

Ag Emissions Centre

Strategic Plan 2024-2029



New Zealand Agricultural
Greenhouse Gas Research Centre

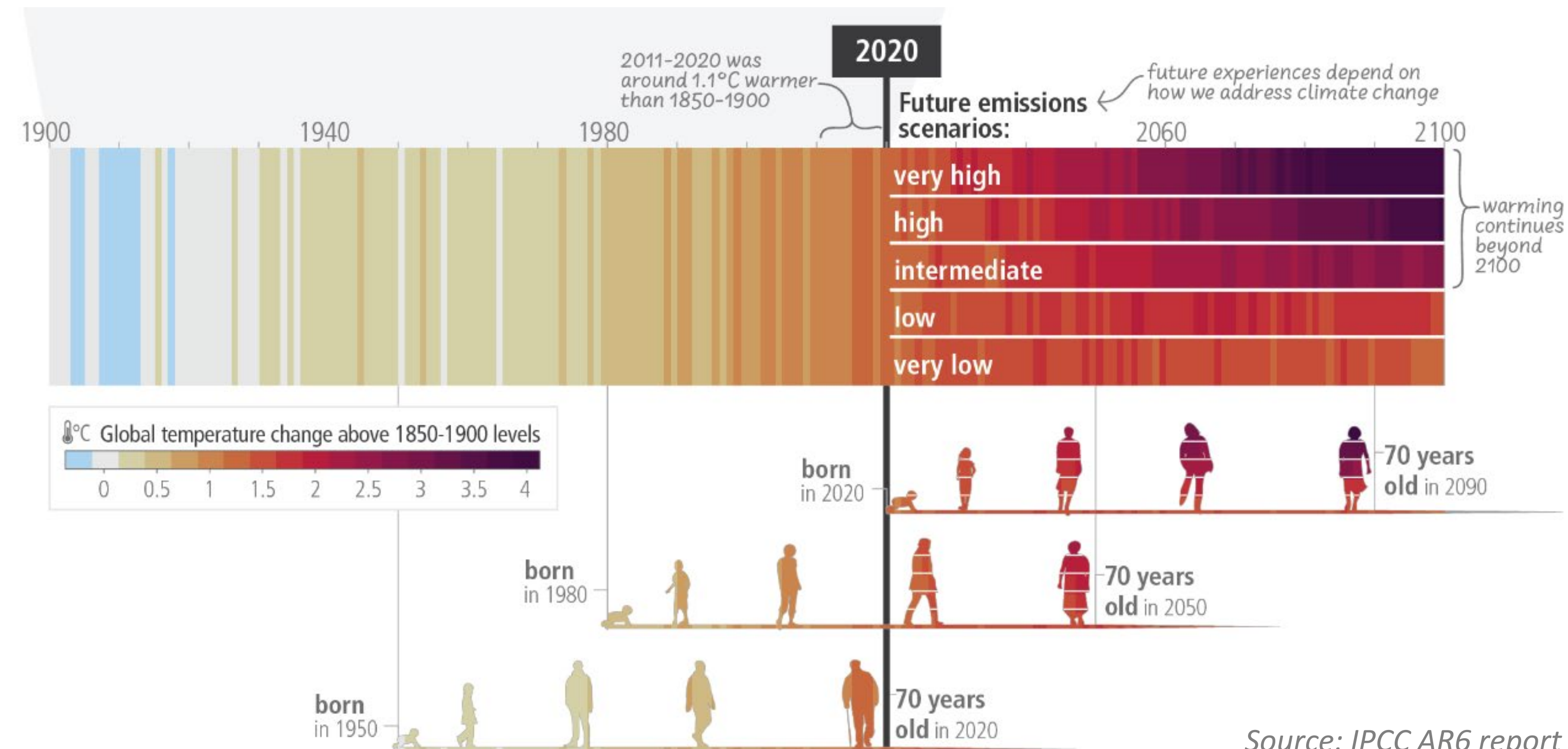
The Challenge

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Our climate is changing⁴

Without reduction of emissions future generations will be facing unprecedented temperatures, more extreme weather events, sea level rise and ocean acidification. Feeding people and quality of life will be seriously at risk, along with wider environmental and biodiversity impacts.

Reducing agricultural emissions is critical to mitigate those impacts, meet emissions targets, ensure our primary industries can thrive, and support New Zealand's economy.

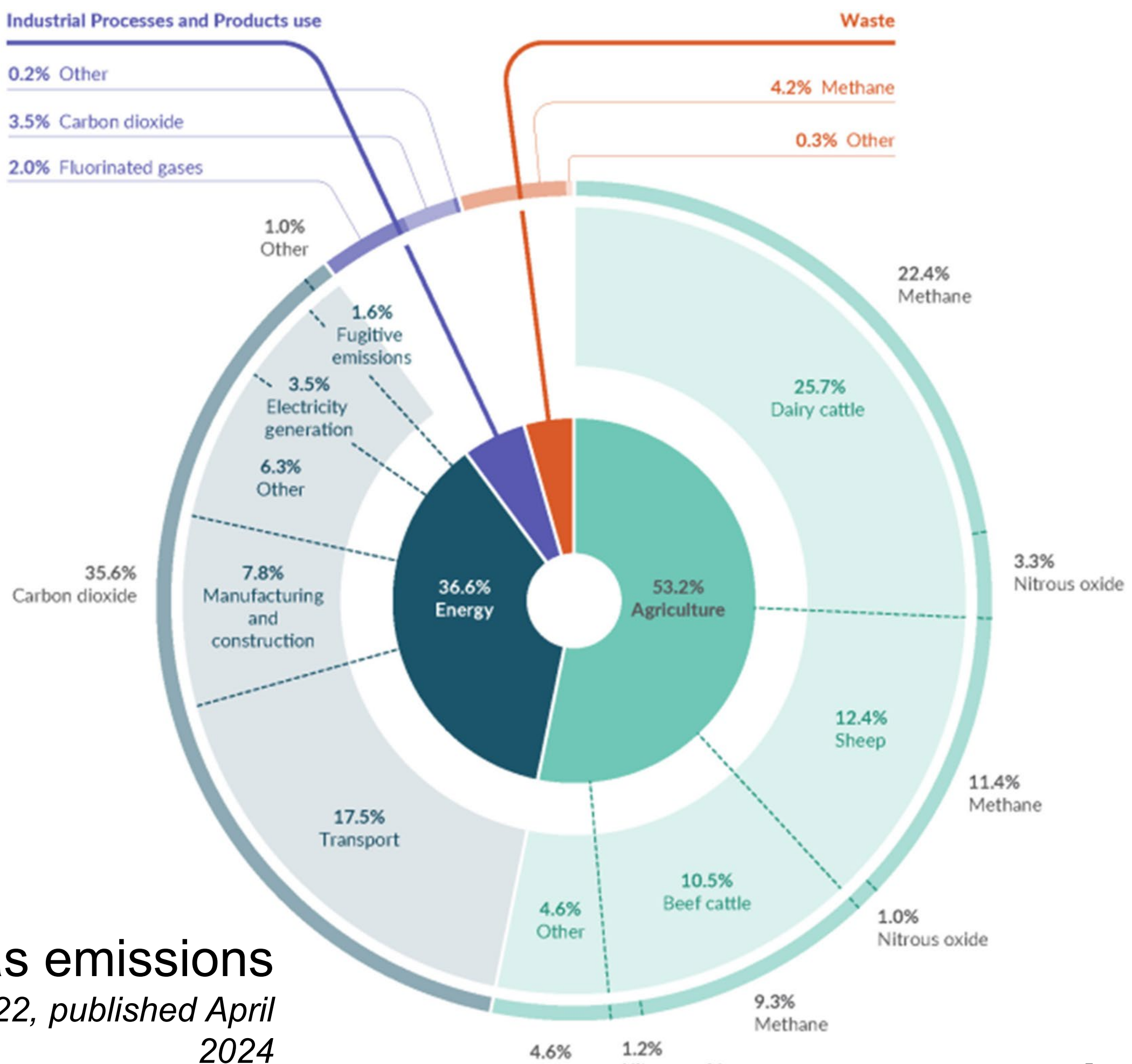


The Challenge

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New Zealand’s emissions reduction targets under the Paris Agreement
Reduce emissions to 50% below 2005 levels by 2030

Under the Climate Change Response (Zero Carbon) Amendment Act 2019
Carbon dioxide and nitrous oxide (“long-lived gases”) are net zero by 2050;
Methane reduced to 10% below 2017 by 2030, and to 24-47% below 2017 levels by 2050



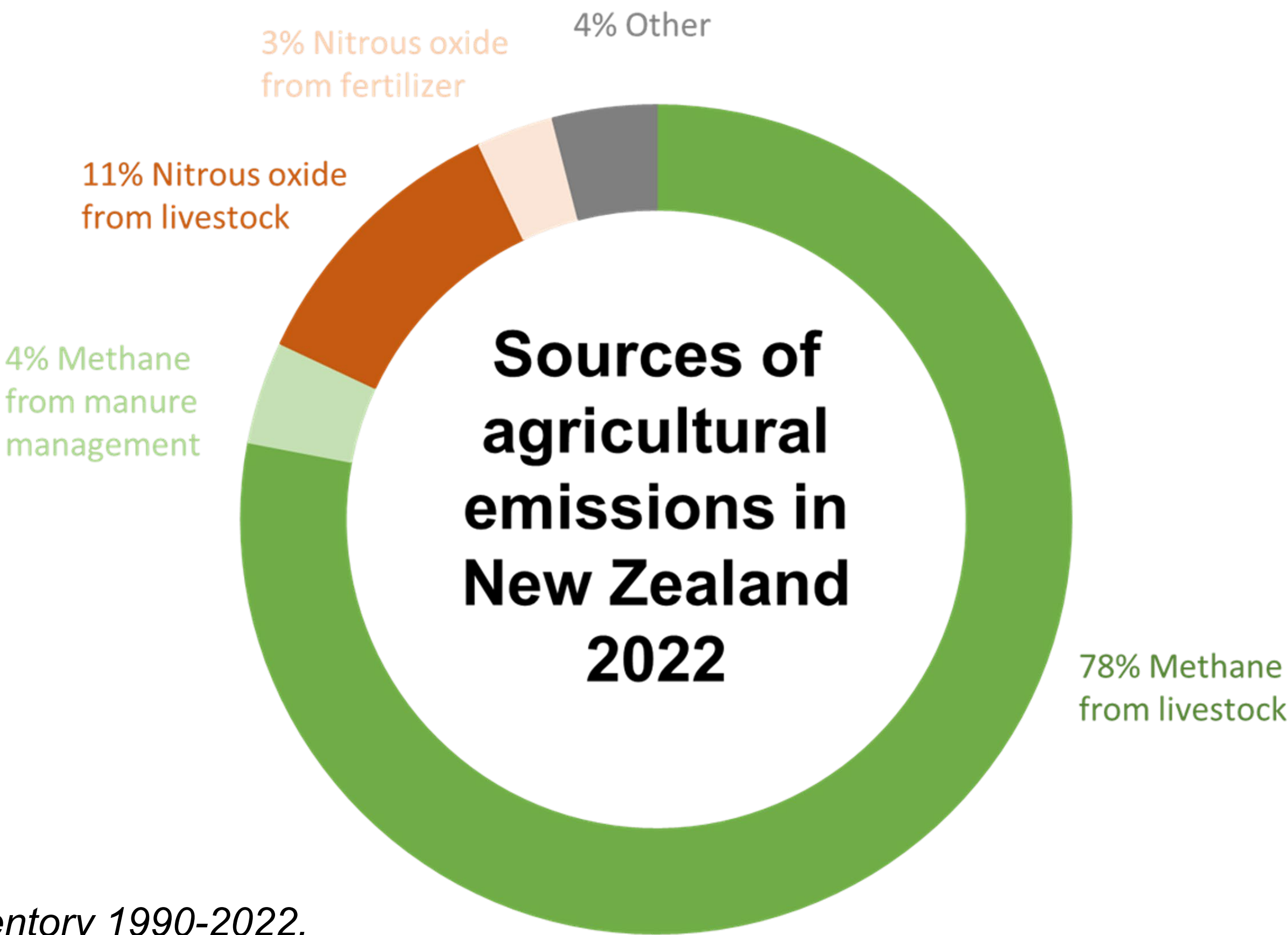
Source of New Zealand's agricultural emissions

Pasture based agriculture is the primary source of emissions

Livestock emissions are the greatest source of agricultural emissions in New Zealand, particularly methane from enteric fermentation, and nitrous oxide from urine.

To meet our emissions targets we will need a combination of high productivity and efficiency of farming practices and new tools and technologies to support reduction of emissions.

We do not yet have the suite of tools – the ‘silver buckshot’ we need to deliver emissions reduction.



Source: NZ Greenhouse Gas Inventory 1990-2022,
published April 2024

Companies setting emission reduction targets

Increasingly emissions reduction will be driven by commercial imperatives alongside policy and regulatory drivers

Much of the dialogue on emissions reduction over the last decade and more has been on the potential for pricing of agricultural emissions. While this is yet to be fully resolved the role of the private sector in driving down emissions is coming to the fore. Large multinational companies are setting increasingly bold targets for reducing their emissions. This will have direct impact on New Zealand farmers and growers.



Dairy for life

Net zero by 2050
Reduce FLAG Scope 1&2 emissions by 50% by 2030 from a 2018 base year
30% intensity reduction in FLAG Scope 1&3 from a 2018 base year



Net zero by 2050
Reduce absolute FLAG Scope 1&3 emissions from Forest, Land and Agriculture 30.3% by 2030 from a 2020 base year



Net zero by 2050
Reduce FLAG Scope 1&3 by 45.5% by 2030 from a 2015 base year



Reduce absolute FLAG Scope 3 emissions 20% by 2030 from a 2015 base year



Net zero across total emissions footprint by 2050, including supply chain and products
Reduce absolute FLAG Scope 3 emissions 39% by 2032, using a 2019 base year



Strategic partnerships & strengthened operating systems

The establishment of the Centre for Climate Action on Agricultural Emissions – Te Mana Whakamaru Āhuarangi – and AgriZero^{NZ} as our strategic partner within this enables an increased focus for our activities and must drive acceleration of progress.

The domestic landscape has also shifted. In 2022 The Centre for Climate Action on Agricultural Emissions (CCA AE) was established, bringing together the Ag Emissions Centre and a new public private joint venture AgriZero^{NZ} with a commercial and venture capital focus.

The Ag Emissions Centre and AgriZero^{NZ} are both focused on delivering fit for purpose tools and technologies for New Zealand farmers and growers to reduce emissions but with different and complementary strengths and approaches. The Ministry for Primary Industries also plays a critical role in the new system as a supporter, funder, shareholder and driver of critical regulatory and policy levers.

A Centre Oversight Group, chaired by the MPI Director-General and comprising the Chairs of AgriZero^{NZ}, Ag Emissions Centre, AgResearch, and Ngā Pouwhiro Taimatua, and a farmer representative, supports wider system alignment.

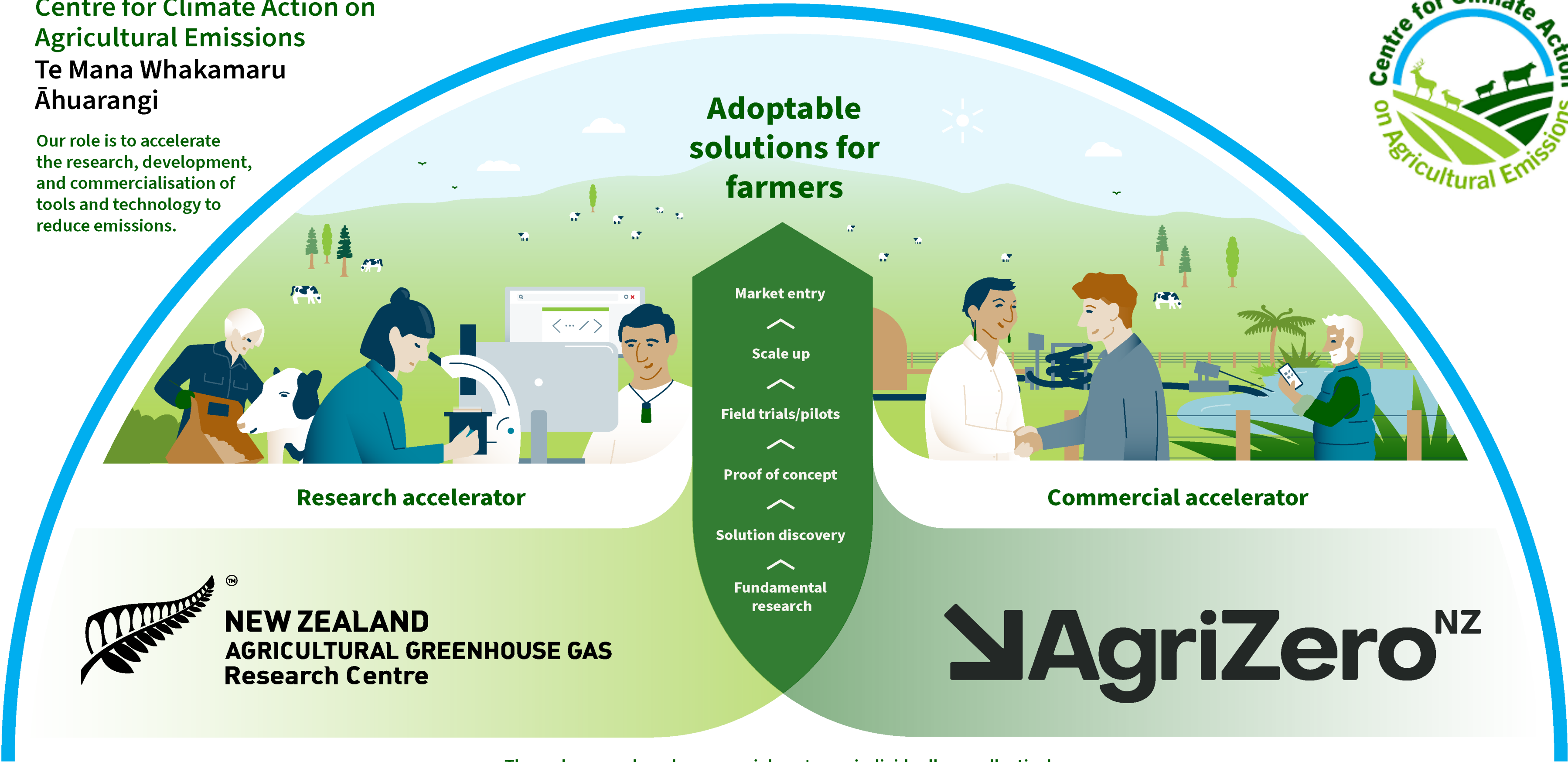
Within the CCA AE the Ag Emissions Centre is the primary entity:

- Funding **mitigation R&D** from fundamental science concepts through to strengthening pathway to adoption, including research targeted to Māori needs and outcomes
- Funding **systems research**
- Funding **policy relevant research**
- Providing a **national perspective on capability and infrastructure** needs and funding and managing agreed elements of this
- **Providing robust information** on mitigation research for government, industry, and the general public
- **Supporting New Zealand's contribution to the Global Research Alliance** on Agricultural Greenhouse Gases through contracting research programmes, and capability building work in developing countries, on behalf of MPI
- We also support **analysis of AgriZero^{NZ} investments**

Centre for Climate Action on Agricultural Emissions – CCAAE

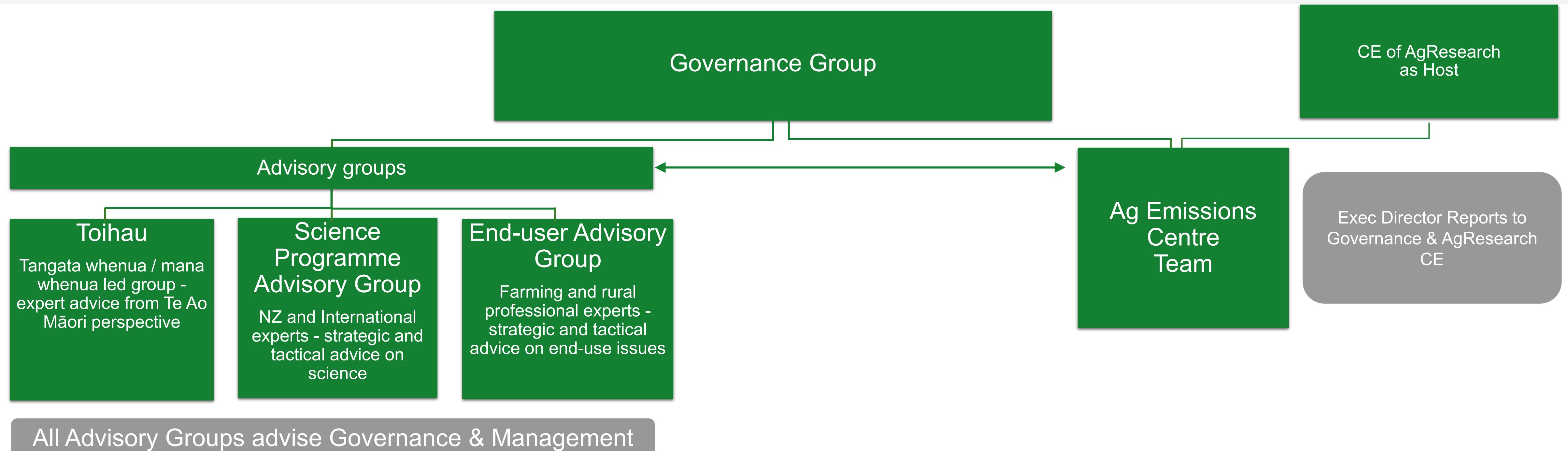
Centre for Climate Action on
Agricultural Emissions
Te Mana Whakamaru
Āhuarangi

Our role is to accelerate
the research, development,
and commercialisation of
tools and technology to
reduce emissions.



Through research and commercial ventures, individually or collectively,
we provide solutions to farmers to reduce greenhouse gas emissions.

Governance

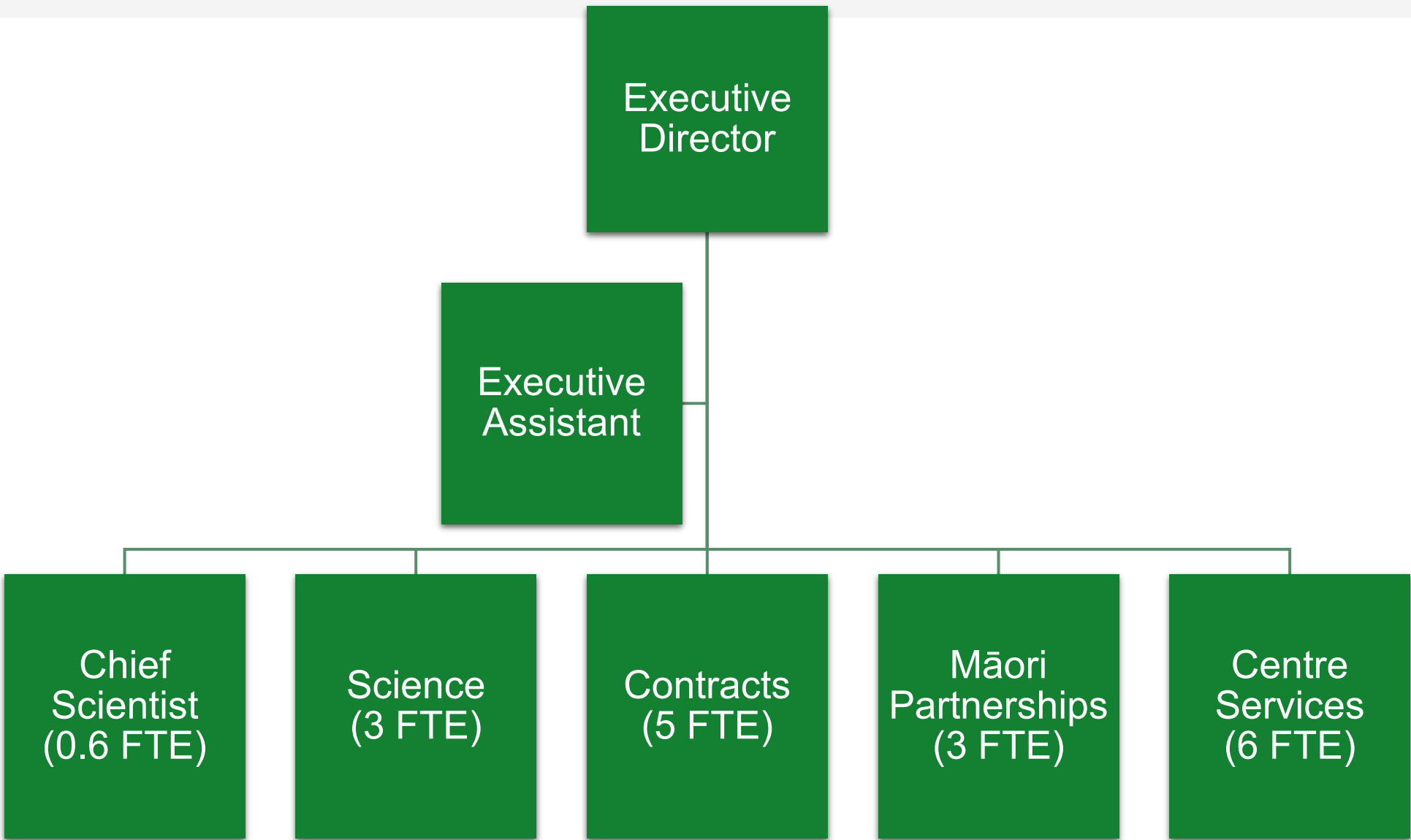


Expertise based governance and advisory groups with clear roles and accountabilities to drive performance and outcomes

Governance has been refreshed, implementing a fully expertise-based model. Governance plays a critical role in driving strategy and outcomes, and ensuring that the Ag Emissions Centre is set up to succeed within the dynamic domestic and international emissions reduction environment. Governance makes critical decisions on the balance of investments in the portfolio as well as on individual programmes.

AgResearch as host and legal entity provides critical support and formal decision making in line with clear delegations. A delegations and accountabilities framework outlines the different roles of MPI as funder, Ag Emissions Centre Management, Ag Emissions Centre Governance and AgResearch as host.

Management structure



A new structure provides greater specialisation of key functions as well as a foundation for growth

Since starting as a small team of 4 the Ag Emissions Centre has had a largely flat structure, with all staff performing multiple functions. With a major increase in funding and ambition for both domestic and GRA programmes a new structure has been implemented that enables specialisation of functions with a strong leadership team to ensure cohesion and strong alignment on delivery towards outcomes.

SO2: Driving for proof of concept - is it feasible?

Funding the critical R&D required to develop new solutions and deliver the evidence of efficacy and acceptability of those currently in the pipeline

We have already shown that sheep and cattle can be bred for low methane and made strong progress towards proof of concept (POC) across a number of other programmes.

Over the next five years we will continue to have a strong focus on this objective, including transitioning at least three programmes into the commercialisation environment. We will work with AgriZero^{NZ} to scale up the vaccine programme under a new company structure and transition our methane and nitrous oxide inhibitor programmes to a commercial partner.

We will also look to better understand the direct stackability of mitigations and support a number of other projects that are at the earlier stages of POC.

We also expect to bring successful innovation programmes under this objective in years 3-5.

S03: Accelerating low emission solutions – is it adoptable?

Supporting the R&D required to accelerate uptake and impact of proven technologies

Over the next five years we will focus on funding R&D that will help ensure that those technologies which have achieved proof of concept get into the hands of farmers as soon as possible.

Initially we will have a critical focus on supporting faster roll out of low methane genetics and underpinning work for bromoform based inhibitor technologies.

S04: Making low emission farming a reality - supporting decisions

Supporting R&D focused on farm systems and how best to deliver emissions reduction, and providing advice on progress towards meeting emissions targets nationally and for different systems

Over the next five years we will continue our investments on farm systems, looking to increase this investment towards the end of the decade.

Our farm systems research aims to ensure there is a holistic approach to emissions reduction, taking into account the full complexity of farming businesses and the diversity of approaches that will work for different farming systems. Soil carbon monitoring and management also play a key role here.

A significant proportion of our dedicated investments into Māori-led and mātauranga based research sits within this objective.

Under this objective we will also regularly update our estimates of the emissions reduction potential of our portfolio.

SO5: Ensuring a strong enabling environment

Having a clear view of current mitigation infrastructure and capability, and any shortfall in what is needed, and working with partners to address these

To date, the Ag Emissions Centre has invested significantly in infrastructure and in building NZ science capability in GHG mitigation research.

Over the next five years we will maintain our focus on ensuring a strong enabling environment.

In the next year we will finalise national plans for both infrastructure and capability. The plans will provide the basis for future investment, and based on these we will identify additional specific investments required and partner with others to deliver them as appropriate.

We will manage our existing infrastructure effectively, ensuring a strong prioritisation and financing model. We will also support a suite of scholarship and fellowship programmes that are designed to ensure we are growing a pipeline of capability.

S06: Supporting New Zealand's global leadership through the GRA

Providing excellent contracting services and leveraging international investment and linkages to strengthen the domestic programmes for maximum benefit

The Ag Emissions Centre has been involved with the Global Research Alliance since its inception and has provided significant leadership and support on behalf of MPI and New Zealand. We currently manage a large portfolio of GRA-related contracts.

Over the next five years we will continue to provide effective contracting services to the MPI Global Climate Partnerships team. This will include contracting of research, capability initiatives, and leadership support.

While MPI is the primary decision maker for these programmes, we will work to ensure strong alignment and leverage of the work we fund directly. Our increased focus on direct international partnerships will also add value to the work that we do for the GRA.



