Section 2

Key Concepts

In any consideration of the roles of native plants on private land a wide range of people, groups, and sectors each bring their particular views, frameworks of value, assumptions and priorities to the dialogue. The following section gives a brief overview of some of the key concepts and ideas that underpin debates about the roles of native plants on private land, and have shaped and influenced the issues.

Language

Inevitably in the discourse around the roles of native plants on private land, and other environmental management issues, a number of terms and concepts are commonly employed. These terms often carry particular meanings or associations for different people, with different implications for the management of native plants on private land. These loaded meanings often result in people 'talking past each other' when trying to engage in debate on this subject.

One of the terms commonly confused by a multiplicity of meanings is the deceptively simple 'use'. 'Use' carries connotations of extraction, making an economic return, and exploiting the environment. Conceptually 'use' is much broader than this, and includes the various benefits that can be derived from a range of management options: including leaving the resource *in situ* for purely conservation reasons, the more traditional ideas of utilisation by the removal of the resource, and the wide range of potential approaches that combine a number of objectives.

Given the general difficulties surrounding the term 'use' and its association with controversial terms (such as 'harvesting' and 'logging') this discussion paper will use the term 'uses and services'. The PCE recognises that all management options have the objective of providing benefits to individuals and to society in the form of uses and services, and therefore it is considered that this

term more accurately reflects the scope of existing and potential relationships between people and native plants on private land.

2.1 Uses and services

In the discussions undertaken for this paper, the focus continually returned to questions about native trees and whether existing stands of native trees on private land should be harvested. These issues are urgent and important, but this study places trees within the broader context - the many roles that native plants can play in sustainable land management, and the ways in which social and economic objectives can be integrated with ecological sustainability. The various uses and services can be characterised as follows:

Uses and services with no direct or indirect economic value

- Intrinsic values - qualities and existence values
- Identity and sense of place
  - national (icon species e.g. cabbage tree, pohutukawa, silver fern)
  - regional and district (characteristic landscapes and vegetation patterns e.g. Northland's kauri forests, Otago's tussock grasslands)
  - local and personal (identification of communities, families and individuals with the special plants of their home environments)
- Habitat for both indigenous and exotic wildlife
- Aesthetic, amenity and landscape values
- Traditional and cultural values of taonga for tangata whenua

Uses and services with direct or indirect economic value

Non-extractive

- Ecosystem services - which include maintenance of biodiversity, water catchment and purification, waste decomposition, carbon sequestration, nitrogen fixation, weed suppression, soil generation and protection, riparian protection, pollination, and nutrient cycling
- Ecotourism, recreation services
- Real estate values

Extractive

- Timber sustainably harvested from existing or newly established forests
- Other products including honey, oils, resins, biological compounds, medicinal products, flax fibres, genetic resources
- Mahinga kai, rongoā resources
- Freshwater fisheries improved by riparian or wetland vegetation
- Grazing of indigenous grasslands

The contexts or broader ecosystems where native plants are found often determine perceptions about appropriate management approaches and the benefits that might be derived.

Type of ecosystems

Existing

- Existing forests that have never been deliberately modified by humans
- Regenerating cutover forests at various stages of succession
- Scrublands such as mānuka/kānuka systems
- Wetlands
- Tussocklands
- Coastal dunelands
- Remnant trees or small stands remaining in modified production landscapes - values can vary depending on whether stands have been fenced or undergrazing has occurred[1]

New establishments

- New forests that replicate natural forest ecosystems - for conservation benefits and/or a range of other benefits and purposes
- Adapted plantation forest systems - possibly including a mixture of native and exotic species
- Introduction of indigenous plants into pastoral landscapes dominated by exotic plant species - e.g. shelterbelts, woodlots, indigenous hedgerows, native grasses, flaxes and wetland plants, riparian corridors
- Wetland restoration - for conservation

benefits and/or a range of other benefits and purposes (e.g. water purification)

2.2 Biodiversity

Biological diversity, or biodiversity, describes the richness, diversity and variability among all living organisms and ecosystems. Biodiversity is commonly considered at three levels: genetic (diversity within species), species (diversity between species and within an ecosystem) and ecosystem (diversity between ecosystems).

To the public, biodiversity appears to be shorthand for our indigenous species and their protection. The media often use the term to suggest an entity, or end point in itself rather than a quality that ecological systems possess that provides benefits such as resilience to impacts like climate change or invasion by new pests.

Why is indigenous biodiversity important?

Much of New Zealand's indigenous flora and fauna is endemic - our ecosystems are unique in the world. Indigenous biodiversity is maintained and cherished as an integral part of our heritage and identity, as well as for its values as wildlife habitat, for traditional and cultural purposes, and for a range of economic benefits and ecosystem services. Because New Zealand's indigenous species and ecosystems have evolved to deal with the conditions and climate of these islands they are generally more resilient to perturbations than exotics.

In the 1997 State of the Environment report, [2] the decline in biological diversity was identified as New Zealand's most pervasive environmental issue. The principal threats to indigenous biodiversity were identified as:

- habitat destruction - deforestation, grazing, fires, development, wetland drainage, fragmentation and degradation of ecosystems, and unsustainable use of resources
- introduced pests and weeds - competing with and preying upon indigenous plants and animals.

The purpose of the New Zealand Biodiversity Strategy was to meet New Zealand's commitments under the Convention on Biological Diversity and in response to the decline in the nation's indigenous biodiversity as highlighted in the State of the Environment report. [3]

Native plants on private land and their value in enhancing biodiversity

For New Zealand to meet its goals to maintain and enhance indigenous biodiversity, focusing only on the plants, animals and ecosystems on publicly managed lands will not be enough. The biodiversity of privately owned lands will also play an important role, both in enhancing conservation goals and improving the sustainability of land uses.

Integrating private lands within New Zealand's efforts to enhance biodiversity will require collaborative approaches and new ways to encourage and involve landowners, tangata whenua, councils and other interested parties. The extent to which this could include sustainable use of indigenous plants was an issue identified for further debate by the Ministerial Advisory Committee on Biodiversity and Private Land.[4]

(See section 5.1)

2.3 Ecological significance

The Resource Management Act 1991 requires councils to protect areas of significant indigenous vegetation (s 6(c)). This is often referred to as the Significant Natural Area (SNA) process, however, the Act provides limited guidance on assessing significance. Much debate has ensued around various interpretations, criteria for classification of SNAs, and appropriate means to provide for protection. One way of defining significance in s6(c) has been to assess the ecological significance of areas of land.

There is general recognition that areas with high levels of ecological significance should be managed in ways that minimise any risk of damage to those values. However, there are

Case study: Introducing indigenous biodiversity into a cropping farm

Heinz Wattie's Organic Farm at Lincoln University ('Kowhai Farm') is a 57 ha[5] cropping farm operated for commercial, scientific investigation, and demonstration purposes. Farm operations include an initiative to demonstrate the important role that biodiversity, and more specifically indigenous biodiversity, can play in achieving more sustainable farming practices.

The farm consists of a rotation of six paddocks producing linseed, beans, peas, and buckwheat crops, green manures of oats, lupins and rye corn and two pasture paddocks. The introduction of indigenous biodiversity into these areas has been achieved by planting margins between paddocks using double fencing, and also the planting of road margins. These areas have been planted with native woody plants (*Coprosma spp, Corokia spp, Olearia spp, Sophora spp*), native grasses (*Carex spp, Poa cita, Anemanthele lessonia*) and flax. Some exotic species, such as tree lucerne, have also been planted.

By increasing biodiversity the project intends to assess both the direct and indirect benefits to the farming operation. The study also will assess the impact of the increased width of field margins on the overall economic performance of the unit.

The expected benefits include:

- pollination services
- biological pest control (through beetle banks[6])
- weed suppression
- nutrient retention
- enhancing land values
- providing demonstrable substance to New Zealand's 'clean green' marketing programme.

The farm is a possible model of how increased indigenous biodiversity in agricultural areas such as the Canterbury plains, where there is little indigenous ecology, can contribute to the sustainability of land uses.

differences over what people consider to be ecologically significant, leading to conflict and uncertainty. People can place different levels of importance on the same areas. Some consider that only pristine or nearly pristine areas of native forest or wetlands are ecologically significant; others consider that all areas of native plants have significant ecological value.

During discussions for this study the need for clarity and consistency in defining 'ecologically significant' areas was frequently raised as a critical issue for landowners and councils. In plans produced under the RMA, assessments of significance can determine the range of available management options for areas containing native plants.

(See section 5.2)

2.4 Preservation and conservation

Definitions

The terms 'preservation' and 'conservation' are closely related; both have the concept of keeping something safe from harm, decay or loss, and maintaining its state or condition. Despite their similarities in meaning there have been strong disagreements in New Zealand over 'conservation' and 'preservation', and polarised positions have developed. Section 5.3 looks at the evolution of these concepts' in the context of New Zealand's history of settlement, and how this has influenced current thinking.

The two currently predominant perspectives on conservation and preservation can be summarised as:

A perspective that conservation equals preservation

- Given New Zealand's history, the best way to prevent further losses of indigenous species and ecosystems is to prevent further use or exploitation.
- So much has already been lost from our native plant communities and forests that those that remain are now all significant and worthy of protection from any use.
- There should be no extractive use of areas of regenerating native forest plants as a means of increasing the abundance of native plant

species.

- The protection of native species should extend to trees and plants on private land.
- The motivations of landowners and others wanting to utilise native trees for timber are questionable; New Zealand's history of non-sustainable use of forests indicates that people seeking to use these resources cannot be trusted.
- Protection is best achieved through the purchase, acquisition or covenanting of areas containing native plants, or through regulation or other planning mechanisms.

A perspective that conservation includes preservation

- Conservation is a continuum that includes non-extractive uses, such as enjoyment of wilderness, through to ecologically sustainable use of natural resources.
- It is appropriate to designate some special areas as national parks, or under some other protected category, where indigenous biodiversity and landscape values are given prominence and protection.
- High value native plants have been used in New Zealand for centuries. Providing it is done in a way that sustains or increases the overall abundance of the species, extractive utilisation is a valid option.
- One way of increasing the abundance of native plants on private land is to encourage active planting for a wide range of values, including aesthetic values, ecosystem services, wildlife values and extractive uses.
- While the past record of exploitation of native forests and other indigenous ecosystems is dismal, important lessons have been learned from these experiences, and sustainable management in the future is possible.

The management imperative

Whether people agree or disagree with these different perspectives, one issue is common to both. Regardless of the status of the land, or the purposes for which it is being managed, valued native species may be vulnerable to a variety of pressures (e.g. weeds and pests, changes in climate, loss of pollinators and dispersers, changes in soil characteristics, and hydrological changes). Not to intervene in an attempt to control, for instance, pests and weeds is likely to risk a degradation of the biodiversity values.

(See section 5.3)

Case study: Hinewai Reserve - Eco-restoration and tourism

Hinewai Reserve on Banks Peninsula is a 1050 ha area of land owned by the Maurice White Native Forest Trust, to enable the natural regeneration of indigenous vegetation and ecosystems.

The management philosophy applied at Hinewai is one of minimum interference, a recognition that with the exclusion of fire and introduced animals the natural resilience of native species will allow for recolonisation of modified areas, without further human assistance. This approach requires patience and a willingness to try not to predetermine the long-term outcomes. Nurse crops for regenerating native plants include exotic species, such as gorse and broom, in addition to native kānuka. The trust is confident that exotic plant species will gradually be replaced as natural succession occurs; although this is aided with on sight removal of some exotics such as *Pinus radiata*, *Acer pseudoplataris* and *Clematis vitalba*.

At present approximately 40 percent of the reserve is in native vegetation consisting of red beech stands, kānuka, second growth mixed hardwoods and scattered podocarp (tōtara, matai, kahikatea).

Hinewai Reserve is also part of the successful Banks Peninsula Track - an initiative of ten local landowning (mostly farming) families to diversify their income through tourism. The financial contributions from tourism and other visitors help to offset some of the costs of the conservation work.

Although the area has been managed for conservation purposes for not much more than a decade, regeneration has progressed at least as rapidly as was initially predicted. The ecological and financial benefits are already clearly apparent, including increased bird and invertebrate life, and returns from tourism.

2.5 Ecological sustainability

Ecological sustainability should be a fundamental requirement for all New Zealand's land use and for the roles of native plants in the country's social,

cultural, political and economic futures. To give a useful and practical definition to the concept of ecological sustainability, clear understanding is needed of the kinds of relationships New Zealanders want with their physical environment. Some contemporary discussions of sustainability focus on the 'triple bottom-line' - the incorporation of social (cultural), economic and environmental considerations in management systems and objectives. The three components are closely inter-related.

In this discussion paper the PCE has taken an ecological orientation in working towards a practical concept of sustainability, that:

- encompasses biodiversity, a core component of ecological services
- works within ecological limits and the carrying capacities of the biosphere
- recognises the importance of complex biophysical systems and processes
- means ecological services and natural processes are maintained into the future without them failing or being irreversibly compromised
- maintains natural capital
- enhances environmental quality
- enhances the resilience and robustness of the environment.

Sustainability is an ideal, like truth, justice, freedom, democracy and love. We never completely reach our ideals but we strive toward them...[7]

(See section 5.4)

2.6 Managing for change and resilience

There is increasing awareness of the complexity and inter-connectedness of natural systems, the unpredictability of ecosystems' responses to change, and the limits of our knowledge in many critical areas. It is now recognised thanks to ecological sciences, that natural systems are complex non-linear systems with different capacities to cope with natural and human impacts.

In the face of often daunting complexity, policy-makers and some science-based approaches seeking a sense of greater certainty, have tended to develop rigid policy and management structures that have a single target (e.g. enhancing biodiversity, or economic production), a single scale of focus (typically limited in space and time), and limited capacity for adaptation.

With better awareness of ecological principles, the varying capacity of systems to cope with impacts, and the resulting complexity of relationships, comes an appreciation that a reductionist approach, focusing down on isolated aspects of an issue or ecosystem, will not be enough to deliver ecologically sustainable management. The limitations of some narrowly specialised scientific frameworks, and the adversarial nature of some of the debates about different management models, have led to public scepticism and mistrust about science and its role in providing solutions for indigenous ecosystem management.

Environmental management needs to evolve to incorporate:

- integrated policies that are flexible and adaptive
- close monitoring to increase knowledge of trends in ecosystem health and improve responsiveness
- research that integrates a broad range of disciplines and perspectives
- active citizen involvement.

(See section 5.5)

2.7 Kaitiakitanga

This discussion aims at advancing understanding on matters of importance for tangata whenua in relation to native trees and plants. It does not have the status, nor should be taken in place of the statements of iwi, hapū and whanau on their own behalf concerning native trees and plants, traditional relationships with those taonga, their values and management, or any other issue.

Whakapapa

For tangata whenua, issues such as the place of trees and plants will be approached from the basis of whakapapa. All living things are originally descended from Ranginui and Papatuanuku, the sky and the earth; their son Tāne is the atua responsible for forests. After Tāne had brought all the trees, plants, birds and insects into the world, he created humans, making the form of a woman from the red earth of Hawaiki and breathing life into her.

Within the structures of whakapapa all the components of the natural world, including people, are connected back to the atua, and so linked together in the bonds and obligations of kinship. Metaphysical and ancestral dimensions are inherent in the landscape, in plants and animals, water and stone: "There is no distinction or break in... the whakapapa between supernatural and natural. Both are part of a unified whole."[8] The relationships between people and the other descendants of Tāne are especially close; as the junior member of this kin-group, humans have particular obligations to the older members, the trees, plants, birds and other forest creatures.

Tikanga

The responsibilities of humans to the rest of the natural world are determined within the systems of kaitiakitanga and tikanga. Tikanga can be described as the correct way of doing things, and is based in some of the essential principles that shape the Māori world:

- Mauri - the essential life force or distinctiveness that enables each thing to exist as itself
- Tapu - the particular sacredness of people, things and places for particular reasons
- Mana - the status and authority of tangata whenua
- Rangatiratanga - the right of iwi, hapū and whanau to make their own decisions about things that concern them
- Kaitiakitanga - the ongoing necessity for tangata whenua to look after the taonga, both physical and intangible, that are their heritage.

Te waonui a Tāne

Over the centuries, through a cumulative process of learning and adaptation, through abundance, scarcities and losses, tangata whenua developed close relationships with the trees and plants of Aotearoa. These islands' forests, wetlands, coastal vegetation and other ecosystems were the foundations on which survival depended, both as habitat for birds and other foods, and as rich resources to meet all kinds of practical needs.

Over the generations, an extensive body of knowledge has been brought together. Matauranga Māori is a storehouse of detail on the characteristics and qualities of native trees and plants, on ecosystem dynamics and relationships, and practical management methods and techniques. These methods aim to ensure ongoing sustainability, and take an integrated approach to all aspects of management and utilisation.

Kaupapa

Today, the practical aspects of Māori relationships with forest and plant resources continue, including:

- customary uses of traditional materials, often for special purposes such as waka construction, the restoration of wharenui, or other carving projects
- use of harakeke, pīngao and other materials for weaving work
- rongoā, to which increasing numbers of people are turning for natural health treatments.

The practical and the esoteric, the physical and the divine are inextricably intertwined. As taonga tuku iho, native trees and plants combine both tangible usefulness in the here and now, and elemental connections to the gods, the ancestors and the eternal universe.

Māori landowners

Māori own the majority of the remaining indigenous forest on private lands; this has been estimated at approximately 80%.[9] The extent of today's Māori-owned forests is due to a mix of inter-relating factors, including:

- economic constraints on the capacities of Māori landowners to develop their resources (for example, difficulties in raising finance where land has multiple owners)
- isolation and access (many Māori-owned blocks are in remoter areas).

Māori were not signatories to the 1991 Forest Accord between industry and environmental groups (see section 5.18). There are often concerns amongst iwi and hapū about the kaupapa and assumptions of some environmentalists, and about some of the formal and statutory frameworks established or proposed by government to secure the protection of forest areas. However, many Māori trusts and landowners have committed to protection of the forests on their lands through Nga Whenua Rahui kawenata (see section 5.16).

Many Māori landowners, incorporations and Trust Boards have undertaken commercial forestry projects with exotic species (primarily *Pinus radiata*), often in joint venture partnerships. Exotic species are seen as currently the most financially viable option. These initiatives are subject to the same imperatives as any other land use - the requirement to generate appropriate economic returns, to manage resources for the ongoing benefit of owners or shareholders, and to ensure the environmental sustainability of the operation.

However, Māori have an acute sense of longer-term timeframes, and acknowledge that, if the economic returns were similar to current ventures, working sustainably with indigenous trees and plants would generate a wider range of benefits for tangata whenua than projects with exotic species.

(See section 5.6)

2.8 Te Tiriti o Waitangi - the Treaty of Waitangi

Tangata whenua have a considerable range of interests in native trees and plants, and in issues of land use and the management of indigenous vegetation, in terms of the rights guaranteed under te Tiriti o Waitangi (the Treaty of Waitangi 1840).

The Treaty records the fundamental bargain between the Crown and Māori - the exchange of the right of the Crown to govern (Article I), in return for confirmation of the rangatiratanga of tangata whenua, and the obligation to protect Māori interests (Article II). The Treaty did not convey any special rights to tangata whenua - rather it confirmed and guaranteed their existing rights to land, forests and other natural resources, including rights in respect of intangible taonga.

Some of the principles of the Treaty, as established by the Courts and enunciated by the Waitangi Tribunal, that are relevant to the management of native plants include:

- partnership between the Crown and tangata whenua, to act in good faith and to accord each other reasonable co-operation on major issues of common concern
- active protection of the Māori interest in natural resources, species, places and other taonga, which will require more than passive recognition or processes of consultation with tangata whenua
- management of natural resources, species, places and other taonga according to tikanga
- recognition that taonga include both tangible and intangible dimensions and values.

Māori involvement in issues connected with the management of native trees and plants will also occur under the RMA, which requires councils to take into account the principles of the Treaty and to recognise and provide for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga. Councils must also have regard to iwi environmental management plans in formulating

plans and policy statements. Consultation also occurs in relation to resource consent processes. And many iwi proactively advocate the use of native species in a range of environmental contexts - for example, advising councils to use native plants rather than exotics for riparian restoration.

The WAI 262 claim

One claim currently being heard by the Waitangi Tribunal is the "indigenous flora and fauna claim", commonly referred to as WAI 262 (its number in the Tribunal's recording system). WAI 262 is a wide-ranging claim lodged with the Tribunal in 1991 by representatives of several iwi in regard to the "protection, control, conservation, management, treatment, propagation, sale, dispersal, utilisation, and restriction on the use" of native plants and animals, of the genetic resources inherent within these taonga, and the whakapapa, intellectual property and traditional knowledge associated with them. Clearly this claim and its eventual outcomes have enormous implications for the future roles and management of native trees and plants in the New Zealand landscape.

(See section 5.7)

2.9 Markets

During the interviews undertaken for this paper, the economic dimensions of native plants on private land were frequently raised. People's concerns centred on the relationships between ecological, social and economic sustainability. There is widespread concern that without economic viability over both the short and longer term, future management options and potential uses of native plants on private land will be constrained.

Economic considerations apply both to extractive benefits such as fibre, timber, honey, and oils, and non-extractive benefits such as ecosystem services (e.g. pollination, water and soil conservation, and biodiversity benefits), and recreation and tourism.

Case study: Gowan Hills - A managed native remnant

The Gowan Hills Trust currently manages a 600 ha silver beech (*Nothofagus menziesii*) forest in Southland under a Forests Act Sustainable Management Plan. The Trust is the only native forest manager currently operating under Forest Stewardship Council (FSC) certification in New Zealand.

The Gowan Hills forests are remnant areas located at about 300 - 500 metres altitude on what was, until the mid 1990s, a sheep farm. The land is now owned by a forestry company and is planted in Douglas fir. However, the original farming family, via the Gowan Hills Trust, has a 25-year forestry right to manage the silver beech remnants.

Prior to the introduction of the Forests Amendment Act (FAA) 1993, the trust decided not to accept offers to chip the forest (at $2 per tonne), believing that there was more value in retaining the forest within the landscape, and chose to invest in the longer term sustainable management of the forest. With the introduction of the FAA the trust spent four years getting approvals under both the FAA and RMA. As one of the first forest managers seeking approval under the new regime they found it to be largely uncharted waters. They also found themselves on a steep learning curve about the techniques necessary to endeavour to sustainably manage a native beech forest. The trust initially sought a permit in an attempt to better understand the implications of the FAA requirements. Today the trust operates under a fully registered Sustainable Management Plan (see section 5.11).

The trust found that the major limitation on the level of timber harvested, was not the amount permitted under the approvals, but the lack of a domestic market that realised the value of native timber sourced from a sustainably managed forest. In addition, the domestic market is open to imported wood and finishing timbers from forests that are not required to meet standards similar to those under the FAA 1993. Consequently the trust applied for Forest Stewardship Council certification in order to access more discerning 'green' overseas markets.

The Gowan Hills Trust and the School of Forestry at Canterbury University are jointly conducting long-term research assessing impacts of the management regime on the forest ecology. Two areas of primary concern are the impacts on native mistletoe and on rates of regeneration of beech seedlings.

The role of markets

There are a number of inter-related issues around determining acceptable management options for native trees and plants on private land. One area of debate is the extent to which allowing economic or market values to be attributed to and derived from these ecosystems can be environmentally beneficial.

It has been suggested that by allowing for some levels of economic return, through the creation of market mechanisms, landowners will have a financial incentive to sustainably manage native plants on their properties, and thereby contribute to environmental sustainability and to biodiversity and landscape values.

The limitations of markets

Discussions about market creation and the use of market mechanisms usually focus on questions about extractive uses, primarily of native timber. Views differ greatly over the future of the high quality timber market in New Zealand; native timber only contributed 0.4% of the total amount of roundwood produced in 2000.[10]

Many people consider that economic markets do not take account of the complex diversity of values inherent within ecosystems, and cannot accurately reflect these values. The conclusion is drawn that markets must inevitably fail to fully reflect the *in situ* ecosystem values of indigenous trees and plants. Therefore, it is argued that these ecosystems and the benefits they provide will be undervalued resulting in their over-utilisation and exploitation.

Other concerns around markets for native plants and products derived from them include perceived difficulties in determining whether or not products being sold are sourced from lands managed under an ecologically sustainable regime.

For landowners involved in native timber production under the Forests Act 1949, [11] New Zealand's current practice of importing timber and timber products without requiring that they be sourced from sustainably managed forests is unfair competition. This lack of discrimination is perceived as undermining the development of best practice in sustainable native forest management.

Forest certification

Forest certification, such as the international Forest Stewardship Council (FSC) system, is a means of ensuring recognition for sustainably derived timber products both in terms of product quality, and the reliability systems that provide consistency and certainty for markets to maintain economic values. Certification provides a guarantee to customers through mechanisms that trace the timber product from a specific forest through the production process to the retailer.

Markets for non-extractive uses

The markets for non-extractive products from native plants on private land also have the potential to provide economic incentives to sustainably manage indigenous vegetation, but these markets are not as well developed as those for extractive uses. Existing non-extractive markets are associated with tourism and recreation, the public funds provided for conservation (through the Nature Heritage Fund, Nga Whenua Rahui and the QEII National Trust), and private funding from organisations such as the New Zealand National Parks and Conservation Foundation.[12]

Alternative markets for the conservation and establishment of areas of native vegetation on private land have also been proposed, such as carbon sequestration systems, and tradeable habitat systems.

New establishments of native plants

In many respects the economic implications of establishing new areas of native plants are different from those for existing areas of native plants. In current commercial terms the establishment of new areas of indigenous vegetation is not as attractive as establishing exotic species. Many native tree species have

much longer rotation periods and higher establishment costs than *Pinus radiata* or even Douglas fir. Research similar to that undertaken on *Pinus radiata* could shorten rotation periods, but at present there appears to be little or no research effort in this area (see sections 2.14 & 5.15).

Case study: Planted Kauri in South Auckland

During the 1970s the Auckland Regional Authority forestry section undertook a series of trials in the planting and management of Kauri (*Agathis australis*).

The project aimed to identify the best and most economical way to establish kauri plantations by determining the factors that influence kauri growth (e.g. light and temperature requirements, effects of fertiliser and planting time). The lack of knowledge in this area was seen as a critical barrier to expanding the amount of kauri available for harvest.

The trials were established in the southern Hunua Ranges over 10 ha. Although the trial areas are not currently under any specific management regime they demonstrate techniques that will increase tree survival rates and growth rates. Trials showed that the primary determinant for survival and growth is soil quality, as kauri grows best in friable, reasonably well-drained soils. The use of a nurse crop and the use of releasing[13] and thinning were also assessed as being beneficial.

On good sites kauri has achieved significantly improved growth rates over those traditionally associated with the species, with 27 year-old specimens reaching heights of 15 metres. Based on this work kauri would seem to have good potential for use in riparian plantings, and for sustainable harvest on a 80-100 yr rotation. Currently there is a proposal to establish a trust that will use the existing trial sites to promote the planting of kauri through education and information sharing.

The prices currently received for native timbers do not provide a sufficient premium to offset the longer growing periods and establishment costs. This reason is often given as to why native trees will not be widely planted for timber, with the exception of the efforts of a limited number of individual enthusiasts.[14]

Differentiating exotic and native forestry

In New Zealand current perceptions of forestry are largely based on past unsustainable practices, and on current practices with *Pinus radiata*, a fast growing exotic species that produces, without additional processing, a relatively low value timber with relatively small profit margins. This type of forestry relies on the comparatively short rotation length and the production of large quantities of timber to be economic. Silviculture, harvesting, and processing of timber is characterised by uniform stands and large-scale, time-dependent, energy-intensive operations. This type of forestry can be termed 'industrial forestry'.

However, both ecological and economic factors mean that ecologically sustainable forestry with native species would have very different characteristics. Native tree species are relatively slow growing, but produce higher value timbers. Native species generally grow better, in terms of rates of growth and health, in association with other native plants, and not in monocultures (the possible exceptions being kauri and *Nothofagus spp*). Due to the longer rotations, planting and growing these species purely for timber is not as economically viable as working with pine.

Successful indigenous forestry is likely to be characterised by forestry practices that mimic natural ecosystems. Such forests will include a range of species, growing at different rates. To be economically viable they will need to provide returns in relation to a range of other uses and services (such as recreation, amenity, biodiversity and other ecosystem services, conservation, non-timber products, and biosecurity risk management). Therefore, harvesting practices based on clear felling will be neither economically or ecologically sustainable. Harvesting will need to be based on low-impact, low-cost, small-scale techniques that maximise the revenue derived from the relatively low volume of timber produced.[15]

Taxation regimes

The economic impacts of central and local government taxation (rates relief, income tax regimes) were identified, in the discussions undertaken for this paper, as disincentives both to the protection of existing indigenous vegetation and to the establishment of new native plants on private lands. These factors apply whether management is purely for protection purposes, or where there is an intention of deriving income in the future.

(See section 5.8)

2.10 Landowners' rights and responsibilities

The issue of property rights and their implications for regulatory and land use decisions are fundamental themes in relation to native plants on private land. Concepts of property rights are often based in strongly felt beliefs about the need for fairness and respect for individual freedoms when balanced against the interests of wider society.

The debates focus around some critical questions:

- the extent to which society can determine appropriate roles for native plants on privately owned property (whether for economic use, ecosystem services, biodiversity protection, amenity values, or some combination of values)
- the role and effectiveness of regulation
- who pays for and benefits from such decisions.

Many New Zealanders believe that an individual's ability or right to choose what to do with his or her own land is sacrosanct, and the expectation is that such rights should not be unfairly compromised. Consequently, there is the view that if landowners are required to give up certain land use choices for the public benefit, then they should be compensated, although there are different views as to what compensation might entail. However, others consider that it is appropriate for the State to purchase or negotiate agreements for protection of all areas of significant natural vegetation and habitat. If this is not possible, it is argued that the State should regulate or impose rules that prevent further loss from adverse human impacts.

Loss of trust

Many people hold the strong view that conflicts between landowners, environmental groups and local authorities are essentially about a lack of trust and respect, and people talking past each other.

Some landowners who have looked after a stand of bush or other indigenous vegetation on their properties for many years, perhaps over several generations in a family, are rightly proud of their achievements. There is often a deep sense of offence when regulators come in at a later date and impose a particular protection-oriented management approach, often, in the view of the landowner, without adequate understanding of the qualities of the property, or adequate consultation.

Concerned environmental groups often have similar feelings of distrust about the land management practices of landowners, and sometimes the activities of regulators. This distrust may be based in past negative experiences; the emphasis on regulation may not be due to any lack of respect for any individual landowner, but a more general lack of trust in human nature. The view is that regulation will always be necessary for the few 'cowboys' who would not otherwise act responsibly toward the environment.

The absence of certainty

There is a widespread view amongst landowners that the possibility of regulatory change to their rights in relation to native plants on their properties creates an environment of uncertainty.

There is concern that if landowners establish new areas of native plants on their land by planting or facilitating regeneration, with the objective of undertaking in the future some types of extractive

use, over time these areas would inevitably develop significant ecological values. Rather than seeing these ecological values as an asset, some landowners view this as a potential liability. There is an expectation that such new areas would in future be designated, via regulation, to be managed exclusively for conservation purposes.

Uncertainty, or even the perception of uncertainty, is often cited as a reason why landowners will not invest effort into the protection of existing native plants, and more specifically into establishing new native plants on their land for any number of potential uses and services.

(See section 5.9)

2.11 Central government: roles and approaches

Background to the government institutions

The government reforms of the late 1980s brought significant change to the structures of central government agencies with roles in relation to native plants on private land. The reforms were based on a number of general principles, including separating policy and operational functions, and reallocation of responsibilities across departments to locate similar functions within the same agency.

The restructuring appeared to reflect and affirm the separation of thinking between a protection ethic and the sustainable use of lands. A single agency, the Department of Conservation, was established to manage lands that were considered to have primarily conservation values. Those lands that were considered to have primarily production values were transferred to State Owned Enterprises (SOEs); Forest Corp (subsequently renamed Timberlands) received the Crown's production forests, both exotic and indigenous.

Consistent with the principle that policy making should be separated from the operational functions of government departments, two new policy agencies were created: the Ministry of Forestry (now part of the Ministry of Agriculture and Forestry) and the Ministry for the Environment.

The Ministry for the Environment

The Ministry for the Environment has a range of functions that directly or indirectly impact on native plants on private land, including providing advice on the application of environmental legislation (including the Resource Management Act (RMA) 1991, Forests Act 1949, Hazardous Substances and New Organisms Act 1996 and Conservation Act 1987) [16], and promoting environmental policies and effective public participation in planning.

The Ministry for the Environment has always been understood to have the role of mediation, working to manage the tensions arising from conflicts between protection and production, between the environment and development and social interests. As a consequence it was seen during its establishment phase as the "Ministry in the middle".[17]

One of the major roles of the Ministry for the Environment was in the development of the RMA, and the Ministry continues to be involved in ongoing oversight and policy direction of that Act. Local authorities have responsibilities to implement the RMA. How this is achieved will directly impact on the current and future role of native plants on private land.

The Department of Conservation

The primary functions of the Department of Conservation in relation to native plants on private land are:

- to manage for conservation purposes, all land, and all other natural and historic resources held by the department and any other land managed on behalf of the owner
- to advocate the conservation of natural and historic resources
- to advise the Minister on conservation matters.

In the Conservation Act 1987, conservation is defined as:

the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, [18] *providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations*.

It is within this statutory context that the department undertakes its advocacy, education and policy functions with respect to native plants on private land. The legislation requires that DOC advocates for conservation as it is defined. The department undertakes this role through:

- working with organisations such as local authorities, Forest & Bird, Federated Farmers, Fish and Game, Native Forests Restoration Trust, Landcare Trust and Ducks Unlimited
- providing support for private landowners who wish to protect land of conservation value through Nga Whenua Rahui, the Nature Heritage Fund, and the QEII National Trust
- providing input to statutory planning processes under the RMA.[19]

In the department's recent Statement of Intent it has redefined its strategic direction with respect to natural heritage that it does not hold or manage. It will now focus its effort to:

- work with landowners, communities and associate agencies to protect important natural ecosystems and habitats and indigenous flora and fauna
- use the best methods to achieve the desired outcomes in particular circumstances, drawing on a full range of methods including the encouragement of voluntary conservation endeavour, establishment of co-operative conservation programmes and through statutory advocacy. [20]

The Ministry of Agriculture and Forestry

The Ministry has responsibility for the Forests Act 1949 and administers, via the Indigenous Forestry Unit (IFU), the indigenous forest provisions as provided for under Part IIIA of the Act. Under this legislation, indigenous timber can only be produced from forests covered by that Act and that are managed in a way that maintains the ability of the forest growing on that land to continue to provide a full range of products and amenities in perpetuity while retaining the forest's natural values. The Indigenous Forestry Unit has the function of approving sustainable management plans and permits, as required by the Act, for indigenous production forests. Sawmills may only mill logs sourced from forests managed according to approved sustainable management plans or permits.[21]

Part IIIA of the Forests Act 1949 does not apply to:

- any Crown owned West Coast indigenous production forest
- any indigenous timber from or on any land permanently reserved under the South Island Landless Natives Act 1906 and having the status of Māori land or General land owned by Māori under Te Ture Whenua Māori Act 1993
- any indigenous timber from or on any land held, managed, or administered by the Crown under the Conservation Act 1987 or any of the Acts specified in the First Schedule to that Act
- any indigenous timber from any planted indigenous forest.

The Act also does not apply to native trees or vegetation that are not intended to be milled for timber, i.e. firewood or vegetation cleared as part of a change in land use.

(See sections 5.10 & 5.11)

2.12 Biodiversity policies and strategies

The Convention on Biological Diversity

In response to the global decline in biodiversity, the Convention on Biological Diversity (CBD), an international agreement on the conservation and sustainable use of biodiversity, was adopted at the 1992 Earth Summit in Rio de Janeiro. The objectives of the CBD are:

- the conservation of biological diversity
- the sustainable use of its components [22]

- the fair and equitable sharing of the benefits from the use of genetic resources.

The CBD was ratified by New Zealand in 1993 and a number of initiatives have been undertaken to give effect to its provisions, including a lengthy process of consultation to develop a New Zealand Biodiversity Strategy.

New Zealand Biodiversity Strategy

The New Zealand Biodiversity Strategy was announced in 2000 with the goals of:

- increasing community and individual awareness of biodiversity
- protecting iwi and hapū interests in indigenous biodiversity
- maintaining and restoring natural habitats and ecosystems to a healthy functioning state
- maintaining the genetic resources of those introduced species that are important to New Zealand for economic, biological and cultural reasons.

The strategy does acknowledge that, while conserving indigenous biodiversity is the priority, this objective does not preclude the use of the components of indigenous biodiversity where such use is ecologically sustainable and does not result in the long-term decline of biodiversity.[23] The strategy also recognises that the sustainable use of indigenous species within New Zealand's production and urban landscapes could assist in the mitigation of threats to biodiversity.[24]

The strategy includes considerable discussion of the sustainable and commercial use of genetic resources, and a policy is proposed for the management of indigenous genetic material in New Zealand, and for appropriate mechanisms to access those genetic resources.[25]

In the strategy's implementation plan there is, however, no reference to the various ecologically sustainable uses and services that might be derived from native trees and plants in the landscape. It is unclear what contributions, if any, management regimes for sustainable use of native vegetation on private land might be able to make in achieving the strategy's biodiversity goals.

In 2000 the Government allocated $187 million over five years for a package of measures to implement the strategy on both public and private lands.

Biodiversity on Private Land - Policy Package

In December 2000, following the Biodiversity on Private Land project undertaken by the Ministerial Advisory Committee, the Government announced a policy package to address the issues that had been raised. The policy package contained six initiatives:

- enhancing the capacity of local government to address biodiversity issues
- development of a National Policy Statement on Biodiversity to provide guidance for local government
- a biodiversity advisory service implemented by the Department of Conservation
- increased funding for existing protection mechanisms (QEII, Nga Whenua Rahui, Nature Heritage Fund)
- clarification of the role of regional councils as the lead agency for biodiversity and the important role of territorial authorities
- further work on a national governance structure.[26]

The package makes no mention of any measures aimed at improving current land use practices on private land so as to take better account of indigenous biodiversity, or the contributions that native plants could make to improve ecological and economic sustainability.

(See section 5.13)

2.13 The RMA and sustainable management

The RMA provides for the management of native plants on private land, through plans and policy statements produced and implemented by local authorities. Section 6(c) of the RMA requires that,

in achieving the purposes of the Act (i.e. in developing and implementing plans and policy statements), the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna shall be recognised and provided for as a matter of national importance.

The RMA, through plans and policy statements and the concept of integrated management, has an influence on the management of native trees and plants outside any areas that may be deemed to be significant under section 6(c). District and regional plans may set rules governing vegetation clearance, riparian management and water quality, soil quality and erosion, and landscape, or that impact on native vegetation.

It is also important to remember that the RMA does not preclude a range of alternative non-regulatory management approaches, such as education and public awareness programmes, or provision of financial or other support to facilitate the establishment and protection of native plants.

Section 6(c) RMA

There are two major issues of interpretation with respect to the implementation of this section.

First, what does significant mean, and how do you assess it? Nowhere in the Act is there guidance on how to assess significance. Consequently, there has been much debate about the various interpretations of what is significant in the context of section 6(c), and what ecological criteria should be applied in the classification of what are commonly referred to as significant natural areas (SNAs) (see sections 2.3 and 5.2).

Secondly, what does protection mean, and how do you provide for it? What kinds of rules and other measures are necessary, legally and practically, to provide for the protection of areas of significant indigenous vegetation? Are voluntary approaches acceptable?

The Department of Conservation has stated that:

Section 6(c) is not about obtaining more reserves, it is about sustainable management of natural resources. Protection of SNAs identified under the RMA does not preclude use of natural resources within an SNA, as long as that use does not impact adversely upon the values for which the area is considered significant. The issue is sustainable management, not reservation. Therefore there are a greater range of opportunities for protection, which may include reservation of parts or all of an area, if deemed desirable and agreement of all parties is reached, or use and management which provide for the avoidance, remedying or mitigating of potential adverse effects.[27]

However, there is a perception among landowners that the delineation of section 6(c) areas in district plans is being used as a default reserve making power, and that landowner's land use options are substantially restricted and compliance costs increased within those areas listed as SNAs. In some areas this has led to conflict and controversy.

In the absence to date of national RMA guidelines on assessing 'significance', many councils have developed their own approaches. The Ministry for the Environment did begin in 1997 to develop draft guidelines for councils on implementing section 6(c). However, work is now focusing on the development of a draft National Policy Statement for Biodiversity under the RMA, which could provide some assistance in this regard.

Local authorities and native plants outside significant natural areas

Regional councils and unitary authorities have responsibilities under the RMA for soil conservation and water quality.

Regional councils can set rules to prohibit or control the clearance of vegetation where this activity might have adverse impact on soil stability or water quality. Vegetation controlled by the regional plan is often on steep or poor quality soils and frequently consists of indigenous species. Regional councils can also undertake education and facilitation programmes to promote more ecologically sustainable land management

practices, and have responsibilities for the control of pests and weeds under the Biosecurity Act 1993. Often regional councils will consider the impact of introduced species on native species and habitats in their regions when determining priorities for pest and weed control.

Territorial local authorities (district, city councils) and unitary authorities are responsible under the RMA for control of land use. Territorial local authorities (TLAs) often set controls on the removal of indigenous vegetation through rules in district plans. These rules are often based on the maximum area and height of the native vegetation that can be cleared before the person undertaking the activity is required to obtain a resource consent from the council.

(See section 5.14)

2.14 Research and the provision of information

Focus of current research

A number of agencies are currently, or have been, involved in the management of native plants for non-conservation purposes.

In the past most of this research focused on indigenous forestry, and was undertaken by the Forest Research Institute (now called Forest Research). Forest Research currently concentrates on pine plantation forestry, although it still undertakes some research on native plant species as part of its "New Plantation Species for Future Forests" programme. This programme, however, also includes research into exotic species such as Douglas fir, Cypress species and Eucalyptus.

Case study: Riparian planting using native species to achieve more sustainable land use in Taranaki.

Through its Sustainable Land Management Programme the Taranaki Regional Council advocates the establishment of riparian margins that are protected from grazing by livestock, and are planted with suitable vegetation.

Whilst the council promotes the use of exotic or native species, the majority of plants recommended are natives as they are particularly effective species for stream protection and enhancement. For erosion control at the water's edge favoured plants include flax and toe toe with shrubs and trees such as karamū, cabbage tree, lemonwood, mahoe, five finger and kōwhai planted further up the bank. At the tops of banks commercial timber planting of either native or exotic species is often recommended. Native species such as kahikatea, rimu, miro, mataī and tōtara are slow to mature, but could eventually provide timber as well as providing food sources for native birds.

Increasing the amount of appropriate riparian plantings and improving management of riparian areas can result in the following benefits:

- improved water quality (reducing sedimentation, nutrient and fertiliser run off and animal defecation)
- reduction in stream bank erosion
- improved flood management (e.g. through replacement of inappropriate vegetation such as willows growing in water channel)
- habitats for native wildlife and freshwater fish
- cooler and more constant water temperatures
- enhancement of aesthetic and amenity values
- shelter
- plant products
- improved overall sustainable farm management.

The council has prepared about 300 riparian management plans that are being implemented along over 500km of waterways. Plans are supplied on a no-cost, no-obligation basis. In addition the TRC supplies locally sourced native trees at cost price where the landowner holds a riparian plan.

The plans contain:

- a brief description of the property
- the objectives of the plan including how it will contribute to regional water quality and farm management
- a riparian management proposal that covers the specific works required
- an estimate of costs
- a month-by-month schedule for each stage of implementation
- a form for monitoring the work completed
- information sheets with technical advice on the types of plants to choose, when and how to plant, ongoing maintenance, and weed and pest control.

There is some concern that with Forest Research's increasing emphasis on pine, the knowledge and skills in indigenous species gained over many decades will be lost with the transfer and retirement of staff.

Other research agencies have, to some degree, increased their research into the ecologically sustainable management of native plant species on private land, partly in response to these trends in Forest Research's work. Agencies involved include Landcare Research, the School of Forestry at Canterbury University, and the Centre of Continuing Education at the University of Waikato and Lincoln University.

Provision of information

Providing landowners with accessible information on native plants, their potential uses and services, and approaches for managing them in an ecologically sustainable manner, is a critical contribution to improving current land use practices.

Personnel from Forest Research, Landcare Research and the universities do undertake this function, but often these contributions must be undertaken in their own time and on a case-by-case basis. Personnel from these agencies also work with other organisations such as regional and district councils, the New Zealand Farm Forestry Association, Landcare Trust groups and other community groups to provide information to landowners. More detail on the current research being undertaken in these agencies and the current amount of public funding in this area is provided in section 5.15.

There are only a few businesses or individuals involved in providing information to landowners on the ecologically sustainable management of native plants for a range uses or services.[28]

(See section 5.15)

Case study: Forest Herbs ™ "Innovative health products from natural New Zealand"

Forest Herbs' products include herbal tea, creams, capsules and extracts from native plants, such as horopito (pepper tree), which has antifungal properties. The products are sold in New Zealand, Europe, Asia and North America.

The Forest Herbs research farm, situated beneath old growth and regenerating temperate rain forest at Kaituna, Golden Bay, is an experimental plot with a mix of regenerating and plantation forest that includes both exotic and native species. An adaptive management approach is taken, studying plant growth and replication of their requirements in a plantation setting. Trials are under way evaluating symbiotic relationships between canopy species and horopito. Additional values, including timber, are considered when choosing companion plantings.

Horopito is currently sourced from a 200 ha area of privately owned native forests. Forest Herbs use and grow horopito with the highest levels of anti-fungal properties, as there is at least a five-fold difference between plants with the highest and lowest levels.

Forest Herbs uses Australian tea tree oil as it is currently much cheaper than New Zealand mānuka and is effective against different strains of bacteria. In Australia tea tree is grown in intensive monoculture plantation forests, where the plants are coppiced.[29] Tea tree is also now being grown in developing countries and supplied to the market at lower prices. However, Peter Butler of Forest Herbs believes New Zealand products have a 'natural' competitive advantage based on perceptions of our 'clean green' environment.

2.15 Attitudes and relationships

During the discussions undertaken for this project, strong views and opinions were expressed about the roles of official agencies with responsibilities for policies and regulation in respect of native plants on private land, and about the ways in which some agencies have carried out their roles and functions.

The focus and scope of this project are qualitative rather than quantitative; the PCE investigation team met with individuals and groups that have a greater than average involvement with issues surrounding native plants on private land. They are not representative of all views on such issues.

The concerns and dissatisfactions raised were largely characterised by patterns of strongly held views, suspicions, communication failures and 'stand-off' situations. These patterns are a major impediment to achieving:

- practical working relationships between agencies, landowners, tangata whenua and other groups
- improved management for New Zealand's native trees and plants on private land.

These societal and attitudinal dimensions - along with appropriate and innovative means of improving communication and working partnerships between citizens, tangata whenua, groups and official agencies - will need ongoing proactive action in order for New Zealand to make progress on many of these issues.

Department of Conservation

There are mixed views in relation to the department - many landowners are supportive of DOC's conservation programmes on private land through such initiatives as the Nature Heritage Fund, other voluntary protection mechanisms, and ecological restoration projects. However, many landowners and landowner organisations interviewed expressed dissatisfaction with DOC's approaches to its advocacy responsibilities for conservation on private land.

These concerns include:

- some territorial local authorities, with limited resources and in-house expertise, opted to use DOC's information to identify significant indigenous vegetation on private land as part of the processes for section 6(c) of the RMA; there were concerns about the appropriateness of the use of information previously gathered for protection-oriented programmes such as the Protected Natural Areas Programme (PNAP)
- the department's use of the RMA to influence land use decisions that might impact on native plants on private lands
- the perception that the department is not effectively controlling the pests and weeds on all of the lands it manages; complaints of possums reinfesting properties from adjacent conservation lands affect the department's credibility and acceptance amongst rural communities.

There is also concern about the perceived dual role of DOC in the process for gaining approval of a sustainable management plan or permit under the FA. DOC is required to be consulted under the FA, but as a resource consent is also required under the RMA, DOC may provide a second phase of advocacy within that process. The view is that this creates uncertainty and additional costs for the landowner. In recognition of these concerns, DOC and MAF have developed a protocol to minimise difficulties.

Some of these tensions appear to have their origins in the early phases of the development of regional and district plans under the RMA and thus have a historical element. There are also differences in views about the department around New Zealand. These differences may be more of a reflection of the diverse relationship styles among department staff, community leaders and stakeholders.

The department fully recognises that it needs to continue to do more to build 'bridges' with landowners in order to reduce tensions, work towards common goals and increase trust. The Rural Advocate Programme, with funding of $1.022 million, is a major new initiative.[30] This programme will work with rural communities to raise conservation awareness and improve communications and relationships. The department also notes its statutory obligation under the Conservation Act to advocate for preservation and protection (see section 5.10). In some cases the statutory requirements force the department into processes that can result in adverse outcomes, rather than other less adversarial approaches.

Ministry for the Environment

The view was strongly expressed by local government that there has been a lack of guidance and support from central government - in particular from MFE, as the lead agency with responsibility for the RMA - in how best to interpret and implement the statutory provisions at regional and district levels. It is felt that this lack of guidance has placed immense pressure on individual councils, and has resulted in inconsistencies and confusion between the provisions of plans and policies of different councils.

As in the case of DOC these concerns appear to have a historical context and are reflective of former Government policies rather than the performance of MFE *per se*. The priorities of government ministries are largely dictated by the purchase contracts that they negotiate with their ministers.

The ministry is undertaking a range of initiatives in these areas to facilitate better practices and processes within local government. These include:

- draft guidelines for identifying good practice for SNAs (this has not been formally published but some councils have found it a useful resource)
- guidelines for ecological significance criteria for SNAs (see section 5.2)
- the NZ Biodiversity Strategy (with the Department of Conservation) [31] (see section 2.12)
- Sustainable Management Fund support for a pilot project to develop a cost effective approach to section 6(c) RMA responsibilities on the West Coast (see section 5.14)
- development of a draft National Policy Statement for Biodiversity.

Ministry of Agriculture and Forestry

Various groups expressed a range of views about the effectiveness of Part IIIA of the Forests Act 1949 and its implementation by the IFU of the Ministry of Agriculture and Forestry. One of the main concerns was that while on the whole the IFU does a good job, it has limited resources to carry out all the work necessary. Other concerns include:

- the IFU is often, by default, the source of expertise on native forest management, but its role does not formally include providing the assistance landowners require to attain best practice
- there is insufficient capacity within the IFU for monitoring of actual harvesting practice
- the exclusions of native trees cleared for other land uses, SILNA[32] forests and planted native forest from the provisions of the Forests Amendment Act 1993 (FAA) undermine the validity and effectiveness of the system
- there is an over-reliance on permits rather than the more environmentally robust management plans
- as the Act is too prescriptive in specifying sustainable forestry practices, the regime relies too heavily on the discretion of the IFU; however, standards and guidelines are currently being developed for managing indigenous forests and these could provide some definition of the unit's role in this regard
- only 4% of indigenous forests on private land are currently under a sustainable management plan or permit.

Local government

Many landowners spoken to reported less than satisfactory interactions and relationships with their regional councils or territorial authorities. One key factor seemed to be whether the basis of the landowner's encounters with the council was as part of a voluntary programme, or a regulatory requirement. Another key factor often was credibility and levels of experience of the council staff member.

Local government, especially territorial authorities, expressed the view that they have limited resources to undertake the complicated environmental assessment and evaluation programmes that are required to implement section 6(c) and other provisions of the RMA.

Wider issues of local government funding are relevant insofar as they impact upon the ways that councils fulfil their obligations in respect of native trees and plants on private lands, and the effects this has on the attitudes of landowners both to their local council and about the future of native vegetation on their properties.

Decision-making within agencies

Some landowners did recognise - whether in relation to DOC, MFE or councils - that the difficulties are often not with the staff with whom they have direct interaction e.g. field staff undertaking survey work, regional MFE staff, or council workers keeping in touch with local issues. Rather problems tend to arise with more senior or policy-oriented levels within the organisations. There are strong concerns amongst some landowners about the apparent remoteness of departmental systems and decision-makers from the 'real world'.

1 Damage from roaming livestock is one of the major negative impacts on native remnants on farms.

2 MFE 1997, p 10.6.

3 DOC and MFE 2000, Executive Summary.

4 MAC 2000, p 31.

5 ha - hectares

6 Shelters provided to house beetles and other beneficial insects.

7 AtKisson 2000, p 138.

8 Roberts et al. 1995, p 9.

9 Jacob Haronga FOMA, pers comm.

10 MAF 2000a, p 5 and MAF 2000b.

11 The Forests Act 1949 was amended by the Forests Amendment Act 1993 which introduced a new Part (Part IIIA) that deals with the sustainable harvesting of native trees on private land. The correct term for the legislation is the Forests Act 1949, but those involved with the industry usually refer it to as the Forest Amendment Act.

12 See section 5.18.

13 Releasing is the manual clearing of competing plants from around the seedlings.

14 Horgan 1999.

15 Drengson and Taylor 1997, MacGibbon 1999.

16 See s31(c)(i) and the Schedule of the Environment Act 1986.

17 Būhrs and Bartlett 1993.

18 Intrinsic values are not defined in the Conservation Act; however the Resource Management Act defines them as:

"in relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including -

(a) Their biological and genetic diversity; and

(b) The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience".

19 DOC 2001a.

20 DOC 2001b.

21 MAF 2001.

22 "Sustainable use", as defined in the Convention on Biological Diversity, means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

23 DOC and MFE 2000, p 13.

24 ibid p 33.

25 ibid pp 69 ff.

26 MFE 2000.

27 DOC 1999.

28 Roger MacGibbon 2001, pers comm.

29 This type of plant management is characterised by high productivity that involves regeneration of the new crop, from sprouts arising from stumps of felled trees.

30 DOC 2001c.

31 DOC and MFE 2000.

32 SILNA refers to those lands awarded to some South Island Māori under the South Island Landless Natives Act 1906 and are discussed in section 5.12.