

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**Tenure review:**

**Discourses around sustainable development in New Zealand.**



**Jeph Mathias**

**MPhil Thesis** 2004

**Development studies**



Cover. Central Christchurch lies in the shadow  
of the high country. Southern men loom  
large and tussocky hills perforate the  
skyline.

## Table of Contents

Table of Contents.....	1
Introduction .....	2
Methods .....	5
History .....	8
Table One – Strategies of Stress Tolerance .....	9
Figure One: History funnels us to the present. Filters and constraints limit our possible future .....	22
The Process of Tenure review .....	24
Questions .....	26
1 Is tenure change the answer? .....	28
2 Are freehold and central control the only options:.....	32
3 What spatial scale is appropriate?.....	39
4 Is there an incongruity between axes? .....	42
Figure Two – Biodiversity and axis.....	43
5 What temporal scale is appropriate? .....	44
6 Who is community? Who is a stakeholder? Who is in and who is out? .....	47
7 Who is a farmer?.....	51
8 What is sustainability? .....	53
9 Is the process fair? .....	57
10 What speed do we need?.....	62
11 Is the price fair? .....	63
Discussion.....	66
Table Two - Summary table of questions around tenure review .....	82
Figure Three - History as a funnel with a widened development space .....	84
Alternatives? .....	85
Table Three – Proposed resilience- based leases .....	90
Key Points .....	91
Key points about development in general.....	91
Key points about tenure review .....	92
Conclusion .....	93
References .....	97
Appendix One - Personal comment: .....	101
Appendix Two - Chronology of High Country.....	103
Appendix Three – Key Informants .....	106

## Introduction

*[The high country] is central to the national imagining, carrying multiple meanings within a shared dialogic space – something belonging to all New Zealanders a focal point for....identity” (Dominy 2001:29)*

“I think I have the solution to tenure of the Crown pastoral lands ” said Kevin O’Connor, Lincoln’s retired emeritus professor of grassland management (O’Connor 2004)KI. Through his Sumner home’s north window settling dusk smudged the Kaikouras into grey sea and purpling sky. Bubbles winked at the rim of my glass of tawny Speights. While crisp beer revitalised my cycle weary muscles O’Connor’s wide ranging conversation and eclectic wisdom was doing the same for my mind. Our three hours had thus far spanned tenure review’s early ferment in NZ’s heady 1980’s political climate, how to curry an Arrowsmith tahr and everything between. Now the crucial moment in my research had arrived. Leaning intently toward me, husky voice distilled through years of academia, classics, poetry... and life as a South Islander Kevin declared “Treat Mountains as mountains”(O’Connor 2004) KI.

In some ways this thesis explores that cryptic whisper.

Tenure crystallises the relationship between people and between them and the land (O’Flaherty 2003). New Zealand’s contested social relationships evidently precipitate here. High country colonists 150 years ago wanted to break the shackles of a strongly class divided society. Now some see stations with names derived from Britain supporting a ‘country gentry’ who send children to private Christchurch schools (Dominy 2001). Others argue tenure review will squander vast areas of productive land on the pleasure of rich liberal urban elites (Patterson 2003)KI. Tenure is an arena for competition between New Zealand (NZ) values. Complaints suggesting access to our high country rivers is almost as restrictive as England’s (Millichamp 2003) defences of deeply held values.

*“Will we end up with... public fish and game resources effectively privatised. We’re losing our identity.” Blincoe,J (Hansard 1995).*

Deep similarities with the social landscape, from which our colonisation is derived, are inescapable. Embedded relationships have settled out in buildings and societal structures like tenure. Christchurch, NZ’s ‘tenure review capital,’ is an oak-lined reflection of old England, its Anglican cathedral boxed between leafy avenues

named after great English colonists Bealy, Fitzgerald, Moorhouse and Rolleston. Yet this is not rural nineteenth century England. Snowy mountains perforate the skyline of this neat garden city as English mountains never will. The landscape ecology and global context are distinct. New discourses appear in old dialogues. Sustainability, not in Moorehouse's lexicon, underpins the Crown Pastoral Land Act (1998) (CPLA) (Hansard 1995; Hansard 1998a; Hansard 1998c; Hansard 1998d; Martin 1994). Global and national awareness of changing relationships between humanity and Earth, (e.g. 2002 UN conference on sustainability and 991 Resource Management Act) influence how the remote high country is partitioned. Tenure review cuts deeply into the NZ psyche - asking questions of who we are, our societal relationships, sovereignty, political process and our relationship with an isolated, mountainous land.

I begin with the history of European farming of the eastern flanks of the South Island Alps, showing what led to today's tenure review. The body of the thesis examines the questions at this point where we presently stand. These questions, what people consider worth contesting about tenure, constitute today's development space. What is impossible to change (e.g. landform) is incontestable. Managers can modify their environment e.g. fertility but not slope and aridity. They have to adapt management to prevailing climatic limitations (McKendry and O'Connor 1990:41). Accepted axioms (e.g. maintaining production in a global market) are uncontested. History resolves questions that can be asked within those parameters. The questions define the future we construct and our trajectory towards it. The wider the development space (the more 'askable' questions), the more possible trajectories can be created. The role of development might be more to widen the space for dialogue than to define and implement solutions within that dialogue. New concepts like sustainability particularly need an expanded development space to truly modulate our trajectory.

The questions I identify fall into two broad categories- related to the content of tenure change and the process by which those changes are enacted. The discussion analyses the meaning of these questions of content and process. I find interest groups competing in either/or games- e.g. land as summer pasture or high country conservation estate. In the middle Land Information New Zealand (LINZ) (and ultimately the minister of Crown Lands) try to balance orthogonal interests (Clark 2004)KI. A theme of this thesis is constructing the future with tools from the past (Holland 2004)KI. For instance a parliamentary system evolved in England at a time of resource exploitation used to produce law in a world of ecological unsustainability. The culturally bound confrontational style of debate from polarised positions might be

efficient but possibly filters out important and subtle possibilities created by prolonged negotiations between people. Many other cultures use slower decision making processes. If Western land management decisions are somehow optimum, I ask what is optimised. Sustainability, from empirical evidence, is not among the answers. A new trajectory needs new tools, but sequential parliamentary commissions reach into the old toolbox. One of their solutions is Science: e.g. "It is most important that the issues confronting sustainability in the high country are translated and prioritised into the relevant scientific questions (Martin 1994:57) also see (Hughes et al. 1991; Hughes et al. 1995). Tenure change is an old tool too.

Development space can be as broad as human imagination. I try to frame new questions that capture informants core concerns, realign them less confrontationally and integrate novel concepts. Actively searching other cultures for what they might teach us is part widening our vision and thus development space. A holistic goal (Savory and Butterfield 1999) with stakeholder buy-in might avoid single issues dominating our direction. Increased dialogue and wide vision might throw up subtle possibilities to evolve into sustainable elements of our future direction. Tenure Review might be the best solution in a restricted development space. Critiques should focus on the space rather than the process itself.

The thesis finishes with a definition of development as "defining a desired future by capturing and aligning interests through unasked questions and constructing it with appropriate tools". The difference between that and tenure review today is the difference between walking backwards or forwards into the future. Defining what must be done and choosing specific tools is more logical and less natural than grabbing the old toolbox that's worked before (on unrelated jobs).

In this new definition, development facilitates discourse rather than produces solutions. Solutions come from stakeholders. To illustrate I introduce ideas suggested by key informants to indicate unconsidered alternatives exist. The scope of this thesis cannot incorporate solutions. That is not the role of development in any case. I only identify some 'blocking axioms'- unquestioned constraining assumptions. My diverse, passionate and highly skilled informants in shared dialogue would define what it means for New Zealanders to "treat mountains like mountains".

***"To allow thought to be bounded by social context is not to think philosophically, and yet to be human is to be linguistically and historically enframed," (Heidigger in (Oelschlaeger 1991:9)***

## Methods

A central concept of this thesis is that process is content. End points of development are hugely constrained by how we construct them. Equally for research. How I explored and widen tenure review's development space affects what I found.

I dispensed from the start with uninvolved objectivity. Like my informants I am passionately connected to my subject in multiple ways: New Zealander, ecologist, alpine climber, fisherman, hunter, development studies student, Forest and Bird member, ex -landowner etc (Appendix 1). Most informants also identified at least one major area they knew little about.

My approach was personal, deep and iterative. Traditional research: - a literature review, defining the questions, appropriate information gathering methodology, primary data collection and valid analysis - is good at finding answers within the existent development space. I avoided predefining a research question for fear of finding an answer to my question- unsurprising, neatly framed and bounded by my imagination. I reject searching for 'answers'. I identify questions and their possible meanings. I began with in-depth, open ended key-informant interviews and proceeded iteratively. Reading was stimulated by and followed my interviews. Informants led me to the newspaper, Leopold's classic "Sand county Almanac" (Leopold 1949), "New institutional economics", (Furubotn and Richter 1997), historical writings(e.g. Burdon 1938)., NZ biodiversity strategy (Department of Conservation 2000) and much more. In second and third conversations I often brought up ideas from other informants or from my reading. I was consciously trying to widen the discourse and put myself in the middle of it. My analysis, like my primary information, is qualitative and subjective. . I wanted to tentatively draw the questions into unexplored development space to see what possibilities might be generated.

I live in Christchurch, alongside many important informants. Starting in the centre-LINZ – I identified key informants and arranged interviews. (Appendix 4) All but three were face to face. The interviews were semi-structured in that I asked everyone two questions: – "What do you think the high country will look like in 50 years?" and "What do you want it to look like in 50- years?" I also arrived with specific ideas from other informants. However the structure was loose. My key informant interviews were typically between one and four hours often in the homes of the informants. These are



ideal conditions to explore meanings rather than simply identify questions. Subtleties, un-thought ideas, off-hand comments, philosophical musings are all relevant. As a doctor I take medical histories from perhaps a tattooed gang member, an elderly lawyer with a fractured hip, a scared six-year-old with pneumonia or an intoxicated rugby player. Now I was taking land tenure 'histories' from diverse, passionate New Zealanders. I was trying to hear deep unvoiced questions not find objective truth. Subtext is as important as text in sensing concerns feelings attitudes unvoiced ideas etc. Hearing about someone's family was as relevant as their economic theories. Disclosing myself to my informants helped in establishing rapport... Overall I spoke to 26 key informants. It was fascinating, a true privilege.

The context of meetings is very relevant. We talked in informants homes, my home, their offices, a high country station up the Rangitata, Christchurch cafes, a Geraldine garden oscillating between ecological philosophy and the simple immediacy of an informant's four year old.... My research method aims for deep disclosure based on establishing a relationship of trust and understanding between two human beings.

I then tried to widen my understanding of the content and texture of the discourse. A major source is the popular press. Newspaper editors identify current questions in the public domain. For Tenure review this particularly applies to Christchurch's newspaper 'The Press'. Another primary source was the entire text of Hansard related to CPLA. Politicians are professional assimilators and voicers of questions in voting New Zealanders minds although, as I point out, these are filtered through party ideology. I then read academic literature to deepen my understanding of the discourse. This thesis led me into many surprising research areas.

***"New Zealanders told me, and they told the National Party in the ballot box, that property rights are very important to them " Jennings, O. in (Hansard 1998a) 7 May.***

Throughout I had second, third and fourth interviews with informants, face to face, by phone or e-mail. I felt phone or e-mail dialogue with people who already know who they were talking to is valid for my research aims. I was amazed and grateful for the huge amount of time and effort all informants spent with me. Interviewing passionate New Zealanders about an issue close to our hearts was a huge privilege.

Gathered information is always interpreted. I do not try to minimise the impact on the quality and content of the concluding ideas of who I, the interpreter, am (Appendix 1).

I claim no objectivity, simply suggesting the possible value of opening up various spaces for the resolution of particular ideas or concerns. Development, under pressure to decide on aims and implement projects, often operates within paradigms (Kuhn 1970; Oelschlaeger 1991) with invisible, impenetrable walls.. What limits development space (i.e. possibilities) is always important, especially from the middle of a 'hot topic' that is evolving. Openly 'qualitative' research is an essential adjunct to formal research methodologies in development.

In summary my qualitative methodology proceeded iteratively without pre-set questions from semi-structured in-depth key-informant interviews. It is not objective. All conclusions can be contested. I claim only to have explored a currently evolving discourse (rather than its results). A major conclusion is that (passionate) stakeholders with space to understand and constructively re-frame their questions construct solutions. Questions are re-interpreted by dialogue between people, not just competition between their ideas. Development sufficiently widens the ambit of discourse to facilitate constructive (vs. adversarial) dialogue between stakeholders.

Finally a comment on presentation. My subject is 'discourse'. Real discourse involves actual words and a fusing of horizons between listener and speaker. I even conceptualise history as a human/land 'dialogue'. I try to present an evolving dialogue rather than a traditional methods-results-discussion-conclusion format. Each question is interpreted in light of a widened discourse before the discussion. The body of the thesis presents questions I actually heard and questions I interpret into what I heard. Some re-interpretations came from informant's words, others from trying to interpret their feelings. Sometimes I had to search the literature to gain alternative angles on the content of informant's concerns. Mine are not unique, 'correct' interpretations. The discussion tries to link my understanding of the meaning of the interpreted questions. By speaking to many informants and exploring their words by reading I accessed myriad angles into tenure. Like facets on a gem each derives from the same centre but reflects it differently. I aim to present the complete stone in the full light of an open space. . Key informant comments are indicated by KI after the reference. Quotes, often apparently contradictory, from literature or Hansard intersperse the text, to give a flavour of what people are talking about and what they might be.

## History

*"In reality tenure review has gone on for the past 100 years." (Patterson 2003)KI*

*[tenure review] "...the last point in which boundaries are set and the last great carve-up, it will not be the end of the matter" Hodgson,P in (Hansard 1998a)*

Tenure review continues human's evolving relationship with the land expressed through farming practise and institutional adjustment. Rather than a simple human chronology I regard history as a continuous dialogue between the land and its human occupants. For a simple chronology see Appendix 2. I believe a key element of sustainability is the ability of humans to hear and respond to questions the land asks not just impose 'improved' human partitioning and management.

New Zealand is the most isolated significant landmass. The Southern Alps, a linear barrier almost perpendicular to the prevailing winds, create a moist West Coast and a dry East Coast in its rain shadow. The fault that throws up the Alps is still active and the landscape dynamic, consisting of steep unstable greywacke slopes, deep valleys and braided rivers with wide flats around them. East of the divide limiting factors to plant growth are temperature and snow in winter, organic matter in the soil throughout the year and dryness and nutrient runoff in summer caused by rapid runoff from steep land. The original vegetation was not only tussock, but also included areas of beech, podocarp in moister areas, and woody shrubs like matagouri (Walker et al. 2002). It was a mosaic of plants using different life history strategies to secure resources (Hughes et al. 1991)

A continuously changing disturbance regime superimposed on the geography influences the competitiveness of each strategy. Tussock might be selected over beech and later be out-competed and invaded by matagouri. Biologically the vegetation that humans met is what had been selected by the combination of landscape, climate and disturbance regimes. Grime's widely accepted analysis divides selective pressures along two axes- stress and disturbance. (Grime 1979) Stress refers to inherent environmental factors that make resource acquisition difficult for plants (e.g. dryness, low nutrient content etc.) Disturbance refers to the frequency and amplitude of conditions varying outside 'normal'. (e.g. temperature changes, flood, and fires).

Selected strategies can be visualised:

**Table One – Strategies of Stress Tolerance**

Intensity of disturbance	Intensity of stress	
	low	High
low	competitors	Stress tolerators
High	ruderals	No strategy

Stress tolerators are typically long lived with slow growth, investing heavily in mechanisms to garner resources from difficult environments (think of a cactus). There are plenty of niches so rapid colonisation and growth is not selected, survival is. Ruderals' rapid lifecycles and small size allow utilisation of resources from inter disturbance periods and dispersal and re-growth after a disturbance e.g. Hieracium. Competitors invest most in acquiring resources more rapidly than other plants and little in combating stress or disturbance. Disturbing high stress environments without reducing stress selects out all plants. Consider bare high-country ground this way.

Pre-human the high country disturbance regime was towards the lower end of the disturbance scale. Steepness, dryness and poor soil selected stress tolerators. Tussocks are plants with slow reproduction, deep roots and moisture and nutrient retention strategies, i.e. stress combat strategies. Tall tussock yield water through reduced evaporation and interception from fog and are physiologically adapted to exploit seasonal surges in mineral nitrogen released by freeze/thaw of the subsoil capturing valuable nitrogen into the grassland system The whole vegetative community is co-adapted. Other species exist because tussocks' useable minerals and moisture modify micro-environments. Tussocks as heat conductors, melt and break up snow thereby freeing shorter inter-tussock plants from the cover of winter snow (Harding 1995) is a surprising illustration.

***Climate landform and cultural history interact to give the vegetation pattern observed. (McKendry and O'Connor 1990:41)***

The difference between dramatic New Zealand mountains and rolling English hills is vast. So are differences between the tussock life-history strategies and perennial grasses that English farmers were used to managing. Tussock grassland has many

of the characteristics of a forest and few of those of a short rotation pasture. Like a ***“Everybody lives next to someone who has stuffed a pastoral lease” (Stafford Smith et al. 2000:191)***

forest, it is the product of a long slow development and like a forest it is much easier to destroy than rebuild (Moore 1956). Plants selected by a high stress environment without mammals were now subjected to humans whose management techniques, evolved on Northern Hemisphere perennial grasslands, included intense disturbance like fire and heavy mammalian grazing. Colonists 150 years ago who certainly did not understand the complexities of the new system they were managing. Management mistakes were inevitable (Stafford Smith et al. 2000). The non-resilient system made degradation unavoidable: Degradation was “not a question of whether mistakes happen... rather how resilient the system is to them” (Stafford Smith et al. 2000:193). Seeds of tenure review were sown with those early attempts to farm the high country.

Our ecological understanding is better now. Many suggest we have, or soon will reach, sufficient knowledge for ecologically sustainable management. (E.g.(Hughes et al. 1995; Martin 1994; Smith et al. 1994)) This point will never be reached anywhere (Banks 2003a) Essential characteristics of the resource(Banks 2001) make it particularly unattainable here. Resilience is particularly difficult for science to capture because some its components are outside its ambit others are too complex. The steep dry high country under western production and neo-liberal economics is particularly non-resilient. Non resilient, complex systems are susceptible to steady, irreversible declines (Busso 1997).

***“Resilience is not confined to biophysical parameters but arises from the interaction of these with the social and economic systems.”(Stafford Smith et al. 2000:193)***

Essential characteristics of semi-arid rangelands and western economic systems rather than anything specific to the NZ high country might make degradation likely. Consider how closely this analysis of Australia fits here: “rangelands are spatially complex, variable to the point where reactions to disturbance are often unpredictable and generally uneconomic to rehabilitate once damaged. Areas of rangelands are inherently prone to degradation through management mistakes. Further economically optimum short-term stocking rates are often well above what the environment seems able to tolerate in the long term. Pastoralists graze heavily because it pays to do so;

but this is ultimately an institutional problem, not the fault of the pastoralists. (Stafford Smith et al. 2000:193)

Ecologically the human impact altered stress and disturbance characteristics and thus species composition. Fire and grazing-intense disturbance regimes- remove plant biomass. Adding fertiliser and enclosure with fences reduces stress of nutrient deficiency. Farming can be described as managing high stress, low disturbance towards low stress high disturbance systems (McKendry and O'Connor 1990) and trying to maximally convert the extra biomass into a valuable commodity. The changing flora since colonisation of the high -country is, ecologically, a response to altered disturbance and stress regimes.

***The rabbit problem and the Hieracium problem are largely a result of bad land management (Fitzsimons(Hansard 1998c).***

High-country history is a human/land dialogue: Humans continually ask “How much can this land produce if we minimise stress via tenure, settlement, fertiliser an other technology?” The land slowly answers through altered species “disturbance is more significant than stress to this system”.

Wakefield's model was to freehold land at a sufficient price to fund public works. While applicable on the lowlands new settlers were reluctant to sink limited capital into land distant from the new towns. Governments were compelled to lease it instead.(Sinclair and Dalziel 2000) because in settlers' minds “the inaccessibility.... meant heavy expenses and a hard semi-civilised existence and agriculture was at that time out of the question . This being so to buy land ... in the distant pastoral districts would at that time have been considered the act of a fool” (Burdon 1938) p57). The pastoral lease first emerged in as a device to entice settlers on the high country (Welham 2003) allowing them to convert capital into stock rather than land.

Colonists brought a culture and farming practises developed principally in nineteenth century Britain with mammalian grazing as the mainstay to plants unadapted to mammals. This is still significant in attempts at co-management (more than one goal e.g. farming and conservation on the same land (Walker 2004b)KI.

Low population, transport difficulties and severe geography made settlement difficult. The pattern of colonisation was partly geographically enforced, partly culturally

modulated. Kashmiris would have become nomadic herders roaming across undivided hills (O'Connor 2004) KI. They are mountain people. Bangladeshis might have terraced the wet West Coast. English settlers established gabled homesteads in valleys of rivers flowing east from the divide and seasonally allowed sheep to roam high tussock grassland. This phenomenon- geography rather than optimum production dictating colonisation- is well known. "Ricardo held that cultivation spread out from the best land, in the New World it often began with the worst- on the best land more trees had to be cut down before getting at it." (Galbraith 1977:41). Retrospectively it is always obvious that perfect information and optimum strategy never inform development. From where they stand- culturally, technologically and scientifically- people use the tools they have as best they can. Today new institutional economics emphasises the perfectly informed free-market, despite its ideologues claims, remains an unrealistic abstraction (Furubotn and Richter 1997). However the 1998 CPLA's economic ideologues argued as if perfect information were at hand.(e.g. Prebble Hansard 1998 a,b,c,)

Seddon shifted policy towards smallholdings but on the marginal high country large stations persisted. The early planners urgently tried to attract settlement on remote, non-productive land- (so-called wasteland.). The exact form of tenure was not critical. (Sinclair and Dalziel 2000). Paradoxically at this stage from the 1850s to 1870s great prosperity was enjoyed. Stock units increased in central Otago by 247% between 1861 and 1871 reaching their zenith in 1878 These very high stock levels were achieved by effectively 'mining' the native tussock grasslands. By 1950 'unimproved rangelands of central Otago supported only 10% of the stock carried in 1880! (Harding 1991).

***"I remind the House that the Land Act does not give lessees perpetual rights to low rents. It gives them perpetual rights to renewable leases, but not to the peppercorn rents they have been paying. This Bill cements in place those highly concessionary rents and the farming practices that go with them" (Fitzsimons,J.(Hansard 1998c)***

Burning was common, the hinterland for summer grazing seemed limitless and people (rationally) continued increasing stocking levels. Though they may not have known the ecological services they were damaging these farmers were doing what farmers, no humans, still do all over the world - discounting the future for short term benefits. (Clark 1991). Their high disturbance regime - burning- released a nutrient pulse that immediately ameliorated one of the limiting factors of plant growth.

Periodic burning moves a nutrient deficient high stress, low disturbance environment to a high disturbance environment with high nutrients (i.e. less environmental stress). Unpalatable older growth, converted into a pulse of organic matter, became lush new growth, healthy sheep and ultimately bales of fine wool. Lady Barker describing “the exceeding joy of burning”(Barker 1870) appreciated the effect.

Barker never heard the land’s answer later. Most of the nutrients were lost downhill. At steady state, (i.e. sustainability) nutrient inputs must equal outputs. In her day farming was not at steady state. Analyses show repeated burning and grazing deplete snow tussock nutrient reserves. (Williams and Meurk 1977) post burn recovery is most sustainable and fastest if grazing does not follow fire (O'Connor 1974) and vegetative growth of burnt snow tussocks may take up to 14 years to equal that of unburned plants (Payton and Mark 1979). Studies indicate that burnt plants never regain pre-fire height. Invasion of shrubs in periodically burnt tussock grasslands may indicate a disturbance tolerant strategy is selected (Espie 1987) In the Mackenzie basin and upper Rakaia persistent burning and grazing demonstrably facilitated changes in the grasslands. (Connor 1964; Connor 1965). Land degradation, declining biodiversity and invasion by rabbits, hieracium and other disturbance-adapted species began during Lady Barker’s halcyon station life.

***“Plant productivity and vegetation processes reflect the relative cost and benefit for each biotype of its characteristic pattern of resource acquisition and utilisation, over other species in its evolutionary habitat,” (Scott in (McKendry and O'Connor 1990:46)***

Geography and biology underpin human cultural evolution (Diamond 1997). Decreasing productivity would eventually drive changes. By the early 1870s a combination of ecological decline falling wool prices, and rabbits began the first major decrease in return from pastoral lease lands. Land degradation became a recognised problem and insecure tenure seen to be the cause. The response was the first major national land act of 1876, which set 10-year leases with favourable rent and allowed pre-emptive freehold of 320 acres around the homestead. It proposed auction at the end of the term. (Broad 1995). The term of leases was extended to 21 years over a series of acts

The land’s ecological answer to decades of unsustainable ‘nutrient mining’ (Harding 1995)— visible degradation- was first answered by altering tenure laws. Today’s CPLA might be similarly described. Continued pest invasion was later met with the



1892 act requiring gorse control and rabbit control (Barnett 2003) The dialogue of ecological questions and human answers was well under way. Neither now nor for the next 110 years has the question of why gorse and rabbits were invading arisen.

An answer to that question relates to 'resilience' (Stafford Smith et al. 2000). Resilient areas can be highly disturbed and continue production. Fragile areas, high productive potential notwithstanding, respond to disturbance with degradation. High-country history is progressively defining the maximum altitude to which western pastoral farming is possible. Landcare's 2003 map (Manaaki Whenua 2003) uses modern technology (e.g. LENZ) to divide Crown Lease lands into 9 classes of agricultural productive potential. This presents in highly refined form results to date of this 150-year-old experiment.

***"A licence to pasture stock carried with it no right to the soil... but those holding licences could not be expected to live the lives of Asiatic nomads nor could they be expected to improve their flocks if they were liable to be turned out of their homes at a moment's notice. ..."* (Burdon 1938:66)**

Over the 20 years from 1892 the government promotion of closer settlement included breaking up and freeholding large stations (e.g. Cheviot). This largely failed because there were few buyers (Sinclair and Dalziel 2000). By 1913 a new act gave a right of renewal of a 21 year lease – showing growing acceptance of long term tenure as a solution to the problem of investment in 'husbandry of the land'. (Barnett 2003) Over the next decades the term of lease was increased again, offers of freehold title made and largely rejected and a soil conservation authority established. A high country committee of federated farmers was a subsequent reaction shortly afterwards (Broad 1995). Competition between high-country values through competing interests groups continues to this day. Ultimately a law (the 1948 Land Act) tried to amalgamate and balance those interests. Today's solution identically tries to "balance competing interests" (Clark 2004; Hansard 1995, 1998a, b, c) KI The 1948 Act allowed permanent right of renewal of a 33 year lease with set rental but imposed 'good husbandry' on the leaseholder and gave no rights to the soil. The act effectively changed leasehold into permanent tenure (Barnett 2003). Section 99 of the Land Act 1948 says Crown land under pastoral lease must be "properly farmed" using the rules of good husbandry" and kept "free from wild animals rabbits and other vermin and comply with the provisions of the Agricultural Pests Destruction Act. However these provisions have not prevented a loss of vegetative cover on the land nor build

up of damaging populations of rabbits. If disturbance tolerant species (vermin) are the land's response to 'proper' (i.e. maximally productive, culturally western) farming (managed disturbance) the act itself asks farmers to simultaneously achieve two contradictory aims. The logical impossibility required changing farming goals and methods or changing the act. (Hughes et al. 1995:52). The 1998 CPLA [CPLA1998 #313] takes the second of the options above (changing the act via tenure) perhaps because the extent of culture change required for the first is beyond what members of parliament can produce.

***In the golden years of the 1950s Alan Innes would lead his horse through waist deep tussock on the McKenzie Country..."wet to the waist" they'd say of a dewy early morning muster...(Cronshaw, 2004 a)***

The 30 years following the 1948 act were the high point of pastoralism. Permanent tenure with trespass rights did stimulate investment against rabbits and erosion. This were supplemented by government subsidies. Pastoralism was evolving towards more intensive pastoral farming. Top-dressing, over-sowing, fencing and 4 wheel drive access demonstrates this evolution [O'Connor, 2003 #250]. This evolution continues. Innovative farm management, income generating schemes from farm-stay guests (Hayman 2003b) to commercial recreation (Aubrey 2004a) and biological control of rabbits and hieracium (Cronshaw 2004b) show today's farmer integrating ecological conditions into the local and global context to maximise output. Over these decades that the improvements were relative rather than absolutely sustainable became obvious. Deep land questions (Leopold 1969) rather than being solved were avoided by technological solutions. Faith in science and technology continues. E.g. last year's detailed vegetative cover map (Newsome et al. 2003) or Smith's recommendation to better match research priorities to national policy goals and support these through funding. He says we do not necessarily need more science but more useable science and research driven by policy concerns." (Smith et al. 1994)

I see high-country history as slow ecological questions answered by rapid human responses like top-dressing, over-sowing and aerial drops of 1080. 1950s dollar for dollar subsidies to kill rabbits, 1960s tax incentives and subsidies and investment in RHD to control rabbits. The deep land questions are related its resilience against intensity and frequency of disturbance. However farming is imposing a managed disturbance regime to reduce stress and optimise output. Cost outrunning return (McKendry and O'Connor 1990)) imposes the only limit to disturbance. I.e. in our

system humans can only respond to land questions that can be translated into economics. This ensures firstly a lag between ecological damage and farming response, and secondly that market failures never elicit changes in farming practise.

***“It would appear that over three generations of occupancy especially in the back county each generation has had to have the lesson of rabbit infestation driven home with attendant hardships and frustrations” ... Bill Chisholm , manager of Molesworth (Mckaskill 1969)***

We know repeated burning or other forms of intense disturbance (e.g. maximal stocking) result in degradation unless nutrient depletion is reversed by ‘ rejuvenation’ (Williams and Meurk 1977) Moving stock off pasture is a temporal disturbance reduction strategy nomads have always understood. Despite cultural obstacles and legally enshrined property this country’s colonists had discovered seasonal partitioning of grazing. Tenure review promotes permanent tenure for intensive farming on land capable of year-round production. It blocks cultural evolution towards strategies like nomadism which recognise resilience is critical, and varies seasonally.

Non-resilient land asks disturbance questions. Humans answer in ‘another language’ because a culturally selected suite of farming strategies largely consists of inputs and technology to decrease stress (Harding 2004) KI Subsequent short-term gains are interpreted as justifying the farming answer without addressing disturbance. “Some factors are susceptible to better extension, investment or better participatory research. However these traditional solutions often represent a focus on symptoms rather than causes”(Stafford Smith et al. 2000:192).

Topdressing, saviour of the 1960’s illustrates. Phosphorous is perhaps the high-country’s rate-limiting nutrient. Phosphorus lost during disturbance is not replaced in the biotic cycle unless fresh rock is introduced.(Williams et al. 1977) Declining production would have forced consideration of disturbance (i.e. farming) except planes began deliver Nauru’s phosphate. Immediate significant improvement in stocking and good international prices financially validated the strategy. Replacement of stress tolerators by disturbance tolerant plants continued unanswered. Today’s search for biological control of hieracium (Cronshaw 2004b) continues the same dialogue- scientifically avoiding ecological questions.

***“ when a soil loses fertility we pour on fertiliser to at best alter its tame flora and fauna without considering the fact that its wild flora and fauna which built the soil may likewise be important in its maintenance” (Leopold 1949:279)***

New stakeholders were evolving during farming's peak in the 60's and 70s.(Broad 1995) The New Zealand high country is located in a socio-geographical context. Improved infrastructure and access with increase prosperity allowed an environmental movement to begin growing from the 1970s. New stakeholders began to claim previously inaccessible hinterland.

***“Traditionally we have thought only in terms of productive farming values of pastoral leased land, but all that is changing” Herlihy,G in (Hansard 1998a)***

The Federated Mountain Clubs (FMC) and Forest and Bird became increasing voices in the high country. Access fuelled their sense of visual and spiritual ownership. (Dominy 2001) Though they lived in cities their members express connection with the mountains that inform their identity (Sinclair 1986). Even the city dweller reading poetry at his fireside asserts a spiritual connection with the mountains (Bennett 2003b; Hayman 2003b). Paradoxically recreational groups grew on prosperity derived from an agricultural/productive vision they now oppose. The Department of Conservation was created at this time indicating changes in the values the government felt it was institutionally obliged to protect.(Broad 1995)

***“The fact of the matter is also that community values have shifted over the years from the times when pastoral licences were issued” (O'Connor,D in(Hansard 1998a)).***

***“The Crown is absolutely within its rights to decide that in the 1990s it is appropriate to take into account the conservation values of the land, even though those things were not widely considered in the 1940s.” (Fitzsimons,J. in (Hansard 1998c).***

The political climate of the 1980s moved towards a government philosophy of divesting itself of assets and phasing out subsidies. The most marginal pastoral lands, previously splinted by subsidies “were brought into shaper focus” (Barnett 2003:4). Multiple stakeholders and decreasing will for central management produced turmoil. Parliament felt the need for a law that could achieve multiple objectives (Harding 1991). Parliamentary enquiries and reports were commissioned from the Clayton report (1982) to the Martin Report (1994) which strongly suggested tenure

change could absorb diverse values by integrating them into a single equation. Some of the new pressures are;(Harding 1995)

- ◆ Sustainability as a nationally and internationally important discourse
- ◆ Conservation including concepts of species diversity representativeness and ecological sustainability not contained in the 1948 land act.
- ◆ Tourism as a bigger national earner than agriculture
- ◆ The sweeping high country acknowledged for its scenic and landscape values.
- ◆ Revenue is less than the cost of administration of Crown lease
- ◆ Recreation as a strong lobby
- ◆ New profitable uses of the high country like eco-tourism and forestry.

***“The major environmental problem that confronts rural communities in Central Otago, Mackenzie basin and parts of Inland Marlborough is not rabbits but hawkweed. It is the problem of seeking to sustain families and local communities at current levels when the land resource base on which their pastoral economy is based is diminishing through increasingly severe degradation” (Martin 1994:3)***

The similarities with the genesis of the 1948 CPLA are striking. Complexity is perhaps increased today by more stakeholders, arguably more advanced ecological degradation and an international climate adding sustainability to traditional dialogues of maximum production. However the conversation has been heard before- land degradation questions and human answers via tenure laws and scientific hopes. This culture continues its traditional methods to capture and resolve the continuous dialogue with nature.

***The Crown actually has an ability to learn from and to deal with these issues, whether or not it has in the past (White,J , Hansard 1995).***

Episodic argument and resolution during crisis is typical of our decision-making. Perhaps this is more efficient than protracted dialogue and consensus. Parliamentary debates are initiated at the cusp of a crisis and carried on by our society” experts in adversarial dialogue (politicians). Adversarially aligned, mediated by rules and with an adjudicator, members argue over lasting solutions and move on. Few have close connections with the land. All have ideological affiliations. Voting during the parliamentary debate over tenure review was always along party lines (Hansard

1995; Hansard 1998a; Hansard 1998b; Hansard 1998c; Hansard 1998d) Meanwhile . the land continues to ask slow questions.

The 'solution ' in this case is a specified adjudicator (LINZ) and rules for further adversarial contests between interests. A newspaper accurately describes one review as "Balmoral Battle"(Welham 2003). Another overview is titled "Tenure tensions' (Hayman 2003b) Key-informants often spoke negatively to me about others whom they had not talked to. Rejecting ideas by belittling people was also demonstrated throughout the parliamentary debate.

***"Farmers argue the land... was freeholded in 1948 under the existing Act, and really they already have virtually the whole bundle of rights that freeholding would represent," (Blincoe (Hansard 1995)***

The land that solution is applied to today, is almost entirely modified under 300metres altitude. It is largely unmodified and Department of Conservation (DoC) controlled over 1000 m. Between, a mosaic of modified, partially modified and unmodified land is today's battlefield. Species and micro-environments are also a mosaic: short tussock, snow tussock, red tussock, sub-alpine shrubs, and herb fields cushion fields, fell fields and wetlands variably invaded by exotic trees shrubs and hieracium.(Hughes et al. 1995) Stock units on this contested land have oscillated downwards: from a high o 12 million in 1890s to 1 million in 1950s. 2.5 million in late 80 s and now declined. .(Martin 1994:33) The biggest loss of biodiversity is unsurprisingly on the totally modified lower altitudes(Walker 2003)KI(Rogers and Walker 2002). The highest recreational values are higher up though access is required(Wesley 2003)KI(Mason 2003)KI(Sage 1995). Pastoral farmers would like continued access to the tops at least intermittently,(Anderson 2003) Intensive agriculture is suited to and looks to capture the lower land (Manaaki Whenua 2003).

***Environmental management is becoming more holistic and integrated as we recognise our relationships with other organisms and with the environments in which we live (LandcareResearch 1998)***

The future of tussock grasslands is a function of the ecological processes prevailing in each habitat and cultural modification of those processes, (Hughes et al. 1995). The right to cultural modification has become a contest between productive pastoralism and newer options including intensive farming, tourism, conservation,

recreation and many others. Some of the land being contested cannot withstand the high disturbance regimes imposed on it, other land can but not while simultaneously maintaining the endemic flora (Walker 2003) KI. The 1998 CPLA is an attempt to solve divergent values and meanings of the high country on in a single equation. It could be described as a 'command and control' central solution to a peripheral problem of 'people and nature'.

***Commercially operated rangelands are coupled systems of people and nature. The biophysical components include: the reduction and recovery of potential primary production, changes in grass production per unit or rainfall, changes in woody plants dependent on the grazing and fire regimes an livestock and wool dynamics influenced by season condition of the rangeland and wild and feral animal numbers. Command and control approaches are bound to fail (Walker and Janssen 200:724).***

LINZ is invested with the responsibility of redrawing the map to demarcate areas interest groups should exclusively pursue their interests. It is a big job. Barnett's claim that win/win is possible for the high country (Barnett 2003) probably only means that FMC values need little realignment to coincide with other major stakeholders. Conservation and farming seem to be closer to mutually exclusive-" If conservation goals are principally landscape or physiognomic they may be possible to achieve under continuing pastoral use. If conservation values include floristic or ecological elements exclusion of livestock may be necessary for such nature conservation gaols" (McKendry and O'Connor 1990:66). Matthew Clark, from the middle of the process only sees unhappy people "whose glasses are all half (or more) empty" (Clark 2004) KI.

***(The high country) "is pastoral farming at the limits" (Martin 1994:8)***

***" This is a story of land, of tussock grasslands and mountain lands; it is also a story of people." It is a story of how the vegetation was damaged so that it became a tattered remnant more suited to sheep then sheep made it more suited to rabbits... and leave the mountains groaning to the movement of scree and shingle fans. There is no real evidence that the heritage due to posterity was thoughtlessly squandered, nor the consequence of rapacious exploitation of the land by irresponsible and conscienceless runholders. (Mckaskill 1969:14).***

The history of the high country is about co-evolution of land and communities at the limits, it is about lessons learned, re-learned and lessons not yet learned yet. Tenure

review in the 1998 CPLA is an episodic decision from Wellington in the style typical of this culture. On the hills a continuous interaction between land and people moulds each to and by the other. Sustainability demands Western cultures try to force hills into our systems less and shape itself to them more. This concept is almost impossible to grasp. My major conclusions are about how we can leave space- development space- for lessons we have not even reached. Eighty –year old retired runholder Alan Innes remembers golden years when dewy snow tussock, perhaps 50 years old, brushed his horses steaming underbelly. Even today he doesn't consider how his sheep helped tip the competitive balance in favour of low-growing *Hieracium* sp, today strangling the same expansive McKenzie country. (Cronshaw 2004a)

***The Grassmere of those first ten years has gone, never to return. Changing social and economic conditions, soil conservation, aerial topdressing, extensive cultivation subdivision even irrigation have changed the place irrevocably,. The motorcar and unlimited leisure have destroyed the splendid isolation of our kingdom. But none of these things can destroy its beauty nor remove the element of struggle, which must always exist in its harsh environment (McLeod 1980:220).***



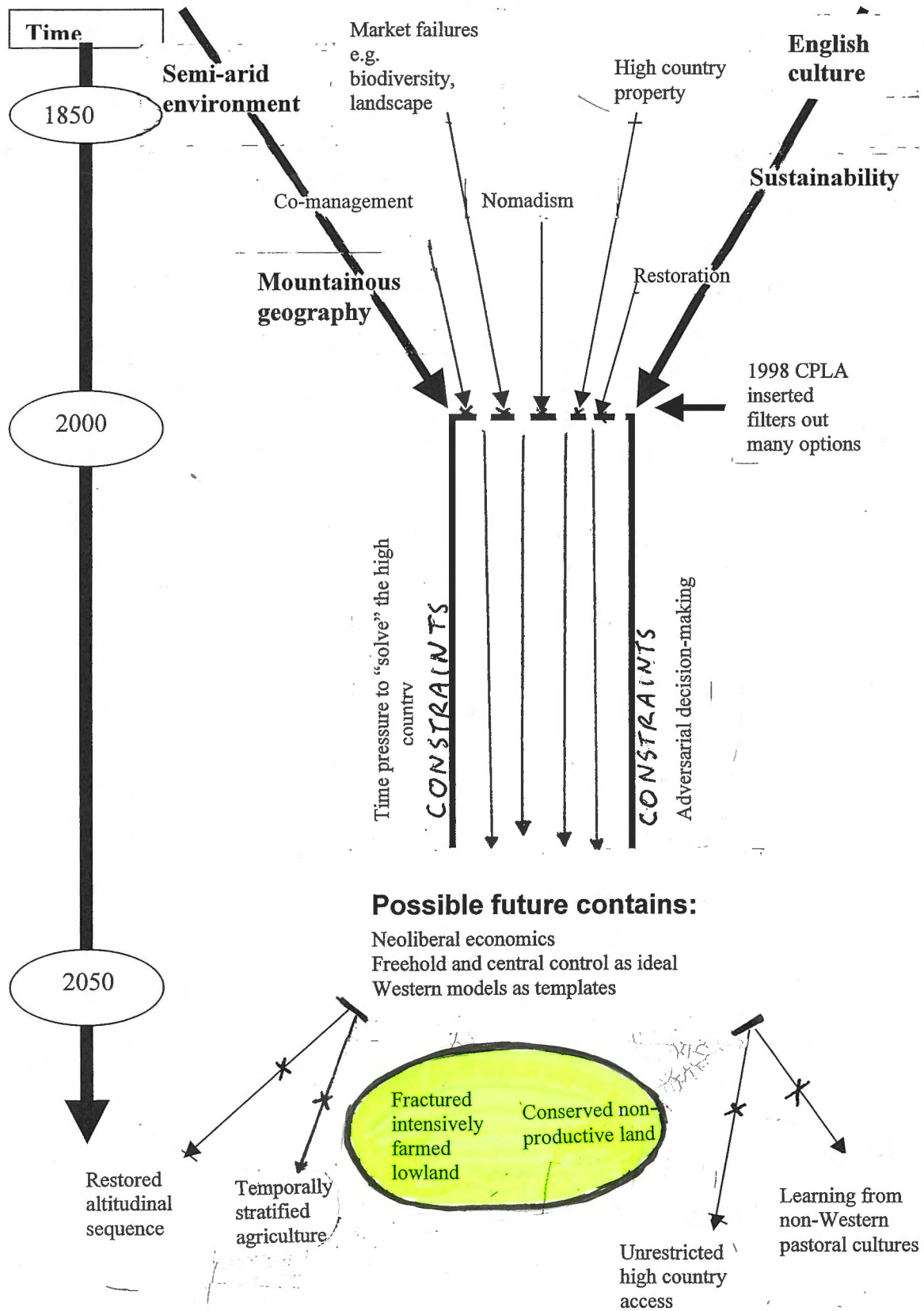
Summary of visualise history and geography metaphorically as a funnel, narrowing to a point, which is the present. Its contents- people- have been channelled to the present by geography ecology and their own social history. They are inexorably propelled into a future defined by the funnel outlet's straight sides.

Content of laws act as filters – ideas that pass through help define our development trajectory, those filtered out do not. For example the neo-liberal resource ideology favours partitioning into freehold and central government control. Co-management and negotiated solutions as practised by many rural populations throughout the world (Ostrom 1990; Paulson 1998) are filtered out. The 1998 CPLA removes these options from our land use decisions. Process, the funnel's straight-sided terminal spout, determines the direction the filtered content (humans and the ideas they carry) actually takes. Generally this culture is constrained by episodic decisions and adversarial negotiation. Specifically the process of tenure review does not allow potential for restoration as a significant value.(Clark 2003)KI(Clare 2003)KI .Land that is already modified (all the lowland farms) will not be restored. Altitudinal sequences from river flat to mountaintop are unlikely to be part of our future. This despite the content of the NZ biodiversity strategy (Department of Conservation 2000)) which puts value on representative samples of bio-diversity of all ecosystems (Walker 2003)KI.

Content and process (filters and constraints) together determine the endpoint of development. Our high country is destined for either DoC reserve or freehold farmland. I have summarised these ideas into a funnel shaped diagram Figure One on the following page.

***Figure One: History funnels us to the present. Filters and constraints limit our possible future***

**Figure One – History funnels us to the present. Filters and constraints limit our possible future**



## The Process of Tenure review

(LINZ 2002)

*At length it came to the turn of the hill country to be subdivided. Commissioners rode over Canterbury's tussock covered uplands and through her windy gorges to see how the runs could be partitioned. The townsman who cries aloud to heaven that no one should be allowed to hold such large areas and then proceeds to subdivide them to his own entire satisfaction on a survey map is often ignorant of some of the facts.*

*Summer country is useless without a corresponding amount of winter country and it is far easier to draw a fence line on a map than to erect it on the ground. .... It requires a considerable area of such land to provide the holder with the standard of living enjoyed by a waterside worker. Sir John McKenzie had always laid down that high country alone was useless and should be let in conjunction with a certain amount that was low (Burdon 1938:162).*

Tenure review is a four-step process voluntarily for the landowner. If the runholder chooses to enter the process s/he can withdraw at any point up to signing the substantive proposal. LINZ is also legally permitted to withdraw. LINZ pays the cost of the entire process unless the leaseholder wants to employ independent advisors. .

The four stages are:

1. Commencement
2. Preliminary proposal
3. Substantive proposal
4. Implementation of substantive proposal.

### 1. Commencement

A runholder invites LINZ to review their property. LINZ informs the director general of conservation and asks a contractor to oversee the review. 4 months average time frame given by LINZ

### 2. Preliminary Proposal

Runholders, DoC, Fish and Game and Iwi are consulted statutorily. The DoC team includes plant, invertebrate and avian biologists. They do quick and a detailed survey, identifying significant inherent values (SIVs). They specifically only identify existing values The possibility of restoration is not considered. (Clare 2003) KI. This has been criticised as outdated methodology, based on the NZ Protected Natural Areas Programme (PNAP). (Dickinson and Mark 1988) which aimed to survey and

preserve the best of residual biodiversity. A forward-looking analysis would identify where biodiversity needs to be saved, protect those areas and then try to restore them if necessary. (Walker 2004b)KI . Highly modified lowland is rarely identified as a Significant Inherent Value (SIV). The reports of statutorily consulted bodies are used by LINZ to produce a Preliminary Proposal suggesting land partition. When runholder and LINZ agree this is publicly advertised and submissions accepted. The cost of freehold title and the payment for loss of leasehold rights are included at this stage but are not made public. 20 months expected time frame.

### 3. Substantive proposal

LINZ considers submissions (at this stage NGOs can have a say) to prepare a final proposal which is put before the leaseholder. This document must be signed within 90 days or is assumed to have been rejected. Once the leaseholder has signed off the contract becomes irrevocable and binding. 12 months expected time frame

### 4. Implementation of substantive proposal

Surveying and fencing and any other formal details are undertaken and freehold title given to the runholder. 12 months expected time frame.

The objectives of review are;

- ◆ “ free land capable of economic use in away that is ecologically sustainable.  
(Clark 2003)KI

More formally stated (LINZ 2002):

- ◆ “ To promote the management of reviewable land in a way that is ecologically sustainable “ and “to enable reviewable land capable of economic use to be freed from management constraints resulting form its tenure.”
- ◆ “ To enable the protection of the significant inherent value of reviewable land by the creation of protective mechanisms or preferably by the restoration of the land concerned to full crown ownership and control”
- ◆ “To make easier the security of public access to and enjoyment of reviewable land.

The role is to be a good listener, to balance without bias the weights of arguments and fulfil the law. The law is politically driven. It is not within LINZ’s mandate to ask why tenure review happens. It is LINZ’s role to implement tenure review. It is entirely a ‘process’ rather than a ‘content’ organisation.(Clark 2003) KI

## Questions

The thrust of this thesis is identification of the development space around land tenure and sustainability of the high country of New Zealand. This is particularly relevant at this juncture. Internationally and nationally sustainability is a new concept that changes the way we look at the world and ourselves. Sustainability is moulded into our existing worldview as much as existing thought is modelled around sustainability. This thesis could be described as a description of a culture absorbing a new concept from the middle of an evolving process. We are constructing the future which we will inhabit (Oelschlaeger 1991) negotiating the place of wilderness, sustainability, conservation, production, biodiversity etc in that constructed future....

***Tenure review is a major progression in the step-wise evolution of our relationship with the land. It also potentially sends us through some 'one way doors', or "bolts and nails up an already closed door"(Clark 2003)KI..***

The 1998 CPLA actually allows a variety of land uses but strongly supports the extremes of the property rights continuum- private freehold and government controlled DoC estate. Superficially Tenure review's question is "Up to what altitudinal contour is western farming economically sustainable in New Zealand?" Much debate revolves around "Where to draw the line?" with farming and conservation groups arguing for it to be pushed down or uphill. Tenure review is largely directed towards defining productive land 'worthy' of freehold which by classical economic dogma maximises economic output versus land too fragile for relationship with western agriculture and culture which by dogma must be protected centrally. Little attention is given to other land-use categories. Farmers themselves ask to continue as active managers of integral landscapes they love and understand well (Aubrey 2004a)KI. Ecologists say market failures, values that are not measurable against productive potential (e.g. biodiversity and landscape) are lost.

On my office wall a beautiful map analyses productive potential of the whole crown pastoral estate. [Manaaki whenua, 2003 #289] Kevin O'Connor would call this a portrait of mountains forced into a flat-landers worldview (O'Connor 2004)KI. Rather than let the mountains crenellating Christchurch's skyline impose themselves into our culture we divide those mountains technologically (GIS etc) into land capturable by

production without demanding culture change and hinterland this culture can't manage.

Both ends of the tenure spectrum minimise social interaction over land. Contrast this with e.g. Mongolia where social interaction is maximised and multiple simultaneous meanings allowed- (Fernandez-Giminez 2002). Co-management was completely ignored by the Martin report (Meister 2004)KI. Are we intentionally avoiding complicated and ambitious alternatives (Walker 2004a)KI, because "the tyranny of the possible" (Overton 2004)KI demands simple and achievable ones?

I try to identify major questions- contestable components of this debate - define their meaning and re-frame each so it might capture the expressed and unexpressed concerns yet admit wider solutions. Some questions relate to the 1998 CPLA's content .: What is it trying to do? Why are we trying to do this? Who wins and who loses. My summary of 'content' questions is: "What is the deep aim of tenure review? Is the rate, shape and scale of the biological elements of sustainability (particularly biodiversity) capturable by the western political, economic and cultural system? If not do our aims, our processes or our values need to change?" Other questions relate to process. Whatever philosophical justification underlies content its mode of implementation affects outcome. Sustainability of Tenure review's resultant human/human and human/land relationships is hugely process dependent. For me the ultimate question behind everyone's proximate questions of process is "What process can include stakeholders values and a continuously changing ecology?" A person feeling the process excluded their values rejects the content of the outcome. The four process questions were best re-framed by identifying the values and re-framing them into content questions.

## 1 Is tenure change the answer?

***“pastoral leasehold tenure established under the land act 1948 has impeded the development of alternative land uses. It has fixed the boundaries for properties and blurred the accountability for resource management. Without the restriction of pastoral leasehold tenure , existing businesses could restructure , new land uses could be adopted more freely and landowners would be fully accountable for maintaining the resources in their care (Martin 1994:vi)***

***“... because of the nature of pastoral lease tenure lessees face a number of constraints that reduce the opportunities for them to move towards the sustainable management of the land.”(Martin 1994:87)***

The Martin Report and the 1998 CPLA identify tenure as the limiting factor in creating a sustainable human/land relationship. Land too ecologically fragile for farming should be identified, surveyed and made off-limits. Land that can be farmed should be farmed optimally.(Martin 1994)

Neo-liberal dogma says unrestricted individual tenure and transferable property rights does this (Banks 2003b). Theoretically land gravitates to its best use, carefully matched to specific local conditions rather than have pastoral farming enforced over a huge latitudinal and altitudinal range. Individuals maximising their own interests maximise the public interest if a suitable framework for their operation is created. The 1991 RMA is part of such a sustainability-guaranteeing framework. Prebble,R (Hansard 1998c) (Meister,A. 2003) KI. Well-defined individual tenure also clarifies responsibility for sustainability rather than the blurred rights and responsibilities of pastoral leases. The Martin report identified Crown failure to hold farmers responsible for unsustainable farming.(Martin 1994) Property boundaries can change to best suit the locally optimum farming practise. (Banks 2001)

***This is a massive improvement on farmers forced into pastoral farming and locked into set boundaries. Jennings,O.(Hansard 1998a).***

That ecological sustainability implies farming cannot continue on the Crown pastoral leases in their present form.(Martin 1994) (Hughes et al. 1991; Hughes et al. 1995) is not universally accepted. Farmers contend further research will verify this dynamic unstable land is naturally erosion prone and pastoral farming is sustainable(Undorf-Ley 2004)KI. Farming rather than the cause of degradation is an increasingly

adapted and sensitive practise on difficult conditions on unstable land.(Patterson 2003)KI. There is support for this viewpoint on semi-arid rangelands (Ho 2001), but I doubt this 'new range ecology' informed the Martin report or the parliamentary debate. Tenure review means it never will.

In practice, transferable property rights and diversified decisions do make real differences. A strong opponent of tenure review, Bruce Mason describes economic benefits to his Central Otago community of investment in grapes "by living in a small community I have come to appreciate the impact of the change on the local community.... from a moribund community to viticulture that cannot find enough workers....Earnslaw turned round completely when the a pastoralist realised fine merino wool and grapes could be grown on lowland and high land given access to DoC" (Mason,B. 2003) KI

All participants in the parliamentary debate.(Hansard 1995; Hansard 1998a; Hansard 1998c; Hansard 1998d) accepted the apparently sound logic of identifying the land's capability and partitioning it so that sustainability is protected throughout and productive and conservation goals maximised (Meister 2003)KI. Most of my key informants did too. Even farmers accept some land could be used better than pastoral farming and some land perhaps should not be farmed(Patterson 2003)KI. Discourse is focused on where the split should occur.

There was considerable contest in parliament over defining significant value (Hansard 1995; Hansard 1998a; Hansard 1998c; Hansard 1998d). Particularly where an identified SIV is on economically valuable land Tenure Review becomes a conflict of values(Clark 2003)KI. Ecologists might value modified land that 'has the possibility of restoration to create integral altitudinal sequences'. Walker (Walker 2003)KI, argues some productive lowland must become part of the conservation estate to fulfil article three of the biodiversity strategy(Department of Conservation 2000). Her reasons are less commonly understood, but perhaps for sustainability more important, than rock-climbers who see a superb crag 'lost' to freehold land as a huge reduction in value (Wesley 2004). One informant identified gains for all stakeholders and said this is practically the best solution we have.(Broad 2003)KI Everyone-else, considering the loss of some of their values is left looking at half empty glasses.(Clark 2004)KI.



A few informants questioned whether tenure is the problem and review the solution - "We can practise conservation and production on the same square metre..."(Undorf-Ley 2004) KI. This view has theoretical backing:- Resilient lower land might well allow sustainability and production goals to be pursued simultaneously (Stafford Smith et al. 2000). Others say "present conservation values exist because of, not despite runholders' active management"(Aubrey 2004a)KI. And "offering tenure as the solution prevents it being a solution"(O'Connor 2004)KI. Behind the last cryptic comment lies a huge concept.

***"Scapegoating insecurity of tenure is part of high-country mythology" (Centre for resource management, 1983:40).***

Tenure review changes the land, or at least its zoning, to allow humans to continue as they always have. The blame for degradation is shifted away from economic systems, limited understanding, unsustainable farming, values that discount the future and unsustainable lifestyle practises. Focusing on a proximate cause of degradation (tenure) avoids identifying ultimate causes and the culture change that might be demanded. Politicians recognise it's untenable to make laws that enforce sustainable lifestyles including public transport, living standards commensurate with biological capacity, resources diverted to environmental restoration etc. They are suited by producing final solutions only to unthreatening proximate causes.

***"to settle once and for all ...accountability for the land." Marshall,D. in (Hansard, 1995).***

I'll reframe the logical sequence underpinning review:

- ◆ Much Crown pastoral lease land is non-resilient.
- ◆ Ecological sustainability is a major new dialogue in today's world.
- ◆ Farmers, like everyone else, discount the future to run their operation
- ◆ Discounting the future results in degradation of non-resilient land. This is now visible.
- Either we (all) stop discounting the future or allow our mountains to degrade.  
Changing tenure at most will delay when visible degradation occurs.

Tenure is an answer. The question is not defined. The re-framed questions relate to objective. They might be "What is our vision for New Zealanders relationship with the land? What values do we, as a nation put on sustainability and mountains? How

much present production (i.e. discounting of the future) are we prepared to sacrifice for a future and identity that might include restored altitudinal sequences, access to climbing crags, integral landscapes etc. Another question begs itself. "In what forum could a constructive national exchange of values occur to answer these questions?" Content and process are both involved.

***Most of the cause of the degradation has not been the system of ownership, but in fact has been ignorance--ignorance by all of us--by farmers, scientists, Governments, territorial local authorities, and anyone else who has had a role in it. Hodgson, P. in (Hansard 1995)***

## 2 Are freehold and central control the only options:

***“ for 150 years the government has been a willing participant in wholesale erosion of its property rights.” (Broad 2003)KI***

***“They are leaseholders, long term tenants on this land constrained in what they can do frustrated at the binds of lease which while benign with low rents perpetual rights of renewal and the right to sell them on remain a fetter on the diversity that modern farmers pride themselves on”. (Hayman 2003b)***

Pastoral farming is at the limits (Martin 1994:8) yet runholders are locked into it by a 50 yr old act. Ecologically some say the land is at crisis, progressively mined of its nutrients and with declining stocking levels(Harding 2003) KI . It is susceptible to invaders like rabbits and hieracium better adapted to prevailing disturbance and stress regimes. Change is clearly required Fitzsimons,J.(Hansard 1998c), yet unclear title makes responsibility unclear and deters investment in land care. Tenure review formalises and clarifies the partition. The 1998 CPLA determined that LINZ administer division into freehold private title and centrally managed land, mostly destined for the DoC estate.

The logic behind partition into private and DoC land seems irrefutable. The benefits of freehold rights and the need to identify land that can withstand western farming were articulated throughout the parliamentary debate often by Act and National members (Hansard 1995; Hansard 1998a; Hansard 1998c; Hansard 1998d). Only one informant questioned transferable property rights suggesting they may allow transfer away from intensive production into lifestyle blocks(Talbot 2003) KI. Green members e.g. Jeanette Fitzsimons(Hansard 1998a) cite erosion, lost bio-diversity and invasion by rabbits and hieracium to highlight unsustainability of present production on less resilient land. To them it is best DoC managed. Few contest central control as the way to manage conservation goals.

***The overall intent of this legislation is supported and accepted by most people. It is a matter of process and detail Jennings,O. in (Hansard 1998a).***

The philosophy behind partition was universally accepted, the difference was which portion of the partitioned land members concentrated on. ACT and national stressed advantages of freehold and questioned central management. Green accepted central control as axiomatic and challenged freehold's ability to guard sustainability.

***“The other matter is philosophical, and that is the underlying assumption that the Crown in fact is a better steward than the private owner---and I, frankly, just do not accept that, and the evidence does not support it”. Shirley (Hansard 1998d).***

***“If land is sufficiently fragile and sufficiently damaged that the way to preserve its significant inherent values is to get the sheep off it, then how on earth could farmers be the best people to do that? Fitzsimmons,J (Hansard 1998d)***

***I differ from the view of Jeanette Fitzsimmons that the Government is always the best one to be dealing with when it comes to the future of our natural resources Marshall,D. in (Hansard 1998a)***

The logic behind moving towards either freehold or central tenure is: (Martin 1994)

- There is evident ecological degradation particularly in less productive areas..
- High production comes mostly from already highly modified areas.
- Freehold tenure maximises productive output.
- Farming on highly modified productive land maximises production at minimal biological cost.
- Central management best preserves public goods..
- Conservation on low production land maximises conservation gains/economic cost ratio

Therefore Identifying and formalising freehold vs. DoC maximises both productive and conservation.

Widening the discourse academically shows assumptions behind freehold and central management are constraining axioms, unquestioned but restricting vision of possible outcomes. They are not universally true.

How do we know freehold tenure or central management are more appropriate tenure strategies? To mainstream microeconomics private property represents the most efficient type of land tenure institution because it embodies the efficiency enhancing characteristics of completeness, exclusivity transferability and enforceability (Banks 2003b). Exclusivity ensures users have incentives to invest and adopt sustainable management practises with decreased cost of legalised exclusion. Transferability provides access to credit since land is important collateral and ensures that resources gravitate to their highest value use. Enforceability guarantees

the owner all the benefits accruing from his investment. Self-interested landowners continuously tailor management to market forces and local environmental and social conditions.

Recent Neoinstitutionalist writing severely criticises many classical neo-liberal assumptions. “ more than one kind of property rights can exist and profit or wealth maximisation is not assured...[ because of] ”transaction costs, incomplete information and bounded reality” (Furubotn and Richter 1997:441-2). These views do not appear in the debate but show how academic theory can widen development space.

In truth evidence is not from theory- faith in the advantages of freehold property rights is empirically derived, i.e. from past experience. Through this culture’s ‘historical trajectory’ private property has come to be regarded as both a solution to the challenges posed by common pool resources and the lowest cost institutional arrangement available” (Banks 2001)721. The influential property rights school even extrapolates to predicting universal evolution of institutional change from open access to common property to private property (Banks 2003a).

Open access becoming private property empirically describes the last 150 years. The small last step is from “peppercorn rental”(Talbot 2003)KI, with permanent right of renewal to freehold. Refining to only the good productive land- technologically defined e.g.[Manaakiwhenua, 2003 #289]- is seen as making it an even better allocation of resources. Neo-classical theorists describe common property and shared tenure as primitive and leaving public goods vulnerable. The major implication of the tragedy of the commons (Hardin 1968) was that common pool resources need to be privatised or brought under centralised management. (Banks 2003b)

This inductive logic is invalid! The past is not a guide to the future! “The neo-classical model is ... a special case relating to a special universe..... a shift must be made to a fundamentally different paradigm (Furubotn and Richter 1997);438). More consideration should be given to the qualities of the resource itself and it’s socio-political context. “Firstly the resources are different- the evidence comes from an “almost exclusive focus on arable areas.” (Banks 2003b) The wisdom of freehold tenure to optimise production might be dogma when applied to low productive, high stress environments on which it was not developed.(Ho 2001) Extensiveness, low productivity and variability of rangelands make group tenure sometimes superior to exclusive individual household tenure.(Banks 2003b). ‘New range ecology suggests

rangelands in highly variable environments are in perpetual disequilibrium rather than gravitating towards equilibrium ... the standard concepts and tools of conventional rangeland management may have little relevance to rangelands.” (Banks 2001:718) The resource might be fundamentally different from what freehold theory was designed for. There may also be fundamental differences between the overlying socio-political context which always influences resource management. (Ostrom 1990)

Secondly the aim today is different. Management in the past never tried to achieve ecological sustainability. Freehold property rights as economically powerful and gravitating toward highest economic value uses does not guarantee gravitation towards sustainability. Long term pastoral cultures can claim empirical validation for their tenure systems’ sustainability but western culture cannot. There are no examples of long term sustainability of western pastoral extensive rangeland farming under freehold rights. All have a very short history. Further all western agriculture is subsidised by (unsustainable?) fossil fuels and imported resources (Harding 2004) Economic tools developed for another job are being used to secure high-country rangeland sustainability.

Empirical evidence also shows tragedy of the commons to be theory that cannot be generalised in the real world where common property is often well defended and that central control often fails (Ostrom et al. 1999; Ridley 1997). Mongolia, Zimbabwe, South Africa and Kashmir (Fernandez-Giminez , Bruce, Hudak Casimir) offer examples of rangeland farming cultures protecting their resources well. A potential advantage of common property is its essential embeddedness in social relationship structures which ensures adherence to group norms and rules. This constrains individual opportunism. It is not commons in general, rather commons without socially negotiated user rights that are exploited (Casimir and Rao 1998). Private property regimes in contrast require considerable social overhead investment in structures for the recording and administering of property rights and jurisdiction for disputes.(Ostrom and Gardner 1993) Tenure review might be deliberately sacrificing the advantages of social negotiations over values for the efficient simplicity of legal documents because of the importance of ‘individual opportunism to westerners and their dislike of paying ‘social overheads’ This need to demarcate and clearly define boundaries- either conservation or production- expresses something intrinsic to western society not land tenure generally (Overton 2003) KI.

Tenure review determines high ecological and cultural values on productive land should be protected centrally by DoC.(LINZ 2002). Is DoC the best manager of the conservation interest? Lets explore the 'Green' axiom- central management as optimum for conservation.

A recent review calls returning to central protection of biodiversity is "reinventing square wheels"(Wilshuesen et al. 2002) Debs Martin beautifully described delineating DoC estate as this culture's way of declaring rahui (Martin 2004) KI. Other cultures temporary rahuīs can mould to changing ecological variables (e.g. kereru population) If this culture demands rahuīs legally defined, permanent and marked on maps are we travelling into the future on square wheels?

Notwithstanding DoC can only manage land if it has resources. Some fear uncontrolled pests and weeds,(Patterson 2003)KI, Shirley (Hansard 1998c), while others fear that DoC will end up leasing the tops back to farmers in a lose-lose situation(Talbot 2003)KI. There is theoretical dissent about DoC managing a 'conservation theme Park'(Ainsley 2003).p18. The literature says any centralised mode of resource management suffers from information gaps. The difficulty of collecting information about a huge variety of resource types, microclimatic constraints and the behaviour and customs of widely dispersed user groups as well as the specific constraints confronting them' all mitigate against successful central management (Baland and Platteau 1996b). Don Aubrey argues farmers as active land managers preserve the conservation values in the high country for exactly these reasons. DoC's remote, passive management will not increase, and probably reduce conservation values because active managers on the land receive feedback on conservation issues. For example black stilts in the Ahuriri valley have been observed being harried by Canada geese. Without an active manager on the land such information will go unnoticed(Aubrey 2004a)KI. "We don't need black and white solutions"(Aubrey 2004b).

Tenure review promises gains including huge alpine conservation parks, diverse productive management on better land, formal protection of iconic areas and important populations. It is certainly an improvement on the present and criticism is only valid behind a superior alternative.(Broad 2003) KI. However because polarising land into bundles of private and central control improves on the present does not logically mean it is the best option. The need to legislate land into the formalised ends of the property rights spectrum (freehold or central) in order to secure

sustainability while maximising single optimum uses might describe specific truths about western culture's weakness at negotiating rather than general truths about land tenure (Overton 2004). Concurrently pursuing goals (Dawson and Tao 2002) was not explored. The Martin report did not consider co-management in 1994- but it would today (Meister 2004)KI. Axioms constrained the future we constructed. I needed further theoretical exploration to find new space for the discourse.

New Institutional economics shows that privatisation does not necessarily emerge as the appropriate solution in all situations wherever exploitation of natural resources is under way. (Baland and Platteau 1996a) Individual tenure may enhance investment but another scale based on whether degradation irreversible by investment could occur is required(Stafford Smith et al. 2000) The literature casts doubt on any particular tenure as universally ideal, strongly supporting instead different solutions in every context. "Both centralisation and privatisation advocates assume institutional change must come from outside and be imposed on the individuals affected. The institutional changes they accept could hardly be further apart. I reject this. Rather than a single solution to a single problem there are many solutions to many problems".(Ostrom 1990:14)

If central institutional change is not the answer how do we find local solutions? The answer - dialogue between people with different specialities and different scopes, is widely theoretically validated e.g.(Baland and Platteau 1996b; Furubotn and Richter 1997; Ostrom 1990; Ostrom et al. 1999; Ostrom and Gardner 1993(Brown 1994). Empirical validation (the strongest form of validation) comes from many sustainable pastoral cultures.e.g.(Bruce et al. 1993; Goldstein 1994; Zhang and Wang 2003). On the periphery of the NZ discourse, this is understood: "We've so obviously got no idea about farming mountains sustainably. Why not let the experts- Afghanis, Pakistanis, Bolivians-teach us. They've been doing it for ever," (Wesley 2004) KI.

***The risk we have is the tragedy of the commons. Indeed the existing evidence is that the Department of Conservation cannot manage the existing land it has. Shirley,K. (Hansard 1998c)***

Community developed co-management is often applauded for maximising sustainable gains from common land in developing countries (Ostrom et al. 1999 gives many examples) but seldom considered by the developed west. (Overton 2004). The recent Molesworth decision(DoC and LINZ 2004) allows productive and



conservation goals be managed on the same land. Alternatives are accessible in NZ as well as China(Zhang and Wang 2003). Dual goals are simultaneously possible if guidelines about constraints are clear. We know that “preservation hitherto has been achieved under existing pastoral management” (O'Connor 2003:109). Farming and conservation are mutually exclusive only when forced into adversarial corners.

Co-management makes people and bodies with different scope interact over resources. “The State at macro level plays a critical role in general institutional environment and more specifically the range of possible institutional arrangements that resource users can adopt. States may be better than communities at processing information on ecological dynamics over time. Rural communities offer knowledge about local ecological social and economic conditions. They also may possess low cost arenas for the quick resolution of disputes and more effective mechanisms for the monitoring and enforcement of rules”(Baland and Platteau 1996:346). Though complicated, collaborative management which increases dialogue has been achieved in developed countries.(Paulson 1998) Our episodic decision-making closed the tenure discourse before co-management was inserted.

We are severely limited by deeply embedded cultural axioms about tenure. Most MPs and informants believe that partitioning land use means “the public interest and the private interest are married in a sensible, cost-effective way, thus ensuring that good conservation outcomes are achieved at the same time as economic outcomes.” Jennings,O (Hansard 1998a) The axioms constrained discourse on whether to move to the extremes of the tenure spectrum and directed people’s energy on where this extensive common property resource should be government managed or freeholded.

To interpret a deepened question I had to search alternatives in theoretical literature and empiric evidence from other cultures. Little is said about alternatives in our constrained discourse. The deep questions are “how can we facilitate interaction of experts with different scope and expertise over a partially-common property resource that is extensive, non resilient and heterogeneous? What alternatives exist and how could they be created? How can these decisions be continuous and incremental? (vs. Episodic and cataclysmic) The content question-freehold or central – transforms into process questions!

***“This will bring to a close some three years and three months of activity around the Crown Pastoral Land Bill.” Roy,E in (Hansard 1998b)***

### 3 What spatial scale is appropriate?

***“if land demands one thing it is integrity.” Aldo Leopold quoted (O'Connor 2004)KI***

Tenure review for practical reasons works property by property as runholders voluntarily enter the process(LINZ 2002). Property is another cultural axiom. “As I have said before in this House, property rights are important. They do underpin our democracy. They do underpin every commercial transaction. Parliament, by coercion and fiat, changes those rights at some great risk. I stress again property...”- (Jennings,O.in (Hansard 1998a)) (my underline). Western civilisation is proud of its evolution away from ‘primitive’ notions like common property.

Tenure review highlights the conflict between private property and land questions.: “Property boundaries are one of the biggest blocks to the tenure review solution being ecologically sustainable”(Harding 2004). Harding accepts that forced review is politically untenable but this development space is amenable to much widening. Consider this title:“The tragedy of property” (O’Flaherty 2003) or the even pithier maxim “property is theft” (Proudhon 1994)!

Natural systems are integral, they cannot be transferred and divided. The value of human titles critically depends on those properties(Banks 2003b). Half a minimum viable population (MVP) of skinks is not viable, half a basin free of wilding pines is a basin invaded by wilding pines Unlike politicians, farmers here perceive the ‘integrity of a property’.(Anderson 2003). Different parts supply different things, the whole is a system. Over 150 years British colonists cultural evolution is converging with semi-arid pastoralists from all over the world who are operating undivided landscapes as common property resources on landscape scale e.g. Mongolia, Kashmir, China and Zimbabwe (Casimir and Rao 1998; Fernandez-Giminez 2002) (Banks 2003b; Bruce et al. 1993). These cultures all show conformation of the society to the resource as well as vice-versa (Brown 1994; McKay and Acheson 1987). Fitzsimons unique in the parliamentary debate for her ecological understanding said “One of its special values is that it forms a whole. Because such a vast area is still owned by the Crown, although under perpetual lease, it has an integrity and a wholeness” Fitzsimons in (Hansard 1998a).

There is growing recognition in the West of the value of landscapes for our own rangeland farming. An Australian wrote: “ecologically sustainable management must

be at a regional scale.... maintenance of biodiversity and other values cannot simply be satisfied at the individual property level. Land use practices which do not impair animal production at the property level may not translate to sustainability at the regional level nor vice versa" (Stafford Smith et al. 2000:195)

The question of spatial scale asks deeply whether we could review our thinking and farming practise rather than our maps to allow farmers to be part of ecological units, rather than independent of them. Questions about social and institutional structures that co-evolve with characteristics of rangeland are asked e.g.(Banks 2001) but only in distant, 'interesting' underdeveloped countries.(Overton 2004). Perhaps the axiom that it is primitive restricts our asking those questions of ourselves.

No! The question of scale exists at different levels of the NZ discourse beyond Harding and Fitzsimons. Farmers decry the loss of good summer grazing, (Anderson 2003) consultants suggest that some income generation has been lost to DoC estate, (Patterson 2003)KI, ecologists weep seeing horizontal contours cut across potential vertical altitudinal sequences (Walker 2003; Walker 2004a) KI. Even anglers complain their favourite trout stream is accessible only through private land, (Mason 2003; Millichamp 2003) and conservationists are disappointed with 'postage stamp reserves'(Sage 1995). For everyone integral, legitimate stakeholder interests have been lost by division... All glasses are half empty (Clark 2004). One informant, a climber said: "A mountain is a whole experience. An approach through tame farmland makes it like driving to a Port Hills crag and having a coffee in town afterwards. That's not wilderness" (Wesley 2004)KI. I interpret a common deep understanding of the value of landscape integrity.

To someone who values maximum production (e.g. Rodney Paterson) three quarters of maximum production on half the land is a failure (Patterson 2003)KI. If biodiversity is the highest value conservation parks on 50% of the land fails because biodiversity is lost on the other 50%.(Walker 2004a)KI. To Public Access NZ (PANZ), access to most of the high country is loss of possible access to all of it (Mason 2003)KI. Forest and Bird say the bill should give priority to landscape and conservation values(Sage 1995)-i.e. their values. Divided landscapes cannot preserve values. Ecologist Susan Walker values lowland to restore biodiversity, Bruce Mason asks "why trade a snowfield for a flat paddock?(Mason 2003)KI. Everyone wants the whole landscape to pursue their interests. In Western thinking it is logically impossible that everyone can have everything. Yet Mongolians have had this for generations and do not feel

their glasses are half empty because they accept as theirs the negotiated social norms that determine how they exercise 'ownership' rights.(Fernandez-Giminez 2002) The development space is limited by Western logic!

Consider this summary of spatial problems:

- ◆ Parts of the high country are impossible to profitably farm year round.,
- ◆ Some highly productive parts apparently could sustain year round farming. Even these however have often been managed up to now as part of whole properties with upland areas.
- ◆ For ecological sustainability a landscape scale is more rational.
- ◆ Changes evolve in farming practise and ecological understanding,- there is no point at which a full and final decision can be made. Space for further evolution should be built into any answer.
- ◆ Farmers have a deep practical understanding of the land , its temporal and spatial possibilities.
- ◆ Ecologists have a deep understanding of ecosystem scale processes over longer time scales and how biological processes are affected by of land use and larger forces (e.g. global warming)
- ◆ History hands us a landscape fractured into properties.

Currently we ask ' how best can the land be divided property by property to fairly accommodate the various values. We could re-frame that to "how could entire landscapes be maintained and groups simultaneously pursue interests? " What institutional rules and cultural changes are necessary to facilitate this?" The answer undoubtedly will involve constructive (rather than adversarial) trading of values between farmers and ecologists, landscape architects, economists and alpine climbers etc. The structure will be flexible enough to continuously accommodate changing understandings. The deep question is of process and content.

#### 4 Is there an incongruity between axes?

Tenure review will, more or less, divide the land along a horizontal contour. Almost all land below say 600 m will become freehold intensive farmland. Land above say 900m will all become tussocky conservation land which will slowly revert to its original mosaic of species. Regardless of the area in each land use, the cartographers pen's direction hugely affects a major outcome.

Goal 3 of the NZ biodiversity strategy is:

“to maintain and restore a full range of remaining natural habitats and ecosystems to a healthy functioning state, enhance critically scarce habitats and sustain the more modified ecosystems in production and urban environments: and do what else is necessary to maintain and restore viable populations of all indigenous species and subspecies across their natural range and maintain their genetic diversity.”

[Department of Conservation, 2000:18 #252]

Given history, most productive lower land has been intensively modified. Most threatened biodiversity is there. Tenure review could create a vast tussock “conservation theme park” (Ainsley 2003:18) and worsen our biodiversity situation! (Walker 2004a) KI Land that now could be gazetted then restored to complete integral altitudinal sequences from 300 to 1200 metres will be irrevocably alienated from crown control. We will lose biodiversity, and the potential for its restoration forever. The shape not just the size of reserve is important though even people in DoC do not understand its importance. This question therefore is not in the discourse. Only ecologists Mike Harding (KI) and Susan Walker (KI) talk about it. Though it escaped other informants, none were resistant when I explained it. Shape could be included in the discourse.

Currently tenure review asks “Up to what altitude is farming possible?” More helpfully it should ask “What physical shape do we envisage protecting? What spiritual shape (i.e. values) do we want to protect enough to change the current horizontal contour? How much production would we sacrifice for this? How could this be negotiated? If biodiversity is not important enough for New Zealanders to sacrifice production (wealth) that should be a conscious decision not an omission from the discourse. This is illustrated in Figure Two on the following page.

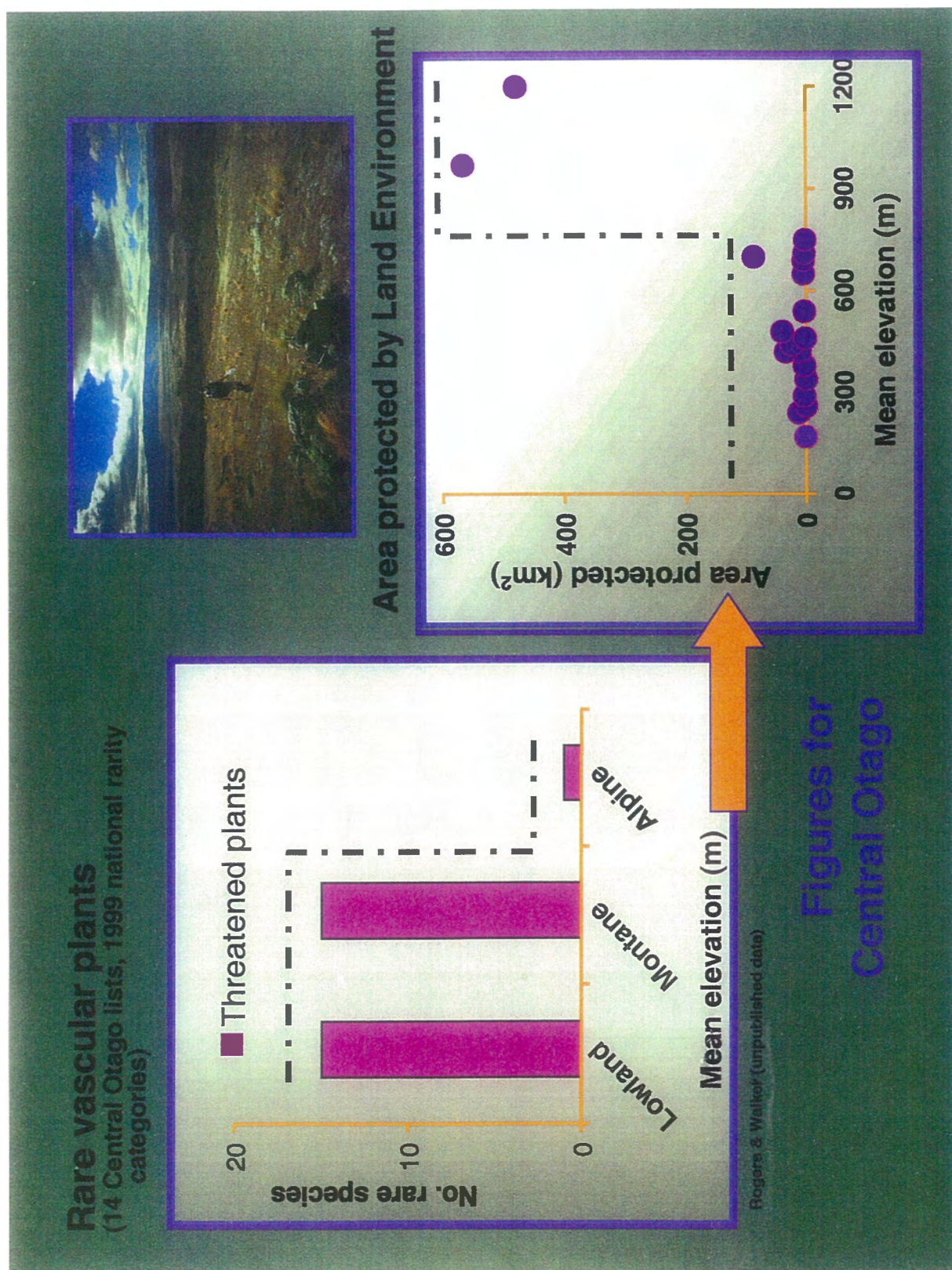


## Figure Two – Biodiversity and axis

Graphical illustration that high country conservation parks will not protect biodiversity.

Most threatened biodiversity is lowland. Most conservation area already is upland.

Walker, S. and Rogers, G. Unpublished data.



## 5 What temporal scale is appropriate?

***“If farm businesses base their stocking rate decisions on stock liveweight they will be one year too late. If they base their decisions on finance they may never make the right decisions for sustainability. (Martin 1994:47)***

Today Hieracium is displacing tussock over much of the Mackenzie country. (Cronshaw 2004a). The search for a solution (Cronshaw 2004b) almost a holy grail. Previously rabbits proved their competitive advantage over stock until biological control improved stocking rates over a few seasons. A common explanation is that farming goes in cycles e.g. Pettis (Hansard 1998a;Anderson 2003).

Ecologists see slow continuous degradation met with increased inputs(Harding 2004)KI. These immediately superimpose small amplitude upswings on a general downward trend. Instant positive feedback on interventions blurs the larger temporal scale. Enclosed and isolated in dynamic mountains individuals see themselves operating within rather than causing the rigorous parameters of a difficult environment (Aubrey 2004a)KI.

To illustrate, imagine yourself an early colonial farmer on the high country. Burning tussock and watching sheep thriving on the new flush of growth was reward for a season of hard work. Successive healthy clips of fine wool confirmed your practises as logical and ecologically sound. After 20 years of time honoured farming practise a slight deterioration might have been attributed to a bad season or three. You handed the farm to your son expecting the station and its sheep were eternal. The boy continues what Dad taught him, puzzled by continued declines. He counters each with innovative new solutions which improve stock condition. He's a practical man, close to the land and endlessly resourceful with No8 wire. To him each decline is temporary. Solutions come from steely resolve, hard work and innovative ideas. He taught his son this. Over generations significant solutions accumulate; fencing, rabbit control and aerial top-dressing, four wheel drive bikes, RHD, even helicopters. The paradigmatic southern man understands the land. Even Alan Innes reflecting on conditions 45 years ago when he first saddled up for the autumn muster and tussock reached his horse's belly does not ask why hieracium is invading (Cronshaw 2004a). If he did he'd struggle to identify exactly which components of his myriad farming activities might have caused decline. No farmer can compare this season with 150 years ago to ask those questions.

.Now put on the shoes of an ecologist today. Armed with 150 years of historical data and technology like LENZ you easily spot slow cycles of decreasing stocking levels and returns on land(Harding 2003) KI. Retrospectively, ecologists identify farming practises that have mined the land of organic matter(Harding 1995; Martin 1994) but they do not have to live year to year on their property returns. Ecological information comes in a variety of temporal scales, humans think only over months or a few years.

A theme of this thesis is that sustainability involves humans co-evolving with the land (Diamond 1997) People who work land have a continuous dialogue with that land. Shorter ecological responses are captured by farmers who might be thus “running some of the most important ecological experiments” (O'Connor 2004)KI. Continuity is important. So is sufficient time for cultures to feel the time-lag effects of their practise. 150 years is not sufficient.

***Earlier this year I had the privilege of accompanying my colleague Jim Sutton to the Mackenzie Country. I regret to say that it was my very first visit”. Pettis,J (Hansard 1998a)***

Continuous dialogue with land is prevented by our decision making structure-episodic, crisis driven and made by people disconnected from the land. MPs are neither in continuous contact with the land, nor do they personally feel the effects of their decisions. Their information comes from parliamentary commissions which present information gained at a specific time from specific people(O'Connor 2004)KI. It is making long term decisions by looking at a snapshot. The time pressure on parliament managing the plethora of questions of national interest is evident too: “This Bill has had a very, very long gestation period. Marshall,D in(Hansard 1995). Alongside Neville Bennett I argue three years is very short for a major decision (Bennett 2004)KI. Tenure review was decided in a blink of an ecological eye.

There is some understanding the environment continuously changes and episodic decisions miss important angles. “Ten years ago we had not heard of Hieracium; 20 years ago we were not talking about wilding pines” Hodgson,P in (Hansard 1998a). However parliamentary decisions are axiomatic. No one talks of alternative decision making structures. Making final decisions and moving on continues.

***“This Bill is the final step..” Marshall,D (Hansard 1998a) (my underline) .***



***Mongolian nomad's pasture negotiations happen over Naadam. Everyone rolled up, yak-butter tea was poured, snuff was passed round, horses were tethered, and the rest of the morning was just saying hello" (Author's personal experience, 1998)***

Is this necessarily so? No informant questioned parliamentary decision-making. It is axiomatic but theoretical literature questions its inappropriateness for natural resources. Continuous modulation of resource information seems to be essential for good management of common pool resources (Ostrom 1990). Literature also presents empirical alternatives like Pakistan, Zimbabwe, South Africa, Argentina, and Mongolia where sustainability is arguably truly embedded into cultures co-evolved with pastoral farming rangelands.(Shah2003, Bruce1993, Hudak1999, Ostrom1999, Goldstein1994 Fernandez-Giminez 2002). Decisions are made continuously, slowly, locally through multiple nested social structures. This mirrors nested ecological cycles whose rhythms these people's lives follow. Generational continuity helps such cultures capture longer ecological cycles.(Goldstein 1994). Episodic, crisis decision making is not able to select the most knowledgeable people to make its decisions.: I do not profess for one moment to be an expert on this Bill, but I am certainly pleased to add a small contribution to the debate this afternoon .Pettis,J (Hansard 1998c) may27Pettis' contribution was larger than Fitzsimons who was acknowledged even by ACT to have the deepest ecological knowledge in the house. Shirley (Hansard 1998c) That ecological knowledge accumulated over years was lost in the adversarial democratic process. Fitzsimons (Hansard 1998c) Significantly many NZ runholders highlight a generational connection with the land (Ainsley 2003; Dominy 2001) indicating perhaps that on the land there exists an understanding of longer temporal scales over which land asks questions.

***"They deserve a kick in the b\*\*\*\* for presenting it as if it was certainty". (O'Connor 2004)KI (referring to Martin report authors.)***

The Martin report(Martin 1994) and 1998 CPLA are based on the confidence that sufficient information exists to decide the ultimate fate of 20% of the South Island. I interpret deep questions from informants and literature about flexibility, evolving land-understanding, and inserting long ecological time into decisions. We should ask "What structure can capture differing temporal perspectives including slow land cycles, ecologists' historical research, politicians' election cycle limited view, farmers seasonal land interactions etc? " Content once again becomes process.

## 6 Who is community? Who is a stakeholder? Who is in and who is out?

*“There is an amazing divergence between north and South Island in tenure review. In the North Island people do not even know what is happening, in the south island they stop talking to me when I say I am involved in tenure review.(Bowie 2003)KI*

*“we as lessees and land managers in the high country must take on the responsibility of drawing up our set of objectives for future land management and land use . We need to convince ourselves that we have the ability , the knowledge and the expertise to manage our land and to set in place long term sustainable strategies. What’s more we can do it damn sight better than the bureaucracy. These objectives should be established by “grass” roots farmers*

*It will require a commitment and a preparedness to change which will e extremely difficult but the alliterative for us is to be locked into a system of outside experts dictating what should happen and an every-increasing inability for us to influence our own business dedications indeed our own destiny.”*

*Pat Garden, Chairman, South Island High country committee , Federated Farmers . 1 March 1991 quoted in (Dominy 2001:48)*

The discourse’s subtext is laden with nested definitions of ownership, different meanings attached to land, fences around who is ‘in and who is out. The fear of losing control over place where values reside I believe lies at the root.

Farmers often claim their proximity and connection more than ownership defines them as ultimate insiders. “I chose this to live here, I value this country.. I live close to it. I spend long evenings in town making decisions... Others chose lives in the city...” (Aubrey 2004a) KI. Aubrey’s view seems eternal: “The man of the high country chose to be there for its values and resents the intrusion of those who have chosen city values”. (Burdon 1938:66). This view is held strongly enough for articulation in parliament by an MP and runholder: “While sort of understanding that the Crown is the ultimate owner, we believe we have been in de facto ownership of this country...., that is understandable. We are the ones who have farmed it. We are the ones who have depended on this land for our living. We are the ones who have husbanded this land. It has been part of our heritage” Herlihy (Hansard 1998a). They can dismiss others as “romantic and unrealistic” (Patterson 2003)KI.

This is contested- others argue necessity to make a living from the land may cloud objectivity in weighing up the value of say biodiversity versus wool-clip (Hughes et al.

1991) Some even resent locals. "Many urban NZers who oppose its occupation and deny the strength of farming families feel a sense of visual ownership of the high country. The farmer believes the mountains are his spiritual home. The contrasting view is typical of many urban people environmental activists and maoris who perceive those in the mountains as not having the right to live in what should be the wilderness, to own a "national resource' or to have monopoly on a national symbol".(Dominy 2001:49). A Christchurch-based Forest and Bird officer sees a single meaning dominating others: "350 families who've captured all the benefits from pastoral leases. Community interests have not been recognised. The community interest in biodiversity is being sold. The whole of New Zealand, those who live on the land, those who recreate on the land those for whom the land informs identity are all community....(Sage 2003)KI. A Christchurch lecturer and tramper agrees. He claims the stakeholder right of the fireside urbanite reading poetry, his right as a tramper and city academic (Bennett 2003a). To him having a deep connection with the land does not imply living locally.

A politician, perhaps aware his electorate consists of both groups says it is "a special place to every New Zealander, whether those people are lucky enough to enjoy it, either through work or recreation, or just see it as an icon and an example" O'Connor D.(Hansard 1998a). He includes all - except foreigners. Many informants express fear of foreigners buying out the high country. Rational arguments may explain this fear e.g their wealth may distort prices and put land forever out of reach. (Clare 2003;KI Sage 1995), however resistance is often emotional. There is more resentment of one indonesian who owns high country land than many Americans and Europeans even voiced by the liberal MP- "there was considerable feeling in the high country itself about the area now owned by the Suharto family ..their bolt hole" (Fitzsimons,J. Hansard1998 d) She crucially identifies feeling. This is an emotive issue. A labour politician talks of "the vexed and difficult issue of overseas ownership of our high country" Hodgson,P in(Hansard 1995) despite assurances in the same debate that his party supports foreign investment generally. Xenophobic fear of selling identity is not restricted to indonesions.: "F\*\*\*ing Aucklanders – they might as well be Martians for all I care. Keep them out!" (Anonymous) KI

Jealously guarding the high country against 'foreign buy-up' is not universal. For some it is restrictive, one outsider the same as another. Some farmers argue further restrictions on the sale of land they have slaved on for generations are inequitable.. They say there are already sufficient controls (e.g. RMA) to protect values (Gamble.

***“every foreigner buying high country represents a local selling it.(Broad 2003)KI***

2003) Runholders see this as their land and demand total freedom in decisions regarding it given others have no restrictions on their property “We cannot be members of a global village if we do not want to play the global rules. I can sell my property to anyone”(Patterson 2003) KI.

A common answer to legitimacy is ‘the community’. “ The community without doubt holds the future of the high country in its hands. This community extends well beyond the bounds of the high country. (Martin 1994:vii). Everyone defines themselves as ‘the community’. Spatially community has little meaning in NZ where high mobility, individualism and communications mean local connections are not necessarily paramount. What then is community? I liked this explanation: “ Where you hear ‘community’ smell a rat- someone is trying to legitimise their individual agenda”(Bayldon 2003) KI

I found this question the most difficult to understand and reframe. Literature helped. The following quote was my entry to understanding: “A vexing problem in the analysis and resolution of tenure conflict is the evolving definition of insiders and outsiders. In addition it is often difficult for villagers to exercise the same control over new migrants , particularly those from a different tradition. Thus traditional controls begin to erode with the introduction of new residents and sometimes new religious beliefs.(Bruce et al. 1993:639). Defining insiders and outsiders is about defending control against people with different values, different meanings. When David Round says. “The fear is that the New Zealand high country will become a fashion accessory to rich foreigners” (Hayman 2003a), I sense the fear of other meanings being attached to land David loves. “I fear for the future of our wilderness”(Round 2003)KI. I also interpret the wistful description “the land where sheep once ruled” (Patterson 2003) KI, as a lament for his lost meaning.

NZ has a single legal definition of in/out- citizenship. Therefore all the fear of losing meaning to other interests is often expressed as fear people with other passports.. Other societies have degrees of inclusion eg Mongolian pastoralists multiple nested definitions of land rights. (Fernandez-Giminez 2002). New Zealanders trying to defend their values do the same despite our single formal definition of in/out. Jeanette Fitzsimons seems irrational in opposing foreign ownership (Hansard 1998c;

Hansard 1998d). A person's relationship to the land rather than their passport determines whether the land is managed sustainably (which is what she usually talks about.) "Who manages?" obscures the holistic question of "how and why they manage. Greens environmental researcher Debs Martin's bigger picture view included a careful definition of community, determined by "passionate involvement"- , how much one's life is changed by the land",.(Martin 2004) KI. This makes sense to me- but because I do not live on the high country but want ownership mine is emotively clouded logic like every other's.

The question can be re-framed. ' Who has rights to decide the fate of this land?' spawns stand-offs between federated farmers and Forest and bird etc. Instead let's ask " What is/are the meaning/s of the land to Zealand? What is our vision? How can people passionate about those meanings be identified and brought into constructive dialogue?"

## 7 Who is a farmer?

*The member says they are unpaid stewards. I have walked across Crown pastoral leasehold land that is nothing but bare dirt and Hieracium. Fitzsimons, J. (Hansard 1998c)*

*That's because of the Department of Conservation rabbits from next door. Shirley, K (Hansard 1998c)*

The iconic 'southern man' lives in the high country but gives all New Zealanders identity. The definition of who he is, is hotly contested.

National Identity is important: "The lease is a symbolic exchange in which the leaseholder is invested with stewardship of a part of the national heritage. Identity depends on being rooted firmly in high country networks. Even the private schools of Christchurch are a forum of high country identity. (Dominy 2001:44).

Like 'Symbol of identity'. 'steward guarding land values' frequently surfaces as a definition. A runholder's view: "We're just custodians, nobody ever owns it, we're just passing through and trying to enhance it for the next generation..... We have a spiritual and historical connection" Andrew Simpson in (Welham 2003) is echoed in Parliament "unpaid stewards keeping our national identity alive" Prebble (Hansard 1998b)

The positive views are countered at all levels too: Some see high country elites, landed gentry on land belonging to all of us. (Bennett 2003a) and deeply resent "Southern Gentry with undue political influence". (Anonymous, 2003)KI. Their stewardship is criticised "Thousands of hectares are raising nothing except Hieracium. That land has been seriously overgrazed. We have had report after scientific report about how serious the situation is, and who has been in charge while that has been happening? Pastoral farmers!" Fitzsimons, J. (Hansard 1998d)

The definition of farmers I like best comes from one: 'active managers of the land' (Aubrey 2004a)KI. Which is exactly an anthropologist's view "High country leaseholders are active resource managers responding to transitional rhetoric of sustainability (Dominy 2001:44).

This is the entry to a deep question. What matters is what these skilled active managers do, what society asks them to do, the national and transnational rhetoric that surrounds them. Today's runholder called 'Landed gentry' by conservationists is tomorrow's 'steward of the land' if he turns to ecological restoration. Those favouring production might call him a 'greenie'. The true content of the question is not what farmers are but what high country goal we would like managed and how can we use highly experienced NZ active land managers to achieve those aims alongside experts with specific theoretical knowledge and wider perspectives.?"

With much difficulty I found my deep question here, then found it already expressed in the discourse!- "If the Crown suddenly had to deal with 20 percent of the South Island, given its existing problems in terms of weeds and pests and management it could not do it. Realistically, the best thing we can do is to facilitate the managers who are there" Roy,E. (Hansard, 1998b). The responsibility for what these managers do is also understood: "people who have an existing financial interest in the land, but, more importantly, have a genuine love of this land, were left as managers of that estate, and that the Crown contract them to care for that land in a proper way." (Jennings,O. Hansard 1998 a) In this form the question is what we might sacrifice, what we'd pay for highly skilled land managers to implement our vision.

## 8 What is sustainability?

Sustainable management of the high country is the ultimate aim of the martin report's solution: tenure review (Martin 1994). This is translated into the parliamentary debate "Perhaps most of all, underlying it, the land continues to be used unsustainably," Hodgson,P (Hansard 1998a). LINZ says the same (Clark 2003; Clark 2004)KI. The discourse encompasses multiple definitions of sustainability, in different contexts and different temporal and spatial scales.

*The use of the definition of sustainable management ... was not considered appropriate...A new definition of the same term could be also confusing. Marshall,D. in (Hansard 1998a).*

Whether sustainability could even be admitted was contested because of its undefined meaning. However ecological degradation is inescapable and the negative definition- what unsustainability is- forced its inclusion. E.g. "it man be more helpful to think about unsustainability rather than sustainability. We strive to make society more equitable by removing specified inequities. We strive to make the economy more efficient by removing specific inefficiencies. Can we strive to make our national development more sustainable by eliminating unsustainable practises? Wright in (Hughes et al. 1991:33)

Sustainability is not universally accepted today e.g. "What human activity is sustainable?"(Patterson 2003)KI, but generally the implementation of sustainability rather than its definition dominate the discourse." I would just like to finish on that note and say that the Bill is not lacking by its omission of sustainable management as an interpretation O'Connor(Hansard 1998c).

This still requires simultaneous comparison of multiple factors on multiple scales (Adams). An overview says sustainability bridges multiple discourses by arraying them as interlocked parts of a grand puzzle (Pezzoli 1997;549). Schematically this is shown overleaf ( from Stafford –Smith 2000)



Fig 3. Schematic view of multiple scales and spheres of sustainability

	Environmental	Economic	Social
Sustainable land use	Long term productivity of land for the given land use is maintained Necessary rehabilitation is occurring.	The land use perhaps based on a mix of enterprises on the one piece of land ) is economically viable	The management strategies needed to meet environmental and economic goals are feasible and do not require unrealistic personal deprivation or impossible complex management
Regional sustainability	The interactions between land uses do not destroy ecological function : biodiversity is maintained regionally ( not on every hectare)	The region is in net economic balance or an imbalance/ subsidy has an on-going justification from the point of view of society.	The regions social fabric is capable of supporting its human communities; the diversity of these can adapt in the face of future changes

The contest over sustainability derives from the depth of change achieving long term ecological sustainability might require. This is voiced in the discourse: "the pastoral use of unimproved range can never fully achieve sustainable management, even though it may seem tolerable in the short term of about 100 years or more for some vegetation-soil systems" O'Connor in (Martin 1994:25) and "in the long term pastoral use on extensive areas is probably not sustainable in NZ," (Martin 1994:28). It is uncomfortable to think that one of our defining icons- pastoral farming rural communities- is not sustainable.

The contest then becomes where to start- ecologically or socially. "The immediate problem then is how to integrate the social components of sustainability into a

process for driving longer term ecologically based decisions. The difficulty of this, given multiple meanings is well understood too. Run holders and Ngai Tahu share a definition of sustainability as an outcome of systematic processes that link people to one another within a community to their natural environment and to the communities what is to be sustained is a particular relationship between a population and an environment : here social relationships are at stake and land is a template for the familial. In contrast urban-based environmentalists and NGOs argue for preservation of a presumed static past (Dominy 2001:248). This is not just an anthropologist's assessment- it appears in the discourse:

***"I totally disagree with Jeanette Fitzsimons that the environmental values should come before the farming values" Herlihy,G. in (Hansard 1998c).***

***" But the member should not think that property rights stand above all other rights, because they do not. In the cascade of rights, property rights are not at the top. They cannot be at the top, because if they are at the top, then other things like ecosystems come below those rights. That cannot be right. There cannot be any inviolable right to do something to an ecosystem that can never be undone. Hodgson,P (Hansard 1998a)***

Somehow sustainability involves fusing social and ecological systems. Spatial separation of multiple aims is a superficial solution to the deep problem of creating a "land ethic ... enlarging the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land."(Leopold 1969:12). Rather than encourage discourse to evolve our meanings towards this the 1998 CPLA partitions land to reduce contest because it assumes the varying values in sustainability cannot merge. The competitive and exclusive nature of NZ contests is illustrated here: "Conservationists said that the provision did not put conservation as the No. 1 priority as it should. The farmers said that their property rights were being undermined, and that the objects of the Bill clearly were to facilitate economic use. The recreationists said that their right of access was being put down in ranking, and should be right at the top". O'Connor,D.(Hansard 1998d).

Mutually exclusive values are assumed to be unmodifiable. This is not true. Surprises like a 'hard-line' Green MP defending production are possible. : "Ecologically sustainable' makes it quite clear that we are tying it to the ability of productive land to remain productive in all its aspects, forever". Fitzsimons,(Hansard 1998c)

The question 'what is sustainability ?' cannot be fully answered but it begs another question "how can we make sustainability part of constructive interchange over land issues to refine our meaning of the term.?" The answer is in the discourse too- "Sustainable land use rests in the hearts of men not textbooks and science" (Morris 1994)

## 9 Is the process fair?

***“They were so influential a class that one provincial legislator complained bitterly that the council strongly resembled a stockowners club. On the principle that it was well to ask for much more than they expected eventually to get they suggested that they should be given a pre-emptive right over the whole of their runs. ... Whether the legislators intended it...or whether it was a mistake in the drafting of the bill it was a fact that the challenger had to challenge and pay his deposit for the whole block while the holder could stave off the challenge by merely buying twenty acres”. (Burdon 1938:58).***

History is repeating itself- complaints about fairness have been heard before!

NGOs see a process skewed towards farmers. One side has obligations, the other is presented with choices. NGOs often struggling for human and financial resources argue that they have to make a submission while landholders do not. (Sage 1995). NGOs question production as the default option. Significant inherent values must be identified while the appropriateness of continuing to farm the land is not questioned. (Sage 2003). Greens say productive use should be questioned. “The 1948 Land Act obliged good husbandry from its lessees...ecological degradation shows the husbandry has not been good therefore permanent right of renewal is not assured but is taken as a given”. Fitzsimons (Hansard 1998c). Another complaint is that “the whole process is state funded and the lessee can pull out at any point they choose”.(Harding 2003) KI.

***“May I remind the Committee that farmers still have the whip hand in this process” Herlihy,(Hansard 1998d)...***

Claims of unfairness result from perceptions of being at the bottom a hierarchy of values. Some feel even more discriminated against than conservationists. “Recreation is also subservient in the hierarchy to those other two values” Kelley,G. (Hansard 1998d).

Farmers present just the opposite view. Federated Farmers high country secretary Bob Douglas sees a skewed adversarial system with no-one arguing for the farming potential of the land “ it is one lease holder family up against the might of DoC” (Hayman 2003b). To farmers feel like David’s paying for consultants ‘against’ the

Goliath DoC (Anderson 2003). It is adversarial and universally defined as unfair: "This is a tough place. You don't make a fortune living and working here. The environment is against you. Now New Zealand is against us. "We've fought other battles, now we are fighting the politicians Murray in" (Moore 2003). They fear "the insatiable appetite of DoC for land" (Aubrey 2004a)KI Farmers say the land identified as significant is continually increasing, skewing the trade-off against farming. NGOs and DoC do not have to justify the significance of identified inherent value against real costs in terms of production or it's place as part of an entire enterprise.(Undorf-Ley 2004)KI. To farmers SIVs are single values identified at a moment issue while the person on the land has an overview of the meaning of each piece of land as part of a continuing story of production (Anderson 2003; Dominy 2001).

Even when stakeholders get to comment is identified as unfair. NGOs only get to comment at stage three by when runholder, LINZ and DoC have already invested significantly in the preliminary proposal. Mason complains there have been no significant changes between preliminary and substantive proposals (Mason 2003)KI illustrating with. an example of access drawn over a bluff in a preliminarily proposal not being changed despite submissions. He claims NGOs are effectively excluded from input, the process simply being designed appear consultative.

My impression of LINZ was of a truly neutral and professional body. I was unable to detect bias in conversations and unspoken text over many hours' conversation with Christchurch Tenure review manager (Clark 2003; Clark 2004)KI. Why does LINZ neutrality not guarantee perceptions of fair process? I needed to reinterpret these complaints.

My answer is that an unbiased LINZ is not adjudicating on what is important to contestants. The Martin report says GNP and production is not ultimately relevant, the quality of the resource handed down is (Martin 1994). This cuts deeply.. Overriding farming in favour of another inherent value somehow denies the significant and inherent value of a farmer's life history. Patterson says" There will be 250m loss of primary production and there will be 20 million to try to (and fail) maintaining it. This will in no way be replaced by a tourist market that is already saturated. Just more Europeans in \$500 cars driving from Auckland to Invercargill with a bag of rice and staying DoC huts without paying fees"(Patterson 2003). I sense behind this an expression that to him his years successfully sheep farming on Longslip station are more valuable than anything that land might be traded for.

Equally the other side thinks more significance should be given to their core meaning. "The problem is not that the balance is skewed. The problem is that it is not skewed and it ought to be skewed. In fact, the ecological bottom line ought to come before the convenience of the farmer; Fitzsimons, J. (Hansard 1998c). 'Convenience' minimises other peoples' meanings.

Land specialisation denies multiple meanings which is an important social component of sustainability. People ascribe meaning at a much bigger scale than tenure review operates. The complaints that the process is not fair are actually pleas to be able to continue ascribing multiple definitions to the whole high country. This process problem actually involves content- "what is the holistic vision for the high country and how can that be defined?" Following tenure review we may gain efficient lowland farming and high country parks on steep land in exchange for a reduced significance to New Zealander's multiple definitions of the high country.

This question of fair process is a question of meaning and values.. NGOs feel they must fight for the land to mean anything other than 'quantifiable agricultural production'. With limited resources they must leave some areas uncontested. They feel their meaning becomes excluded from most of an area that previously supported it. To Public Access NZ all crown lease lands from river bottom to skyline is crown land to which there should be recreational access. Previously this was negotiated by talking to runholders. Now there will be conservation land on the tops but no leverage to negotiate access through totally freeholded land. That is huge loss. Ecologists like Susan Walker see the need to identify and protect biodiversity across the range of altitudes. The meaning is completely lost, even with a 50/50 split to conservation. For farmers the meaning of a station might be a place where their family has produced fine wool (or beef or mutton) in harmony and understanding with the land's contours and seasonal rhythms. Removing summer grazing and redefining their land as land into permanent productive units, minus pieces others define as SIV changes their definition of themselves and the meaning of their work and lives. (Anderson 2003; Dominy 2001). A new meaning is also struggling to emerge, a post-modern concept of wilderness (Oelschlaeger 1991). Resistance to tenure review and resentment of its beneficiaries also comes from a fear this and other meanings will never be able to evolve. Adversarial adjudication is not capable of dealing with unquantifiable values, even less with yet-to-be-defined meanings.. The deep question is not whether the process is fair but whether it excludes what is important.

Is the process too expensive?

Detractors question the overall cost of tenure review. One estimate is \$9.8m over 5 years (Clark 2004).<sup>1</sup> This is only the cost to the taxpayer of LINZ's involvement. Taxpayers also pay directly for DoCs human and physical resources. Opportunity costs are much greater still. Farmers expend time and effort, which could be spent on producing for GDP. They also divert resources into consultants. Federated Farmers expends research time and funding which could be directed elsewhere. Simultaneously NGOs human and financial resources go into presenting opposing viewpoints. However the direct and opportunity costs were easily justified considering the magnitude of the decision. "We are talking about effectively 20 percent of the South Island---20 percent of the Mainland of New Zealand. That is a very significant portion of land---2.4 to 2.5 million hectares of prime, pristine, beautiful New Zealand high country. We have to get it right.." O'Connor, D (Hansard 1998a), or more dramatically "we are not talking about balancing the views, the preferences, and the rights of environmentalists against the views, the preferences, and the rights of farmers; we are actually talking about the survival of the land itself, Fitzsimons (Hansard 1998c).

Contestants from all sides question costs. " This is a waste of money. Biodiversity could be much better protected"(Walker 2003).<sup>1</sup> "We're spending millions to decimate our sheep industry"(Patterson 2003).<sup>1</sup> "vast resources to do something nobody wants"(Wesley 2004).<sup>1</sup> "... a landscape approach. Obliging farmers into tenure review is politically untenable. For the same costs the government could identify priority regions (e.g. the Mackenzie country), buy contiguous stations, appropriately partition them and sell the land designated for freehold. Money from freehold sale could fund the process in the next priority region" (Harding 2004).<sup>1</sup> Notice how Harding actually defines what he wants, his desired future, not how to save money.

Nobody is really questioning what we spend. The question really is ' what are we buying?', "Can these resources be better spent?" These are questions of content. Informants say "my aims, different from the aims of Tenure review, could be better served." A subservient goal- which land can continue to produce? – completely obliterates the deep question- What do we want ? Deciding on land suitable for freehold and selling it might be part one option to achieve the vision, but only after the vision, which has never been framed, has been defined in the appropriate forum. Ecologists like Susan Walker would insert biodiversity. Bruce Mason from PANZ would advocate for access and Rodney Patterson for sheep. Tourist operators and

forestry developers would have to interchange values with landscape architects. Forest and Bird constructively exchange views with Federated farmers. It would be complicated and take time but I sense all my stakeholders being prepared to engage because of the importance of the subject. Process again is integral to content. The forum in which the desired future is defined will determine whether stakeholders buy into the cost of creating a holistic vision.



## 10 What speed do we need?

Tenure review is seen as 'agonisingly slow'.(Hayman 2003b)in newspaper. This is understood in the chamber. "There has been some frustration that the process has not moved on at a faster rate," O'Connor,D (Hansard, 1998c).

From the point of entering review through four steps to resolution will be some years.(LINZ 2002) Modern farmers manage businesses. Years of uncertainty regarding the future shape and size of underlying assets is strategically difficult for a farmer from a business point of view. (Hayman 2003b) It is also emotionally difficult because it is a farmer's home, livelihood and history. The runholder who has been used to controlling his own destiny and business now has to watch groups of DoC scientists identifying significant inherent values and await with uncertainty submissions from NGOs(Anderson 2003). Urgency for resolution is understandable.

Others say the process should slow down, be the object of profound study.(Bennett 2003a) NGOs see a single opportunity to make the best submission for protection of their values(Sage 1995) This is also voiced in Parliament "People are worried that perhaps they will not be able to keep up with the rate of reviews being considered" Sutton,J. (Hansard 1998d). Many properties may be simultaneously in tenure review. With limited human and financial resources the time pressure is enormous. DoC has a statutory obligation to identify SIVs and is somewhat better resourced but could always use more time on its surveys.(Clare 2003)KI.

Regardless of specific pressure to get a submission in on a particular property what is the philosophically appropriate time frame for a major land partition decision? Neville Bennett asks that question(Bennett 2003a). MPs answer: " this move to deal with this issue, hopefully once and for all, is overdue" Kelly, G.(Hansard 1998d).(my underline) The time pressure seems to come from the distant decision makers. I ask "if we have to make this final decision why must it be done over a few years? There is the deep question! Do we need final decisions? The process question - how fast? relates to content i.e. why?. The discomfort is with centrally planned 'final solutions' no matter how fast. "Politicians can't run the high country from wellington"(Patterson 2003)KI. A process question emerges "How can we become continuously adaptable to the land at a variety of scales from small increments rapidly implemented to large lessons slowly absorbed?".

### 11 Is the price fair?

The negotiated prices excite emotions. Popular press talks of “Selling the country short” (Hayman 2003a) “windfall profits for a few” (Forest and Bird 2004) and “Selling the country for a song”. (Bennett 2003b) Some say lessees buy land at minimal cost, based on historical ‘peppercorn rentals (Talbot 2003)KI and sell it for vineyards at ten times more. Capital gains taxes on resold CPLA land are suggested to ensure market value of the land is passed on to all New Zealanders (Walker 2003)KI. Bennett calls the process ‘shonky’ (Bennett 2003a). Undisclosed prices and effectively single buyer auctions are ridiculed (Barnett 2003). “What happened to the free market and open tenders?” (Bennett 2004). It is claimed that rapid sales rather than fair prices are sought “Managers are rewarded for successful deals so weight is placed on closure not a fair price.” (Walker 2003)KI. For Neville Bennett justice in transactions is a major issue. For him a high country elite with unfair political influence has negotiated buying crown land – our land- at minimal cost to sell for subdivisions, vineyards and other uses beyond public control. (Bennett 2004) KI

Farmers reply that they have already bought leases and legally own perhaps 85% of the land value. (Aubrey 2004a)KI. They are only buying the residual value not the entire land. For them this is not the sale of Crown owned land, this is final settlement of land they or their families bought most of the rights to a long time ago. Legitimately negotiations are not public. (Undorf-Ley 2004)KI The Crown, rightly or wrongly sold most of its rights and is now keen to completely divest itself of the rest... so it is “simply nailing shut a door that is already bolted”. (Clark 2003)KI

I asked all informants two questions-

1. “What do you think New Zealand will look like in 50 years?”
2. “What would you like New Zealand to look like in 50 years?.”

I believe that price is irrelevant to overall holistic goals of best ecological and social management with optimum economic benefit. My children and grand children might ask me why we let land be free-helded, why we did not establish co-management, why we did not preserve altitudinal sequences, why we let the sheep industry go under, why they have no access to climb Faerie Queen through the St James. They will not ask me whether a few families benefited financially.

The deeper issue behind key informant's price questions relates to content. People feel we are selling more than just residual property rights on alpine hinterland. Politicians know this "it must be acknowledged that land is about feelings and about history". Elder, J. (Hansard 1995). Informants interpret price as the value put on their feelings and history. Key informants are worried about selling control over land practises of the high country. They fear loss of sovereignty as freehold land is sold to overseas interests Fitzsimons, J. in (Hansard 1998a), loss of access to important areas (Mason 2003) KI unrestrained land use which will alter landscape values (Lucas 2004) KI, potential biological restoration irrevocably lost (Walker 2004a) KI. Even Bennett, who says price is important, might be objecting to what is being sold:- "South Island identity sells for a song". (Bennett 2003b) (my underlining). Many non-landowners fear that we are accepting a one way door, which will close off options for the high country. They object to price only because western thought correlates price with value. Informants worried about price feel we have undervalued their high-country meaning.

Some landowners may fear we are selling a history they have invested hugely in. This does not sit easily with those whose lives were part emperor and part dog. Rodney Patterson says "a playground for a few is being created from the land where the sheep once ruled (Patterson 2003). KI.

For informants meanings should determine sale price. Bennett says "The pastoral leases were a device to keep vital assets in public ownership and to preserve the inherent values of a unique landscape (Bennett 2003b)." This is not true. My historical analysis says leases were to entice people onto the land for production. (Woodford 2003) Bennett complains his ascribed meanings are being sold. Everyone ascribes different meanings. "Some of the lower more productive land can be made freehold. But much land, particularly the higher country has little of on pastoral value. This land's greatest values are for conservation and recreation. (Barnett 2003) Irrespective of the price Shaun Barnett wants the land's greatest values to be preserved. Only his definition is different to Rodney Patterson's and Susan Walker's. All want to preserve values. The only way they can negotiate over value (in a western society) is via price.

The Martin Report considered many alternative meanings including playground, conservation estate, spiritual home and potential for alternative business investments like Eco tourism alongside productive pastoral land. But some important values were

not included. Anton Meister, an author, agreed appropriateness for bio-diversity of vertical versus horizontal partitioning was unconsidered. (Meister 2003) That is almost Susan Walker's entire meaning!

Rodney Patterson ridiculed Helen Clark eulogising the land as inspiring poets and painters, criticises recreationalists who want free access to high country land when everyone else must pay, rejects Forest and Bird values as elitist. (Patterson 2003) KI He like all others struggles to accept others' meanings. To him, high country means 'land of productive sheep stations'. That is his unchallengeable value. Many key informants, superficially identifying price, are actually voicing their fear over closing the door on uncaptured present meanings and yet-to-evolve new meanings. They value their present relationship with the land, regardless of their actual property rights and resent selling it. Susan Walker for instance puts a high value on modified land that 'has the possibility of restoration to create integral altitudinal sequences'. Her reasons are poorly understood yet she resists selling this meaning at any price.

Though impossible to measure tenure review is a contest of values.,. Values are traded off, and everyone is left looking at glasses that are half-empty. (Clark 2004) KI. A few identify gains and see half-full glasses all round (Broad 2003) KI. Tenure review confuses exchanging property rights with exchanging values.

The re-framed price question- "Exactly what are we selling? What does the high country mean to New Zealanders?" is understood in the discourse "land is about feelings and about history." White, J (Hansard 1995). The answer is certainly wider than '2.45 million ha of low production, semi-arid pastoral land' We could also question process "In what forum can complex, continuing negotiation and exchange of quantifiable and unquantifiable rights and values be used to construct a high country vision?". Many informants' subtexts subtly reject parliamentary committees and closed LINZ room as the answer to that.

## Discussion

*Many historical events, hitherto explained solely in terms of human enterprise, were actually biotic interactions between people and land. The characteristics of the land determined the facts quite as potently as the characteristics of the men who lived on it. (Leopold 1969:420)*

For me this thesis touched important topics. Firstly methods. I dispensed with many traditional research approaches. I did not define my question, start with a literature search, use structured consistent interviewing. I do not claim any objectivity. I reached deep qualitative ideas about the relationships of New Zealanders to the land and to each other. This thesis is about what people are talking about, what they are thinking but not talking about, and what they are not thinking about but might be. It comes from me in Christchurch 2003-4 i.e. the middle of a process. It delves into the intangible texture of a development space.

I claim validity for qualitative, subjective, value loaded methods to do this. Living in Christchurch and with a background in climbing, ecology, medicine and conservation were essential to my research. Development research by traditional methods is essential but incomplete. I believe what I did formally is what we all do everyday, particularly in development. We try to feel the texture of issues around us. Discomfort with subject, language and context results in sticking to known, definable, quantifiable ...unsurprising areas. It prevents full exploration of development space. I humbly question my previous development work in unfamiliar environments.

My first major conclusion is that insiders must do much important development work. All the 'outsider's' biases Chambers classically describes.(Chambers 1983) are insurmountable barriers to exploration of a development space. Working in known and comfortable environments is essential to extending development into unknown and surprising new areas.

My second major conclusion follows directly- development is not about finding solutions. It is about finding questions. These are found by hearing subtle subtexts behind comments, imagining areas of possible congruity between opposed interests, and feeling unsaid deep discomforts. Solutions are implemented by technicians: doctors, engineers, micro-finance experts, agronomists, ecologists etc. Development creates space for them. It is exciting difficult interesting and intangible work. .

I present history as a continuous dialogue between a culture and the resource it colonised. An ecological understanding of the land is as important to tenure as social understanding of the colonisers and economic understanding of free markets and their failures. A conclusion is that sustainable development will only be approached by emphasising the two-way nature of the dialogue. We have to be changed by the land as much as we change it. Westerners have not operated like that for the last 500 years. But the last 500 years are a unique 'conjuncture' (So and May 1993) of available resources and powerful technology to exploit them (Holland 2004)KI. The future is now qualitatively different.

I present multiple examples of history repeating itself, none more striking than the antecedents to the 1948 land act and the 1998 CPLA. The reason I believe is that the same culture, 'going into the future backwards', is using the same tools. (e.g. adversarial decision style, episodic crisis decisions, science as a panacea) These produce the same imperfect results. More rationally we should prospectively consider problems and search *ex ante* for new tools to deal with them. The search undoubtedly will take us, among other places, to other pastoral cultures. We might ask why we should not "live the lives of Asiatic nomads" (Burdon 1938).

***"Why not bring Patans here to teach us how to farm and how to cook"(Wesley 2004)KI***

The New Zealand high country is a 2.45 million ha leviathan. It slips the net we are casting over it. Its exact ownership is a blurred form of common property. The blurriness allows perceptions beyond legal or historical reality e.g. Runholders feel full ownership while others read Baxter's poetry and feel this land that gives them definition is their land. Multiple stakeholders attribute multiple meanings to Crown pastoral lease lands. They are simultaneously iconic landscape, degrading hillsides, remote hinterland of the southern man and his dogs, accessible playground, farmland, potential biological reservoir and backbone of the sheep industry Tenure review tries to solve these multiple meanings by inserting them into a single algorithm worked out by a transparent process. It is a process that has never had to deal with such issues. This 'old tool' succeeds partially and fails simultaneously.

The logic behind tenure review that multiple conflicting meanings are best resolved by spatial separation is straightforward. Yet the debate is full of emotion and questions. Key informants' questions were sometimes voiced directly. Some had to

be interpreted by synthesising multiple views and the literature. The reason key informants did not voice these questions is that space does not exist in our culture for them. Sometimes the constraints are in understanding (e.g. The importance of axis to biodiversity) Usually they are outside deeply embedded cultural axioms that constrain people from asking them.(e.g. neither Fitzsimons nor Meister considered co-management as good for conservation. Central management was axiomatic to both.)

My first question is whether tenure is the solution. This is not a new idea. The 1948 act was a similar response to similar antecedents. Other arid rangelands under culturally similar farming practises produced similar responses: "Rather than waste time and money in trying to stem the inevitable it is highly desirable that a serious attempt be made to determine what portions of the arid belt can be expected to support pastoral settlement without suffering progressive deterioration and then to devise a policy of land tenure and management that will put settlement in those areas on a sound basis" (Radcliffe 1937:28). Speed and financial efficiency favoured Radcliffes solution and underlie Tenure review today. Yet tenure change failed to create sustainability in Radcliffes Australia and 1948 NZ. Multiple international examples show individual tenure is neither necessary nor sufficient for sustainable grazing (Banks 2003a)KI. Examples of sustainable alternative ownership systems abound (e.g. Ostrom et al. 1990). I argue tenure change will fail to create sustainability today.

Why is tenure, a proximate cause of unsustainability presented as the ultimate cause? The answer I believe is that we do know the deep question. It is question for all of us, not only farmers, and relates to myriad unsustainable practises in all our lives. Logically this requires the whole society change. It is untenable to demand farmers altruistically change for the public good while everyone else continues to take the rewards of maximised net present value. Not discounting the future means paying in the present. Farmers would become "stewards of the land paid to do what society wants" (Meister 2004)KI. If they have sacrificed personal production they must be paid publicly. We would prefer to let another generation ask these deep questions. Meanwhile we redraw maps and splint the system along for a little longer.

David Round said 'conservation without sacrifice but is moving into phase of conservation with lifestyle modification... conservation movement was moving from being conscience of the nation to nagger of the nation.(Round 2003)KI. He's saying both the hinterland and unsustainability are no longer remote. We can see the effect

of the unsustainable practises, which helped NZ become wealthy. We need to consider modifying our own lifestyles. It's uncomfortable.

The assumption that individual tenure is a necessary condition for land development and central management to maximise conservation goals is an axiom that restricts the development space. As a paradigm (Kuhn 1970) it impedes achieving holistic solutions (Savory and Butterfield 1999) because it minimises dialogue. Sustainability is a new aim so we require a new land ethic- reminiscent of Leopold's definition: "a community instinct in the making" (Leopold 1969:403). The way to create new ethics is dialogue. The widened development space would include wider participants than conservationists and neo-liberal economists to maximise production and biodiversity. Consider this anthropologists comment: "The not so extra-ordinary parallel between community sustainability and ecological sustainability prompts anthropologists to imagine how we might enter dialogues on sustainability by factoring human communities into biodiversity (Dominy 2001:216). She is saying something similar to this development economist who says: " the recent increasing awareness of the potentially complimentary roles of state and rural communities in natural resource management (Banks 2001)p724. Dialogue produces surprising commonalities!

Seeking ultimate causes of land degradation leads inexorably to deep societal change. It almost seems overwhelming, unattainable. Tenure review under the 1998 CPLA is achievable, improves on the present and avoids deep national transformation which is impossible overnight. The blame for degradation can be shifted away from our economic system, limited understanding, unsustainable farming and lifestyle practises. But culture evolves (Diamond 1997). We do not have to change our thinking overnight. We need to incrementally absorb mountains and be absorbed by them. We have no vision of a desired goal nor space for cultural evolution. We need to find the question to which tenure review is not the answer!

***I will just say one last thing, in passing, to the ACT speaker who is yet to speak. Property rights in land are not inviolable. Property rights in land can change, will change, and will always change. The reason is that the circumstances around land ownership also change. Hodgson, P in (Hansard 1998a)***

My second question is whether freehold or public control are the only options. The 1998 CPLA polarises us to the extremes of the property rights continuum. Many other sustainable pastoral cultures operate in the complex area in the middle of the range,



maximising rather than minimising social interaction over the resource. Freehold and central control are not necessary for humans to operate semi-arid pastoralism. They might be for this culture, but that could change. Cultures evolve. Sustainability might be a strong enough evolutionary pressure on this culture to change social and tenure relationships. We could choose to move our almost alienated common property towards increased rather than decreased commonality. Templates do exist (Ostrom et al. 1999). The humbling vision is that development is bi-directional. The new discourse- sustainability- might force searching less powerful cultures. For example we might ask Mongolian social contracts experts to facilitate negotiated solutions over rangelands here. The deep question sustainability asks is how we can involve people with varied visions to create a holistic goal for a heterogeneous and non-resilient resource. Old processes have failed. Old answers like freehold and central control should be questioned.

A general difficulty with sustainable development, well illustrated in Tenure review is the incongruity between human and ecological scales. Tenure review, in the interest of sustainability tries to integrate ecological social and economic factors into a single algorithm. (Clark 2003)KI However LINZ's single algorithm must span problems measured on different scales - one human the other biological. Nature works on a continuous range of sizes from the unnamed invertebrate to the grand mountain (Marten 2001). The temporal scale of biology is much longer than human time scales. Biologically relevant spatial scales are both much bigger and much smaller than the property boundaries tenure review has to work around. Even the direction relevant to biodiversity is at right angles to the direction of economically useful lines(Walker 2003)KI. Suggestions that ecological knowledge could be applied 'with a little more education' eg (Hudak 1999) miss the point . A cultural/biological incongruity underlies Western societies which have evolved without ecological constraints. Ecology is impossible to capture in a moment with uni-dimensional economic tools. The lessons are that biology is too complex for simple algorithms and that final solutions should be avoided.

Property boundaries are partially determined geographically (e.g. rivers, catchments) but often more by the vagaries of human history. Current thin king in conservation biology is directed towards the landscape spatial scale (Margules and Pressey 2000) Ecological cycles conform to river basins , catchments, mountain ranges, not human drawn national regional or property boundaries. The property, basic unit of tenure

review, often cuts across ecologically logical units at the landscape scale. To capture ecological sustainability we should look at land not property.

Stratification and division of land into separate, static units, legally defined and drawn on maps is derived from the cultural tradition of New Zealanders who came largely from an England heavily populated and without arid rangelands. There, inflexible property rights are enshrined in law and deeply culturally embedded. British farming culture when translated to NZ began absorbing elements of the landscape imperatives (e.g. summer extensive grazing over the tops and winter intensive grazing on the home paddock). There was still much to learn. Simultaneously the process of replacing geographically drawn natural boundaries with historically drawn human boundaries had started. Contrast this with long evolved nomadic pastoralists e.g. Mongolians and Kashmiris. The integrity of natural rangelands is part of their culture. They move across an unfenced landscape, have no individual property and negotiate use of a landscape scale common property. They understand this deeply. In both countries people resisted centrally imposed attempts to partition common property landscapes (O'Flaherty 2003)[Goldstein, 1994]. Tenure review continues the imposition of cultural values not adapted to rangeland pastoralism and terminates a process of culture absorbing landscape values.

Like its British template New Zealand is tending towards individually held smaller parcels, with the farming inflexibility that involves. High country elites are identified and resented by some (Dominy, 2001) as are private hunting and limited recreational fishing access (Millichamp 2003). Science shows fragmenting landscapes makes achievement of sustainability more difficult, biodiversity preservation almost impossible (Sheridan 2001). We walk into the future backwards. Walking forwards would include taking a landscape rather than property view of the high-country, regardless of the practical difficulties.

Human questions are asked in the short term, the land's answers come slowly over 50 to 150 years or more - plenty of time for human practises to condense into paradigms. Paradigms, by definition are difficult to 'step out side of' and almost impossible to change (Kuhn 1970). By the time ecological declines are inescapable human traditions have already coagulated around generations' old behavioural patterns that may have caused them. The Southern man is a New Zealand icon at the same time as his farming might be ecologically unsustainable. He is simply doing, with modern improvements, what his father did. Further the 'noise' of variable

climate, myriad simultaneous farming practises, new breeds, different mustering times etc. drowns the significance of any action. Each innovative farming measure temporarily improves returns, the runholder finances his mortgage for another year and big-picture questions rabbits and hieracium might be asking can be avoided- like last year.

Fire, an early human intervention to improve net primary productivity was identified very slowly as wasteful of essential nutrients. The pulse of organic matter and a flush of new growth obscures longer term declines. When that eventually became inescapable, top-dressing intervened. Immediate far superior returns, (subsidised by fossil fuel and Naaru's phosphate) muffled the land's sustainability question. It is certain that yet to be identified elements of present practise are unsustainable. It is also certain that there is a limit to resuscitating non-resilient land.

Land use decisions based on continuous dialogue between the land and its human occupants should be incremental and continuous. Occasionally there may be major modifications but mostly small changes are created via local policy experiments in land management. If successful, they are adopted and spread. New technology is taken up slowly, with the behavioural changes that are demanded to make those changes most beneficial. Central policy making removes the decision-makers from the questions the land itself is asking. Fragmented individual freehold tenure removes farmers from others trying policy experiments around them, from community checks and balances, The tools with which we make land management decisions, in this case centrally imposed, stepwise change in tenure policy might not be spatially or temporally appropriate for ecological temporal and spatial scales

Ecological scales demand humans making decisions on land management have long term and landscape scale visions. Politicians are elected for a variety of reasons but seldom because they are associated with the land. Informed episodically by sporadic parliamentary commissions and bombarded by lobbyists and interest groups MPs are unlikely to make the best land use decisions. They are driven by many competing goals, including party ideologies. In the parliamentary debates voting consistently went along party lines, (Hansard 1995; Hansard 1998a; Hansard 1998c; Hansard 1998d) strong evidence that little negotiation and modulation of pre-held positions occurred. Politicians also are responsive to a three yearly election cycle Successful politicians are those who represent human interests that arise in three years. NGOs are flawed too, often with single issue rather than holistic visions. They seldom

negotiate values continuously with other users over long times and broad areas. Land issues seldom do that and are thus only dealt with when a crisis has resulted.

In the debates over the 1998 CPLA only Jeanette Fitzsimons spoke strongly on ecological concerns.(Hansard 1998a; Hansard 1998c; Hansard 1998d) Her researcher unsurprisingly, described the Green vision as long term and said tenure decisions should be vested with those with a passion and connection with the land. (Martin 2004)KIThe Greens are the smallest elected party in NZ. Sustainability might be 'political failure'- something that a Westminster style democracies cannot absorb.

The complexity of nature is difficult for human decision making to capture, certainly all at one time. This is well understood theoretically but does not inform our structures. "By concentrating analysis on various property regimes on the pattern of resource use and generally assuming that information about resources is perfect or almost perfect economists tend to overlook one of the most important courses of resource mismanagement. ...in many instances direct resource users and state authorities are not fully aware of the ecological processes at work .. or at least they tend to underestimate the long-term negative effects of their present use on the future state of the resource(Baland and Platteau 1996:381). Lady Barker knew how many sheep they ran and how much they made from them. She never completely knew the ecological cost of burning tussock to keep them fat. Some costs were unknown, some externalised, some unknowable. Nothing has changed.

***"It is not enough to study local land use as though it is only that - local." (O'Flaherty 2003:186)***

Size, shape and time relations are used as examples of biological realities completely missed by tenure review. The lesson is to leave space to absorb new understandings of our relationships with our ecological resources. Final solutions should be avoided. The 1998 CPLA tries to reach sustainability in a single large step. If we think we have necessary ecological knowledge to make final land partitioning solutions we are as happily misguided as Lady Barker.(Barker 1870) As all biological systems do, we need to allow space to evolve incrementally towards sustainability. "Tenure review is another step in our discovery of how best we can live in this high, often fragile land."(Barnett 2003:4) however it may be a step in the wrong direction because it moves away from further cultural evolution. Tenure as the solution prevents s recognising that land tenure institutions are "a critical medium, but only

one of many through which people negotiate environmental entitlements” (O’Flaherty 2003:179) Biological scales are not amenable to simple tenure changes alone.

If biological landscape scale, shape time and complexity are not absorbed by western decision making systems, are they by any human system? Nomadic people following herds are open to landscape questions and are forced to exchange information via continuous negotiation over their shared common property resource.(Bruce et al. 1993; Fernandez-Giminez 2002; Ostrom 1990). The content of tenure carries the deep process question- how can we evolve incremental, multi-scope, continuous decision making because ‘once and for all’ decisions should be avoided.

Contests of community carry the deep question of meaning. The New Zealand high country is deeply embedded in our national psyche but it means different things to everyone. There is no unified meaning of the land, no connecting vision. The tenure review contest over who should be allowed to make decisions obscures the unknown- what those decisions are designed to achieve and how we might pull disparate parties together to form a vision capable of evolving. Sustainability requires a vision for this land, not only rules for its partition.

Bipolar definitions, black and white divisions(Aubrey 2004b)KI are common in this culture. One is or is not a NZ citizen. Much energy is spent on defending the high country from ‘foreign ‘ control. Our bipolar system is insufficient. Most of the energy is actually directed at protecting stakeholders’ values from values of others they perceive as more peripheral. The multiple nested relationships of Mongolians or Zimbabweans might hold a lesson.(Bruce et al. 1993) (Fernandez-Giminez 2002) Do we need, as Debs Martin suggests, to identify an inner group who have truly changed their lives around the land and allow them central decision making rights (Martin 2004)KI. Such groups will include farmers but also perhaps ecologists who have dedicated their city lives to studying the high –country, grassland scientists for whom productive capacity is central and conservationists who spend time and money on species preservation.

The contested definition of who farmers are really asks what farmers do and what we want them to do. Again this lacks overall vision. Tenure review provides a solution to a proximate cause of unsustainability for a population that has not defined its relationship to its mountainous land. We have innumerable highly skilled active land

managers. Historically we've given them one message about what we want them to do (produce). Now we want to change that but are not sure exactly what to. It is urgent that we do .

From a farming perspective DoC is a poor manager because it is not good at pest control.(Patterson 2003)KI To people with ecological sustainability as their core value farmers are poor managers because there is evident ecological degradation, Fitzsimons in (Hansard 1998d). The 'backlash of public opinion' is not because farmers are not good managers- they are excellent -but because they are given confused messages about their aims of management. They have always been told to produce but now they are told to produce and to conserve biodiversity, be sustainable, to diversify etc. (Harding 2004)KI.

Farmers have had support from and values set by the productive lobby. They have never had ecological advice only plenty of critique. A unified vision of what they are trying to do and support and validation from all quarters is the most positive way we can use our land stewards. Although farmers are the best active land managers their management cannot be complete - the view according to which they are perfectly informed about the resource simply because of proximity is probably as romantic as some fireside poetry readers (Baland and Platteau 1996). There is plenty to gain from theoretical ecologists and farmers co-operating on the same goal.- "education has a central role to play ...[active land managers]" may need help to draw together a number of critical in-the-field observations which have so far remained unconnected ... especially when resources are not well localised, not easily visible and rather unpredictable . (Baland and Platteau 1996:386) The deep question are about content- what are society's farming management aims? and process- how can these be achieved?

Sustainability, the underlying aim of the 1998 CPLA is undefined. This does not invalidate it, but does demand an attempt to discover it's meaning and its implication. Previous attempts to partition its multi-polar meanings exist: "The Clayton committee began an evolving bipolar definition of sustainability- apparently to appease both poles of the argument. Farming land fits a model of sustainability in which economic production based on extraction of resources took primacy while conservation land fit an evolving model of sustainability in which environmental preservation took primacy (Smith et al. 1994:240).

The 1998 CPLA solution also spatially separates incommensurable meanings. It defines areas for production and conservation but avoids picking winning productive uses. The market with the constraint of the RMA has that responsibility. It is a neo-liberal philosophy:

“ This working party is not prepared to pick winners or to promote the propping up of existing businesses. The way forward to a more sustainable future will be determined by avoiding, abandoning or modifying land uses systems which are proven to be unsustainable, by treading carefully where land uses are predicted to be unsustainable, and by testing land use systems against clearly defined objectives for sustainability.

If the impacts of an unsustainable land use are not felt by the landholder in the short to medium term then history would suggest that the status quo is very likely to continue. This can happen even when land users are fully aware that the land use is unsustainable... in such cases the crown and agencies are faced with the task of judging the needs of the present against those of future... The ideal must be to strive for a system in which well informed land users with a commitment to sustainable future make their own decisions. These decisions will be made within a legislative framework that reflects society's desire to safeguard opportunities for future generations” (Martin 1994:97).

The Martin report is not prepared to pick winners in the struggle for sustainability, preferring via tenure review to let self- interested individuals of freehold land and central government on crown owned land to preserve sustainability. But of course they are picking a winner. They inductively assume their best options from the past (appropriate laws and a free market) are best for the future. They selected out co-management and all options between the two extremes of tenure (Meister 2004)KI. Empirically the winner they picked (the market to deliver sustainability) is a rank outsider given its record so far.

.

The market fails on sustainability because of problems of externalities. It cannot capture all values for a true market price of sustainability. Public goods and externalities are difficult to insert into the same formula as private goods and productive values. The question then becomes whether a proxy market can be created that can capture these values. Even this is unlikely because of technical difficulties and because we will never have perfect information(Banks 2003a)KI.

Tenure review closing the door on future cultural evolution makes it harder to absorb management mistakes.

Sustainability applied to the high country is not simply a new concept that farmers will absorb once it is inserted into our discourse and science produces the necessary knowledge. "Another myth that needs dispelling is that when their knowledge improves sufficiently all pastoralists will manage sustainably. Our suggestion that sustainability is unlikely in many regions is not another attack on pastoralists: it is precisely the opposite. It is pointless criticising pastoralists for not having perfect knowledge just as it is unjust to censure them for maximising income when that is precisely what most other people try to do. It is crucial to realise that if we expect a pastoralist to forego present income in favour of the long-term condition of the resource then we are asking him or her to act altruistically without any incentive. Hence we argue that progress from here depends not so much on the pastoralist but on the government agencies responsible for policy (Stafford Smith et al. 2000:197). He is saying is that sustainability is a way a whole culture interacts with all of its resources.

Government demanding sustainability from farmers must also demand changes in Auckland's transport system, and Christchurch's polluted air. New Zealanders have to vote for such a government. The whole society has to 'buy into' immediate costs for long term intangible gains of sustainability (de Roode 2002). Rodney Patterson on the balcony of his Redcliffs home said "When I see s\*\*\* in the water I know it was not farmers who put it there." (Patterson 2003)KI. Pastoral farmers, dairy farmers and businessmen all reflect society's core concerns. They do what society asks via government manipulated contextual changes. For farmers to change their practice everyone else also has to stop discounting the future too.

Farmers could become 'stewards of the land' paid to do what society wants" (Meister 2004)KI. For instance a farmer might be subsidised to restore an altitudinal sequence on his land, with advice from ecologists and labour from task force green. For our protected biodiversity we'd pay in loss of GDP, reduced tax revenue and subsidy to the farmer. Tenure might be part of this solution, for instance the restored altitudinal sequence might be covenanted, co-managed by DoC or community managed. The farmer may chose to maintain his ownership. Tenure is not the whole solution.



A national holistic goal of sustainability that includes altitudinal sequences and restoration would need national buy-in for reduced GDP and sustainable practises in towns like reduced private car use. It demands societal change on an overwhelming scale. Realistically we cannot transform a nation's thinking overnight. Perhaps tenure review improves sustainability under the "tyranny of the possible".(Overton 2004) We cannot transform a nation's thinking overnight, so rather than lift our eyes to distant lofty mountains we concrete some proximate causes.

That logic is mistaken! We do not have to change overnight. Sustainability needs structures that allow incremental evolution - absorbing mountains into culture and let our culture be absorbed by the mountains. The re-framed question then is - "How can the high country be re-zoned to ensure sustainability " should be re-phrased " If people on the high country are simply expressing what culture demands, how can our culture change to absorb and take responsibility for ecological values of our mountains.' The concept is huge, but small, simple solutions like tenure review will not make it disappear. The unending contest over the meaning of sustainability has just begun.

The meaning of sustainability to New Zealand can only come from increased constructive discourse while tenure review specifically tries to reduce discourse by spatial separation of interests assumed to be incommensurable. There is doubt whether this culture is capable of non-adversarial discourse and incremental decision making. In parliament and in Tenure review we choose adversarial systems with rules of engagement and defined adjudicators. These tools of the past may not do for the future. Tenure review highlights the stepwise nature of western government as opposed to a continuous co-evolution with the resource base we live on and the adversarial nature of our decision making. People do not meet, ideas are traded around a central adjudicator, (LINZ) or around periodic votes in a parliamentary debating chamber. People do not meet. Debs Martin says everyone has spirit soul and this could be brought into the review process (Martin 2004)KI. Many contestants around this dialogue might ridicule such comments. However I agree with her. If we are to construct our future (Oelschlaeger 1991) ideas are not enough. Complete people must meet. A sustainable future will evolve from fusing horizons of visionary people, not implementing the ideologies of winning adversarial groups.

A suggestion is that media, far removed from the land, does not capture these values so there is little debate over them (Talbot 2003)KI. Perhaps this culture's powerful

media has emasculated us. We are no longer able to negotiate values individually on a personal level, leaving it rather to media in the public arena. Is tenure review a land solution for people who live distant from resources and from each other? Bruce's idea (Bruce et al. 1993) that tenure crystallises a relationship between people and the land is explained. People, who do not easily talk, partition their land in ways that allow them not to talk. Such people will not discover the meaning of sustainability.

***The partitioning of the high country becomes an algorithm lacking vision, run by process people with a checklist mentalities (Mason 2003)KI.***

The process questions all carry content under their surface. One of my major conclusions about tenure review and about development in general is that content and process are intertwined. How we do development and what we try to do both determine where we finish up, what possibilities we see, how big our development space is. "Development is not simply starting with a clean slate and deciding on the optimal solution- it is deciding on a process to get from where we are to the best outcome" (Broad 2003)KI. The fairness, cost and prices paid all overlie questions of what the land means, and how we might define a unified vision and insert it into our relationships. The speed question asks about how we go into the future. Feeling uncomfortable with the finality of review informants desperately want a process of continuous incremental change rather than one last great leap forward towards evolution of tenure as visualised by the property rights school.

Tenure reviews adversarial with terms of reference and a dispassionate adjudicating body. The debate is fractured- "the process drives people into their corners" Elder, J. in (Hansard 1995). Single interest groups promote their ideas against others, in a suspicious atmosphere. One MP commented "If anybody should be seen entertaining a merino wool producer in the members and guests lounge and the word went out, we would have a procession of people with recreational and environmental interests turning up at all the select committee members' offices to make sure that some sneaky submission had not been put in that needed to be countered" Sutton in (Hansard 1998b). It leaves everyone dissatisfied, feeling they have lost (Clark 2003). "Interests, whose views are diametrically opposed, are claiming that the other side has scored a resounding victory," Herlihy, G. in (Hansard 1998d). What they have lost is some or all of their land definition.

The simple algorithm is, 'specialise' and partition land into its best single use under the strongest authority for that purpose:- Conservation land conserved under DoC and productive land farmed under the historically best way of maximising production (freehold tenure). This view of creating a mosaic is validated by some conservation thinkers (Fisher 1994; Margules and Pressey 2000) but not with exclusively single uses.

This is an example of using tools of the past contexts for future problems. Adversarial decision making is what this (ecologically unsustainable) culture has historically devised. It now applies this to securing future sustainability. Central control and freehold (minimising negotiation over land) is the way this culture historically pursued conservation and productive goals. In a new context (sustainability) assuming these still are optimum, is invalid.

Final decisions, one-way doors, prevent a culture modulate itself to changing land, changing global and local contexts, different technologies, changing understanding of the earth. Just now, when sustainability is being defined nationally and internationally, seems the worst time to partition land beyond the ambit of discourse. Central management puts responsibility for land care with a distant government, freehold's "Private, Keep out" signs take responsibility away communities. "Tenure ceases becoming useful as part of our (evolving) relation with the land when it is seen as THE (final) solution to that relationship" (O'Connor 2004)KI.

There are no unique, non-negotiated final decisions. The resource is too complex. Run holders in the first 30 years of pastoralism on the NZ high country thought they had the answer to farming the high country. Burning gave pulses of nutrients, stocking was high, hieracium non-existent, soil quality reasonable... But conditions changed, knowledge improved, technology advanced. We now know some of their practise discounted us today. Today overseas tourism sometimes makes recreation more valuable than sheep. Global warming might hugely change where biodiversity is most vulnerable or farming most productive. Conditions have, and will continue to change There are no final solutions. Much of the angst on both sides regarding the pace of tenure review relates to its finality, closing the door on learning.

Unlike tenure review, an evolving vision has no end, it requires continued discourse and learning. Mongolian social structures might seem slow and expensive in time, but indicate rangeland societies for whom diverting resources in continued discourse

is cost effective.(Fernandez-Giminez 2002) There surely are lessons for advanced productive societies, with little land history, suddenly confronted by unsustainability. There might be important lessons for New Zealand farmers from listening to words of Karakoram yak grazer(Shah 2003). The need to incorporate learning is understood in the wider discourse (Walker and Janssen 2002). The templates we choose should include cultures co-evolved with mountains.

Tenure review is a snapshot. It universalises a view constructed by managers and economists from a well-selected group of informants at a particular time. O'Connor criticises the martin report most for delivering certainty, presenting its solution as somehow valid beyond the time it was written and outside of its particular informants.(O'Connor 2004)KI Twenty years ago eco-tourism was not considered a major value of the high country. Nor was 'potential bio-diversity reservoir' nor was adventure-racing playground. Today these are huge values to some. Twenty years hence other values, unimagined today, will have evolved in New Zealanders relationship to this land and to each other.

The questions of content and process around tenure review are all re-framed into one question of process and one of content- What is the holistic goal for the high country and how (by what structure) could we achieve it. See table over.

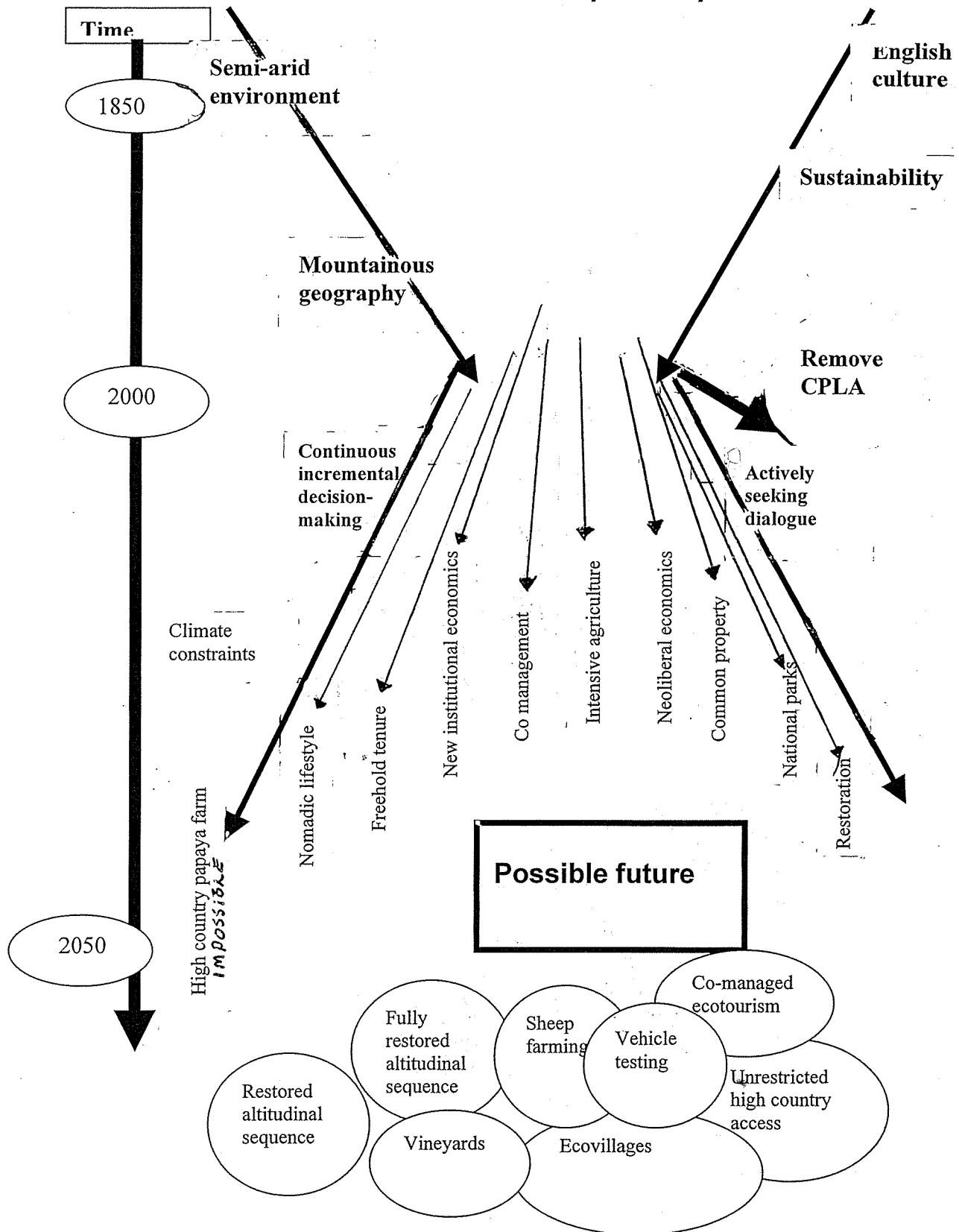
**Table Two - Summary table of questions around tenure review**

Question in the widened discourse.	Reframed questions
Is tenure the solution?	What is the question (vision)? How could we define it
Are freehold and private ownership the only options?	What process would allow interaction to reach the myriad negotiated possibilities between property rights extremes.
When have we reached a point of sufficient information for final decisions?	How can the varying visions of land users be incorporated in a single process with a vision for undivided landscape
What shape should the division be?	What is the vision for our land? How can we fairly negotiate the sacrifices required to include biodiversity
What is a biological time frame?	How can New Zealanders create an evolving, continuous decision making structure.
Who is community	What is our vision How can people deeply involved in the land be included in creating that vision
Who is farmer	What is our vision? How do we want our land managed?
What is sustainability	How do we start creating a land ethic?
Is Tenure review too expensive	What is the holistic goal? How is it to be produced?
Is tenure review too fast or slow?	How do we start making continuous incremental decisions on land?
Are prices fair?	What are we selling? What values do we hold? What is our vision?
Is the process fair?	What are the central meanings of the high country that must be protected?

I finish by generalising some of the lessons about development that this dissertation has taught me by returning to the funnel analogy. The v-shaped funnel of history has brought us to a point where we have inserted a filter –tenure review which defines the content of what can pass through and a process of review which defies the direction that content can take. Practically the constraints are tight. The possible development outcomes from here are limited. I asked all my informants what they thought New Zealand would look like in 50 years time. All answers were similar- intensively farmed diverse lowland and high country conservation and recreation estate. The main differences in outcome are whether freehold owners on productive lowland farm emus or proteas, exactly how access is worked out to the higher land and how much biodiversity we are able to save.

A new vision of development cannot escape the funnel of history, which has brought us to the present point but would remove the 1998 CPLA and insert a widened dialogue. Much more varied content is now allowed to flow into our development decision. Secondly by creating dialogue, ecologists poets and farmers at the same table the constraining straight sidewalls of tenure review begin to flare. The space for dialogue about mountains is widened and becomes progressively wider. I asked my key informants a second question- what would you like the high country to look like in 50 years time. The answers were varied from Rodney Patterson's sheep everywhere to Susan Walkers vertical altitudinal sequences and restoration on significant areas... The new definition of development- widening the space for discourse admits the possibility of any of those outcomes, even different outcomes in different areas if they fit with holistic goal. See Figure Two on the following page.

**Figure Two – History funnels us to the present. Reducing filters and constraints widens development space.**



## ***Alternatives?***

My argument is that tenure review is creating a tragedy of the commons (i.e. a prisoners dilemma played in a group-(Ridley 1997) in a legislated communication vacuum. Despite wanting sustainability, we are likely to lock ourselves into a structure from which it will be difficult to reach new solutions because we cannot communicate with each other. An alternative 'non-tragic' development space exists but the content and process of the law make us unable to reach it. The inadequacy of tools for this process becomes increasingly apparent. I have pointed to the parliamentary system where ideologies talk to each other in an empirical vacuum. For example MPs make laws while admitting to no grounding in the high country, parties vote along strictly ideological lines, various interest groups make submissions to LINZ based on their values but little dialogue occurs between the interest groups. The essential fusing of horizons does not happen.

The first step to overcoming this shortcoming is recognising that this does not have to be the case. Many traditional societies have avoided legalising tragedies of the commons, western societies are discovering neo-institutionalist frameworks now. I will introduce some solutions towards the end of this section but first I simply list a number of quotes that indicate an evolving discourse on alternatives to the axioms under which the 1998 CPLA was drafted. The idea here is to indicate the development space is much wider than what we usually see. An author of the Martin report told me none of this was considered in 1994 but it would today. As I criticise Pettis for her lack of connection to the land in the lawmaking I should say Prebble's strong economic arguments are not grounded in modern empirical studies of Common property nor neo-institutionalist theory. The process is clearly a single snapshot at a particular time without lasting validity, though its outcome, a legally defined map of NZ will have lasting validity.

I specifically avoid interpreting these quotes, they are simply inserted to give the flavour of a widened discourse that exists and show an alternative trajectory is possible.



*The search for solutions.... Will begin with how land is held: not simply how holds what land, but what kinds of relations people form with the land and with each other (O'Flaherty 2003:188).*

*But not all users of natural resources are similarly incapable of changing their constraints. ... I should address the question of how to enhance the capabilities of those involved to change the constraints ... to lead to outcomes other than the remorseless tragedies. The real world has give and take, People on land can alter their rules and constraints and factor in transaction costs and penalties (Ostrom 1990:14).*

*Comparative cultural ecology invites us to look at the landscape in order to see "the interplay between humans and nature and to track the social consequences it has produced –to discover the process by which in the remaking of nature we remake ourselves" (Worster 1992:63).*

*The philosophy is to understand that communicating people can solve their resource problems in any situation and that the idea is to create internal and external structures that will enhance their opportunity to do so (Ostrom 1990:21).*

*"Moving away from some of the more extreme simplifications and abstractions of orthodox neo-classical theory and focusing instead on a different more empirically robust model....The core element that binds the separate groups of neo-institutionalist writers together is the conviction that orthodox neo-classical analysis rests on highly specialised assumptions and is incapable, without some modifications of dealing effectively with many problems of interest to theorists, empirical researchers and policy a-makers (Furubotn and Richter 1997:435).*

*This leads me to ask what differences exist between those who have broken the shackles of a commons dilemma and those who have not. The differences may have to do with factors internal to a given group. The participants may simply have no capacity to communicate with one another, no way to develop trust and no sense that they must share a common future. Alternatively powerful individuals who stand to gain from the current situation while others lose may block efforts by the less powerful to change the rules of the game (Ostrom et al. 1999:280).*

*Whatever the precise model state intervention has to be reshaped to institutionalise collaboration between administration and resource users. The researcher must determine what are the relevant characteristics of the resource, of the users, the social structure to which they belong (Smith et al. 1994:45).*

*There has been an upsurge in in-depth field studies pointing to then considerable collective action of rural communities and non-co-operative game theory has shown that co-operation is a possible outcome in such communities. Rural communities can effectively sustain co-operation even though users are numerous ... provided that an effective authority structure exists to provide leadership and sufficient trust is established to countenance optimistic expectations regarding others' intended behaviour (Ostrom et al. 1999:280).*

*What makes model interesting is that the capture important aspects of many different problems but remember the constraints are assumed to be fixed. As long a analysts presume individual cannot change such situations themselves they do not ask what internal or external variable can enhance or impede the efforts of communities of individuals to deal creatively and constructively with perverse problems such as the tragedy of the commons (Baland and Platteau 1996:385).*

*If natural resources are to be protected against the risk of destruction it is essential that the State provide a clear framework of basic rights rules and objectives to serve as guideline for a voluntarist resource management policy. If market forces have to be tamed for the purpose of resource conservation it is at the national level that protective measures must be taken. Indeed rural communities alone will not always be able to impose on themselves rules of resisting in the midst of powerful market pressures. Given disastrous failures of most governmental attempts at managing natural resources it is essential that user groups be integrated in national resource preserving strategy. This implies they are granted clear and secure rights over local level resources as well as unambiguous responsibilities including monitoring and sanctioning perogatives. . That the rationale of any rule set is properly explained, that here is enough room left for user groups to adapt rules to local circumstances and procedures to change them at grass roots in the light of evolving experiences exist. This tends to favour societies with a long well established tradition of co-op0eration in varied sectors of life. .... Significant successes attest that trust can be created under the impulse of catalytic agents who are often coming from outside the community (Ostrom et al. 1990:16).*

The scope of this dissertation is not wide enough to explore alternative solutions. However I will introduce solutions that I believe does achieve the lofty aim of 'raising our eyes to the mountains' and get us there over a generation. They are course based on the assumption that co-operation is possible. In an expanded development space allowable discourse is as wide as human imagination. There are other solutions out there.

O'Connor (O'Connor 2004) KI is working on this one...  
Imagine a mountain institute. This overarching national structure collects passionate and skilled stakeholders from any field. In a single institute talking co-operatively rather than adversarially ecologists, conservationists, recreationists, economists farmers, poets and philosophers try to establish overarching goals for the mountains. These are passionate people whose lives have actually changed because of the mountains. The initial period of creating a vision might take several years and have buy-in from all stakeholders

Regionally structures under this one would form to implement the vision. These regional people would consist mainly of people who actually live on the land. Farmers, ecologists, photographers conservation groups. They are charged with implementation. Their other function is to provide continuous feedback to the overarching structure.

A weakness of the process creating the 1998 CPLA was that the law was made by people with little long term feed back regarding the land they were making the law about. MPs made flying visits to the high country, waxed lyrical in parliament, made a law and moved on. The proposed structure provides for vision created by people connected to the land in constant dialogue with others who have alternative meanings for that land getting continuous feedback from people who work on that land locally. The implementers are getting continuous feedback from the land and continuous input of overarching vision from the mountain institute. They are truly stewards of the land because their management goals come from a validated body with long term integration of society's vision. The members in the mountain institute think continuously about mountains rather than moving onto other things once a stepwise increment has been made. Every decision of the institute of local implementers would have to be subservient to the holistic goal as well as helping one or more of the subservient interests of the land.

This might practically work as follows: The institute recognises biodiversity in a particular area as important. A farmer is subsidised to restore an altitudinal sequence on his land, with advice from ecologists and labour from Taskforce Green. Everyone becomes a stakeholder by paying for biodiversity in loss of GDP and tax revenue. Tenure worked out locally might be part of this solution, For instance the restored altitudinal sequence might be covenanted, co-managed by DoC, community managed or something else, but tenure is never not THE solution.

Harding (Harding 2004) KI suggested a central institute with multiple skills who analyse key regions, buy properties, rationally make land use decisions and then sell the areas zoned for production to recoup costs. He shows examples (e.g. muzzle station in Clarence or Birchwood) where similar things have been done on smaller scales. This means rational forward-looking decisions are made on a landscape scale. He resolves the process but did not address to overall vision for the high country.

Stafford Smith suggests a single leasehold system with strong sliding scale of balanced rights responsibilities and rentals with a well defined basis in resilience Resource capability and regional profitability are maximised together (Stafford Smith et al. 2000). Of course some would suggest this is theoretically desirable but quite impracticable however a developed version should be used to guide regional policy intervention and public investment with regard to land use. At a property scale there are any ways in which on-property public investment should be guided by the priorities of land and at a regional scale another level of ecologically and socially sound decisions is made. This solution actively seeks to put characteristics of the resource into the way it is managed. A scheme is given overleaf.

**Table Three – Proposed resilience- based leases**

	High resilience	Low resilience
Grazing rights	Higher ( approaching freehold	Lower (e.g. short term grazing rights)
Management responsibilities	Higher responsible for rehabilitation etc	Lower (imposed controls on stock numbers etc
Rental fees	Lower because owners pay to carry out their own management	Higher (to pay for administration and monitoring costs.
Proportion of land allocated to uses other than grazing	Lower ( meet national conservation objectives	Higher (ensure large areas protected from damage.)

These three ideas show a certain convergence- all involve landscape view, different scales, different roles for people with different vision and above all dialogue. I introduce them only to show alternatives are possible. Each would have to be fully explored for validation

## Key Points

### *Key points about development in general*

- ◆ Before any “managed change” (Lele 1991) is introduced , development always involves determining the ambit of the discourse and contest for space to expand an issue. This usually happens informally, with the powerful stakeholders restricting discourse to their interests. This quickly produces an outcome that is achievable because it has been ‘pre-limited’ within those stakeholders. Development should intentionally try to broaden and deepen the discourse so that the result is the best, not just an easily achievable, outcome.
- ◆ Interests that are superficially contradictory may hold deep congruencies. Defining these is a difficult but critical role for development.
- ◆ There is no distinction between content and process. The content of intended changes combined with the process by which those changes are implemented determine the range of possible endpoints that will be reached.
- ◆ Qualitative method is critical to exploring discourse. To do this effectively requires deep understanding of history, context, culture and lots of time. Predetermined research aims are likely to hinder reaching a widened space for development.
- ◆ Every present point in history is an integral of culture, history and environment. Sustainable development demands consideration of the importance environment to where we are.
- ◆ Final solutions should be avoided. Culture evolves and must be allowed to do so.

### ***Key points about tenure review***

- ◆ Tenure review continues the underlying direction in which western colonisation of the South island was headed- formalised property rights on productive land and exclusion from the rest. It is a major step towards the old end. Within that direction it might be the best achievable result.(Broad 2003) KI.
- ◆ Sustainability is a new element of discourse demanding a change in development tools and thinking. We actually continue with our old tools. Characteristics of the resource (high country) need more attention in partitioning decisions. It is a non-resilient ecosystem
- ◆ Tenure review will make sustainability harder to achieve.
- ◆ There is a process deficiency in tenure review. Adversarially aligned interests competing over an episodic crisis limits the development space.
- ◆ There is a content deficiency in tenure review. Change of tenure is advocated as a solution without defining the question. The result focuses all attention on a proximate cause of unsustainability and will not secure sustainability because the ultimate cause is avoided.
- ◆ Alternatives to the present strategy do exist within the passionate stakeholders. There is insufficient space for them to establish constructive dialogue.
- ◆ Social and agricultural strategies of cultures, which have sustainable managed semi-arid ecosystems under pastoralism, should be explored. This culture is not good at learning from less powerful cultures.

## Conclusion

Tenure review is an expression of an important 'conjuncture' (So and May 1993) in New Zealanders relations with the land. Geographical factors underlie much of human cultural and historical evolution (Diamond 1997) Here the pattern of vegetation and climate on the eastern side of the Southern Alps is critical. The rugged landform and historical factors explain colonisation starting from the east and using river valleys as roadways into our mountainous country. Cultural factors too, colonists as 'lowlanders' (O'Connor 2004)KI, also underpin valley colonisation and pastoral farming as the only allowable land use under pastoral leases. This culture puts a particularly high value on maximising net present value and production. Burning which releases a pulse of organic nutrients for quick growth but also allows much of that pulse to be washed away, expresses this value. High short term stocking and a fine wool industry on the 'backbone of New Zealand' resulted. The western scientific approach to land, powerful and flawed simultaneously, also underlies the responses to subsequent downturns in output. Each significant downturn in output was countered with an increased input (Harding 2004)KI and corresponding, short lived increase in output. Thus top-dressing, fencing, rabbit control and fossil fuel based mechanised transport and machinery 'splinted' production for time.

More recently other realities from global to local level have impacted on the relationship between New Zealanders and the land. In the 1980's a strong Government philosophy of divesting itself of assets worked through both major political parties and thus became axiomatic, unquestioned (Broad 1995). New Zealand's adversarial parliamentary system contests ideas that two polarised parties disagree on. It is able neither to accept nor refine ideas where both disagree or agree. So from conception in the mid 80's to the 1998 CPLA (CPLA 1998) developed a vision for crown land based on the best ideas from the past. Simultaneously increasing wealth and access threw many more stakeholders into the South Island high country (Broad 1995). Recreationalists and conservationists political voice was heard through their respective NGO's (e.g. FMC, NZDA, Forest and Bird, PANZ etc). With increased access different land uses also became possible. Recreational tourism both national and foreign, fishing and hunting, farm stays, and scenic flights promoted non-productive uses of land while forestry and diversified agriculture became possible with transport and infrastructure. Each potential land use brought in



different interest groups. There has also been a property boom with particularly lakeshore subdivision becoming highly valuable. Having sheep grazing on land that people would spend hundreds of thousands of dollars for makes little economic sense. These local and national changes are nested in a global discourse where sustainability in its many definitions becomes important. Geographical factors lurking behind much of this. The land under discussion is some of the most mountainous and remote in the most geographically remote major landmass on earth. Fossil fuel production is close to its all-time peak and may decline soon. Given the fact that petroleum subsidises much of the infrastructure, access and framing methods of the High country all land uses hang by a fragile thread.... (Harding 2004)KI.

The conjuncture of factors leading to tenure review brings about a discourse expressed in ten major questions. These questions relate to content of the law being applied to the Crown pastoral leases and to the process whereby that content is enacted. Our culture often makes decisions via interest groups pressuring for a single issue which is decided for "once-and for all" Shirley (Hansard 1998c). Here central authority decides and expresses that decision in terms of a redrawn map- a partitioning of the land into areas for each of the interests to be expressed (Clark 2004). This culture typically does not negotiate accommodation of simultaneous interests in the way many traditional cultures do. Thus, Tenure as a physical reflection of the relationship between people and between them and the land, in New Zealand seems headed towards a partitioning of land for production and less productively valuable land for conservation and recreations. Mongolians living in NZ might not have reached this point. Their culture, long evolved with land and common grazing, might have trusted the enshrined cultural mechanisms (Fernandez-Giminez 2002) of negotiation to produce appropriate local solutions as required. However British colonists could not be expected to live like Asiatic nomads (Burdon 1938). The partitioned either/or nature of the LINZ map being drawn now might express New Zealanders acceptance that continuous, subtle negotiations for appropriate solutions are beyond us. Even negotiation regarding access will eventually be crystallised in law to avoid continued negotiation, anathema to this culture.

A picture of what the redrawn map of New Zealand already hangs on my wall - produced by Landcare in Nov 2003 (Manaakiwhenua, 2003). It analyses land in terms of productive potential. The high value on production is likely to over ride other issues (notably biodiversity) and partition NZ along horizontally contours. Many cultures and NZ farmers (Anderson 2003) recognise vertical migration as a way to

cope with seasonal production variation. Biodiversity is best protected on vertical strips too.(Walker 2003)KI.

Tenure review, in its present form, will produce gains. A large area that ecologically may not have been able to support farming as practised in its present form, will become part of the conservation estate (Broad 2003)KI. Huge areas of leased productive land with restricted land use options will be freed to individual owners land use decisions. Theoretically, with transferable property rights and individual control it will gravitate towards improved output related to specific geographic conditions on that land (Banks 2003a). Already vineyards produce pinot noir where once only sheep grazed, communities are stronger and economic output higher (Mason 2003)KI. Tenure review as the Martin report envisaged, (Martin 1994) will certainly diversify land use in NZ high country to tourism, forestry and many other uses that may even be unimaginable now. Making many simultaneous 'land use experiments' possible on the high country will allow freehold landowners unrestricted selection of choices to maximise production-i.e. tailor his land use to specific local conditions. Tenure review, if it deals with tenure issues 'once and for all' will free politicians for other tasks of managing this nation rather than tie up the state with central control of a peripheral asset. Prebble,R. (Hansard 1995).

Tenure review in its present form will also create problems. The shape of the land partition, reflecting this society's high value on property rights Shirley (Hansard 1998a; Hansard 1998c; Hansard 1998d) 19997) and production but much lower value on biodiversity will partition the land along productive lines. These are orthogonal, literally and metaphorically to the lines biodiversity preservation demands (Walker 2003) KI. Vertical altitudinal sequences and restoration will be ignored. Market forces largely control tenure review, New Zealand and the world. "Bio-diversity is a market failure" (Meister 2003)KI. The vast gains to conservation land may not be supported with the requisite increased funding to the conservation department resulting in less conservation value being preserved and a degradation of the image of conservation in the public mind.(Aubrey 2004a)KI It remains to be seen how access issues will resolve. No doubt some areas of high recreation value will have legally validated access preserved, in some areas hunters fisherman or climbers will be denied access to areas they traditionally used. (Mason 2003)KI How much will fall in each category remains to be seen.

Most importantly tenure review in its present form will divide land into centrally controlled conservation estate and privately owned productive land. Some call this black and white partitioning (Aubrey 2004a; KI Clark 2003). It will remove responsibility for land care from average New Zealanders. This will, restrict the amount that land issues will change culture. We (people who do not live on the land or do not work for DoC) will not listen to the questions the land asks us. Tenure review will move New Zealanders further from the ecological ideal of being a culture continuously modified by the land on which it lives (Leopold 1949).

Are there alternatives? The scope of this dissertation does not encompass offering alternative solutions to Tenure review. I however have re-framed the major questions in such a way that their content is captured but stakeholders not alienated. I believe those negotiated solutions, working in the 'grey' area between the extremes of central control and unrestricted private decision, is where this society has most to gain. In today's global context we must learn to listen to the questions we ask each other and to questions the land asks us. The cultural antecedents of this society lived in four very unusual centuries of human history (Holland 2004) KI - a time of resource plenty and burgeoning transport. To simply use the tools of that time to create solutions for a period of resource scarcity is natural but not logical.

I believe we should walk forwards into the future: Predict the problems and issues that might arise and treat each other and the land in accordance with that rather than using the best solution of the past. Development to me is creating structures that can do that. I offer some examples of this. I particularly like O'Connor's vision of a mountain institute that integrates science with conservation, sociology, even poetry and philosophy overarching multiple local institutes negotiating holistic management (Savory and Butterfield 1999). I did not include this as the ideal, final solution but rather to indicate there are many possible solutions (Ostrom 1990) and ways to evolve incrementally as social and ecological determinants change.

I spoke to many passionate and knowledgeable people who unfortunately never holistically negotiate our identity together. Sinclair talking about constructing a national identity says, "it is as if we have been imprinted by images of our land. The physical suggestions of our mountains must be included in the framework of our lives" (Sinclair 1986:6) In other words to create a culture that 'treats mountains like mountains' (O'Connor 2004) KI.

## References

- Adams, W. M. (1995). "Sustainable development?" In R. J. Johnston, P. J. Taylor & M. J. Watts (Eds.), *Geographies of global change* (pp. 354- 373). Oxford: Blackwell.
- Ainsley, B. (2003). Tenure review, *Listener* (pp. 17-22).
- Anderson, I. (2003). "Trouble reviewing pastoral lease." *The Press* 27 November 2003, pp. A11.
- Aubrey, D. (2004a). Interview Ben McLeod station 22 March Mathias (Ed.).
- Aubrey, D. (2004b). Midday Report National Radio
- Baland, J., & Platteau (1996a). Halting degradation of Natural resources: is there a role for Rural Communities? Oxford: FAO and Clarendon Press..
- Banks, T. (2001). Property rights and the Environment in Pastoral China: Evidence from Field. *Development and Change*, 32, 717-40.
- (2003a). Interview Christchurch 24 December J. Mathias (Ed.).
- (2003b). Property Rights Reform in Rangeland China: Dilemmas on the Road to the Household Ranch. *World Development*, 31, 2129-43.
- Barker, L. M. (1870). *Station Life in New Zealand*. London: Virago.
- Barnett, S. (2003). Freedom of The Hills: Unlocking High Country Recreation. Wellington: Federated Mountain Clubs (FMC).
- Bayldon, G. (2003). Interview 26 July J. Mathias (Ed.).
- Bennett, N. (2003a). "High Country land grab creates riches for a few." *The National Business review* Oct 24 2003, pp. 13.
- (2003b). "South Island Identity Sells for a Song." *The Press* 22 Nov 2003, pp. A17.
- (2004). Interview. Christchurch Feb 18 In J. Mathias (Ed.).
- Bowie, S. (2003). Interview. Christchurch July 17 J. Mathias (Ed.).
- Broad, H. (1995). *The changing role of government in the management of its high country lands : a research paper for the degree of Master of Public Policy, Victoria University of Wellington / Harry Broad*. Unpublished Master of Public Policy, Victoria.
- (2003). Interview. In J. Mathias Christchurch Oct 17 (Ed.).
- Brown, D. W. (1994). *When strangers Co-operate: Using Social Conventions to Govern Ourselves*. New York: The Free Press.
- Bruce, J., Fortmann, L., & Nhira, C. (1993). Tenures in Transition, Tenures in Conflict: Examples from the Zimbabwe Social Forest. *Rural Sociology*, 58, 626-642.
- Burdon, R. (1938). *High Country*. Auckland: Whitcombe and Tombs.
- Busso, C. (1997). Towards an increased and sustainable production in semi-arid rangelands if central Argentina: two decades of research. *Journal of Arid Environments*, 197-210.
- Casimir, M., & Rao, A. (1998). Sustainable herd management and the tragedy of no man's land: an analysis of West Himalayan pastures using remote sensing techniques. *Human Ecology: An Interdisciplinary Journal*, 26, 113-25.
- Centre for resource management (1983). Pastoral High country : Proposed Tenure changes and the Public Interest - A case study. Christchurch: Lincoln Papers in Resource Management 11, Canterbury and Lincoln College.,.
- Chambers, R. (1983). *Rural Development: Putting the Last First*. London: Longman.
- Clare, M. (2003). Interview. Christchurch J. Mathias (Ed.).
- Clark, C. (1991). Economic Biases against Sustainable development. In R. Costanza (Ed.), *Ecological Economics: The science and management of sustainability* (pp. 319-30). New York: Colombia University Press.
- Clark, M. (2003). Interview. Christchurch, several occasions J. Mathias (Ed.).
- (2004). Interview. Christchurch , several; occasions J. Mathias (Ed.).
- Connor, H. (1964). Tussock Grassland communities in The Mackenzie Country, South Canterbury New Zealand. *New Zealand Journal of Botany*, 325-351.
- (1965). Tussock Grasslands in the Middle Rakia Valley Canterbury New Zealand. *New Zealand Journal of Botany*, 261-76.
- Cronshaw, T. (2004a). "Hieracium, Curse of the Hills." *The Press* 12 March 2004, pp. C8.
- (2004b). "The War goes on." *The Press* 19 March 2004, pp. C8.

- Dawson, R., & Tao, S. (2002). Concurrency: a system design approach to environmental management and sustainability. *Journal of Environmental Sciences*, 14, 63-69.
- de Roode, J. (2002). A Strikingly Good Bargain. *Times Higher Education Supplement*, 18-20.
- Department of Conservation (2000). The New Zealand Biodiversity Strategy: Our Chance to Turn the Tide. Wellington: Department of Conservation, Ministry for the Environment.
- Diamond, J. (1997). *Germs, Guns and Steel*. London: Jonathan Cape.
- Dickinson, K., & Mark, A. (1988). The New Zealand Protected Natural Areas Programme- a progress report. *Search*, 19, 203-207.
- DoC, & LINZ (2004). Molesworth a Conservation Park. Wellington.
- Dominy, M. (2001). *Calling the Station Home*. Lanham, Maryland: Rowman and Littlefield.
- Espie, P. (1987). *Edaphic ecology of Festuca nova zelandae, Lotus pedunculatus and Trifolium repens on Cragieburn High country, yellow brown earth and related soils*. Unpublished PhD, Lincoln.
- Fernandez-Giminez, M. (2002). Spatial and social Boundaries and the Paradox of Pastoral Land Tenure: A Case Study From Postsocialist Mongolia. *Human Ecology: An Interdisciplinary Journal*, 30, 49-79.
- Fisher, J. (1994). Carving Up Tomorrow's Planet. *International Wildlife*, 24, 30-38.
- Forest and Bird (2004). "Tenure review moratorium needed." *Conservation News* Feb 04, pp. 3.
- Furubotn, E., & Richter, R. (1997). *Institutions and Economic Theory*. Ann Arbor: The University of Michigan Press.
- Galbraith, J. K. (1977). *The Age of Uncertainty*. London: British Broadcasting Corporation.
- Gamble, W. (2003). "Friends or Foes." *The Press* 22 Nov, pp. D6.
- Goldstein, M. (1994). *The Changing world of the Mongolian Nomads*. Seven oaks Kent: Hodder and Stoughton.
- Grime, J. (1979). *Plant strategies and vegetation processes*. Chichester: Wiley.
- Hansard (1995). Parliamentary Debate on CPLA 6 April.
- (1998a). Parliamentary debate on CPLA 7 May.
- (1998b). parliamentary Debate on CPLA 17 June.
- (1998c). Parliamentary debate on CPLA 27 May.
- (1998d). Parliamentary debate on CPLA 28 May.
- Hardin, G. (1968). The Tragedy of the Commons. *Science*, 1243-8.
- Harding, M. (1991). High Country High Hopes. *Forest and Bird*, 25-32.
- (1995). A vision for the High Country. *Forest and Bird*, 14-22.
- (2003). Phone interview. Christchurch July In J. Mathias (Ed.).
- (2004). Interview. Geraldine Jan 8 In J. Mathias (Ed.).
- Hayman, K. (2003a). "Reign on High." *The Press* 1-11-03, pp. D3.
- (2003b). "Tenure Tensions." *The Press* 22 Nov, pp. D4.
- Ho, P. (2001). Rangeland degradation in North China Revisited? A Preliminary Statistical Analysis to validate Non-Equilibrium Range Ecology. *The Journal of Development Studies*, 37, 99-133.
- Holland, J. (2004). Phone Discussion Christchurch Feb. In J. Mathias (Ed.).
- Hudak, A. (1999). Rangeland Mismanagement in South Africa: failure to apply ecological knowledge. *Human Ecology: An Interdisciplinary Journal*, 27, 55-79.
- Hughes, H., Petersen, D., McEwen, M., & Leslie, D. (1991). Sustainable Land Use for the Dry Tussock Grasslands of the South Island (pp. 80). Wellington: Parliamentary Commissioner for the Environment.
- Hughes, P., James, G., & Woods, K. (1995). A Review of the Government System for Managing the South Island Tussock Grasslands (pp. 104). Wellington: Parliamentary Commissioner for the Environment.
- Kuhn, T. (1970). *The Structure of Scientific Revolutions*. Chicago: Chicago University Press.
- Landcare Research (1998). GIS newsletter (pp. 10).
- Lele, S. (1991). Sustainable development: a critical review. *World Development*, 19, 607-21.
- Leopold, A. (1949). *A sand County Almanac*. Oxford: Oxford University Press.

- (1969). The Land Ethic. In P. Sheppard & D. McKinley (Eds.), *Essays towards and ecology of Man* (pp. 402-25). New York: Houghton Mifflin.
- LINZ (2002). Tenure Review; A detailed guide. Wellington: Land Information New Zealand.
- Lucas, D. (2004). Interview. Christchurch Feb In J. Mathias (Ed.).
- Manaaki whenua (2003). CPLA (1998) Tenure review South Island Land Productivity Groupings. Palmerston North: LINZ.
- Margules, C., & Pressey, R. (2000). Systematic Conservation Planning. *Nature*, 405, 243-253.
- Marten, G. (2001). *Human Ecology: Basic Concepts for sustainable development*. London: Earthscan.
- Martin, D. (2004). Interview. Geraldine Jan 8 In J. Mathias (Ed.).
- Martin, G. e. a. (1994). South Island High Country Review: Final Report. (pp. 183). Wellington: Working Party on Sustainable Land Management  
Ministries of Conservation Agriculture and Environment.
- Mason, B. (2003). Interview. Christchurch October In J. Mathias (Ed.).
- Mckaskill, L. (1969). *Molesworth: a History*. Wellington: A.H. and A.W. Reed.
- McKay, B., & Acheson, J. (1987). *The Question of the commons; The culture and Ecology of Communal resources*. Tuscon: University of Arizona Press.
- McKendry, P., & O'Connor, K. (1990). The Ecology of Tussock Grasslands for Production and Protection (pp. 161). Christchurch: Centre For Resource Management.
- McLeod, D. (1980). *Down from the tussock ranges*. Christchurch: Whitcoulls.
- Meister, A. (2003). Phone Interview October. In J. Mathias (Ed.).
- (2004). Phone Interview. Feb In J. Mathias (Ed.).
- Millichamp, R. (2003). "Angling for Space." *The Press* 22-7, pp. D7.
- Moore, C. (2003). "Land of Legends." *The Press* 22 Nov, pp. D5.
- Moore, L. (1956). The Plants of Tussock Grassland. *Proceedings of the New Zealand Ecological society*, 3.
- Morris, J. (1994). sustaining the resource base-integrating production and conservation values, *New Zealand conference on sustainable land management* (pp. 83-87). Lincoln University.
- Newsome, p., Willoughby, J., & Hunter, G. (2003). South Island Pastoral lease land Tenure Review: an Interim Vegetation Cover Map (pp. 34). Palmerston North: Landcare Research.
- O'Connor, K. (1974). Nitrogen in agribiosystems and its environmental significance. *New Zealand Journal of Agricultural Science*, 8, 137-48.
- (2003). Conflicting Innovations: A Problem for Sustainable Development of New Zealand High-Country Grasslands. *Mountain Research and Development*, 23, 104-109.
- (2004). Interview. Christchurch Feb In J. Mathias (Ed.).
- Oelschlaeger, M. (1991). *The Idea of Wilderness*. Binghamton, New York: Yale University.
- O'Flaherty, M. (2003). The Tragedy of Property: Ecology and Land Tenure in Southeastern Zimbabwe. *Human Organization*, 62, 178-190.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Ostrom, E., Burger, C., Field, R., Norgaard, B., & Policansky, D. (1999). Revisiting the Commons; Local Lessons, Global Challenges. *Science*, 284, 278-82.
- Ostrom, E., & Gardner, R. (1993). Coping with Asymmetries in the Commons: self governing irrigation systems can work. *Journal of Economic Perspectives*, 93-112.
- Overton, J. (2003). Discussion various, 27 Oct in Palmerston North. In J. Mathias (Ed.).
- (2004). Discussion. various In J. Mathias (Ed.).
- Patterson, R. (2003). Interview Christchurch Sept. In J. Mathias (Ed.).
- Paulson, D. (1998). Collaborative management of Public Rangeland in Wyoming; Lessons in Co-management. *The Professional Geographer*, 50, 301-15.
- Payton, I., & Mark, A. (1979). Long term effects of burning on growth, flowering and carbohydrate reserves in narrow leaved snow tussock (*Chinochloa rigida*). *New Zealand Journal of Botany*, 43-54.
- Pezzoli, K. (1997). Sustainable development: A Transdisciplinary Overview. *Journal of Environmental Planning and Management*, 40, 549-602.

- Proudhon, P.-J. (1994). *What is property*. New York: Cambridge University Press.
- Radcliffe (1937). *Further observations on soil erosion and sand drift with special reference to south western Queensland*. Melbourne: Government Printer.
- Ridley, M. (1997). *The Origin of Virtue*. London: Penguin.
- Rogers, G., & Walker, S. (2002). Taxonomic and ecological profiles of rarity in the New Zealand vascular flora. *New Zealand Journal of Botany*, 40, 73-93.
- Round, D. (2003). Interview. christchurch August In J. Mathias (Ed.).
- Sage, E. (1995). The Big Steal. *Forest and Bird*, 18-22.
- (2003). Interview. Christchurch Sept In J. Mathias (Ed.).
- Savory, A., & Butterfield, J. (1999). *Holistic Management: A New Framework for Decision Making*. Washington DC: Island Press.
- Shah, L. (2003). Yak Grazing in the Shimshal Valley, Pakistan. *Mountain Research and Development*, 23.
- Sheridan, T. (2001). Cows, Condos and the Contested Commons: The Political Ecology of Ranching on the Arizona-Sonora Borderlands. *Human Organization*, 60, 141-152.
- Sinclair, K. (1986). *A destiny Apart: New Zealand's search for a national identity*. Wellington: Allen and Unwin.
- Sinclair, K., & Dalziel, R. (2000). *A history of New Zealand*. Auckland: Penguin.
- Smith, W., Sutherland, R., Cairns, I., & Turbitt, M. (1994). Towards a National Science Strategy for Sustainable Land Management (pp. 41). Wellington: Ministry of Research Science and Technology.
- So, A., & May, S. (1993). Democratization in East Asia in the late 1980s: Taiwan Breakthrough, Hong Kong Frustration. *Studies in Comparative International development*, 28, 61-81.
- Stafford Smith, D., Morton, S., & Ash, A. (2000). Towards Sustainable Pastoralism in Australia's Rangelands. *Australian Journal of Environmental Management*, 7, 190-203.
- Talbot, A. (2003). Interview. Christchurch July In J. Mathias (Ed.).
- Undorf-Ley, A. (2004). Interview. Christchurch Feb In J. Mathias (Ed.).
- Walker, B., & Janssen, M. (2002). Rangelands ,pastoralists and governments: interlinked systems of people and nature. *Philosophical transactions of the Royal Society*, 719-25.
- Walker, S. (2003). Interview. Dunedin August In J. Mathias (Ed.).
- Walker, S. (2004a). Phone Discussion March In J. Mathias (Ed.).
- Walker, S. (2004b). Phone conservation. March In J. Mathias (Ed.). Christchurch.
- Walker, S., Lee, W., & Rogers, G. (2002). Woody Biomes of Central Otago, New Zealand: Their present and past distribution and future restoration needs. Wellington: Department of Conservation.
- Welham, K. (2003). "Balmoral Battle." *The Press* Nov 22, pp. D3.
- Wesley, R. (2003). Interview Christchurch September. In J. Mathias (Ed.).
- (2004). Discussion. Christchurch February In J. Mathias (Ed.).
- Williams, P., & Meurk, C. (1977). The nutrient value of burnt tall tussock. *Tussock Grasslands and Mountainlands Review*, 34, 63-66.
- Williams, P., Nes, P., & O'Connor, K. (1977). Macro-element pool and fluxes in tall tussock (Chinochloa) grasslands, Canterbury, New Zealand. *New Zealand Journal of Botany*, 443-76.
- Wilshuesen, P., Brechin, S., Fortwangler, C., & West, P. (2002). Reinventing a Square Wheel: Critique of a Resurgent "Protection Paradigm" in International Biodiversity .
- Woodford, K. (2003). "Stewards of the Land." *The Press* Nov 27 2003, pp. A11.
- Worster, D. (1992). *Under Western Skies: Nature and History in the American West*. New York: Oxford University Press.
- Zhang, L., & Wang, L. (2003). An initial study on habitat conservation of Asian elephants with a focus on human/elephant conflict in Simao China. *Biological Conservation*, 112, 453-9.

## Appendix One - Personal comment:

This dissertation deals with discourses of sustainability around Tenure Review of the New Zealand High country. Discourses are only accessed by people. It is important to say who the author (interpreter) of this discourse is.

Key informants often identified their core concerns and what is outside the debate for them. For example “I am an economist (or ecologist, or farmer or tour operator), I understand farming, tourism and recreational interests reasonably but I have little knowledge of ecology (or economics, or farming or hunting)” This defines one major difficulty: Each interested party expresses values in a specialised language. The core values of one group may not be able to be expressible in the language of another. For example it is very difficult to put economic value on ecological goods and services or on biodiversity, hard to compare the values of a ‘fourth generation farmer’ against a city mountaineer wanting to ‘bag a peak’. The fourth generation farmer may have the skyline in which that peak projects imprinted into his subconscious but have never climbed it while that silhouette may already be blurring when the climber sips his latte in a Twizel café. Whose interests take precedence? Different values are very difficult to integrate into a single rational algorithm for partitioning the high country, yet that is the task LINZ has.

I come from a privileged position in to listen to this discourse. I am able to understand most of the languages and the values they express. I try in this thesis to integrate and compare them.

- On frequent trips to the ‘hills’ I often look through biologists eyes. I have an undergraduate degree in biology, have worked as a field biologist in Brazil and Kenya and Master’s level ecology and conservation biology is part of my development degree.
- I have climbed many of the skyline peaks of Crown lease land and other remote NZ peaks (e.g. Evans) I am an active member of the NZ alpine club . I also hunt and fish both in the bush and alpine areas, having spent many days chasing Thar and Chamois around the very hills that form parts of this analysis. The hills are my holy playground as much as any New Zealanders’.
- My deeply held values include conservation. I am a member of Forest and Bird and spend time planting trees on reforestation schemes. I donate financially to conservation NGOs.



- While not an economist my development studies degree gives me some understanding of economic arguments and I feel I can at least capture the value of terms such as production in my thinking.
- I have some understanding of the New Zealand farming community through meeting farmers on my hunting and climbing trips, living on a Bay of Plenty farm in 1999-2000 then owning a hilly 25 ha Banks peninsula property. My neighbours farmed large areas. I am married to Kaaren whose uncle still farms the (North Island) farm that her grandfather broke in.
- Though I am not a fourth generation farmer my daughter is named after a Kahurangi river. I claim a spiritual link with my subject.

These are good credentials for someone trying to integrate the incommensurable discourses around tenure review. However those very strengths and multiple affiliations with my subject remove me further than most from objectivity.. Here are some of biases I perceive:

- Despite understanding increased production I choose to earn much less than I could. I donate to conservation groups (including Forest and Bird).
- I know that politicians are often elected on promises to increase New Zealanders wealth but I believe we already corner a disproportionate proportion of world resources. My wife and I intend to take our human resource (we're both doctors) to countries we perceive need them more.
- I bought a Banks peninsula rural property to bring up my children but left in favour of a rented house in central Christchurch.
- I understand the advantages of infrastructure development for local communities and for moving farm produce and supplies but I often say I'd take NZ with far fewer roads and a much less developed conservation infrastructure.
- I enjoy most of all two-week trips off-track all the time, no food drops, any alpine radio.... then I sign myself out at DoC and use a road to hitchhike home to the city.

We are all complex and biased. Regarding tenure review I am more complex and biased than most.

## **Appendix Two - Chronology of High Country**

(Broad 1995)

1840-50 Settlement begins in Canterbury, Otago and Nelson/Malborough. Especially in first two settlements there is widespread dislike of extensive pastoralism because it conflicts with idea of closer settlement and agrarian economy.

1850-53 Grudging acceptance of pastoralism as its contribution to the rudimentary colonial economy becomes very significant.

1853-76 Provincial government established and in the south island a prime purpose is to sort out the wastelands issue.

1856 Canterbury land regulations and Otago land regulations establish leasing conditions. In Canterbury licence on a year to year basis with a rental of one farthing per acre. In Otago, a 14 year licence set at 5 per 500 sheep. Pre-emptive rights to freehold of certain areas also allowed. High country runs enjoying great prosperity for a decade and half.

1870 First real down turn sets in, combination of falling wool prices the rabbit problem and deteriorating ecological conditions.

1876-77 provincial government is abolished and a major new national land act comes into force. It sets tenure terms for 10 years for pasturage only. Allows pre-emptive rights to freehold to 320 acres and the run is put up for auction at end of the term. This reflects government's preference for closer settlement. No right to freehold.

1877-92 Various acts ease the restrictions in the 1877 Act. Tenure of 21 years is allowed for small grazing run tenures are introduced and compensation is provided for.

1892 Another land act which for the first time imposes management restraints on lessors prohibits the burning of bush and requires them to control gorse weeds and rabbits.

1893 Liberal government elected and the bursting up of the big estates on the Canterbury and Otago plains such as the Cheviot estates begins. While there are spasmodic attempts at closer settlement in the high country they are largely a failure.

1913 land laws Amendment act signals a major shift in policy. For the first time licensees are given a right of renewal (21 years by 2) Government slowly accepting the need for long term tenure.

1921-22 Land laws Amendment Act. Controls imposed on tussock burning and tenure terms extended (35 years by two) Right to freehold re-introduced but very few take it up.

Late 1930s Birth of NZ soil conservation movement. Inspired by the dust bowl experiences in the United states and huge slips in Hawkes Bay.

Mid 1940s High country committee formed and soon amalgamates with federated farmers. In part a reaction by runholders against strong claims of the soil conservationists that the runholders were responsible for massive erosion the high country. Catchment boards get underway.

1948 A new Land act marries the concerns of soil conservationists and the runholders so that strict conditions to protect the soil are one part of the new Act, but tenure is made perpetually renewable on a 33 year term.

1950-84 The introduction of new technology such as aerial top dressing combined with security of tenure and ample government subsidies through to 1984 gives nearly four decades of what is perhaps the high point of extensive pastoralism

Mid 1970s The strong growth of the Conservation Movement sees the passing of the Reserves act giving some protection to valuable natural areas and a government policy statement in 1979 talks about the conservation of natural resources and poses the first government challenge to the pre-eminence of pastoralism.

1981/82 The Clayton committee recommends free-holding as an option so as to give a boost to agricultural production.

Mid 1980s Labour's election and removal of subsidies has a huge impact in the high country. Agriculture is no longer the most valued activity in the economy. The conservation stakeholders make their presence felt. A time of considerable turbulence for the runholders.

1987 The government reforms of environment and land use administration see the land settlement board swept away, the emergence of the department of conservation and a more commercial focus for the land administration.

1989: Proposed new land bill reflecting these changes fails to gain momentum.

1991 Report of the waitangi Tribunal on the Ngai Tahu claims fully re-establishes the tribe as major players in the high country finding they were cheated of their rightful reserves under settlement and recommending the government negotiate major compensation deals.

1994 A new Lands minister announces tenure reform programmed with a new land bill proposed for the end of the year. A major review of the South Island High Country (the Martin Committee) cautiously concludes there is a long term ecological decline in the high country and recommends a number of measures to counter it, including freeholding parts of the land.

## **Key Informant Interviews with date of first interview**

### **Donald Aubery, Runholder at Ben Mcleod 2-2- 2004**

Donald bought Ben Mcleod as a young man just out of Lincoln and has successfully managed it since. He is also well read and a spokesperson for federated farmers on high country issues. Softly spoken and reflective his range of ideas covers much more than simply how to manage sheep on the dry slopes of the Rangitata.

### **Tony Banks 24-12-03**

Tony has a background in economics and now development studies .He also works as a consultant in international development, interestingly with much work in on Chinese rangelands. Thus he brings a perspective combining development, economics and tenure policy in semi-arid rangelands. He has not looked specifically from an academic perspective at New Zealand, which for me was a huge advantage. I got a deep theoretical picture; f grounded in field research and policy level work from other similar environments, yet he had no particular axe to grind in this debate.

### **Grant Bayldon Canterbury landowner and International development specialist 14-7-03**

An interesting combination –Canterbury landowner and international development worker (for Tear Fund) Grant's view spans the entire breadth of the debate. He is connected to the land but thinks daily about what development is and how it is achieved.

### **Dr Neville Bennett, lecturer economic history, University of Canterbury. 16-2-04**

Neville has often been quoted in the debate and lives in Christchurch so I wanted to hear his perspective. His core concerns are justice, transparency and the value of the high country for more than private framing. He is a good example of a city academic whose identity is formed by a land he sees tramps on and passionately wants to retain his visual ownership of.

### **Scott Bowie Tenure review assistant DoC**

Scott is a north islander from a farm in the Hawkes Bay. He is in the interesting position of being completely involved in the process of tenure review, having contact with ecologists farmers and rural communities, yet without responsibility for any part of the process. He is an ideal person to feel the texture of the debate from the middle.

**Harry Broad- Manager Strategic Issues, DOC 24-11- 2003**

Harry is a thinker. He manages strategic issues for DoC now and has moved in policy circles in Wellington for years. His masters in public policy was specifically on government options for high country land. I found particularly interesting his ability to tell me "what Dennis marshal was thinking at the time was..." etc. His is a view of policy from the inside.

**Mike Clare, DOC tenure review manager, Canterbury 25-8-03**

Mike works in the Canterbury DoC as tenure review manager. He is aware of the legal constraints, the difference between what he can do and what he would like to do. In conversation it came across strongly to me that he is trying to organise identification of SIVs as best he can. He is not trying to publicly question the law rather defend conservation interests as best he can within it.

**Matthew Clark, Tenure review manager LINZ for Canterbury, NZ 10-9-03**

Matthew is extremely professional and an administrator. He was very generous with time with me and always careful to express his role rather than personal views. He is certainly aware of how difficult his position in the middle of an evolving process is, and how important his complete ideological neutrality is. In a more relaxed moment we agreed it is a privilege it is to feel the texture of a debate including strong polarised opinions about an iconic piece of our national identity.

**Mike Harding; contract ecologist for DOC on tenure review matters. 8-1-04**

Mike is a contract ecologist presently collating ecological advice on reviews for DoC. He has previously been field ecologist for Forest and Bird. He lives in a rural South Canterbury farming area. This might give him more than simply an ecological perspective. He would say things like- "from the farming point of view.... And that is fair enough"

**John Holland various phone interviews**

Massey lecturer in natural resources John is a 'big picture' person. He is not specifically involved in the tenure debate but adds great depth to understanding of how we make decisions, how we protect sustainability, how we think. He is also involved in conservation issues locally. His background from growing up in northern Rhodesia to working in senior positions in international development gives his perspective great breadth.

### **Interview Di Lucas President NZ Institute of Landscape Architects 25-04**

President of NZILA Di cares deeply about what this country looks like. Visual ownership of magnificent tussock is worth more (a greater value) than of patchwork farmland. Landscape values are a classic market failure and Di sees her role as trying to counter that. She values naturalness (which does not mean ecological unmodified) in environments.

### **Debs Martin, Researcher Green Party Environmental issues (PhD in Environmental Politics) 8-12-04**

With a PhD in environmental law Debs is academically well grounded. As environmentally researcher for the Green party she is one step removed from the actual political debate but fully involved in its theoretical underpinnings. She also brings the deep perspective of living a simple lifestyle in south Canterbury and spends lots of time on education and local landcare issues.

### **Bruce Mason: Public Access NZ 21-11- 03**

Bruce is a former public servant who now organises Public access New Zealand from a Cobb cottage in central Otago. He is extremely widely read and has an encyclopaedic knowledge of legal and procedural complexities that have led to and are involved in Tenure review. As well as his perspective from his lobby group he brings an understanding of a rural high country without being a landowner or DoC employee there.

### **Anton Meister Phone interview 20-11-03**

Anton is an author of the extremely influential Martin report, an economist and development studies lecturer with an international perspective in development. It is an interesting mixture of academic, development policy and economic thinking. He brings a full appreciation of people to the other skills, having worked in development nationally and internationally at high policy levels but also with disempowered women in micro-finance schemes.

### **Kevin O'Connor 20 Feb 2004-02-22**

Retired emeritus professor of grassland management at Lincoln. Kevin now lives in Sumner and thinks deeply about the high country. He is an academic from the productive side of the debate but said he saw the danger and did not want to be "captured by one faction". He wants to be, and is, his own independent thinker. He is

extremely widely read and conversation slipped easily between the concrete and the esoterically philosophical. Tenure is both these things and hours with Kevin make that obvious

### **John Overton**

Professor of development studies and my supervisor for this dissertation. John's background is from Nelson, and worked in the Canterbury geography department. He has aside interest in development studies including sustainable development. In conversation is a synthesis of a south islander's understanding of geography, development, New Zealand and of me. I found John particularly useful to discuss the intangibles- more 'what is behind what is going on?' than just 'what is going on?'.

### **Rodney Patterson, Masters in agriculture, high country farmer and consultant 27-8-03**

Rodney is an ex-runholder (Longslip) which many people told me he farmed very well, increasing stock with good management. He also has a masters degree from Lincoln in which he was an outstanding student. Now as a consultant he discusses views and attitudes to tenure from a farming perspective with many runholders and represents that to LINZ and other participants. The reading list he recommended included historical and legal writings.

### **David Round Environmental law lecturer, Canterbury University. Immediate past president Federated Mountain Clubs 25-8-03**

David is a Banks peninsula landowner and deeply connected to, personally formed by, New Zealand wilderness. As well as his professional skills in law he brings a deep and eclectic understanding of history to the debate. His role as president of FMC put him in a position of synthesising attitudes and expectations of a huge outdoor recreationsit lobby into national policy.

### **Eugenie Sage Forest and Bird Phone interview 26-11-03**

In her administrative position with the largest conservation NGO Eugenie has very little time. She represents Forest and Birds large membership at many levels from national policy to local 'on the land' meetings. I found her in conversation and in her writings to be extremely clear and well thought out in what she said. Her views certainly came from well-reasoned analysis.



**Chris Stewart 19-11-03**

Chris is practical. His job is to organise DoC review teams to properties. Given tenure review is happening, given SIVs need identification and given the constraints on human and time as resources he has to work under considerable pressure to do the best possible job at fairly identifying SIVs. He is fully aware, at the cutting edge on the land of the different perspectives of farmers and ecologists, how they think, their differing visions for the same piece of land.

**Ainsley Talbot 20/8.03 Aoraki/ New Zealand Conservation board**

From an office in Central Christchurch Ainsley brings a wide academic appreciation to the debate. He particularly was able to look at the whole of NZ society e.g. comments on how we as a nation make decisions, what forms us, the role of media in our view of ourselves. He also has a deep historical and international perspective.

**Alison Undorf Ley Senior policy analyst Fed farmers Feb 2 2004**

Alison has a MSC in resource management. As policy analyst for federated farmers she has contact with farmers on the land and integrates this with national policy. I was impressed with her ability to think outside usual paradigms e.g. " conservation and farming on the same square metre

**Susan Walker, Ecologist, Landcare research, Dunedin July18 2003**

Susan is a person of real passion. She is an ecologist born in Zimbabwe but deeply connected to the New Zealand high country. She is very focused on biodiversity and the theoretical conservation biology best practise to defend it but also the political and social constraints around it. Her tools in this debate are a deep academic understanding of ecological concepts, technological tools like LENZ living in and understanding Otago and most of all passionate concern for biodiversity.

**Richard Wesley Administrator New Zealand Alpine Club 11-7-03**

An engineer and climber Richard spends huge amounts of time in the mountains. As administrator of the Alpine club he has a wide perspective relating the place of mountains to national policy. He is daily exposed to views of people like him who care passionately about and spend lots of time in NZ mountains. Most interestingly for me was Richards perspective from non-western mountain people. He has spent huge amounts of time in big mountains of the third world countries where people live in mountains bigger than ours. He is interested in people and has had cups of chai in the Karakorams, shared yak tea in Kazakhstan, and chewed coca leaves with locals in the Andes. He also has spent time in North American and European mountains.