From Calculations to Climate Action

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IFA Event: Climate Action in Agriculture – A Balanced Approach

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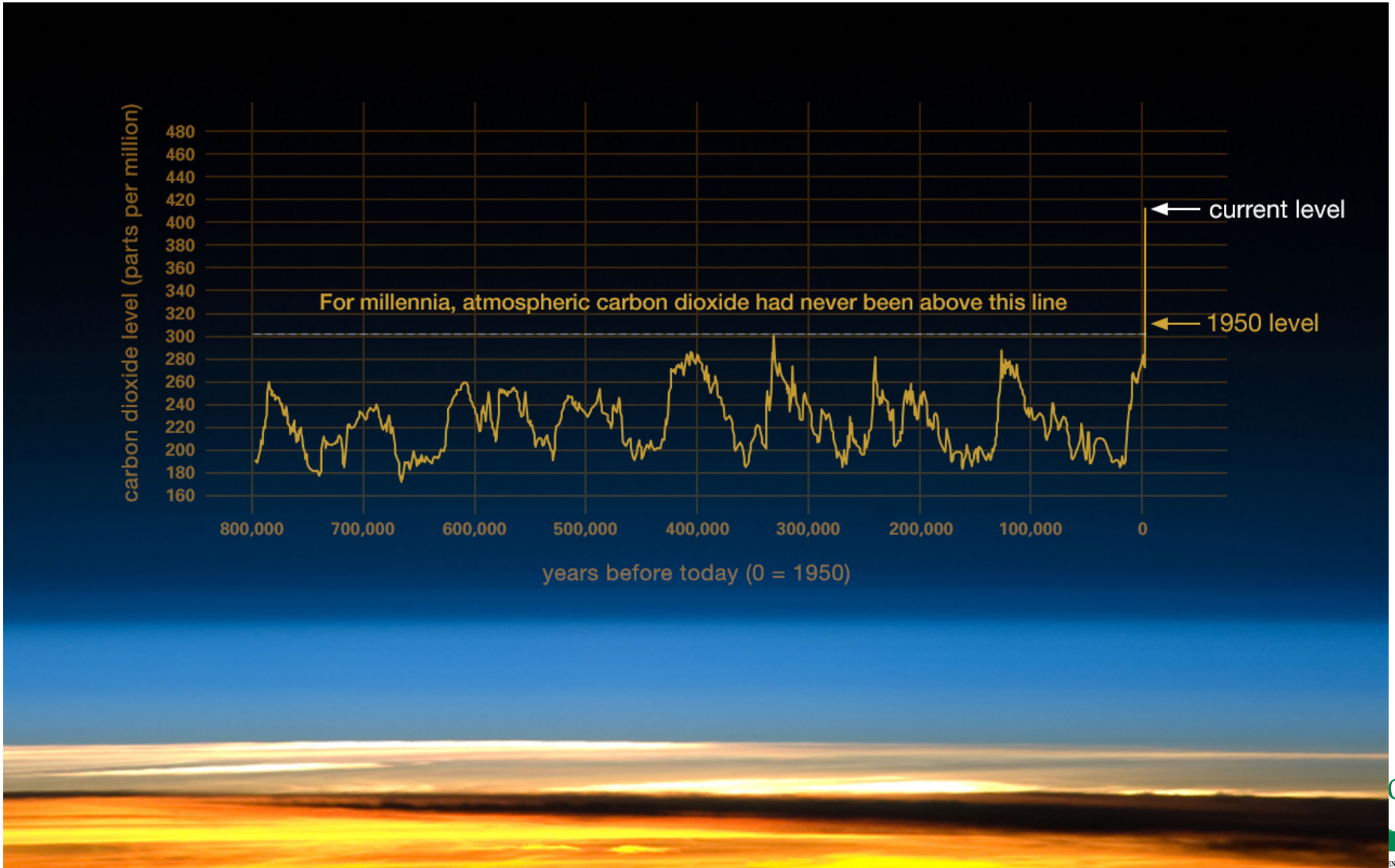
How did we get here?
Where did it all begin?
START

Atmospheric CO_2 concentrations for last 800,000 years (source: NASA)



1992 Rio De Janeiro Earth Summit

United Nations organised summit to create a platform to allow countries to cooperate together on environment and development issues

United National Framework Convention on Climate Changes (UNFCCC)

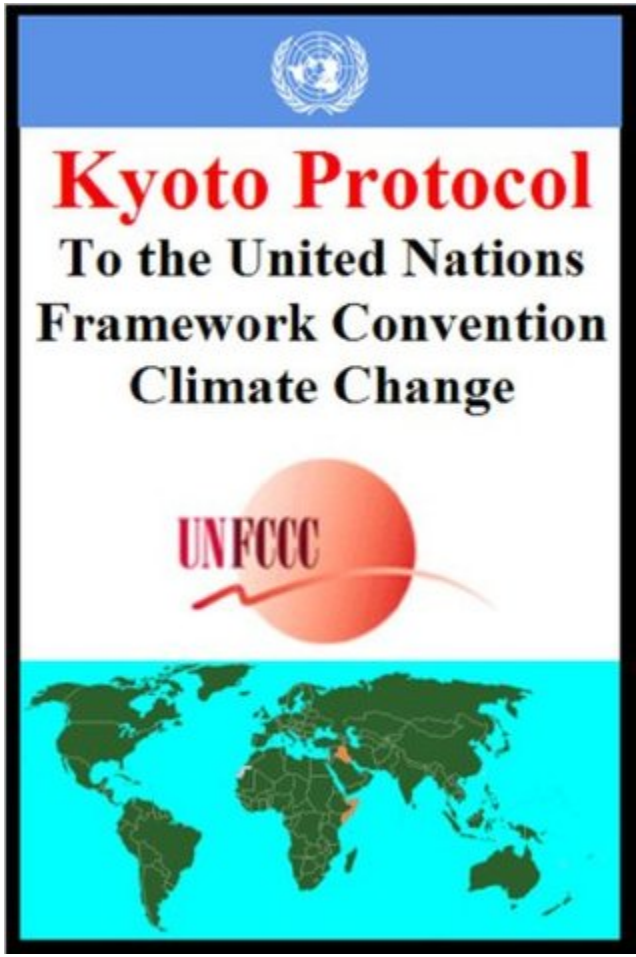
- Treaty opened for signing at Rio 1992
- Came into force in 1994
- Objective: '*stabilize greenhouse gas concentrations* *in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'*
- Parties (signatories): 197 countries
- Each year since 1995, a **Conference of Parties** (COP) has taken place

2019 Conference of Parties in Madrid

2020 COP in Glasgow next November

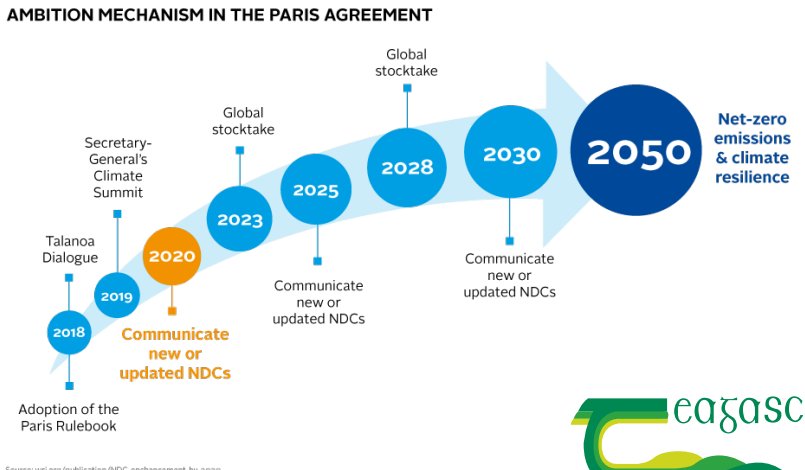
Kyoto Protocol

- Adopted in 1997, came into force in 2005
- Ratified by 184 of the Parties
- Placed legally binding obligations to reduce GHG emissions
- First Commitment Period: 2008-2012 compared to 1990
- Second Commitment Period: 2013-2020 compared to 2005



2015 Paris Agreement

- Aims to keep temperature rise below 2°C, and pursue efforts to keep it below 1.5°C
- Also references adaptation to climate change and doing things in a manner that '*does not threaten food production*'
- Countries make **Nationally Determined Contributions** towards this goal



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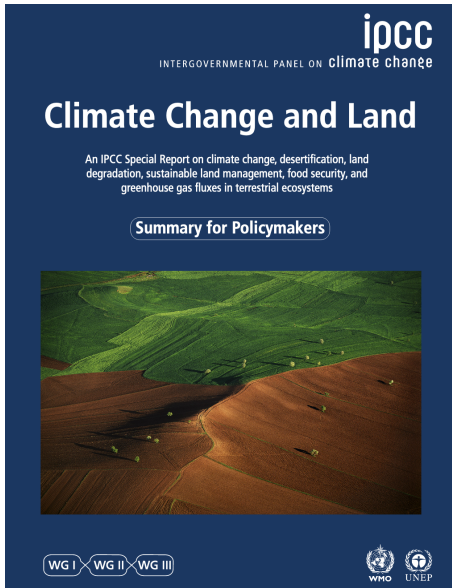
Intergovernmental Panel on Climate Change (IPCC)

- Intergovernmental body of the United Nations that is dedicated to providing the world with objective, scientific information relevant to understanding climate change

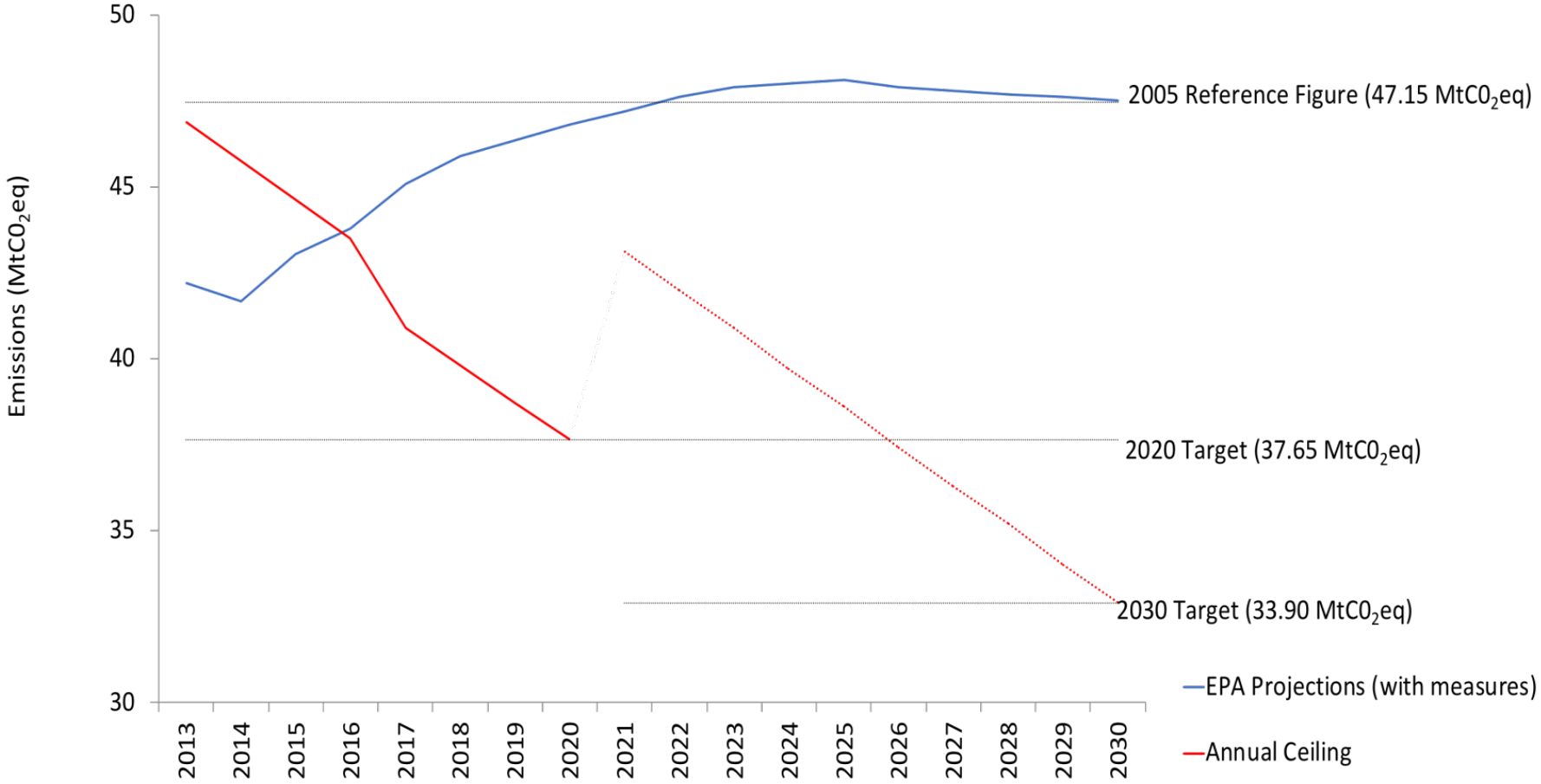
- Founded in 1988
- Produces regular Assessments Reports (AR)
  - AR5 completed in 2014, AR6 due in 2022
- Also produces special reports
  - 1.5°C report in 2018
  - Land, Oceans report in 2019



How does the EU deal with these agreements?

- EU agrees the overall GHG reduction target and then apportions it out in an Effort Sharing Agreement
- Separates out energy generation and large industry into an Emissions Trading Scheme (ETS)
- Non-ETS includes agriculture, transport, housing and other industry
- Example: Irish target for second commitment period of Kyoto was a 20% reduction compared to 2005 by 2020

Irish GHG emissions from the non-ETS sector



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Where to from here?

US President Trump announces decision to withdraw from Paris

Photo: Joyce N. Boghosian

Growing climate change movement internationally and in Ireland

Photo from Journal.ie, 20 Sept

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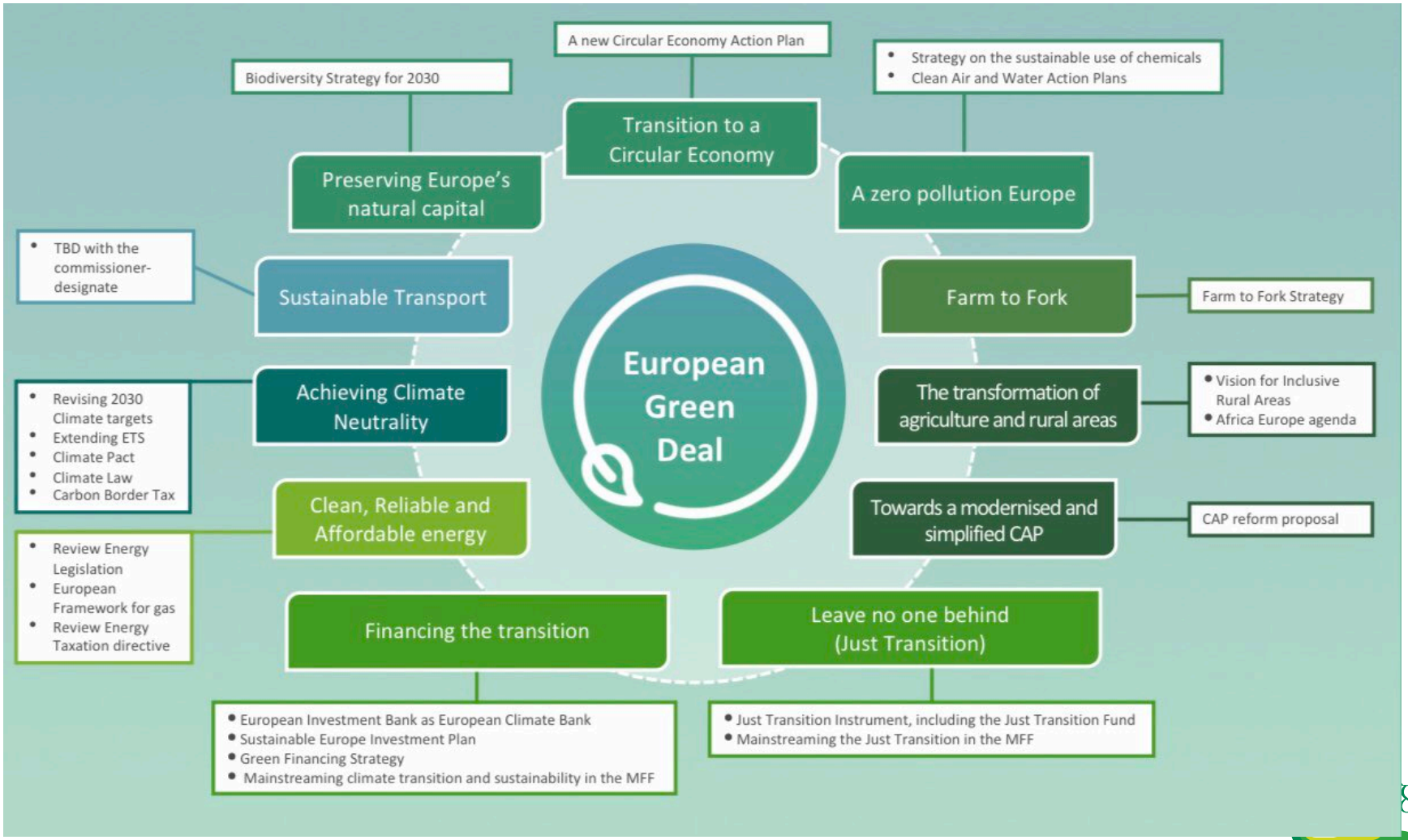
Agriculture often unfairly targeted

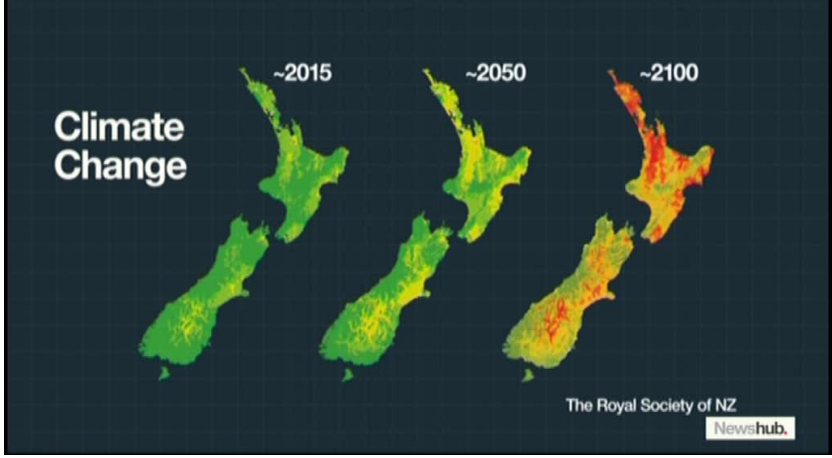
Source: The Irish Times

Will Australian bush fires be a seminal moment?

Planning beyond 2030

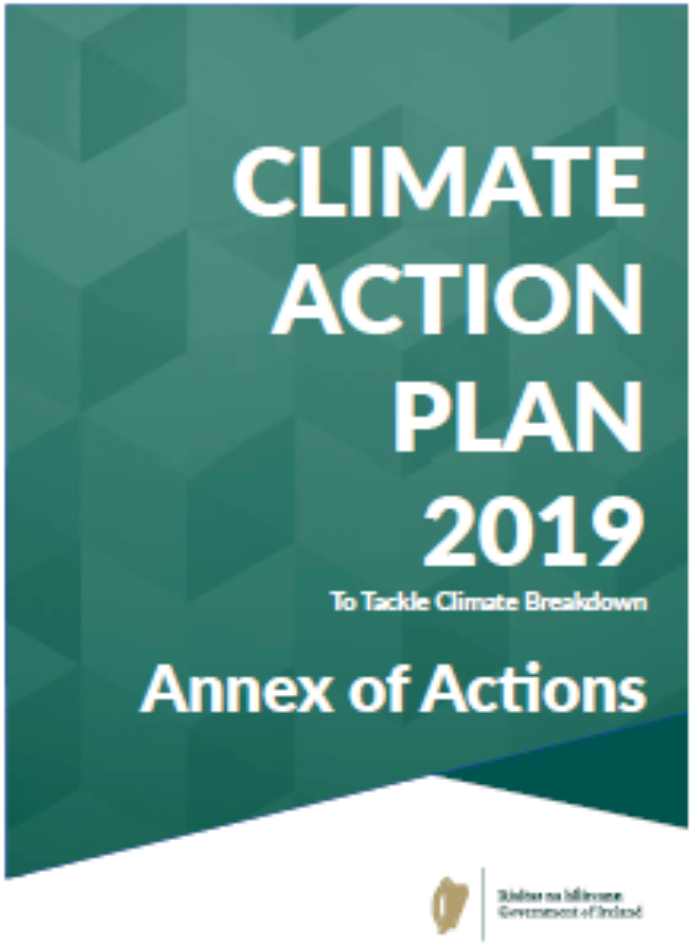


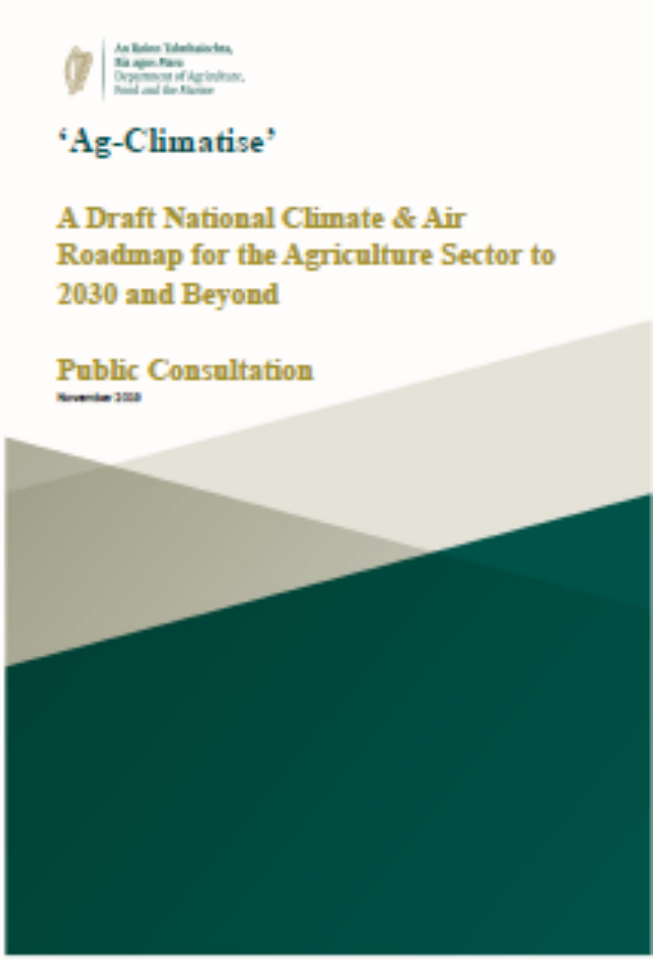
New Zealand



- Reduce emissions of all GHG except methane to net zero by 2050
- Reduce emissions of methane by 24-47% below 2017 levels by 2050
- Short lived nature of methane in atmosphere is the reason for separate target

Irish policy position to 2030 (and beyond)





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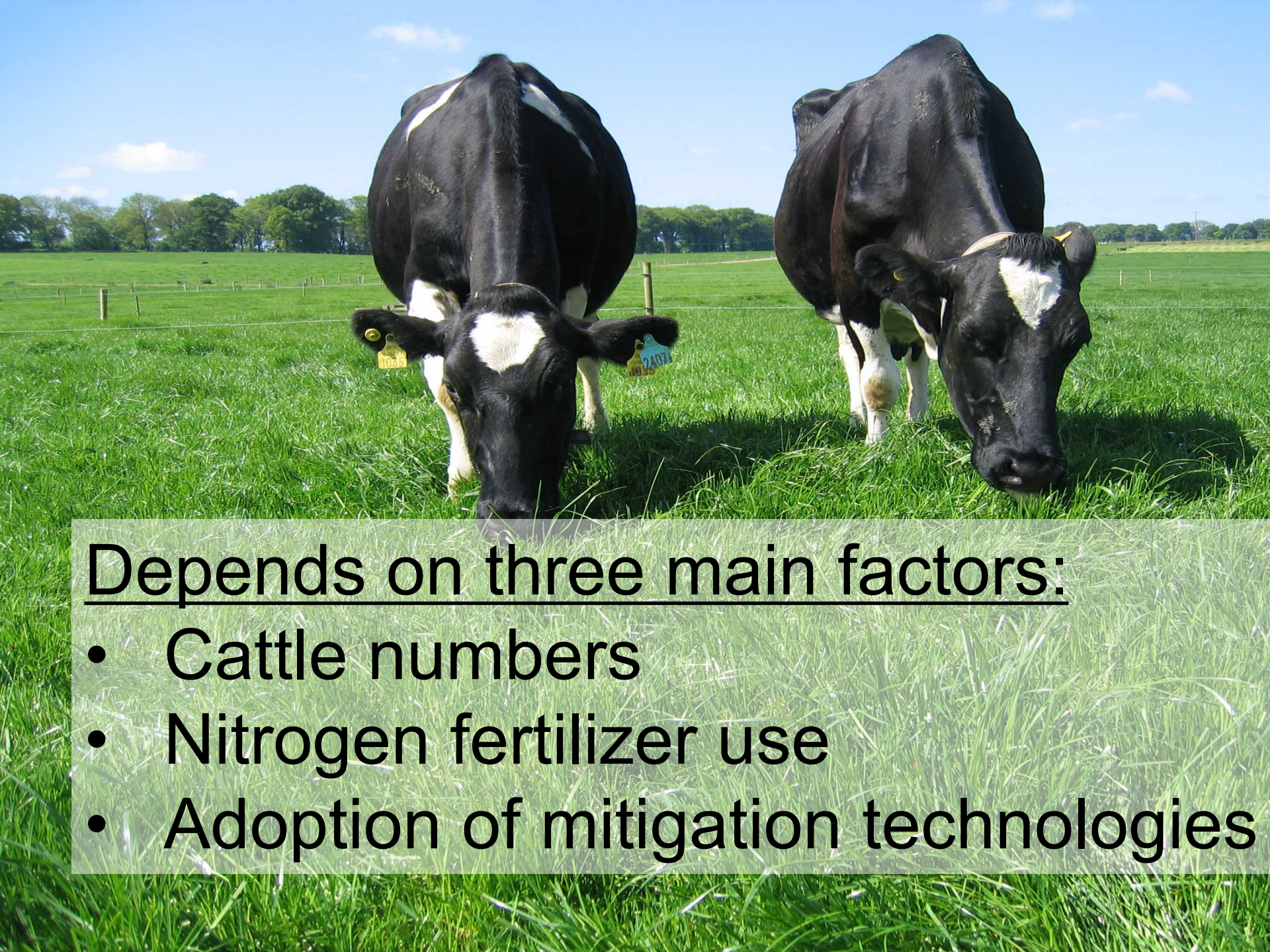
Targets for agriculture in the Climate Action Plan

Can we meet the targets?

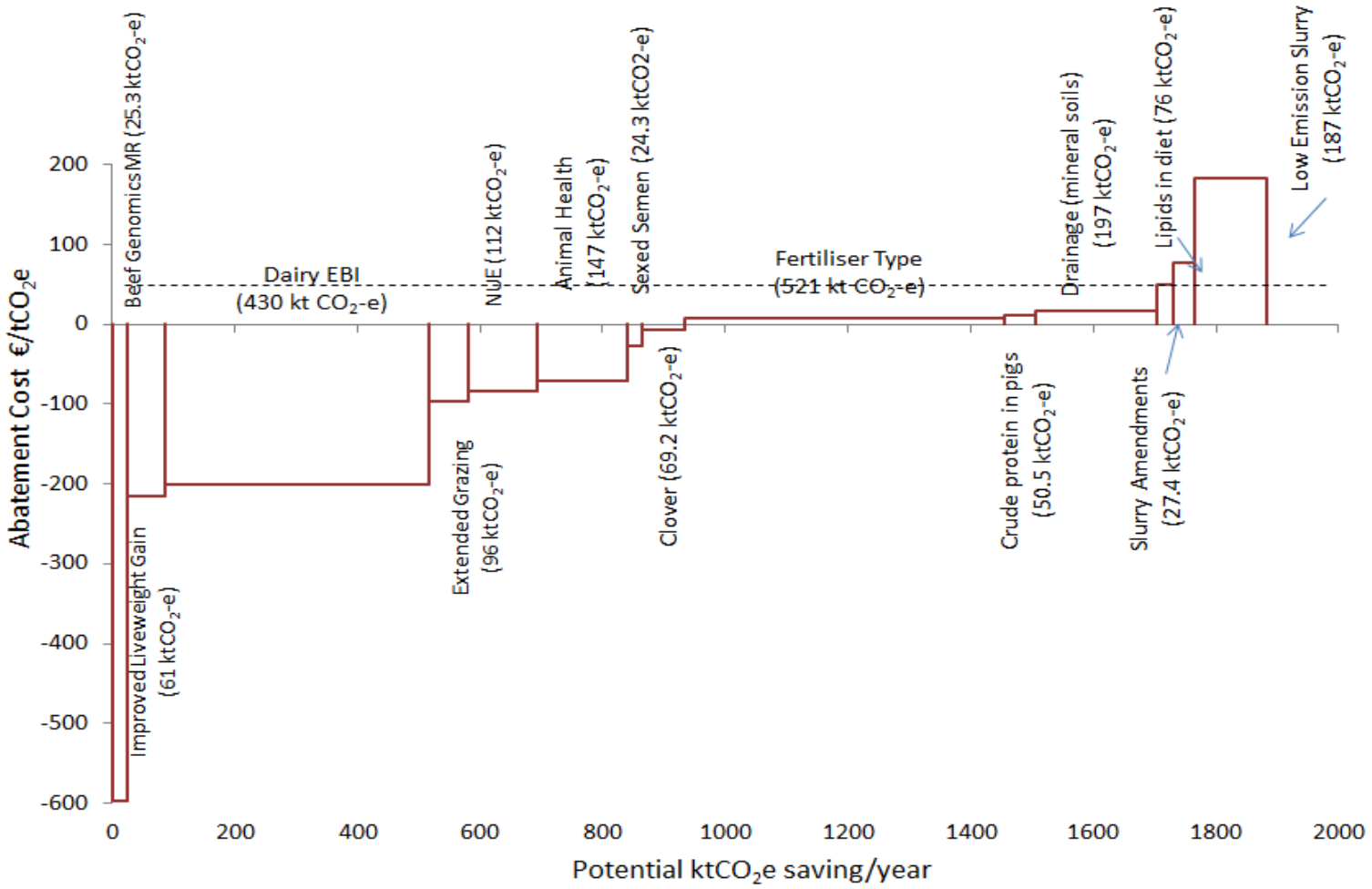


Depends on three main factors:

- Cattle numbers
- Nitrogen fertilizer use
- Adoption of mitigation technologies

MACC – Agricultural Abatement (mitigation pathway 1)

Values are based on linear uptake of measures between the years 2021-2030.



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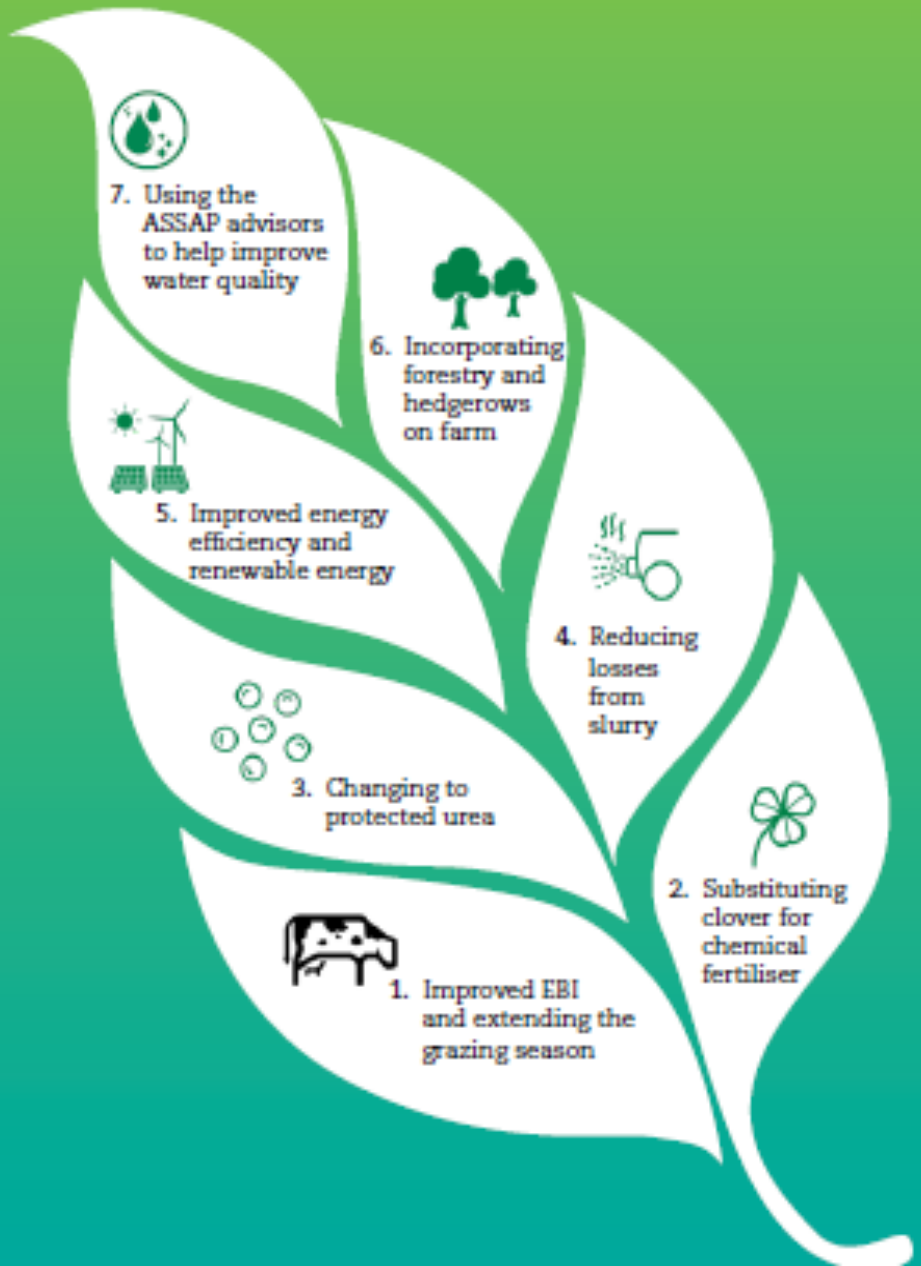
Urea has lower nitrous oxide emissions than calcium ammonia nitrate (CAN), but higher ammonia emissions. However, protected urea has low emissions of both on grassland


SPLASHPLATE


TRAILING
SHOE

Clover in pastures reduces nitrogen requirement
⇒ reduces emissions if bag N is cut
⇒ Can save 100 kg N/ha

7 Steps to Improving Farm Sustainability



Teagasc role

- Research to date (Teagasc MACC) has given us a plan
- Now need to support farmers to implement the MACC
  - **Signpost Farm** advisory campaign
- Research beyond the MACC
  - Carbon sequestration
  - New technologies for methane
  - Further nitrous oxide reduction

CC Signpost farms

Knowledge transfer campaign for change

Training
Advisors
Consultants
Rural professionals
Business

All farmers

Signpost Demo farms

Students

Sustainability roadmap

Events

Discussion groups

Regulation | New CAP | Retail/consumers

Summary and Conclusions

- Climate change has been an issue for over 30 years
- Not going away – debate intensifying
- Science still developing – need strong capability
- Balanced approach is the way forward
- Agriculture can reach the targets in Govt Climate Action Plan **if** key mitigation actions are adopted
- This can be done with the same or a slightly increased cattle herd
- Must work now to implement the MACC whilst developing additional solutions for post 2030