

Reframing of New Zealand's proposal under the Nature-Based Solutions Pillar of the UN Secretary-General's Climate Change Summit

In April New Zealand made a submission to the Nature-Based Solution pillar entitled *Leading the way to a sustainable food future* in which governments and other actors in the food system would be invited to articulate ambitious contributions to help make the global food system more emissions-efficient, climate-resilient, productive and sustainable.

New Zealand is pleased to see the ideas contained in its submission are reflected in the thematic area within Nature-Based Solutions that addresses *Agriculture and food systems* (alongside three other themes¹).

New Zealand has also taken note of the ongoing evolution of the Summit and the large number of submissions made by range of governmental and non-governmental actors under the Nature-Based Solutions pillar.

Addressing the global food system is necessarily a multi-pronged effort requiring actions to improve agricultural production efficiency, increased research investment to develop cost-effective mitigation options, reduced food loss and waste in supply chains, preventing deforestation, amongst others.

In light of the considerations outlined above, New Zealand would like to reframe its proposal and outline its plans to scale up targeted investments in areas of critical importance to improving the sustainability of the global food system.

We recognise that the actions and investments outlined below do not address the food system in its entirety, but we are confident that they will make a meaningful impact in areas where New Zealand has strengths.

We are confident that other governmental and non-governmental actors will make significant contributions in the other thematic areas of the Nature-Based Solutions pillar and, when taken together, overall this will represent a significant scaling up and acceleration of global action.

New Zealand will make targeted investments to strengthen developing countries ability to monitor agricultural greenhouse gases to accelerate the development of mitigation strategies, improve transparency, gain greater access to climate finance, and improve the climate benefits resulting from development and other investment.

In addition, New Zealand will work with partners to mobilise further investment in agricultural mitigation research in key areas, e.g. livestock methane.

New Zealand has prioritised these interventions first and foremost because they are:

¹ Forests and terrestrial ecosystems; Ocean ecosystems and water; Nature's systemic role in Sustainable Development

- **Replicable and scalable:** that is, have the ability to be scaled up or replicated across sectors or regions with additional investment and support from other countries and organisations.
- **Measurable:** that is, concrete enough to be immediately implemented or already working and with a measurable effect that allows the proponents to demonstrate their contribution and secure accountability;
- **Implementable:** that is, supported by an implementation plan with concrete milestones and the corresponding financial resources.

In addition, we consider that this series of interventions, when taken together, can have a **transformational** impact and can directly **address key barriers** and improve the **enabling environments** for large-scale adoption and diffusion of technologies and practices to enhance global climate ambition.

You can't mitigate what you can't measure

Over 100 countries indicated their intention to reduce greenhouse gas emissions (GHG) from the agriculture sector in their Nationally Determined Contributions (NDCs). Credible measurement, reporting and verification (MRV) of emissions and emissions reductions is critical to help national policymakers understand sources of GHGs, develop mitigation strategies, improve transparency, and access climate finance.

National GHG inventories are a key part of a national MRV system. Under the Paris Agreement, inventories will be required on at least a biennial basis and will underpin countries' reporting on their NDCs. Many countries are seeking to link MRV of specific mitigation actions with national GHG inventories in order to measure and report on progress in relation to NDCs.

When it comes to measuring mitigation in the agriculture sector, the methodological approach used for measuring GHG emissions determines the utility of a GHG inventory for MRV of mitigation actions. Tier 1 approaches do not adequately reflect changes in agricultural production and productivity. In contrast, Tier 2 or Tier 3 methods more closely reflect countries' actual farming systems and their productivity, and can capture changes in system and productivity over time.

Most developing countries and many developed countries struggle to produce agricultural GHG inventories at Tier 2 or Tier 3, a concerted effort is required to assist countries to achieve this, including through peer-to-peer learning, development of in-country capability and targeted investment in required research infrastructure.

By 2025, New Zealand will work with partners to:

- Assist at least eight countries to have moved to Tier 2 or 3 livestock GHG inventories by 2025.
- Invest in the establishment of four regional livestock emissions measurement hubs (including infrastructure and capability building).

- Support regional research activities in developing countries to generate locally appropriate estimates of livestock greenhouse gases (enteric methane, nitrous oxide, carbon dioxide) with the outcome being to develop local datasets to contribute to the compilation of Tier 2 GHG inventories in participating countries.

Emissions mitigation research is a key enabler of reducing agricultural greenhouse gas emissions

With currently available and cost-effective technologies, even if fully implemented, there will be insufficient mitigation from agriculture by 2030 to meet the objectives of the Paris Agreement.

Commitments to more research, both nationally and through international alliances, will speed up the development of breakthrough technologies.

Harnessing rumen microbiome diversity

A number of best practices are known to influence the production of methane in ruminants and other greenhouse gases (expressed in terms of emissions per unit of product), usually as a co-benefit of improved livestock productivity.

However, there is an absence of commercially available and cost effective technologies to directly reduce emissions in absolute terms, without having negative consequences on animal performance.

By 2025, New Zealand will work with partners to:

- Catalyse public and private investment in global, public-good, co-ordinated, cross-disciplinary effort to understand, predict, and harness rumen microbiome function to enable the accelerated development of microbiome-based solutions to support sustainable livestock development that underpins food security, resilient economies, livelihoods of farmers, animal health, and a reduced environmental footprint.

The next generation of science leaders

For the agriculture sector to contribute adequately to the objectives of the Paris Agreement -mitigating greenhouse gases while ensuring adequate food production - there needs to be a major increase in science and policy capability.

Due to the challenge of reaching many hundreds of millions of farmers and the complexity of the public policy interventions, there is a growing demand on the scientific community to better inform a range of actors, with high quality, robust, context specific scientific advice.

It is of fundamental importance to develop capability in the global scientific community to address this demand. This is especially true in developing countries where current capability is insufficient.

New Zealand will target investments to develop capability of early career (Masters, PhD) scientists in developing countries through a range of mechanisms.

- Support 20 senior scientist awards to connect New Zealand scientists to international counterparts.
- Sponsor at least 70 early career scientists (Masters or PhDs) from developing countries in the field of agricultural GHGs measurement and mitigation.
- Sponsor Post-Docs from developing countries to undertake targeted projects supporting objectives in both the measurement and microbiome area.
- Provide training for policy, scientists and inventory compilers and farmers.

Improve the climate benefits resulting from development and other investment

Robust assessment of possible reductions in greenhouse gas emissions associated with agricultural development projects and programmes will provide an opportunity for countries to demonstrate progress towards fulfilling Nationally Determined Contributions (NDCs) and for farmers in these countries to make a meaningful contribution to the implementation of the Paris Agreement.

This knowledge will contribute to improved design of future development investments to achieve multiple sustainable development goals simultaneously.

New Zealand will work with partners to:

- Develop improved methods and models to overlay greenhouse gas emissions expertise and capabilities into agricultural development projects to quantify greenhouse gas mitigation co-benefits of relevance to partner country NDCs.
- Build capacity in partner countries to understand, manage, and reduce agricultural greenhouse gas emissions from farming systems for multiple production, environmental, financial, and social benefits.
- Utilise this knowledge and expertise in managing and reducing greenhouse gas emissions from agricultural production systems to add value and build the science and policy evidence base to inform more sustainable investment by donor programmes.