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Livestock Research Group meeting

9-10 August 2019

Developments relevant to the Livestock Research Group and GRA

"A perfect storm"

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- Food, Energy, Water and the Climate: A Perfect Storm Of Global Events? John Beddington, Chief Scientific Adviser to UK Government, 2009

"There is an intrinsic link between the challenge we face to ensure food security through the 21st century and other global issues, most notably climate change..."

"It is predicted that by 2030 the world will need to produce 50 per cent more food and energy, together with 30 per cent more available fresh water, whilst mitigating and adapting to climate change. This threatens to create a 'perfect storm' of global events."

"Science and technology can make a major contribution, by providing practical solutions. Securing this contribution requires that high priority be attached both to research and to facilitating the real world deployment of existing and emergent technologies. On food, we need a new, "greener revolution".

GRA – an idea whose time had come – first of its kind – others soon followed

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COP15
COPENHAGEN
UN CLIMATE CHANGE CONFERENCE 2009

Food Security, Climate Change and Sustainable Development

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The Sustainable Development Goals are the Reference Framework of GASL

Paris Agreement: agriculture in national climate plans

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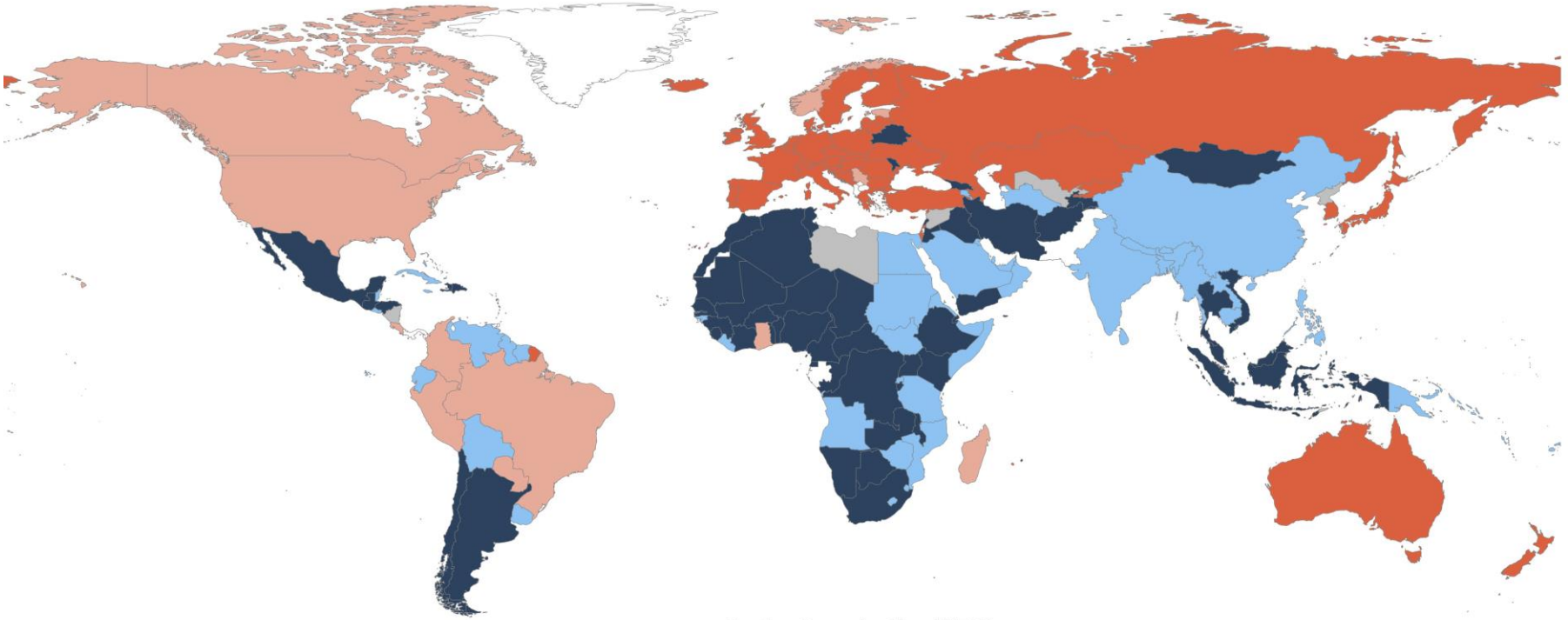

Agriculture in the INDCs

- Mitigation target and adaptation priorities include agriculture
- Adaptation priorities include agriculture
- GHG reduction target specifically includes agriculture
- Economy-wide GHG reduction target
- No agriculture in INDC
- No INDC

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security CCAFS

March 20, 2017

Richards M, Bruun TB, Campbell B, Gregersen LE, Huyer S, Kuntze V, Madsen STN, Oldvig MB, Vasileiou I. 2016. How countries plan to address agricultural adaptation and mitigation: An analysis of Intended Nationally Determined Contributions. CCAFS dataset version 1.3. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Koronivia Joint Work on Agriculture (KJWA)

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- COP23 November 2017 adopted a decision called *Koronivia joint work on agriculture*
- Decision requests the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) to jointly address issues related to agriculture
- SBSTA is the body of the UNFCCC responsible for dealing with scientific and technical issues relating to climate change and its effects, technology, international cooperation in research and development, capacity building, amongst other things
- SBI is the body of the UNFCCC charged with dealing with implementation of Parties' commitments/actions, including their reporting of greenhouse gases (GHG Inventories) and policies and measures (National Communications, NDCs).

United Nations Climate Change

COP23 | FIJI

UN CLIMATE CHANGE CONFERENCE

BONN 2017-18

KJWA Roadmap

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Advancing previous work:

(a) Modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and other future topics that may arise from this work;

New substantive work:

(b) Methods and approaches for assessing **adaptation, adaptation co-benefits and resilience;**

(c) Improved **soil carbon**, **soil health** and **soil fertility** under **grassland** and **cropland** as well as **integrated systems**, including **water management**;

(d) Improved **nutrient use** and **manure management** towards sustainable and resilient agricultural systems;

(e) Improved **livestock management** systems;

(f) **Socioeconomic** and **food security** dimensions of climate change in the agricultural sector

KJWA Road Map - inputs sought over next 2 years

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- Parties and observers to submit on following topics:
  - Methods and approaches for assessing adaptation, adaptation co-benefits and resilience and improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management by **6 May 2019**.
  - Improved nutrient use and manure management towards sustainable and resilient agricultural systems by **30 September 2019**.
  - Improved livestock management systems, including agropastoral production systems and others) and socioeconomic and food security dimensions of climate change in the agricultural sector by **20 April 2020**.
  - Other topics by **28 September 2020.**
- Workshops to be conducted on each of the above topics at sessions of SBSTA and SBI immediately following date of submissions.

GRA supporting the KJWA

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- GRA Council meeting in Berlin encouraged Members to include reference to the GRA and its products in national submissions of the Koronivia Joint Work on Agriculture.

- Council discussed ways to support KJWA include:
  - Mapping activities of Research Groups against the timelines of the KJWA
  - Identification of existing knowledge products of GRA relevant to KJWA
  - Identification of future knowledge products of GRA that will be relevant to KJWA
  - Identify the added value of the GRA for KJWA and related to its mandate
    - e.g. scientific focus.
  - Ensure visibility of GRA capability building activities in KJWA for benefit of Parties, e.g. GHG inventory training workshops

Reducing emissions from agriculture to meet the 2°C target

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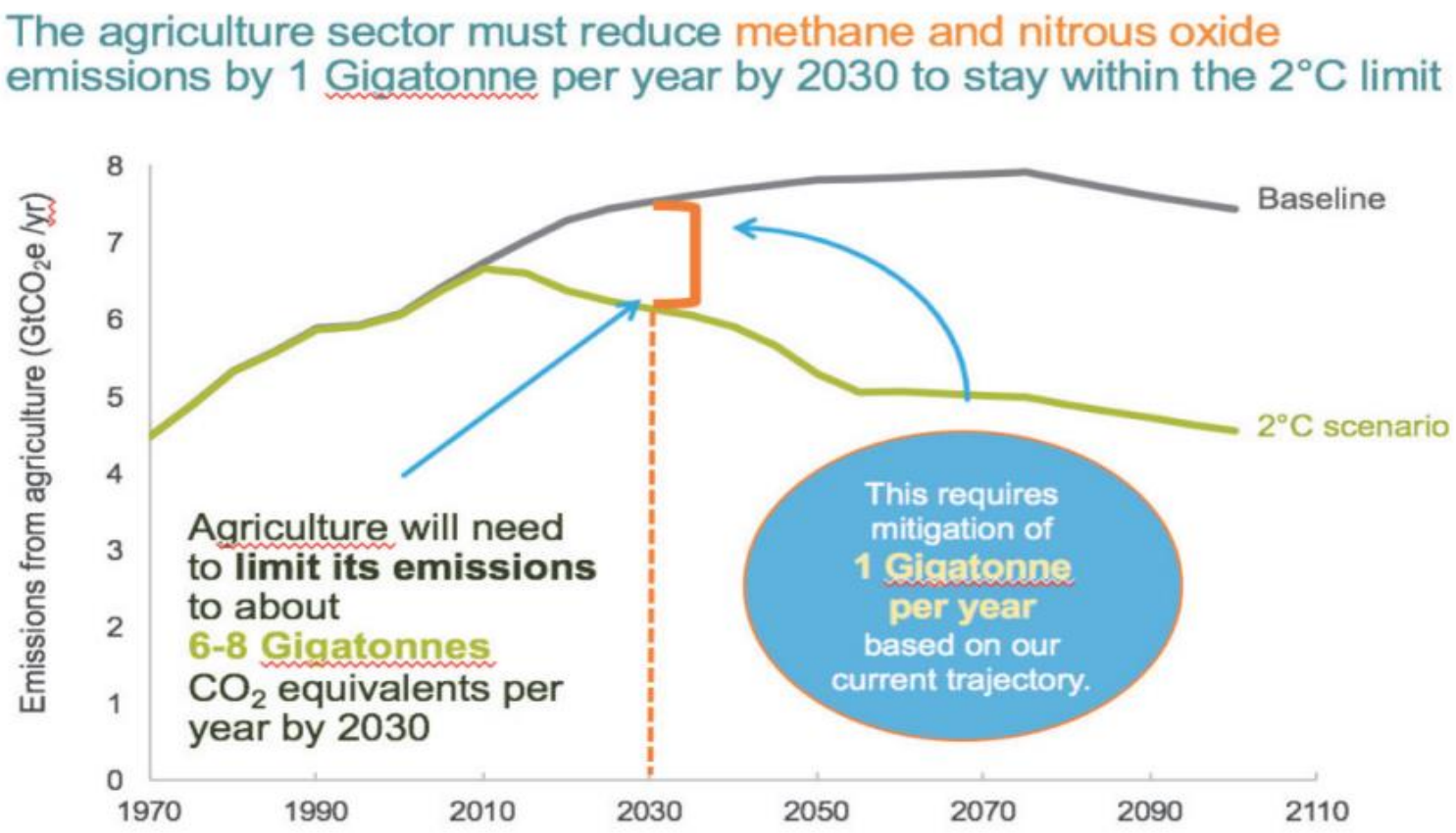

Figure 1. Mitigation needed in agriculture to achieve the 2°C target in 2030.

Global Change Biology
Volume 22, Issue 12, pages 3859-3864, 11 JUL 2016 DOI: 10.1111/gcb.13340
http://onlinelibrary.wiley.com/doi/10.1111/gcb.13340/full#gcb13340-fig-0001

Business as usual insufficient

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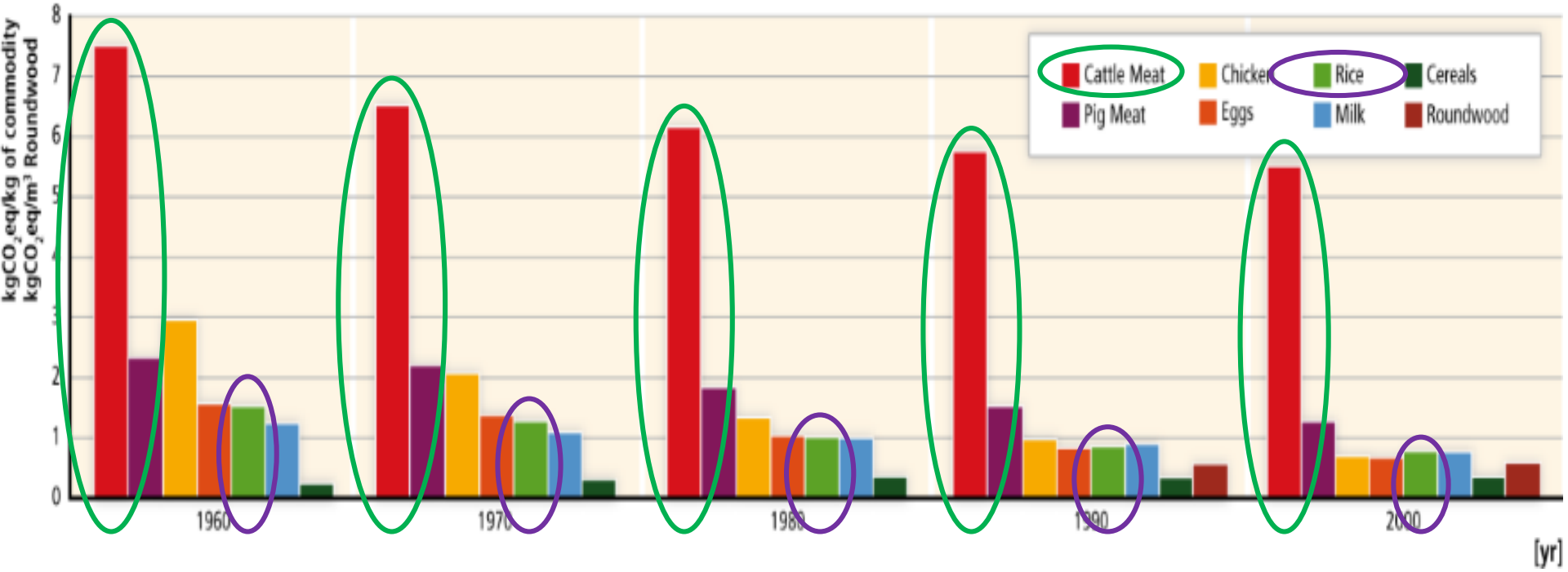
Sustainable increases in yield per animal, per hectare, per day and per unit of input can lead to significant reductions in emissions per unit of food and fibre.



However this alone will be insufficient to meet global goals.

Reducing emissions from agriculture to meet the 2 °C target

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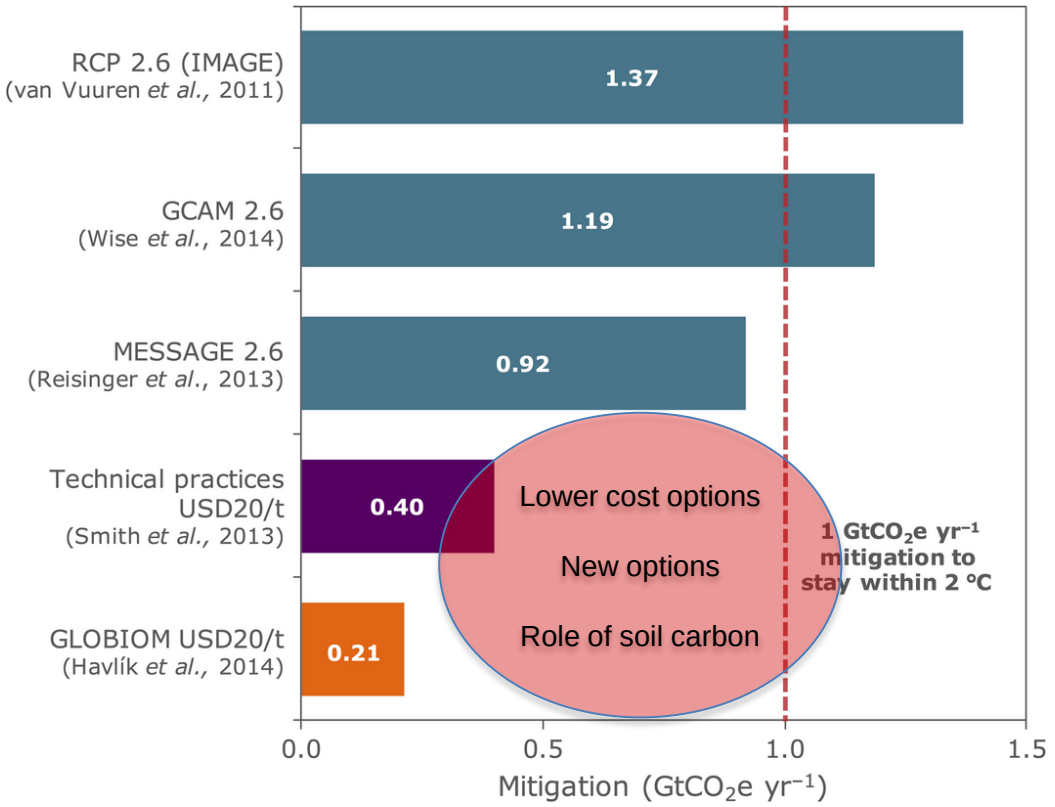

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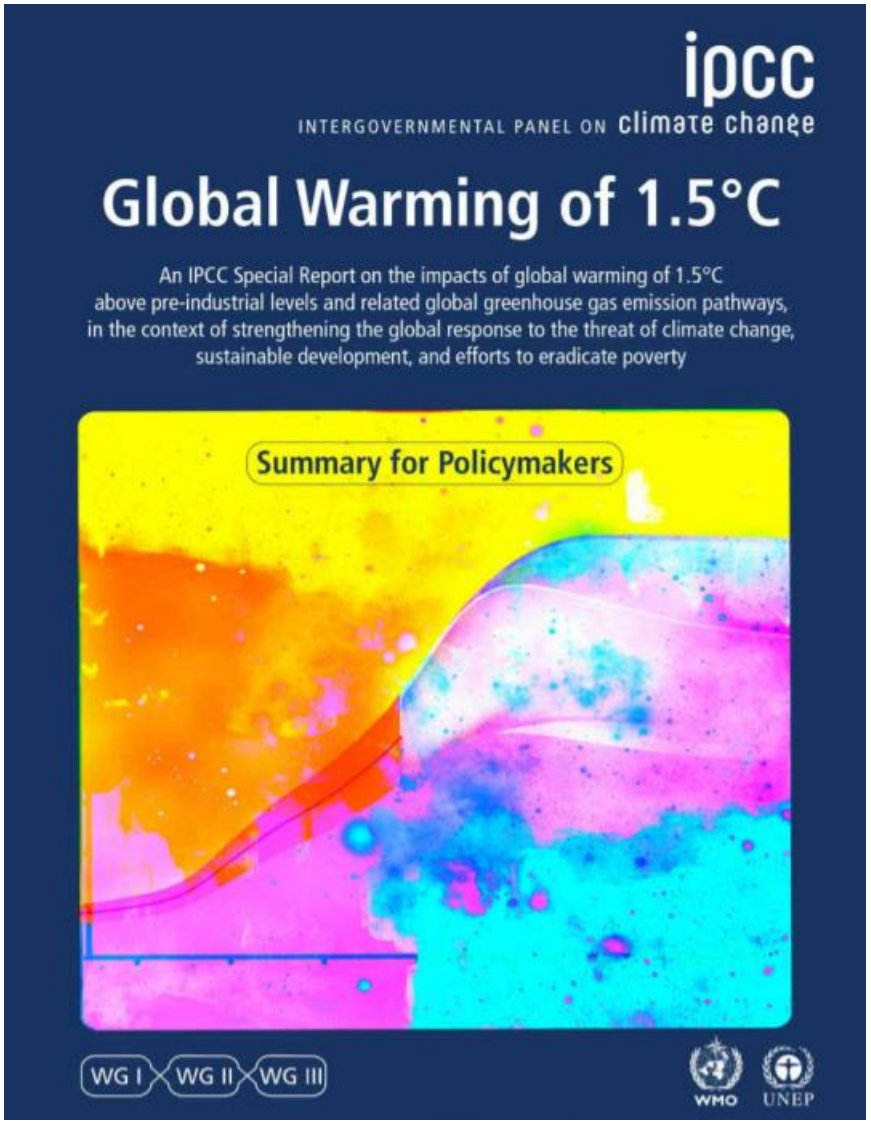
ipcc
INTERGOVERNMENTAL PANEL ON climate change
Global Warming of 1.5°C
An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty
Summary for Policymakers
WG I
WG II
WG III
WMO
UNEP

IPCC SR: Global Warming of 1.5 Degrees

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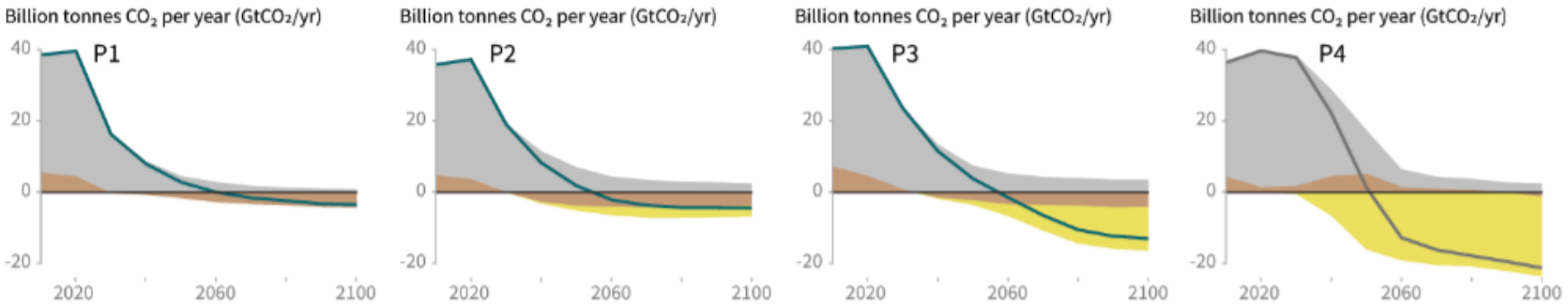
Breakdown of contributions to global net CO_2 emissions in four illustrative model pathways

Fossil fuel and industry AFOLU BECCS



P1: A scenario in which social, business and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the global South. A downsized energy system enables rapid decarbonization of energy supply. Afforestation is the only CDR option considered; neither fossil fuels with CCS nor BECCS are used.

P2: A scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS.

P3: A middle-of-the-road scenario in which societal as well as technological development follows historical patterns. Emissions reductions are mainly achieved by changing the way in which energy and products are produced, and to a lesser degree by reductions in demand.

P4: A resource- and energy-intensive scenario in which economic growth and globalization lead to widespread adoption of greenhouse-gas-intensive lifestyles, including high demand for transportation fuels and livestock products. Emissions reductions are mainly achieved through technological means, making strong use of CDR through the deployment of BECCS.

Global indicators	P1	P2	P3	P4	**Interquartile range**
Agricultural CH_4 emissions in 2030 (% rel to 2010)	-24	-48	1	14	(-30,-11)
in 2050 (% rel to 2010)	-33	-69	-23	2	(-47,-24)
Agricultural N_2O emissions in 2030 (% rel to 2010)	5	-26	15	3	(-21,3)
in 2050 (% rel to 2010)	6	-26	0	39	(-26,1)

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Summary Report —

The EAT-Lancet Commission on Food, Planet, Health

Can we feed a future population of 10 billion people a healthy diet within planetary boundaries?

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UN Environment ✓
@UNEnvironment

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Remove the hassle factor.

Go small, make it personal.

Here are a number of ways that behavioural science can transform #ClimateAction ⬇️

Five ways behavioural science can transform climate change action

Eating less meat, flying less, or opting for renewable energy can accelerate the transition to a low-carbon economy. But why aren't more people doing this? What ...

unenvironment.org

Why eating less meat is the best thing you can do for the planet in 2019

Eating meat has a hefty impact on the environment from fueling climate change to polluting landscapes and waterways

- Here's how to make it painless for you – and others
- Welcome 2019 with vegan and vegetarian recipes

▲ Beef cattle stand at a ranch in this aerial photograph taken above Texas. Meat and dairy accounts for just 18% of all food calories and around a third of protein. Photograph: Daniel Acker/Bloomberg via Getty Images

Decycling or taking the bus rather than driving to work has its place, but scientists are increasingly pointing to a deeper lifestyle change

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Oxford scientists say eat less beef to combat global warming

A report by the Oxford Martin Programme on the Future of Food says beef consumption needs to fall by as much as 90% in western countries to combat climate change.

The report's lead author, Dr Marco Springmann, told Today that individuals should aim to eat just one portion of beef, pork or lamb a week.

11 Oct 2018

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ARTICLE / 22 JUL, 2014

Go Easy on the Beef for the Climate

Plant-based diet can fight climate change - UN

By Roger Harrabin
BBC environment analyst, Geneva

8 August 2019 | 2905 Share

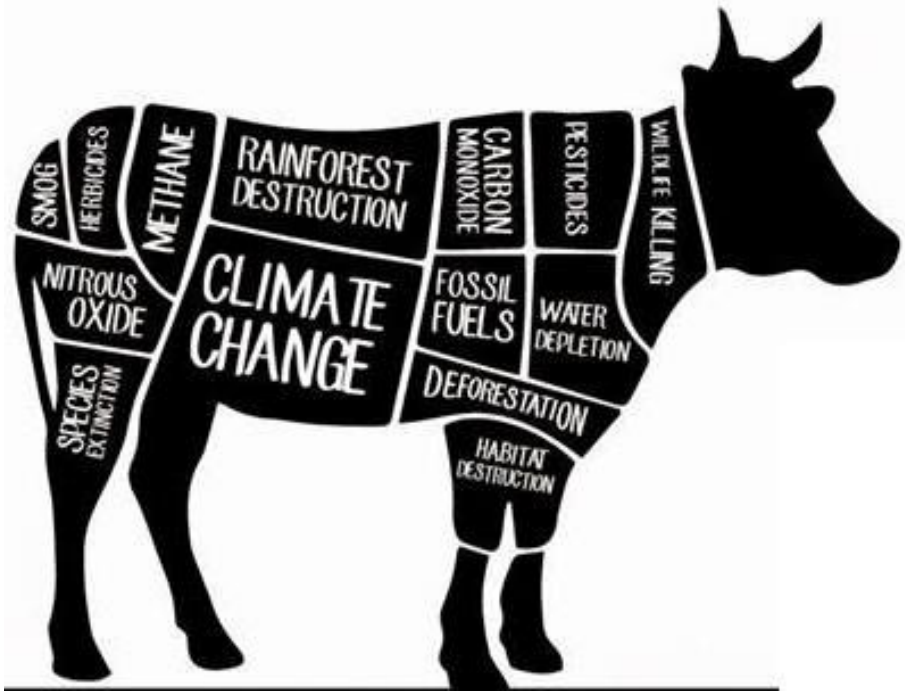
Climate change

Vegan burgers are now a fixture on many restaurant menus

Switching to a plant-based diet can help fight climate change, UN experts have said.

A major report on land use and climate change says the West's high consumption of meat and dairy produce is fuelling global warming.

But scientists and officials stopped short of explicitly calling on everyone to become



Thank you.

Please discuss…