

# Farming in a carbon-priced economy – implications for farm businesses.

Mick Keogh  
Australian Farm Institute

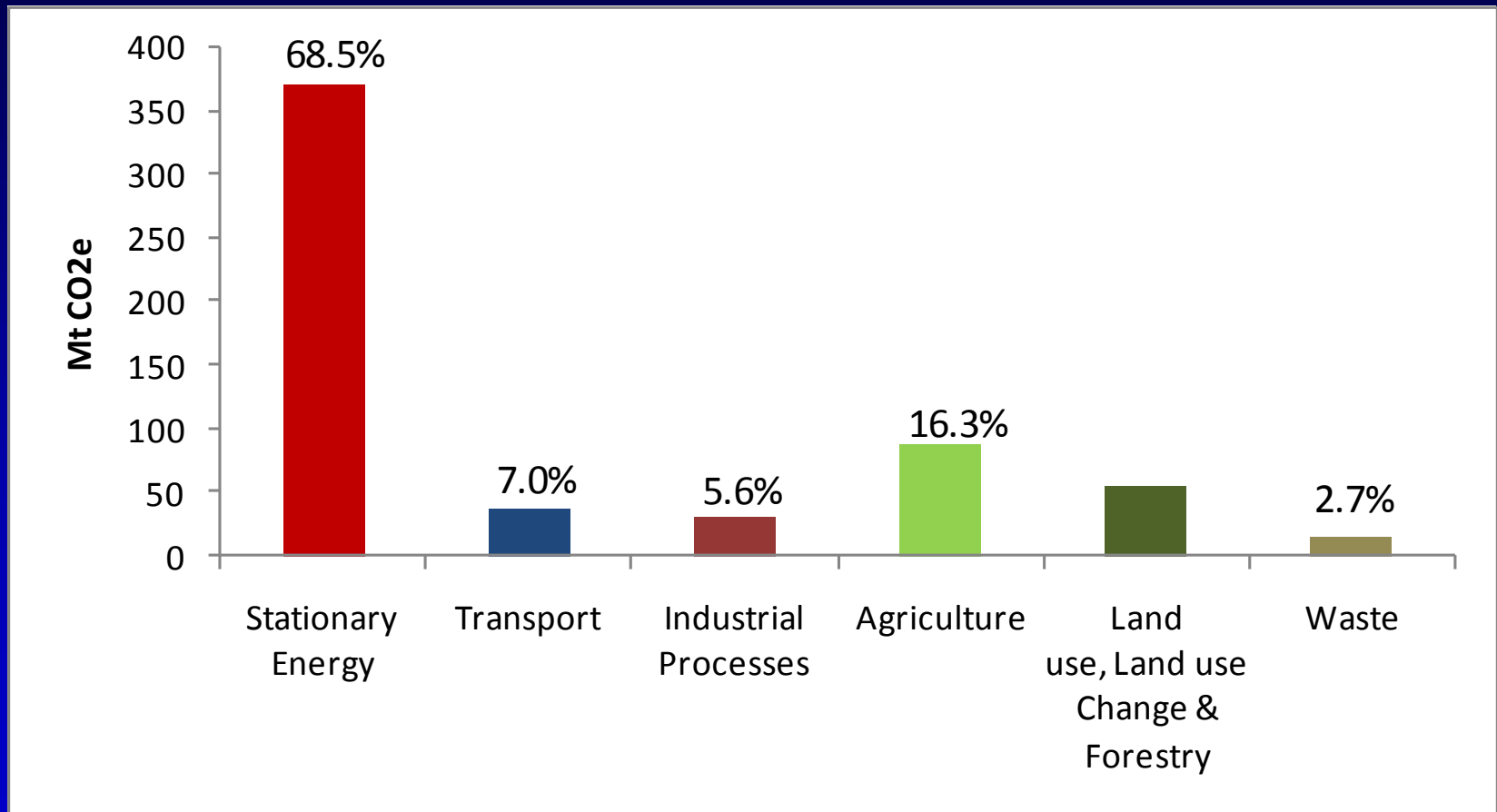


Australian carbon policy

The Carbon Farming Initiative (CFI)

Implications

# Australia's greenhouse emissions.



# A future Australian carbon policy?

Fixed price carbon tax imposed on electricity generators, fuel from 2012 (\$20-\$30)

Transformed into an ETS by 2015

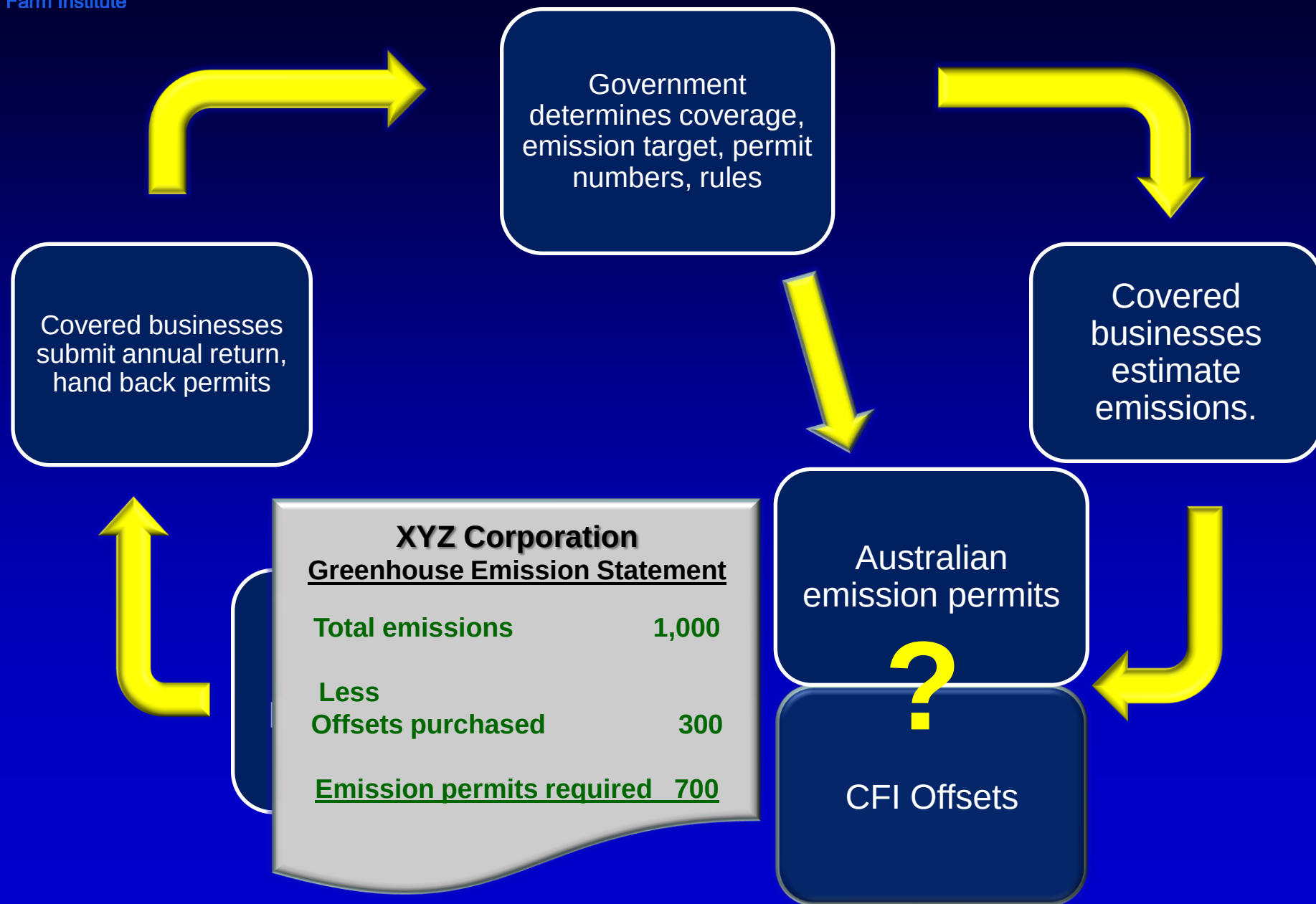
‘Covered sector’ exporters receive graduated concessions

ETS expanded to more sectors of the economy post 2015.

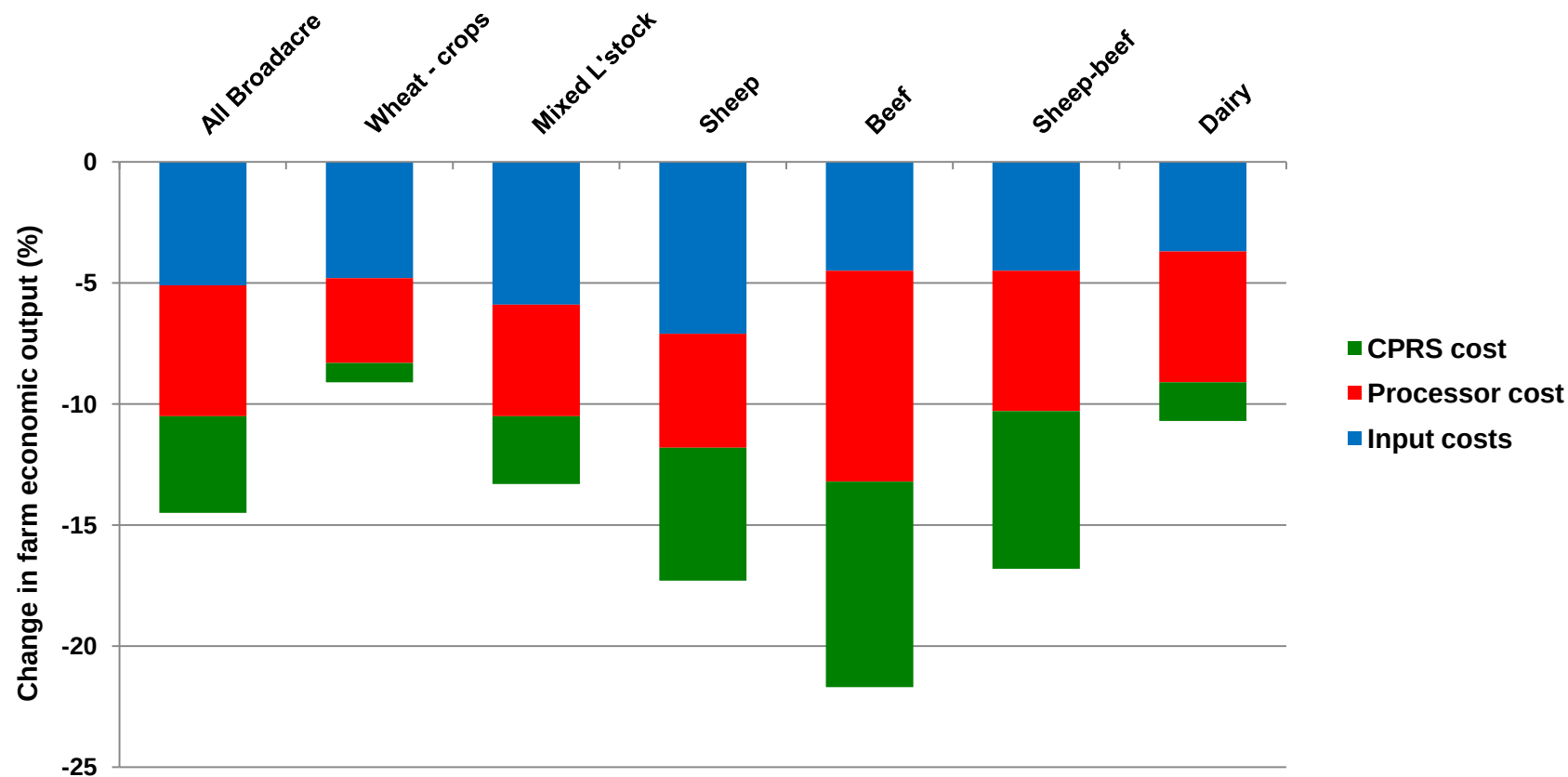
Agriculture able to sell CFI offsets from 2015

Agriculture uncovered to 2015 but then ????

## An emissions trading scheme



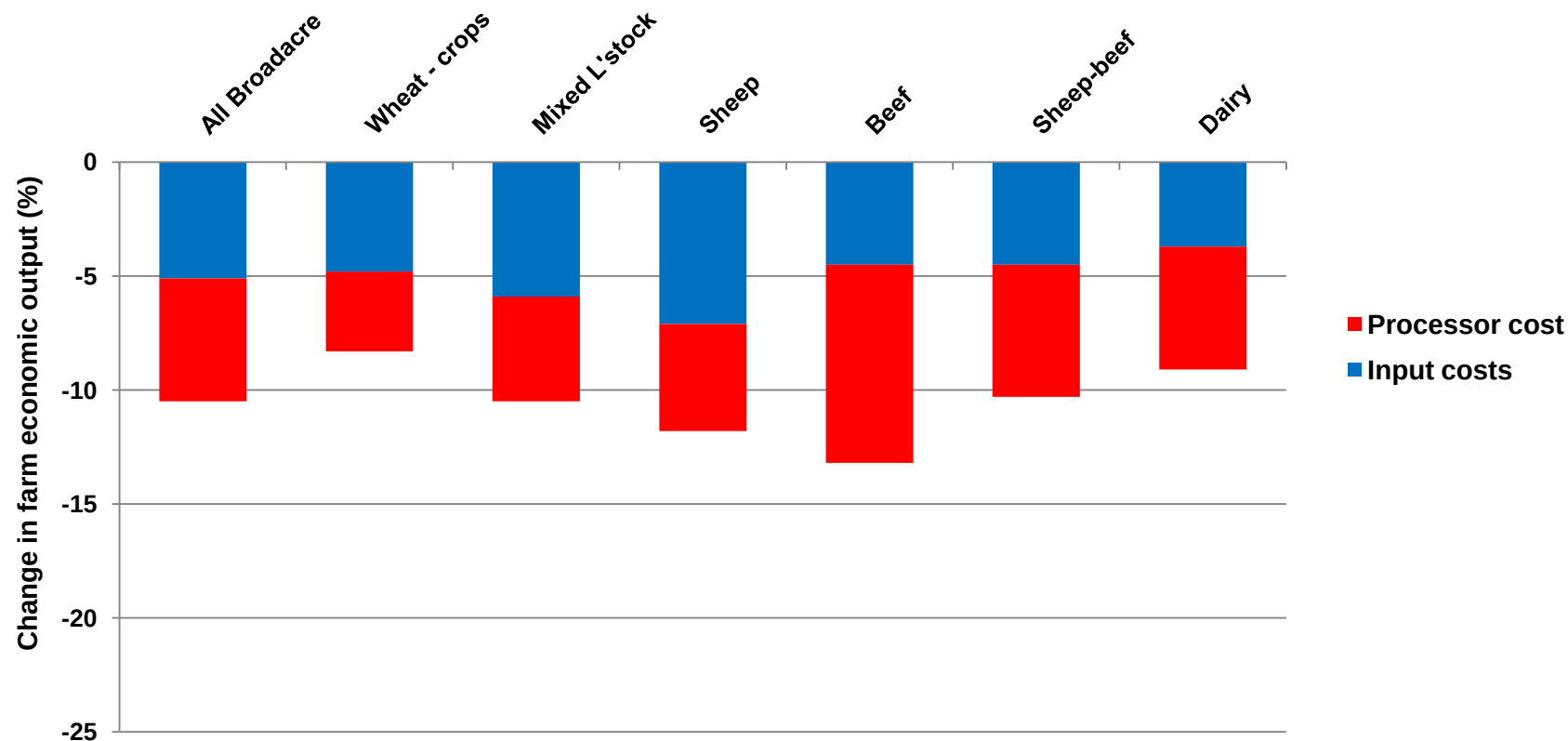
# Projected impacts – farm level



Source: ABARE

( Five years after a carbon tax /ETS is introduced)

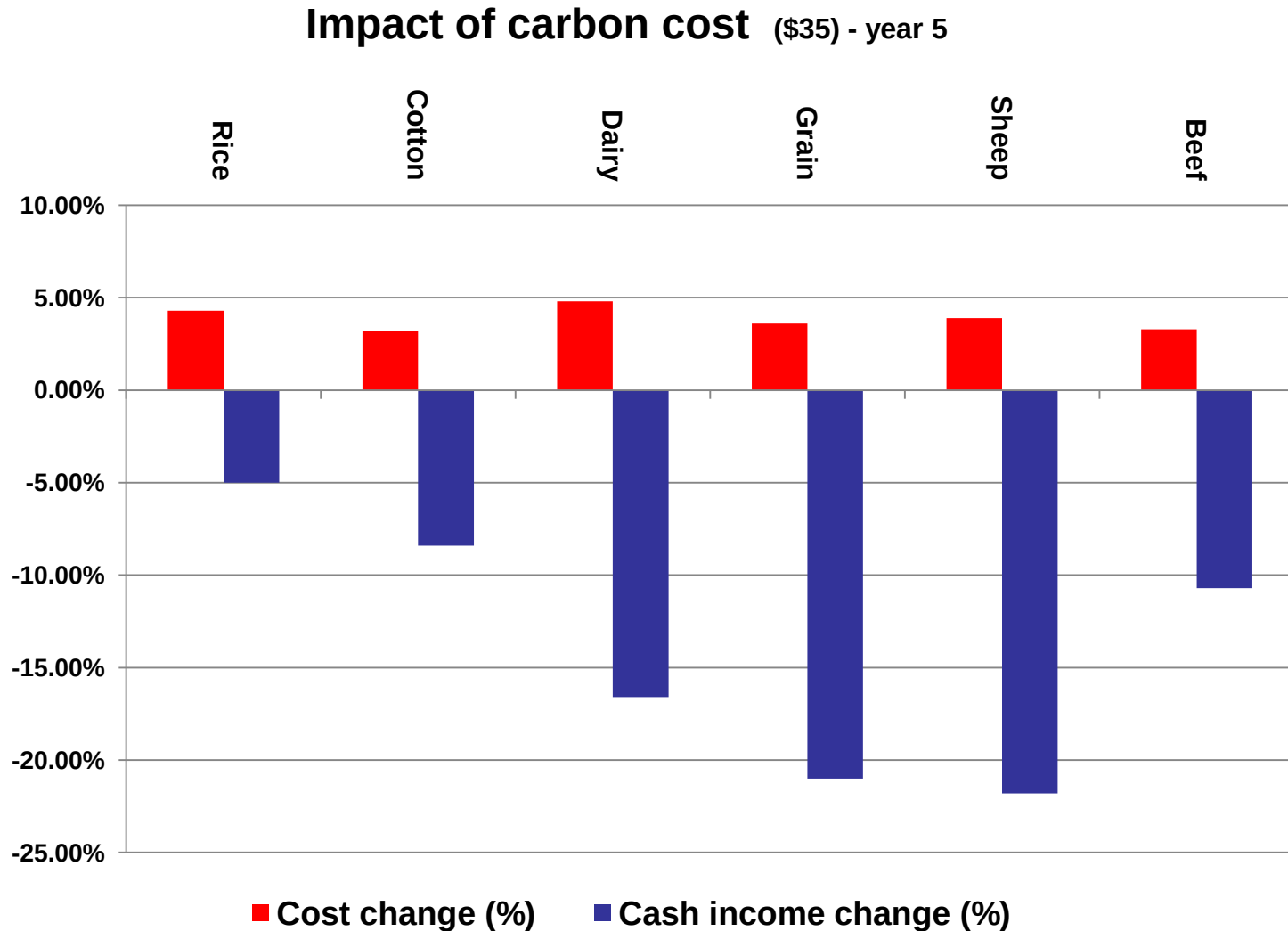
# Agricultural emissions not covered.



Source: ABARE

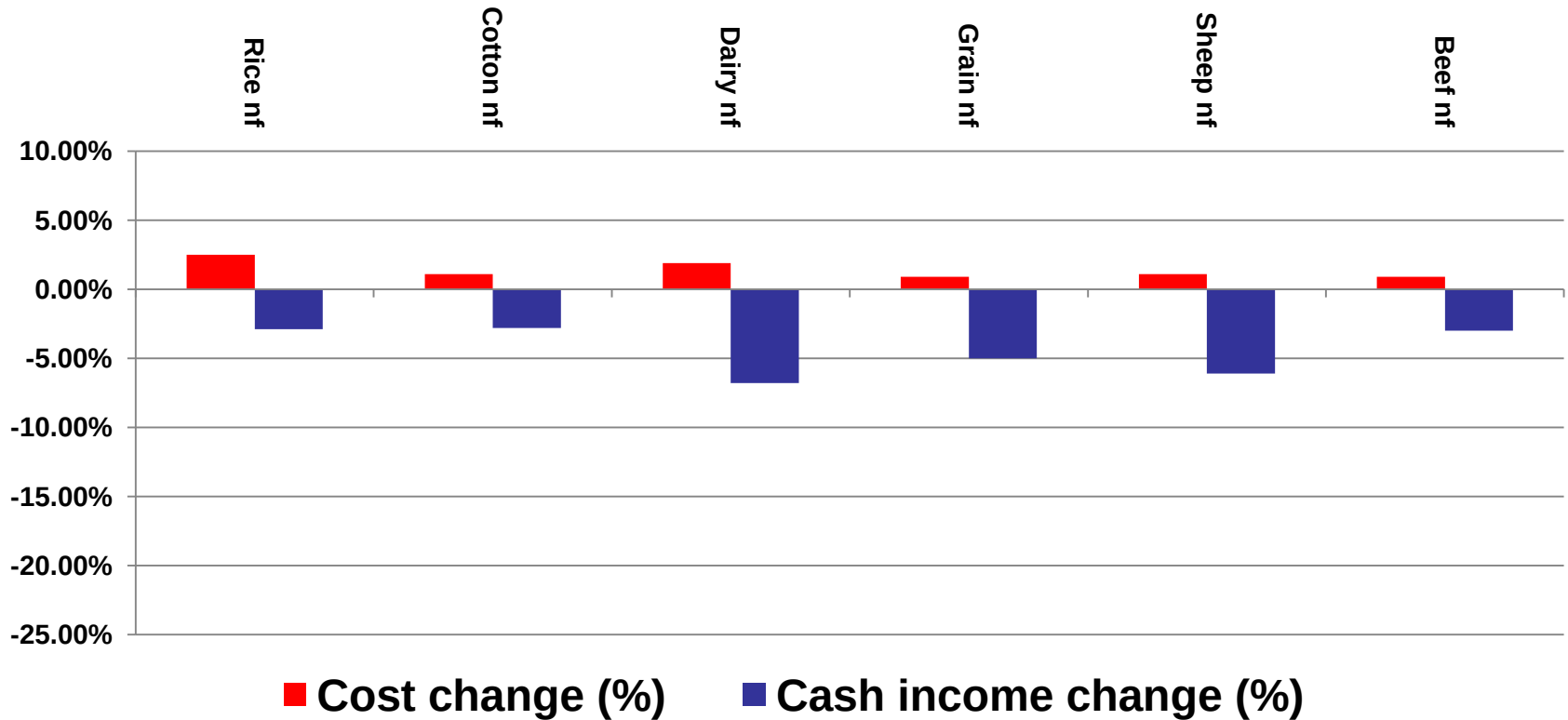
( Five years after a carbon tax /ETS is introduced)

# Impacts vary by sector ...



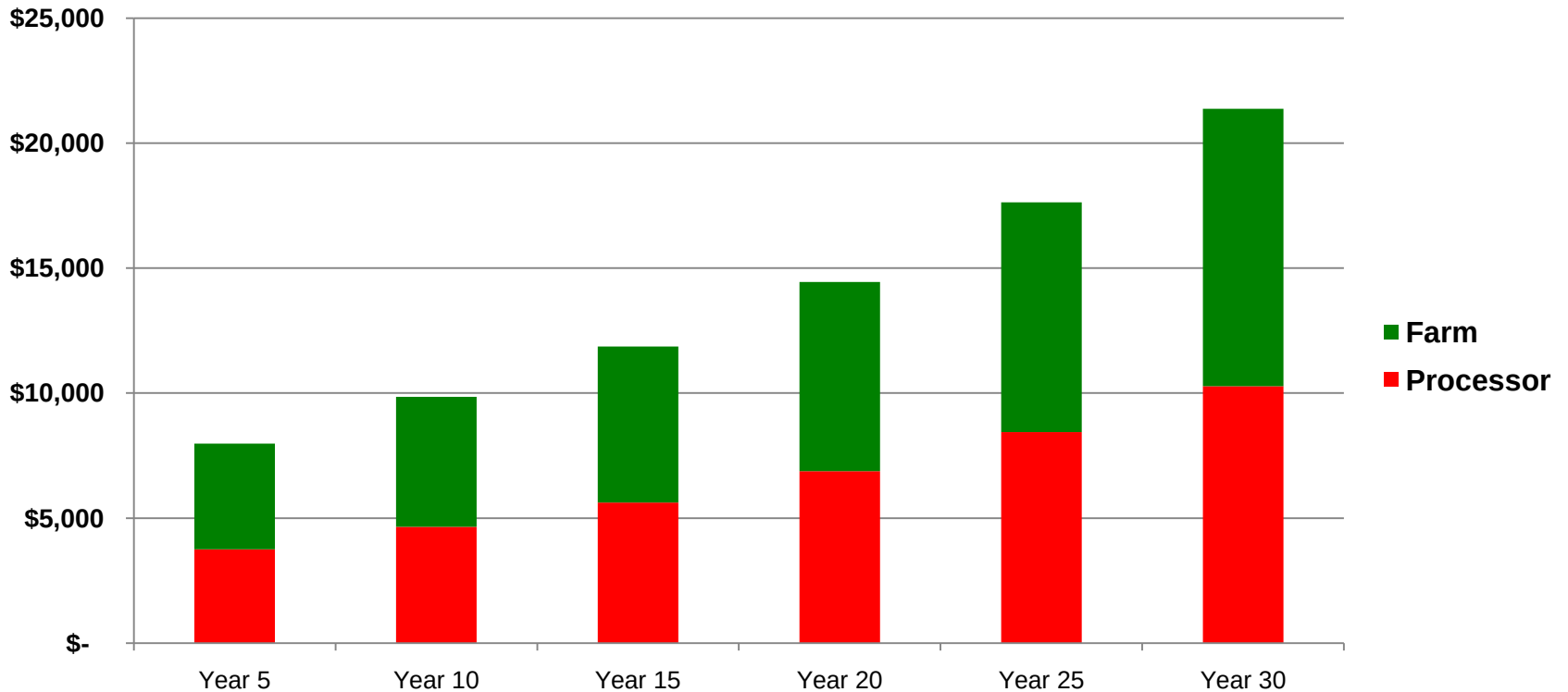
# Impacts reduced if fuel emissions excluded.

Impact of carbon cost (No fuel) (\$35) - year 5



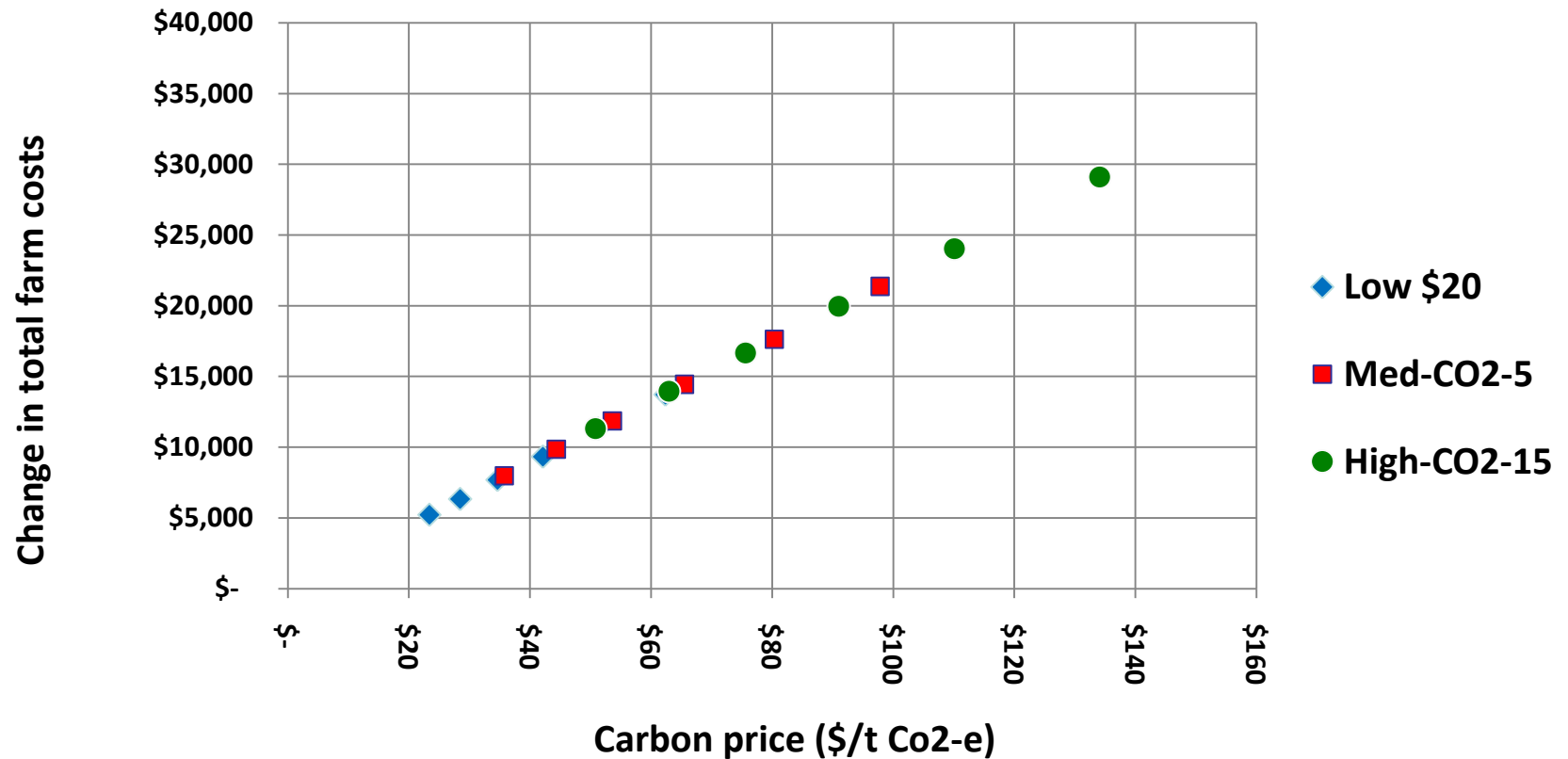
# NSW sheep business cost increases

Additional farm and processor costs -  
Medium carbon price



**\$250k turnover, 3,000 sheep, 700 t grain**

# Carbon price farm cost impact.

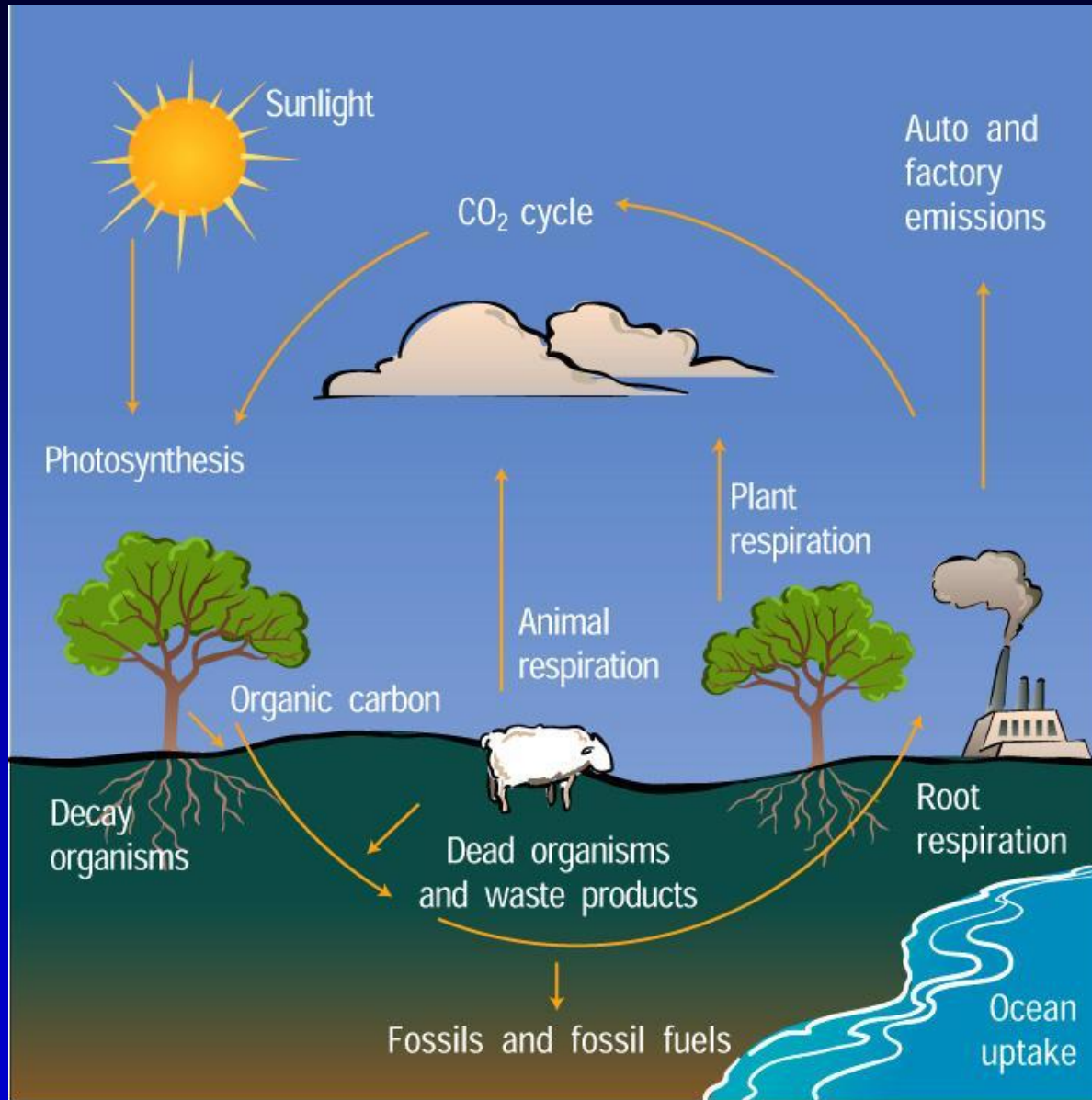


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Sequestration



Emission



Mitigation

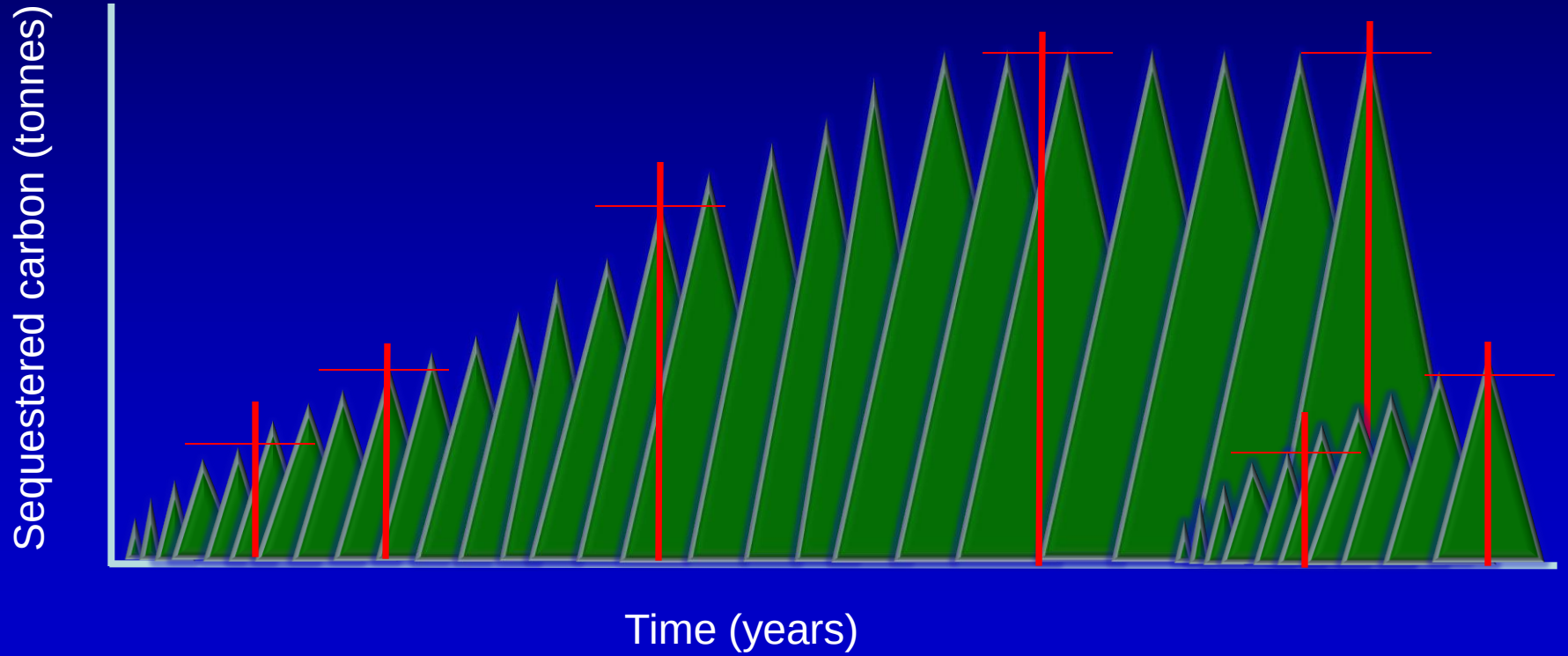
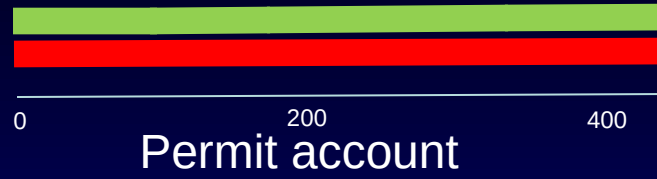


# The Carbon Farming Initiative (CFI)

- Legislation in place by July, 2011
- Offsets produced in accordance with approved methodologies.
- Key requirements;
  - Additionality
  - Permanence (100 years) for sequestration
  - Scientific validity
  - Conservative assumptions
  - Audited and verified by 3<sup>rd</sup> party.
- Soil carbon – voluntary carbon markets
- Kyoto Protocol accredited offsets – mandatory markets

# Voluntary and mandatory markets

- **Voluntary markets** – non-compliant with Kyoto Protocol. Companies choose to offset, but not required to. Typically \$2 - \$5 per tonne. (Soil carbon offsets)
- **Mandatory Markets.** Compliance required under legislation. Currently limited to EU, NZ. Offsets must comply with Kyoto Protocol rules. Typically \$20 - \$25 per tonne. (Permanent tree planting on land that was clear of trees in 1990)



# Assumptions

- Carbon price – 5% CPRS (voluntary = \$5)
- Model beef farms (ex ABARE) (\$400k + turnover)
- Beef processor cost increases based on ABARE modelling.
- Farm emissions calculated using FarmGAS.
- No dynamic response to changed input costs.

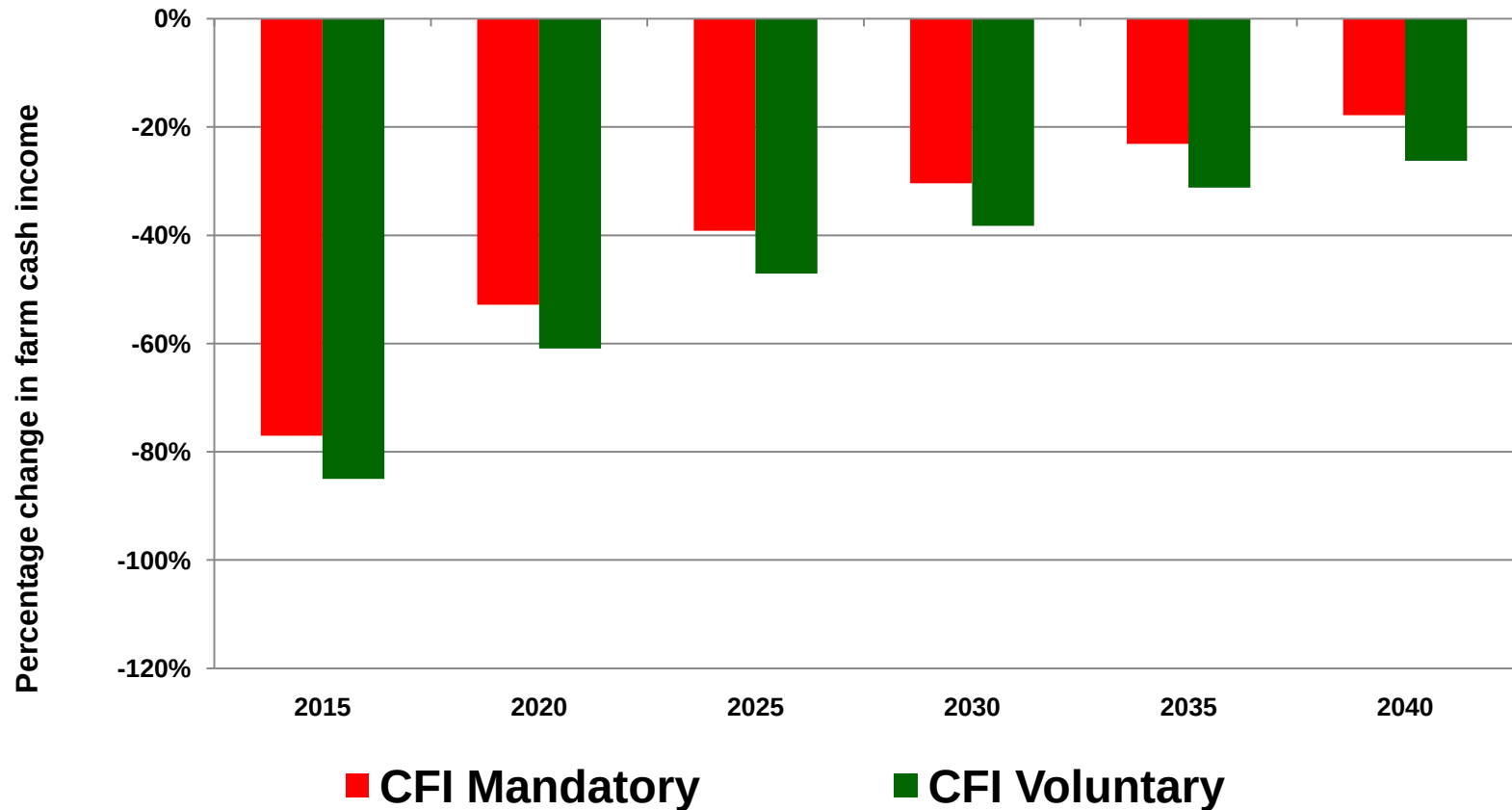
# Transaction costs

| Item                         | Cost                         |
|------------------------------|------------------------------|
| Initial accreditation        | \$3,000 one-off cost         |
| Legal advice (contract)      | \$2,000 one-off cost         |
| Initial verification         | \$1,500/day one-off cost     |
| Annual statement preparation | \$1,000/day each year        |
| Annual verification          | \$1,500/day each year        |
| Audit                        | \$1,500/day every third year |

# Rumen methane mitigation

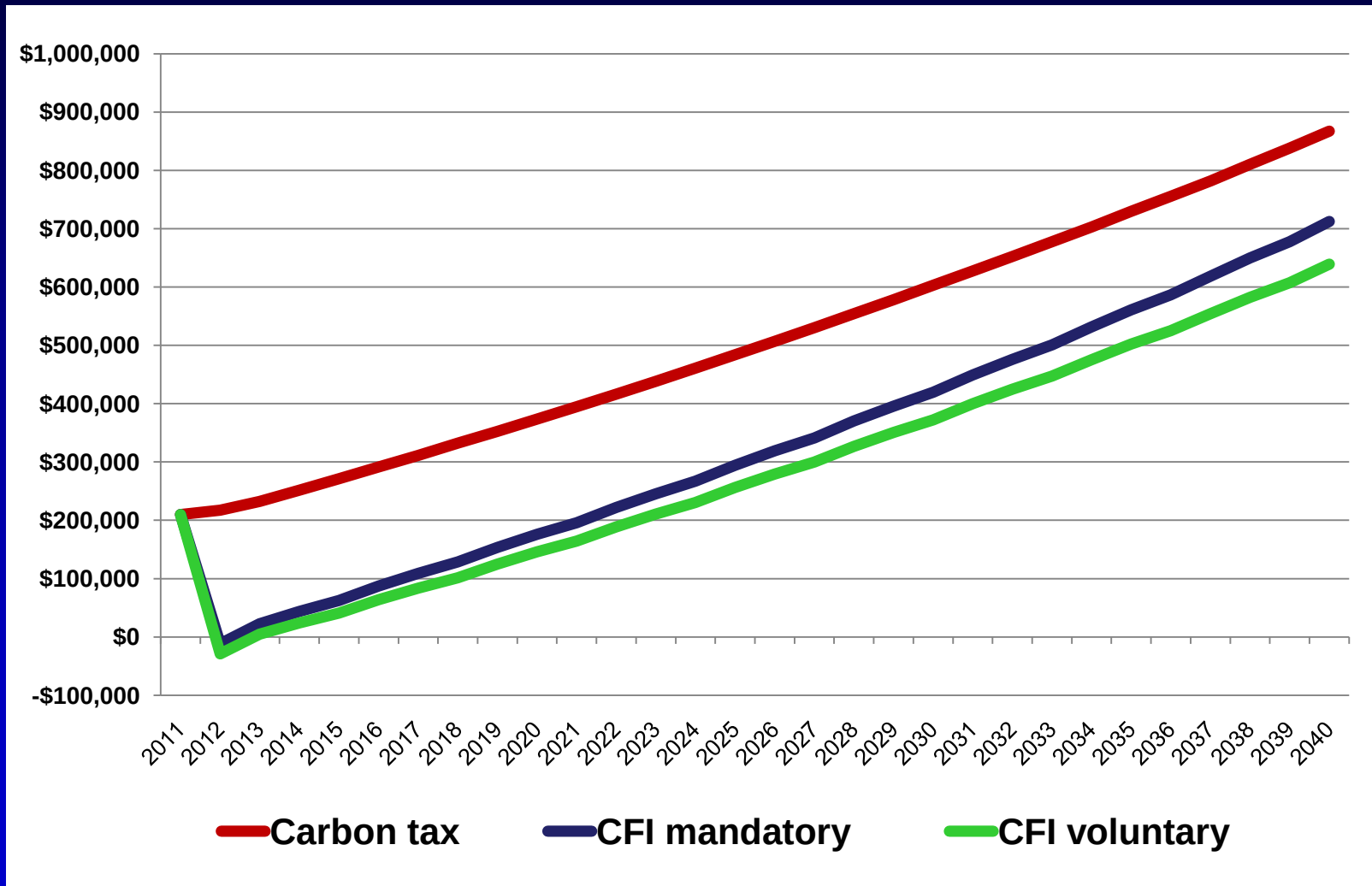
- Rumen bolus (360 day)
- 20% emission reduction
- Bolus cost \$65/hd/year

## Participation in the CFI, \$400k+ beef farm, -5% carbon price, bolus achieves 20% emission reduction



Note: Compared to 'business-as-usual under a carbon tax,  
no coverage of agricultural emissions.

# Modelling results (CFI)



# Change in cumulative farm cash income over 30 yrs relative to BAU (no carbon price)

| Sheep Farm                                              | Offset scenario              | Agriculture covered |                  | Agriculture uncovered |                  |
|---------------------------------------------------------|------------------------------|---------------------|------------------|-----------------------|------------------|
|                                                         |                              | Mandatory market    | Voluntary market | Mandatory market      | Voluntary market |
| Pastoral zone, more than \$400,000 annual turnover      | Methane mitigation           | -52%                | -61%             | -31%                  | -40%             |
|                                                         | Environmental plantings      | -113%               | -333%            | -91%                  | -312%            |
| High Rainfall zone, more than \$400,000 annual turnover | Soil carbon sequestration    | -72%                | -123%            | -57%                  | -108%            |
|                                                         | Single species farm forestry | 111%                | -23%             | 126%                  | -8%              |
| Wheat/Sheep zone, more than \$400,000 annual turnover   | Environmental plantings      | -34%                | -51%             | -20%                  | -37%             |
|                                                         | Nitrification inhibitor      | -32%                | -32%             | -18%                  | -19%             |

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# Implications

- A carbon price will have a negative impact on farm profitability
- Accelerated productivity growth will be the key to retaining farm profitability (in response to climate change or climate change policy).
- The CFI may provide some opportunity to mitigate additional costs.
- CFI offsets unlikely to be accepted in the mandatory market during the 'fixed price' phase.
- CFI offsets are unlikely to be viable for farmers if they can only be sold into the voluntary market.

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