



Australian Government
Department of Climate Change

Climate change, agriculture & the CPRS




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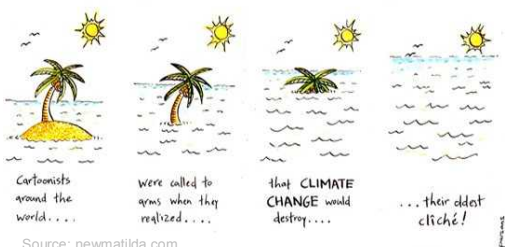
Overview

1. The case for action
 - Climate change impacts and agriculture
2. Australia's policy response – the CPRS
3. The CPRS & agriculture
 - Agriculture Work Program
4. Issues for agriculture
 - Preliminary thoughts on wine industry implications



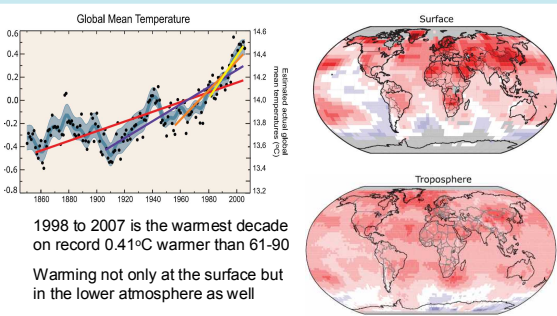
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1. The case for action



Source: newmatilda.com

Regardless of the cause ...our climate is changing



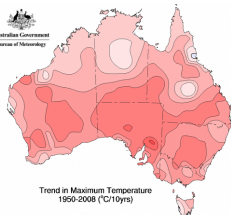
1998 to 2007 is the warmest decade on record 0.41°C warmer than 61-90

Warming not only at the surface but in the lower atmosphere as well

Source: IPCC 4AR

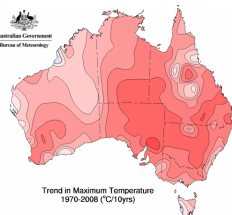
Our climate is already changing ...at an accelerating rate

1950 - 2008




Trend in Maximum Temperature 1950-2008 (°C/10yrs)

1970 - 2008



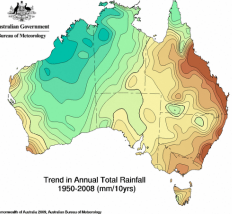
Trend in Maximum Temperature 1970-2008 (°C/10yrs)



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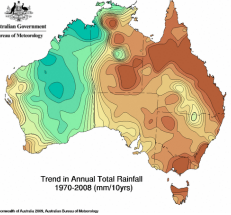
It is also getting drier ...with consequences for agriculture

1950 - 2008




Trend in Annual Total Rainfall 1950-2008 (mm/10yrs)

1970 - 2008



Trend in Annual Total Rainfall 1970-2008 (mm/10yrs)

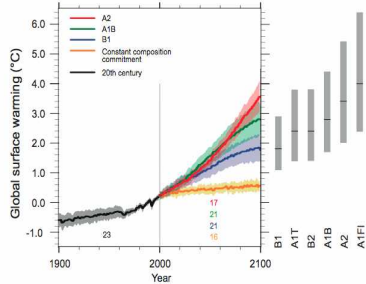


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Projections of future changes in climate

Best estimate for low scenario (B1) is 1.8°C (likely range is 1.1°C to 2.9°C).

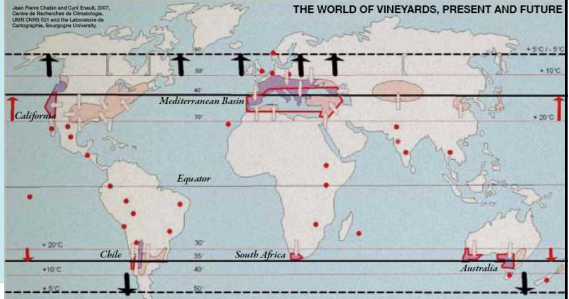
For high scenario (A1F1) is 4.0°C (likely range is 2.4°C to 6.4°C).



Source: IPCC



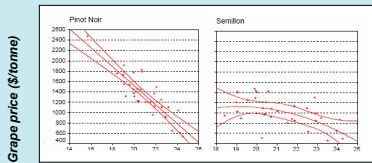
Exposure to climate change Vineyards



Greenpeace (2009) - Impacts of climate change on wine in France



Product quality and temperature

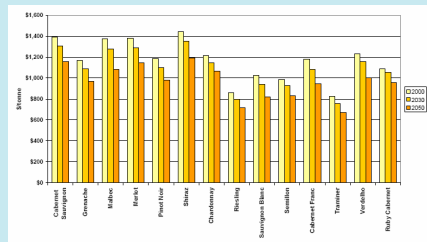


Average regional mean January temperature (°C), Australia

Source: Webb (2006)



Wine grape quality in Barossa Valley High emissions scenario



Source: Webb (2006)



Effects on spraying



Emerald (QLD)

Kellerberrin (WA)

2030 ———
2070 - - - - -

Source: Steven Crimp, CSIRO

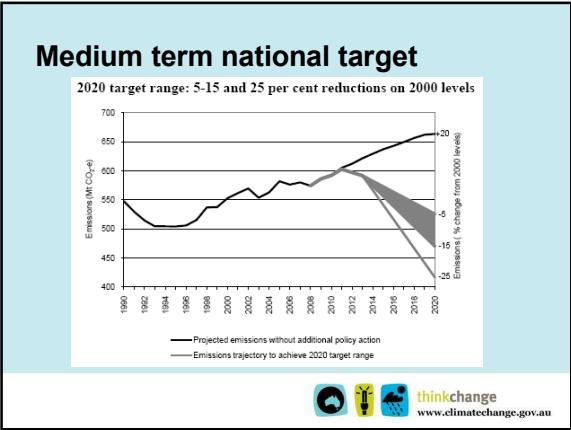
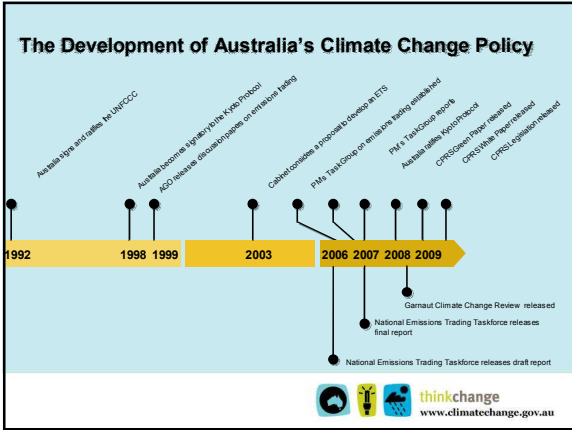


2. Australia's policy response

- Reducing Australia's carbon pollution

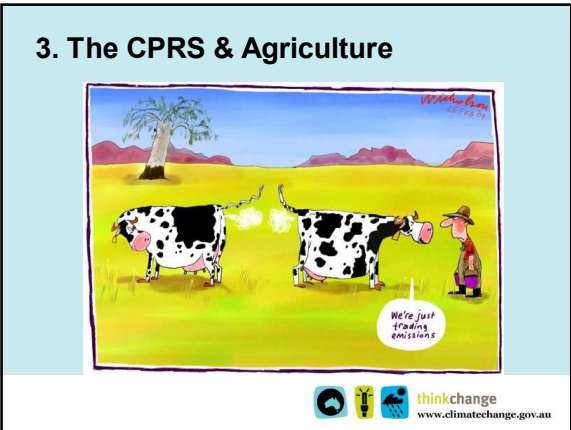
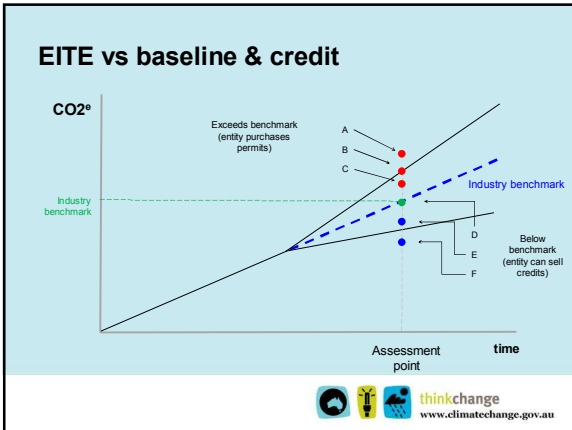


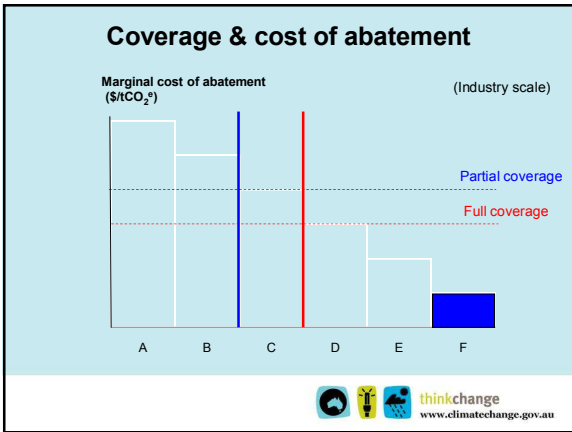
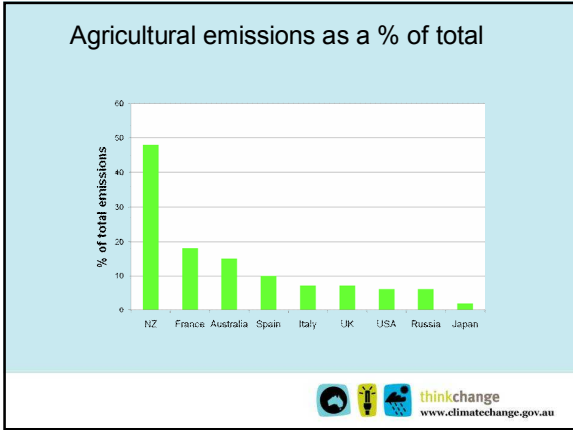
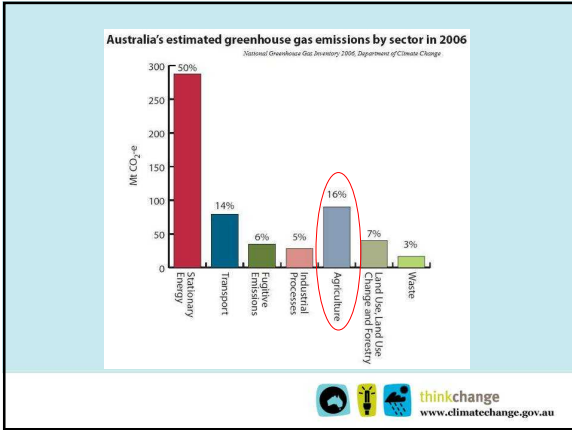
Source: newmatilda.com



- ### CPRS coverage
- Around 75% of national emissions covered
 - Around 1000 firms with mandatory obligations
 - Large direct emitters (>25kt)
 - Upstream fuel suppliers to small emitters
 - Some entities will volunteer to take on scheme obligations
 - Forest entities
 - Some fuel users
 - Some entities will volunteer to take on scheme obligations
 - Transition for legacy waste
 - Proposed 'obligation transfer number' system for netting out of upstream and downstream emissions
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- ### Rates of assistance to EITE industries
- Two rates of assistance:
- | | |
|------------------------|---|
| 90% rate of assistance | Activities above 2000t/\$m revenue or 6000t/\$m value added |
| 60% rate of assistance | Activities between 1000t/\$m-1999t/\$m revenue or 3000t/\$m-5999t/\$m value added |
- Rates of assistance reduced by 1.3% per annum for EITE sector - 'carbon productivity contribution'
 - Initially around 25% of total permits to be provided as EITE assistance (35% including agriculture)
 - EITE assistance could reach 45% depending on growth in the sectors
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Mitigation policy for agriculture

- **Agricultural emissions will NOT be covered at CPRS commencement**
- Commitment to implement policies for reducing agricultural emissions from 2015
- Decision on how to do this deferred to 2013
- No set view on which policy options are most appropriate

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Agricultural Work Program

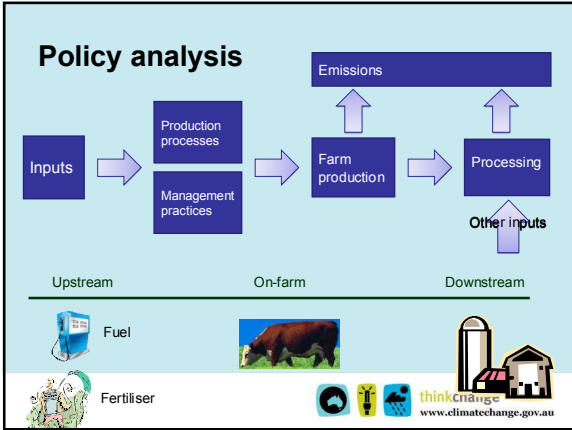
- Work Program agreed with industry through Ministerial Roundtable process. Will determine:
 - Options for CPRS coverage
 - Cost-effectiveness comparison with alternative policy options that place an equivalent cost on carbon
- To progress through three stages:
 - Stage 1: Data collection, analysis and stakeholder consultation – 2009-10
 - Stage 2: Voluntary reporting trial – 2011
 - Stage 3: Decision on policy options and preparation for implementation – 2013 onwards

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Policy options

Generic options	Implementation options		Match to industry characteristics
<ul style="list-style-type: none"> - Charges (tax) <ul style="list-style-type: none"> - emissions - practices - Regulation <ul style="list-style-type: none"> - standards - practices - Trading systems <ul style="list-style-type: none"> - ETS - Baseline/credit (offsets) 	<ul style="list-style-type: none"> - Coverage <ul style="list-style-type: none"> - point of obligation - Thresholds - Point of obligation - Monitoring & reporting <ul style="list-style-type: none"> - minimum data - Administration <ul style="list-style-type: none"> - timing - transition - delivery - industry participation - Abatement options - Policy interactions 	<p>X</p> <p>VS</p>	

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Criteria for evaluating policy options

- environmental integrity
- economic efficiency
- minimisation of implementation risk
- policy flexibility
- promotion of international objectives
- implications for the competitiveness of traded and non-traded industries
- accountability and transparency
- fairness

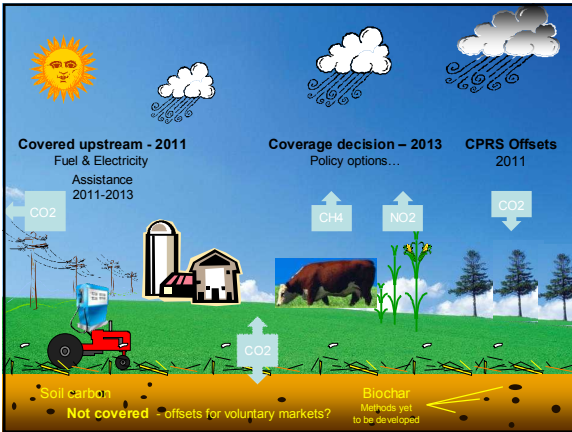
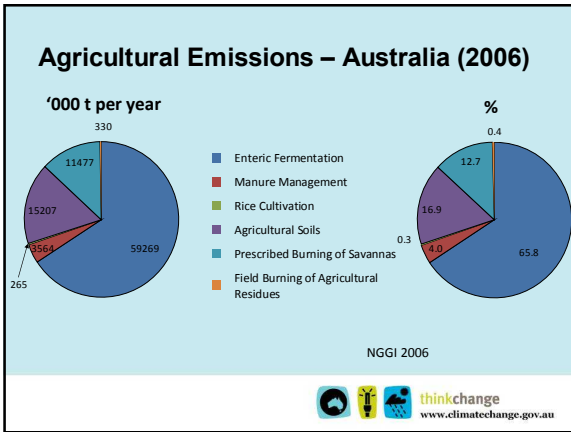
Source: CPRS White Paper

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4. Issues for agriculture

- Policy options – what are they?
- Abatement options – what are they?
- Monitoring, reporting & verification
 - Data systems
 - Compliance auditing
- Coverage & cost of abatement
- Food security, EITE and sector expansion
- Modelling of potential CPRS impacts
- Soil carbon & offsets

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Commitments on fuel

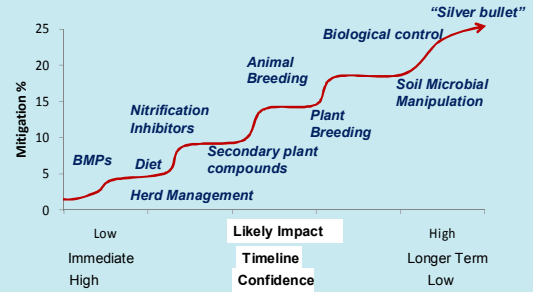
- Cut fuel taxes on cent-for-cent basis to offset impacts of Carbon Pollution Reduction Scheme
 - Periodically assess adequacy for 3 years
 - Review adjustment mechanism at end of 3 years
- Businesses
 - Agriculture and fisheries – offset for 3 years
 - Heavy road vehicles – offset on cent for cent basis, review after 1 year

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Policy options

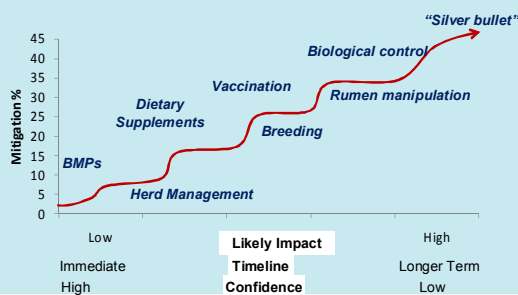
- Emissions trading schemes
 - Cap and trade
 - Baseline and credit (including offsets)
- Tax
 - Inputs, processes/management or emissions
- Regulation
 - Inputs, processes/management or emissions

Nitrous Oxide - abatement options



Eckard et al. 2009

Enteric Methane – abatement options



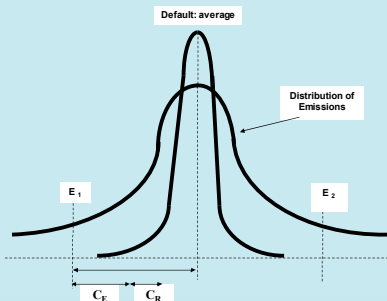
Eckard et al. 2009

Data systems

- Minimum science standards?
- Existing information systems?
 - can they be modified?
- Legitimacy issues?
 - can they be accessed?
- Transactions costs?
 - easy to use?
 - achieve multiple purposes?



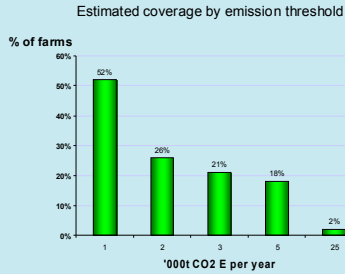
Measurement vs estimation



Compliance auditing

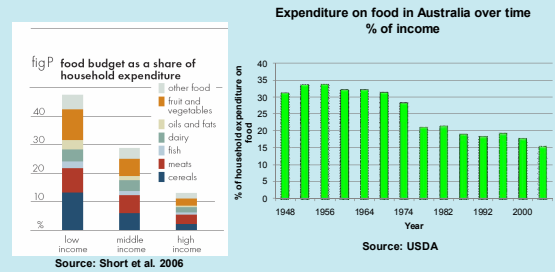
- Provides incentives for compliance?
- Cost of operation (to governments & participants)
- Penalties for non-compliance – fair, but effective?
- Legitimacy?
 - appropriate use of information, privacy
 - intrusiveness, social acceptability
- Auditing agents – industry, government, combination?
- Opportunities for cross-referencing data?
- Reviews – Trigger? Frequency?

Coverage

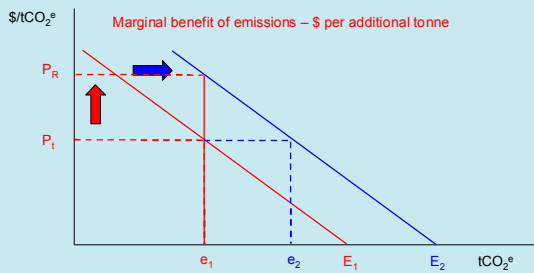


Source: Ford et al. (2009)

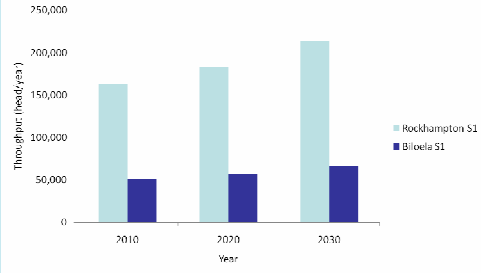
Food & fibre security



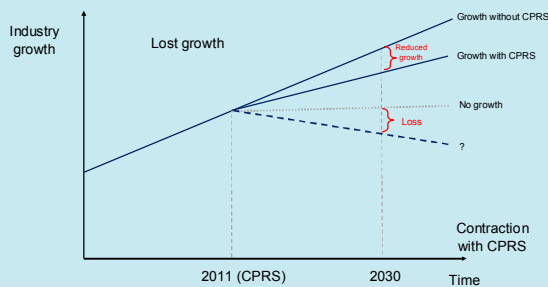
Food security & mitigation policy



Abattoir throughput over time under the most negative CIE scenario (2009)



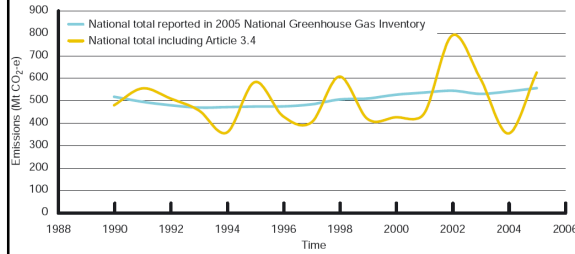
A foregone opportunity is not a loss



Soil carbon, biochar & offsets

- Preconditions
 - Sound science
 - credible sequestration potential – national interest
 - permanence & additionality
 - Governance
 - international rules
 - National Carbon Offsets Standard – voluntary market
- If these standards are not met, the cost is transferred to other sectors or taxpayers

Carbon in soil, vegetation & pasture



Source: National Greenhouse Gas Inventory 2006, Department of Climate Change



Inducing action, not just analysis



Source: New Matilda

<http://www.csiro.au/org/ClimateAdaptation> www.climatechange.gov.au