NZ Landcare Trust 'Growing for good' Workshops February-March 2005

nz landcare trust ngā matapopore whenua

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KEY TAKE-HOME MESSAGES:

An overview from all regions

In October 2004, the Parliamentary Commissioner for the Environment (PCE) published *Growing for good: Intensive farming, sustainability and New Zealand's environment.* The report examines the environmental sustainability of more intensive farming in New Zealand. A series of workshops was subsequently run by the New Zealand Landcare Trust in February and March 2005 to seek feedback on the key messages and conceptual ideas in the report.

The discussion groups at each of the eight workshops drew the following key take-home messages from seven broad themes. For notes on the methodology used at the workshops, see page 4 below.

Team New Zealand

This theme attracted the greatest number of key take-home messages overall compared to other themes.

Education and Communication

These points were very strong across all of the regions:

- Urban people lack information or awareness about the importance of farming in New Zealand, and the issues that farmers are grappling with
- Consumers need to be educated about the costs of producing the food they eat
- Better communication is required between urban and rural communities.

Working Together

These points were very strong across all of the regions:

- All sectors of society (consumers, industry leaders, farmers, plus local and central government) need to work together to address the economic and social drivers that are shaping farming in New Zealand
- Sustainable farming is a rural and urban responsibility, "This is OUR issue".

Questions of Strategy

Key issues that need to be considered when considering the direction of farming in New Zealand include:

- New Zealand needs to be pro-active and set its own direction both domestically and internationally
- Current government policies for progress towards sustainability are lacking, inconsistent or sending mixed messages
- New Zealand needs a commonly defined and shared vision of sustainability, coupled with a clearly defined strategy which includes triple bottom line analysis
- Public good versus private good: who benefits and who pays?
- A balance between education and regulation is required.

Leadership

- There was no consensus about the need for a pan-sector organisation. Doubt was expressed by some groups about the worth of creating yet another organisation. Other groups thought that an independent organisation would have real value
- Stronger leadership is needed from *all* levels (consumers, industry leaders, farmers, plus local and central government)

- Direction from the grass roots level is critical. Integrated Catchment Management approaches were identified by some groups as a key vehicle for action
- Central and local government need to support communities by providing funding and implementing effective policies.

Understanding the Impact of Economic and Social Drivers

This theme attracted the second greatest number of key take-home messages. The key argument was that farming in New Zealand is part of a greater whole, and that farmers are forced to respond to economic and social drivers beyond their control.

Key Economic Drivers

- Farmers are forced to 'run faster to stand still' they have to produce more for less through the international commodities market. This is a fundamental driver for most farmers
- The food industry (e.g. supermarkets) insist on low prices
- Increasing compliance and business costs
- Increasing land prices.

Key Social Drivers

- Urban political pressures drive many decisions that affect rural people (e.g. national policies)
- Urban-based consumers demand an affordable, secure food supply.

Drivers: Incentives to Change

- Farmers need to be able to farm profitably to farm sustainably. Addressing environmental
 problems can incur costs to farmers, and consumers must be prepared to pay more for food so
 that farmers can farm profitably and mitigate environmental impacts
- Market signals (e.g. offering a premium price for 'environmentally sensitive' products) will motivate farmers to change very quickly. There needs to be stronger links between farming practices and markets
- The farming industry as a whole needs to focus on increasing profitability, not productivity.

Effects of Intensification on Natural Capital

Differences between the regions were most evident in comments about the effects of intensification on natural capital. However differences were more evident in the general group discussions, rather than in the key take-home messages. Comments about water were more frequent in Canterbury, and comments about nitrogen were more frequent in Waikato. Land use change was identified as a key driver in Marlborough, and in Northland it was suggested that intensification may be less of an issue in this region.

- Farmers want to farm sustainably. Many are aware of environmental problems and want to solve them
- Farmers need good information about the impacts of farming, plus potential solutions/measures for change. Farmers need on farm, paddock-level indicators and a monitoring framework to understand what is happening, how it is happening, and why.

Performance of Research on Delivering Needs

- Funding into research on soils needs to increase significantly, coupled with better coordination of research initiatives. This point was very strong across all regions
- Researchers need to demonstrate the economic implications (benefits and costs) of any changes suggested by researchers
- Effective dialogue between farming communities and researchers is required about the focus and direction of research

- Research programmes must be coupled with effective, well-funded extension programmes to aid the translation of research findings into action on the ground
- Farmers are concerned that the information they receive from fertiliser companies is biased towards selling product. Independent research that is free of commercial interests needs to be conducted on the impacts of fertiliser.

Understanding Redesign

- The concept of 'redesign' is too dramatic. Break changes into small steps. This point was strong across all regions
- Redesign needs to address *whole farm* systems, not just one aspect. This point was shared across most regions
- Suggestions for redesign need to address implications for day to day management techniques, plus financial benefits and costs
- Farmers need *practical* management tools, incentives, and good information based on sound research to change their farming practices.

Education Models for Farmers

- There is a need for well funded, coordinated education programmes for farmers. This point was strong across all regions
- Farmers are dealing with information overload. They are also receiving mixed messages from different sources of information
- Education is a more effective vehicle for change than regulation
- Effective education tools include monitor farms, 'good news' stories, and championing best practice. Messages must be locally specific.

The Importance of Farming to New Zealand's Wealth

This theme attracted fewer key take-home messages than all the other themes. There were no strong commonly shared themes overall. Some key comments included:

- The risk of losing a market is relative to the value of the market
- A variety of opinions exists within the agricultural/farming industry about the risk of losing markets
- Risk need to be identified at all levels (local/national/global levels)
- Quality production reduces the risk of losing markets.

Methodology

Why and how the data was collected

A key purpose of these workshops was to seek feedback on the key messages and conceptual ideas in the report. After the Commissioner's presentation, workshop participants were organised into small discussion groups to obtain feedback on the key messages. From a list of seven overall themes in the report, groups were nominated two to discuss, and given a list of questions for each.

Helped by a facilitator, the groups identified five 'key take-home messages' at the end of each discussion. This required the group to identify the most important issues.

Feedback was never intended to be systematic by insisting that groups respond to a 'compulsory' set of questions or respond exhaustively to all themes. The questions were simply to stimulate discussion, so groups and facilitators worked together differently.

Some were systematic, while other discussions were more fluid. Some groups discussed a different theme altogether, or talked about issues not raised by the questions. Differences of opinion were also encouraged. No attempt was made to achieve consensus if this occurred.

Facilitators recorded the group discussions as completely as possible. After each workshop, group discussion notes were transcribed into electronic format and, wherever possible, facilitators were asked to check their notes for accuracy and to make comments explicit.

At the end of each workshop participants were asked to fill out an evaluation sheet. The results have been analysed and are presented on page 5. In addition to this, participants' evaluation sheet comments have been included in each of the 8 regional reports.

Analysis of key take-home messages

No attempt was made to 'count' the different kinds of responses or to interpret or discuss the comments to any depth because:

- to 'count' the same responses to a particular question, all groups would have had to have been asked the same questions in the same way
- how facilitators recorded the discussions varied. Often they recorded just two or three words, enough to indicate the basic content of the discussion, but not necessarily enough to indicate its true meaning. Interpreting these comments brings into question the validity of those interpretations.

Given these limitations, the data is left to 'speak for itself', and a meta-analysis is attempted whereby:

- 1. Group discussion comments are sorted into each of the seven broad themes
- 2. Comments are made on the overall number of responses per theme that the messages attracted
- 3. Strong consistencies across and between different regions are identified and summarised.

This approach makes the validity and reliability of the analysis more certain.

ANALYSIS OF WORKSHOP EVALUATION SHEETS

Region (Location)	Total Attendance	Evaluation Sheets Returned	Response rate %
Northland (Whangarei)	86	67	77
Waikato (Hamilton)	125	93	74
Bay of Plenty (Rotorua)	97	73	75
Hawke's Bay (Napier)	76	62	81
Manawatu (Palmerston North)	98	76	77
Marlborough (Blenheim)	73	31	42
Canterbury (Christchurch)	115	89	77
Southland (Invercargill)	69	65	94
TOTALS	739	556	75

Table 1 Attendance Per Workshop

• A total of 739 people attended eight 'Growing for good' workshops in February and March 2005 (This does not include PCE or NZ Landcare Trust staff)

• Three quarters of all attendants returned an evaluation sheet.

Table 2 Types of Attendants

Type of Attendant	Total	%
Agricultural/Food industry	83	15
Community Group	22	4
Government/Research Agency	134	24
lwi	9	2
Land owner	157	28
Land owner/Agricultural/Food industry	21	4
Land owner/Community Group	38	7
Land owner/Government/Research Agency	41	7
TOTAL Landowners	257	46
Other	51	9
TOTALS	556	100

• Nearly half (46%) of the attendants were land owners, some of whom also represented a government or research agency, a community group, or the agricultural and food industry

• One third of all attendants were representatives from government or research agencies

- One fifth of attendants were representatives from the Agricultural/Food Industry
- Just over ten percent of all attendants were representatives from community groups.

	Un-						No		
Type of Attendant	necessary	%	Important	%	Critical	%	Response	%	Total
Agricultural/Food									
industry	0	0	60	72	23	28	0	0	83
Community Group	1	5	11	50	10	45	0	0	22
Government/Research									
Agency	0	0	58	43	76	57	0	0	134
lwi	0	0	4	44	5	56	0	0	9
Landowner	0	0	103	66	51	32	3	2	157
Landowner/Agricultural									
/Food industry	0	0	12	57	8	38	1	5	21
Landowner/Community									
Group	1	3	19	50	18	47	0	0	38
Landowner/Governme-									
nt/Research Agency	0	0	23	56	17	41	1	2	41
TOTAL Landowners	1	0	157	61	94	37	5	2	257
Other	1	2	23	45	26	51	1	2	51
TOTALS	3	1	313	56	234	42	6	1	556

Table 3 Purpose of Report

• Only 1% of workshop attendants agreed with the statement that the report was "Unnecessary – farming in NZ is sustainable already and no change is necessary"

• Just over half of all attendants agreed with the statement that the report was "Important – farming is mostly sustainable but there are some issues that may need to be addressed"

• 42% of all attendants agreed with the statement that the report was "Critical – farming is mostly unsustainable and change is required at all levels."

Different types of attendants tended to select different responses:

- Representatives from government, research agencies and iwi were more likely to agree that the report was "Critical farming is mostly unsustainable and change is required at all levels"
- Landowners, and representatives from the agricultural and food industry were more likely to agree with the statement that the report was "Important farming is mostly sustainable but there are some issues that may need to be addressed."

Table 4 Purpose of Workshop

Change Awareness		Commur Ideas/Op	nicate inions	Network with People		
n	%	n	%	n	%	TOTAL
167	30	339	61	404	73	556

The 'Growing for good' workshops have:

- Raised awareness about farming and sustainability issues for nearly one third of the attendants
- Enabled between half to three quarters of the all the different kinds of workshop attendants to communicate their ideas and opinions about the intensification of farming
- Provided an opportunity for the majority of attendants to meet other people and talk about farming and sustainability issues.

NORTHLAND

'Growing for good' Workshop, 22 March 2005

Key Take-home Messages

This section lists the key take-home messages from the Northland workshop only.

The Importance of Farming to New Zealand's Wealth

- Risk: relative, can't afford to ignore
- Diversification: why? Lose market

Effects of Intensification on Natural Capital

- More monitoring must be done
- Intensification is regional may be less in Northland
- Pressure e.g. subdivision on high quality land leads to intensified use on remaining land and production on more marginal land.

Understanding the Impact of Economic and Social Drivers

Drivers – Economic

- Economics are still big drivers and tend to dictate decisions. Can we afford long-term views?
- Main drivers cost (production, compliance land). Social factors (urban drift, corporate farms)
- It is still an issue of supply and demand demand for land increases costs
- External forces have a greater influence than indicated e.g. policy, markets, biosecurity, and national policy
- Will higher returns lead to improvements or further degradation?
- Economic and social cost of sustainability vs return
- Globalisation and consumer demands we are a small cog in a large wheel.

Drivers – Social

• No take-home message

Incentives To Change

- Motive keep things sustainable rather than purely economic or interest groups. Get this right first
- Resources to help action on the ground
- Driven from landowners conviction rather than force
- Incentives needed to help change or regulations (disincentives to bring the change)
- Inspire people to improve environmental practice. Do not throw changes at them and expect to take hold
- Solutions promoted to be practicable
- Land user driven: talk from like to like. Farmer presents to farmer
- Drivers for change market requirements, 'feel good'/awareness by farmers, tax signals, national involvement/rather than individual sector
- We need to know when we make change that what we are going to do is better than where we currently are.

Performance of Research on Delivering Needs

- More research must be done
- Better coordination of research/assistance
- Loss of knowledge base i.e. where have all the scientists gone?
- Funding signals need to change
- Independent research collated to combine economic and environmental outcomes
- Research get the facts to underpin cultural change.

Understanding Redesign

- Needs total system approach
- Soil loss/water quality/nutrient values a starting point
- Sustainable production not sustainability vs. production.

Education Models for Farmers

- Farmers resist imposed change but embrace evolutionary change
- Farmers' information and learning and innovation is commercially loaded listening too closely to the 'wrong' people
- Need more open education (cultural attitudes need to change). Need better extension to farmers. Fearful of the unknown. Need to be aware.

Team New Zealand

Education and Communication

- Education problems, solutions, opportunities to land owners, urbanites, youth, politicians
- Education environmental awareness of all members of society city and country look at impacts of our own activities.

Working Together

- Acceptance by urban population and central government of importance of agricultural and horticultural industries to NZ's economy
- Working together is essential local, national, regional, industry
- Long term with support from (and framework) national/regional/local levels e.g. catchment groups.

Question of Strategy

- Work to be a real clean green NZ. No more green wash!
- How do we prioritise spending on sustainability/environmental improvement?
- Perceived good vs. actual good.

Leadership

• Lobby group = across sectors.

Northland Small Group Discussion Notes

This section lists all points of discussion recorded from the Northland workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

General

- We must also think of our land like a 'kauri' we plant it now but don't see the results for 100 years
- We trade on Clean Green to gain Premiums
- We need indicators and measurements to prove/disprove, also monitors environments
- Do we react to overseas or be proactive?

How much risk do you think there really is? (high, medium, low)

- Risk: Depends on market
- Medium \rightarrow high and increasing
- For NZ there are two produce quality could be instant, perception is slower
- Overseas markets: short term possibly
- Depends on what markets as to the risk
- There is a spectrum for risk which is based on quality and intensiveness.

What kinds of things do you think would make that risk higher?

- Should we continue to promote increased productivity when it causes problems and may not get more money?
- Politically driven
- Consumer driven
- Awareness and unawareness
- Drivers \rightarrow change and risk management
- Economic main one
- Beef industry QA programme failed.

Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- Industry responsibility to educate/inform farmers and users
- Information must targeted

- Information must be presented in forms that are useful and practical
- Manage total system not just individual points
- Generally ignorant/unaware of environmental risk and influence on market.

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground fresh water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

General Comment

- Is intensification happening? Some industries yes
- Land values are ↑. Has some ↑ in land use been balanced by ↓ in intensification else where?
- ↑ silviculture
- Some farmers already acknowledge better per animal production is more sustainable
- Northland may be different.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Need information to know if long term trend is ok
- Forge *fbetter* links between environment outcomes and productivity
- Need good (easy to use, rapid assessment) 'tools' for land owners to be able to objectively measure 'sustainability' in the long term
- Need to know when making change that what you are going to is better than where you currently are
- Documentation essential: systems/putting on value on this.

Nitrogen

- Whilst business supply nitrogen there is economic/environment conflict
- Too short-term focused 'life boat syndrome' 'how long have we got'?
- Problem? Why? Clover suppression
- Long term effects unknown at present. Cellular poison. Eutrophication Water Quality ↓

Water

- Are too many of farming / food business models incompatible with long term natural capital?
- Economic models do not take social costs into account
- Globalisation/free market \rightarrow commodities purchased on basis of lowest cost
- Most producers are price takers
- International influence \rightarrow small size of NZ, overseas subsidies exchange rate
- Farm boundaries not often sensible from environmental management.

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Industry control/commodity prices forcing prices down therefore production must go up
- Need to produce more
- Problems of bank ownership they own the farms and are off shore banks
- System of paying need for more production?
- Farm 'business' vs. family farm. Governance taken away not drinking farm water. Farm corporations have different approach
- Uprices due to market influence. International pressures/government policy/interest rates
- Key drivers: bottom line profit
- History decreasing returns for produce, lower margins, consumer expectations for cheap food
 and other spending
- Bottom line profit % to farmer has declined
- Economics influence land use practices more than environmental concerns e.g. decline of sheep in favour of beef
- Interest rates
- Markets dictates what should happen e.g. clean stream accord why should general public contribute.

Land Values

- Land use farming driven out for housing/rates increase (three mile bush/Glenbervie)
- ↑ land costs paying town prices land valued on small block basis
- Urbanisation
- Cost of land/capital/value.

Markets

- ↑ world population therefore ↑ demand/need for food global basis international affluence
- ↑ quality required
- Market entry requirements non-tariff barriers raising bar on quality levels/↑cost compliance.

Costs of Production

- Compliance
- ↑ Costs production
- Legislation and compliance costs encourages larger farms less family farms/higher inputs costs.

Social/Political Drivers

• Urbanisation less land area producing more - ↑ footprint

- 'State of farmers equity' (social driver) maturity of equity. Earlier need to intensify to pay mortgage later can 'afford' to produce less.
- Impact of council regulations more of a driver permitting land use change
- 'Greenie' factor farmers averse to environment matters. 'Its ok to be green'
- Generational: Don't want to change.

Food Industry

- Agriculture/production Industry
- Emotion removed out of system fertiliser industry. Picked on
- Some industries e.g. dairy taking responsibility
- Advertising products fertiliser, chem.
- Fertiliser company policy to budgeting/nutrient/COP (contracting businesses not taking these up)
- Research.

Moving Forward: Economic

- Monetary policy: low understanding of this. Government needs to understand more
- Need \$ drivers to encourage this
- Waste too much time on weird ideas (carbon credit/fart tax)
- Costs: confusion between productivity/production. Not paid to produce better quality
- Produce more = pay more
- Increase profitability rather than increase production
- Costs decrease taxes
- Beyond farm gate special milks
- Efficiency gains harder in future
- Tax break for environmental practices
- Funding signals: increase production receptive to change but not getting funding for sustainability.

Moving Forward: Social/Education

- Demographics/council planning impacts on land use
- 'Feel good' factor is a driver.

Moving Forward: Markets

• Markets: niche.

Do We Have Enough Understanding Of These Drivers?

• Understanding does not mean we can influence or control them. Historical practices not always easy to change.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

- Low priority given to research for soil conservation, particularly planting
- Lack of funding given to any/all areas of on-farm research by government
- Research done by private organisation is aimed at profit not necessarily overall good
- Information must be relevant but also put out to end-users in a form that is relevant and applicable
- Knowledge on practices (research/education) for different type/size block regard soils as bank

- What impact if fertiliser programme had continued through the '80s, rather than stopping dead for four years fertiliser increase records quoted are taking it from an 'unnatural base'
- Need to keep up the impeding/funding for land/soils research and make sure the information gets to farmers and can be applied
- Independent research needed not done by commercial firms
- Loss of soil scientists/soil research loss of research independence/annual funding
- Visual Soil Assessment soil structure won't cope
- \$\$ spent on on-farm research ↓ not replaced
- Haven't asked the big questions before we've done the research. And where does the information to base the questions on come from local vs. international issues
- Information not shared across arenas/systems
- Research funding/investment too short term competitive
- Independence of advice important.

Comments on Research for Redesign

- Research information needs to focus on farm implications. Farmers resist imposed change but they embrace evolutionary change
- Need to encourage quality not quantity so less intensification would be required
- Farmers resist change therefore how is important regional needs must be met
- Need to address biosecurity issues
- Which port need more research to justify/quantify needs. Need to trial it/get it right.
- ↑ of monitor farm programmes these are driving changes in Northland (beef) farming
- Need to know when making change that what you are going to is better than where you currently are.

Research Areas

- Think also sulphate/pH
- Measurements on real systems not 'baby' systems
- Balancing economic/environment bridge the gap
- Soil research how do people know how good their soils are... some kit user-friendly
- Further research/information transfer: soils/nitrogen
- Role of organic production
- Biodynamic principles
- Effluent management NARF trial.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Do we need to re-design farming?
- Needs to be led from government

- Research information needs to focus on farm implications. Farmers resist imposed change but they embrace evolutionary change
- Need to encourage quality not quantity so less intensification would be required
- Farmers resist change therefore how is important regional needs must be met
- Need to address biosecurity issues
- Which port
- Need more research to justify/quantify needs
- Need to trial it/get it right
- \uparrow of monitor farm programmes these are driving changes in Northland (beef) farming.

Enabling Redesign: Big Picture

- What opportunities farmers need to help redesign?
- Publications to inform indicators of soil needs
- Bring in more rural professionals
- Use already existing publications to get new knowledge out
- Research needs fact on integral part of agriculture
- Block \$\$
- Collaborative approach doors open
- Show what you doing, wasting time/money cost more eventually economic (try) incentives
- NRC:
- educate more field days, onsite farm days
- do more
- proactive with what we know e.g. cowsheds
- watchdog that should know be well informed and make it happen
- parent bond Fonterra Beef/Fibre
- respond local issues
- Total farm nutrient budget needs to happen. . . NRC/parent.

What Makes Redesign Difficult?

- Perception that biodynamics is labour intensive. Don't get to see long-term benefits. Need to show how it can work
- Difficulty to make change where large amounts of capital invested in status quo.

Ideas for Redesign

- Stand off facilities/herd homes. Farmer driven/funded
- Pyrethrum pour-ons for fly control.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Websites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- Education need to get into peoples faces what's happening
- Farmers say: you tell us what we need to do, we'll do it.

Types Of Extension Models

- NBEG tool kit
- Happening central (Whangarei). Biodynamic group (in recess at moment). Grow safe training (councils)
- Landcare most effective
- Far North District Council free advice
- NIRC land disturbance targeting advice contractors
- Read everything newspapers, magazines from agribusiness suppliers.

What Is Working With Current Extension Models?

• No response.

What Is Not Working With Current Extension Models?

• No response.

Enabling Change

- Demonstration farms
- Workshops/get together
- How best to bring about behavioural change? Written word is still strongest way to get information but farmers need to see change working on someone else's farm. On farm demonstration – need to look at overseas systems.

Barriers to Change

• Perception that 'this will be all cost no return'.

Moving Forward: Making the Transition from the Production to the Sustainability Era

How important do you think it is to move from the production to the sustainability era?

- Can't keep going same way
- Sustainable: carry on won't run out
- Limit inputs (fertiliser/stock rate)?
- How do we know? Water quality/work getting done.

Are we being strategic enough in our development of our farming systems – pulling together as 'Team NZ'?

Lack of Strategy

- Need a long term sustainability strategy for NZ
- Mixed signals slm → sustainable production → ?

Questions of Strategy

- How high do we prioritise spending on sustainability?
- Are there off-site/farm benefits to sustainability?
- Who pays?
- Not production vs. sustainability rather sustainable production.

Strategy: Moving Forward

- How do we address these drivers?
- Accept can't change overnight
- (Change) \rightarrow corporate ownership
- Farmer requests/aspirations
- Regulation/rules
- Reach the influencers
- Solutions: Greater education. Land care groups, reach the kids
- Solutions: regulations, \$ 'hit the pocket'
- Solutions: consistent messages from commercial, research, council
- Solutions: talk to each other, ok to be green (fear factor)
- Fragmentation of land need to protect soils and better 'classes' of land
- Loss of soil to non-productive use need better guidance planning
- Issues are often local: local knowledge important, solutions local
- Driven by communities best don't want more legislation
- Balance: Important increase wealth/increase health environment and personal
- Balance changes = new rules
- Catchment groups people taking responsibility
 - role models
 - encouragement
 - peer pressure
- One plan not necessarily the way to do.

Working Together

- Agriculture supports all NZ and it should be returned by Central Government not just industry
- This is not to say that industry should not shoulder some of the burden
- Not just research
- Very few rural MPs in parliament
- Recognition needs to be given to Agriculture by all of NZ
- Farmers are stewards of the land they need better information, skills. Community support and change of attitude 'stewardship is an attitude'
- 'Farmers can't be sustainable in an unsustainable society' too much being lumped onto farmers – but don't let them off
- Work together: 'what we think about what we're doing on our land'
- Sustainable farming requires a sustainable society.

Urban Population

- ↓ area of farmland urban pressure. Educate urban people about why things happen role for regulators to mediate or regulate
- Do city people think there are any benefits?
- Education wider than just farming community: Who? National level
- More urbanised therefore can lose focus on importance of primary sector → need to promote value of the industry to the country.

Pan Sector Organisation

 Need for pan-sectoral lobby group too fragmented – need to include all NZ, especially general public.

Comments from Northland Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Really great that this workshop happened and need more forums like this to follow up
- · Great lunch. Very good discussion need for concrete practices, examples
- This report is excellent and certainly needed at a time when the productivity needs of NZ are clashing with needs of the public
- These opportunities are vital for: keeping groups/communities talking and thinking (is a key to better outcomes sustainability)
- Great start, need to continue and drive forward
- Good worthwhile exercise
- Good session, needed badly, provided some insight into ways forward
- Provided a base for further discussion
- Assisted learning
- Raised awareness that some people don't access readily available information
- Good for next steps to address issues
- Learn other people views on sustainability in farming.

Feedback on Process/Workshop

- Too many questions to discuss during workshops only scraped surface of discussions
- Whenever I offered an alternative the men of the group offered such comments as "I can just imagine what most farmers would think of that." The general consensus was farmers are not open to change
- Provided an opportunity for the farmers (at the coal face) to provide/communicate ideas and opinions. Farmers need to have input into things that can/may effect them.
- So many ideas that are all true that it becomes almost overwhelming
- Not enough farmers present.

Challenges

- How do we get more farmers to participate in workshops like today?
- Showed willingness to change but also huge hurdles to overcome.

Moving Forward

- Include marae and community forums/groups and the media to communicate change and education towards change of attitudes and mindsets. Improve 'buy in' to the process by involving all sectors of the community
- The wide ranging issues confronting NZ in a global sense need more urban/rural communication and input
- It's a wonderful start. Needs more emphasis on the concept that farming can't become/never will be sustainable, in an unsustainable society. All of NZ society has to walk this road together.
- These principles you have raised in this workshop guidelines for sustainability already proven by the Biodynamic i.e. farming and gardening Assn of NZ. Much correspondence/research already exists both in NZ UK, Germany, HRH Prince Charles. There are two dairy farms in Northland and biodiversity 'Rainbow Valley' Warkworth. These methods are not labour intensive, can be adopted gradually if wished. The information is there to be used to change way of thinking. The 'soil' is your bank. Nitrogen is only one component of a balanced biodiversity. Dead soil, no micro-organisms all working together creating a rich diversity of all nutrients. Northland has many different soil

types in very close proximity – needing different strategies of management. Research needed. NZ could be and should be the 'Organic Food Bowl of the World'

- NZ has to diversity and go 'green'. At the moment we are list clean and green. Overseas
 customers are demanding organic produce, especially Europeans. Because of USA's sanctions,
 Cuba had to farm without chemical aids. She now leads the world in organics. The nation is poor
 but well educated and healthy, no junk food outlets. Surely a lesson to be learnt here. Good
 organic farming in NZ would be sustainable and beneficial both in monetary value and healthy
 living. Go biodynamic
- A 'Team NZ' approach is needed. Rural people will do their best provided urban areas are prepared to address their pollution (sewage) discharges
- Good points made, well expressed. Now it needs to put into practice, not remain words
- Please take action rather than just more lip service. E.g. money into longer term sustainability, research vs. short term productivity research
- The message needs to go out to those in the primary sector who may not be interested or aware of the report
- I think Geoff Wightman's comment is useful: 'the city doesn't need a sustainable rural area, the rural area needs a sustainable urban area.' The report is a good stimulus. The key is having a vision and strategic plan that meshes nationally and that individuals 'buy into this'
- An excellent document that communicates a vital message in a balanced way. Would like the
 government to take a much more proactive stance to disseminate best practice from other
 countries and to communicate changing consumer attitudes in our export markets. After a slow
 start, Australia's federal government is starting to do this. Clusters (regionally basin) of farmers,
 retailers, local and central government agencies, tertiary institutions etc all linked to funding
 opportunities such as the SMF or RDF central government to promote these. To develop and
 share best practice and ideas. Government to re-establish a well-resourced national soil
 conservation agency... more useful, relevant research like the Hokianga/Kaipara soil and climate
 study, produced by multi-agencies (NIWA, Crop and Food etc) financed by Econ Dev Minister
- Following the round of workshops, it would be good if PCE come out with some firm recommendations
- The environmental messages need to be a positive spin to get action take on board
- National study
- Long overdue assessment of situation a stimulus for change. Must be taken through to next level, not left on shelf. Lack of information dissemination and co-operation in current system must start action at grassroots level as will die if left at national level. Maybe pass baton to Landcare?
- Raised my awareness that there is a need for increased communication between/across the various sectors of the community e.g. Maori, local people, across generations, cultures, agriculture, fisheries, gardeners, forestry, and science
- Need more publicity.

Feedback on Report

- I am always suspicious when the dates of 'selected trends' are all different has the direction of the trends been predetermined? Why pick on agriculture? What about sustainable cities? Need more research on long-term effects of farming on soils
- Very little emphasis on 'organic farming' as a sustainable system that has proven benefits to run environment
- Why no mention of organic systems as sustainable alternatives?
- A lot of the info is being used against farmers, not enough celebration of what many good practices being used ways to spread the word. Need for documentation so we can prove what we do that is sustainable.

Other

- I would like to feel that the *Growing for good* report changes if needed not becoming a political football with the various parties
- First time I have attended, I have learnt more about Landcare Kaupapa and tautoko their vision and mission 100%. I have learnt a little more about the farming industry and the way they operate, and the minority that are prepared to contribute to healthier land and water 'Sustainable Production' 'National View'

WAIKATO

'Growing for good' Workshop, 17 February 2005

Key Take-home Messages

This section lists the key take-home messages from the Waikato workshop only.

The Importance of Farming to New Zealand's Wealth

• No key take-home messages

Effects of Intensification on Natural Capital

- Farmers are aware of environmental issues and want to solve them. 'How' is the challenge?
- Farmers need to be more pro active e.g. sheep and beef to regain "clean green" image
- Shouldn't be limited by property size (e.g. not just big farms, but lifestylers need to realise the impact they are having too)
- Farmers need information about local areas e.g. what is happening, why, how help move forward. Help to educate their own staff
- Practical on-farm indicators research required to develop a sustainability indicator

Understanding the Impact of Economic and Social Drivers

- Identifying indicators for all drivers
- Not an individual farmer problem farmer / farm is part of a greater whole drivers outside the farm – outcomes impact off farm

Drivers – Economic

- Costs Land, Products, Advice, Compliance = Key driver in intensification?
- Acknowledge \$ and social pressure on land users from markets, supermarkets]
- We're killing the structures that produced responsible farm owners (young people can't get sharemilking jobs and progress to farm ownership)

Drivers – Social

- Social change land owners, market driven, customers / consumers
- Blame v self responsibility

Incentives To Change

- Farmers need to understand the economic implications of changes, plus flow on benefits to the environment 'win, win'. Healthier environment = healthier farming
- We need to let farmers know it is ok to come out of the green closet in regards to sustainability
- More incentives (money / social) needed to promote more change and compliance
- More economic info on pros/cons of various change options
- Give farmers an incentive to farm sustainably
- Optimum production rather than increased production.

Performance of Research on Delivering Needs

- More research into new systems can't just fix one part of the problem
- More research need a stronger dialogue between research and farming 2 ways
- Need for good research (research that is from independent sources)

- Need better understanding of our soils land changes effects exotic tree farming
- Need properly funded research: air/water/soil/fire (the fundamentals of life)
- Research must be independent

Understanding Redesign

- In a sustainable farming situation not everything is perfect but it can be dealt with over time
- Farmers need to reduce the connectivity between soils and water e.g. reduce leaching, wetlands, fence stock out, riparian planting
- 'One bite at a time' small steps to change. Give direction
- 'The answer lies in the soil'
- Incentive to redesign What? Where? Who?
- Concept change from feeding pasture to feed soil

Education Models for Farmers

- We need a co-ordinated communication system extension system (a way of transferring knowledge to those who need it)
- Education not regulation
- Education Key Driver
- Education move from policy to practical young farmers tertiary ed
- Education needed can leverage through collective grouping how does a community list support locally?
- Correct messages needed based on science/technology and perceptions of public/community
- Need to define problem / issue correct message locally specific
- Extension, getting message out is key

Team New Zealand

Education and Communication

- Communication is fundamental for everyone
- Total integration of land users (i.e. not only farmers, and not only rural). Biodiversity/society community/people can be done thru education
- Cost to farmers if they have to pay for environmental costs does not equal what consumers are willing to pay how can consumers have information on those trade offs when they shop?

Working Together

- Not just a farmer problem, but whole of society needs to work together
- Collective responsibility: Urban +/- rural NZ 'INC'. Pride in rural heritage GOOD NEWS messages. Bad news travel fast: RISK
- Unite rural and urban people
- Need for accountability across the board (farmers, industry, regulators and consumers)
- Community action need to engage locals to combine skills need the will to do something

Question of Strategy

- Land treated as a commodity, but it's not! District and regional plans need to recognise suitability of land use for subdivision of new land (for example)
- We need an agreed definition of sustainability (including long term)
- We need a government-led conversation OR we need to have conversation and government's involvement = need their action and industry action etc
- We need a good plan on how to achieve sustainability

- Give some thought for the next generation
- Awareness of internal trends: a) Industry leadership b) Regional / national concerns combined
- Triple bottom line sustainability and one well-defined message for farmers / people and be lead by industry
- Clear defined vision and strategy with timelines and targets. This vision is a collective approach across all sectors: agriculture /horticulture and urban
- Cultural change in NZ. Internally driven rather than imposed from offshore. Becomes a 'core value.' Quality vs quantity
- How do we send the right signals for change? Farmers and consumers this is critical but no solutions. More emphasis needed on environmental indicators with economic costs and values attached e.g. cost to have Waikato River swimmable. Once have that info as a community need to make those decisions on trade offs as a countrywide initiative (or global).

Leadership

- A little 'big brother'/regulator to deal with the farmers that are causing real damage
- Balance needed between regulation and education
- To get required rate of change the industries need to take ownership rather than just dumping on the farmer e.g. Clean Streams Accord doesn't do anything to modify industry behaviour
- Integrated catchment models rather than individual farmer use community build on existing
 programmes this will require a paradigm shift to deal with the tension between private property
 and the community
- Direction from bottom up. Needs an adjustment of the power structure and decision making processes
- Broadly accepted leadership (to develop vision): must be independent, demonstrate action, be proactive, knowledge-rich, inspirational
- Regulation wanted by consumers but don't want to pay extra and it's impossible to monitor and police all these issues.

Waikato Small Group Discussion Notes

This section lists all points of discussion recorded from the Waikato workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

How much risk do you think there really is? (high, medium, low)

- POV #1 Internal and external risks from environmental impacts high
- POV #2 Moderate to high externally but NZ ahead (NZ competitive advantage)
- POV #3 Medium high risk
- Biggest risks in Europe / Nth America but also opportunities there
- Overseas more interested human capital issues in trade partnerships
- Risks ongoing for farming domestically lose license to operate
- NZ competitive edge is can grow grass, with less inputs than overseas, but this is changing
- CURRENTLY environment standards are NOT required by overseas buyers (dairy)
- NZ primary produce very small proportion of overseas market (except dairy)
- Sustainability is not just about market access and animal welfare NZ issues compared with overseas
- NZ wide vision (as with "nuclear free"): Does 'clean and green' stack up? Are we compromising for a distant market?

What kinds of things do you think would make that risk higher?

- Mitigating the effects new barriers invented everyday more risks become harder and harder
- Supply and demand only used as a barrier when there is a large demand
- Taxes real costs vs tariff barriers
- Environment risks low compared biosecurity risks, not on WTO agenda now but will be in future
- Global warming/emissions more of a threat
- NZ cannot afford a 'BSE' type scare
- Change can happen quickly
- Individuals not accountable

Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

• Ability of natural systems to sustain environment – don't fully appreciate consequences

Moving Forward

- Comply domestically this can then satisfy overseas requirements
- Research: find out what are others doing overseas? (e.g. organic co-ops)
- 'Internal shake up' (domestic NZ) needed before external shake up and this will satisfy offshore
- Issue is wider than 'on farm' a whole system approach is needed

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground fresh water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

General

- Differences we have between dry stock and dairy systems, not to mean one is better that the other, but pressures on dairy will happen to sheep and beef further down the track, despite the different issues e.g. sheep dips
- Don't want to lose 'clean, green' image. But favourable climate so get good response to farming intensively (which is why we have this problem!)
- Farmers intensification to get the most out of the environment
- Difficulty to measure change in a meaningful way due to long time lags
- Did anyone ask the farmers in this study if their farm was sustainable over the next 50 years? If asked me 90% of current practice would be (looking at the production side of things, possibly also including the value chain) 10% would not be.

Is this Enough to Fix the Problem?

- Effects of Intensification: Need to define problem...Is there a problem Event or problem?: Surface water yes, Ground water?? Problem Definition (urban vs rural?) How big?
- Enough science
- By whose standards?
- Accuracy of standards/accuracy of science?
- Where is the problem?
- Downtrending due to BMPs vs intensification community requesting higher standards problem escalating at intensification and economics
- Problems with shifting targets water quality targets shift risk.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Farmers need information about how much is happening, where and how. At the moment all of it is finger pointing
- Farmers need practical targets: can't go back to pristine systems
- Farmers need to know where they are going what if their land is un-farmable in 20 years? Possibly land prices decrease?
- Farmers monitor things they need to know to manage farm impact off farm irrelevant? Require measurement
- How does a farmer know their farm is sustainable? (Definition?, from whose perspective?, what is today may not be tomorrow, what is the clear message to farmers? What is the message?)
- What is right and wrong? Correct message needed
- Kinds of Information required: Market signals/Targets for water quality with good science re.g. council
- Key indicators economic, social, production
- Need to engage community understanding impacts etc
- Is information readily available?:
 - Internet info available but what uptake?
 - Communication how info sourced
 - Need interpretation making general info relevant to farm systems
 - Info is least limiting but needs consistency
- Do farmers have enough information to answer that question? Farmers get changing messages. Farmers may think they are sustainable, RC may differ. Nobody has all the information – new

information coming in all the time e.g Taupo farmers – have done a lot of work then told not enough

- What measuring stick to use? How do you calibrate it? Constantly changing environment e.g. 20 years ago if was fine
- How do we prepare farmers for this?
- Not clear on the environmental 'bads' and public 'goods'
- Plenty of individuals have directed resources to better environmental use within their own farm boundaries

Nitrogen

- Sheep and Beef at an advantage at the moment, as not same levels (of N use) as dairy yet
- More fertiliser be used on sheep and beef country
- Need to come up with different driver (incentive to not use N)
- Learning from overseas (capped limit) but what are the drivers?
- But cost of nitrogen is rising: may alter application
- Nitrogen is TOO cheap
- Need to be re-educated to not put N on. Education of N cycle in soil, in water, in plants, in atmosphere
- Probably not enough knowledge water quality still declining
- Way we use N is part of the problem, and part of the solution
- Make more use of N already available and different products around (e.g. N inhibitors)
- Nitrogen issue: need to fine tune application don't put too much into system
- Even if bagged N not added to land, still a problem with animals urine (increased stocking rates)
- Urine on a concrete pad better that on soil because can capture it before it leeches into water
- N can be stopped by putting cows on pads and collecting it, but will increase energy costs to farms
- N easier to control in soil. Base system on this
- Moisture needs to be held in the soil to help N absorption
- Poor performing farmers are pouring nitrogen on to make up for poor management
- Better farmers put on barest minimum: 137 units N per year, 6 applications
- Animal welfare issue: short of feed urea: increase supply
- Nitrogen fertiliser not the problem: Historical context need to understand the longer timeframe
- Dairy Accord a start but need to address the whole catchment
- Fencing / planting help long term
- We definitely over fertilise in New Zealand: There are other technologies
- More phosphate being used might be of concern
- Could be delayed possible effects: Delays are critical/ impacts on economic investments
- N Inhibitors sticking plaster only
- (Loss of clover) red herring? Intensification has taken it past anything clover could have supported
- Constantly learning about N but know an awful lot already. There is a gap between science and public

Can Farms in New Zealand Survive with Less Synthetic Fertiliser?

• Can they survive – yes, if best knowledge used

Moving Forward

- Need more examples farm /catchment system changes
- More tools to monitor water quality would be useful but complex catchment context
- More nutrient budgeting education

- Water logs more understanding relate what happened at time
- Need for quality dialogue
- Voluntary / education good for farmers
- Project green good knowledge team
- Need new technology for example, strip nitrogen from water

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Need to change drivers from economic spiral of land prices going up, stocking rates and N use going up. How can we make it still profitable but sustainable?
- Economic drivers not within farmers' control
- Commodity prices tending downwards
- Social and economic (still a business/bottom line) and costs are catching up. Discretionary spending/Improve discretionary income
- Farming: increasing in scale, moving away from family farm big corporates: big impact
- Economics the environment goes out window for low costs
- Short term vs long term driver for long term
- Farmers currently farming for capital gain not necessary for long term
- Economic drivers dominate
- Farmer incomes to remain equivalent (to other people's incomes) requires productivity to continually increase
- Market forces NZ exports dictate prices (including land prices)
- Economic / Incentives e.g. supply chain
- Rewards are economic/productivity
- Profit is the driver
- Temporal issue natural capital is a long-term measure, implying landowners are focused on short-term financial gain (but may be undermining their resource base)
- More production = more \$\$
- Farmers are advised to produce more: is this advice correct or incorrect?
- Young farmers: lack of understanding/- debt the 'hard to be green when in the red' concept
- Farmer worry is survival
- Corporate farms shareholder goals
- Macro (industry) rather than micro (farmers)
- Substantial \$ drivers to increase production
- 'Good' farmers use new products at higher cost to raise production
- Everything in society intensifying we want more from a limited resource
- Not full costing of our goods as consumers want more but are not prepared to pay not accounting for the change in our quality of life

- If a farmer got \$120/lamb would they run more lambs or less? (Based on historical evidence more)
- Organic farmers 10-15% premium but doesn't meet their extra cost (market not rewarding them) but they feel good
- Price taker versus price maker need to have value added
- Historically, return to farmers is from capital gain, not returns/profit
- People are not "paying" for their impacts on the environment Land Values
- Land prices what drives this? Is it farmers? Is it land use / lifestyle?
- Land use demand
- Speculation on land value
- Increase in land prices (especially for new entries)
- Urban pressures onto productive land
- Increased influence by lifestylers pushing farmers to less suitable land
- Need to increase profit to pay cost of land

Markets

- Consumer demand (cheapest price, volume, quality, value added) for goods
- Signal too confused
- Bugger-all people will pay for free range eggs
- How will consumers take responsibility for what they want if they won't pay for it? Don't blame/regulate the farmer
- Farmers will change very fast if they see an opportunity/price
- E.g. once a day milking better lifestyle, better for environment, same income why aren't more doing it?
- Consumers buy unsustainably produced goods not interested in how produced/don't have access to info
- Diversity of markets higher paying are more environmentally conscious dilemma managed carefully

Supply Organisations

- What drives farmers?: economic/industry drivers e.g. Fonterra: It is about producing more milk
- Drivers Fertiliser Companies
- Fonterra can't just decide you have done a fine job and pay more
- Fonterra responds to different pressures
- Currently market pressures less impact and 'internal' pressure higher (expectations of NZ RC, central government)
- To be in a good position when trade barriers come down is a motivation but trying to meet level where New Zealanders are comfortable is currently more important – environmental vs prices/products i.e. domestic pressures

Costs of Production

- Costs access i.e. cost of H, O urea fossil fuel increase and the cost increases too
- RMA cost of compliance
- Internal costs expectation of customer internal costs, rates etc

Social or Political Drivers

- Increased pressure: lifestyle issue, no time for family
- 55+ age = happy status quo = sons return sons want change

- Wealth \$ or the environment not necessarily both
- Farmers have greened conscience raised
- Farming council relationships tense
- Land prices rates generate revenues for local government land use charges e.g. urban development also generates local government income (implying the agencies are not necessarily adverse to land use intensification)
- Public perception (e.g. Taupo) of unacceptable practices may lead to more sustainable land use
- Still protecting status quo local government planning e.g. subdivision on elite soils
- Consumer or neighbour (community pressure) driving standards
- Drivers government lean on rural sector: driven harder by this model
- As farmers, have never understood drivers at a stock sale, a property sale (always going up) or changes made by a young and enthusiastic farmer (pushing production more). Some drivers of decisions do not conform to laws of economics (applies to all people) there are other drivers

Moving Forward: Economic

- Farmers respond to economic measures which are commercialised
- Wealth is the prime driver. Options for taking this into account?
- Incentives required to change current practices (increased productivity) to more sustainable practices
- How? Applying appropriate consumer taxes to the cost of production
- There are no penalties/ disincentives for land use intensification
- Should focus on profit, not productivity
- Farm value include natural capital value as well as capital value land value
- Whatever segment it is it must be cost effective
- Motivation money for change / reward
- Trick is to separate the different aspects of value (unbundle the price) sounds sensible, but mammoth task
- How could you redesign payment?
 - incentivise it (e.g. QA)
 - compliance nightmare
 - global marketplace will we ever get a premium for environmental products/higher value product. Can we assume it will attract a price
- If we produce less 'commodity milk' will that gap be filled by a lower standard producer?

Moving Forward: Markets

- Kiwi green can't afford not to comply with market input allows to push "green"
- Possibly need change to the marketing
- Value chain supermarkets could dictate conditions of buying products
- European supermarkets are competing on quality (of products), implying the potential to increase consumer costs for sustainably produced products
- Break down consumers apathy a role for industry marketing whole industry

Do We Have Enough Understanding Of These Drivers?

• Need to look at where costs are being incurred to lead farmers to intensify e.g. rating, council costs/monitory.

Constraints to Moving Forward:

 General perception that all this environment 'stuff' is extra cost – more compliance costs – following Europe

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

- In farm studies of the soil and what happens huge variety of soils and farming operations in NZ share, learn from each other
- Farmers need to identify costs and profit in suggested changes: To not identify costs and profit goes over farmers heads
- Need to know the economic pros and cons of any changes in farming practices
- Research is a big cost through production levies just taken off at point of production e.g. 'dairy insight
- Producer research: lots of \$ goes to increase productivity
- Individual research projects not being linked: need to pull them together
- Farmers are always leading the researchers: often ridiculed for innovation
- Dilemma is the CRI clear about the definition?
- A Prof Walker is needed for farmers living soil biomass little info on it (farmers need to be shown data friendly systems)
- Lots of information sitting there how to get it to the people opening and closing the gates?
- Discussion groups gone (unless paid)
- No free information service
- Discussion on soil is how much N to do
- Need leadership
- What is the cost to farming if not address environment? Need more research?
- Many environmental things don't cost "green ≠ red" where is this in NZ?
- There is an assumption you can 'engineer' around soil problems with fertiliser additions
- Co-ordination of both research and industry
- Piecemeal at present. Collective strategy using farmers
- Research not getting through to farmers
- Concern about lost research funding
- Dissemination of research is needed
- Needs to be proven in a farm context
- Reflection of science funding, things have got tighter and tighter
- Risk assessment of land use change Have we enough info on this? Who?
- Need for better integration across research groups

Research Areas

- Want to know if farms exist that are profitable and sustainable?
- Animal health lungs and oxygen important, use vegetation to enhance health
- Soil research to capture N and enhance soil through different crops
- Nutrient balance
- Pasture growth model (short term)
- Information on organics (how to do it)
- N that can be used under different growing conditions: optimum use? E.g. low soil temp not much moisture
- Research needs to tell farmers about economic benefits of optimum use
- Where else can you anchor oxygen on to?

- Turn the question upside down: how does an environment that has been adversely affected affect farming? E.g. water/quality stock health
- Research cow urine/efficiency of cow/uptake of nitrogen/content of urea according to different kinds of feed?
- Are live things included (environment) below ground life impacts on the environment?
- Difficulty tackling on a regional level need better spatial information across regions
- Soil nutrients, residues, heavy metals, biological functioning, soil ecology, environment landscape and human elements
- Soil is a big worry, are we treating them correctly e.g. maize, can we grow maize for 700 years?
 - can we farm with nil-cultivation after spray out are they sustainable practices. New Zealand has huge range of soils
- Soil and mapping land use capability work done in the past needs to be progressed to a more detailed level – more useful for decision – making (planning)
- Scale is still the issue with soil mapping
- What issues will underpin this (to help direct research themes for soil/ land) soils differentiation robustness, appropriate stocking level/type how grass production may be in jeopardy from certain practices on certain soils/land is it possible to do this 'redesign' if we can maintain the economic benefits: Can it grow (capacity/value/industry)- look at the total picture e.g. standing off stock to protect soils can create issues dealing with effluent- look at what's happening and full implications of that (whole farm system)
- Issues in soil research and management include:
- Too much...(?) with planners using land use maps to make decisions
- Aluminium (contamination) in soils
- Zinc (and other trace elements) levels increasing in soils
- Concerns about more N more P additions to soil without looking at plant soil system (interactions). That is, how nutrient additions affect plant physiology and ecology
- Need to understand: compaction understanding / how to manage
- Ways things add to soils that alter it move beyond a beyond fertility focus (powdered molasses with urea)
- Long term carbon/nitrogen ratios
- Systems approach pull knowledge together
- Publicity access linked (10 pages) resources
- Farmers need tool includes info on their farm to make decisions with
- Need for education on some 'basics' of environment and research etc? Public contribution needed
- Natural processes not renewing soils (flood control) silt out to sea need more understanding of what it means
- Nitrogen when do you put on not much information research required: lot of information on pasture response
- Major questions about Nitrogen cycle, needs more research

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Farming complex constantly juggling lots of balls
- Need to shift to a culture of re-design
- Dairying is a big problem
- Is the Taupo catchment a prototype of the future?
- Fertiliser budgets only 'front end' of equation
- Observe nature and copy
- Paradigm shifts to look after soil
- Time scale needs to be changed (???) if adding chemical nitrogen, speed up all (???) processes
- Transition production sustainability: Chemical in biology model concept
- Put in the impacts/implications so people can decide where they want to sit
- If you fixed the intensity of inputs for particular farms/areas would bring value down different areas would have different values according to vulnerability:- e.g. Taupo – would have to come through councils – compliance nightmare – reanalyse it?
- What is the timeframe we need to do this in?
- Don't know what we're redesigning towards
- Difficulty is defining changes/impacts
- Redesign to say what we are not complete cultural change to thinking based on: quality, future, personal values, social, work ethic etc
- Lack of soil quality, implying soil degradation may drive a move to more sustainable practices
- Do we need to re-design farming?: Most land will only require minor fine tuning/not redesign
- Evolution not revolution: too much for farmers change has to be incremental

What Changes To Farming Are Needed?

• Need for compatibility with the land / surrounding landscape

Constraints to Redesign:

- Market research is market driven
- Inability to do business unless you comply with standards \$ important

Ideas for Redesign

- Best land use working to soil types and productive land
- Whole farm planning
- New systems e.g. OAD milking need to be implemented
- By adapting organics can drop cost factor (lower inputs)
- Certified organics marketing tool, also provides insights for other farmers
- Over time: changes / fads in farming practice e.g. super phosphate potash nitrogen. Where do we go to now? Need to find a balance (redesign) in whole systems
- COMMONSENSE
- Amazing how quickly some ecosystems recover
- Need to manage farmer expectations as well can't expect to return to pristine recovery/Time frame levels of recovery
- Riparian planting not whole answer: Need complete redesign consequences for \$
- Connect productivity to 20 yr result
- Clean Stream Accord
- Give appropriate technologies
- Using wet areas as buffers
- Issues are localised and need area specific fixes

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Websites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- 'Sustainable' farmer: 'intelligent' use of knowledge, including: grass grown, capacity of soils, farming systems
- Farmers struggling with overload?
- Farmers have to be receptive stage of life, farm, family, lower debt/smaller mortgage, disposable income, time, less financial responsibility, "freedom to move"
- Do farmers trust sources of information? This is an issue
- Fonterra is leading changes/but farmers still going through learning phase
- Other farmers trust leading farmers
- Need to collate information and spell out the consequences education
- Education is a big factor soil management
- Understanding is bigger than just farmers external drivers internal drivers
- Issues overtaking faster than educationalists can get their message out
- If you make nitrogen a priority tend to lose focus on whole farm system e.g. P, faecal
- Farming one industry where, if successful, farmers will share their success: commercial sensitivity not an issue
- Farmers less likely to share 'failures': problem with 'failure' is the time lag
- 60% farmers take advice from fertiliser reps (profit driven?)
- Last six months fertiliser reps attitude changed using fertiliser budgets but still use as a fertiliser selling point
- Farmers have good understanding, very conscious of the environment
- Messages to farmers muddled
- Farmers see themselves as caretakers: what is 'better state'?
- Some farmers learned 50 years ago and will not change. There's a mixed group out there
- Farmers more aware
- Science not short in this no need for further science, more need on extension and uptake
- Opportunity to utilise tools / tech out there better better understanding / uptake
- Needs more education different learning styles (many styles / channels needed) what are better ways – mass distribution? Fertiliser reps (what's in it for them?)
- Change doesn't happen overnight or decade
- Greater role of Landcare (as concept)
- Universities have changed focus- e.g. Massey moved from agriculture to business
- Social structure of farming has changed, (??) of lack of labour, stress, pressure. Lack of good labour management
- Question should farmers self regulate?
- Hasn't happened with milk quality
- Education process needed

• Do farmers have technical knowledge vs running farm business?

Types Of Extension Models

- Field days/Dexcel discussion groups
- Monitor farms dairy and dry stock
- Fonterra on-line programme
 - focused on technology
- Agriculture
 - business courses
 - Dexcel/AGITO
 - Win technology
- Clover interest groups
 - road shows
 - w Beef council to HB
- AGMARDT funding/SFF money
- Landcare groups
- Fact sheets
- Dairy Exporter/Rural News/Straight Furrow
- Waikato Times farming supplement
- Workshops by Meat and Wool Board" focused on specific topics. Production oriented
- Farm forestry, New Zealand tree crops association have annual conferences and monthly field trips learning by sharing information, publications
- Role model farmers trust farmers
- Environment Waikato
 - EW clean streams EW=helpers
 - Action groups e.g. Lake Taupo/Rotorua multi stakeholders includes farmers e.g. Whaingaroa Harbour- care = ground up = whole catchment and good buy in. Farmers fencing e.g. 80% ref harbour
 - EW information community groups need to get better at getting information to farmers
- Ballance Farm Environment (Awards)
- Look for role models
- If enter, and get feed back and sustainability
- MAF funding learning from leaders
- Measure of success: number of entries and quality of finalist
- How do I have a sustainable farm business? outward looking
- Peer review of farming business and field days at previous winners
- Sheep and beef monitor farms
- On farm field days: hands on/trusted independent source
- FEA more mainstream
- Structure of field days/discussion groups need good incentives to get people to attend

What kinds of things are farmers changing as a result of these programmes?

- People ID and look after natural features
- Fencing off of streams
- Cultural change 10 years ago compared with the way farmers work and the pressure on them, no time for community or outside of work
- Rate of change of values
- People wont move into to change now light is on

- There is more 'conservation' type articles in main stream farming books
 - Taumarunui has sustainable farming group going
 - Involves everyone SFF \$

Developed a framework to consider how at address sustainability issues on the farm e.g. impact of intensive bull farming, led to

- changes to farm management. Used Stockpol
- higher profit
- improved environment outcome

What Is Not Working With Current Extension Models?

- Extension isn't delivering the result
- The demise of the farm adviser too much 'quasi' advice
- Decreased understanding of the processes between soil and water, and the degradation of natural capital
- Education models for sheep and beef slim when it comes to N
- Lots of tools to increase productivity but not many tools to do so in a sustainable way
- Need to move to optimum production rather than increasing production: but 'everyone' is seeking increase in profit therefore seeking to increase production
- Struggling to reach most farmers only reaching (links to values) the generally interested
- Dexcel contact = more economics and production. Dexcel totally production focus
- Education doesn't match students' needs and expectations (example was given based on Unitec experience)

Possible Education Models

- Step-change in attitudes. Take one step, think about impacts next step, next step
- Lead farmers: demonstrate benefits: more credible than being presented by agencies
- Farm advisors need to understand the issues
- Learning from peers key driver
- Tool kit: range of issues. Needs to be both temporal as well as spatial to determine best use of resources on a particular property (or catchment)
- Individual farms individual issues
 - to move to operating as a catchment
 - therefore education model needs to be integrated
- Peer pressure can produce change in attitude
- Help farmers work through cause / effect on farm
- Training in nutrient budgeting
- Education around ecology of soil to understand how N behaves in different situations i.e. in the soil (different types), water and air. We have forgotten to focus on the soil, instead we focus on N

Enabling or Encouraging Change:

- Need to teach farmers about commonsense benefits of caring for environment. But this can be hard to do!
- Flow on benefits. E.g. change in bird life
- What are the sound practices? E.g. benefit of fencing: Stop loss of stock (this will get farmer attention)
- Need good information about impact of changes in practices: MONITORING e.g. don't know how long it takes for change to take place
- Turn up to a meeting about organics in 4wd BMW
- Environmental cost to farmer is historical not economic need more info about what can be done
- How do we connect the long-term economic signals to tomorrow's decisions? Need leadership discipline – consistency
- A way of thinking can we change this or can we influence this? incentive driver / price? personal desire
- Education required up the 'food chain' e.g. industry, government
 - bigger than the individual and most of the drivers for on farm behaviour comes from industry and government etc
- Councils could / should do more
- Farming system changes need to be of economic benefit to farmers
- At discussion group could point out whole picture/whole farm system approach
- Fertiliser rep/s have a responsibility
- Take advice from a whole range of people e.g. QE2, to included conservation bodies, not just production

Moving Forward: Making the Transition from the Production to the Sustainability Era

General Comments about Sustainability

- Production could stay at same level and be sustainable
- Difficulty in defining 'sustainability'
- Sustainability is more than just environment. Also economic and social as well. 'Time' is important. Humans working on shorter time frame than Nature
- Measure sustainability will determine the answer we come up with
- Don't put blanket taxes on certain impacts of farming some farms may not be creating those impacts
- Possibly we need definition of sustainability
- Farmers want sustainability: Sustainability social, economics, environment?
- What is sustainable? definition
- How do you determine when sustainable ?
 - indicators nation capital
 - problem getting farmers onto appropriate financial indicators let alone non financial
- Making the connections/balance between wealth, productivity, social, environmental
- Triple bottom line needs better articulation, and all parts of the triple should be equal
- On whose definition of sustainability? need objective not subjective e.g. fertiliser reps diff to concerns

General Comments on Regulation

- Role of regulation: communities more effective @ change than regulation have to be ahead of regulation want to be left alone
- 2 sorts of regulation: need to avoid autocratic can stop innovation
- Hard rules for others
- Safer regulations for people to work to
- Regulation will come into place when wider communities state bottom line
- Regulators need to understand that there is greater cost for some farmers e.g. some farms have lots of river frontage lots of costs associated with this
- Need to drive cultural changes (across society) to avoid knee jerk regulations- takes lots of time but get better outcome- hard if economic factors are not working alongside- tax incentives another option e.g. Green house gas- what are the incentives you can use to drive that cultural change

- First we need to agree on the drivers i.e. N in ground water do we know the risks? We each know a segment only
- Wealth what is important enough? Do we value our environment? What are the social drivers?

Are we being strategic enough in our development of our farming systems – pulling together as 'Team NZ'?

Problems with Strategy

- It's piecemeal
- Problem technology is available but lack leadership, lack a definition of sustainability
- Need to do info sharing
- We don't have agreed plans
- Lack of exploration of other tools than regulation
- Studies in NZ tend not to take a 'big picture' approach there are comparative studies but often don't capture economic drivers
- Media: pit urban and rural together. Need more info about collective responsibility
- BAD news stories always get better coverage. Need "Good news stories": rivers cleaning up
- Intervention –can create a lot of unintended consequences social/economic
- New Zealand has to decide what trade offs to accept not 'do you want clean water?' but 'do you want clean water and walk to work" (environmental economics)
- Need for debate scale off farm society level lakes e.g. Taupo lifted debate off farm and involved whole community vs just the urban rural battle.

Questions of Strategy

- Risk assessment of land use change Have we enough info on this? Who?
- How proactive should we be? (are we waiting for others to tell us what to do?)
- Who 'pays' for the natural capital cost farm, consumer, industry community this debate is crucial to determine equity
- Issues of scale
- Issue of understanding
- Issues of institutions/systems (too many)
- Timeliness can't be too quick / too slow

Moving Forward

- Shift to non-point source pollution and solutions
- Require physical framework overlaid with organisational/management framework
- Focus on policy rather than change on the ground. On ground change occurs from the community
- Use consumer-driven Taupo as a template
- Need a whole range of solutions
- Farmers don't hold the solutions but will change when not alone
- Define and paint a vision that means something to the farmers, not high level
- Assistance programmes would be great, including \$ and good advice
- We need:
 - Knowledge
 - Funding mechanisms this is more important than Auckland's roads
 - Bio security we don't need any more pests. Anyone who brings in a pest should be sent back to their country of origin
 - Commitment from land users, government institutions
 - Fewer distractions on matters like access etc

- Properly funded research
- Paradigm shift needs to be for whole country not just farmers
- o Broader understanding on holistic environmental management including in cities
- No finger pointing
- Promote good models and success stories
- o Acknowledge the problem (Alan's words) 'We will if they will'
- Include environment in school programmes focused on New Zealand education
- Need to look at other models of sustainability
- Need recognition from on high that individuals and communities matter

Is there enough understanding of growing urban/rural tensions, regarding environmental expectations, in our politically urban dominated society?

- Urban people need to understand economic value of primary production
- Understanding not good at the moment
- Critical: urban areas: lots of damage. Can't point the finger!
- Can't back each other into a corner problem
- Gap between rural and urban widening
- Need collective responsibility
- Urban people: recognise environmental cost of agriculture
- Farmers provide too much food taken for granted
- Supermarkets increasing the gap
- Urban NZ has a poor understanding of farming
- Environment 'stuff' is forced on us by people without intimate connections with land
- Urban population will be a tough challenge
- Example of transmission lines: authority is allowed to just do this. Scorched earth, without covering the cost

Working Together

- Raglan Harbour Cave good example of urban/rural communities working together
- An independent group like the Hillary Commission?
- Grassroots bottom up action lots of this in our industry
- Growth and Innovation Framework have a big role: trade/regional development
- Co-operative e.g. agriculture and horticulture sectors working together
- Co-operation e.g. Meat and Wool / dairy (happening now)
- Create cultural change vs regulation
- Everybody is part of the solutions

Leadership

- Farmers' views are important. They hold solutions
- Government need to be there too with \$
- Central Government leadership role needed
- The institutions need to support the drive: hard to get young farmers started due to cost of property
- Government needs to lead by example and start the conversation
- Need Ministry for Environment component
- Farmers need to lead the way otherwise it will come top down
- Leadership Style
 - knowledge rich

- o quality- focussed
- \circ proactive
- o teams approach
- \circ trust
- \circ $\,$ open and prepared to grow
- o keep focus
- o motivate/demonstrate mana
- \circ independent
- o non government
- o action not talk
- Too big = too hard
- Promote success story, good news
- Because: organisations, sectors can be threatened and defensive. So who? Coalition of existing groups:
 - $\circ \quad \text{Hort NZ}$
 - Meat and Wool NZ
 - o Dairy
 - PCE
 - o Landcare Trust
 - QE2 National Trust
 - \circ Individuals
 - \circ Collective
 - o Group
 - Are they recognised by urban population?/others?
 - Local groups
- Still need VISION: goals (e.g. World cup) with an enabling organisation to assist, champion, promote: Is it the thinking of the NZ farmer?

Comments from Waikato Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Clearer identification of ultimate aim of sustainable farming
- Great report well done, Morgan, Philippa and the team
- Excellent report capturing the big picture of the context of land use and agriculture and economic importance
- Wonderful catalyst!
- Excellent. It is contributing to the solution for the issues it identifies
- Pleased with questions raised looking forward to NZ working closer together
- Initially I thought more farmers should be here (was disappointed) and then started to think I hope there are some key urban people here and possibly had my doubts. I think most here were on the same wavelength, now we need to put it into action as a unified over-arching approach
- The beginning of a new enlightening process of changing land management practices. It is evolutionary
- I am excited about embarking on this process makes me want to get out of the office and onto the land. NO more guilt just action
- Certainly making people aware of environmental issues
- An excellent effort which must be acted on seriously
- It has been a long time coming! Some really good questions have been asked to stimulate people's thinking. Thank you and congratulations for facilitating a seminar such as this
- Thank you for report and workshop
- Good start great to see organics used as a model for change
- Great intention. The work is in making it happen

Comment on Workshop Process

- Raised public awareness in a non-confrontational manner collective responsibility approach better than "Dirty Dairying" campaign
- Good initiative, good to hear Morgan Williams views in person
- Despite discussion on incentives and rules, at the end of the day with regards to filling out these forms, we were told we won't be allowed to leave unless we filled out the form .. regulations?! Instead an incentive should have been in place to encourage to change and to decide willingly to fill these out!

Challenges

- The report is critical in light of the pace of change and the intensity of the drivers of current trends. The drivers are society wide - consumers pay too little to cover the environmental costs of our current food production methods
- The key is taking the report and turning it into action on the ground
- Let's hope that the report doesn't disappear with a "too hard" label attached
- I think the question and negative consequences of treating land as a commodity are serious. Can agricultural land be owned by trusts to be managed sustainably and therefore opportunities for people to farm free of high mortgages. Farmers then have responsibility to farm sustainably
- How best can we ensure that the problems / damage / harm being done, and in many cases worsening by the month, are honestly examined and the CAUSES of the harm effectively addressed? Picking up pieces tinkering round the edges, making mini improvements are grossly inadequate where the magnitude of the negative outcomes is honestly examined. We need redesign and transformation - that basic need is in every one's interests – especially when the

sustainability issues will all seriously affect our future if we don't tackle them and find solutions that work

• The high cost of farming e.g. rates, mortgage, RMA - farmers are forced to use every method they can to increase output but to meet these costs if this means using nitrates and high stocking?

Moving Forward

- Forum needs to go round dairy industry. Farmers feel more secure and ready to share ideas amongst their own rather than feeling threatened amongst Government Agency groups etc
- Excellent piece of work well done. Need to follow it with a strategic management report
- The focus needs to be on those that create the farmer drivers e.g. did Fonterra change the way it does business (i.e. drivers it creates) because of the Clean Streams Accord
- What comes next?
- There is a lot we know about the issue and this workshop didn't (and was never likely to) produce new (?) outlet solutions it's about dealing with the complexity, I tend to agree with Bruce Thomson(?) it's more an absence of will than need for a new type of institution to strategise but who knows?
- Hopefully something comes from this report i.e. not another report that is put on the bookshelf. Action needs to start. Ideas have been put forward and need to be followed up / passed on to different industry's/acted upon
- Lacks a clear template for change is this the follow-up report?
- Good leadership now required to drive this initiative further
- Should be pulled up by govt/council proposed policies
- Follow up workshops will be critical otherwise it's just going to be an academic exercise
- Can't deliver this all to the foot soldiers. Have to lift dialogue up a floor or two
- Keep up the profile to ensure follow through
- Make sure that it doesn't stay as an unwritten report never on the ground stuff to happen
- Growing for Good must start from the 'engine room', the soil which is from where the food chain, the start and health of life starts. If the serious imbalance of soil nutrients in a lot of cases to be addressed
- The debate that this report has started is good and needs to be part of a continuous dialogue to keep the conversation going
- Where from here?
- My opinion is that "we are all in this together" and there needs to be an integrated approach both city developers and by farmers to achieve the long term good
- Incentives to farmers and community enjoy
- Although the report has stimulated debate the most important part is the next step, the how and who will influence the change to a sustainable future and develop the vision of sustainable farming. What further role will the PCE have in this next step?
- Educate the young in schools under 10 years
- The vision should include addressing effects of subdivision, growth etc on land prices, which forces farmers to intensify. Groups have talked about non-regulation approach, however, govt should regulate the use of farm land for farming purposes, which will reduce land prices, allow farmers to manage debt / costs and not need to intensify therefore the environment would benefit
- Farmers must have a "Good operating practice" plan in place specific to fertiliser application and riparian protection regulated by regional and local Government Agency. This "plan" would suit the particular farming practice and would be "verified" by an approved "Agency"
- Incentives are the key. If society really wants sustainable farming then we must give farmers strong incentives to farm sustainably, then they will. Education and Research Agency can follow They should not be thought of as key drivers
- Who / how will this message continue to be debated and implemented beyond the workshops?
- A good starting point. Need to move now to extension/communication of implications and provide material to assist in changing to meet a more sustainable future

- Issues in tangent to *Growing for Good*. Need to promote traceability issue (e.g. eid) to sustain markets, track acceptable use. Infrastructural access to Broadband for rural NZ for information flow. Needs to be infrastructural support for small rural towns. For sewerage systems to be sustainable operational with increasing costs but state/declining population to share costs
- Funding Research Agency mechanisms need to be streamlined so essential funding goes into area where knowledge is weak e.g. how does N work in our soils? Applying time and time again not only frustrating it wastes huge resources within our science and farm sectors. Stricter bio security to reduce further impacts on our farming environment therefore resulting increased costs to production and environment. We need knowledge to allow us to farm environmentally and viably. This needs to be science based. If we want NZ to be passionate about our environment we need strong, positive messages from the top. We are certainly not getting these from Transpower's proposed 400vAC grid upgrade and associated support from government looking for campaign votes. What is good for the goose need to be good for the gander. Some farmers are doing things very well, others largely through ignorance not so well. I believe few farmers want to ruin our environment
- Am keen to hear/see more about leadership exposing the will and the way.

Feedback

- Supposedly meant to deal with issues at farm, catchment, national levels but in fact doesn't address the issues except at a farm level
- I believe that although the PCE/ reports are getting out there and people attend these workshops etc; there is still not enough recognition of real people doing real things and using those skills and models in the education forum. The process is still captured by the institutions (academics) e.g. NIWA etc). There are other practitioners implementing some real outcomes. The issue of the "hackles going up" when reports of this nature emerge (the PCE series) is real out there: It's an 'institutional' academic approach. The PCE has to realise that what he has raised e.g. Redesign /ICM, etc is not NEW. But, there is no recognition of the "non institutionalised" individuals and groups who have been influencing ICM type MODELS on properties and "community" districts; who can through a more bottom-up series of forums and processes, educate and transfer real info not a theoretical construct
- It has not emphasised sufficiently the potential of contamination of soil and water resources by pesticides
- Meat and wool in R and D were not asked to contribute to report as largest group of farming land users, why not? Incentives for environmental preservation, production capital recognition could be built in to land values e.g. VSA scoring of land for sale
- Holier-than-thou approach do we really understand the issue? NZ needs a long-term vision / approach for this issue. Our history has been hot and cold (probably a lot to do with our political system). We need to be realistic about what would happen if we did nothing. What are the real dollars around this? Cost of compliance is value gained. Impact of fast actions changes natural processes e.g. flood control
- 1.5% of NZ is wetlands or wetland substrates but these generate only Z links of acknowledgement in the GFG report. Wetlands and wet soils are poorly understood, often badly managed and poorly administered by local Government Agency. Wetlands have values with beyond biodiversity. The National Wetland Trust is concerned about the lack of understanding of wetlands and the lack of attention paid to then by agencies such as MFE and PCE. Streams, rivers and lakes are mentioned but wetlands deserve at least equal rating with these
- I don't feel that the workshop shifted us any further forward I wonder if the questions asked were the right ones? Or whether an alternative process is needed? The report itself will help since it stimulates debate and raises awareness - all part of the process of moving our attitudes / intentions as a society - I don't know that the solutions it proposes are the right ones but it is an Important contribution
- Didn't change anything.

Other

- It will be good to see the follow-up from these workshops
- Come up and see us and have a look at our work!
- Provided a forum to discuss Research Agency needs
- Raises awareness of other perceptions of issues
- To identify gaps/issues not covered much in the report
- Take in the enormity of the problems relating how Research Agency and communication can be pro trade
- Drawn attention to the very conflicts of interest and lack of common goals that exist within our community, even amongst those that important to be interested in sustainable agriculture! The will is there at grassroots level e.g. farmers (= custody of 70% of our land) but the leadership is lacking... Great to initiate the conversation let's see how it can be developed to all NZ
- Given me "food" to continue being an environment advocate
- Stimulated thinking about what I could do personally and what could be done to influence those around me
- Learned a lot from practising farmers!
- Great debate issue is not new but for 65 years how much have things improved
- Emphasised the need for much more information, awareness, understanding of reality
- Raising awareness of the whole of NZ society for change
- Get an overview of what people in this community are thinking and future direction
- To hear the opinion of others
- Create a "walking together" attitude
- Reinforced views that I have developed through 60 years of Research Agency and education
- Joy in seeing change of interest and understanding
- Highlighted barrier to change.

BAY OF PLENTY

'Growing for good' Workshop, 16 March 2005

Key Take-home Messages

This section lists the key take-home messages from the Bay of Plenty workshop only.

The Importance of Farming to New Zealand's Wealth

• No take-home messages

Effects of Intensification on Natural Capital

• Is what we are doing sufficient? Will the goal posts shift?

Understanding the Impact of Economic and Social Drivers

Drivers – Economic

- Key driver economic overseas markets
- Driver economic pricing lowest cost production
- Best understanding of lowest cost of production not focussed on environment caused by a reduction in research and development from government level
- To maintain economic viability have had to increase productivity so lead to bigger farms
- Farmers have been farmed by commerce, banks encouraging borrowing.

Drivers – Social

- We understand economic drivers. We don't understand social drivers
- Science system review
- More R&D for unique niche products maintain clean, green and sustainable
- Understanding ecosystems and organics
- Labour, skills, availability?

Incentives to Change

- Incentives needed
- Do unto self rather than media driven
- May have to remove livestock from some sensitive areas
- · Farmers to recognise sustainability and its effect on him/her
- Quantification of benefits
- Transfer -ve costs to +ve values
- Cost benefit compliance.

Performance of Research on Delivering Needs

- Research needed
- Increase R&D soils and all related aspects
- Technologies are available to implement
- Research needs continuity better decision making processes on distributing \$ and strategic direction
- Sound research, technologically sound education

• Farmers are getting smarter though – still loss of science.

Understanding Redesign

- Redesign already happening constant tinkering
- Overall plan by farmers set targets, indicators of progress
- Can we utilise excess nutrients on farms? Redesign.

Education Models for Farmers

- Good technology transfer system needed
- Clear identification of problem wide dissemination of it. Remove the ignorance and prejudice
- Transfer of knowledge
- Mixed messages through education.

Team New Zealand

Education and Communication

- Education needed
- Communication needed
- Research and education across the whole community.

Working Together

- General ownership by all community of the need to change ways
- Cost share to all New Zealanders for remedial work, equity/fairness to all citizens
- Govt funding needed recognise impact of past policies
- Major effort to remove 'them' and 'us' divide
- Urban/rural divide needs to be closed generations now.

Question of Strategy

- Address land use change where it's critical zoning is critical
- Triple bottom line approach
- Change based on science/fact, not phobia
- Get involved in RMA process have say
- Economic, social, environmental, cultural how bring together whole context. Need more tools to integrate information
- Define sustainability collectively acceptance that will continue to evolve. Begin with ethic development/principles.

Leadership

- Leadership by community vehicles to support government agencies national
- Support the need for strategic thinking must be independent clear of govt, commercial interests. Promote initiatives such as RCCT
- Leadership delivery vehicle multi wheeled. Collective of all industry sectors. Farmers, all vested groups. Define sustainability.

Bay of Plenty Small Group Discussion Notes

This section lists all points of discussion recorded from the Bay of Plenty workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

How much risk do you think there really is? (high, medium, low)

- High risk environment, competitors will highlight our deficiencies
- Opportunity to lead high risk.

What kinds of things do you think would make that risk higher?

- Rule 11 pushes to European-style cut and carry/feed pads
- O/S people far more aware comes down to economic/environmental sustainability
- Tourism
- Health N and P e.g. N in water, contain algae / toxin
- Politics/Greens influence RMA will market pay premium?
- Standards to comply to: not here in NZ international compliances e.g. ISO
- Compliance: will all farmers abide to new guidelines/rules?
- International regulation
- Political driven
- Global markets
- Fossil fuel based N industry
- Hysteria/media not necessarily true
- Phobia
- Commodity prices rather than niche market 2.6% on capital value increase costs
- Drivers for standards: erosion/water quality/retirement
- Loss of knowledge
- Pressure from consumers M/H.

Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- How well placed? Good
 - Educated farmers
 - o Science available
 - Good political system

• Need action

Moving Forward

- Ways to improve / lessen risk:
 - Correct media transmission to public/education
 - Rural representation to parliament
 - o Improve perception/reality e.g. TV programmes
 - Science input
 - Organic solutions
- Risk is all part of the problem "ours" = all NZ population complexities
- Education about farm/success stories.

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground fresh water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- Is this enough to fix the problem? If no what more needs to happen?
- Can farms in New Zealand survive with less synthetic fertiliser?
- How does a farmer know that his/her farm is sustainable?
- What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- Is this information readily available to farmers at the moment? Is this enough?
- How well do we understand the impact of nitrogen on our natural capital?
- How well do we understand the impact of irrigation on our natural capital?

General

- Riparian strips only a start
- Clover root weevil problem: clover effectiveness severely reduced
- Erosion high on hills young landscapes
- Intensification: a lot happening in Taupo and Rotorua
- People aware of negative impacts
- In Rotorua even if stop farming altogether 70-80 years of impact still human impact still there
- Delete intensification productivity better.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Leaching overseer measures the impact
- Better use of indicators, alter way of thinking, change culture/smarter agricultural practices
- To maintain a "level of sustainability" is a business concern and to keep operating is not only driven by animal health (cows/beef/sheep etc), but to enable maximum stock unit per hectare and increased annual yield with a strategy plan of high predictability. He or she will operate their farm within these parameters and will continue to look for improvement from R&D and overseas technology. The farming sector has provided NZ with excellence in innovative thinking and monitoring based on practical experience.

Environmental Impacts/Measurements

- If we can measure effects then markets are safe?
- Not enough info environment information companies pressure to buy products
- Triple bottom line reporting is not done effectively or to a sufficient level of assurance by others than land users
- Adaptation of best management practices (BMP) is a surface band-aid to the problem and does not seriously address the problem
- Problems to address: the bigger problems are outside BMP and have a heavy burden of cost on the land user to comply with RMA and other central government policies that are driven by regional and local statutory bodies
- Discussion group wanted to see more qualitative and not quantitative analysis regards BMP and to
 prove that lesser effect takes place and it has a negative impact on the environment for land users
 to adopt more easily (human behaviour to change).

Nitrogen

- NZ not yet highly dependent on fertiliser N
- Late autumn N is flushed nutrient uptake of plants only at certain times of year.
- Is lack of N absorption in soil due to overstocking?
- Budgeting marvellous
- Education key, lots of confusion about N sources
- Plant tree lucerne on riparian margins (roots go deeper)
- What danger is N to humans?

Water

- Irrigation effects of increasing stock numbers changing land use. No discussion on effects
- AQUA focus was economic driver, not consideration of environmental effects.

Are too many of farming/food business models incompatible with long-term natural capital?

- Yes dependence on phosphate fertiliser
- Low natural fertility importation and exportation of food fertilisers = in and out
- Internationally sustainability soil/climate requires inputs all inputs are unsustainable
- Nationally unsustainable with a lesser level of input whether organic or non-organic.

Can NZ Farming Survive with Less Synthetic Fertiliser?

- Discussion was divided: The question asked from the group was, can farmers survive with less application of synthetic fertilisers and maintain levels of sustainable productivity? Those that answered yes gave many indicators of how it was done, particularly in the last 20-30yrs with good hands-on practice and lots of monitoring with application rates
- A generalised opinion of acceptance is that farmers did survive with less application based on need and dollar subsidy. To the contrary, others believed that application rates are still a priority and important to production. If natural resources or synthetic fertilisers are used it is based on intensive farming practice to maximise \$s spent producing \$ income based on sustainable economic outcomes.

Understanding the Impact of Economic and Social Drivers

- What are the key drivers behind the intensification of farming in New Zealand?
- Do we have enough understanding of these drivers?
- Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- What are some of the ways these drivers can be addressed?
- What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Return on investment
- Expectation of increased productivity to keep pace with inflation
- Return on investment unsustainable systems manpower
- Market access requirement
- Driven to short-term focus rather than longer-term consequences
- Lack of long-term view
- Production cost / hectare
- Markets driver
- Economy scale
- Area of use smaller the better 80 acres
- "Economic drivers" are historical
- Running down natural capital/investing into better land
- Lack of profitability increase land prices
- Farming based to a degree on short-term goals
- Economic, income, standard of living
- NZ wide benefits
- Need money to put into environment
- Capital machinery, economic, knowledge, land
- Key driver for landowners: self-interest in financial success/can be short-term. Challenge long-term
- Cost e.g. land retirement already drove \$6-10k/ha 1 farm 100ha = 1,000,000 1 house holder \$12,000 sewerage contribution
- Water trading.

Land Values

- Competition from life-stylers for land raising land value
- Markets cheaper production

Markets

- Public expectation cheap food
- Consumers expect the best, but blame farmers for damage
- Is there a market for environmental goods?

Costs of Production

- Regulatory cost to compliance
- Compliance BMP.

Social/Political Drivers

- Consumer awareness eco fundamentalism what you like
- Political agendas
- New generation of expectations/values
- Urban versus rural misunderstanding
- Disney World view, education of real farm life needed
- Farmer/land user mindset of community whole of community
- More stakeholders in the farming business
- Intensification knowledge led by farmers
- Labour lack skills/availability
- Central govt policy high country nitrogen clear agendas, also science, irrigation support, don't get whole of govt message
- Regulators / management push against intensification
- MFE/MED messages pick winners highest return for use resources
- Social issues who gets what?

Food/Agricultural Industry

• Fertiliser companies push fertiliser onto farmers.

Moving Forward: Economic

- Incentives / subsidies
- Need reasons to change commercial drivers too
- Change timing, incentives, barriers remove.

Moving Forward: Social/Education

• No comments.

Moving Forward: Markets

- Forestry trends for sustainability produced products niche opposed to volume products of agriculture
- Market drivers that work
- May need to look at 'new road': markets can agriculture make the transition?

Do We Have Enough Understanding Of These Drivers?

- No don't understand what future drivers may be
- Origins of demands not understood trade barrier. Market protection/spiritual dynamic/organic /inorganic differences.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

- R and D was good need more investment
- Gap of new graduates
- More funding needed for science

- Great knowledge improvement of long-term consequences
- Need quicker uptake of science
- Need a review of science funding systems
- More long-term (better policy / delivery). Strategic
- Independent body review and CRI act
- Conflict of Interest need quality information
- R and D: policies, Implementations, effect of practice
- Lack scientific capacity due to down-scaling haven't current technology to improve practices and transfer ideas
- Reliance on one source of info, more relevant scientists soils, chemical, farm management etc
- Research limiting access to research outcomes
- Loss of researchers o/seas
- "DREAM"
- Research demanding new industry 50% input for research funding
- Issues around quality of decision making process
- Research farm orientated cost of building pads buildings, machinery uneconomic
- Challenge how to get farmers to take up? Applied form
- Use model farms
- Soil science \$2m package cut funding accountability
- Need to acknowledge historical studies and knowledge before we can move on
- Essential government funds research for neutrality
- Government has not been keeping up with soil science so we want scientists to be fully funded but needs to be neutral (not for the benefit for only one area)
- Need to build on good science done already and get it to farmers (a bit haphazard to date). Need to involve wider community in science (education)
- Need co-ordination at national level for science to fill gaps and build on what we've got
- Science is not keeping up with farming
- Research funding limited encourages agendas got to sell it, own IP.

Research Areas

- R and D ground water movement
- Pesticide residues yet to be identified
- R and D: to find trade-offs/ diversity of product
- Research gap effects of improvements: fencing streams, riparian planting
- Increasing ability of pastures to absorb N through plant species through science
- Models account for leakage quantity
- Seek new technologies
- Ability to capture mobile N
- Accuracy of "overseer"
- Utilise nutrients on farms
- Potential to head down new directions (Murray Rodpath hazelnuts)
- Lack of research into alternate land uses
- Importance of soil health relationship with human health
- Cost benefit analysis incentives for technologies that reduce impacts.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Redesign implies extending something: dirty word 'limitation'
- Size of paddocks now smaller/range of pastures
- An assumption there is a need to redesign farming over all of NZ. Maybe need to accept there will be intensive farming areas and we won't be able to swim in all the creeks (the price we pay)
- Talking about redesigning farming, but shouldn't we need to redesign our social systems?
- Redesign model all inputs/outputs to farm can't do this yet
- Got tools issue: how put together communicate proven advice/options
- Improvements to soil quality/quantity
- Enhanced natural capital, water quality.

Do we need to re-design farming?

• Why do I need to do more?

Enabling Redesign: Big Picture

- Recognise incompatible land use
- Must know costs/ benefits? Of different techniques
- Need relevant info
- Need incentives fencing planting
- Must include economic sustainability
- Need toolbox link farm to wider catchment
- Need to account for economic benefits of costs of environmental factors
- Need tools to measure input economic / social info.

Ideas for Redesign

- N inhibitors
- Stand off pads winter
- Irrigation of effluent
- · More can be done with on-land practices in relation to water
- Research on N retention and use etc
- Feed pads
- Set traps
- N inhibitors.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Web sites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- Used to have change agents: farm advisory forums Dept of Agriculture. Do we need to re-invest?
- Farming is no longer insular: farmers do understand wider issues.

Types Of Extension Models

- School programmes work as simple tools. Programmes encouraging kids interest
- Rural Networks
- RLLT Ballance Awards Learning Leaders
- Annie Perkins, Ian P Farm Environment Awards.

What Is Working With Current Extension Models?

• Problems have been highlighted, looking at the whole picture.

What Is Not Working With Current Extension Models?

- Piecemeal, uncoordinated, redesigned
- Funded by orgs that are focused on increased productivity monitor farm trying to get a sustainability direction but has been difficult because business interest (....?)
- Holistic programmes, but not mainstream not part of vested interest
- Mixed messages.

Enabling Change:

- Better networks for transfer: e.g. forestry sector
- Using money available and good templates for different forms
- Important role of regional council
- LCT access to funds and facilitation of groups community driven not just farmers
- Stream care
- Encourage fertiliser training local not overseas
- Begin with ethic, develop principles
- Diversity within catchment
- Fonterra clean streams: long-term, sold message first
- Include effects/how to mitigate effects
- Increase productivity
- Bullet proof, clear examples
- To make things work farmers have to own it e.g. Kailua scheme, riparian planting this has worked.
- Education: a socio-economic problem!
- Funding on forum farmer funded
- A cultural issue: start young/target adults

• Methods – human leadership by top 10%. Monitor farms/info sharing/team culture.

Barriers to Change

- Political isolation of sector
- Lack of knowledge dissemination widely in community.

Other

 Non-financial gains of education: education re external costs/research and extension – urban – farmers: common understanding.

Moving Forward: Making the Transition from the Production to the Sustainability Era

How important do you think it is to move from the production to the sustainability era?

- Can't keep going same way
- Landowners/managers maintain an unsubscribed code to "protect the land" and accordingly
 without this ethos, farming will not be sustainable. A burden of responsibility is incumbent on land
 users and it is more than the perception of "dirty dairying" but includes servicing loans and debt,
 input of local GDP, economic infrastructure. There is no intent by farmers to jeopardise that
 responsibility.

Are we being strategic enough in our development of our farming systems – pulling together as 'Team NZ'?

Lack of Strategy

- Rules distort. Rule 11 not for enough (40% decrease in N not just cap)
- Distrust of science, councils, politicians, business by everyone
- Continuity decision making strategic direction loss of people
- Govt wrong motivators commoditisation of food
- As soon as it goes back to govt farmers are not important
- Govt saying farming is a sunset industry
- Farming perceived as no longer important?
- Worse case scenario published.

Questions of Strategy

- Driver who's going to pay? Does everyone bear the cost?
- Environment is it finite? What's the limit? Still possible to work within limits shift knowledge, info
- Q Do we have an agreement of what is sustainability? Different perspectives: we do not have agreement globally/nationally/locally as to what sustainability actually means
- Define sustainability collectively accept that it will continue to evolve
- If farming doing well, the country is doing well. If we don't keep farming going, the economy will suffer
- Sustainability not at expected profitability socio-economic issue
- Who carries costs?: Equity of responsibility:

Strategy: Moving Forward

- Issues national Kyoto credits to forestry distortions in land use. Solutions local. Need to educate all farmers on debits and credits
- Implementing do now

- Costs structured back: sewerage to people/N to farmers
- Implement action of sewerage schemes
- Check back to Rule 15 RMA and held accountable
- Catchment Action Plan identifies solutions.

Is there enough understanding of growing urban/rural tensions, re environmental expectations, in our politically urban dominated society?

- Lack of acceptance of importance by nation about farming/third world approach to farming
- Conflict of land use/values: non farmers need to be included in programmes
- Urban waste/water management important (ratepayer ownership)
- Separation of rural/urban: generations removed from land. Need to bring into food production system.

Working Together

- All sectors share in the cost: affordable/incentives/educate and encourage/more dialogue than regulation
- Forums production vs wellbeing
- Need strong clear united messages and a working consortium of experts
- Need more interaction of regional council, science, Federated Farmers etc
- More community ownership how joint actions e.g. RLLT
- Partnerships success due to
- Threat of intervention by Govt/LC
- R11 Re W & LP
- Costs shared/Govt funding etc
- All owned problem
- Passion and vision community
- Regionally have to come together
- Media positive messages, good news stories, specialist journalists continuity
- Paradigm shift in ethic of care all sectors represented
- And local govt needs to work together
- Learn from Holland.

Urban Population

- Urban need to know issues
- Urban sector contribute more: pay more for food
- Education needs to include urban community.

Pan Sector Organisation

- Funding political knowledge sustainability, bio base
- Regional community group
- National leadership "board"
- Farming Team Regional Team
- Get ideas fused through existing organisations first
- Strategic thinking: govt devolution (not empowering)
- Initiatives such as RLLT funded by central govt.

Comments from Bay of Plenty Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Extremely encouraged by the balance in the report
- It offers the perfect hope that I know of to resolve sustainable farming issues. It must continue
- Excellent
- There has been some great feedback from this conference which is wonderful. If people and government will listen and help. Thank you for the great wealth of your knowledge
- Good to have the summary report too
- Useful start to generating social discussion
- Raised my awareness that PCE's effects are being heard out there in our communities
- Listen to others' ideas
- Raised that concept of trade-offs for environment, economic, social is not widely understood
- Highlights the urgency for progress
- Bringing different sectors together to listen to each other and begin to work together.

Feedback on Process/Workshop

- Workshops members need to be changed to allow ideas between different people not just one small group of five/six people
- Would have found it more helpful to get more background. I think to some extent we were
 providing feedback on headlines
- More time needed for workshop. 1 day 9-4
- Really needed more time for debate. It's a lot of information to take in over a shot time.
- Good format, excellent number and range of participants; terrible food (high in fat, no salad). Good venue for meetings and discussion groups.

Challenges

- Not only farming is unsustainable, urban areas need good reliable sewage system that is sustainable
- My highest concern is the appalling pattern of 'too hard, let's just let it sink without trace' attitude from our current political so-called 'leadership'. Absolutely disgraceful and short-sighted we must step around this just as we did to achieve re nuclear-free status in the 1980s
- Need to consider that farmers are often so 'barraged' by other pressures regulatory pressures for councils and lobby groups - that we are initially defensive and perhaps 'slow' to accept that change will be good for us - i.e. the whole community
- The lack or availability of government in allowing large areas of the Waikato change from trees to pastoral farming when they have control of that land
- Very useful in identifying sustainable innovations for bio-based industries but does not answer the fundamental question: how sustainable is the current economic framework and does it encourage sustainable behaviour?
- An excellent way of reaching many people who have concerns and issues about the way we maintain our 'clean green image'.

Moving Forward

- Get the show on the road. Stop talking and get on with it. The research is there. The communication is not so hot
- The report needs also to be discussed with urban people and rural people so that a balance of expectations is known

- Need integrated science management. Like ILM need balanced approach, science has learnt to measure effects that's easy, science needs great focus on solutions driving research
- Sustained effect required over considerable period to change the consciousness of the total population
- I fully support moving rapidly to the next phase IMO education and on the ground models in all areas of the design spectrum. But we have more than enough data research and monitoring what we are short of is on the ground models
- Need to get to grips with bridging the communicative urban-rural divide and keep farmers sustainable - reduce their N load into the environment
- Involve the whole catchment community. Research across the whole community catchment
- This work must be continued
- Leaching of N is the only problem science will find the solution. More government funded R&D
- Overseas experience is the Netherlands, Canada overseas research
- The absolute key is going back to funding biotic soil systems without inorganic inputs! Research it extremely well and get the information out. The sooner fossil fuels make fertiliser uneconomic is a happy day for the environment
- Important that developments do not go down the centrally planned route i.e. the innovation and enterprise and leadership route. Hayek's 'The Road to Serfdom' describes well what happens with the central planning model
- Major problems obviously need to be addressed but many minor problems can be solved easily and many small successes can have a major impact
- I think it is important that this report doesn't 'go away' the concepts and issues raised must be continued and debated with an agreed-upon outcome achieved
- Workshop very good but is starting point there needs to be some ongoing conordination/direction/momentum maintained
- Similar workshops on a sustained basis would be good. It creates discussion and enables various viewpoints to be given in a non-confrontational environment
- A great need for biological farming systems
- More research needed.

Feedback on Report

- I think the report on N management is not complete. E.g. key papers on N leaching are missing
- Focused on research for more understanding of concepts and systems and less on understanding the vehicle or drive to ensure that known and established facts are implemented at the practitioner's level
- To research that type and origin of P that affects alga growth
- Report is not clear on why the RMA (clause 15) is not being applied to avoid/remedy/mitigate pollution from non-point so urea such as urine patches are additional lows/rules needed? No mention of need for silt traps in conjunction with cultivation of pasture to prevent transport of P. Some farming practices are deeply embedded, yet are very damaging, i.e. soil cultivation in sensitive catchments. Trees are obviously not part of the problem, but it is disappointing to see they are not mentioned as part of the solution. Nutrients tracking offers much promise to rebalancing the environment vs economic outputs. Both positive and negative trading is essential, not just one way to the solution in carbon. Is the PCE in contract with the relevant minister about Landcorp activities in converting forest land to intensive dairying at Reporoa/Mihi? If not, why not? Why don't PCE initiate sheeting of trace costs to the environment back to what they initiated from. In sensitive catchments urea/urine needs a high true cost apportioned to it
- Thought that the 'good' guy aspect of forestry did not come thru as much as it should
- A lengthy document, that takes a lot of reasoning and understanding
- Forestry not mentioned a lot. Farming is only a part of the problem getting the correct information/research is really hard. Compliance costs? Rotate the land types?

- There is a need for PCE to study the impacts of world trends on NZ. These trends are: told population (+x3 in 80years), urbanisation world wide, water demands, food demands, collapse of sea fisheries and protein supplies, climate change, energy demands, and what will these do to NZ are casual 6 and isolated
- *Growing for good* must not threaten our case business as Maori farms are focused on keeping the economic value ahead of the population increase (beneficiaries)
- Doesn't make the key point clear enough it is human activity that has lead to current situation, not farming. Farming change/development is a consequence of human activity. Human activity encompasses all - urban, rural. Solution needs to encompass, therefore both urban and rural contribution.

Other

- Is there to be a version of the report for the lay person/student?
- Getting a different opinion still seeking the correct answer
- Showed the sound practical sense of farmers
- Meet key communicators/leaders in the rural change scenario
- Updated me on ag-research issues.

HAWKE'S BAY

'Growing for good' Workshop, 25 February 2005

Key Take-home Messages

This section lists the key take-home messages from the Hawke's Bay workshop only.

The Importance of Farming to New Zealand's Wealth

• Farmers need to better understand the risk so they can address issues.

Effects of Intensification on Natural Capital

- We are already in the sustainability era
- Need effective soil natural capital monitoring indices in addition to water
- Resource info (a) What have you got (b) How you can use?
- Proactive be real monitoring data.

Understanding the Impact of Economic and Social Drivers

• Understanding resources: - land use change, water, nutrients, money.

Drivers – Economic

- Singular focus on production is the main driver need to broaden to include other outcomes profitability
- Land values are artificially high which is a key driver
- Consumers/supermarkets are an influential driver.

Drivers – Social

- Incentives to change
- 'X' factors/'feel good' factor
- Economically viable
- Has to be profitable, needs to be sustainable in today's market
- Rewards: Incentives (tax, rates, returns for products). Asset value give recognition
- Marketing: link farming practices to markets.

Performance of Research on Delivering Needs

- Lots more research needed to understand increase
- Access to all new technologies
- Urgent need for soil research (funding)
- Research: markets, soil/sustainable management/impact of fertiliser, Nitrogen fixing species, managing the N cycle.

Understanding Redesign

- Matching land use to increase
- Balance use of resources
- Optimise rather than maximise.

Education Models for Farmers

- Farmers are struggling with information overload
- Information needs to be disseminated to a wider audience
- Need incentives to learn/training
- There is an awareness of sustainability issues but are behaviours changing?
- Champion best practice
- Good examples of things that work very useful
- Need better understanding of how to manage land to reduce the environmental risks
- Extension work gap
- Education/ideas: come from many directions. Learn from success and failure
- Tools and needs
- Causes of problems.

Team New Zealand

Education and Communication

- Educate urban people about importance of farming
- Educate whole community. Buy in. Urban vs rural villains
- Agriculture needs to be promoted more positively by farmers themselves and others
- Education needs to be for everyone. Urban and rural. Need better understanding /balance
- Education: school curriculum/of community about environment
- Engage the community/understanding/ownership/commitment/Especially youth/idea sharing.

Working Together

• Sharing responsibility: - local and central government, farmer, consumer.

Question of Strategy

- Need national standards with regional variations. Educate
- Need to pay more attention to what's happening overseas
- Clear deliberation between public and private good is needed
- Funding and background research needs big government input (not intervention)
- Sustainability is driven by market requirements need to educate the market Brand NZ
- We don't need them as much as they need us. They want our product. We need to take control of our product and our markets and tell them. Value added, not commodity is key to sustainability
- Regulation: res. consents enforce better research of new ideas / regulations / policies.

Leadership

- Farmers as guardians of land the key to moving forward
- Local government/regional council
- Industry self regulation
- Sustainability must be industry driven not regulated
- Need pan-industry/sector forum (e.g. facilitated by Landcare trust).

Hawke's Bay Small Group Discussion Notes

This section lists all points of discussion recorded from the Hawke's Bay workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

How much risk do you think there really is? (high, medium, low)

- Environmental issues already there: all ready in forestry
- Yes there is risk: more external reviews/- external perceptions controls market.

What kinds of things do you think would make that risk higher?

• Non-tariff barriers can still impact on New Zealand.

Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- POV #1Raising awareness needed
- POV #2 Known risks are understood.

Moving Forward

• Pre-empt international pressures with national standards: - project green kiwi green farm sure.

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground fresh water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

General

• Loss of land/soils to other uses a concern.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Need indicators to know if redesign necessary or working
- Need to spread more good examples around, valuable for making progress.

Nitrogen

- Application levels high
- Excessive application needs to be penalised publicly and financially traceability
- Focus on N is an over-simplification. Need to look at regions e.g. P in Hawke's Bay
- N is a requirement on some farms no biological fixation (or inadequate). Govt needs to act quickly and help in areas it can (e.g. introduction of biological controls).

Can Farms in New Zealand Survive with Less Synthetic Fertiliser?

• Apply only enough fertiliser that the plants need. Less cost of production.

Water

 Highest – best use of water – how do we know what that is? Who is the best use for? The individual, the nation?

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Different drivers e.g. decrease in global markets
- As long as we are a price taker: e.g. 12 month supply, low prices difficult to change: whole supply chain issue
- Drivers from overseas demand
- Variability of income from year to year-
- Finances: shareholders
- Balance of returns to impacts needs readjusting
- Economic thinking coming first
- Farming is productivity gains focused rather than profitability focused
- Fine line between environmental 'purity' and returns from market
- Horticultural growers huge investment in changes but not reflected in returns
- Who pays for wider benefits?
- Economic
- Low returns intensify.

Land Values

- Change of ownership: new drivers
- Difficulty of getting into farming
- High land prices
- Land prices increasing, all sectors.

Markets

- Range of standards and markets
 - non commodity
 - commodity
 - not all applicable to New Zealand agriculture
 - not all high environmental standards
 - marketing issue
- Customer requirements: customer information of impacts
- Market-driven (expectation of future market forces, pro-active)
- Market influences are too important (fear, social pressure of losing market access)
- Already driven by consumer: driven by overseas demand/- e.g. dairy: high prices products: turn from risk to opportunity: marketing issues
- Profits driven by o/s markets
- Drivers of change can be doing all the right things, but need the market.

Costs of Production

- Consultants
- Increased costs, produce more, increase profits
- Farm advisors, products sales, push products.

Social Drivers

- Personal level a sense of pride
- Many changing on own accord.

Food Industry

- Supermarkets
- Supermarkets, transfer environmental impacts to other countries almost like trade barriers, decrease food prices, particularly so for horticulture and milk but not necessarily other products.

Moving Forward: Economic

Benefits include overseas view of NZ produce (Green/clean).

Moving Forward: Social/Education

- Need a better understand of the process / effects and the limitations of retirement
- Extension 1.1 advisory.

Moving Forward: Markets

- If we change practices market this to get an advantage:
- Increase value of products a solution to the problem
- Special products for specialist markets niche markets high returns, kiwifruit (?), keeping our IP important
- Not hard to equate \$ with environment.

Do We Have Enough Understanding Of These Drivers?

• At farm scale – there is more understanding of the drivers. At a wider scale, there is less knowledge.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

• Comment on education and science - not co-ordinated, 'the blind leading the blind'.

Research Areas

- Soil (monitor soil the key resource)
- Healthy animals
- Good structure
- Soil life
- Need research into this.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Need to understand elements working rainfall/soil/topography
- There is always going to be some negative impact: minimise negatives, can't eliminate them
- Don't change the principles. Problem is the focus: have to know the big picture
- Doing things which are 'less bad' is not good enough mind shift needed
- Parma-culture: positive example
- Needs to be economic
- Sheep and beef farmers have more time to change / control effects
- Do we need to re-design farming?
- Is redesign necessary?

Constraints to Redesign:

- Problem we are a country of individuals
- Corporate farms less likely to change.

What makes it difficult to redesign?

- Not recognising a problem
- Government regulations slow down / inhibit major changes (a problem)

- Differing goals within the industry difficult to agree
- Look of consistency between councils' rules / processes but different environments need different approaches.

Enabling Redesign: Big Picture

- Time may force us to change. Need to bring communities together motivated by better returns
- Sense of belonging
- Education increase knowledge about environment / ecosystem
- Economic results / profit margins
- Regulation
- Farmers need to 'buy in' understanding
- Profits
- Long-term e.g. carbon credits.

Ideas for Redesign

- Organics are an 'ideal' form of sustainability but not realistic
- Need better budgeting to ensure there is no wastage
- Remove the clover root weevil (breeding)
- Organic
- Get rid of sprays
- Financial reward
- Good for mind and soul / results
- Dairying issues e.g. silage pits
- Soil types N, waterway management, fertiliser apply rates
- Education needed
- Natural fertiliser useful.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Web sites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- Creating Change: education: children (parent pressure)
- Change is age-dependent (tradition)
- Pastoral changes have been massive over last couple of generations due to education
- Indoctrination or education?
- View of \$ driver
- All basically educational
- Trying to raise bottom line
- Can't focus purely on environment (cost involved).

Types Of Extension Models

- Monitor farms
- SSF (land wise)
- Major regional initiating
- QE2: partnership/biodiversity
- Farm discussion groups
- Environmental awards: excellence
- Ag courses @ Eastern Institute
- Websites: general information
- Environmental awards are Important: regional council newsletters Hawke's Bay media very good. Heartland page, websites, pamphlets
- Whole range of farmer-of-the-year awards
- Forest farming
- Farmer driven discussion groups
- Education on fertiliser and cropping
- Monitor farm programmes
- On farm research farmers
- Who is doing the education?
 - Farmers educating farmers
 - Fertiliser companies
 - Does it matter?
 - Who's co-ordinating it all?
 - Do you want it all coordinated?
 - Need a bit of chaos.

What Is Working With Current Extension Models?

- Lifestyle block field days and websites doing a good job
- Some programmes are making a difference e.g. minimum strip tool SFF happening for a couple
 of years
- Landwise profitability and sustainability.

What Is Not Working With Current Extension Models?

• Results need to be disseminated widely (tend to hit only a small number of people).

Enabling Change

- Editors of newspapers need to be educated: but media has its own agenda
- Education: results of sustainable farming practices are actually known and understood hand onto future generations
- Papers need provide a practical point of view editors need to be trained as well
- Demonstration / monitor farms
- Practical solutions need to be seen (demonstration)
- Ability to harness tech (e.g. GE)
- Role of educators needs to be clarified co-ordinate centrally or allow some chaos
- Listen to the grassroots
- Scholarships e.g. Nuffield
- People going on holiday (e.g. overseas)
- Make linkage between education and selling markets
- Woolshed meetings
- Education rewards e.g. recognition, raise standards through targets.

Motivating Farmers

- People need incentives to attend courses for training: subsidies concession, free courses, rates relief
- If it hits the pocket, people turn up: e.g. farm safe/OSH: lots of people attending
- Make practices 'sexy' e.g. protectors of native bush 'trendy', 'feel good', X factor fancy
- Beer and sausages, STEAK, hospitality
- Field days: people see on the ground what is happening
- Farmers do take notice of certain people who write articles
- Sustainable farming practices: used as a marketing tool/- demanded by international markets: this will encourage farmers
- Landwise started with soil erosion. Being an issue (wind blowing) action by people to address this.

Barriers to Change

- Cost e.g. fencing \$10 a metre
- Problem: people not attending courses in training/sustainability no demand for graduates: fewer graduates
- Farmers overloaded with positive/negative information
- Media sometimes slow to respond or won't profile articles at all.

Moving Forward: Making the Transition from the Production to the Sustainability Era

How important do you think it is to move from the production to the sustainability era?

- Sustainability era is already happening already. There are a few cowboys though
- We are there already one view
- There is more awareness of sustainability, but is there a change of behaviour? Yes this can be regionally specific e.g. Gisborne after Bola (accentuated issues), Taupo
- Different sectors have different sustainability issues
- How stop mining natural capital and still be profitable? The key question
- Sustainability is being driven by the farmers/horticultural/rural people. Love for the land and attempt to use it as carefully as possible. But economic constraints
- Industry-driven focus groups and 'rules' already happening (especially horticultural) learn from this and draw on same models.

Are we being strategic enough in our development of our farming systems – pulling together as 'team NZ'?

• "Team New Zealand" – a nice romantic idea. Would be great if it could happen.

Problems with Strategy

- Farmer at bottom of chain → roads → processor → markets → plates. So many people in the chain: fragmented groups, no-one comes together
- How to encourage farmers to change, when not increase income? Not govt actions that are hard on farmers retrench
- Kyoto Accord landowners (farm foresters) have planted and get nothing for it (no credits). Is it fair?
- Farmers are currently being bombarded with so many issues. Threatened, squeezed by central govt (e.g. Kyoto, access, etc) Lack of support from govt, just more rules. Retrenchment.

Moving Forward: Strategy

- Need integration of knowledge/- knowledge sharing
- Reduces faith in central govt
- Needs to remove the disincentives to be doing environmental work (e.g. compliance costs for wetland enhancement. the compliance costs more than the work who benefits?)
- Look at existing successful sustainability schemes and transfer elements. Who does it? E.g. grape industry market driven focus farms pro-active
- Farmers want to be driving / controlling.

Is there enough understanding of growing urban/rural tensions, re environmental expectations, in our politically urban dominated society?

- Social issues (urban rural relationships) e.g. with water. Not just farming, but urban water use is a problem
- Urban rural tension is focused on loss of prime agricultural/horticultural land to urban use
- Farmers don't need to be educated: urban people do
- Urban people need to learn about the importance of agriculture and where food comes from: don't understand about ordinary farming practices
- Town-country relationships have never been better: no subsidies, better communication, local governments might be specific to Hawke's Bay though
- Need more balance too much criticism of farmers. What about urban actions rubbish, sewerage. We all need to clean up
- Balance public access to rivers closed off in some areas (rubbish dumping, vandalism etc)
- Education models need to be for everyone, not just farmers
- Community protection of urban waterways (adopt a water plan?).

Working Together

- Catchment the level to work at but need a change agent to get people to work together (example trading elements)
- ICM is hard to do, it's resource hungry
- Can't afford urban subsidisation like Europe.

Pan Sector Organisation

- Fraser Basin 'FORUM' a better phrase: yes we need one
- Needs an overarching body not govt
- Needs to be grassroots, industry driven (and then govt support it \$ not regulation)
- Got to be national (NZ is small)
- Need to get people together from all sectors: E.g. NZ Landcare Trust
- Discussion, inputs etc should be from the custodians, not from central govt (not rules).

Comments from Hawke's Bay Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- A valuable starting point to highlight the issues
- Thank you for this workshop. Well done
- Was a very good report
- This has lifted the awareness of the issue and considerably added to the debate
- Very worthwhile
- It has put some future thought about farming
- Constructive, challenging, well informed, realistic
- A good start
- Very productive workshop
- Very well organised. Focused, succinct, yet covered a lot of material
- The workshop was interesting and an opportunity for me to hear the issues / themes within the New Zealand perspective. Being a researcher / catchment management scientist from overseas, it was refreshing to see the differences; particularly the vitalisation of natural resources keep it up as we can never be idle
- A timely alarm bell. We are on an unsustainable path and we have to change our worldview of farming (fishing and other primary production). Recognising our shortcomings and being prepared to change is not a sign of weakness but of strength. Thank you for organising the event
- A useful platform / context for future activities
- An important document to help change the land/water management culture. The tone is positive but the message is serious and alarming. Even in NZ we need to start living off nature's interest and not nature's capital. God's Own Country cannot rely on God and the free market forever
- Usefully added to the debate
- Provided an opportunity to hear from the horses mouth and understand the PCE position
- Made other people aware of the issues "water quality"
- Learn of regional views and opinions on sustainability.

Feedback on Process/Workshop

• More volume of speakers - hard to hear!

Challenges

- Once again farming is the easy target: what about forestry, urban sprawl, highway expansion, airport expansion etc?
- Will my grandchildren make a living of the farm!
- How do you get all farming sections to recognise where they need to change (for whatever reason) and then take up the knowledge to carry out the change?
- Lots of ideas but how can it actually go out on the farm and do something?

Moving Forward

- It needs to be complemented with a deeper understanding of what redesign means in a practical sense and thorough study of what is already happening around NZ and what is driving positive change
- Water allocation being bid for will go to the bidder. Need for a follow-up workshop next year. Need for regional councils to have trigger levels for water quality. Need for research in plant uptake of nitrogen so no excess is applied

- I hope Landcare Trust will facilitate a 'pan industry forum' to work on key sustainability drivers and workable model. Must be industry driven not govt regulated
- The issue now needs to move from debate and discussion to strategies and action
- What about urban sector? I think they need more education about agriculture. Do not change the principles of farming, change the systems i.e. reduce stocking rates feed stock better, reduce inputs, increase outputs, increase profitability = happy, well-fed cows, happy people urban /rural
- N leach into ground H2O. Shallow well areas. Tighten up on R/consent for irrigation. Test bores. Larger dairy herds monitor non-point discharge to H2O. Overseas grain growing areas spoiled crops produce pork and chicken cheaply. Our farms produce milk, cheese and dairy - beef, burger mince. Many farmers are exotic cattle producers good to see good cuts. Higher market: sheep lambs better cuts
- Urban rural liaison
- If taken up by the right people in the right way, this report should become a ? for agriculture in New Zealand. It is up to the intensity to drive the change in direction God help us if politicians and bureaucrats get hold of it!
- Anything that can assist farmers in improving farming must be good business but, local and regional councils and central govt must be more prudent in assisting farmers improve profit that can sustain NZ economy e.g. water and soil research, education and community partnerships
- Develop solutions from the ground up not Wellington down!
- Any change going forward will need farmer buy in and continuing input in the process for it to be successful
- It appears that some/several farmers remain defensive of activity and the buying in of their leaders is critical
- Science needs to be co-ordinated
- Closer urban/rural liaison.

Feedback on Report

- Narrow focus on farming land use and water quality / N reduces value of the report, other land use sectors also have been covered
- I have a feeling that practices at present are not fully appreciated. Most farmers operate on a very sustainable system (I am a hill country farmer) which is not being recognised
- Summarised the report but provided little opportunity for in-depth discussion. Another Landcare Trust sanitisation exercise.

Other

- A pity that some of the newspaper headlines were not related and put a better message out to get better buy-in from those effected
- Soil health and grass manages animal health
- Opened my eyes to how uniformed the general public is to the value of agriculture
- Many farmers are in denial that their practices are unsustainable
- Identified how diverse people's opinions are on the subject.

MANAWATU

'Growing for good' Workshop, 16 February 2005

Key Take-home Messages

This section lists the key take-home messages from the Manawatu workshop only.

The Importance of Farming to New Zealand's Wealth

• Risk – variety of perception on immediacy.

Effects of Intensification on Natural Capital

- Variation in understanding of intensification drivers
- Water is a finite resource and soil.

Understanding the Impact of Economic and Social Drivers

Drivers – Economic

- True environmental cost of production is not accounted for
- Reduced profit margins leading to inappropriate intensification and diversification
- Change of ownership because of reduced competitiveness and impact on land price (urban sprawl lifestyle blocks, corporatisation)
- Hip pocket: driver
- Our markets are overseas have to perform to overseas standards.

Drivers – Social

• No key take-home messages

Incentives To Change

- Need a market signal to encourage farmers (e.g. internalising cost or earning more \$)
- Recognise price is the bottom line
- Customer pull for change is key provide incentive.

Performance of Research on Delivering Needs

- Fund tech transfer at similar levels to research \$ to speed it up
- Good science proven and funded
- Government must support relevant research in the short and long-term!

Understanding Redesign

- Matching land use to land capability
- Match land use with resource limitations
- Sell message differently "redesign your farm" is not an easy to take message! Say this differently
- Focus on whole systems change
- Provide concrete examples of whole system redesign e.g. using native trees/plants within the system – these best suited to soil/climate needs, could have many benefits
- Indicators for this practical, simple, viable
- What is "redesign"?
- Need whole farm systems not just individual components
- Different farming systems have their own range of challenges
- One model does not fit all but all models have a common purpose i.e. food production.

Education Models for Farmers

- Need for farmers to get a greater understanding of natural resources and their long-term capabilities and limitations
- Information flows translation required to make sense?
- Facilitate ongoing education of farmers especially about these issues e.g. a TV programme
- Any initiatives in this area need resourcing. Key areas in which projects should be initiated or expanded include demonstration, monitoring, education/information. Some resourcing should be by refocusing existing expenditure
- Need for dissemination of "appropriate" information relevant to farmers and all actors
- Emphasise the good news stories there are many out there about sustainable land use
- Need clearly defined Best Management Practices.

Team New Zealand

Education and Communication

- Focus on getting out message to all people not just those 'already converted' like who's at this
 meeting
- We need a real understanding of our systems not prescription. This is not just for farmers but for society / consumers / bankers / community.

Working Together

- All levels of communities / agencies / agricultural sector and central government FUND about sustainable farming
- Collaboration will achieve success (e.g. ICM); further research on effective ICM is needed
- Sustainability Is achievable at farmer level "Where there is a will there will be a way"
- This is OUR Issue and needs to be addressed with a "NZ incorporated" perspective, i.e. it needs to be based on common understandings and commitments by all (urban/rural, central/regional government).

Questions of Strategy

- Need to get people to want to pay \$
- Currently lacking policies that encourage good land use/land management practices (incentives)
- Need to link farmers to environmental/community outcomes more strongly
- Money! Solving insufficiencies/cost sharing
- We need flexible policy instruments which bring environmental values into the market (and feed these environmental drivers back to farmer)
- Recognition of value of regulatory framework at a catchment scale through research and broad consultation e.g. Taupo catchment.

Leadership

- More resources from central and local government to support change of thinking (farmers)
- ICM critical bottom up
- Farmer is the unit of change
- Government taskforce to address detailed solutions
- Need community or catchment approach

Leadership is critical. Leadership on this issue should:

• Be drawn from the grassroots

- Not be statutory or dominated by government officials
- Recognise that regulation is "at the door" or a "back stop" if we do not make progress
- Value farmers' knowledge and encourage communities to develop catchment visions. Also
 recognise the success of existing initiatives such as e.g. Landcare groups/SUBS groups/Taupo
 and Waitomo catchment initiatives
- Agricultural industries need to take responsibility for leadership in the changes needed for sustainability
- Is there really a need for another organisation to discuss this this is a regional council role!

Manawatu Small Group Discussion Notes

This section lists all points of discussion recorded from the Manawatu workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like environmental impact of farming become important to those markets.

- How much risk do you think there really is? (high, medium, low)
- What kinds of things do you think would make that risk higher?
- How immediate do you think that risk is?
- Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

General Comment

- Depends on market
- EU risks greater Germany, Swiss
- QA European audits, are becoming more interested in environment now, nutrient budgeting
- Food safety still the key concern
- North America less concerned about environmental outcomes
- Animal welfare still the key concern
- Consumers a key driver
- Regional variation understanding
- Media affects perception
- Fonterra focus on food safety as important for customers, not yet getting premium to environment.

How much risk do you think there really is? (high, medium, low)

- POV#1 High Risk due to risk of damage to trade and the importance of agricultural trade to NZ's economy
- POV #2 Medium risk if it was high-risk farmers would be leaving farming
- Possibly 20 years away?

What kinds of things do you think would make that risk higher?

- Water priority in terms of risk Rotorua Lakes
- If we say we're clean and green, we need to be it
- Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- Some thought the risk was more immediate and farmers were aware of risks.

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground fresh water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

General Comments

- Farming is about risk management, especially of more sensitive environments
- Methods to control unacceptable effects of intensification could be made mandatory
- Recognise that there are multiple objectives to manage
- Nutrient budgeting is a useful, educational and management tool
- Is there a tipping point best practice will not ameliorate effects. There is a finite limit.

Is this Enough to Fix the Problem?

- Fencing on farms etc not enough need to work in the whole catchment
- No not enough farmers doing what is required: whole catchment approach needed.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Large chunks of landscape are farmed sustainably
- How do farmers know they are farming sustainably? Lots of denial?
- Not all farmers have the right information
- Farmers need to understand if they are farming sustainably
- Farmers may be unaware of their effects on the environment
- Need targets to aim for, for example, x tonnes N out of catchment
- Need SoE info communicated to land owners
- Casual linkages
- RC contribute info to farmers about catchment context
- Need biological indicators (these exist already use them!)
- Greater understanding capabilities limitations/finite
- Level of risk immediate or long-term
- Reach everyone information flows
- Facilitate ongoing education TV, taskforce

- Appropriate relevant information for all
- Soil and H2O quality measures and relevant information to answer so what!!! *Nitrogen*
- Intensification-driven nitrogen problems are obvious already.

Can Farms in New Zealand Survive with Less Synthetic Fertiliser?

- Not without P and N
- Unless consumers willing to pay more for products not grown with fertiliser
- What is your definition? of success?

Water

- A disastrous event focus the mind Cyclone Bola
- Water mixed messages between Fonterra district (pro) councils and residential councils (anti) – Canterbury
- Water storage needed
- Water availability
- Changing land use
- Intensification.

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Profit drives production
- Limited land competition for
- ROI / wealth
- True environment cost not accounted for
- We are not factoring in the cost of use of natural resources
- Farmers caught in a bind: have to produce more for less
- If there is no pressure to internalise costs farmers just focus on the bottom line (\$)
- Cheap food: drivers all through the world. Beef in the US 50% subsidy
- Change in ownership structure
- Environmental costs not all captured on farms.

Land Values

- Land prices
- Price of Land
- Need to earn more
- Increase intensification
- Banks lending on equity

- Urban sprawl
- Availability of suitable land = more pressure of less suitable land.

Markets

- Competition for markets
- Customer 'pull' key driver
- Social pressures: how overseas purchasers see our products
- Retail differentiation a driver
- Supermarket concentration a driver.

Supply Organisations

- Signals from consumers about environmental expectations are filtered by the market, and through 'middle men' agencies like Fonterra
- Executives (e.g. Fonterra) make decisions; farmers more into farming
- Fonterra shift in focus more to market and sustainability.

Costs of Production

- Cost of inputs: cost of business
- Compliance costs: costs of business
- Labour driver / cost
- Traceability: cost to farmers
- Animal health requirements
- Higher processing costs
- More need to push system.

Social/Political Drivers

- The technological advances
- Greed consumers/farmers
- Less localised knowledge
- Farmers knowing impacts: would it change behaviour?
- Productivity culture
- Desire to move forward
- Older farmers are more complacent about environmental improvement (but retiring earlier)
- There's a trend to more group/corporate ownership of farms for capital gains, therefore profit, so
 the environmental messages may not be acknowledged so readily by farm managers on the
 ground.

Moving Forward: Economic

- Financial benefits motivate changes
- Demand pulls e.g. price premiums (doubts about these), restricted access to markets (considered more likely)
- Ensuring farms remain profitable (focus on added value)
- Motivation to learn/change: need a price signal
- Purchase of product: pay more for sustainable product pay less for unsustainable product.

Moving Forward: Social/Education

- Negative incentives/reason to not do something
- Need to make it easier to get younger people on farm.

Moving Forward: Markets

- Signals to encourage
- People need to want to pay
- New Zealand has to perform
- Growing consumer awareness.

Constraints to Moving Forward:

• QA system – but consumers still looking for cheap food: promoted by supermarkets (hard to get people to pay more for food).

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

- Research coming through but needs to be packed for better communication
- Translation of science needed
- Soil quality management systems need tools for farmers
- More research needed especially on soil science / water science linkages
- Getting information out to farmers and agencies is important
- Prove and funded
- Short and long-term
- How get through to policy: not happening
- On tap
- Move away from applied science
- Need for good science: not nitrogen but urine
- Need farm sustainability measurement tools
- Government commitment through research into soil research and relevant areas is also required
- Clarity? Better understand what environmental indicators mean
- Develop indicators with farmers to ensure relevance
- Visual soil assessment kit look at soil resource underneath, rather than what is happening on top.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Farmer is unit of change
- One model doesn't fit all
- Whole systems: use examples and indicators

- Need to consider global environment as well as local effects
- "Redesign" what do you mean? need explanation
- Need "achieved" status description, who sets these standards?
- Do we need to re-design farming?
- "Evolution" rather than redesign
- Don't know if we need to redesign
- Some farm systems / farms do but not others
- Need to ID farm types / systems and match to locations
- Yes do need to respond to NZ's environment problems, e.g. buffering of floods / droughts etc a
 matter that farmers need to get better at
- Higher productivity now on permanent pastures reflecting a shift to greater use of forage crops new issues will arise from these changes
- "Need to redesign" is a poor message to give farmers
- Jargon word not understood: sell message differently.

Constraints to Redesign:

- Do regional councils have tools/info to give good advice?
- Cost of change
- Structure of ownership, e.g. family farm in middle of system that now includes lifestyle properties, corporate farms
- Structure of lease arrangements goes against sustainable practices in some situations
- In absence of agreed indicators, lease agreements are a problem because lessee not necessarily farming to particular environmental objectives
- Price of land is a major problem
- People's inherent conservatism needs to be recognised
- Slow speed of technology transfer between researchers and farm
- Reduced profit margins
- Short term who pays the cost.

Enabling Redesign: Big Picture

- Soils unsure if good enough info? If poor soil information, compromises effectiveness of nutrient budgets
- RC should place decision making on what tool to use with farmers
- Need more focus on the whole farm, focusing on one issue a risk because other problems often occur
- Soils Underpinning Business Success (SUBS) successful
- Working groups a way to do it
- Financial support
- Too narrow to focus on just farm must be system level
- Need to look at this differently should take on challenge of choosing to change before we need to
- What's public/private land this debate key environment requires this to change
- Need different ways to sell this message
- Financial
- Market / buyer incentives market access has been a key has seen significant change in horticulture systems within 5 years
- Get info out to farmers use media etc
- Tech transfer at on-farm level beyond monitor farms need to get other people

- Get the buyer out on the farm this has worked in horticulture
- Need incentive
- Continuity of ownership.

Ideas for Redesign

- Nutrient budgeting 3% 17/18% farmers using
- Nutrient budgeting can be used across the redesign spectrum
- Catchment nutrient budgets important, farm outputs should be put in the context of a catchment.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Websites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- Farmers do respond to community "pressure" they are part of the community
- Plenty of goodwill on farmers part to maintain healthy environments
- More information on impact of changes and practical ways to change is needed by land managers
- There is evidence of a "slow' shift in thinking
- Farmers know little about soils and water need a deeper understanding/soils/ecology
- Farmers: change will be gradual support has to be there forever
- Better question: how do you make it more worthwhile for farmers to farm sustainably? Support from regional councils advice incentives \$ for planting disincentives
- What do regional councils do for farmers? Not sure!

Types Of Extension Models

- MWES monitor farms
- Landcare Trust (?) NZ
- Use feed quality assurance
- SFF project. Internal parasites
- Dairy discussion support group (Dexcel)
- Massey annual conference
- Media: human interest/ideas. Sustainability focus growing esp. 10-15 years
- Money for farms
- SUBS Soils Underpinning Business Success (understanding soil types, behaviour, production, long-term sustainability)
- Green Tick (Farm Sure)
- Sustainable Farming Fund Project SLM Group
- Clean Streams Accord
- Agricultural media info
- VSA workshops
- Field Days / Workshops single focus
- Public Good Science funded programme i.e. transfer of research

- Polytech programmes rural, tertiary
- Farm Discussion Groups
- 1:1 Consultancy
- Local initiatives
- Growsafe
- Legislative Formal Training
- Internet
- Environment management officers talking to farmers
- How soils would react under change management
- Farm environment awards: field days, education, pamphlets
- Learning from leaders? Themes and threads from winners/ success stories
- 1 monitor farm in Manawatu not operational any more.

2		
Programmes	Focus	Reasons for
	(Production /	effectiveness for those
	Sustainability / Awareness	considered most
	raising / Action)	effective
Monitor / focus farms	Production	Raise awareness
		through wide exposure
		Demonstrate the benefits
Discussion groups	Mixed	
 sector groups 	Primarily Production	
- regional council groups	Sustainability & Production	
SFF Projects	Sustainability and	Farmer driven
e.g. SUBS discussion groups	production, Raising	Good funding support
	awareness of alternative	0
	systems	
Field days e.g. NZFFA	Production	
	Special interest	
Land Based Training	Production	
	Health and Safety	
	Risk reduction	
Commercial Professional	Product promotion	
Development – workshops /	Production oriented	
field days		
Awards / Competitions e.g.	Mixed (production and	
environment awards	sustainability)	
	Some have a specific focus	
Annual conferences	Production with some	
	environmental sessions	
Environmental Education in	Awareness / Action	
Schools		

What Is Working With Current Extension Models?

• MAF sustainable farming fund: funding for farmers to do their own stuff solve problems v successful – communities of interest.

What Is Not Working With Current Extension Models?

- Extension still production
- Focused some shift in dairying

- Hill country still profit focused
- Some are focused on production and not looking at how that affects sustainability
- Those providing the "education" have different "drivers" not necessarily sustainable
- Define sustainable?
- Measure /indicators?
- Answer is always more N!!!!! (i.e. beware of those with something to sell)
- Beware of simple bandwagons/themes
- Market focus. Fonterra run
- Not many block courses
- Information is available but not being used by farmers because the information often lacks relevance?
- Farmers are not aware of the information
- Benefits to farmers of information and acting on information are not clear
- Often focus on single aspect, not systems as whole
- Farm environment awards (can be a superficial look at a farm. Things not as good as they seem on the surface) limited to existing? Systems? How do we know this is enough?
- No one is really shifting to redesign
- Monitor farms: focus on soil mapping strong focus on \$. But not a tool for moving environment knowledge into farming community
- Fertiliser reps / consultants. Selling product industry has been responsible but farmers don't always listen
- 83% dairy farmers still to have comprehensive nutrient budgets
- · Confusing messages being given to farmers
- Little capacity to do farm plans. Need more resources: Varies across region to council and staff.

Enabling Change:

- More resources for people to understand: SUBS programme not followed up, into always need to be available all the time to everybody/ farmers need ongoing support. Need more resources
- Monitoring
- Collaboration
- Good news
- Sustainability outcomes: variation case by case
- How can we improve the effectiveness of educational programmes? Build in monitoring of programmes to measure their success
- How do we best reach the unconverted?
- Start young (in schools)
- Provide financial support for effective programmes
- Encourage and promote the "converted", others will follow
- We are talking to converted population not parishioners, need to engage them through demonstration
- Unique solutions
- Learning opportunities weaken over time, must be reinforced
- Getting advice going out to farmers aligned
- Producing food fit for purpose economic model
- Good news stories
- Need for whole farm approaches not in compartments
- Need to ask farmers what would cause them to change?

Motivating Farmers

- Find out what others are doing and what can be done
- Individual can make a difference even if only within their own boundaries
- Don't always have to be economic social? Pressure. Collective action
- Increasing levels of knowledge and understanding
- Want to be early, adopt leading edge.

Barriers to Change

- Uptake can be slow
- How do you get farmers to recognise they are not farming sustainably?
- Farmers know they are not farming sustainably but argue they are the backbone of the country and that they have to do it.

Moving Forward: Making the Transition from the Production to the Sustainability Era

Can we do it? Yes

Are we being strategic enough in our development of our farming systems – pulling together as 'Team NZ'?

Questions of Strategy

- Need to develop environmental bottom lines so industry knows what their targets are
- Set absolute environmental bottom lines e.g. which protect human health?
- How do we generate on-farm charge?
- How do we generate whole system change i.e. the food / farm system?
- How do we generate a "whole of NZ", shared approach to these issues?
- What is the role or place of wider public interest in land use and farming systems?
- How do we raise awareness in the rural community that this may be our last chance before significant intervention?

What will make it possible?

- Leadership
- Good indicators/measures of sustainability
- Demonstration and promotion of effectiveness of measures put in place e.g. improvement in State of the Environment or other sustainability indicators.

Suggestions for Strategy

- Education needs to be thru whole chain
- Policy makers (need to learn: for farmers to farm sustainably, they need to earn \$), schools (understanding how everything fits together), consumers, retail industry – have to take responsibility
- Programmes available, but not enough resources e.g. SUBS programme group learning environment
- Quadruple bottom line supermarket chains have to understand impacts of their policies more customer demand
- People have to have a better understanding of the trade-offs of our choices, to make future decisions e.g. ecosystem services; how to use in a sustainable manner? How they are utilised and monetary value
- Education does not always lead to voluntary change have to combine with incentives and regulation

- Combination of fiscal tools / education/ regulation problems with RMA: not being implemented / variable / wimpy
- Regulation driven by community/agency/industry? (Accreditation system).

Is there enough understanding of growing urban/rural tensions, re environmental expectations, in our politically urban dominated society?

- The "urban effect"
- How much will they pay to support the transition? They already do through regional council spending
- Is this occurring to best effect now? Does current spending reflect a real commitment to sustainability? Perhaps not
- Urban society too much removed from producers
- How much pressure will they exert? This could very well be our "last chance" before significant intervention
- Urban/rural: educated what is sustainable farming.

Working Together

- Catchment plans needed
- Whole community (e.g. tourism) need to be involved, assist farmers
- Industries to take responsibility for leading change
- Community or catchment approach
- Vision including everybody.

What type of Leadership Organisation is needed?

- One that operates across the whole community and establishes this as OUR problem
- One that fosters awareness raising and education to galvanise interest and involvement
- One that is made up of people who are known and respected (not just officials)
- One that is well resourced and can resource action
- One that has a long-term commitment behind it i.e. that will evolve, that will work on "what's between peoples ears".

Pan Sector Organisation

- A leadership organisation like that which hosts the Environmental Awards
- Do we want another QUANGO? Could the NZ Landcare Trust or PCE provide this leadership?
- We need a new group with a clean sheet (although it could/should be serviced through an existing organisation to avoid building up additional bureaucracy)
- Should it be national or should there be regional leadership organisations?
- Should be tiered, regional organisations with national affiliation.

Comments from Manawatu Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Well written, good layout, good used diagrams
- It has got a reaction, the issues are now in to public arena, it is important
- I liked the use of 'dash-board' indicators need more of these and wider publicity
- The environmental workshop was well worthwhile. It allowed us all to share ideas in this important issue. Well done
- Well balanced and highly likely to advance awareness and progress towards sustainability
- Haven't had the opportunity to read the report yet. The workshop was interesting
- Looking forward to seeing the change when I return to NZ. Keep up the great work PCE and Landcare
- Thrust/message absolutely correct. Some omissions and errors detect for some but I argue these should not (comment not finished)
- Addresses the key issue for NZ in the 21st century
- Opportunity to put forward a farmers' perspective to the people who have little indepth knowledge of practical farming.

Comment on Workshop Process

- The number of farmers compared to other sectors of our industry is very low to get a level playing field for comment on the subject
- Keep it in balance. It is those that have 'no investment that appear to be having a lot of the say'
- Seems that those groups with the least invested might want to have a bigger say
- I think unfortunately this workshop has attracted the same old faces
- Too few farmers present
- Allowed views to be put were they 'the converted'?
- Raised concerns about who has interest in all this
- Identified need to look at how to interact with farmers very few present!

Challenges

- Look forward to seeing how redesigned system gets implemented
- How do you get the breadth of farmers reading this sort of material?

Moving Forward

- There is a need for people without farming knowledge to be more aware of the importance of farming to our total economy. Farming is a very complex business and there is not going to be any quick fix solution, sustainability is a community issue as well as an individual issue
- Raise profile of issues at government level get local buy-in, make this a priority for New Zealand redesign/pre package/renew/reinvent
- Soil science and farming research must combine the productivity and health of the product and the sustainability and effect on biological resources Farmers won't buy in unless they are incentivised by dollars
- Great report; but we need action; what next? How are communities being engaged in the debate?
- Would be good if this is progressed and not end up in the filing cabinet
- We have been taking these issues for 15years + now lets do/implement it

- Needs government support/resources to deliver the message to farmers/landowners of support research and extension for informed changes
- Good to see issues addressed at the national scale. Solutions need to be national but recognise the knowledge and projects already happening at a local level
- We need to concentrate on out comes and rather inputs because of differences in farming systems
- It needs to be taken out to rural NZ/smaller rural towns. Great report, but someone must be given
 ownership of the responsibility to implement it. The term balance must not be allowed to displace or
 dilute the term sustainability: the primary focus must remain on 'natural capital sustainability'.
 Individual agricultural industries need to take responsibility for causing their suppliers to become
 knowledgeable about the content of the report; e.g. VegFed, Fonterra, Meat and Wool NZ etc. Talk
 to the supermarket industry
- Don't get stuck into the 'education leading to voluntary change' solutions, for two reasons: 1 we can't wait; 2 history shows it has seldom worked. The fact we have the PCE's report in 2004 proves the previous approach hasn't worked
- Excellent. Does need to be taken out more
- Good stimulus for discussion but needs ownership/leadership from farming industry and whole government
- Needs more disseminations of the report i.e. a series on Country Calendar raise urban awareness
- Need to manage the total messages media and lobby groups sensitively focus on 'unsustainable farming'
- Generate article for publishing
- Didn't do much more discussion needed to take place between science and landowners as other stakeholders. It is part of a process
- Education needed.

Feedback

- Was it printed on recycled paper? i.e. try practising sustainability
- Serious errors of fact in the report were not addressed but an opportunity was created to address those at a later date
- Good work, however seems to dwell on inputs rather than the desired outcomes. Also take (and has produced a similar) broad brush to farming systems. Agree there are issues that need addressing but these aren't right across the whole sector
- I found the marketing argument e.g. organic and economic opportunities to a degree unnecessary to justify the need for change
- In general a very valuable report, bit disappointed that the environmental credentials of commercial forestry, especially farm forestry, as land use almost invisible. Forestry especially valuable for soil conservation, low nitrogen emissions, but generally profitable land use. Current low radiata log prices probably not end of forestry, and other species currently selling well
- It did not go far enough making recommendations as a guardian of the communities' environment.

Other

- Intensification is not unique to NZ. It is happening all over the world. NZ farmers follow good sustainable practices when compared to farmers in Europe and North America. The difference is while NZ economy depends mainly on agriculture, agriculture is a minor component in the economy of Europe and North America so we have to adapt better sustainable practices mainly to protect our economy. 'Economic sustainability is a prime reason for environmental sustainability'
- Provided reinforcement for GFG messages
- Added a bit to my understanding of issues
- Good confirmation of stuff I already have knowledge
- Chance to catch up with people.

NELSON/MARLBOROUGH

'Growing for good' Workshop, 2 February 2005

Key Take-home Messages

The Importance of Farming to New Zealand's Wealth

- New Zealand needs to retain its special advantages: low cost farm system, 'clean' image
- Put profit before increasing production
- Choose products for markets
- Risk: quality production reduces it, politicians increase it
- The higher the value the higher the risk, risk at all levels
- Ability to move from price taker to maker.

Effects of Intensification on Natural Capital

- Nitrogen S&T- maximise return, minimise impacts
- Farmers need concrete information showing damage and potential solutions/measures to change
- Land use change very important here
- Need good indicators sustainable on farm indicators, environmental indicators
- Rate of change exceeds capacity to manage it.

Understanding the Impact of Economic and Social Drivers

Economic Drivers

- Economic drivers are the key cause for unsustainable practices
- 'Run faster to stand still' \rightarrow not sustainable economically/socially
- Retailers position of dominance questioned/mitigated (free trade) equitable
- New Zealand urban and rural responsibility → e.g. urban consumers of rural products currently buying on 'price' rather than quality/impact.

Social/Political Drivers – No Key Take-home Messages

Incentives to Change

- Motivation change: saving money, making money. On farm trials, visible evidence, leading farmers
- Not until market (global) tells us we have to be environmentally sensitive will/does New Zealand respond
- Financial incentives have to be better off for doing some things profitability drives change.

Performance of Research on Delivering Needs

- Availability of quality, understandable information: soil research, NZ cases, unbiased
- Sharing of knowledge/research positive, robust, long term
- Independent research needed
- Sustainable farming practices: knowledge should not be a cost to farmers. Research and development need to be nationally funded → Farming: national interest, needs national ownership.

Understanding Redesign

- One system doesn't fit all, has to evolve sensibly/practically takes time, constant reevaluation/diverse models
- Farmers are motivated to make environmentally sound decisions. A lot can be done without losing production (focus on efficiencies, not extremes)
- Need profit to be able to redesign
- Need good audit/quality assurance.

Education Models for Farmers: Are They Leading To Change?

- Monitor farm concept: transfer of knowledge, helps to lead farmers
- Extension not relevant to Marlborough old news.

Team New Zealand

Education and Communication

• Isolation of farming from urban - need understanding.

Working Together

- Team New Zealand approach identify advantages
- Bold vision Supported by innovative approach
- Team approach to agriculture and any changes.

Questions of Strategy

- Drivers must be home grown/local rather than from off shore
- Change farm ownership model young investors
- Consistent government policies
- Encourage 'farm-family' co-operation sense of ownership drives stewardship cost of land.

Nelson/Marlborough Small Group Discussion Notes

This section lists all points of discussion recorded from the Nelson/Marlborough workshop small group discussions. The questions used to prompt the small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

• Wealth lies in healthy soil, clean water, money.

How much risk do you think there really is? (high, medium, low)

- POV #1: High risk of losing overseas markets NZ has dependency on agriculture e.g. tariffs being imposed, companies building in environment standards concerning quality of product and environment
- POV #2: Limited risk manageable?: dependent on type of farming e.g. wine/dairy
- Markets based on a perception clean and green
 - need to retain diversity of production risk always present
 - variables of risk Kyoto demands/unknowns
- Three levels of risk the whole sector/ farming sector/individual
- The higher the value the higher the risk
- Currently risk associated with food safety (not environmental impacts)
- NZ has seen risk already
- Reality of compliance: reports/gate-to-plate auditing systems. There is a risk of not meeting these
- Dependent on market demands.

What kinds of things do you think would make that risk higher?

- What is increasing risk?
 - less land being farmed
 - more compliances
 - cost from government
 - relying on petroleum based fertiliser
- Carbon tax risk
- Politicians put practical people on land at risk
- Distance from market high energy input increases risk
- Level of information? perception vs reality in markets
- Risk based on perception of environmental impacts of farming, not always grounded in facts, or a realistic understanding of farming
- Higher risk will result from bad publicity (makes news faster than good news): lack of quality assurance and links back to producers
- Competition increases risk overseas.

Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- Community not with that process: there is a lack of knowledge about the connection between quality and value
- Varying level of understanding risk
- Farmers awareness of risk is increasing not certain about how fast the potential impact is.

The Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?

7. How well do we understand the impact of irrigation on our natural capital?

- Dramatic change in short time can be detrimental
- Intensification is linked to profitability
- The rate of change faster than ability to respond
- Intensification can be thought of as a spectrum for different reasons people will be at different places (might be conscious, might not) e.g. initial land values, personal philosophy, risk taking level etc
- Some aspects of current management systems are positive but intensification is still strong.

Marlborough-Specific Comments

- Land use is strongly connected to intensification. Connected to market drivers. Use changes around farm can affect viability
- Farming sustainability is complex, influenced by drought, connected to appropriate nutrient balance
- Value of land here very high
- Overgrazing is also an issue
- Councils allowing subdivisions and lifestyle blocks: lack of 'big plan'
 - conflict between farming practice and those who want views etc
 - overseas investments
 - e.g. dams
- Climate dominates here: adapt.

How does a farmer know that his/her farm is sustainable?

- Most farmers don't know if they are farming sustainably. They need:
 - soil information
 - water quality information
 - different levels of monitoring
- Need more indicators
- Need quality assurance systems
- Nutrient budgeting soil fertility
- Inputs/outputs (stock sold): feed budget
- Farmers are always aware of input/outputs, but they tend to underestimate/guesstimate
- Concern: we currently have no way of determining cumulative effect of minor effects.

Impact of Nitrogen on Natural Capital

- Nitrate leachate most from animals not fertiliser application: needs education
- Moving away from use on hill country for environmental reasons: long term use detrimental to 'whole farm'
- Wide range of opinions about fertiliser
 - fertiliser reps: because have vested interest in their products
 - farmers have own perceptions/experiences
- Cost of fertiliser vs products will influence a response to nitrogen
- Differences of impacts: pasture species/growth patterns/suited to different areas
- Is excess fertiliser killing or enhancing soil? probably killing.

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Economics main driver: survival first, environment second
- Cost of production: running to stand still, world wide trend
- Premiums tend to become the norm: "running to stand still"
- Commodity based industry
- Cheap product big driver for market place quality vs niche, quantity
- Move toward premium production vs commodities produced
- Drivers can depend on ownership structure i.e. family farm/corporate etc, land values
- Interest rate/exchange rate
- Further intensification/commoditisation too expensive? Have to work off the land
- Interest rates: owner
- Fiscal process/taxation methods
- Other products produced in countries with very few environmental regulations e.g. China,
- Price/cost differential: free trade
- Low importing from the Pacific Islands
- Cost of land and water resources of farming
- Decreasing area of productive land in New Zealand (going to 'urbanisation')
- Growing population requires food
- Smaller areas (higher value) of land being utilised more 'efficiently' e.g. intensity on smaller size high profit lots vs farming marginal land on scale
- International issue
- Strength of the New Zealand dollar.

Land Prices

- Price of land younger people can not afford it
- Conventional farmers 'priced out' by grape growers
- Land values, foreign ownership.

Markets

- Overseas markets: good quality focal enjoyment of eating
- Not enough good markets over supply
- 'house wife' demanding quality (what producer told) but then buy on price
 - depends on supply can demand quality and low price
 - over supply = price taker
 - under supply = price setter
- Commerce Act prevents collective bargaining (i.e. price setting) not getting price for product to enable 'farmer' to grow sustainably
- New Zealanders now concerned about environment impact/awareness in other countries
 - e.g. buying non New Zealand produce based on price

• Consumer awareness of what they are buying.

Costs of Production

- OSH, RMA, holidays (staff)
- Compliance costs not related to production
- Rates.

Food Industry

- Held at supermarkets whim whole sector vulnerable can limit risk of value added product
- Retreat from cooperatives to big enterprise
- Bigger supermarkets/amalgamations: supermarket demands e.g. health standards.

Other

- There is no salesmen encouraging products to look after the land
- Drivers do not encourage creativity, thinking outside the square.

Do We Have Enough Understanding Of These Drivers?

- Impacts and drivers not well understood
- Selling quality of streams by selling cheap products
- Price doesn't reflect 'true cost': environment/inputs.

Moving Forward: Economics

- Outside influences will force re-design
 - increase in oil prices
 - profit vs production
- Exports and NZ dollar
- Applying the 'business model' to farming e.g. corporate based in Auckland versus individual farm family owner/operator
- Vision (e.g. olive industry): farm family (autonomy) collectively working together, cooperation e.g. marketing, volume of product, rational inputs, share machinery est efficiency
- Need to increase viability of small unit.

Moving Forward: Markets

- Innovative marketing tools: create market
- Gain control of markets:single desk marketing
- Increase demand by marketing to increase profit: supply and demand/niche market
- Overseas buyers/access overseas markets
- Better networking of systems
- How do we influence UK supermarkets?
- 'Less stick'
- Lead by market driven: e.g. consumer health concern ability to get high prices
- People in charge need to change
- Understanding dollar value of green
- Will overseas buyers 'buy in' to redesign?

Moving Forward: Food Industry

- Need to retain strength of primary production through local ownership
- Meat industry \$\$ for quality lambs, increase profit
- Veer away from growing committees: look at what and how they grow: will this work?
- Producers need to be more proactive communicating realities of production to controllers of retail outlets (e.g. M&S)

• Branding: go back to smaller niche markets.

Moving Forward: Other

- There are other methods for NZ e.g. organic
- Farmers very able to adapt if 'drivers' are changed
- Profit before production: need to work with mother nature is this achievable?
- Review rates system: we are paying for what we are not getting
- Farmers need to maintain product quality: product quality could be achieved through genetic improvement and technology
- Sense of ownership is a driver for 'stewardship'
 - Issue: enabling ownership: re: cost of land and capital gains from subdivision
 - focus should be on production not 'capital gain'?
 - land is a finite resource price will always increase
- Profitability and fashion drives change/action.

Constraints to Moving Forward

- OSH/RMA complicates possible solutions to intensification
- Reducing freedom to manage e.g. costs of compliances
- Costs from/standards of varying priorities/import product safety stands vs bureaucracy/lack of understanding about farming systems.

Understanding the Effects of Intensification

- Testing water will help show impacts
- Effects depend on level of intensification at any point in time
- Methods should/are improving quality over time
- Success depends on location/geology etc
- Farm systems more at risk/less suitable = monocultures
- High dependency e.g. N2 dependency
- Economic driver is greater than the understanding of the impact of farm practices on natural capital varies around the country
- Drivers of intensification are understood but not their impact.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comments

- Need independent data about effects of fertiliser
- R+D need to spend money on this to increase environment quality and profit
- We like to dwell on mitigation because we understand it, but need to move to research to discover unknown
- Need independent research
- Research funded by the state, not just farmers
- 'Intellectual property': cost of buying prohibits use of knowledge
- Most research focussed on production rather than sustainable practices
- Research into long-term issues is not immediate
- Compared to farmers the government invests little in R&D
- Currently research is reactive
- User pays research myth

- Balance: 'verification acknowledgment of working knowledge' anecdotal evidence
 - weighing in consideration
 - long-term observation and experience
- Scientists if can communicate well
 - process of scientific method hinders progress
 - intuitive answer from farmers vs proof. Takes a long time
- Need understandable science back to the owners
- there is little independent research about good use of fertiliser, and how much to apply. Reps (who sell fertiliser to make money) tell farmers what to do. Market driven advice
- NZ research funding by fertiliser companies corrupt
- Research funding lacking for agriculture and rural sector
- Researchers only research what paid for
 - there are different drivers and funding for research
 - Crown Research
 - commercial vs pure research
 - government should sponsor research
 - government funding is ill spent
- Irrelevant to Marlborough (research done elsewhere) cannot use information
- Variety of production systems and each is small, so does not attract much research.

Research Areas

- Need better science and understanding and use of inputs e.g. water
- Nitrogen look at growing legumes (research)
- ICM schemes
 - initiated from impacts on aquaculture, mountain to sea impacts
 - have lots of info related to how information can be used in practical application
 - valuable data to discussion
- Soil health vital there is lack of information about soil health.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comment

- Do we need to re-design farming?
- Concept is concerning agriculture has come a long way in unsubsidised rural economy have to make a living
- Farmers ARE more efficient
- There is a misconception that farmers want to harm the environment
- 'Redesign' concept is simplistic will take time and change in attitude
- Evolution rather than change design
- Can't afford extreme practices e.g. low stocking rates can't afford to reduce production. Need stock to manage plant pest/pasture fertility, graze, pests, maintain biodiversity
- Concentrate on efficiencies rather than whole farm design

- Can't wholesale redesign systems but can make gradual changes
- Farmers will not take to the extremes.

Where should information come from?

- Farmers (sort out best solutions)
- More discussion groups: target good farmers as case studies need credibility to their practices
- Learn from other countries but we are independent
- Collective solutions, farmers are the solution
- Re-design is all about education and reliable information: certify information.

Difficulties in re-design

- Habits
- Debt

•

- Old school
- Lack of information.

Constraints to Redesign

- Ability to change influenced by: profit, bank pressures
- Change in rating?/ land use
- Less government interference needed and less cost
 - Price taker not price makers
 - are making more money but compliance costs eat this up e.g. ACC
 - quality
 - premium price compliance ok
 - No control over players that effect farm prices
- Problems lack of knowledge how to go organic (very hard).

Enabling Redesign: Big Picture

- Needs to be profit (short and long term) to drive change
- Value of utilising land more effectively: e.g. lifestyle blocks under-utilise
- Green system: wine growing: still not spending less, savings are through integration
- Redesign \rightarrow concentrate on farmers in better financial position
 - not driven by banks
 - need money to take risks
 - changing thinking in older farmers can be hard. If it works, they can be good examples
 - need credible research
- Sustainable farming: unless you can mitigate effect, it does involve reducing production
- Depends on the farm system.

Ideas for Redesign

- 'Tweaking' of system rather than redesign: focus on inputs e.g. number/level of inputs e.g. fertiliser
- Reduce costs/target inputs better: spray programme/drench/fertiliser/soil tests
- Any essential changes will vary due to local conditions using relevant tools for fertiliser (Overseer etc) - more how fertiliser is applied rather than actual quantity. Often it's the process that needs to be questioned
- Depends on the farm system
- Need smarter use of fertiliser
- Sustainable soil management is essential ← Key issue.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing because of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Web sites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comment

- Tide is starting to turn people are aware there are problems
- Draw on experience/lessons from other countries
 - e.g. Israel good, UK bad
 - e.g. effects of water use
 - o different context for New Zealand.

Types Of Extension Models

- Monitor farm concept v good/working
- Good farm participation
- Awards: positive/pull approach
- Raise awareness of different approaches
- Dexcel: production levels main focus. Farmers need to be proactive and push other topics
- Environment Awards: highlights different practices
- SI Dairy Event and Road Show: provides research information.

What Is Working With Current Extension Models?

- Makes you question your practices
- Makes you consider change
- Makes you research facts and figures.

What Is Not Working With Current Extension Models?

- Can be narrow focus, too technical
- Consultants need to be more practical
- Tend to focus on economic performance and technology application not achieving anything concerning sustainability. Need to extend focus e.g. sustainable/environment/holistic.

Enabling Change

- Good examples (unbiased) of improvements
- Extension models focus on individual needs (e.g. age etc)
- Better transfer of technology researchers to farmers
- Need to see evidence sort out wheat from chaff
 - monitor farms (use good examples)
 - e.g. direct drilling
- Changes have been forced in the past/farmers need to be led to next change. Needs to be led by good information/workshop ideas
- Need to highlight good operators, demonstrate success, environmental awards
- Production is integral, as production and profit are linked
- Need more publicity about local good examples
- Practising farmers are the best way to promote different technique
- Landowners need workshops/clear information about nitrogen and irrigation

- Need information on soil management: local magazines/papers should summarise research in • good publications
- Need more discussion groups.

Motivating Farmers

- Chris Dawkins rarely drench sheep due to management tools. SAVING: motivation
- Motivating - cost: cheaper products not necessary
- 'Better to see it than be told it'
- Proving things that are difficult to see: •
 - graphs _
 - pictures
- See it: farm visits e.g. soil profile •
- Farmers have to believe the information.

How To Encourage Changes In Farming Practices Not Related To Cost Saving Or Profit Making

- Use of fines (stick) •
- Assistance e.g. \$ provided by public for planting. Community support (carrot).

Barriers to Change

- Farmers not picking up new information – hard to sort out the chaff from the good stuff
- Farmers can't be bothered getting together •
- Change cannot happen over night •
- Education providers look at things in isolation •
- Loss of knowledge over generations e.g. 'carrot' plants: good for sheep •
- 'Farmers don't know what they don't know'
- Farmers do not change quickly. •

Moving Forward: Making the Transition from the Production to the Sustainability Era

Working Together

- Need a 'Team New Zealand' approach
- Top down bottom up > inclusive •
- Nelson/Marlborough concept of unitary authority delivers practical outcomes effectively
- Need guidelines of responsibility rather than rules
- Industry responsibility develop their own rules •
- Council audit/ownership buy industry sector •
- Farmers are only one element in the solution
- New Zealand society has to work out an agreed 'balance' for farming •
- Visual/emotional effects as opposed to environmental integrity
- Proactive rather than being regulated
- Needs to be an acceptance that progress takes time •
- Regional groups and sub catchment groups address environmental issues •
- Government policy/legislation: the day it becomes prescriptive get negative response from • farmers
- All New Zealanders urban and rural perhaps need to accept a lower standard of living
- Need a greater awareness of the link between environment preferred and product value •
- Not putting different types of farmers or farmers/DOC etc against each other
- Great when local groups form to come up with locally relevant solutions bottom up approach

- Role of agencies: information, facilitation, promoting, research/international/national practices come up with some possible measures
- Need the 'vision', then what/how we need to do to get there/stay there
- New road is underway but not well supported.

Urban Population

- Children do not visit farms so much risk OSH etc
- Need for mind-set change: urban majority
 - making milk and meat sexier
 - isolation of farming from urban: because of rules and regulations
- a minority influences others.

Pan Sector Organisation/Leadership

- Farming community is not shaping its own destiny decision making by land owners important/more say in local initiatives
- Landowners' ability and opportunity to articulate needs not necessarily a pan-sector organisation, but - rather a change in the way conversation/consults take place. More 'informal' talking amongst sector interests
- Relates to forum for discussion are (???) talking to people on the farm re practical issues
- Farmers have a huge impact on New Zealand economy/social/environment but difficult for them to be involved in government processes because self employed/cannot take the day off
- Cynicism around consultation process
 - government already has pre-determined agenda
 - submission process inadequate to gather meaningful inputs
- Existing structures need to be tweaked adjusted.

Other – Comments on 'Growing for good' report

- Report is balanced but interpretation may not be: things taken out of context, depends on point of view
- Comprehensive
- Balance of interviewees: not enough farmers
- Practical experience essential
- Positive in that it recognises farmers are responding to 'drivers' not necessarily in control (manipulated).

Comments from Nelson/Marlborough Evaluation Sheets

Positive

- Thought provoking day thanks
- A great spring board to start and facilitate change
- Excellent
- Overdue
- An exciting report have needed this level of information to combine several strands of concern to a holistic picture
- Well done!
- Nice to know that 'farming for food' is NZ's biggest asset!

Moving Forward

- Be bold, but not authoritative. Stimulate and lead don't push
- Deciding on a suitable forum to continue dealing with key issues preferably a forum already in existence but with widening of scope
- Above all, there must be understanding between all ?? groups in NZ
- Rather than creating a whole new department I feel the message can be gotten across with the people you have in landcare, together with Dr Morgan???... by meeting land owners at monitor farm days a....

Feedback on Process

- Consultation needs to be across all land use groups. Meeting could have been better advertised to canvas (sic) parties. Few viticulture industry representatives (Marlborough Grape Growers Contacted?)
- Reduce noise level in hall
- Workshop questions rather difficult and long
- Have a sound system for us deafys!
- Don Ross did a good job under the circumstances. Landcare got people thinking with them.

Other

• Helped key people network with a view to future cooperation.

Notes submitted by a Landowner – attached to evaluation form

- Economics, economics, economics we are all dependent
- Sustainability for human life is reliant on agriculture
- Other political regimes such as the EU place huge value on ensuring fair standard of living for the agricultural community and the stability of farm incomes
- Since 1984, NZ has systematically reduced agricultural incomes, factors such as high interest/high exchange rate policy, regulations, compliance costs, local rates have disadvantaged agriculture culminating in the RMA and now the land access policy, which seems to be more about getting control of rivers and river banks, than it does about walking access
- During the 1980s, many of the best and brightest brains were lost to agriculture because of the brutal restructuring entered into by the labour government. Today, the effects of this are still obvious with the age of farmers, and the lack of graduates taking interest in agricultural concerns
- The 'run fast to stand still' philosophy is not sustainable. Before anything else is addressed the CAP objective of 'ensuring fair standards of living of those involved in agriculture' must be addressed
- The more economic pressure put on farmers will only mean more stress, deaths, accidents and short cuts. The environment comes second to the short term survival in New Zealand
- With a balance of payment crisis here, 6% of GDP, NZ cannot afford to continue to plunder and abuse agriculture
- In my Tu rangi wai wai (sic), the upper Waihopai Valley, 20 years ago, there were thriving, productive pastoral farms supporting families. Now there are weed infested hunting blocks, some forestry and a very few surviving traditional farms – most of which are struggling.

CANTERBURY

'Growing for good' Workshop, 7 February 2005

Key Take-home Messages

This section lists the key take-home messages from the Canterbury workshop only.

The Importance of Farming to New Zealand's Wealth

• Risk is medium to high and needs immediate action.

Effects of Intensification on Natural Capital

- We have some tools to monitor the sustainability of agriculture, but how effective are they? One difficulty is that outside drivers affect the sustainability of agriculture
- We need to be able to measure natural capital so it can be included in the economic and accounting models. Triple bottom line accounting and reporting are needed
- Farmers want to run a sustainable system
- Helping individual farmers to understand their own farm's impacts would be useful develop information systems to allow this
- Understanding true costs is very important and there has been a lot of work done on this in the UK. Internalising externalities.

Understanding the Impact of Economic and Social Drivers

• Need wider understanding of wider economic system and drivers.

Drivers – Economic

- Have to use economics to effect change. However economics alone is not sufficient to effect change
- Farm businesses need adequate income for return on capital
- Lack of 'green investment' opportunities in New Zealand (triple bottom line)
- Productivity and sustainability mutually exclusive must include business sustainability triple bottom line
- Economic efficiency is often the sole driver of sustainability
- Economics consumers want it cheap farmers need to live
- Main driver on farm is economic sustainability
- Some sectors at present focused (still) on commodity mindset.

Drivers – Social

• Urban political pressures will drive final decision (e.g. sustainable logging on West Coast).

Incentives To Change

- Whatever is done has to be economic otherwise it won't happen
- Change cheap food perception by educating consumers to pay for higher cost food including its environmental cost
- Society attitudes are the drivers of our current model with demands for better food at a cheap price. When consumers are prepared to pay a premium for environmentally safe food then there will be 'pull through' for more change at the farm level. This would also be reflected in urban environmental behaviour re energy, waste management etc

- Change perceptions from commodities to quality products (high value)
- Need to cherry pick the most discerning markets
- Retain better control of value chain including supermarkets (farm profitability)
- The right message/incentives from (e.g. milk companies) to encourages good practice. Carrot not stick.

Markets

- Need to brand New Zealand food as sustainable and prove it
- Marketing created it. Marketing can solve it
- Product integrity (justification and differentiation) all important
- We need to demonstrate that we make safe and environmentally sound products.

Performance of Research on Delivering Needs

- How was Kruley of the 1960s lost? Need to learn from this
- Research on nitrogen optimal application rates of water
- Communicate research better particularly the economic implications
- Research needed: holistic/soil biology/clear benefits/processes
- Funding for research and education
- Science hasn't got all the answers: not science for science's stake/listening to nature. Investment in studying natural systems
- Research must be focused: all GRI and private working together co-operate
- New Zealand needs to invest more in research because we are one of the only world countries who rely largely on agriculture for our wealth
- Must have new technology available: GM etc
- Sustainability: what does this mean for farmers on the ground? (Need good science).

Understanding Redesign

- Need to understand whole system before suggesting solutions including systems research. Redesign is complex
- Urgent remodel needed to protect the environment. (Minority view of group that action was needed and current practices could not be allowed to continue. Remainder in the group considered that steady progress was needed)
- Joint modelling/practical programme important: need 'practical things for practical people'
- 80/20 rule 80% already have good systems and are sustainable. Redesign of whole system is too ambitious – be pragmatic
- Redesign terrible word: redesign suggests top down
- Start again: Should or could be evolution as changes generally based on accurate knowledge happening continuously already
- New path? No, more likely to be a gradual process (little new paths)
- In farming it can take a long time to make changes e.g. to improve plants, animals and soil. Need to break into many small changes and to start today
- How to manage water better: storage, use, quality
- There has to be incentives and supports to help farmers redesign their farms.

Education Models for Farmers

- Farmers need better access to information/education
- Information transfer needs to be proactive and farmer friendly
- There are lots of people processing lots of information distribution of this information is important – so as people can make appropriate choices

- Education and hard data: farm consultants, farm discussion groups, expanded Landcare groups
- Funding for education.

Team New Zealand

Education and Communication

- Rural/urban awareness linkages are vital
- 'Information exchange' needs to be properly done (producers ↔ others) Education of consumers need to start this
- Positive side of farming should be communicated to the urban population
- Improved education awareness of all rural issues is important
- Education and information for public and farmers, international too. Win-win solution independent information/verification
- Improving communication will help a lot
- Education required: school/farmer/community/consumer. Some being done: more required
- Education: delivery and support and land users (education of producers and consumers)
- Need to educate consumers about sustainable/unsustainable products links to cost of product.

Working Together

- The whole community has to be part of any changes to sustainable agriculture. Many of the key drivers of change are at the societal level e.g. land values and product processing
- 'Sexual' context: dislocation of 1980s/1990s needs to be corrected (?) effects still significant
- 'Capacity building' in preference to (communities and catchments) 'regulation' e.g. Fraser Basin
- Managing change: catchment/natural
- All work together and understand each other: whole community.

Question of Strategy

- Need to set own levels and take the lead: decide our own future: BE PROACTIVE
- Need to be able to compete as a nation internationally
- What are our expectations? Whole community/strategically/income ± environment
- Disconnection between what farmers and consumers want: lack of signals in both directions
- Public good vs. private good: who benefits and who pays?
- Farmers can (if all farm costs are priced into food) survive on lower production but can the nation?

Leadership

- 'Top' needs to be involved and educated. Ministers, Parliament, central government
- Why aren't Federated Farmers taking a key role?
- More government assistance required if sustainable farming to be achieved
- Leadership with trust? Or get things in perspective. We don't always trust our 'leaders'. Not a
 separate body. Real concern about what constituted leadership in this area and that some people
 might put themselves forward as leaders without the right values and respecting the need for
 participation in this area. Our group felt that a separate body to pursue this was further
 bureaucracy and not appropriate. Let's use existing structures to really get some education and
 publicity going. Education: public, consumers, farmers. There needs to be an ongoing education
 programme to change behaviour
- Setting up non-government organisation to bring people together
- Carrot or stick approach (educate or regulations).

Other

• Rate of population growth will change what we call economic efficiency.

Canterbury Small Group Discussion Notes

This section lists all points of discussion recorded from the Canterbury workshop small group discussions. The questions used to prompt small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

How much risk do you think there really is? (high, medium, low).

- POV #1 Risks from markets: medium UK, high US, BSE. Med Asia more important (they are less sensitive to environmental issues than Europe or North America)
- POV #2 Low Med High (attempt to get people to commit to the scale of the problem. In the end most said it was important and needed action)
- POV #3 Not as bad as many countries so risk is lower
- POV #4 Risk huge but there is conflict between economic and sustainability
- POV #5 Different risk for high value vs. low priced products
- We need to be watching trends overseas. Need to be thinking about sets of standards to bring in future
- Border controls are an important means of managing risk from pests and diseases
- Risks are very difficult to manage because there are many of them all varying over time in different patterns
- Agriculture has some very different characteristics to industry general e.g. the ability to change is less, the activity is extensive use of land
- Public not prepared to accept environmental degradation.

What kinds of things do you think would make that risk higher?

- Contamination of groundwater by agriculture may take hundreds of years to reverse. Recharge of depleted aquifer could occur more quickly for most
- Non-point source discharges are difficult to manage/control
- If we continue to abuse our environment overseas tourists will take this home
- Examples of poor environmental management in the press
- Political non tariff barriers
- There are a wide range of markets, some are discerning /high value risk if we are ejected from high value markets, and NZ is forced to stay in commodity market

- Aware consumer will boycott markets
- Govt level governments may use farming practices to cut out NZ practices: create market/trade barriers.

Do farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- POV #1 90% of farmers understand and 40-50% are doing something about it
- POV #2 Most farmers aware of current risk but economic drivers will push farmers to move out of sustainable practices
- But red necks or rope sandals brigade get the publicity
- Very hard for an individual to identify all the risks and react to reduce them. Farmers tend to be busy with current issues whereas many risks are some time off into the future.

Moving Forward: Risk

- Need more stories in rural press
- We need to monitor trends in factory farming overseas and how that may affect our ability to dispose of animal effluent
- Important to involve powerful players: food industry/supermarkets/customer
- Marketing message: has to include sustainability: differentiate markets
- There has to be compatibility between message and actual practices to minimise risk
- There is a culture of quality standards for agricultural products. Similarly standards need to be developed for environmental sustainability of agriculture
- Understanding the customer's wants and needs is very important
- Can aim to produce premium quality products but the costs of doing that are much higher
- Education is there one group who can pull this together what are the messages who targeted at?

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

General Comments

- Soil and water, air, climate, people, flora and fauna, insects etc
- We don't have a holistic picture of natural capital and our role in it
- Do we understand the effect of intensification on natural capital?
- Natural capital is a vague term
- What are you aiming for? Planning systems don't capture desired outcomes
- There has been a failure to achieve integrated management.

What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?

- Farmers need solutions, need research and monitoring
- Information not readily available. It is there but how to find the information?
- Monitor farms farmers very receptive to this approach
- But monitoring costs money
- Need to better understand potential impact of activities e.g. 40-50 year lag between land use and effect (at Taupo)
- Can't wait for perfect information therefore precautionary
- Can fix things but demand for cheap food still there answer is with consumers
- There are difficulties in understanding environmental impacts/measurements.

Water

- Water doesn't blow away! i.e. under irrigation the previous problem of wind erosion is overcome. That is seen as a huge step forward by many dry land farmers
- Soil health and structure is difficult to manage (e.g. wet winter, dry summer)
- Irrigation is becoming more efficient
- Are there further acceptable sources of water? i.e. surface water, groundwater, impoundments? Is water in our rivers running to waste?
- How much pollution is being created?
- Dairy not the problem there is plenty of advice
- We are heading in right direction to achieve good water quality
- Effects on waterways are less apparent to the farmer.

How well do we understand the impact of irrigation?

- Not well
- A lot to learn, price of water determines use.

Nitrogen

- N grossly under-publicised
- Don't know if real cost is embodied in price of N fertiliser. No its not as N outflow cost of reducing not included
- Time frames are long N inputs from decade ago still moving through system
- Need to identify all sources of N in system
- No one is talking about 'stop using urea'
- Farming in Canterbury 90% of dairy farmers nutrient budgeting
- Tax on urea?
- Economics drive urea where to from here?
- Rebates for nitrogen inhibitors?
- Catchment approach positive.

How well do we understand the impacts of intensification overall?

- POV #1 Intensive farming systems may be more sustainable because they are more efficient. Extensive hill country may be less sustainable because they are less efficient
- POV #2 Efficiency is not necessarily sustainable
- Efficiency minimum input maximum output, can degrade natural capital or sustain natural capital
- Have to assess cumulative effect of 'efficient' operation: may not be sustainable

- Redesign don't know enough about what this means
- Need to bring in extensive systems as well.

Can farms in New Zealand survive with less synthetic fertiliser?

- Yes farmers can, but can consumers?
- But grass/clover sward can't produce as much because of clover root weevil
- NZ is breeding grasses that need artificial N
- It will result in lower production.

Moving Forward

- Nutrient budgeting
- Measuring and monitoring ground water
- Need controllable irrigation methods e.g. centre pivot instead of rotor rainers
- Put a price on tradable water rights
- More efficiency if water limited and more expensive
- Re-using water within one farm
- Waterways have started fencing off it is expensive who pays? Benefit is to consumer and public so farmer shouldn't have to pay it all
- If we can get 90% of farmers to manage well will the environment tolerate the excesses of the last 10%?
- Water harvesting required.

Other

• The greater the intensity of production the greater the potential waste products that may contaminate the environment.

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- Increased capital expenditure requires increased borrowing and an increased return to service it. This requires more intensive production
- Debt servicing financial driver for the younger generation which manages debt better than previous generations
- Farm business: need income/profit (as other businesses) to get reasonable return of capital
- Lack of green investment opportunities in New Zealand: No triple bottom line
- Single bottom line (\$\$) need triple
- Poor economic returns hard to be 'green'
- Corporate/absentee farm owners: problem or opportunity?
- Lots of investment companies buying lots farms: they don't care mainly interested in money

- Pendulum has swung too far to economic and now back to social
- All commodities decline in price in long-term pressure on suppliers to increases efficiency
- High value market is prepared to pay for environmentally sound food. The rest are not and price is the principal determinant of sales. So an organisation like Fonterra will never have all of their output in the high value area
- Declining commodity prices. These place continued pressure for intensification of land use.
- High New Zealand dollar/input costs.

Land Values

- Driven by alternative use e.g. lifestyle blocks
- Tenure review is driving intensification on lower land. Set aside is putting pressure on to increase productivity e.g. DOC, government policy
- Farmers sell out to high prices if land is scarce resource 2 incomes: production/land value increase
- Urban people are driving land use want access to rural land.

Markets

- International buyers are cherry picking at the moment
- Products specifications higher
- Prices organics vs. commodity food
- Perception that products should be cheap at end market. Markets driving prices down
- Need 'responsible' labelling
- We can't regulate prices at the supermarket
- New Zealand production is high compared to local/domestic consumption: farmer markets may only apply to small part of market
- Who will pay extra for 'better' food?
- Too late to educate consumers?
- Farmers do not get paid enough compared to end price/market
- Exports from in NZ non-level playing field
- Seasonal fluctuations in price and supply. 12-month year: premium quality market place expects that. There are costs to this kind of supply: huge factor: consumers need to be educated.

Supply Organisations

- One standard milk price from producer organisations: no incentive to monitor inputs/outputs carefully to obtain a premium price
- Too much further production is offshore
- Dairy industry 'cooperative' demanding efficiencies e.g. bigger factory
- Marginal land production is subsidised e.g. cost of cartage of milk from new (unsustainable) areas (Twizel).

Costs of Production

• Farm costs are going up: compliance costs/rates/ACC.

Social/Political Drivers

- Everyone blames the farmer not the fertiliser company
- Political influence: social driver: environment drivers from the urban population
- Following the leaders (track cutters)
- Improvements in equipment/technology/knowledge
- Sense of achievement (values driven)

- Regulation (positive and negative)
- Response to national direction
- Population density
- Expectations wealth, environment
- Farmers enhance reputation through increasing production/profit. Increased productivity is a measure of farm success.

Food Industry

- Supermarket or end consumer who controls it? Consumers may want environmentally friendly food but the supermarkets are the gate keepers and manipulate consumer demand
- Supermarkets: Tesco set organic standards auditing farmers
- Undermining of connections farmer/processor/market e.g. overseas buyers of processing.

Moving Forward: Economic

- Natural capital needs to be given an economic value and be built into accounting models
- Should there be a charge for water reflecting its economic value and a charge for polluting discharges?
- Financial outcome: Meat Company QA programmes
- Incentive: price premium for a product, rather than standard price
- Disincentive: not meet quality standard downgraded
- Credit system for changes in farmers' attitudes: will increase awareness/increase income. On the flipside farmers may buy credits but not change practice/attitude
- Regulation is inefficient: market mechanisms are more efficient
- Any solution has to be financially viable to farmers
- As a farmer you have to be able to afford a sustainable system
- Product sold at a price that embodies good environment practice.

Moving Forward: Markets

- A challenge to educate people when they don't perceive there is a problem: need to change behaviour make the right thing to do easy
- Can fix things but demand for cheap food still there answer is with consumers
- Trust the market: consumers supporting farmers markets and talking to the growers
- Need to lead the way in high value niche markets.

Moving Forward: Govt

- More flexible zoning: 1/2 acre instead of 10 acre for rural life style
- Need 'better' Govt involvement
- More community and personal responsibility e.g. production chain 'disconnected'.

Moving Forward: General

- Issues: 'passion' farmer vs. 'corporate'
- Existing work is 'all there': don't reinvent
- E.g. organics tell the subsidy story in Europe organic production was heavily subsidised, then once the food was produced they switched the subsidies to marketing in order to sell it
- Carrot vs. stick required.

Moving Forward: Issues with Verification and Auditing

- Food safety and standards useful
- Taxing bad operators to remedy environmental damage
- Is too late, damage is done
- Paperwork huge
- Don't believe get more \$: farmers don't prescribe
- Keep it simple
- Can be labour intensive
- Put \$ into education instead
- Overall scale should be focus
- Good data useful.

Constraints to Moving Forward

- Dairy can it position to be 'value added'? (Answer from one farmer in the industry 'not in my lifetime')
- Environmental a cost? Will not do it if costs money
- Economic premium (this is essential for farmers)/sustainability but are consumers prepared to pay a premium? Big question!
- Fonterra: monopoly: can be seen as heavy handed by some members with regard to environmental standards if implemented too quickly. Producer organisations have their own internal tensions and politics, which can hamper progress.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for good* pg 184.

General Comment

• Elite soils going to urban development drives land prices up, rates too.

Research Areas

- SLURI: excellent idea
- Soils resilient, will bounce back if treated right, 80% doing well
- Researchers need to work with bottom 20%
- Organic content of soils vital
- Soil biology knowledge of farmers limited
- Need independent advice on products
- Matching farming type to catchment?
- How it's done rather than type?
- Farmers need info to help decide how to manage
- Need to know why
- Need to link research and farm practice
- Compost/ waste industry can rural sector use? Co-ordination
- Management of urban sewage biosolids land research
- Mixed, do more cropping? Info
- Use research as marketing tool
- Future problem of finding markets
- Organic farming (Mike Brosnan)
 - Working with nature
 - Needs financial input into research.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comments

- Redesign pretty ambitious, would require industry-wide approach
- If there are fundamental changes, some may lose out
- Do we need to re-design farming?
- Is there a need for a shift?
- Are we getting dirty water?
- Lots of people say 'you are not sustainable' but where are indicators? You tell me why this is not sustainable?
- Much is already happening: stream margins, bush/forest being fenced
- Lots happening, eco-n (nitrogen leaching prevention).

What Changes To Farming Are Needed?

- Efficient use of water inputs important
- Riparian management critical: intensification provides opportunity to do this
- Need to be more efficient in terms of use of inputs, e.g. water, nutrients
- Select plants suited to natural environment e.g. will require less fertiliser/water
- Redesign has to be whole production chain e.g. finishing systems and breeding systems: a lot of work to be done
- Role of trees? Should there be some discussion on role of trees in sustainable production?
- Restoration programme possibilities: green corridor birds
- We may need more radical changes than on-farm e.g. price signals
- We face risks if we don't.

Constraints to Redesign

- Cost of sustainability hidden e.g. dairy
- Short term economic drivers
- Limit nitrogen = limit grass = limit production
- Cost of upgrading systems e.g. effluent discharges
- Compliance, paperwork
- Monitoring: inputs, outputs 'farmers are farming intuitively'
- Information: majority not using all this information
- Farmers have a wide range of abilities.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Web sites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

General Comments

•

- Don't blame farmers need better education
- Environment awards profiling good environment practice
- Farmers have a wide range of abilities
- Information: majority not using all this information
 - Education telling us what we can't do important part of process
 - more and more compliance issues
 - o may need to be more strategic in our approach
 - o doing things now because you may not be able to do them later
- The relative importance of maximising income or choosing a lifestyle varies greatly among farmers
- How did it happen that the knowledge of the 1960s wasn't applied? Now forgotten?
- Need continuity of knowledge, 'information exchange'
- Commercial knowledge transfer vs. impartial 'one on one' info transfer
- Commercial involved by 'invitation' can be withdrawn
- Good corporate citizens: Farmers want to be seen as good corporate citizens.

Current Extension or Education Models

- SI dairy event successful
- Large herds successful
- Quality info relevant
- Lincoln focus farm
- Trust who provides info?
- Thinking through all outcomes
- Riparian strips example
- Changing multiple objectives
- Private consultants problems
- Silo interests
- Of urban people vital.

Types Of Extension Models

- Monitor farms production
- Farm discussion groups
- Lincoln Dairy Monitor Farm big turnouts, key in mid SI production + environment
- Landcare Groups sustainability nitrate weeds and pests
- Waihora Ellesmere Trust
- Living Streams (ECan) programme surface water (not ground)
- ECan catchment working groups water allocation issues; all community vs. negative approach

- Environment awards awareness, demonstration, information; Best practice both environmental and production
- Merino benchmarking project provides a good example
- Suppliers industry e.g. Fonterra
- Schools
- Resource consent process surprises, this is often where farmers need and get a lot more information
- Polytech
- Young Farmers Clubs human resource
- FITT Workshops/on farm research for farmers
- Fish & Game
- Biological Husbandry Unit: Lincoln.

Main Purpose of Programmes

- Efficiency
- Tech transfer
- Thriving farming community
- Productivity: higher returns from less inputs
- Sustainability
- Shared environmental awareness.

What kinds of things are farmers changing as a result of these programmes?

- Use of inputs: how/where/when
- On-farm and point issues/non-point
- Irrigation monitoring
- Sustainability: improving on-farm environment
- Farmers constantly change: uptake technology/cost.

Enabling Change

- Workshops like this (PCE) are very important
- Free exchange of ideas
- Web-based technology transfer: huge area but has its limitations. Many people would rather read articles. Most schools are linked to web simple exercises needed
- Help everyone see where they sit in the puzzle. Real feeling that we needed to have the facts and put together the big picture for people
- Need to educate (positively) about real issues/solutions
- Understand the need for integrated environment management at a local level and right across the community
- Taking responsibility for actions and consequences but how do we achieve this?
- The market can fix some problems but there are other relevant issues. Reputation
- Environmental sustainability needs to be unthreatening
- Leaving a legacy driver for sustainability long-term
- Need incentives before education
- Drivers costs and rates of return
- Internalise costs
- A few rules can be helpful (e.g. Otago)
- Trading 'N' (Waikato)
- Closing the system loop requires understanding

- Link environment to price signals
- Farmers respond well to price signals
- Internalising and price signals: externalities/true cost
- Dairy farmer 80% environment neutral or positive, need to focus on the 20% that are not for whatever reason
- Increase profit
- Increase production
- 'Good' tidy farm. But some need more
- Good environmental outcomes
- Sustainable land practices
- Clear understanding of consequences of actions
- Change in mindset
- Self-start, not prescriptive regulation
- Extension models need to demonstrate downstream benefits. Otherwise why do you do it?
- Potential for lots of education programmes. Requires coordination, time, facilitators (paid)
- Environmental awards are a good way to encourage changes towards more sustainable agriculture
- Modelling practical/'on the ground' outcome
- 'Practical things for practical people'
- Learning models to help farmers redesign farms
- Peer-based, neighbours, farmers learn from other farmers
- Fertiliser companies
- Resource consents for effluent
- It's not good to mix negative (enforcement) with attempts to educate (e.g. don't have compliance officers also discussing other ideas of sustainability)
- Info source for dairy farmers in groups
- Web
- 'Dairy Exporter' pub
- Lincoln Model Farm.

How To Encourage Changes In Farming Practices Not Related To Cost Saving Or Profit Making

- Nothing it's a business
- OK if cost neutral/or minimal cost
- Business has to be sustainable
- Non farmers 'feel good factor'
- There could be more incentive on energy
- Much potential saving via solar and head exchanges, adds value to farm and is sustainable
- Sustainable farming: can gain a lot of personal satisfaction from it.

Barriers to Change

 Understanding regional resource plans is costly for farmers e.g. a 300 page report is too much for a tired farmer after 12 hours manual labour.

Other Comments

- Does Federated Farmers promote/educate?
- Reactive
- Disappointed less positive, proactive.

Moving Forward: Making the Transition from the Production to the Sustainability Era

• New Zealand is the only 'first world' country relying on agriculture

How important do you think it is to move from the production to the sustainability era?

- Extremely important
- Most farms (80%) are sustainable
- 10% modest cost could solve problems
- 10% difficult and expensive to solve problems.

Are We Being Strategic Enough In Our Development Of Our Farming Systems – Pulling Together As 'Team NZ'?

Problems with Strategy

- Lack of 'alignment', but enthusiasm, passion there but no leadership
- Difficult message to take out politically
- Barriers RMA number of people involved
- Not enough cross-pollination between community at all
- Protecting vested interests
- We are heading in two directions
- Have we decided as a country whether we protect environment or promote agriculture?

Moving Forward: Suggestions for Strategy

- We need to stand up as a nation and say we are sustainable: A 'NZ Position' move away from the rest of the world
- GE debate: could have been a good opportunity to position as 'GE free'
- New Zealand needs to be most efficient in the world and compete in the world by being ??
- Need a national net gain rather than sector improvements: can we actually get this on to the ground?
- Need to set standards around sustainability
- Rules and regulations? We need same bottom lines
- Need greater input from central govt: more support for regional councils, consistent standards across the country
- Farms respond to a shock \rightarrow adapt systems.
- Need to show lead-in phase, everybody needs to know the ground
- Key performance indicators are needed to reverse decline of water quality link sustainable management to indicators?
- Need branding for premium markets
- Environmentally aware to grow business and market in New Zealand
- Marketing created the problem, marketing can solve the problem (could cost big money)
- Way forward: new technologies to protect environment
- Maybe need to clarify the issue: this requires some form of interaction across community collaboration. Use local level collaboration of existing industry and stakeholders to address these issues (use existing organisations).

Is there enough understanding of growing urban/rural tensions, re environmental expectations, in our politically urban dominated society?

• Differences in urban/rural perceptions - currently the two are miles apart

- The new generation has no concept of source of product. Many kids think milk comes from a bottle. This influences their view on rural issues
- Debate needs to be bigger than farming sustainability: it needs to include housing development and urban issues etc
- Web-site: important link for urban people to understand rural issues
- Lots happening in urban sense e.g. sustainable households
 - hardest thing is water
 - doesn't cover farming
 - people not making link between what farmers do and their lives
- City kids want to learn about sustainability not farming
- Sustainability is a fringe thing need to be more mainstream
- Lots of people overeat: food coming out our ears
- There are a lot of mixed messages: milk comes from bottle/all you hear about is greedy farmers
- Need for equity across rural and urban communities: fair e.g. pay for water everywhere
- Consumers need to understand pressures they each pose: 'up-stream impacts'
- School education and activities.

Working Together

- Need to work at regional landscape e.g. Fraser Basin
- Central government assist with \$\$ and support, need 'teeth'
- 'Capacity building' rather than total 'regulation'
- Community will respond if there are drivers 'environment' too low on agenda of NZ
- 'Top' needs to be involved and educated
- How we manage agriculture affects the whole country
- Yes they need to get together
- All benefit
- Compromise
- Distrust pegs get wider apart
- Middle ground can be obvious but neither party may go there
- All work together and understand each other/all need to sing off the same hymn sheet
- Needs to be more open communication with other groups e.g. not just within each sector
- Organisations need to work together.

Pan Sector Organisation

- Good thing: needs to be seen as a positive thing
- Unconvinced
- Good idea but not sure whether good for farmers
- Useful but would need to ensure that it doesn't become anti-farmer in the long run you need to be realistic
- Agree with concept but how efficient is it going to be we have had so many committees.

Other

- Loss of white clover from system: GM would fix clover root weevil problems
- The GM argument is hijacked by the environmentalists
- Attitude to GM in ten years will be completely different
- Dairy picked on because visual/emotional e.g. photo of cow in stream.

Feedback on Report

- Over emphasis on nitrogen in report: went away from this because not sustainable
- Lot of words without much understanding.

Comments from Canterbury Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Well done PCE team
- It's an excellent starting point hope the concepts get carried through into the future
- Lots for thought
- A tragedy a meeting of this type with developed action plan did not occur 15-20 years ago. We are still delighted that these meetings are taking place now
- Future focused
- A further opportunity to achieve a win-win situation rather than an either/or
- Raised the urgency needed
- Better understanding of where some of the key players are coming from
- An excellent workshop. A great contribution to the discussion and to mapping the route to a sustainable farming future
- Useful, stimulating debate
- I hope the discussions about the way forward will continue beyond these workshops and reports. The report is timely and provocative. It is pleasing to see questions being asked of our current system. It is good to see some of the ? that have/are being made are recorded
- Well done on this effort and all the best for encouraging everyone to go forward with the next step.

Feedback on Process/Workshop

- Group dominated by one person and facilitator should have controlled more
- Ask people to turn off their cell phones
- We could not get points across in Group 14 as it was take over by one politician facilitator needed to be stricter
- Our discussion group was dominated by one person, which affected the group dynamic/all contribution. Plenary session after morning tea more worthwhile
- 1 hour (less ³/₄ intro) is not nearly enough time to have a constructive discussion and debate about such an important issue.
- Mostly this was a positive coming together it is not appropriate in such a forum for people with political/ideological barrow to push? Good facilitation by Landcare Trust person
- Need to be careful about attendee mix, not a lot of farmers in attendance. If these workshop become a ? for change here we been listening to a balanced stockholders group
- Hard to hear discussion
- 1) The questions we were given to discuss seemed directed to eliciting certain answers. 2) Which with saying some issues were 'dropped down' to specific focus and other issues need to be ? 3) The debate needs to ?
- Questions 2 & 3 are very leading questions for a survey
- Too short. Inclusion of SLURI interrupted flow of our subgroups discussion in what was already too little time.

Challenges

- I think we need to sort out how to address catchment issues. Easy if small catchment since few landowners. Much harder if large
- Unless consumers are prepared to pay extra for the price of their food, it is going to be difficult the level of change required at the farm gate
- This meeting showed that the government is not providing (?) finance for soil biology research (Bugs etc that take out contaminants in soils)
- Is NZ looking at the broader question of 'how sustainable' is relying on tangible products that need to be transported even more heavily while approaching peak oil supply? Are these concrete limits as to how many animals can be raised on a certain size farm and still be sustainable?
- Farmers can be in a system of commodity prices driving intensification. But to intensify production it is often necessary for them to incorporate major debt. Which in turn drives further intensification. Debt also. Means that a farmer may be unable to modify unsustainable practices even if they know it is unsustainable
- But it is a society consumptive issue as much a farming issue.

Moving Forward

- Farmers aren't afraid of change, but only if there is no financial cost and ? concession
- Raised debate but needs fundamental institutional. Very clear where to go next
- Do we need limits on stocking? We need some to manage, monitor limits. Regional councils need to step up (regulate) don't approve. Border immigration not effective. Education is the key, farmers need information on what they need to do. If everyone did sustainable practices maybe there wouldn't be a problem
- Very dangerous to interfere in the 'market' for food in order to clarify or change signals that growers/farmers receive. Redesign is not needed – just get better at what we are already doing: education, research, extension. Results of market working. Comparative market for cheap food. Good for consumers. Good from an export perspective. But there is a disconnect between what consumers want and what is happening. Signals are not getting through. Science is not getting through and we can change this through education. If we want to value 'so called true' value natural capital we have to accept lower income
- Please drop the word 'redesign', farmers won't buy into this, means completely different systems, means top down should be bottom up, means all agricultural production is faulty. Adopt something like 'evolution/building on what we know'
- Absolutely critical that concept of sustainable agriculture be given a much higher profile. Use exciting avenues to spread the word profiling successful farmers i.e. Ballance awards
- There is a much wider impact than we think. Also a much wider buy in required i.e. produce to consumer
- Convinced me of the need for modelling to integrate systems indicators
- The answer to the problems must be a community (NZ wide) solution and contributed to by all NZers directly and indirectly, financially and other ways
- Farming is not only industry to target. The associated fertiliser companies etc are part of the picture and they persuade farmers to use their products. Also the marketing businesses pressure farmers to produce more. It is everyone's problem; we consume more and throw away more. Everyone needs to live sustainable
- I think the suggestion of having a non-governmental trust that will bring key people together of interested and diverse groups should be ??
- Need to get urban NZ in touch with sustainability
- Inspect for the earlier intellectual culture in NZ in whole farm systems research teaching and farm practice. In short it neglects our past understanding of the issue

- Many more please.
- Need sustained follow up and 'runs on the board'
- Report should be abbreviated to gain track with the wider community
- Not sure that the message was accepted by the farming retrospectives. You will have to continue to advocate/communicate this issue to government and wider community. Thanks for taking this issue on. Stick with it
- Needs to be practical and economically sustainable. Needs more research into effects; keep up the water monitoring and funding; regionally based not general information based on for regions
- Education is key to any change, not just at schools but in our community
- 1) The key to such workshops is what happens as a result of them. 2) Gelling the findings and presenting and advocating them to the appropriate body. 3) Obtaining, coordinating and focusing farmer support is also key
- Work on the remedy and mitigation, farm systems redesign, 'whole systems redesign'
- Need to keep up the momentum for change towards greater sustainability, not just talk about it
- Don't let it gather dust. Keep pushing the cause it's very much an evolution, not a revolution.

Feedback on Report

- It would be great to have *Growing for good* put some positive emphasis on farming and raise its profile in a positive manner as the urban population and mainly what they hear is negative
- Formal comments from organisations would be useful so that everyone can have their say. Should have focused more, not on history, but on what needs to happen to solve the issues of say nitrogen. Leadership and ownership is now required. This needs to happen now. Need to have forum for where a mix of viewpoints come together
- Not enough farmer representation. Big misconceptions i.e. farming practice
- It is my view that the document has failed to look at these industries which have had significant improvement? of? and locked to see what worked for example better the most and whole industry have been able to move formed outside of the? agency
- Report has brought together much of the information surrounding sustainability but failed to adequately acknowledge that change has begun within the farming and primary industry sector
- The collection of overseas research information is important and should be done
- The report indicates to me that it had been written to show that NZ farming is non-sustainable and has based on ? and studies selected to show this. A ? review would be worthwhile
- Not always factual e.g. recent (1990s) research indicates nitrate doesn't cause blue baby syndrome
- Not the complete picture, reflects to a degree what is happening but personally I think we are well along the way to resolving issues though increased industry awareness regulations etc.

Other

- Not provided a clear direction ahead
- Contracts for future research use.

SOUTHLAND

'Growing for good' Workshop, 8 February 2005

Key Take-home Messages

This section lists the key take-home messages from the Southland workshop only.

The Importance of Farming to New Zealand's Wealth

• Need to identify risk at local/national/global levels.

Effects of Intensification on Natural Capital

• Farmers need good information about the impacts of their own management practices. Monitoring – good information about best practices. Need a good team to provide expertise. Need more resources/people on the ground – free advice. Seminars not enough (farmers can not be expected to have all that knowledge). QA systems to encourage people to access.

Understanding the Impact of Economic and Social Drivers

Drivers – Economic

• Increasing cost systems and declining market returns encourages/drives intensification.

Drivers – Social

• Governments have high impact on market indicators. Current government policies etc. Pressure groups and corporations also have a significant impact.

Incentives To Change

- Need financial reward for environment practices: push and pull influences
- Cost of compliance need to be cut or shared more equitably across the whole nation
- Takes money to make changes
- Penalties or incentives are the only way to get people to act (human nature)
- "Hard cash not warm fuzzies"
- Food safety and production just as important if not more important than environment health for marketability now and in the future.

Performance of Research on Delivering Needs

- Research and development funding
- Science and systems research needed with effective extension.

Understanding Redesign

• No key take-home messages.

Education Models for Farmers

- Key extension work getting the message out, regular forums as well as on-farm exchange
- Identify and celebrate 'people' doing it well and sharing their systems how they do it. What are the benefits?
- Farmers better education understanding e.g. overseas.

Team New Zealand

Education and Communication

- Not just a farmer issue. Urban sector needs to be informed e.g. pollution, where food comes from, impact of urban environment
- Increase consumer awareness, costs of producing that product they want. Need to accept the cost as a community
- Lack of understanding between urban/rural
- Education in schools and of the whole community about food production
- People need to understand and contribute.

Working Together

• No key take-home messages.

Question of Strategy

- Walk the talk need Triple Bottom Line to sell products overseas. Clean green products. Let us provide the blue print for overseas countries lead. Stipulate the price
- Plans, legislation vitally important.

Leadership

- Need real grass roots leadership
- Community leaders as sellers of sustainable management approaches and involved as the future planners.

Southland Small Group Discussion Notes

This section lists all points of discussion recorded from the Southland workshop small group discussions. The questions used to prompt the small group discussion are listed under each of the seven key themes.

The Importance of Farming to New Zealand's Wealth

The PCE talks about the risks of losing important overseas markets if issues like the environmental impact of farming become important to those markets.

- 1. How much risk do you think there really is? (high, medium, low)
- 2. What kinds of things do you think would make that risk higher?
- 3. How immediate do you think that risk is?
- 4. Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?
- 5. What are some of the ways farmers and the farming industry can improve their understanding about the risk of losing important overseas markets?

How much risk do you think there really is? (high, medium, low).

• POV #1 Risk can be based on general misinformation/misunderstanding about farmers' (e.g. they are uncaring) activity /practices e.g. farmers in Australia mulesing (animal welfare). Horror spring –

lambing in Southland. Gap: rural/urban – no interaction. Problem with misconceptions. Risk: some of it is based on misinformation and some is general

- POV #2 Most markets do not care about our 'image' at the moment there is no risk
- POV #3 China, Middle East markets not concerned about environmental standards
- POV #4 Minimal if world on level playing field trade barriers impact on New Zealand
- New Zealand has no power over any nation imposing conditions on us e.g. lamb tariffs. World Trade Organisation has a history of not always being effective and slow (as with the lamb tariffs scenario) hence we are at risk potentially at any stage.

What kinds of things do you think would make that risk higher?

- New Zealand long way behind in erosion problems less evident (less population)
- Water quality
- Disease outbreak: bio-security
- Other industries e.g. tourism
- Animal welfare
- Cost of production: people affording
- Clean green produce?
- If consumers' 'perceptions' change at any point we are at risk
- At any point overseas markets could review our environmental management hence there is a level of risk at any stage
- Overseas markets not caring yet
- Investors from outside buying farms only looking at profit. Not looking at long-term sustainability. This can create more risk
- There is a risk of moving from tariff and quota barriers to non-trade barriers.
- Risk of losing market: depends on affluence of markets and their alternatives. Have to aim for these markets. Not much money? go for commodity prices
- Risk: depends on market we target. Difference between European and Asian markets (velvet)
- Have to protect market access
- Lifestyle block owners do not know how to look after stock/environment issues (risk)
- Problems with monoculture e.g. viticulture
- Green mile (distance of NZ from rest of the world) is a disadvantage already
- All external forces e.g. international market economy
- Tourism has the potential to take over farming as the most important use of our rural areas
- Bio-security risks foot and mouth, mad cow etc. However fortunate due to distance from contaminants because of geographic location
- Changes in markets available internationally
- Pressures from corporates
- Demands can quickly come from pressure groups and markets change substantially as a result. If a wide group demands better environmental practices then markets have the potential to change very rapidly
- Changes to economics in the New Zealand farming system e.g. interest rates
- If worth money to corporations, they will require environment standards
- Developed world trying to open up world trade systems
- In future especially 'affluent mouths' will want our environmental image high
- NZ's 'clean green' image
- Overseas markets may shut us out
- Good for tourism but can be a handicap for producers
- What happens if overseas markets find out it's not true

- Food safety actually higher impact on marketability
- We should sell food safety not clean green
- Urban markets have high potential to impact
- Corporate controlled companies have too much power for environment standards to come into effect.

Do you think farmers and the farming industry have a good understanding of this risk and the impact it might have on their farm income?

- POV #1 Risks are still too distant in people's minds. Will not deal with till we have to
- POV #2 Farmers aware in 'academic sense' does not immediately affect daily lives
- POV #3 All are aware. Not aware how really serious risk may be or implications. Not the right question to ask ('how aware are farmers of the risk'), question should be what is being done. Farmers depend on their experts and industry to act on indicators
- POV #4 Understanding of risk = different point of view
- POV #5 Generally farmers are aware of risk
- Industries like meat processors QA systems feed down (these are generally focused on food safety rather than environment though)
- Top 10% of farmers respond quickly to market indicators. Need to think of top 10% as more than
 just production (some farmers noted that when they think of the top 10% they think of farms with
 very high productivity and this is a mark of success, they suggest we need to think of the top 10%
 more holistically)
- Still promoting production as be all and end all. However farmers find they are becoming a villain for their success in production. Leads to frustration as they are successful but are then still not getting it right
- Improving farmers understanding about risk and overseas markets
- Effective use of media
- Pub talk is powerful! Can be rubbish. Not based on actual facts: this is a problem
- Producer boards/processors: have to set standards, educate farmers. But farmers are suspicious of this
- Some rules and regulations
- Tailoring interaction with farmers and other key stakeholders to be effective at all levels (e.g. talking to farmers about issues requires a different approach than talking to technocrats, other farmers talking is useful)
- Need to market from all levels that our environment is very important and not acting sustainably is a risk.

Moving Forward

- If we increase product quality may reduce risk
- NZ is a long way ahead though of a European market? Natural advantages Europe is also a long way ahead – re: addressing issues
- New Zealand recognising problems earlier; this is good
- A price element needs to be attached to environment health. Internal tariffs for non-compliance (already penalties for low milk quality) not new concept. Need to see an economic return. Awareness of benefits.

Effects of Intensification on Natural Capital

Research in New Zealand and overseas has demonstrated that intensification of farming can lead to pollution of surface and ground water. Some farmers have responded by building bridges, fencing off waterways, and riparian planting.

- 1. Is this enough to fix the problem? If no what more needs to happen?
- 2. Can farms in New Zealand survive with less synthetic fertiliser?
- 3. How does a farmer know that his/her farm is sustainable?
- 4. What kinds of information does a farmer need to know that his/her farm is sustainable or unsustainable?
- 5. Is this information readily available to farmers at the moment? Is this enough?
- 6. How well do we understand the impact of nitrogen on our natural capital?
- 7. How well do we understand the impact of irrigation on our natural capital?

How does a farmer know that his/her farm is sustainable?

- Farmers do not understand what sustainable management is
- Do not understand own impact
- Monitoring: people do change (water data)
- Wash Pool creek catchment in Clydedale
- Need credible, independent indicators.

Is this Enough to Fix the Problem?

- Bridges, planting etc a good start. Easy stuff to do. Not enough its own
- Change in fundamental thinking is required e.g. drains were dug and this led to fast run off today we are looking more to water harvesting
- Accumulated non-point impacts the main issue must stop at the site e.g. technology improvements
- We will never do enough there are always going to be shifting goal posts!

Nitrogen

- Nutrient budgeting etc timing etc
- New grasses?
- Nitrogen-free farming?
- Change in perception from wonder-product to potential problem
- Taxes on nitrogen.

Water

- Greed water 'our water' reactions to 'outsiders' coming in, wanting water increased pressure on demand insurance for future
- 'First come, first served basis' rather than sharing not the right approach
- Farmers saw potential capital gain if water became limited. Need to change our thinking need to be dictated by value rather than price.

Other

- High quality soils not protected under RMA
- Dairying decided on economies rather than natural capital soil/water.

Moving Forward

- Need positive leads, MAR (RMA?) wrong in irrigation direction dairying/irrigation didn't refer to climate mapping. Need more land classification by regional councils, say it won't happen in certain areas because the environment can't handle it rather than the market try it, do the damage and then walk away
- Need to change our thinking need to be dictated by value rather than price
- Soil capital an asset rather than natural capital to be conserved.

Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?

• Agree that we are mining the natural resource.

Understanding the Impact of Economic and Social Drivers

- 1. What are the key drivers behind the intensification of farming in New Zealand?
- 2. Do we have enough understanding of these drivers?
- 3. Are too many of our farming/food business models incompatible with long-term maintenance of our natural capital?
- 4. What are some of the ways these drivers can be addressed?
- 5. What will it take for farmers to become 'price makers', rather than 'price takers'?

What Are The Key Drivers Behind The Intensification Of Farming In New Zealand?

Economics

- When people have to make money the environment suffers
- Problem: drivers economic: this is a bottom line. Family farms are now more of a business than a way of life
- Economic risk underpins it all: need larger amounts of land to support a whole family
- Preoccupied with economic drivers when making money farmers are still not necessarily interested in environment (focused on increasing productivity)
- Economic keep making more profit. Higher returns able to increase inputs. Farm incomes on a much higher level.
- Corporatisation of farming need return of capital
- International want 10-14% to get short-term investment, don't worry about long-term effects
- Greed water 'our water' reactions to 'outsiders' coming in, wanting water increased pressure on demand insurance for future
- Farm ownership is changing. The attitude between corporate and family farming is often different in their requirements for return on capital, intensification etc
- Farming our natural capital the 'mining' is forced by markets and the long-term downward real dollar value of products
- Farming industry: price taker not a price maker (cannot afford compliance cost). Price maker: always difficult if produce is perishable: market will always set price. Possibility: create own market, add value to product.

Land Prices

- Urban sprawl affecting productivity losing prime productive land, using marginal land: higher risk
- High land prices usually incur high debt which in turn pressures intensification due to the economics.

Markets

- There are varying international standards for 'organic': what to pitch to?
- At mercy of retail gate
- We are either a commodity supplier or a niche supplier. Processors (e.g. meat companies) are directing where the market is e.g. lamb maximum return
- New Zealand: 90% of food we produce is consumed overseas. In other countries, 90% consumed domestically – they have access to more diverse markets. Environmental ethos – may not be healthiest
- Overseas market demands. Driver for farmers. Largely accepted from industry best.

Costs of Production

- Big concern: compliance cost, ACC, HSNO. If this keep rising affects income need to be considered carefully
- Government regulation cost needs to be carried through HSNO, ACC, OSH
- Inputs increasing in price.

Food Industry

- Overseas supermarkets want biggest market share want cheapest food conflict with
- Supermarket instant demands cheap cost
 - health obesity problems
 - customer is always right no contamination, GE free
 - food may cost more to be healthy.

Social/Political

- Peer pressure greed
- Youngsters in farming competition hard to get in some avenues closed off to young farmers
- Historically farming a lifestyle choice, now retire at 40 mine quick return.

Moving Forward – Economics

- Need a new road have to produce good, affordable food but farmers have to get a premium to be able to farm sustainably
- What needs to happen to make farmers focus on sustainability/than production? Dictate price rather than be dictated by price
- Change the mindset how? As prices of products go higher they can afford to operate smaller units. People role of people to improve what they have, particularly production can go back to smaller farms if want to, due to improvements in productivity prices, increase in land values
- Premium for Integrated Pest Management fruit shows better environmental management can reward growers. However this reward can simply be access to a market and is often not increased product price.

Moving Forward: Markets

- If we can sell produce in local market we can be a price setter
- Stop overseas purchases/international competition
- Need to show that changing to environmental friendly practices can lift profits need those stories
- Need consumers to pick our products dictate our prices.

Moving Forward: Other

- Cost of tourism use income from tourists to protect environment
- Triple bottom line still need to sell to the funders SFF
- Keep standards and integrity. 'Organic' GE free

- Need to put environmental costs on the farm budget and stop externalising
- There is a perceived limit to the 'organic' food market. A price limit and a volume limit.

Constraints to Moving Forward

• Organisations say 'you have to do this' but do not contribute to cost. That farmers giving up something for the rest of society is unfair.

Performance of Research on Delivering Needs

"Soil is one area where there are a number of issues which require better understanding if soils are to continue to have the capacity to support farming" *Growing for Good* pg 184.

No SLURI (Soil and Land Use Research Initiative) representative was present at the Southland workshop

General Comments

- Need research done in own catchments so we can have good information. Need information about how it affects an individual: will get a response
- Understanding nitrification better connections what science and other agencies need funding
- Group wanted much increased research, and favoured internal industry driven product development and auditing
- Farmers lack independent advice: need research related to on-farm water, soils
- Water monitoring critical a trigger
- Science: needs translation
- Flagship farmers scientists
- Independence of commercial motives (no central point)
- Government funding policy difficult
- Foundation research needed
- More science R&D at systems scale. More technology transfer
- Need more science capacity.

Understanding Redesign

- 1. How necessary do you think it is to redesign New Zealand farms?
- 2. Do some farm types need to be redesigned more than others?
- 3. What kinds of things make it difficult to redesign a farming system?
- 4. What kinds of information or assistance would help farmers redesign their farms?
- 5. Is it necessary for the whole system (refer to diagram below) to be redesigned to achieve sustainable agriculture in New Zealand?
- 6. What changes are essential to achieve sustainable agriculture?

General Comments

• Future of New Zealand may not be in livestock farming, different lands of protein/crops.

Do we need to re-design farming?

• Redesign may not be necessary if we get other stuff right.

Whole System Redesign

• Beyond farm gate – paddock to plate

- Need to put environmental costs on the farm budget and stop externalising
- Total package linkages vital.

Enabling Redesign: Big Picture

- Need systems to fit with land capabilities
- Topo-climate mapping only accessible in last year
- There are dangers in using overseas models
- Best practice in action
- Economic incentives
- Care for land to protect capital value
- Refocus production focused, broaden to include sustainability: short-term to long-term
- Key informed choice
- Premiums for products
- Industry processors encourage redesign
- Internalising external cost
- Education and regulation as well as economic incentives needed. Other ways needed
- Nation to pay for financial burden spread e.g. access biodiversity
- Regional Councils should be responsible for land use relating to farming rather than district councils
- Consultation as plans are written plain language needed
- Farming community do not react well to rules and regulation
- Oil-based production system need to switch natural and internal based inputs switch to hydrogen-based car. Don't want to be reliant on oil
- Sustainable technologies.

Constraints to Redesign

• Barrier: paperwork to demonstrate for auditing trail.

Ideas for Redesign

- Size of sheep changing very large cyclic recognition of big enough
- Look at size of animal for right soils
- Select cows for smaller bladders
- Tile issues how you manage the land above look for alternatives. Faecal coliforms.
- Different management systems strip grazing where did you learn it the techniques
- Seasonal pressure winter grazing
- Understand the soil: fundamentally integrated policy think out as land use changes
- Measurement ongoing
- Precision agriculture/horticulture.

Education Models for Farmers: Are They Leading To Change?

- 1. What kinds of farmer extension/education programmes are happening in your area?
- 2. What is the main purpose of these programmes? (e.g. increasing production, addressing sustainability issues, animal health)
- 3. What kinds of things are farmers changing as a result of these programmes?
- 4. What kinds of learning opportunities would help farmers to redesign their farms? (e.g. Monitor farms? Field days? Web sites?)
- 5. What kinds of things encourage farmers to adopt new ideas about sustainable farming practices that will not necessarily increase their income or save them money?

Types Of Extension Models

- Environmental awards
- Adopt a stream/schools
- Landcare groups
- Increased media exposure to environmental concerns
- Field days
- Prosecutions helpful to raise profile
- Regional Council education & RMA
- Industry initiatives
- Farm advisors
- Award schemes very important
- Landcare groups important.

Main Purpose of Programmes

• Generally still production focused, with 'add-on' environmental 'concern'.

What kinds of things are farmers changing as a result of these programmes?

• 'Changing the easy things', stream fencing, changes still tend to be economically driven.

What Is Not Working With Current Extension Models?

- Agriculture science (have to make money) can't get graduates
- Field days & hands-on was considered the best, but feeling that preaching to the converted. Resultant peer pressure necessary to encourage greater change.
- Education not considered 'game breaker', need to demonstrate alternative, ok to highlight 'environmental issues' but until financial imperatives are balanced farmers have little option, 'how can I be green in the red?'

Enabling Change

- When farmers have good information, they change behaviour
- Thinking about impact on community
- Own performance as a farm manager
- Peer pressure
- People do want to do the right thing
- Sharing information
- Showcase best practices. Social/environment/financial/mediation
- Whole catchment (region) approach
- A relatively 'good' income for farmers in the last few years. Encourages better ways to make money.
- Farming families are looking for 'sustainability' and lifestyle and economics. Non-economic quality of life factors important to New Zealanders. Need to pick the winners.
- Better education in schools about the environment e.g. environment schools network.

Motivating Farmers

- Feeling that changes still need to be demonstrably financially beneficial and/or labour saving (fencing streams so you don't have to pull cows out)
- Monitor farms.

Barriers to Change

• Requires a whole change in values, which is difficult in a farming culture that has so dramatically changed away from a lifestyle choice to an intensive 'cut-throat' agri-business.

Moving Forward: Making the Transition from the Production to the Sustainability Era

General Comments

- Farming is more sustainable than other industries
- Recognised that this transition is important, and no option but to change, fossil fuel-based, running out of time, need to move away from commodity products. Depends on whether truly sustainable, how can we when so reliant on fossil fuels, not just to produce but to export our products?
- It is possible to be much less 'unsustainable', but very difficult
- Farmers consider 'sustainable' = balancing the nutrient lost through exporting produce from farm by replacing with adequate fertiliser
- We were closer to sustainability now than we were ten years ago because farmers had a better idea of how much fertiliser they were using
- Try to get sustainability over the total spectrum from farm to market: somewhat unrealistic"
- All of New Zealand benefits from our landowners' land stewardship as it contributes to our image important for tourism and our way of life. Farming needs to be sustained for the 'national good'. However, still requires greater recognition within the industry that it is currently becoming less sustainable and this poses such a significant risk to its continued financial sustainability.

Are we being strategic enough in our development of our farming systems – pulling together as 'Team NZ'?

- Government not being consistent in policies (e.g. sustainability vs. production)
- No, certainly not toward sustainability, only drive has been toward production
- Not enough science.

Questions of Strategy

- Is there a fundamental issue of private property rights? Ownerships vs. production rights? Is the land truly private and is the culture of private ownership at odds with perception of what is acceptable within land stewardship?
- Does society have to offset natural capital costs?

Is there enough understanding of growing urban/rural tensions, re environmental expectations, in our politically urban dominated society?

- No. Requirement to educate urbanites as to significance of over intensity of our farming
- Urban/rural gap creates expectations around the environment without 'paying' for the consequences or limitations put on the farming sector.

Who should be involved in leading the move to a sustainability era?

- Industry organisations need to provide leadership
- Leading farmers should be 'glue'
- Building on existing systems: no new bureaucracies.

Urban Population

- Perception of farmers turning into 'peasants': keep cost of food down. Consumers need to realise they play a part. They go for cheaper brands, this demand is related to economy and discretionary spending
- Rural/urban tensions getting worse. Social change rural population decreasing. Media exacerbates tensions
- Rural heritage days but don't lose sight of bad things too
- Many urban people and government officials don't understand food production or rural culture or its importance. Some areas e.g. Southland are still 'rural'. Bigger gap in other areas. Create expectations around the environment without 'paying' for the consequences or limitations put on the farming sector.

Comments from Southland Evaluation Sheets

This section lists regional-specific comments gathered through workshop evaluation sheets.

Positive

- Raises really good issues
- A very good initiative that hopefully will improve awareness and compliance of environmental issues. An essential process that I believe will have good buy in from farming circles
- I think this is a good report. I hope the wider community get a chance to discuss it or be informed
- Well done and I look forward to future dialogue
- Well-organised, well run, productive and interesting. I just hope it has some effect in due course
- Congratulations for the conceptual sophistication and the courage
- It needs to be read throughout NZ and to be adopted to lift the game
- An excellent report
- I feel very positive that you have produced this to raise these issues with the various stakeholders involved i.e. all NZers
- As a fisherman I see the degradation. There has to be change if we are to live up to our image. This report paints the way
- The transition is already happening. This report will hasten the debate and change.

Comment on Workshop Process

- Video camera should be explained to participants of the workshop is it for internal PCE use or is there going to be footage on TV
- Liked the opportunity for small group discussion
- Very good event. Rare to get such a mix of people together
- Encouraging discussion between groups on all levels
- Got people in the same room talking about issues
- Exposed me to a range of views
- Stimulated discussion and awareness of the huge gaps
- The snails pace got me into a sweat.

Challenges

- A very accurate assessment of NZ's situation. The necessary action will not happen if left to farming sector. Suitability of particular land for particular use is an essential prerequisite.
- Raises pertinent issues and the idea of redesign of farming systems is exciting but I wonder if the will is there. Whole catchment management and getting people thinking beyond their boundary of working together is the challenge

• As I have indicated above I feel the *Growing for Good* report is very important but not absolutely critical. The gap between rural and urban thinking and understanding is one of our biggest problems. The answer is difficult. Thank you for the opportunity.

Moving Forward

- Farmers need to 1) want to change 2) see a reward for changing. Would be nice to see govt policy
 supporting farming rather than picking on it and making our job harder which goes against
 sustainability
- Critical that independence is maintained interest groups have a multitude of agendas
- This is an excellent report and should be promoted more broadly. I feel that this report and its contents have not 'got out' to the general ordinary farmer. It is easy reading and easily understood and should be more broadly and vigorously promoted
- Have to make environmental sustainability economically and socially desirable
- This sustainability issue is national and all New Zealanders are involved. Education will enhance a better understanding. Economics is the driver, central government will have to accept and fund land to be retired from the economic pressure to produce if progress is to be made
- Need on going discussion about issues raised today to seek viable solutions
- Needs to be TV programme. See Juliet Monaghan.

Feedback

- Has had a high 'exposure' to communities. Where is consideration by government? if it has happened it is not obvious
- Would like to see more farmers at these presentations. Excellent. Well overdue
- Does not discuss consumption of organic material with N fertilisers.