

New Zealand

Experience in accelerating innovation to reduce agricultural emissions via the Centre for Climate Action on Agricultural Emissions and the Global Research Alliance on Agricultural Greenhouse Gases

Context

New Zealand has a unique emissions profile; 49% of our total emissions come from the agricultural sector, over half of which is methane. Accordingly, agricultural emissions reductions are critical to our transition to a low-emission, climate-resilient economy. To meet climate targets and ensure New Zealand farmers and growers remain competitive with our credible sustainably produced products, the government has taken the following actions:



- Allocated more than NZD 300 million over four years to strengthen the role of research and development in getting new technology and practices that reduce on-farm emissions to farmers faster. This includes funding for the new **Centre for Climate Action on Agricultural Emissions**.
- Continued to promote global collaboration through the **Global Research Alliance on Agricultural Greenhouse Gases (GRA)**.

Rationale

To provide farmers with options to reduce emissions on farm, the New Zealand government is accelerating the research, development and commercialization of tools and technology to reduce emissions through the Centre for Climate Action on Agricultural Emissions.

The Centre for Climate Action on Agricultural Emissions has two key components: AgriZeroNZ, a public–private joint venture with key industry agribusinesses, and the New Zealand Agricultural Greenhouse Gas Research Centre.

The Centre for Climate Action on Agricultural Emissions will:

- Unite efforts to accelerate research and development.
- Get new tools, technology and practices that lower on-farm emissions to farmers faster.
- Support Māori owners with climate change mitigation.

The global collaboration programme via the GRA:

- Accelerates research, expanding the scale and scope of agricultural research.
- Builds global capability and capacity.
- Connects like-minded countries and communities, including through the GRA Indigenous Research Network, to share expertise.
- Helps to establish consistency of measurement.

Approach

Launched in November 2022, the Centre for Climate Action on Agricultural Emissions has already made more than NZD 54 million in investments, alongside industry. Projects includes developing a methane-inhibiting bolus, increasing the pool of researchers with skills in agricultural greenhouse gas (GHG) mitigation, and building a new GHG testing facility for large cattle.

The international collaboration programme supports multi-country research and capability initiatives through the GRA, including best practice for on-farm systems, inhibitor and vaccine research, low-emitting animals, soil carbon and peatlands management. Global collaboration allows participating countries access to expertise, infrastructure and scale with large datasets from multiple sites, accelerating research outcomes.

The capability programme includes the highly successful [Climate, Food and Farming, Global Research Alliance Development Scholarships Programme \(CLIFF-GRADS\)](#). Since 2017, 177 students from 32 developing countries have received CLIFF-GRADS awards, with awards for another 40 students announced at COP28.

In support of New Zealand's development assistance programme, the Climate Smart Agriculture Initiative is being delivered in Southeast Africa, Association of Southeast Asian Nations (ASEAN) and Latin America and the Caribbean through the GRA. New Zealand is working with partner countries, other GRA members and partner organisations to build global climate resilience through in-country capability on farm, locally relevant research, and establishing and maintaining Tier 2 inventories.

Experience and results achieved

The Centre for Climate Action on Agricultural Emissions was launched in November 2022. Since that time, projects funded include:

Sheep genetics partnership. This project aims to increase the supply of low methane rams through genetic selection, introducing more low-methane traits into the national sheep flock for a greater supply of low-methane rams across breeds available for use by sheep farmers.

Ruminant BioTech CALM (Cut Agricultural Livestock Methane) programme. Support for the development of a methane-inhibiting capsule, or bolus, which aims to deliver at least a 70% reduction in methane while active, to assist New Zealand to reach its emissions reductions targets.

Infrastructure and testing equipment. Investments in GHG measuring equipment and infrastructure to accelerate testing capabilities and increase the speed for the development of new tools and technologies for use by farmers. The new equipment will help testing in the short and long term – for cattle and sheep, indoors and in the field, and at multi-locations all over the country.

Plantain research. Further research on the effect plantain has on nitrous oxide emissions to increase the understanding of the key controller of biological nitrification inhibition metabolites in plantain.

PhD and fellowship programme. Government funding for PhD and post-doctoral students over six years, and the development of a national agricultural GHG capability plan to ensure New Zealand can meet the increased demand for researchers.

GHG testing facility. Joint public–private partnership towards the construction of a new GHG testing facility to provide permanent measuring and testing equipment to enable researchers to measure and monitor changes to methane emissions in individual cows.



Lessons learned

Funding research is critical to reduce agricultural emissions and getting new technologies and tools to farmers sooner. Products and practices must be commercialized quickly so that farmers can access them and are trained to implement them. This is particularly important for New Zealand given our emissions profile.

Globally, however, not enough public money is being directed towards research and development activities. For example, the 2023 OECD Agriculture Policies Monitoring and Evaluation Report shows that the 54 countries monitored provided on average USD 851 billion of support to agriculture annually over the 2020–22 period; a record level. Support has remained substantial among countries covered by the OECD analysis, with more than half of the support to producers (USD 333 billion annually) delivered through higher market prices paid by consumers, while the remainder (USD 297 billion annually) was paid by taxpayers through subsidies. Although support has increased overall, the share of money spent on innovation, biosecurity or infrastructure services has declined to 12.5% of support directed to the sector in 2020–22, down from 16% two decades earlier. These services are critical for increasing sustainable productivity growth and reducing GHG emissions from agriculture.

Emission reductions require the development of agricultural production systems of much lower emission intensity. Budgetary support must be oriented towards investments in innovation to foster emission-saving and sustainable productivity growth and to ensure the emergence of new mitigation technologies. Such investments benefit from stronger partnerships between the public and private sectors to maximize synergies. The private sector has a key role to play in climate change mitigation and its responses to climate change are accelerating.

To underpin the transition to sustainable agriculture, New Zealand and Australia have developed the high-level Principles for Cooperation Aimed to Underpin the Transition to Sustainable Agriculture. Recognizing the diversity of agricultural production systems globally, these principles do not define sustainable agriculture but acknowledge that countries will require context-specific, evidence-based management practices to achieve shared their sustainability objectives. The principles are structured around two complementary objectives:

- To demonstrate a shared commitment to progressive improvement of the sustainability of our agricultural production systems, including recognizing the role of agriculture in global efforts to reduce GHG emissions, and ensuring public support and funding to agriculture does not harm the environment.
- To set out how states can cooperate internationally, in a way that supports each country's domestic commitment to sustainable agriculture and sustainable productivity growth in a manner consistent with trade obligations, as opposed to creating barriers.

Research work undertaken by the Centre for Climate Action on Agricultural Emissions and the global collaboration programme of the GRA are consistent with the objectives articulated in the principles, including promoting public investment in sustainable agriculture and strengthening internationally recognized best practice for making transparent, evidence-based claims about the sustainability of agricultural production.

This is one in a set of country case studies demonstrating policy action that individual countries are taking with the aim of transition to sustainable agriculture. They are country owned and do not represent wider views of the Policy Dialogue participants.