

# Agricultural Mitigation Options and Policies

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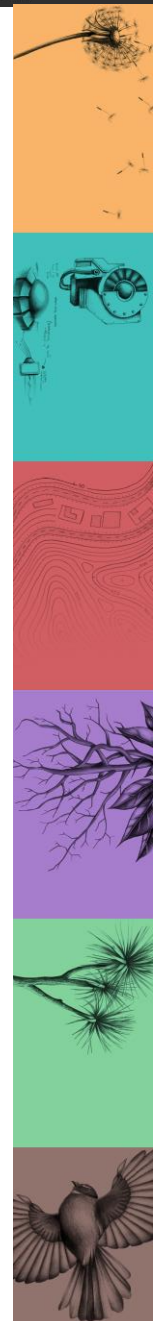
E-Mission Possible Roundtable 2: Mitigation in the Land Sector



# Agricultural emissions policy options

1. Goals for the agricultural sector in the long term
2. Behaviours needed to reach those goals
3. Policies to facilitate those behaviours
4. Agriculture in the Emissions Trading System?

Managing methane (short-lived) relative to nitrous oxide and carbon dioxide (long-lived)



## Long-term goal:

NZ operates a highly efficient, ultra-low-emission food production system

1. NZ operates an ultra-GHG-efficient livestock sector.
2. NZ produces zero-CH<sub>4</sub>, low-N<sub>2</sub>O nutrition.
3. NZ reduces food waste across the chain of food production and consumption.
4. NZers have low emission diets.



# New Zealand and rural communities have high well-being

The agriculture sector is adaptable and flexible

We have:

- created new options through active learning
- facilitated gradual transitions in land use


New Zealand is able to

- benefit by sharing new technology and low emission practices abroad
- help lower global emissions at the same time



# What needs to happen to get there?

NZ operates an ultra-GHG-efficient livestock sector.

- 
- Ruminant farmers become highly efficient
  - New technologies become available
  - New technologies are adopted



# What policies could help?

## 1. NZ operates an ultra-GHG-efficient livestock sector.

- Ruminant farmers become highly efficient
- New technologies become available
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## Potential policies

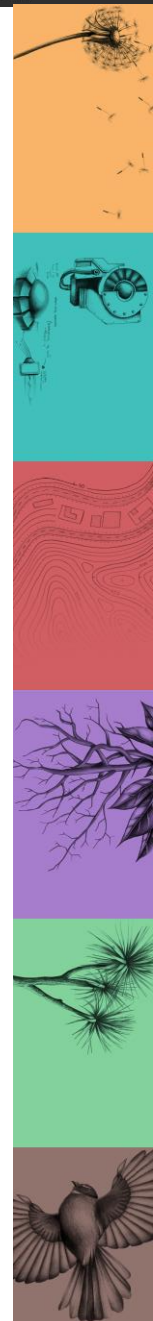
- a. Farmer education and extension improved
- b. Research into new technologies continues
- c. Subsidies for early adopters – in exchange for data  
– as technologies/practices emerge



# What needs to happen to get there?

## 2. NZ produces zero-methane, low-N<sub>2</sub>O nutrition – e.g. horticulture

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- Farms optimise use of nitrogenous fertiliser
  - Profitable non-ruminant land-use options have been found, tested and established
  - Markets for new products are established and effective supply chains created
  - A new generation of workers have good jobs in these new industries



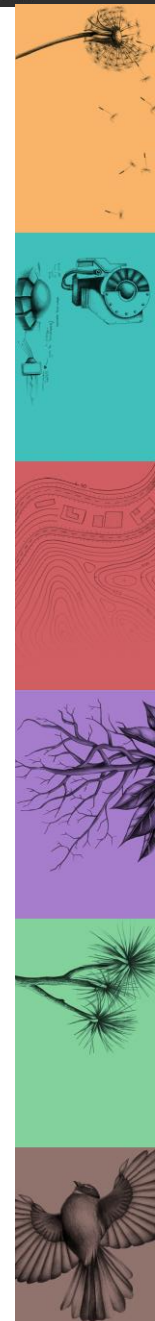
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## Potential policies

- a. Pricing of biological emissions – e.g. ETS
- b. Horticulture education and extension improved – including for supply chain
- c. Research into new crops expanded
- d. Subsidies for early adopters of new crops
- e. Coordination of supply chains for new crops





# Agriculture in the ETS?

## Will it lead to mitigation?

- Yes - it can encourage land use change
- Would need to be farm-level to encourage on-farm mitigation

## Should we do it on-farm?

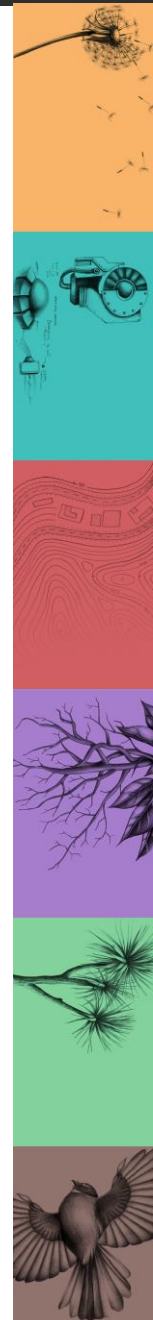
- high transaction costs and poor measurement
- no evidence that it would lead to significant reduction in emissions intensity

## Leakage? Food security?

- Less leakage than in other sectors – land cannot move
- Counter both by facilitating land-use change toward food production

## Too painful for the rural sector?

- Do it gradually
- Opportunities could be valuable
- Good for sector to start adjustment now
- Will help with other risks such as synthetic milk and meat



# Will including agriculture in the ETS lead to too little focus on long-run gases?

## How fast do we want each gas to decline?

- Part depends on how fast we want to reduce overall
- Part depends on weighting of short- versus long-term climate

## How could we manage the speed of decline if agriculture is in the ETS?

- Adjust ETS cap if long-lived gases are not declining fast enough
- Adjust relative pressure across gases – e.g. through metric
- Each of these can be regularly fine-tuned within the ETS



# Act now to give us time to learn and change

1. Improve farm efficiency and develop new technologies – with emphasis on how we can share New Zealand learning internationally
  - Focus on learning: research, education and early adoption – not emission pricing
2. Start land-use change now – toward horticulture as well as forests
  - This will create options and make the rural sector more resilient
  - Emission pricing can be part of this
3. Can manage different gases flexibly within an all-sectors ETS
4. Change diets and reduce waste

