BRIEFING TO THE INCOMING GOVERNMENT 2008: ENVIRONMENTAL SUSTAINABILITY

Purpose and introduction

1. This paper focuses on several critical issues in the environmental area, as New Zealand is not yet capitalising on significant opportunities or managing significant risks as well as we could in those areas. The paper also sets out the importance of environmental sustainability for New Zealand's overall wellbeing, and discusses (at a high level) some of the choices to be made in addressing environmental sustainability and the capability improvements needed within central government.

2. Environmental sustainability has moved from the periphery to a central issue for New Zealand. The reason for this shift is not just a change in public or global opinion, but recognition that we have reached a crossroads: some environmental limits have been reached, and the full consequences of many legacy issues (like land contamination) are now becoming clear. The links between environmental sustainability and economic growth are now better understood, and a 'business as usual' approach will not deal with the increased threats or new opportunities. If New Zealand takes the wrong path, we risk lasting damage to our domestic wellbeing and international reputation.

3. This paper has been developed jointly by government agencies with an interest in natural resources and the environment, led by the Ministry for the Environment. Working collaboratively across the relevant agencies, Chief Executives have decided to establish new governance arrangements for a formalised Natural Resources Sector[1] to improve strategic leadership and collaboration. This has delivered better identification of the priority issues and alignment of good environmental outcomes with economic, social and cultural considerations. This paper complements other cross-departmental briefings on climate change and Auckland issues, as well as departmental briefings.

Environmental sustainability and sustainable development

4. A working definition of environmental sustainability is: "*A healthy environment, based on healthy functioning ecosystems, that provides for the wellbeing of society, now and in the future*." Ecosystems include natural and human-altered ecosystems, and societal wellbeing includes social, cultural and economic wellbeing.

5. Environmental sustainability is pursued for more than environmental reasons. As in other policy areas, government policies relating to environmental sustainability should aim to maximise New Zealanders' overall wellbeing. Environmental, social, cultural and economic goals should interact in a way that delivers 'sustainable development', or as many benefits as possible across all objectives.

6. The aim of this approach is to maximise the overlaps and 'win-wins' between the various goals, rather than treating all decisions or interactions as trade-offs between values or outcomes. This will not always be possible, however, particularly at local levels, and so as a nation we will increasingly need to make difficult choices between values in order to maximise overall national benefit.

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[1] Comprising the Ministry for the Environment, Ministry of Agriculture and Forestry, Department of Conservation, Ministry of Fisheries, Ministry of Economic Development, Land Information New Zealand, Te Puni Kōkiri, Treasury, Department of Prime Minister and Cabinet, and the State Services Commission.

Environmental sustainability's importance to overall wellbeing

7. Environmental sustainability is crucial to New Zealand's overall wellbeing because of the biological basis to our export earnings. Primary production and tourism equate to about 17% of New Zealand's gross domestic product, and generate roughly $29 billion in export earnings (2006 to 2007 figures). Running down New Zealand's natural capital would eventually damage the economy.

8. The ecosystem services people draw from the environment, such as food, fuel, water, and cultural connections, are also very important. Sometimes an economic value can be calculated for these – for example, the water supply services (drinking water, hydro-electricity and agricultural irrigation) of Te Papanui Conservation Park in Otago were valued at $11 million a year in 2005 dollars. Other ecosystem services cannot be easily quantified in this way, yet are highly valuable.

Social and cultural values

9. The environment is central to New Zealand's national identity. Most New Zealanders value the environment highly and gain pleasure and recreation from it. This value is reflected in the groundswell of action on sustainability and climate change outside government. Environmental performance also has social consequences. For example, about 1,100 New Zealanders die prematurely each year from exposure to air pollution, and lack of safe drinking water is a risk to community health.

10. The environment and natural resources are also central to Māori identity and mana. Many Māori value an holistic relationship with the environment, balancing economic aspirations with their cultural values, and maintaining healthy natural resources for the benefit of present and future generations.

Importance of environmental sustainability for economic growth

11. The big economic issue at the heart of many environmental issues in New Zealand is not resource use in itself. The issue is ensuring that resources are used efficiently by those who value them most (in an economic, social or cultural sense) and that resource users face the costs they impose on others or the environment (i.e. pricing of externalities). New Zealand is having to confront these issues for the first time as we approach, or have already reached, some resource limits.

12. In the longer run, higher environmental standards and efficiencies are consistent with – and are likely to be essential for – economic growth. Higher standards will be needed to gain market premiums for our exports, and probably even to maintain market access. For some individual businesses, meeting higher standards in the short term may limit growth. Despite the current economic difficulties, however, it is important to keep a focus on New Zealand's longer-term interests.

13. Globally, environmental issues are driving fundamental changes in business conditions and creating new opportunities. Much of New Zealand's international competitive advantage lies in the quality and quantity of our natural resources and in our 'clean green' image. Because of our favourable image, reputation for integrity, natural resource base and related capabilities, New Zealand is well placed to take advantage of these opportunities, but the benefits could be squandered if we degrade the environment in pursuit of higher short-term production.

14. To take up the opportunities, New Zealand (particularly business) needs to be vigilant about the current and likely effects of changing consumer preferences, rising world prices for raw materials, energy and food security concerns, carbon pricing in the global and domestic economy, and other emerging issues. The growing international trend towards the use of environmentally focused technical

barriers to trade could affect our exports. Already, more consumer attention is being given to water footprints and biodiversity impacts as well as to carbon footprints.

The most critical issues for New Zealand

15. Departments in the natural resources sector have identified a short-list of critical issues related to New Zealand's move towards environmental sustainability. These issues are significant because they come with risks and unrealised opportunities that could affect national wellbeing, and because New Zealand is not yet performing as well as it could in these areas. The critical issues have proved difficult to address in the past because potential solutions are complex, costly and/or contentious, due to the public and private interests that will be affected.

16. The short-list includes both pressures on the environment, and issues arising from the policy or management arrangements for addressing those pressures:
    a. The role of the Resource Management Act in providing for environmental and socio-economic outcomes, and allocating scarce resources
    b. Developing natural resources policy and management arrangements that better reflect the Treaty of Waitangi relationship, and managing some emerging issues with the use of natural resources in Treaty settlements
    c. Fresh water quality decline, demand pressures and allocation
    d. Pressures on biodiversity and ecosystems
    e. Environmental pressures and allocation issues for New Zealand's oceans, particularly the near-shore marine environment, and
    f. Meeting New Zealand's international climate change obligations, reducing greenhouse gas emissions and adapting to climate change (dealt with in the briefing on climate change).

17. The Ministry for the Environment's reporting on the state of the environment suggests that the most significant issues are freshwater consumption and land use intensification in some regions, water quality in many catchments, and greenhouse gas emissions. The trends indicate that, if we do not change current paths, we risk hitting environmental limits or effects that are irreversible or very costly to remedy.

18. The critical issues are all complex and interconnected. Several underlying themes have emerged from examining these issues:
    a. Central government has multiple interests and roles in any environmental issue, but is often not clear (or strategic) about the high-level outcomes it is seeking or the role it is exercising. This lack of clarity about outcomes can contribute to deferral of difficult but necessary decisions and failure to prioritise issues or problems, which tends to magnify problems over time.
    b. New Zealand has a highly devolved resource management system, which makes it difficult to apply national direction and balance national and local costs and benefits. Many councils are leaders in sustainable development, but others face challenges in resourcing, capability and leadership. Councils are required to make many difficult decisions, but have not always been well provided with central government guidance on how to approach these.
    c. The need for greater national strategy or direction does not detract from the need for environmental management responses and solutions to be appropriate for – and adaptable to – local circumstances. Too many special-purpose regional arrangements can, however, detract from national strategy and create cumulative effects and costs.

d. Increased resource competition and environmental pressures are stressing existing resource allocation mechanisms. A 'first-in first-served' approach does not provide well for efficient allocation of scarce resources or management of competing uses. Legislation already enables the development of alternatives to first-in first-served, but there has been little trialling or implementation of these – with the notable exception of fisheries.

e. Addressing the role, rights and interests of Māori and iwi, particularly at the regional level, is critical for robust policy and well-functioning environmental management systems.

Issue A: Resource Management Act

19. The Resource Management Act 1991 (RMA) is the principal legislation for managing New Zealand's environment and allocating most natural resources. Effective and efficient operation of the RMA is critical for both environmental and socio-economic outcomes. The RMA is, however, frequently criticised both for unnecessary delays and compliance costs that hinder economic growth and major infrastructure development, and for failing to protect the environment, given the negative trend in several key environmental indicators.

20. This raises a question as to whether there are problems with the RMA's implementation, its decision-making processes, or its fundamental principles. Some common complaints about the RMA are anecdotal and not supported by evidence. Departments do, however, consider that there are some real practical issues with both the provisions of the RMA and its implementation by central and local government.

21. Devolved RMA decision-making has exacerbated capacity issues in local government, and led to variability in planning controls and the speed and quality of consent processing. It is often difficult, both practically and politically, for councils to factor national benefits, priorities and strategies into planning and decision-making when the costs of decisions fall locally. Central government has recently started to make more use of the RMA instruments that offer greater national direction, involvement and guidance (including those added in 2005). There is, however, no overall strategy for the use of these powers, which creates a lack of certainty for all parties about when and how central government will intervene.

22. Good RMA implementation relies on high quality statutory plans. Quicker final decisions are needed on both statutory plans and resource consents, especially for major infrastructure projects (although the interface with other legislation can also be a factor in delays). Cumbersome planning processes make it harder for councils to respond quickly to changing conditions or new evidence. Broad rights of public participation and multiple appeals on consents and plans can cause considerable delays in RMA decision-making. This suggests a need for reassessment of the balance between public participation and appeal rights on the one hand, and efficiency, effectiveness and responsiveness on the other.

23. Under current RMA practice, effective and efficient resource allocation is not occurring and new or expanding high-value uses are not being provided for. Problems are most keenly felt where resources are at or approaching full allocation in some areas: fresh water, coastal space and air-sheds. The current first-in first-served system evolved from case law at a time when there was less resource competition and no explicit central government direction. The 2005 RMA amendments enabled councils to develop alternative forms of resource allocation, but it is still too early to determine how councils are responding.

24. There is little evidence that decision makers routinely make skewed decisions because of the balance of the sustainable management purpose and principles of the RMA. It is, therefore, uncertain whether some economic concerns could be addressed by re-evaluating the principles of the RMA and giving more weight to economic factors and the benefits of infrastructure. Any alterations could range from minor changes to a more fundamental review, which would be contentious and create a period of uncertainty as new case law developed.

25. Improvements to the operation of the RMA could be achieved by strengthening the role of central government and being more strategic about the use of central government's powers, especially on matters of national importance such as major infrastructure projects. Gains would also be made from streamlining the processes for planning and consenting, and from more leadership by central government on alternatives (including market-based approaches) to current allocation models. Further process efficiencies might also be gained from improving alignment between the RMA and related legislation such as the Local Government Act, Building Act, Public Works Act, Conservation Act, Electricity Act and Fisheries Act.

Issue B: Reflecting the Treaty relationship in natural resources policy

26. The Crown-Māori relationship, based on the Treaty of Waitangi, is important for New Zealand's social cohesion and prosperity. Iwi and Māori have a strong interest in environmental policy, and natural resources are an increasing focus in historical Treaty settlements and foreshore and seabed negotiations. This reflects the importance of natural resources to Māori economic and cultural wellbeing. Many Māori are also dissatisfied with the roles available to them in resource management (including setting outcomes) and the level of recognition of their rights and interests.

27. The process of engagement with iwi and Māori on significant areas of natural resource policy has sometimes created challenges. The Crown does not always have an established position on sensitive matters like the appropriate management role for iwi and the nature and extent of Māori rights and interests. The government's objectives and interests are not clearly articulated in some major policy processes. This lack of clarity can sometimes make it difficult to engage effectively with Māori, who operate across a number of issues as Treaty partner, rights holders, kaitiaki, resource users, prospective developers, and/or litigants.

28. These uncertainties have contributed to delays in some policy areas where difficult decisions are needed, like fresh water. Delay could be turned into opportunity for progress, through a consideration of the nature and extent of Māori rights and interests alongside exploration of the full range of policy tools (such as market mechanisms) and the interests of others. To date, this has often been deferred because of perceived Treaty and litigation risks.

29. These risks and delays in policy development can encourage the parties to try to resolve contemporary issues through the settlement of historical Treaty claims. Some recent Treaty claim settlements and foreshore and seabed agreements have included new forms of redress, including mechanisms to include iwi in aspects of local decision-making. The suite of new tools has many benefits, but recent negotiations have tested – and at times moved beyond – the policy framework for use of natural resources in Treaty settlements established in 1997-98.

30. Negotiations create an opportunity for solutions tailored to local circumstances and iwi aspirations. Flexibility is important for development of appropriate redress, but mechanisms negotiated on a case-by-case basis may conflict with or undermine existing national policy objectives, or pre-empt the development of national policy. The case-by-case approach can also increase the risk of high implementation

costs, unintended precedents and cumulative effects, inconsistent and complicated management regimes, and equity concerns between iwi. The deadline for settling historical Treaty claims adds to the tension between maintaining the current momentum on settlements and developing national policy on natural resources.

31. Councils are often left to handle, with limited central government support, the difficult questions (such as allocation) which the Crown has not yet resolved – yet local government's Treaty obligations are limited. Local government performance and RMA implementation with regard to Māori interests has improved over the years, but the concerns of some iwi can push local issues into a Treaty settlement or foreshore and seabed context.

32. Progress is being made on resolving some outstanding issues, but we may well be at a crossroads. There is an opportunity to deal with issues through high-level dialogue in a more proactive and coherent way while maintaining flexibility in the relationship, which could result in a more strategic pursuit of shared outcomes for New Zealand. On the other side there is a risk that, if we lose momentum or fail to deliver on expectations, we could revert to a more adversarial climate that diverts resources and energy away from a collaborative relationship.

33. One way to maintain the current progress is to continue engagement and wide-ranging dialogue with iwi leaders on major policy areas like climate change and water, and on natural resources generally. Some senior iwi leaders are likely to seek early engagement on these matters. A greater alignment between natural resources policy and Treaty settlement processes is also needed, to support the timely settlement of remaining historical Treaty claims in a coherent and consistent way. The Natural Resources Sector considers that more use of national direction and policy development (including policy on the roles, rights and interests of iwi and Māori, and further support for local government) to address resource management issues common to all iwi would smooth the settlement process for all parties.

Issue C: Fresh water

34. Fresh water is fundamental to the present and future environmental, cultural, social and economic well-being of New Zealand – and these values can easily come into conflict. Our ecosystems, primary producers, community health and cultural values depend on water. Water gives us a competitive advantage in primary production, energy generation and tourism. By international standards, our water supplies are abundant and of relatively good quality, but performing better than most of our peers may not be enough for New Zealand's long-term prosperity.

35. Freshwater quality is declining, particularly in rural lowland rivers, streams and groundwaters (with consequent negative effects on the near-shore coastal environment). One-third of our lakes have poor water quality, and 40% of monitored groundwaters have nitrate levels raised by land use. Water is unsafe for stock to drink at 75% of sites in the Waikato region. Because of the long time lags in hydrological systems, water quality in some of our catchments will get worse before it gets better, even if we introduce best practice management now.

36. Addressing water quality is not simple, because environmental deterioration is closely linked to urban and rural land use intensification, and so to economic growth. Poor water quality is much more than an environmental problem – it will be a constraint on economic opportunities, create additional costs (e.g. for treatment of drinking water), and be a continuing focus of community concern. Nevertheless, the decisions needed to improve water quality in the long term may have costs for primary producers in the short to medium term.

37. In some regions, catchments have been over-allocated or are close to full allocation, resulting in potential users being denied access to water and foregone economic opportunities. Limited use of the mechanisms for re-allocating water and promoting efficient use (including urban and rural demand management) means that water is not necessarily going to its most valued uses, and this constrains economic growth.

38. New Zealand is at grave risk of further environmental damage and squandering our natural advantages if this situation does not change. Several factors amplify the risks:
    a. There is not yet a wide public understanding of how critical water issues are for New Zealand's long-term wellbeing.
    b. Restoring water quality is expensive and time-consuming (as demonstrated by work on Lake Taupo, Rotorua Lakes and the Waikato River).
    c. Changes in land use, particularly from forestry or dry stock farming to dairying, are being made before there are effective plans to address additional impacts on water.
    d. There is increasing international scrutiny of New Zealand's environmental performance. Our trade may be affected if overseas consumers react to real or perceived issues about poor water quality, waste or over-allocation.
    e. Climate change will probably increase the frequency and intensity of droughts and floods.
    f. In some parts of New Zealand, we have already captured or allocated the readily accessible water. Further economic development will require re-allocation to higher value uses and/or more water storage and distribution systems to deal with variability in when and where water is available.
    g. Relevant science research capacity has declined by 35-40% over the last decade or so, and it is difficult for central and local government to get access to science that will support good decision-making on water issues.

39. Inertia by some local authorities in developing water plans and tackling non-compliance with consents has accentuated problems. In the case of Environment Canterbury, officials are concerned that successful challenges to its approach to water allocation create a risk of system failure and loss of authority as resource manager for the region. Some of the inertia, however, arises from lack of direction from central government. National policy development has been hampered by delays in dealing with Māori rights and interests in water. In general, disquiet in parts of the community about anything that looks like 'privatisation' of water has created a disincentive to trialling new approaches to allocation.

40. Officials consider that it is imperative to take further action to address both quality and allocation issues, so that we make better use of our water in ways that increase growth without compromising environmental outcomes. Such action could build on existing work programmes by putting more focus on central government leadership and powers; development of interventions tailored to local quality, allocation, efficiency or governance issues; support for local government through development of coherent national outcomes and policy, and 'off-the-shelf' management tools; and development of new models (including economic instruments) for allocation and re-allocation of water. As noted above, the Natural Resources Sector also recommends keeping up the momentum of engagement with iwi leaders on water issues.

Issue D: Biodiversity

41. Healthy functioning ecosystems, both natural and human-altered, underpin our economy and are essential to social and cultural wellbeing. New Zealand has a

responsibility to maintain our unique and globally important genetic and environmental resource. Indigenous biodiversity is also a draw-card for overseas tourism, and a major element of New Zealand's '100% Pure' marketing image.

42. These critical resources are, however, under significant pressure and are challenging to manage. New Zealand is the last major habitable landmass to be settled by humans, so the rate of decline of our indigenous biodiversity is high compared to most countries – and some level of decline has, perhaps, been unavoidable.

43. In 2000, the New Zealand Biodiversity Strategy set an ambitious goal of halting the decline of indigenous biodiversity. Substantial progress has been made in some areas, including intensive management in mainland islands, eradication of pests on offshore islands, creation of marine reserves and benthic protection areas, and gains on private land.

44. But the goal of 'halting the decline' is not being met. There have been serious declines in the status of many threatened species and ecosystems, continuing spread of pest fish and aquatic weeds, growing numbers of weed species, and ongoing loss of rare and threatened biodiversity on private lands. Significant modification and pollution of harbours and estuaries (which are important breeding grounds for many species, including some harvested fish stocks) is likely to be having a major impact on coastal marine biodiversity.

45. Exotic animal pests and weeds are a significant threat to indigenous and primary production systems, especially on land. It takes a lot of resources to manage pests and weeds, and to stop them from entering the country. Biosecurity is an issue of permanent urgency. If potential incursions are not stopped at the borders and threats are not addressed as soon as they become apparent, the costs soon escalate. Additional pressures on biodiversity include conversion of native habitat to other uses; water pollution, over-abstraction and disruption of natural water flows; terrestrial runoff and sedimentation of coastal waters; impacts of fishing; climate change; and the effect of land use on soils and slope stability.

46. The complexity and scale of the biodiversity management challenge requires a collaborative approach across government and society and a systems approach. Yet the governance structures for policy-making, decision-making and implementation are sometimes disconnected and incoherent, and responsibilities can be split across several local and central government agencies.

47. Effective implementation may be hampered by inadequate capacity and capability within agencies. This is particularly apparent in the different responses by local authorities to their responsibilities to manage biodiversity on private land, and disparities in the effectiveness of their programmes. Lack of information about ecosystem functioning, particularly in the marine environment, hampers development of adequate responses.

48. Officials consider more action is needed if we are to halt or slow the decline in the health and functioning of indigenous ecosystems and ensure the continuing health of productive systems. Intensive management is not necessary or justified for all places or species. More effort and resources may, however, be needed to achieve particular thresholds of restoration and protection. Greater prioritisation and national direction would help to focus effort. Better approaches, including incentives, would encourage biodiversity conservation outside government.

Issue E: Marine environment

49. New Zealand's marine environment is an integral part of our national identity and contributes significantly to our economy (through ecosystem services, tourism,

fishing and aquaculture, oil and gas, transport, and telecommunication links). A lack of outcomes or strategy to guide how the marine environment is managed compromises our ability to ensure environmental integrity while providing for different uses and values.

50. The ocean is a large interconnected ecosystem but different activities and values are managed under different laws and approaches, which are not always well integrated. In particular, the disconnected management of environmental effects in the ocean risks damage to the environment – especially near to shore. It is difficult to effectively manage cumulative environmental effects, and consistent standards or restrictions are not applied across all activities. These factors could also constrain further economic growth from New Zealand's extensive marine resources.

51. Management under the RMA (which applies out to 12 nautical miles from shore) is generally poor at factoring adverse effects on fishing and marine ecosystems into 'upstream' consents and plans. As a result sensitive fisheries habitats, ecosystems and some activities suffer from sedimentation and pollution caused by land use, and poor management of other coastal activities like dredging. Fisheries management also needs to better address adverse effects on the environment. There are management gaps outside the 12 nautical mile limit in the Exclusive Economic Zone (EEZ), where we lack a comprehensive biodiversity protection tool and legislation to manage the environmental effects of some activities.

52. There is an increasing demand for coastal marine space and resources across a range of activities and values, but some of our tools to manage demand are not adequate. Allocation difficulties are intensifying – illustrated most strongly by poor progress in aquaculture development in recent years. These development pressures will also grow in EEZ 'hotspots' as more oil and gas exploration and seabed mining is proposed. In addition, competition between the recreational, customary and commercial sectors is difficult to manage in some fisheries.

53. It can be hard to establish new uses such as marine reserves or aquaculture, even if they are the highest value use (in either a national or local sense) if they will affect other values or existing uses. At the same time, other interests such as recreation, amenity values and fishing can get squeezed out by activities that require exclusive use of space, such as marinas and marine farms. These allocation difficulties discourage investment and economic growth and can also result in unnecessary cost, with people using the courts, consent processes and political lobbying to defend their real or perceived entitlements.

54. New Zealand's marine area is the sixth largest in the world, and about 14 times bigger than our land mass. This makes it difficult and expensive to obtain information. The lack of comprehensive information is a major impediment to good decision-making in the marine environment, and can exacerbate risks and delay decisions. These gaps in our knowledge mean the marine environment should be managed in a precautionary manner, with the ability to make adaptive management decisions, but this can conflict with economic drivers. The collection, management and use of information by government agencies can be uncoordinated and overlapping. Information available about fish stocks is limited, and even less is known about the impacts of extractive use or some land based activities on the marine environment. A lack of comprehensive monitoring and reporting means that government and stakeholders cannot effectively analyse management performance, reducing the ability to learn from experience.

55. A suggested first step in addressing these issues is to elaborate some national outcomes for New Zealand's marine environment and its uses. These outcomes would form the basis for reviewing the overall approach to marine management,

particularly the alignment between different regimes and the new tools needed to address identified problems and achieve the outcomes. Drafting of legislation to regulate the environmental effects of activities in the EEZ was well advanced under the previous government; progressing that policy would fill a large management gap. Any review of RMA provisions and implementation could also look at how to improve the management of environmental effects in coastal waters, improve resource allocation in the coastal marine area, and assist local government to control land-based effects on the sea more effectively.

Addressing environmental sustainability

56. Addressing environmental sustainability (and particularly the critical issues) requires a more strategic approach, better articulation of the national interest, a willingness to tackle difficult issues, good governance, good information, and partnerships outside central government. The approach must also be dynamic, so it is able to anticipate and respond to major or sudden changes in circumstances.

57. The need for change in how we consider and set policy for environmental sustainability, within the paradigm of sustainable development, will put greater demands on public policy processes and the government agencies involved. Recognising this, the agencies in the natural resources sector have begun to adopt a more collaborative approach, to raise the quality of advice and effectiveness of implementation, and to ensure that interventions target the government's priorities.

Outcomes and Targets

58. As part of a move to take a more strategic and networked approach, officials have developed a set of potential outcomes for New Zealand. These describe a desired 'state of the environment' rather than attempting to capture all relevant values:
    a. *Atmosphere*: Air is fit to breathe and greenhouse gas and ozone depleting substance emissions meet international agreements.
    b. *Land*: Healthy and productive soils, contamination avoided or mitigated, and erosion by human activities minimised.
    c. *Fresh water*: The quality of fresh water meets the range of needs and values for which it is required while supporting healthy and functioning ecosystems; water levels and flows are sufficient to support healthy and functioning ecosystems and meet the range of needs and values for which it is required.
    d. *Marine*: The state of the sea floor and quality of marine waters supports healthy and functioning ecosystems.
    e. *Biodiversity*: Ecosystem composition and processes are maintained or enhanced, human-induced extinctions are avoided and human-induced declines are minimised; genetic resources of introduced species are maintained to meet the range of needs and values for which they are required.

59. Outcomes can be given life by setting achievable but ambitious targets, but poorly chosen targets can push policy in the wrong direction. Targets reflect high-level choices among economic, social, cultural and environmental values. They need to be revisited from time to time, to maintain a fit with overall goals and compatibility with other targets. An initial assessment suggests that the current target package is patchy, and developed mostly to meet sectoral rather than broader outcomes. There would be benefit in re-examining New Zealand's current targets to assess whether they and their associated policies will deliver on New Zealand's environmental sustainability goals.

Policy frameworks and considerations

60. In addition to the principle of maximising overall wellbeing for New Zealand, we see some other important considerations or principles that should underpin environmental policy:
    a. Environmental systems and issues are highly interdependent and complex, which mandates a more sophisticated policy approach.
    b. Effective and efficient policy responses tend to be based on a combination of different interventions.
    c. Economic incentives – particularly pricing of externalities (the negative effects of resource use that fall on others or the environment) or 'polluter pays' – create a strong incentive for more sustainable behaviour.

61. Approaches to environmental management can be placed on a spectrum, from a strategic or systems approach to a more ad hoc approach. Because the critical issues are complex and interconnected, New Zealand's approach needs to be more strategic and seek more integrated outcomes. There will always need to be a reactive response to some issues, but doing so too often can polarise economic and environmental values, and encourage adversarial positioning and pursuit of short-term opportunities.

62. New Zealand has struggled with difficult decisions requiring value judgments or potential trade-offs partly because we lack high-level national outcomes, strategies, bottom lines, standards or planning frameworks to inform those decisions. (These factors also make it hard to manage cumulative effects on the environment.) Decisions involving value judgments will always have a political element, but it is important for these decisions to be constrained by bottom lines (environmental, economic, social and cultural) which protect overall wellbeing, and to be informed by national objectives and strategies, advantages, costs, and risks.

63. The government can use a wide range of tools such as legislation, regulation, markets, incentives, rents or user charges, verification services, standards, information, voluntary mechanisms and co-management. No single tool will suffice; the challenge is to apply the combination which is most efficient at getting the greatest overall value (usually a mix of economic and non-monetary values) from resources while also providing for the environment, managing equity issues, and not creating excessive transaction costs. The critical issues suggest a need for a better combination of regulation and market settings to manage natural resources, as this combination has often been most effective at managing resource pressures and promoting efficient use.

64. Generally speaking, putting a price on resources that reflects the cost to society of their use increases overall wellbeing. Use of 'public' resources like water and the atmosphere (as a sink for pollutants) has been underpriced in the past. Users who do not face the costs of their impacts on others or the environment lack an economic incentive to change their behaviour. The response of firms and individuals to economic incentives like the pricing of externalities and scarcity-driven price increases can drive reduced consumption and the development of alternative technologies.

Strengthening government capability

65. A strategic approach to policy requires greater performance, information and resources from central government. A more collaborative approach is needed across central government to ensure that existing capability and information is used effectively, and that greater capability is developed. Stronger sector leadership will ensure that environmental outcomes are well articulated and inform decisions

across government. As mentioned above, Chief Executives have decided to establish new governance arrangements for a formalised Natural Resources Sector to improve strategic leadership and collaboration across agencies.

66. Unlike economic and social policy, environmental decision-making in New Zealand is not well supported by a strong evidence base. In particular, we lack the integrated environmental and economic information needed to systematically assess the effects of policy on resource efficiency, the environment, economic activity and productivity. This makes it difficult to demonstrate New Zealand's environmental sustainability at a national or sectoral level. To support good decision-making, we need to strengthen the existing environmental-economic accounts and other related data, and build capability across government to use that information. The evidence base should be a key component of the official statistics system, shared across government, and focused on the current and future priorities for New Zealand.

67. Research, science and technology is central to good environmental management. Science provides much of the data, information and tools needed to manage the environment effectively. There has been a decline over the last ten to twelve years in environmental science capacity based in science institutions and working on research related to some of the critical issues, largely because funding has stayed flat over that period (for example, research staffing on freshwater science has declined by 35-40%). Further, research and information management in some areas is not well coordinated and departments and councils have found it difficult to engage with the environmental part of the science and research sector. These factors hinder evidence-based policy and informed discussions.

68. The government cannot achieve outcomes on its own. Central government also needs capability in change management, to help to develop public understanding of the importance of environmental sustainability for New Zealand's wellbeing, and the significance of some of the challenges we face. If New Zealand is to maintain economic growth without worsening our environmental performance (at both the macro level and within businesses, farms and households) this will require a change in attitudes and practices. Change will take time, encouragement, information and incentives. This message may be harder to convey in a time of economic stress, when attention is focused on socio-economic concerns and capital for investment in new technologies is harder to come by – but the current climate may also support a constituency for change. Community acceptance of new sustainable technologies (such as the shift from largely 'invisible' thermal generation to much more visible wind or hydro power) will also require buy-in to a longer-term national goal.

Conclusions

69. Our analysis has identified six critical environmental pressures and management issues (see paragraphs 15-18): climate change, fresh water, the Resource Management Act, the Treaty of Waitangi relationship, biodiversity and marine. Some common elements are seen across these issues – downward environmental trends, tensions caused when trying to articulate national direction or national interest in our highly devolved resource management system, the inability of 'first-in first-served' allocation systems to deliver scarce resources to their most valuable or valued uses, and the need to further consider the role of Māori in resource management. Another theme is the need to explore the use of economic tools and incentives, within regulated environmental limits, to encourage efficiency and reallocation. Investigation of such tools creates an opportunity to further explore the role, rights and interests of Māori.

70. For some of these issues (such as management of certain water-bodies) we do not have much time before environmental pressures start to hurt the economy. While there is a need for greater urgency, the issues are probably not best addressed by hastily developing separate solutions for each. Rather, New Zealand's long-term interests are likely to be served by a more strategic approach to the environment and its intersections with our economic, social and cultural wellbeings. Decisions will be much better informed, and the inevitable value judgments will be much more transparent, when we have a process for setting clear outcomes, targets and standards. In order to protect our overall wellbeing, we also need more robust bottom-lines which deliver for economic, social and cultural needs as well as environmental values.

71. This need for a strategic approach presents a challenge for departments to work at a higher level, and for the government to build a constituency around the real value of New Zealand's environment and the need for change.

Recommendations

72. We recommend you:

    a. **Note** the information in this briefing about the importance of environmental sustainability and the critical issues in the environmental sector.

    b. **Note** that the portfolio and overview briefings of the departments in the sector provide further relevant information, and will also canvass issues beyond the environmental dimension of sustainability.

    c. **Advise** Chief Executives of any further information you require.