HOW WELL ARE FARMERS MANAGING ENVIRONMENTAL SUSTAINABILITY?

8 April 2019
MANAGING THE IMPACTS OF CLIMATE CHANGE

To what extent are farmers…

- Safeguarding their properties against climate change?
- Mitigating agricultural greenhouse gas emissions?

What improvements to farming knowledge, practices and infrastructure are needed?
WHAT WE DID...

Online or hard copy survey

Fieldwork 29 October – 5 December 2018

707 farmers responded
WHAT HAS CHANGED SINCE 2009?

GREATER AGREEMENT
Human activity contributes to climate change

INCREASED ACTION
Not necessarily the most effective actions

REDUCING GHG EMISSIONS
Varied understanding and lack of focus

DESIRE FOR EVIDENCE-BASED INFORMATION
Less active in seeking this

EVERYONE’S ROLE IS VITAL
FARMER AGREEMENT THAT HUMAN ACTIVITY IS A CLIMATE CHANGE CONTRIBUTOR IS INCREASING

AGREE THAT…

Global human activity is contributing to the climate changing above and beyond natural weather cycles…

<table>
<thead>
<tr>
<th>Year</th>
<th>Agree</th>
<th>Unsure</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>63%</td>
<td>20%</td>
<td>17%</td>
</tr>
<tr>
<td>2009</td>
<td>54%</td>
<td>16%</td>
<td>31%</td>
</tr>
</tbody>
</table>
FARMER AGREEMENT THAT HUMAN ACTIVITY IS A CLIMATE CHANGE CONTRIBUTOR IS INCREASING

Global human activity is contributing to the climate changing above and beyond natural weather cycles...

52% AGREEMENT AMONG THOSE NOT CURRENTLY IMPACTED

70% AGREEMENT AMONG THOSE CURRENTLY IMPACTED

54% AGREE
16% UNSURE
31% DISAGREE
FARMERS IDENTIFY SIGNIFICANT IMPACT ON THEIR FARMS AND BUSINESSES

MODERATE OR MAJOR IMPACT OF CLIMATE OR SEVERE WEATHER PATTERNS

52% CURRENTLY

52% OVER NEXT 5 YEARS

59% OVER NEXT 20 YEARS

uncertain moderate major
FARMERS INCREASINGLY CONSIDER LONG TERM CLIMATIC CHANGE BOTH AN OPPORTUNITY AND A THREAT TO THEIR BUSINESS

△ Up from 44% in 2009
BUT BELIEF ABOUT HOW WELL EQUIPPED THEY ARE TO FACE ENVIRONMENTAL IMPACTS IS DECLINING

Agree… Farm is well equipped to adapt to environmental impacts of more severe weather patterns and changing climatic conditions

68% 2009
62% 2018
THE FOUR BIG ISSUES

MAKING THEIR FARMS MORE ENVIRONMENTALLY SUSTAINABLE:

#1 Land management

#2 Water availability and quality

=3 Financial viability

Legislation/regulations
“The key issue is keeping ahead of compliance. We’ve just had a Farm Environment Plan completed through Fonterra. We’ve completed major infrastructure development in the past few years.

We pride ourselves in leading the way in making this farm environmentally sustainable.

On this farm the only thing we have to change for sustainability is containing the effluent that comes off the main race to the cowshed.

Riparian planting in drains and rivers is to be carried out next year and 50 trees a year are planted on the farm.”
ISSUES SHEEP AND BEEF FARMERS FACE

“Soil Health... researching innovative solutions for growing soil, restoring the health of our ecosystem, creating conditions in which the soil biology can thrive again and improving the profit of the family farm.”

SOUTHLAND

“Hillside erosion in form of slipping and slumping. Flood protection of creek crossings and flood gates.”

MANAWATU / WHANGANUI

“Sustainable use of irrigation. Fence off waterways. Monitor water quality.”

OTAGO
“Biosecurity of invading exotic pests (insect, fungal, bacterial, viral) which leads to greater use of control chemicals. Spread of summer rainfall to maintain available soil moisture capacity as no irrigation available. Carbon taxes can negate finance for carbon sink plantings (even small scale woodlots have value).”

Bay of Plenty

“The cost of undertaking environmental improvements with little or no financial return (e.g. planting native trees in an unproductive area of the farm).

Lack of evidence-based alternative horticultural practices (e.g. organic). Will an alternative farming system be at least as profitable as our current systems?

Are our current practices truly unsustainable? Climate change - i.e. less certain weather patterns.”

Bay of Plenty
92% of farmers have done something in last five years to make their farms more environmentally sustainable.
THE MAIN ACTIONS TAKEN TO MAKE THEIR FARMS MORE ENVIRONMENTALLY SUSTAINABLE

- **LAND**
  - Planting

- **WATER**
  - Fencing – waterways, stock control
  - Fertiliser management
  - Irrigation efficiency
  - Effluent management (dairy)

- **INFRASTRUCTURE**
  - Soil management
  - Pasture management

- **ANIMAL**
  - Farm environmental plan / farm management
  - Reduced nitrogen use (dairy)
  - Reduced chemical use (hort)
  - Stock management
  - Lower stock numbers and rates
  - Grazing management
96% OF FARMERS HAVE TAKEN A NOMINATED ACTION IN LAST FIVE YEARS TO MAKE THEIR FARMS MORE ENVIRONMENTALLY SUSTAINABLE.
HOW WELL PLACED ARE FARMERS TO MITIGATE GREENHOUSE GAS EMISSIONS?
UNDERSTANDING OF ACTIONS TO REDUCE GHG EMISSIONS IS AVERAGE

UNDERSTANDING OF GHG ACTIONS

- Very good: 6%
- Reasonable: 18%
- Some: 25%
- A little: 27%
- Don't know: 23%

25% REASONABLE
50% LITTLE OR NONE

FOCUS ON GHG

PAST 5 YEARS
- 27% Moderate or major focus
- 23% Increase focus

NEXT 5 YEARS
- 27% Moderate or major focus
- 23% Increase focus

UNDERSTANDING OF GHG ACTIONS IN PAST FIVE YEARS
INCREASE FOCUS IN NEXT FIVE YEARS
GHG CALCULATIONS PAST 2 YEARS

- **80%**: Not done any
- **8%**: Specific calculations (Overseer model)
- **6%**: Rough Estimates
- **6%**: Estimates or calculations not in the last two years
- **14%**: have made GHG estimates or calculations in the past 2 years
BUT...

Specific calculations (Overseer model): 8%

GHG CALCULATIONS PAST 2 YEARS

- 80% Not done any
- 6% Rough Estimates
- 6% Estimates or calculations not in the last two years
- 2% Know the total GHG emissions from their farm
- 1% Know the per animal emissions from their farm
GHG MITIGATION ACTIONS ARE MAINLY LAND RELATED

### 1: LAND MANAGEMENT (NET)

<table>
<thead>
<tr>
<th>Action</th>
<th>Dairy %</th>
<th>Sheep / Beef %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantings / trees / native forests</td>
<td>22</td>
<td>46</td>
</tr>
<tr>
<td>Reduce nitrogen fertiliser use</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Manage fertiliser use</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Organic fertiliser/farming practices</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Crop cultivation / efficiency</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Direct drill crops</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Soil management</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

### 2: ANIMAL MANAGEMENT (NET)

<table>
<thead>
<tr>
<th>Action</th>
<th>Dairy %</th>
<th>Sheep / Beef %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced stock density</td>
<td>37</td>
<td>23</td>
</tr>
<tr>
<td>Optimise feeding</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Better breeding</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Increase production per unit</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

### OTHER THEMES

<table>
<thead>
<tr>
<th>Theme</th>
<th>%</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm infrastructure (net)</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Research / looking at science</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
**Financial Sustainability**

Financial management and profitability has been the *second area of focus* in the past 5 years (89% of farmers), and the *biggest anticipated increase* (54%) in the coming 5 years.

“Depends on profit - If we don’t have the income we can only plan but not implement. This can change from year to year depending on seasons and weather events.”

**Livestock, Manawatu/Whanganui**

“The farm business *needs to remain profitable*, so that we have the *discretion to be able to invest in ways of continuing to reduce our environmental footprint while increasing productivity*. To continue farming we must improve as the cost of everything increases. The cost of compliance issues is becoming a huge burden.”

**Dairy, Waikato**
“Labour, both planting and ongoing management.

I’m fully committed with livestock responsibilities and don’t have time to add forestry requirements, and under current employment and H&S laws certainly won’t be hiring someone to do it.

Too much cost and risk to my business.”

Livestock, Manawatu/Whanganui

38% anticipate increased focus on recruiting, retaining or upskilling farm labour in the next five years
TAKING ACTION REQUIRES

FINANCIAL SUSTAINABILITY

LABOUR RESOURCE

INFORMATION

BUT ACTIVE INFORMATION SEEKING ABOUT SUSTAINABILITY / CLIMATE CHANGE HAS DECLINED

62% 46%
2009 2018
CONFIDENCE IN LAND MANAGEMENT PRACTICE INFORMATION TO IMPROVE RESILIENCE IS DECLINING

INFORMATION SOURCES

- Events / Fielddays: 55%
- Rural Professionals: 48%
- Sector Organisations: 48%
- Ministry for Primary Industries: 20%

INFORMATION QUALITY

- Amount available: 2009 - 62%, 2018 - 56%; Decrease
- Relevance: 2009 - 53%, 2018 - 42%; Decrease
- Consistency from sectors: 2009 - 54%, 2018 - 50%
- Consistency from Government: 2009 - 30%, 2018 - 19%; Decrease
2. Environmental policy is dictated via politics - maybe it should be non partisan.”
   **ARABLE, CANTERBURY**

“Being forced into changes that aren’t scientifically proved and financially viable. But there could be a lack of knowledge in what is viable best practice.”
   **DAIRY, CANTERBURY**

“...Poor central, regional and local government regulatory decision making based on emotive rather than scientific data and modelling.”
   **DAIRY, WAIKATO**
FARMERS WANT EVIDENCE-BASED INFORMATION

INFORMATION

• Reliable – proven practices that work
• Neutral, informed science
• Non-partisan and apolitical
• Push-back on lobby group propaganda

ABOUT

• Managing severe weather events
• Pasture/grass to hold hillsides in place
• Carbon issues
• Water use, irrigation…

TARGETING

• Under 60 year olds – particularly under 40 year olds
• All farm types

But, what about how to reduce Greenhouse gas emissions?

Clear, consistent messaging delivered by organisations farmers trust, to give them confidence that their actions will make a difference
69% AGREE....
THE SECTOR IS CONTRIBUTING ENOUGH TOWARDS NEW ZEALAND’S EFFORT TO COMBAT NEGATIVE ENVIRONMENTAL IMPACTS OF CLIMATE CHANGE

WHAT MESSAGES DO WE NEED TO COMMUNICATE?

- 73%
- 70%
- 78%
- 55%