EXECUTIVE SUMMARY

CHANGE IN LAND-USE

The Resource Management Act (1991) governs the use of New Zealand’s air, water, ecosystems and built environment. It is also, the key legislation for managing the effects of land use on biodiversity on private land.

Management of biological diversity in New Zealand was ratified under the international Convention of Biological Diversity (1993). A requirement of the Convention is the implementation of national strategies and goals to protect and enhance biodiversity. The New Zealand Government response was the New Zealand Biodiversity Strategy (2000).

Management of biodiversity is difficult due to incomplete data on which to establish trends and predict future outcomes. However, it is widely accepted that biodiversity in New Zealand is in serious decline.

Control of land use activities is vested in local authorities, manifested in land zoning and guided by rules that are specific to the land zoning. Local authorities also have a legislative obligation to manage native biodiversity and implement pest management strategies.

In an international context, New Zealand has the highest proportion (out of 33 OECD countries) of land protected for conservation purposes (33%). More than 90% of New Zealand’s “mountainous” environment has legal protection. This, along with other environments considered to have significant cultural and biological value form part of the public land estate, managed by the Department of Conservation.

New Zealand’s high conservation status allows New Zealand to promote itself globally as “clean and green”.

Biodiversity is predominantly threatened in lowland areas due to greater economic value of the land, higher productive capacity, and multiple land use options.

In “Causes of land-use and land-cover change” (Lambin, Geist, 2007) the connection between the decision making process with respect to land-use, and the decision making context, (ie: environmental, social, economic and political) are explored. Land-use change is always a complex mix and expression of factors that include, time, climate, soils, terrain and broader external influences. The land-use decision is a process of factors that alter the decision-making environment gradually over time, or happen as a single event (eg: flash flood, drought). Major causes of land-use change include: climatic variability, economic and technological factors, changing demographics, the legal environment and access to land, labour, capital, technology and information, cultural influence and globalisation. The decision-making environment requires managerial trade-offs between different (and often competing) land use opportunities. Despite the diverse nature of the cause of land-use change, they conclude, that patterns exist, recurrent interactions that may allow useful comparisons for planning for land-use change.

Planning for land-use change is a requirement of local and regional authorities to successfully manage the land resource. In “Identification and Analysis of Drivers of Significant Land Use Change” (Environment Waikato), analysis of “types of land-use change”, and the expected effect and scale of change on resources is described. Interest from local land owners in land-use intensification and international interest in the effects of land-use change on the environment, were identified as areas requiring further research. The article discusses the “drivers for land-use change” being a result of a decision; a statement of personal motivation, based on values and circumstance (opportunity). The context for land-use change is a mix of global, national, regional and personal influences. Economic drivers include international and NZ commodity prices, and market demand. Legal drivers include Government, regional and local authority policy. Social drivers include individual and community preferences. Technology, land value and climate change are also all significant drivers for change. The rate and scale of change is driven by the economic environment – economics determine viability. However, personal drivers have the strongest influence. As land is a finite resource, pressure for land-use change driven by demographic and economic factors will continue to require identification and policy surrounding land most vulnerable to change.

In “Land: Competition for future use”, the authors state that New Zealand is ranked 3rd out of 27 OECD countries based on land availability per capita. As the global population increases, and land availability decreased, the opportunity for New Zealand as an exporter of primary goods increases. Food demand drives agricultural intensification – causing increased output and increased pressure on environmental resources and landscapes. There is currently, no nationally agreed framework for dealing with land (unlike water-use and water quality). Urban encroachment of high quality agricultural land needs an integrated and national response. In the past 20 years agriculture and forestry land has contracted from 4.8 hectares per capita, to 2.8 hectares. Urban expansion has been at the rate of 4-5% per year. The writers of the article determine that policy development for land-use, due to the finite nature of the resource should be guided by scientific research.

While there are any number of examples of land-use change, Tenure Review of the iconic High Country in particular captures the extremely complex nature of land, tenure, connection, environment, identity, economics, private land-use rights, public access, politics, values, choice and public will, and land-use change. The articles and background information on this subject do not propose to cover the opinions of all stakeholders and wider reading is encouraged.

Land-use change creates employment opportunities that often require a collective or industry response in order to fully capture the economic benefits of change, intensification and/ or improved productivity. The Recognised Seasonal Employer Policy was the government’s response to the increased demand for seasonal employees within the horticulture and viticulture industries.

Other articles demonstrate local authority responses to environmental concerns regarding land-use change, industry responses regarding the environmental impact of land use, opposing viewpoints on land-use change, trade-offs between economic and biodiversity outcomes, alternative land-uses that challenge the norm, the profitability of farming versus forestry as land uses, and the improved environmental outcomes under the East Coast Forestry Project.

“NZ Meat Sector Domestic Trends” presented at the Red Meat Sector Conference 5 September 2011, provides statistical information on trends in land-use, pastoral land area, key-land use changes, economic influences, profitability and industry performance.

The risk of Giardia as an emerging public health risk is considered by Cynthia Winkworth. The article calls for an accurate estimation of the risk posed to public health as a result of land-use conversion to dairying and intensification of existing operations. There is an established link between Giardia strains in cattle and humans in the same geographic location and New Zealand has an extremely high rate of Giardia that is disparate from its socio-economic status. Winkworth maintains that links between land-use activity and prevalence of the disease in humans, warrants a framework to assess the public risk of waterborne pathogens.

Every human activity has an effect on the environment we live in. Each land-use activity has an effect on the environment we live in. Land use, changing land-use, changing land-cover, biodiversity, personal objectives, social values, economic viability, politics, global influences, landscapes, soils, climate, terrain, the finite nature of land, populations, food, demand.....Land Use.