to prevent the "race to fish" syndrome described above. The TAC may however be adjusted from year to year so commercial operators lack one important element of security – exactly how big is next year's permitted catch? Faced with uncertainty, they will have a strong incentive to maximize catch since any conservation gains are lost to future harvests.

We can see therefore that if the design of the quota mechanism is determined purely by market values, it is highly probable that long-lived, slow-growing fish stocks will be "mined" and the proceeds deployed to higher yielding investments. This arises because the returns available elsewhere grow faster than the net capital value of the slow-growing stock. The higher the discount rate, or preference for returns now, the more likely it is to lead to higher levels of fishing and lower fish stocks.

The proceeds from the sale of the fish stock can then be expected to grow faster than the net capital value of the fish remaining in the sea. It is for this reason that the allocation of property rights will not automatically create sufficient incentives for quota owners to ensure that the target stock is maintained.

New Zealand's quota management system – the practice

At the core of the new system when it was introduced in 1983 (for deep-water fishing, in depths greater than 700m) was the allocation of property rights through the ITQ. For a given species or species group, quotas would be calculated on the basis of total allowable catch in a given area. It was expected that the mechanism would improve efficiency in the industry, while still ensuring that the harvest was held within "maximum sustainable yield". The latter concept is a single-stock biological harvest concept, not an economic or ecological term, and requires good science (constantly updated) on the population dynamics of the species in question.

The reasoning behind the shift to quantity limits, and away from controls over the type of gear used or the periods/seasons when fishing would be allowed, was sound enough. It was expected to induce higher efficiency in fishing operations overall and to eliminate the pressures which generate "race to fish" behaviour. Similarly, it was reasonable to promote (as one element in the policy) the formation of quota owner associations in order to improve compliance – the expectation being that they would apply their own rules to diminish competitive fishing and cheating.

We have seen, however, that the core incentive to mine fish stocks as described above was not removed. The non-harvest values of fish have never been considered by

the Ministry of Fisheries because of its interpretation of the term "utilisation" in s.8, which sets out the purpose of the Fisheries Act 1996. "Utilisation" is defined there as meaning "conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic and cultural wellbeing". The Ministry, however, maintains that it actually refers solely to use for harvesting (Ministry of Fisheries, "Section 8 Policy Definitions", p8 c2002). We disagree, on the grounds that there is nothing in the definition of "utilisation" to restrict the meaning to extractive uses only, and indeed, there is much to suggest otherwise.

There was another missing element in the policy design. It arises from the pervasive incentive to externalise both the effects on the environment and the costs of lost non-extractive values. In deepwater fisheries, there are numerous slow-growing species with no market value (this is true both of fish and of the colonial animals that provide important habitat structures). There has to be a very rapid change in harvest levels for any market mechanism to recognize an incentive to protect the environment.

Set out overleaf is the population history of orange roughy, using the officially accepted figures, where catch declined very steeply in almost every area of the fishery following the imposition of the quota system in deepwater fisheries in 1983. Similar trends have been recorded for most of the other deep-water species which come under the quota management scheme and for the "mid-water" hoki fishery, originally a huge stock that has suffered marked decline. The New Zealand experience in this respect is of international interest, given the claims that were originally made, and continue to be advanced, for the success of the quota management system.

Institutional and process failure?

Reviewing the twenty-year period of ITQ operation in New Zealand, one is struck by the institutional evolution and the "work-in-progress" character of the mechanism. Public policy was administered under intense industry pressure and on the basis of unduly optimistic assumptions about incentives, stocks and outcomes. The precautionary approach to resource management is not often in evidence. There is an assumption of greater importance of commercial interests over any other, both by industry and by many (but not all) officials and Ministers, partly due to the industry's ability to mount legal challenges. There has been a reluctance (especially by the industry) to have adequate resources put into independent scientific environmental appraisal. We consider that a dismissive attitude on the part of many officials towards the environmental and future-regarding provisions in the Fisheries Act (1996) was evidenced by their dubbing these "the religious bits", a term used frequently at meetings.

Industry players and administering officials in almost all other environmental and resource management sectors have to face regular public input into management plans, policies and the like, frequently under statutory process. Fisheries management in New Zealand has, by contrast, lacked regular public process and engagement has been limited to "approved parties"[1].

Fisheries Management Plans were abolished in the mid 1990s. The perception of officials at the time was that they were cumbersome. Barebones legislative authority for new forms of fisheries plans was introduced by the Fisheries Amendment Act 1999. The Ministry produced 3 initial papers on these plans in March 2001. Subsequent work, including consultation, has resulted in their elaboration. Significantly, the Ministry of Fisheries has proposed that harvesters hold the pen and that other interests be asked to make submissions to them. The Minister would then approve or decline the resulting fishery plans but would not be allowed to change them. This proposal is apparently based on the argument that industry compliance will depend on their agreement with the plan. This subjugation of non-harvesters, non-quota owners, and the Minister of Conservation to plans defined by quota owners has been the source of great contention.

A forward agenda

Any attempt to improve future decision-making in this sector, while retaining quantity limits, with ITQs as the key tool for management of the resource, would have to tackle the following agenda:

- Where does environmental science feed into the process?

  Stock assessment will always be an inexact science, but ecosystem assessment is even harder. Stock

1 "Approved Parties" are the nationally organized representatives of commercial, recreational and customary fishers, environmental interests and occasionally others, who apply to an gain approval annually from the Minister to be consulted under s.12 of the Fisheries Act 1996.

Decline and Closure in the

The story of the orange roughy fishery is instructive, since it has been the dominant deep-water species over 20+ years of management under ITQs, both in terms of volume and in terms of price and value. Annual catches of 40-50,000 tonnes were recorded during the 1980s, peaking in 1989/90. Since then there have been significant catch reductions leading to progressive (but lagged) reductions in catch limits for individual fisheries. The consequence of this has been a drop in the quantity allocated under ITQs, since these are expressed as a percentage of the total allowable catch. In the deepwater, there is no recreational or customary catch, so these reductions are not due to non-commercial fishing.

For all fish stocks "– with the controversial exception of by-catch stocks – there is a legal requirement for the Minister to ensure that fish stocks are maintained "at or above" the level that will produce the maximum sustainable yield (Fisheries Act 1996, s13). For orange roughy, this minimum stock size has been set at 30% of the original unfished biomass. At that level, it is estimated that the stock will provide a "maximum sustainable yield" in terms of biological replacement for the extracted harvest.

The overall decline in orange roughy stocks is brought out more starkly when the stock assessments are traced for each of the quota management areas for this species – see graphs opposite for the period 1983 to 2003. These are the officially accepted stock assessments, and they demonstrate a pattern of separate and significant declines. In two-thirds of the cases, stocks have fallen well below the 30% mark, some to as low as 3% and 7%: (yet in 2005 the fishing industry wants to reopen one of these, without any indication that the stock has recovered).

Fishing was allowed to continue for many years as the stocks declined further, though the Ministry of Fisheries claims that these are on a path to recovery. Despite these claims, with the exception of the Chatham Rise fisheries, there is little evidence of stock rebuilding. Environmental organisations have lacked resources to take legal action against what they saw as disregard for the requirements of s.13 of the Act.

The Ministers in office during the period have mostly erred on the side of generosity to the fishing industry, usually pitching catch limits above those recommended by scientists and environmentalists, often at or above the level suggested by the fisheries management officials – bringing most of their decisions close to what the industry wanted. Catch limits have been reduced but usually by a significant lag behind the stock assessments.

The Challenger and Puysegur fisheries were only closed when they reached 3% and 7% of the original biomass respectively. Environmental organisations attempted to get science done on the impacts of bottom trawling. In the late 1990s and early 2000s, research was commissioned from NIWA on this aspect. Results to date show significant damage done by trawling.

When Pete Hodgson took the reins as Minister in 1999, he reversed years of inaction and agreed to the closure of 19 seamounts in 2001, some already fished, some too deep to fish, and some potentially fishable.

The overall picture which emerges from the orange roughy experience leads on to a series of questions, not only concerning the ITQ as an appropriate device for sustainable management in deepwater fisheries, but also about the decision-making processes, the inputs into those processes and the institutional framework within which they occur.

SUMMARY OF TOTAL CATCH

Year	Recorded catch (tonnes)
1982/83	48,207
1986/87	52,332
1991/92	37,013
1996/97	16,645
2001/02	14,381

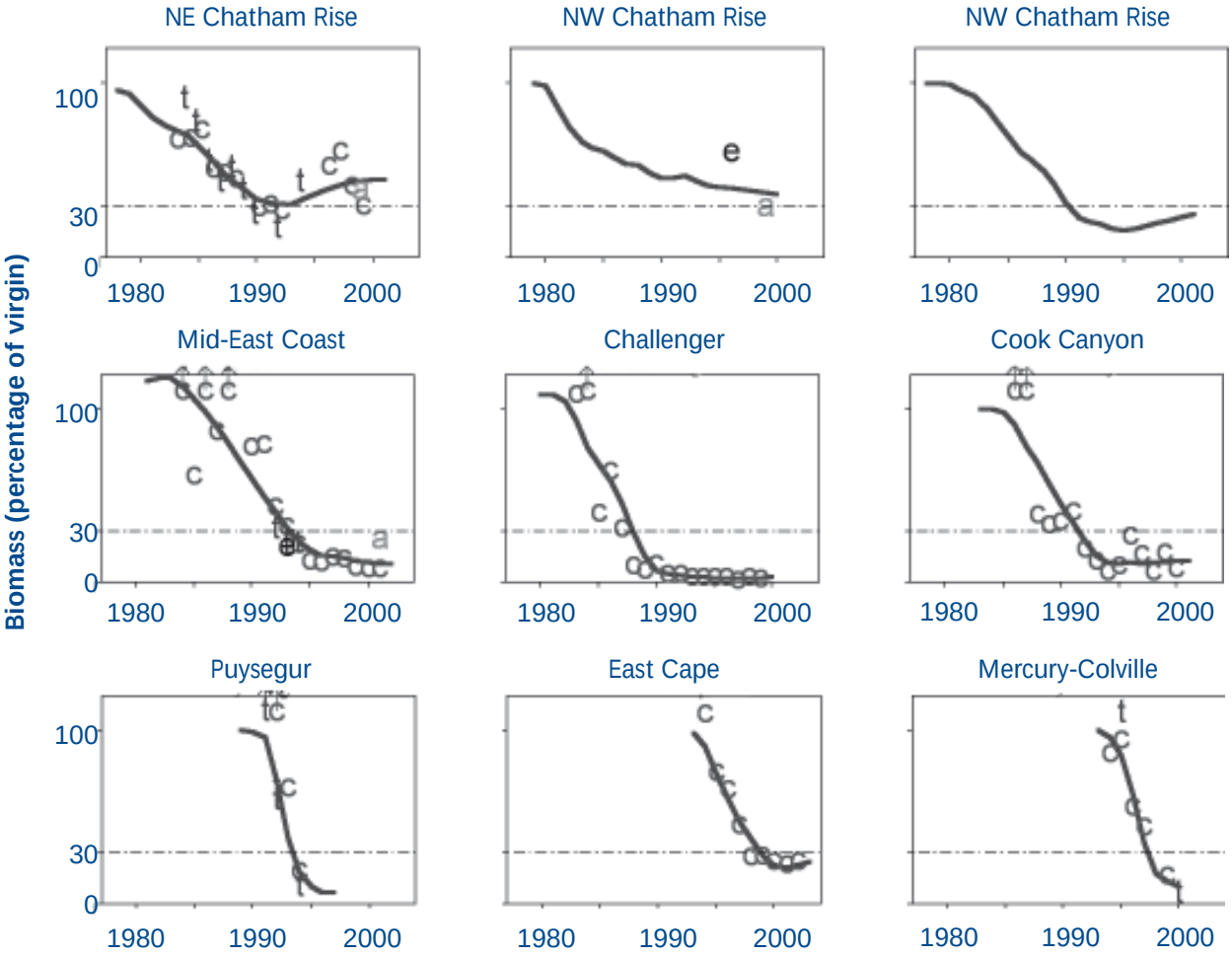
assessment is an important component, but only one part of the necessary science. When stock and environmental estimates have a wide margin of error, then catch limits and catch method controls must be precautionary.

- Who commissions and does the science, and who owns the data?

  There is a clear danger in implying that the industry has an untrammelled property right over the deep-water resource – other than a permit in perpetuity to harvest a share of the allowable commercial catch subject to environmental protection and other social goals for the fishery. The Fisheries Act makes it clear that sustainability must be ensured and that future generations' needs must be provided for (s.8). Industry entitlements are subject to obligations and to wider social goals. Industry ownership (or control) over the commissioning, contracting, or performing elements of the scientific process was enabled in the Fisheries Amendment Act 1999 over the objections of environmental and scientific bodies. Industry pressure on scientists has at times been explicit. It is insidious in its effect and therefore cuts across availability and access to science as a public good.

Orange Roughy Fisheries

FIG 1 ORANGE ROUGHY STOCK DECLINES. THE DOTTED LINE REPRESENTS 30% OF THE UNFISHED BIOMASS, THE VOLUME CALCULATED TO PROVIDE THE MAXIMUM SUSTAINABLE YIELD. THIS IS THE LEGAL MINIMUM FOR TARGET FISH STOCKS, WHICH THE FISHERIES ACT 1996 (s.13)



Note: letters on the graphs refer to the type of stock assessment: c = catch per unit effort, a = acoustic survey, t = trawl survey, e = egg survey
Source: Malcolm Clark, National Institute of Water and Atmosphere (NIWA), New Zealand.

- Is there sufficient evidence to rule out the "hard-landing" (heavy stock depletion) option in future decisions on total allowable catch?

  The fishing industry has preferred to take higher immediate catches and accept "hard landings", meaning that future allocations will be much reduced. The very rapid stock reduction illustrated in the orange roughy case suggests this choice was driven by discount rate factors and that it is unsustainable for deep-water fisheries. When the eventual catch cuts occurred, Ministers were nevertheless given the blame!

- Why is there no environment assessment process nearly ten years after the passage of the Fisheries Act, which is quite specific on the requirement to avoid, remedy or mitigate any adverse effects of fishing on the aquatic environment (s.8), on the mandatory consideration of environmental principles (s.9) and the precautionary approach required (s.10)?

  In the deep-sea environment there are unique requirements for any effective process of environmental assessment. The most obvious is the large input of resource for accurate monitoring of environmental damage and for stock assessment.

Preparation for a Strategy for Managing the Environmental Effects of Fishing eventually began in 2001 but has languished. It may now, with a new Chief Executive at the helm, be revived.

A rapid response requirement is vital; that is, the TAC must be automatically reduced when signs of depletion are registered. "Second opinions" can follow, but the precautionary principle should always apply.

- How should the resources be generated for adequate management of ITQs or any other allocative mechanism?

  The cost recovery system suffers the flaw of providing a potent mechanism for industry capture of fisheries management and research. Resource rentals have been eschewed since they were abandoned by a government under challenge from Maori as to whether the government did indeed own the resource and hence have legitimacy in imposing a resource rental.

  The Auditor-General in 1999 found that low priority was given in the budget process to funding for information and environmental science and management. The evidence in the original paper points to a familiar combination of spineless political management and bureaucratic surrender. The industry comes out repeatedly as the clear winner.

- How are non-market values to be reflected in fisheries management and how can the public be involved in the process of fisheries management?

  Both the Resource Management Act and the Conservation Act provide examples of the way in which such values can be articulated in law. They also include specific mechanisms for engaging the public in conservation policy and resource management planning. An essential element is that all parties have equal and effective access to input and influence.

Research findings

In the Queenstown paper we also isolated three key questions:

a) Does theory suggest a property rights regime alone can be relied on to protect fish stocks and the environment of the deep sea?

b) Has the New Zealand Quota Management System been a success in terms of management of fish stocks and the deep-sea environment?

c) What wider lessons for deep-sea resource management can we learn?

Our responses were negative on both a) and b); this opinion was based on dynamic economic harvesting theory and the evidence of the fish stocks and lack of environmental controls. As stated above, when a species is slow-growing high discount rates will provide a dominant incentive to extract the resource (and find a commercially better placement for the proceeds elsewhere).

Similarly, incentives to avoid damage to the environment are not provided by the Quota Management System or ITQs; instead, such effects continue to be externalised. The ecosystem values of non-target species will effectively be disregarded. Perhaps the central confusion stems from the fact that commercial interests have been able to interpret ITQs as a grant of untrammeled property rights (and sometimes to threaten litigation on these grounds). This has reinforced the industry's instinct to resist any public benefit through more effective environmental controls.

We conclude therefore that the New Zealand experience brings out the way in which a property rights mechanism can lead various stakeholders to lose sight of societal and other interests. This comes about because those non-commercial rights are not codified in the quota system. The basic error is to leave industry with the illusion of unattenuated "ownership". Almost inevitably, the role of the public sector (as the principal agent for the interests of society and the environment) is then eclipsed. Once this happens, the administrative principles behind a quota management system and enforcement of catch limits will, like the target fishery itself, collapse.

In future (and this was our answer to the third question), it will be crucial to configure any institutional framework so that industry pressure is not dominant. Groups that want to see higher fish stocks retained for non-extractive and ecosystem purposes should have an effective voice, and the resources to use it. Some jurisdictions use an independent board to set catch limits and controls - but accountability mechanisms then have to be put in place. In the New Zealand context an independent board could perform that role, with Ministers required to report to Parliament on any proposed variation.

A design for the future

Any resolution of these issues will need to recognize that we are not in a static policy scenario, either in the national or international context. Resource depletion in the oceans is leading on to new initiatives. Most recently, in New Zealand, the whole process of developing an "Oceans Policy" was initiated – and later stalled. Ecosystem-based management in the high seas is under active discussion at the United Nations and elsewhere, as are controls on high seas fishing, particularly bottom trawling.

In all these situations, our public authorities need to assert the powers vested in them by statute and to provide for ecosystem-based management of fishing and other activities. They will need to levy resource rentals and recover management costs, and these decisions must be decoupled from undue industry influence. Only in this way can research on, and management of, New Zealand fisheries display the same integrity as that operating in other areas of the public estate.

Re-jigging incentives to reduce environmental damage is crucial. Public authorities must require that fishers, like their terrestrial counterparts, take steps to avoid, remedy or mitigate adverse effects of fishing. Such a rearrangement of the quota management system might of course be seen as some sort of economic sacrifice, or as "capitulation to the greenies". This has been a typical reaction in many similar situations, but it loses sight of the bigger picture and of the specific legal obligations that New Zealand has accepted under the UN Convention on the Law of the Sea. Moreover, economic efficiency would be enhanced by reform.

Under the UN Convention on the Law of the Sea (which is where the whole EEZ entitlement started) each nation state carries an absolute obligation "to preserve and protect the marine environment" (Art. 192) and to ensure that the management of marine resources meets other criteria endorsed by the international community. New Zealand has already come under intense criticism from the international community (at the 2004 United Nations Informal Consultation on Oceans and the Law of the Sea) for the impacts of our bottom trawlers on the high sea. This attention is set to intensify.

It follows that a revamp of fisheries management would in essence represent the responsible exercise of the obligations accepted by New Zealand in this sector. Without such reform, it is clear that we shall not live up to our own concerns for sustainable development, and for the equitable distribution of benefits to New Zealand citizens, including future generations.

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The exhaustive bibliography assembled for the authors' 2003 paper will be posted on the IPS website, and readers wishing to make e-mail contact with the authors can use:
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The key reference for the statistical material used in this article is;

Annala, J.H., et al., (2003) *"Report from the fishery assessment plenary, May 2003: stock assessments and yield estimates"* Ministry of Fisheries. (Unpublished report held in NIWA Library, Wellington)

Providing for Retirement: Some Key Issues

Richard Hawke

Introduction

This topic has become one of the most problematic areas of policy debate around the world. The onset of a marked demographic transition, combined with debate about the role of government and the efficiency of public provision, has provided both a trigger and a platform for debate. In New Zealand, retirement income policy has been a volatile and unresolved issue since the 1970s. During the 1980s and 1990s there was considerable debate about the long-term policy settings. Following the passage of the New Zealand Superannuation Act (2001) the issue appeared to drop off the political radar. However, it has been revived more recently as a result of political and other contributions – such as New Zealand First's proposal for a "golden age card" and the New Zealand Institute's discussion papers on an "Ownership Society". This flow of ideas, combined with the shifting demographic profile, should ensure that retirement income will remain a live issue in the minds of the electorate.

The framework for retirement income

While the term 'retirement income' is commonly used and there is general acceptance of its meaning, the specifics are less clear. Retirement income does not exist to increase national savings or to provide jobs for actuaries, tax lawyers, accountants, fund managers, or regulators. The purpose is to help the elderly live in dignity.

Within this objective there are a number of tensions for the simple reason that there are many influences on individual behaviour and a number of needs to be met when designing schemes for retirement income. There is also a wide and diverse range of stakeholders (individuals of various ages, government and a group of agencies), so that any alternative arrangements should at least be tested against a common set of criteria. In 1999, the Super 2000 Taskforce suggested the following headings for this purpose:

Policy stability

When making provision for retirement, people only get one chance and there is no possibility for "learning by doing". Also, the time frame is far longer than for almost any other decision they will make, and most people are risk-averse in such situations. Therefore policy stability is, essentially, the need for policy changes to take place only after careful deliberation and in a manner which allows individuals to adjust to any consequences.

No government can provide certainty, but it can attempt to reduce instability, e.g. from rapid or unanticipated shifts of policy. But the desire for stability must be carefully distinguished from a desire to maintain the status quo. It would be dangerous to use the status quo as a hurdle that has to be overcome before change can even be proposed (let alone implemented). A key difficulty is that policy stability implies different treatment according to age. In this area of policy, as in others, risk factors will change over time and will require constant re-assessment. As always, innovation and progress require change.

Sustainability

The Periodic Report Group noted in 1997 that any retirement income scheme must pass the test as to whether it can be sustained over a long period. If a scheme is unsatisfactory, in terms of adequacy, efficiency, equity or fiscal cost, it will come under pressure for change or replacement. For these reasons, the Group suggested that any scheme requires mechanisms to accommodate adjustments without requiring large, frequent or radical changes. In addition, this would allow successive governments to incorporate changes prompted by new research or changes in economic, demographic or social conditions; changes

in conditions, such as demographics, have the potential to upset a previously sustainable scheme.

Adequacy

Perhaps the core objective of retirement income is adequacy. Modern societies demand that people have a level of income in retirement sufficient to provide for a basic standard of living. What constitutes an adequate standard of living is debatable: values, ideals and attitudes have changed in the past and will continue to do so. While New Zealand and Australia have tended to focus on the need to prevent old age poverty and provide for a minimum standard of living, European countries have tended to relate retirement income to lifetime earnings; hence, 'adequacy' can be understood in a range of ways.

Equity

Equity is a contentious issue; it is a concept implying relativity, but without any clear basis for actual measurement. In the debate on retirement income, equity is most often judged by inter-temporal effects, i.e., allocation between generations. But equity also relates to intra-temporal issues – for example, equity in terms of the tax treatment of alternative savings vehicles. It is also related to fairness in relation to individual preferences. A person who chooses to spend more freely prior to retirement will end up with less income than one who spends more prudently – which clashes with some notions of equity.

Efficiency

All retirement income systems are costly. However, it is desirable for unnecessary costs to be avoided. The distribution and allocation of costs will also affect individual behaviour, and any judgements to be made under the other headings listed above. One measure of policy might be the degree to which adequacy and equity are achieved while minimising total cost. Of course, a system designed around these criteria alone may not lead to a sustainable solution.

Why is reform needed?

In common with many other countries, New Zealand is experiencing a rise in the proportion of older people as a result of increased life expectancy and lower birth rates. Analysis of census data suggests that the proportion of the population aged over 65 will rise from the current 12% to 25% by 2050. But the changes are far more profound than the simple ageing of individuals. The shift in demographic structure is associated with an increase in 'age dependency'; i.e. the ratio of people of retirement age relative to those of working-age. Under present arrangements, annual payments under NZ Superannuation will rise from current levels of 4% of GDP to around 9% over the next 50 years. This trend has the potential to affect the stability of the whole economy.

The demographic change will also extend further the length of time people are expecting to be 'retired'. In 1900, the average life expectancy for both men and women was less than the qualifying age for the old age pension; in 1938, when 'universal superannuation' was introduced for those over 65 the average life expectancy was 65 for men and 68 for women. While the qualifying age for National Superannuation is currently 65 life expectancy has increased substantially; therefore, the period over which the government is expected to contribute to retirees' income is considerably longer. Over time, as the New Zealand population ages, the nature of this population will change (both in terms of age and ethnicity). At present, the over 65 year age group is dominated by Europeans while the Maori and Pacific Island population is generally much younger; however, over time Maori and Pacific peoples will form an increasingly significant component of the older age groups.

In general, it is expected that retired people in New Zealand will continue to become more diverse in many ways: marital status, employment history, asset holdings and educational profile. This diversity must be accommodated. Recent research reveals both the lack of financial wealth among New Zealand retirees and the fact that, relative to other countries, asset ownership in New Zealand is much more heavily weighted towards housing. As a result, the retired population is particularly sensitive to changes in the rate of New Zealand Superannuation.

All these changes in demographics, population structure, the labour market and the status of New Zealand's retired population provide good reasons to rethink the way in which New Zealand makes provision for retirement income. The central question is; precisely what changes should be introduced?

What are the options?

Pension reforms initiated around the globe have tended to have common ingredients: retaining a state-run distributive pillar in support of the old-age poor; a complementary pillar of fully-funded savings based on personal accounts (which may be run by either the public or private sector); and a pillar of voluntary private savings. For the majority of reforming countries, these changes represent a radical departure in three ways:

1. A more explicit separation out of the redistributive component of retirement provision;
2. The substitution for a pay-as-you-go arrangement (PAYG) by a fully-funded arrangement (at least in part) of old age saving; and
3. The frequent use of private management for the collection of contributions, the investment of pension funding savings, and/or the payment of pension benefits.

Despite the move away from PAYG schemes one of the goals of public pensions is to reduce poverty among the elderly and so, even with a fully funded scheme, some form of public pension scheme is likely to be necessary. Therefore, the debate over pensions should be concerned with the relative merits of arrangements implemented in addition to the state-run distributive pillar.

PAYG schemes: For an individual, PAYG schemes rely on an implicit contract: i.e., a contribution now 'guarantees' a pension in the future. These schemes are a direct transfer of the right to consume from younger to older people and are usually run by the state because they have the ability to tax current income earners and use the proceeds to pay current pension demands and do not need to accumulate funds over time.

These schemes require the output per worker to exceed the sum of the growth rates in the retired population and in real pensions, otherwise changes in the contribution rate, in coverage or in the payout must be made. In times of real income growth and with a population that isn't ageing, there is an incentive to provide a PAYG scheme as everyone gains.

Contrary to popular belief, these schemes are not risk-free: governments can, and historically have, discounted, defaulted and changed the rules of entitlement and pension provision. In doing so, they may violate the previously agreed commitments to provide predictable, stable, long-lasting and comprehensive coverage. In addition, they cannot cope with a diversity of time preference.

Funded schemes: These rely on the investment of current income into financial assets that are then used for the provision of a future pension. Thus, these schemes are a mechanism for accumulating financial claims, which can be exchanged at a later date. While there are many variations on funded schemes there are two main types of funded schemes, 'defined benefit' or 'defined contribution'. They posses the following distinguishing features:

> In defined contribution schemes (DC) the individual's pension (or entitlement) is determined only by the sum of the accumulated financial assets of the individual and the fund's earning rate. That is, the ultimate benefit depends on the individual's contributions and planning success so that their pension benefit is funded in advance. Historically, these systems have been highly focussed on the individual; however, the exact nature of this type of scheme is becoming more blurred as notional defined contribution schemes have been enacted in countries such as Sweden.
>
> In defined benefit schemes (DB) the pension paid out is determined by the employee's previous wages (over some nominal period). Historically, DB schemes were designed to help solve contracting problems between workers and firms. Firms often want to reduce worker mobility because hiring is costly or because new workers need firm-specific training. However, workers do not want to commit to remaining with one firm. A rising wage profile and back-weighted pension accruals induce a worker to stay. However, the benefits of these schemes were distributed very unevenly: some employees did very well while most did not benefit.

Reform options: While the path taken by many countries follows a template provided by the World Bank in 1994, leading to similarities across the world, each country starts from a different position and has a different set of ideals and norms. Many argue that the natural policy response to population ageing is to find ways to increase self-provision for retirement, normally in the form of compulsory savings by employees or their employers.

New Zealand has not followed this path. Interestingly New Zealand adopted it for a brief time in the early 1970s with the contributory scheme of the Labour Government; however, the election of the 1975 National Government resulted in this scheme being changed to universal New Zealand Superannuation (NZS). Hence, private provision for retirement relies on voluntary savings and the New Zealand 'solution' to the fiscal pressures on its publicly provided pension programme has been the creation of the New Zealand Superannuation Fund (NZSF).

However, this is not a structural change or an increase in the private provision of retirement income; rather it is a mechanism intended to change when the burden of increased future pension payments occurs. This 'solution' does not change the balance between the roles of the government and the individual; its objective is to maintain the government's financial ability to continue to provide a universal public pension. In considering the future options a number of key issues must be addressed.

Key issues

Economic growth

Real income growth is critical for all retirement income schemes. PAYG schemes have relied on income growth to enable current pensions to exceed past contributions; i.e. the sum of the growth rates in the working population and labour productivity must exceed the sum of the growth rates in the retired population and the real pension. Similarly, DB schemes rely on the ability of future generations to fund the retirement of past generations. DC schemes rely on the individual's contributions and success in asset allocation; therefore, the economic growth rate affects individuals' views of future economic conditions and, by extension, their willingness to forgo current consumption for the benefit of future consumption.

Uncertainty and risk

One of the major reasons for the New Zealand Superannuation Act (and the New Zealand Superannuation Fund) was the desire for certainty. However, certainty in state provision does not imply certainty for the individual. The recent AMP Superannuation survey notes that of all those surveyed, 45% (49% in July 2000) were saving for their retirement; when told the rates for NZS 76% said that was not enough money; and 62% said they did not think a similar level of pension would be available for them on retirement.

Uncertainty and risk are two different core issues that pension schemes face. With risk, the probability distribution of potential outcomes can be estimated; with uncertainty it cannot. Therefore, while insurance can deal with risk, it cannot deal with uncertainty. For pensions there are at least three sources of uncertainty:

1. Macroeconomic changes. For example, a decline in real output has adverse effects on pension schemes. Inflation affects pensions, but tends to affect funded schemes more e.g. the effect on German private savings due to hyperinflation in the 1920s;
2. Demographic changes. Changes such as population ageing affect all types of schemes; however, changes in demographics have played the most significant role in placing the PAYG schemes under pressure to change; and
3. Political changes. The enforceability of the inter-generational contract, for example, requires effective government, while there is no 'higher court' to appeal to if the government of the day changes the nature of pension provisions.

Pension schemes also face sources of risk:

1. Management risk. Pension funds can be affected by fraud and incompetence (e.g. The Maxwell Group of Companies in the UK)
2. Investment risk. The choice and behaviour of any pension plan manager affects the returns to the fund, and fluctuations in fund value.

One of the reasons for any pension scheme is to distribute and apportion risk and uncertainty.

New Zealand: can we continue to be special?

New Zealand is similar to other developed countries in having a significant public pension scheme. However, New Zealand is unique in its complete reliance on taxation funding and its focus on universal benefits; this reflects New Zealand's social and political history. Despite New Zealanders' desires for policy stability it is important to note that since the introduction of NZS the level of payout has been adjusted a number of times,

including changes to the indexation regime; a taxation surcharge has been introduced (and removed); the age of entitlement has changed; and the system has been characterised as unsustainable (by the 1988 Royal Commission on Social Policy).

The comparison with Australia: With the increasing emphasis on closer economic relations between New Zealand and Australia, we have seen a closer integration of the Australian and New Zealand labour markets. In both countries there has been a move towards more flexible labour markets for both sexes, and more transparent remuneration policies. In these circumstances, New Zealand's ability to maintain a separate approach from Australia in relation to retirement income is questionable.

Until 1986, Australia relied on its Age Pension (a universal, but means-tested, benefit payment) for retirement income provision.When a Labour Government was elected in 1983, a major part of its economic strategy was a continuing contract with the union movement. This set the scene for the introduction of a compulsory superannuation scheme – this was seen as a deferred wage and salary arrangement, rather than as a significant change in social security.

In any country, structural reform of retirement income is complicated politically and economically. Many of the expected benefits are long-term, uncertain and will largely accrue to younger people. Faced with limited resources and pension costs that have become the largest single item of public expenditure, most governments will change some aspect of the pension system (such as increasing the age of entitlement or changing the indexation regime). Thus, reform is not a case of weighing the interests of the young against those of the old but rather a question of community, and ideally cross-party, consensus. One mechanism for encouraging this is to use institutional structures to focus the debate. In Australia the strong union and employer groups had a century-long history of bargaining before the arbitration courts. This helped to develop an incomes policy within which a trade-off between a wage increase now and retirement income later became workable.

Stocktaking for the future

The extensive liberalisation of the New Zealand economy in the 1980s and 1990s did not include any overhaul of the country's approach to retirement income. We have seen that the current scheme attempts to cover three major objectives: relief of poverty, recognition of the aged, and deferral of income - so that living standards in retirement can be closer to those enjoyed during working life.

True, NZ Superannuation does offer one measure of stability, i.e. all New Zealanders, regardless of lifetime earnings or other variables, such as illness, can be comfortable in the knowledge that they will have an income when they retire. The aim of the scheme is that this should be at an "adequate" level. This depends in turn on an overall societal view on what constitutes an adequate standard of living.

We see in effect that the appearance of stability is deceptive; the system results in an inter-generational transfer which is large and increasingly burdensome for the working-age cohort. The NZSF was set up to meet some of these problems, but there are many "ifs and buts" which suggest that, despite broad political acceptance, it is in itself not a solution. It is not too hard to see it failing the test of sustainability. Before that happens, we should make use of the current good health of the economy to explore how other elements could be brought into the overall design.

In a different world...

Over a period of 25 to 30 years, the world has been changing quite fundamentally for New Zealand and for New Zealanders. As individuals, we have much more freedom to travel, see the world and change our place of employment or residence. The country's economy is itself more closely integrated with the world economy. New Zealanders are increasingly able to compare our standard of living with what is available elsewhere (particularly on the other side of the Tasman).

Another significant trend, and one which has been reinforced by this greater exposure to the outside world, is the move towards a more diverse society inside New Zealand. Ageing of the population is not the only factor which might influence future policies. Society is also changing; in particular, there is an ongoing growth in the Maori and Pacific Island populations. Historically, these groups have had quite different experiences in terms of the way they provided for old age. Home ownership rates have been lower, as has life expectancy. The precise composition of population growth thus becomes more relevant to policy.

Changes in New Zealand society, in family structure

and in the nature of households has already altered the type of housing required. Although housing investment in New Zealand has traditionally been as 'safe as houses', past trends may not be a good indicator of the future. No longer is population growth driven by a high birth rate and no longer is the nuclear family the standard model for home ownership. A standard pattern for housing tenure, career, and early family formation has given way to a wide range of lifestyle pathways. Therefore, investing income in the housing market may become less desirable as an avenue of providing for retirement.

Finally, changes in the profile of a "working life" have already become substantial. One feature of PAYG schemes is that they maintain a link between the 'age of entitlement' and the 'age of retirement'. Given the decreasing size of the workforce, increased longevity, loss of skills and decline in well-being when people retire, and the desire for many people to work during at least their early years of retirement, breaking this link would be valuable. Increasing the age of entitlement in the 1990s demonstrated how sensitive the New Zealand labour force participation rates can be. A move to a more flexible, and individually focussed, retirement age would be advantageous to both older workers and employers.

Adding to the choices

Not only does the current New Zealand system of retirement income provision fail the equity test in terms of intergenerational equity, but it also fails in terms of intra-temporal equity. Is it equitable to have a system which removes incentives to achieve higher earnings during one's working career in order to improve one's post-retirement standard of living? Intra-temporal equity is also important for other reasons. For example, people naturally expect it in the tax treatment applied to different ways of saving. Currently, owner-occupier housing in New Zealand is tax-favoured. This leads to distorted investment patterns, which may also affect the potential for economic growth.

Given that the PAYG scheme is both inequitable and potentially unsustainable, something else is obviously needed to spread the risk to the individual. This could be designed as another pillar alongside the universal pension and need not be publicly provided. The DB arrangement can be quickly discounted: in its time, it was part of a deliberate strategy to keep workers locked into employment. This strategy runs counter to current (and foreseeable) patterns. A scheme based on direct contributions by individuals is required.

The Australian system is based around individual accounts, as is the current Canadian system, and the same mechanism has been promoted as a key element in the recent United States reforms. Arguably, this type of account can have two main benefits for a nation's economy. First, the accumulation of investments will add to private and national saving and thus aid the rate of domestic capital formation (or the accumulation of the nation's overseas assets). Second, this structure provides better incentives for older workers to decide as individuals how to structure their pattern of employment. Crucially, this arrangement makes it very difficult for governments to break commitments previously entered into.

In order to minimise risk, it would be advisable not to rely on an implicit contract; however, reliance on one source of income is also risky. Instead, the aim should be to receive income from a range of sources (a portfolio approach) – and so we return to the three pillars. The public pension will still provide a floor to protect against old age poverty. The mandatory private savings will establish a link between retirement income and employment history (as well as various consumption/lifestyle choices). It will also reduce the incentive to free-ride, and will reduce the taxation advantage of domestic housing. The third pillar, voluntary savings, would also exist for those who wish to pursue this option.

It can be seen that the argument for pre-funding through individual accounts becomes very powerful. It responds to the importance of economic growth and the need to avoid too great a gap between old-age income in this country and that accessible in other nations, especially those where New Zealanders can easily migrate during their working life. Possibly, the objective of this pillar should be defined as "providing the mechanism that is most likely to provide retired people with optimal ability to consume"; rather than link it to the maintenance of a minimum standard of living (the first pillar). Economic and financial changes in the last 20 years have compelled people to become more discerning about consumption choices, and this in turn is associated with the growing importance of self-regulation.

Conclusion and postscript

To sum up, the current arrangement may be acceptable to today's pensioners and may not result in a substantial decline in income for many New Zealanders in the short term. In the medium to long term, its defects will become more obvious – it will not do enough to promote economic growth, nor will it improve the ability of future retirees to consume. The economic future of New Zealand, its households and its individual citizens is quite different from that experienced since 1970. It is, therefore, timely to restructure retirement income provision in New Zealand in order to provide for the living standards of tomorrow's retired population.

The creation of a scheme where the eventual payout is in part a function of previous contributions should appeal to our notion of equity for the individual. The accounts would provide a transparent instrument, similar to that used in many other areas of policy. They would represent a shift away from hidden transfers and unequal treatment for different groups. The creation of the NZSF was essentially the creation of a mandatory savings programme and its existence now provides New Zealand with an opportunity to effect real structural change. This change could reflect the increased diversity of the New Zealand population, together with evolving patterns of lifetime employment and the need for the individual to manage risk and responsibility.

It is normal for structural change to occur in times of extreme budget pressure. The greater challenge for today's policymakers is to recognize that the extremely healthy state of the economy offers the country a singular opportunity. They may not again enjoy the budgetary flexibility to seize it.

Postscript: The 2005 Budget was released as this article was in the final stages of going to press. In effect, it provided little for those interested in retirement savings in New Zealand. The KiwiSaver scheme attempts to encourage savings for a number of reasons, one of which is retirement. However, the policy focus of the scheme is blurred. First, it is an attempt to encourage "savings" as such, and second it is facilitating home ownership. Which goal does it really target?

One has to ask; who will benefit from the scheme in practice? Unfortunately, the main beneficiaries will be those close to retirement. But there is a small glimmer of hope... an optimist could suggest that the real benefit of KiwiSaver will be the indication it provides that the Government has finally zeroed in on the issue of savings. If so, then maybe – just maybe - the scheme is testing the water for some more definitive action in the near future. Which brings us back to the need to clarify the key policy objective.

Richard Hawke carried out extensive research on this topic at IPS during his tenure of the Henry Lang Fellowship from 2003-4 and the Institute published his detailed study early this year, under the title "Retirement Income Provision in New Zealand: A Way Forward". This article draws on the original study and on more recent contributions to the debate. A full bibliography is contained in the main publication (pp.147-162). Both IPS and the author would welcome any comment on the suggested approach to future policy on retirement income.

Preparing for "Peak Oil": Towards a Preliminary Agenda

Ken Piddington

In summary, the problem of the peaking of conventional world oil production is unlike any yet faced by modern industrial society. The challenges and uncertainties need to be much better understood. Technologies exist to mitigate the problem. Timely, aggressive risk management will be essential.

This quotation is from the executive summary of a major report issued in February 2005 on the peaking of world oil production. That in itself is unremarkable, but the document – which has come to be known as "The Hirsch Report" – was sponsored by the United States Department of Energy (DOE). There are all the usual disclaimers about the policy of the United States Government. Nevertheless, as early as 2003, DOE clearly decided that a sound technical analysis of the issues raised by the approach of "Peak Oil" was a job which would be worth the investment of time and money.

As a "summary of the summary", these few sentences can serve as a wake-up call for New Zealand. They state very crisply the policy challenge which the world is facing in the first half of this century (or, as many would argue, in its first quarter...). They also remind us that in a situation of uncertainty, protracted debate about when the event might actually occur may not be particularly helpful. Instead, we can use the discipline of risk assessment to learn more about where uncertainty lies.

For the policy community on both sides of the Tasman, the task which is now becoming urgent is the formulation of a transitional strategy. For this country, and for Australia, such a strategy should respond to the call by the authors of the Hirsch Report for "aggressive risk management". The following notes suggest some areas which might serve as a starting point. They may also stimulate thinking about the wider agenda which would need to be covered in any agreed strategy.

Terminology: The term "Peak Oil" has been in use by industry experts for some fifty years. It is understood in the technical literature as describing *the point at which global potential to extract additional supplies of oil levels off and becomes permanently outpaced by the growth in world demand*. The profile of historic peaking has been documented in fine detail for individual oilfields and for the total resources of particular countries. The application of the concept to the overall world supply has however raised a range of issues, including the high unreliability of the statistical base.

Only in the last year or so has the term moved outside industry, academic and NGO circles, into more general journalistic and popular usage. In the process, it has rapidly become confused with the notion of a "peaking" in oil prices. This leaves an implication that after "Peak Oil" prices could return to a more normal level, which is a fallacy. Although fluctuations will continue, the irreversible trend will be (and possibly is already) towards higher prices. For this reason, many have argued that the term "Post-Cheap Oil" should be used to describe the period we are about to enter.

Global Repercussions: Some of the fundamental implications have already become apparent, particularly since the 2003 invasion of Iraq (which many commentators described as an "Oil War"). Large importers, such as the United States and Japan, will face major escalation of costs and will also be vulnerable to interruptions in supply (either for economic or political motives). Rapidly-growing economies, especially China and India, may find their expansion suddenly checked unless they too can negotiate arrangements which guarantee security of supply. Against this scenario, the "Oil Shocks" of the 1970s will appear in retrospect as a minor perturbation.

The Economic Illusion: Laws of supply and demand would suggest that as the price goes up, there will be a

supply response and that markets will simply stabilise at a higher level. Already, governments around the world are facing pressure, particularly from transport lobbies, to reduce the (generally) high level of taxation on oil-based fuels (and to subsidize "extenders" such as ethanol) so that commercial operations can avoid having to pass increased fuel costs on to other sectors of the economy. (The airlines' fuel surcharge seems to act as a parallel device, intended to make the impact of higher fuel prices transparent, and therefore more acceptable, to the consumer).

The Geological Reality: Since hydrocarbon deposits below the earth's surface are by any real-world definition non-renewable, it follows that "Peak Oil" actually presages a tapering off in the flow of oil supplies. *This decline is for all practical purposes irreversible.* (This is not to say that oil will "run out", but that volumes will drop to what will become a relative "trickle"). Higher prices will not trigger a surge in new supplies, neither will they encourage the adoption of new technology to discover and develop previously unknown or inaccessible deposits. All that will have happened before the Peak Oil event.

The Petrochemical Prop: Analysts have pointed out that it is not just oil, gas and liquid fuels which are implicated. We have only to think of plastics to realize that an impressive variety of oil-derived compounds is now in common use worldwide. These materials have over the past century made a huge contribution to economic development. Even with extensive recycling, many essential components of industrialization will increase in price and some may become unobtainable. Work on substitution will therefore not be limited to alternative fuels. All countries will find it necessary to invest in research and development on new products which are of particular importance to them.

Where to start? There are isolated aspects of public policy where the need to consider the implications of Peak Oil has already become apparent. How should investment in roading capacity be weighed against improvements in public transport? If all fossil fuels, including coal, are going to become significantly more expensive, what are the implications for future investment in electricity generation? And distribution? Are the twentieth-century templates for urban (and particularly suburban) design and servicing at all relevant to the situation which will develop in the twenty-first century? These examples are certainly serving to raise awareness and to stimulate new thinking. They could well extend incrementally to cover all major sectors of the economy in a relatively short space of time, including tourism (where patterns will surely change), land-use (where measures of energy inputs and outputs will become crucially important), and so on. But even if well co-ordinated, such a collective effort would not necessarily deliver an adequate strategy.

Transition is a Core Concept: The strategic principle for New Zealand, as for all other countries, must be to link the end of cheap oil with a transition to a new mix of new, and mainly renewable, sources of energy. For this transition to succeed, one can prescribe also a quantum shift in energy efficiency – again, new technologies are constantly emerging which will accelerate such a shift, but effective policy instruments are still lacking. Ideally, the transition could be designed around the need to define where in future the country's comparative advantage will lie, relative to our major trading partners. Because of the growing integration of the two economies, it would be prudent to develop the transitional strategy in close co-ordination with Australia, and to pool resources in the many areas, such as forestry, where both countries will be affected in a similar way.

When to start? If the focus is on the inevitable transition, it becomes clear that preparation is more important than prediction. Enough evidence is to hand for us to understand that transition will be time-consuming and also costly, so the time to start is now. Leading analysts in the United States have pointed to the lengthy time horizon for the replacement of capital stock, and to the need to identify early opportunities for mitigation - all of which suggests that the scenario technique (as referred to above) should be a useful tool. It would certainly get some transitional options on the table in short order and assist future governments to enlist stakeholder support in what must be a community-wide effort.

In conclusion, we might ask; where does the duty to initiate lie? Most would agree that this is a task for Government. It alone has the authority and the resources to trigger effort on the scale that is needed. New Zealand has been able to bring together its response to external threats on previous occasions, such as Britain's entry into Europe and the loss of our protected status in the "Old Country" (which required a major diversification of export markets within less than a decade). Invariably, at

these times, political leaders find they must be unambiguous about the urgency of the task and seek out a consensus in Parliament to that effect. They must also keep the public fully informed. The sequence for such a political "kick-off" might be as follows;

- Identification of strategic objectives – through publication of a white or "green" paper, followed by the option of Parliamentary process (via Select Committee) or an independent sequence of enquiry and consultation (full-time Task Force or similar);
- Creation and resourcing of mechanisms to construct and model scenarios in support of the enquiry. These groups would need to be retained *over the medium term* to pursue any programme of research identified during the initial enquiry;
- Engagement of all levels of government (local, regional, central and possibly trans-Tasman) to identify actions and allocate responsibility for performance of each task;
- Electronic networks to support all of the above processes and to enlist the ongoing involvement of all stakeholders, community groups, media and so on.

As stated above, prediction of this phenomenon cannot – and need not – be precise; "Peak Oil" by its nature is a "rear-mirror occurrence" – we will only know when it has happened after the event. Even the above sketch of what is a highly complex phenomenon serves to bring out the size of the task confronting policymakers. Sophisticated modelling may serve to refine the range of scenarios, and assess levels of probability, but none will earn universal endorsement. As with climate change, governments will need therefore to switch to risk management mode and concentrate on precautionary policies – covering social, environmental and institutional responses as well as strategic approaches to economic adjustment. It will be a big job.

These notes have been sub-titled "Towards a preliminary agenda"... There is however no way in which this process can be initiated with a pre-determined agenda, action plan or similar matrix. The enquiry itself will bring many hidden issues to light, and may also refine a framework within which the transitional strategy itself can be formulated and implemented. There could be no greater test of our self-image as an innovative society. The openness and accessibility of the process to all groups will ultimately deliver its success.

In the final analysis, action on Peak Oil is not pre-eminently a technical agenda nor is it primarily a political agenda. It is both of these, as well as being environmental, social and economic - to the extent that it is an all-of-society - and ultimately a global - agenda.

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Further reading

The Hirsch Report (91pp) can be downloaded in pdf. format from www.hilltoplancers.org/stories/hirsch0502.pdf and a large number of commentaries are available from the website of the US Department of Energy at www.USDOE.net. One of these is from the Association for the Study of Peak Oil and Gas, which has for many years been the principal focus for study of the phenomenon – its website is constantly updated at www.peakoil.com

Recent press articles – see for example "The Guardian Weekly" (Vol.172 No.19, April 29 - May 5 2005) have highlighted the proceedings of a major Conference held in Edinburgh on 25 April 2005. The title of the event was "Peak Oil UK: Entering the Age of Oil Depletion" and included presentations from leading experts in the field. These are accessible at: www.odacinfo.org PeakOilUKConferenceProceedings.htm and offer collectively the best introduction to the topic.

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