



PROFESSOR MARK HOWDEN FTSE

IPCC Vice Chair, Working Group II, Sixth Assessment Cycle
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I have worked for over 36 years linking climate into the decisions made by governments, industry and communities in Africa, Asia, the Pacific, USA, South America, Europe and Australia. My current role as a Vice Chair of IPCC Working Group II follows 32 years of contributions and leadership across the IPCC.

I have comprehensive coverage of all four major components of the IPCC, having contributed to Working Group I (Climate Science), Working Group II (Impacts, Adaptation and Vulnerability), Working Group III (Mitigation) and the Task Force Bureau (development of GHG inventory methodologies). My significant roles in Assessment Reports in every IPCC cycle since 1991 as well as roles in four IPCC Special Reports demonstrate my high-level commitment to the IPCC, the outcomes it facilitates and the integrity of its processes.

I bring a broad range of skills and experience in a variety of sectors and disciplines (particularly in relation to food security and agriculture), in integrating across these sectors and disciplines and in linking users with relevant science to generate on-ground action. I currently lead a cross-disciplinary institute developing solutions to the inter-linked issues of climate change, the energy transition and disaster risk reduction and in meshing these with broader development goals. I have deep experience working in science, policy and in the science-policy interface and a long-standing commitment to co-designing and actioning effective and equitable climate change strategies with diverse stakeholders.

MY VISION FOR THE IPCC VICE-CHAIR ROLE

The requirement for more rapid, informed and equitable action on GHG emission reduction and climate change adaptation increases year by year. The IPCC needs to respond to this growing demand for actionable knowledge via increasingly timely, relevant, focussed and rigorous advice. I would work closely with the Chair and all other members of the IPCC Bureau in delivering this including via more focussed, policy-relevant Special Reports and in developing effective inputs into the 2nd Paris Agreement Global Stocktake. In particular, I see an opportunity to bring the collectively vast experience and knowledge of the Working Group Vice Chairs more effectively into IPCC processes. For example, by these Vice-Chairs taking key roles to increase cross-fertilisation between the Working Groups.

I will bring to the IPCC my demonstrated capacity to shift the focus from the problems to the solutions, especially in relation to enhancing the implementation of climate adaptation and linking this more effectively with emission-reduction and sustainable development. To progress this, I will work with the other Bureau members to expand the author nomination base and bring a broader array of experience into the author teams. This will aim to provide stronger inclusion of traditional and indigenous knowledge and of the social sciences as well as enhancing representation from developing countries, building from my existing IPCC engagement activities in the Pacific. I will work with the IPCC Secretariat to enhance my

existing high level of outreach and engagement to increase understanding of the IPCC by policymakers and vice versa. Together we can generate accelerated action via practical IPCC assessments that inform adaptation and emission reduction policies, investment and activities.

IPCC ROLES

Sixth Assessment Cycle

- Vice Chair, IPCC Working Group II
- Review Editor, IPCC AR6 *Synthesis Report*
- Author, *Summary for Policymakers* and Review Editor of the *Technical Summary* and of the *Africa* chapter of the IPCC AR6 Working Group II Assessment Report
- Contributing Author, *Summary for Policymakers* of the IPCC AR6 Working Group I Assessment Report
- Author, *Summary for Policymakers* and Author of the *Technical Summary* and member of the Scientific Steering Committee of the IPCC AR6 Special Report on Climate Change and Land
- Scientific Steering Committee for the IPCC Climate Projections Expert meeting
- Review Editor on chapter 4, *Strengthening and implementing the global response* chapter and of the *Technical Summary* of the IPCC Special Report on Global Warming of 1.5°C

Fifth Assessment Cycle

- Expert Team on Agriculture and Food Security Scoping Report (2015)
- Lead Author, IPCC AR5 *Synthesis Report*
- Lead Author, *Food Security* chapter and Contributing Author, *Australia-New Zealand* chapter of the IPCC AR5 Working Group II Assessment Report
- Expert Team for the Scoping Analysis of the AR5 *Synthesis Report*

Fourth Assessment Cycle

- Lead Author, *Food, Fibre, Fisheries and Forestry* chapter and of the *Australia/NZ* chapter of the IPCC AR4 Working Group II Assessment Report
- Contributing Author, *Agriculture* chapter of the IPCC AR4 Working Group III Assessment Report

Third Assessment Cycle

- Review Editor, *Australia and New Zealand* chapter and Contributing Author to the *Ecosystems and their Goods and Services* chapter of the IPCC AR3 Working Group II Assessment Report
- Lead Author, 'Additional Activities' chapter of the IPCC Special Report on Land Use, Land Use Change and Forestry
- Lead Author, *Australasia* chapter of the IPCC Special Report on Climate Change Impacts

Second Assessment Cycle

- Principal Lead Author, *Grasslands and Rangelands* chapter and Lead Author of the *Agriculture* chapter of the IPCC AR2 Working Group II Assessment Report
- Co-Chair IPCC/OECD Working Group I meeting that established the international methodologies and protocols for greenhouse gas inventories (1991)

ACADEMIC AND PROFESSIONAL EXPERIENCE

Australian National University, Professor and Director, Institute for Climate, Energy & Disaster Solutions (formerly the ANU Climate Change Institute) (2015 – present)

CSIRO, Australia, Chief Research Scientist (2000 – 2015)

Bureau of Resource Sciences, Department of Agriculture, Australia, Section Head (1990 - 2000)

Department of Primary Industries, Queensland, Australia, Pasture Agronomist (1987-1990)

APPOINTMENTS (SELECTED)

Global Commission on Adaptation, Advisory Group (2020–present)

Chair, ACT Climate Change Council (2019 - present)

CO₂ Value Europe, Scientific Advisory Board (2019-present)

CO₂ Value Australia, Founding Director (2019–present)

Global Alliance of Universities on Climate Change, Executive and Academic Committees (2019–present)

Australian National Climate Science Advisory Committee (2017–2020)

Lancet Obesity Commissioner covering climate, GHG and food security (2016–2020)

Honorary Professor, Faculty of Science, University of Melbourne (2008–present)

APEC Climate Centre Science Advisory Committee (2015–2020)

Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security, Strategic Advisory Council (2013–2018)

US 3rd National Climate Assessment, Federal Development and Advisory Committee (2010–2014)

International Science Advisory Committee of the Chilean Centre for Climate Science and Resilience (2010–2021)

Netherlands Climate Change Spatial Planning program, Science Advisory Committee (2007–2011)

Global Environment Fund, Science and Technical Advisory Panel Roster of Experts, (2003–2007)

START program, South-East Asian Committee (2001–2007)

SELECTED PUBLICATIONS (FROM ABOUT 440)

Transitioning to a Prosperous, Resilient and Carbon-free Economy: A Guide for Decision Makers. 2021 (with Baldwin K, Smith M and Hussey K) doi.org/10.1017/9781316389553

A framework for complex climate change risk assessment. 2021 (with Simpson NP et al.) doi: 10.1016/j.oneear.2021.03.005.

How necessary and feasible are reductions of methane emissions from livestock to support stringent temperature goals? 2021 (with Reisinger A et al.) doi.org/10.1098/rsta.2020.0452

Burning embers: towards more transparent and robust climate-change risk assessments. 2020 (with Zommers Z et al.) doi: 10.1038/s43017-020-0088-0

Learning from the Climate Change Debate to Avoid Polarisation on Negative Emissions. 2020 (with Colvin RM et al.) doi: 10.1080/17524032.2019.1630463.

Understanding and managing trust at the climate science–policy interface. 2018 (with Lacey J, Cvitanovic C and Colvin RM) doi: 10.1038/s41558-017-0010-z.

Timescales of transformational climate change adaptation in sub-Saharan African agriculture. 2016 (with Rippke U, et al.) doi: 10.1038/nclimate2947.

Re-framing the climate change debate in the livestock sector: mitigation and adaptation options: Mitigation and adaptation options in the livestock sector. 2016. (with Rivera-Ferre MG et al.) doi: 10.1002/wcc.421.

Informed adaptation: Ethical considerations for adaptation researchers and decision-makers. 2015 (with Lacey J, Cvitanovic C, and Dowd AM) doi: 10.1016/j.gloenvcha.2015.03.011.

A probabilistic analysis of human influence on recent record global mean temperature changes. 2014 (with Kokic P and Crimp S) doi: 10.1016/j.crm.2014.03.002.

Greenhouse gas mitigation in agriculture. 2008 (with Smith P, et al.) doi: 10.1098/rstb.2007.2184.

Adapting agriculture to climate change. 2007 (with Soussana JF, Tubiello FN, Chhetri N, Dunlop M and Meinke H.) doi: 10.1073/pnas.0701890104.

Vegetation thickening in an ecological perspective: significance to national greenhouse gas inventories. 2001 (with Gifford RM) doi: 10.1016/S1462-9011(00)00109-X.

Methods for exploring management options to reduce greenhouse gas emissions from tropical grazing systems. 1994 (with White DH et al.) doi: 10.1007/BF01098473.

EDUCATION

PhD, Griffith University, Australia, Sustainable Grazing Systems, 1990

BSc (Honours Class 1), University of New South Wales, Australia, Environmental Science, 1983

HONOURS AND AWARDS (SELECTED)

Fellow, Australian Academy of Technological Sciences and Engineering (2022)

Distinguished Adaptation Scholar, University of Arizona (2014)

Ecological Society of America Sustainability Science Award (2009) for an outstanding contribution to sustainability science

Nobel Peace Prize 2007 (shared) for contributing to the Award to the IPCC, shared with Al Gore

COMMUNICATION AND OUTREACH

I am a highly effective communicator in both formal and informal settings, connecting the IPCC with a wide array of stakeholders including policy makers and politicians, business, community and special-interest groups, non-government organisations, universities and schools amongst others. Last year alone I gave 254 interviews, briefings and presentations, bringing the messages of the IPCC to diverse national and international audiences (e.g. see <https://tinyurl.com/2fzvsa3y>).

I am the lead for an ongoing major collaborative outreach project in the Pacific making IPCC information more relevant and accessible to Pacific audiences via animations, podcasts, vodcasts, video interviews, op-eds, webinar events and factsheets. We produced seventeen factsheets covering the WG I, WG II and WG III reports as well as the Synthesis Report (see <https://iced.s.anu.edu.au/public-policy-outreach/ipcc-pacific/factsheets>). The Working Group II and Synthesis Report factsheets have been translated into five Pacific languages to enhance accessibility. This project also ran a survey (136 responses from 19 Pacific nations) and a regional workshop (34 representatives from ten Pacific nations) to identify options and pathways to enhance engagement with the IPCC and improve accessibility of IPCC data for Pacific decision makers.