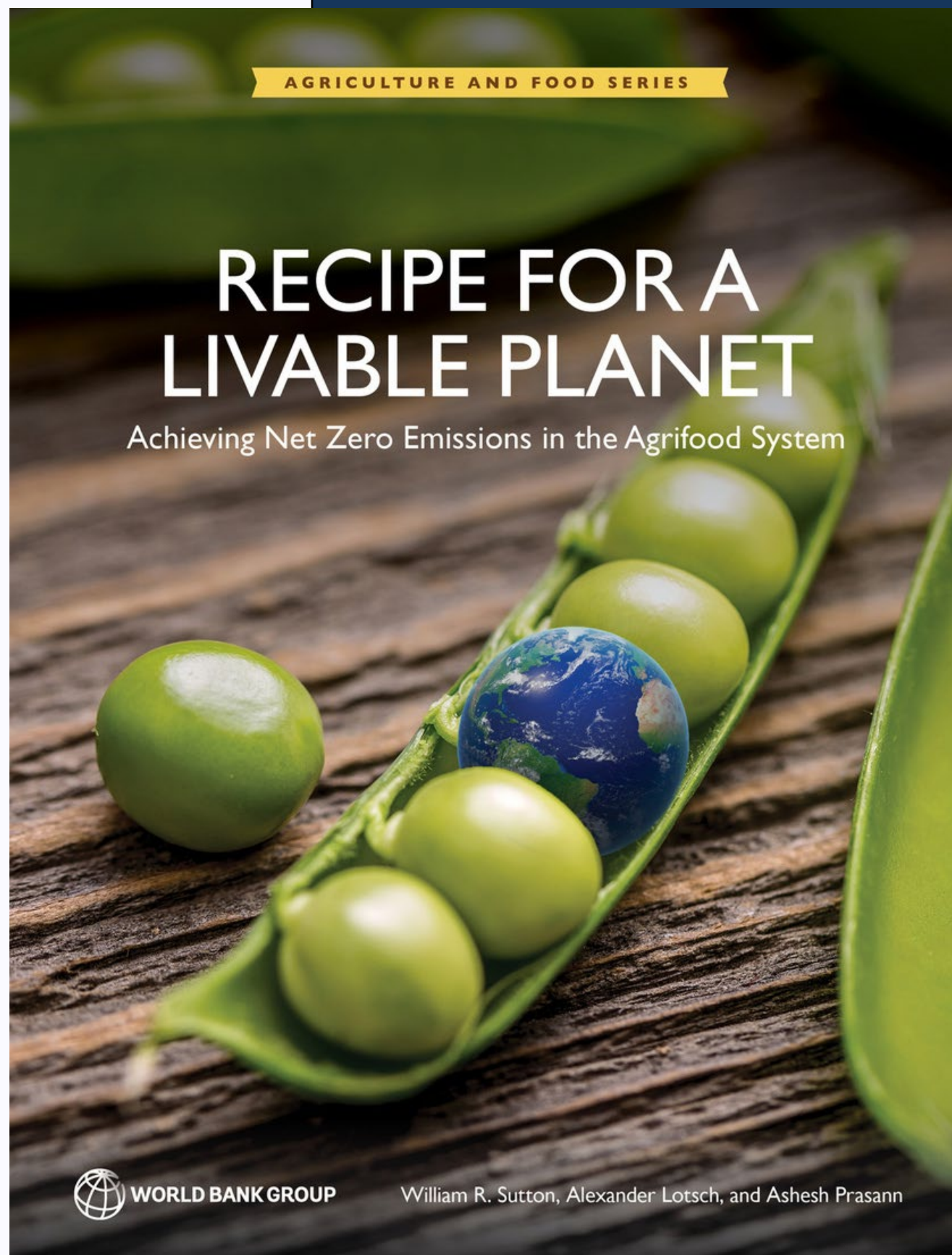


Tokyo, Japan
8 November 2024



Presentation of Key Findings and Recommendations

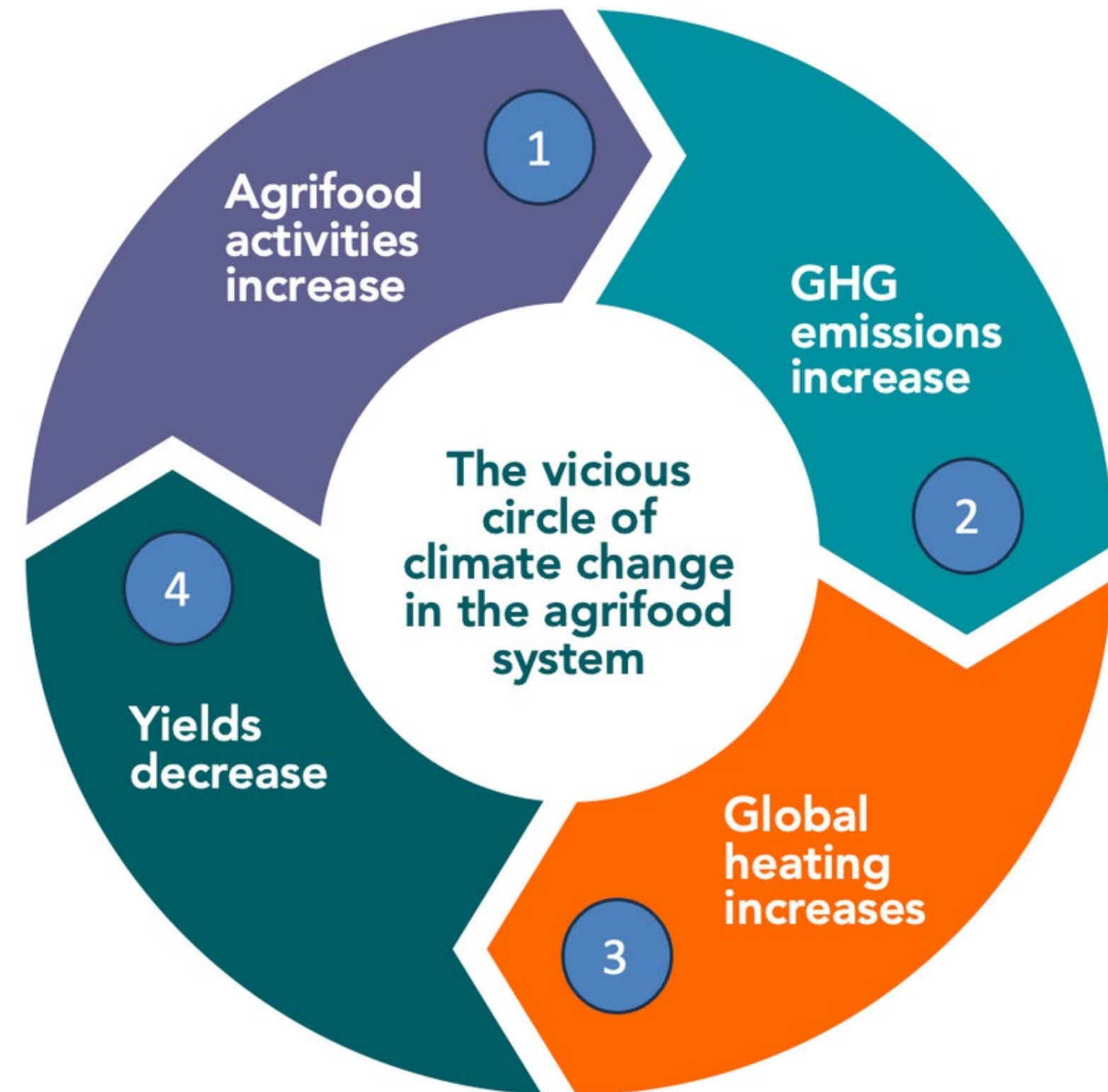
William R. Sutton and Alexander Lotsch
Climate-Smart Agriculture Team
Global Dept. for Agriculture and Food
The World Bank



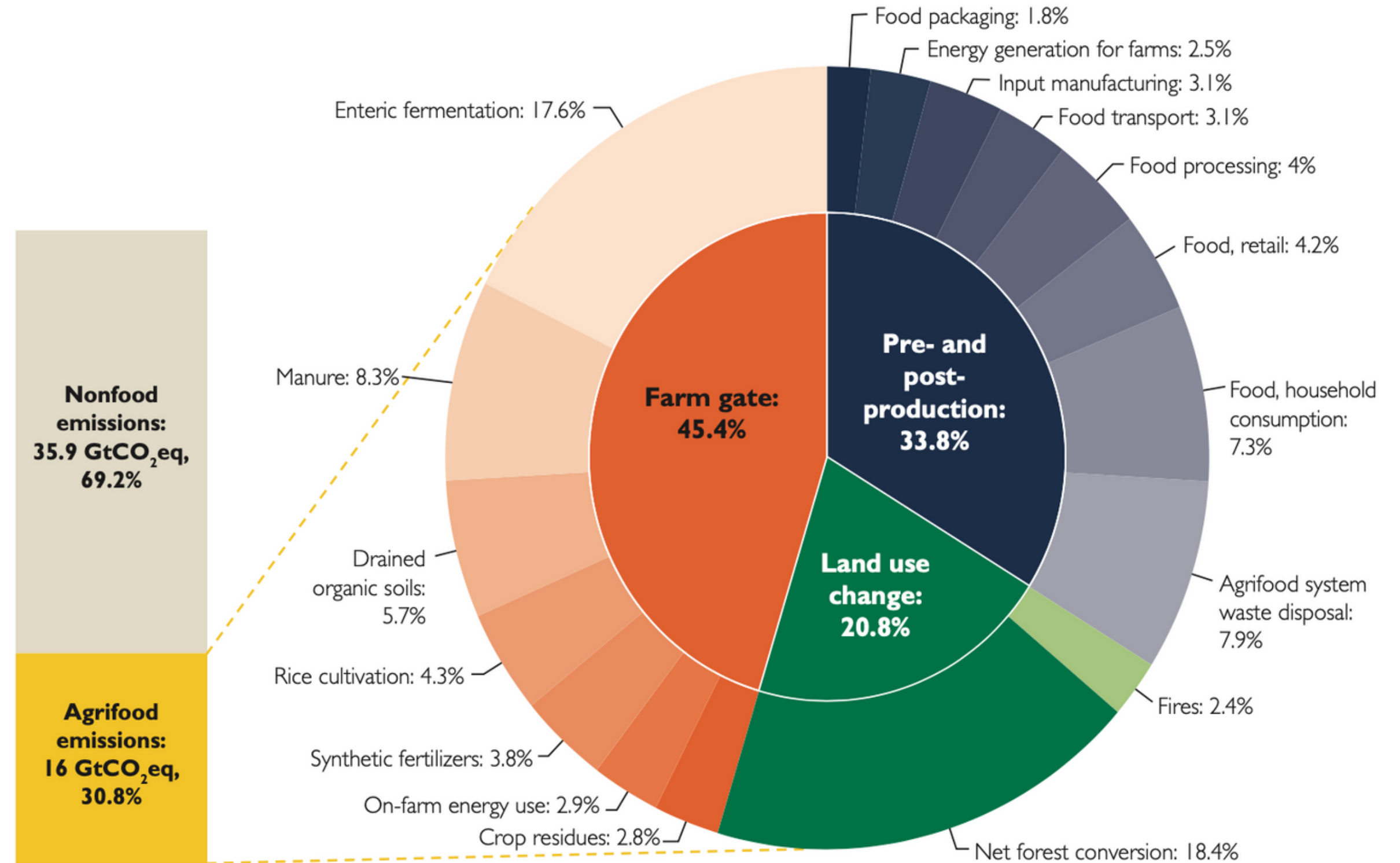
GLOBAL OVERVIEW

Why are we interested in agrifood system emissions?

The agrifood system is caught in a vicious climate circle – and adaptation alone is not sufficient to feed the world

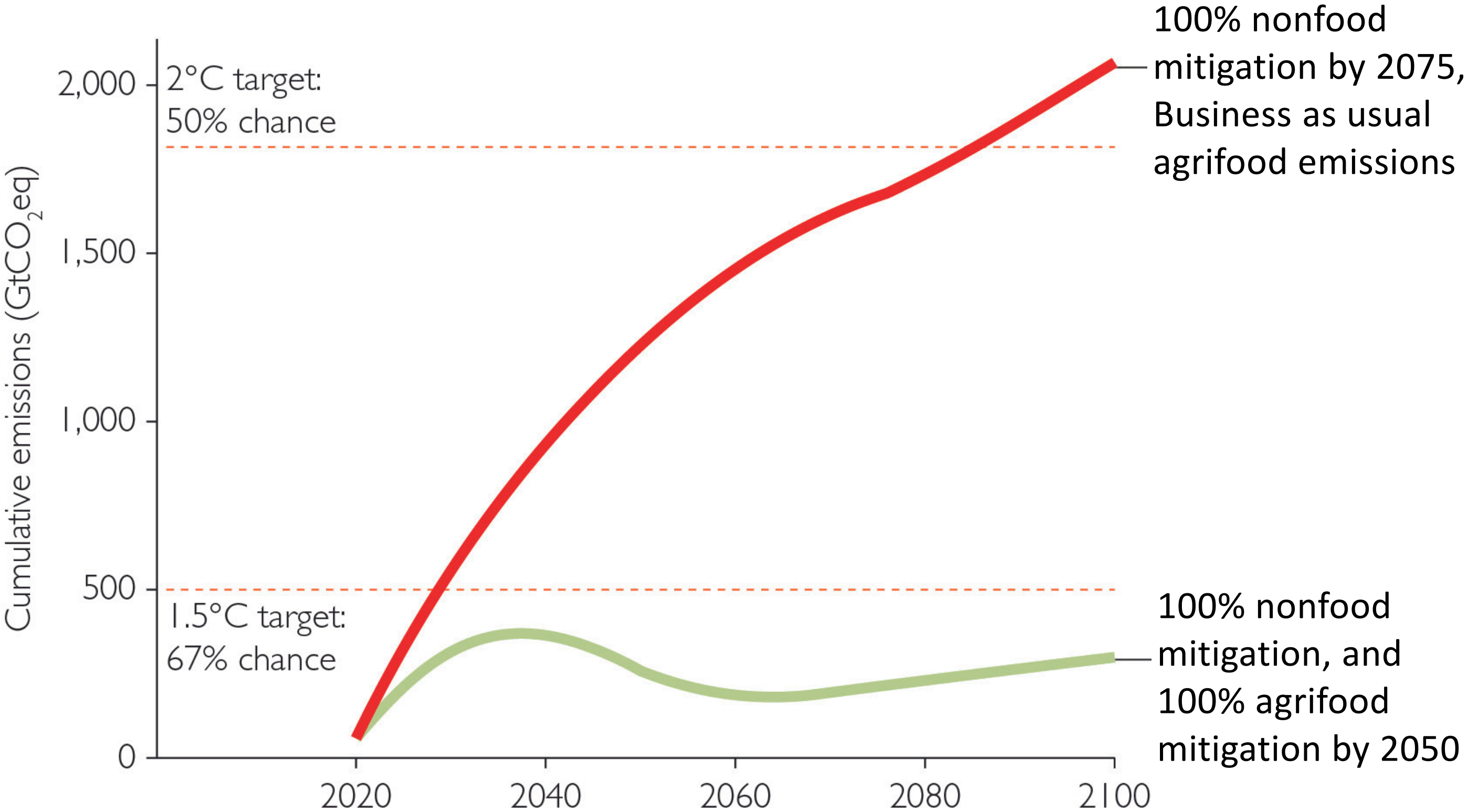


Greenhouse gas emissions from the agrifood system are significantly higher than previously thought

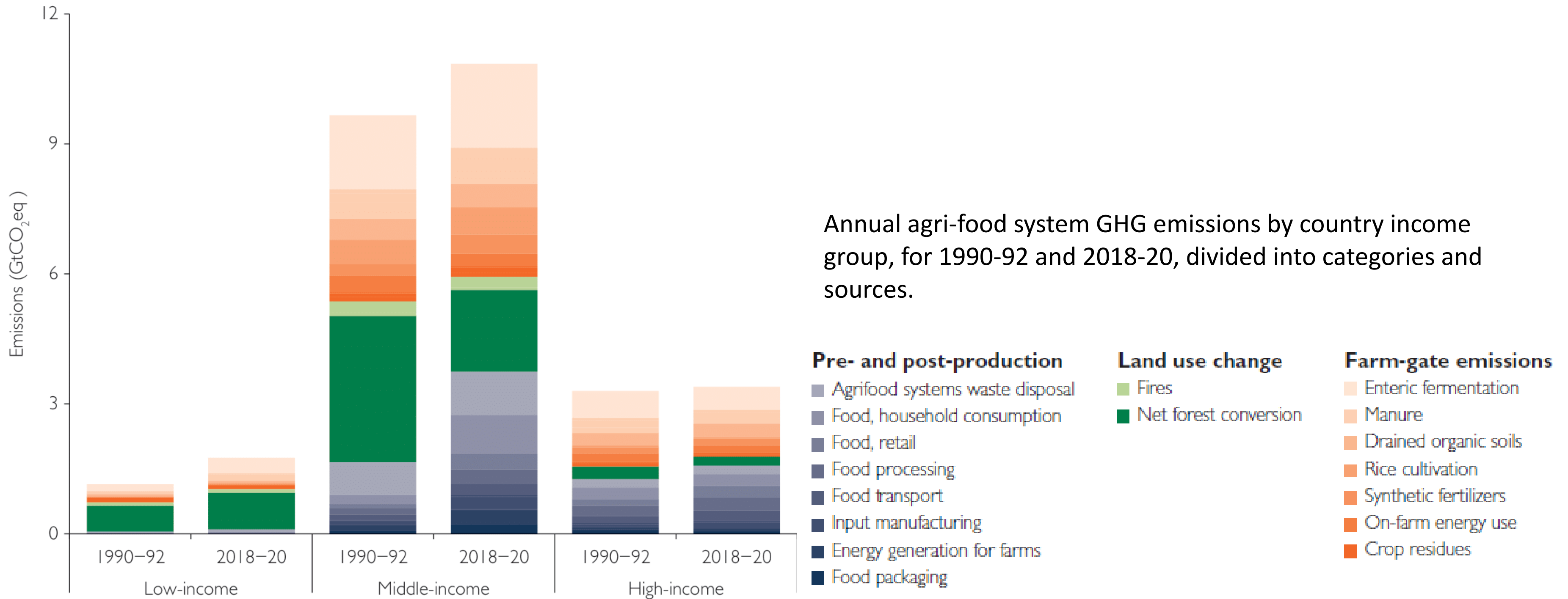


Without significant climate mitigation action in the agrifood system, the Paris Agreement goals cannot be reached

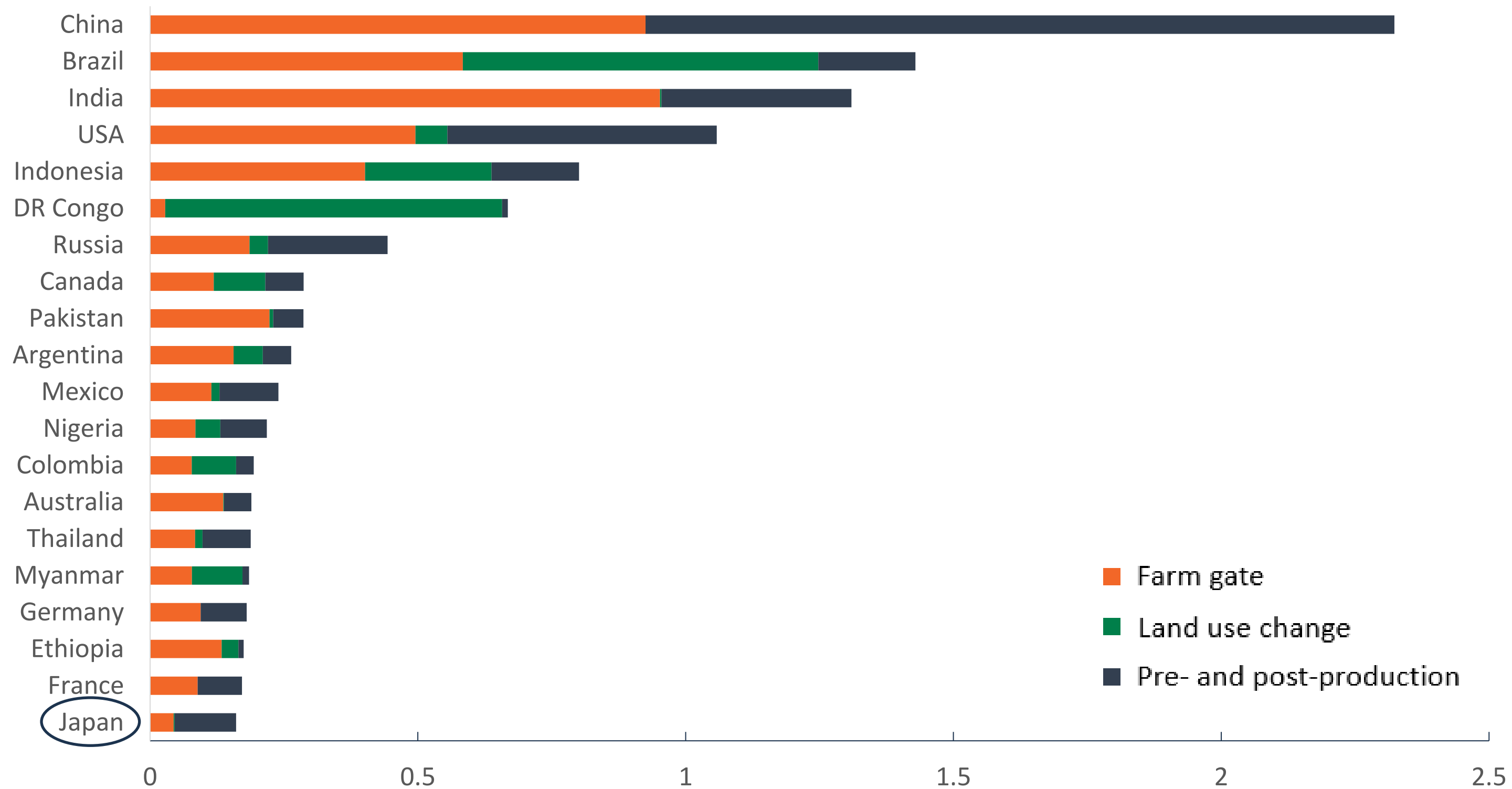
Projected cumulative global emissions pathways and our likelihood of achieving the Paris Agreement targets of 1.5°C or 2°C.



Middle-income countries generate two-thirds of agrifood emissions and are driving emissions growth

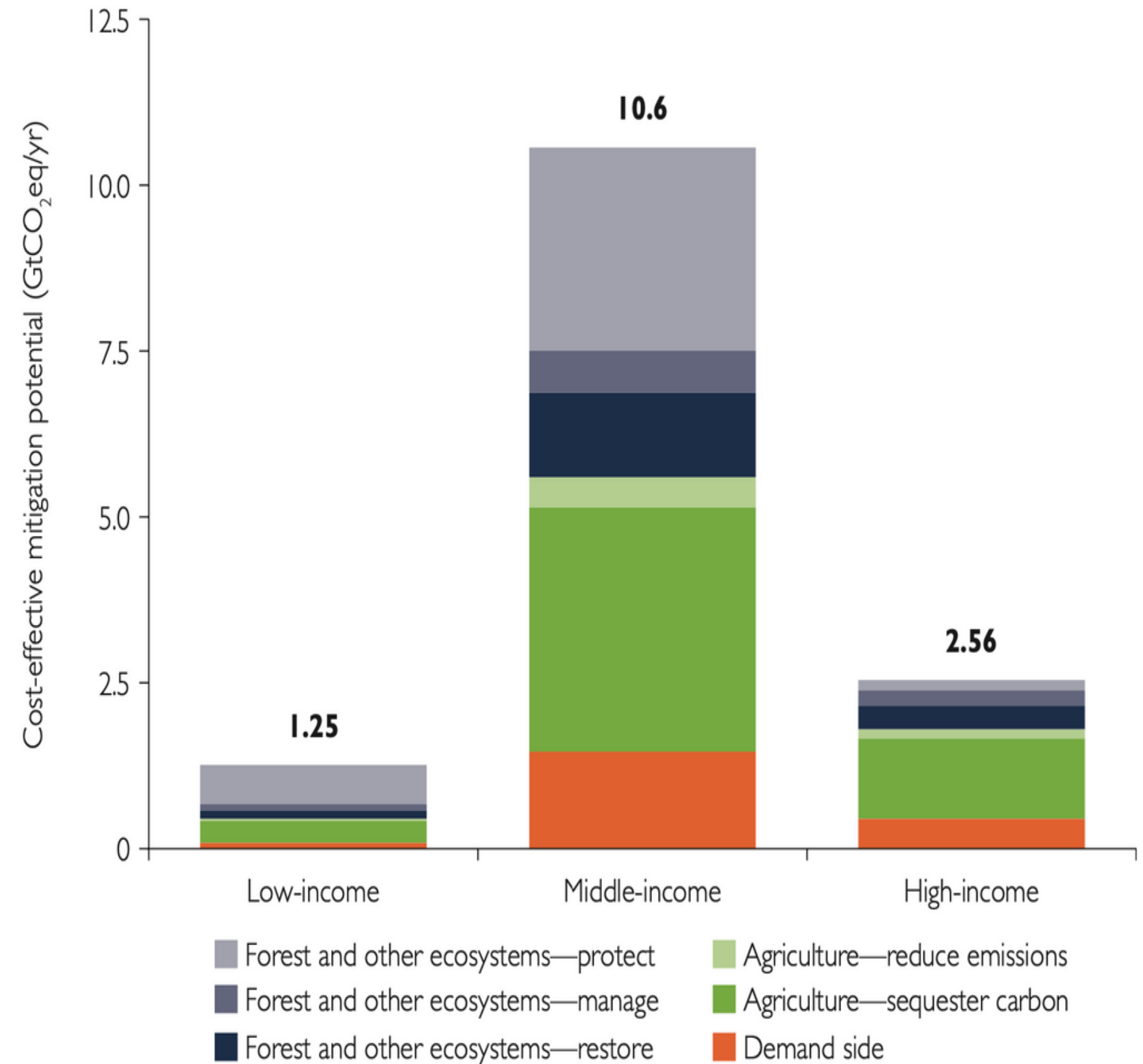


Seven of the top 10 agrifood system emitters are middle-income countries, and one is a low-income country



Good news: the agrifood system is a huge, untapped source of low-cost climate change action

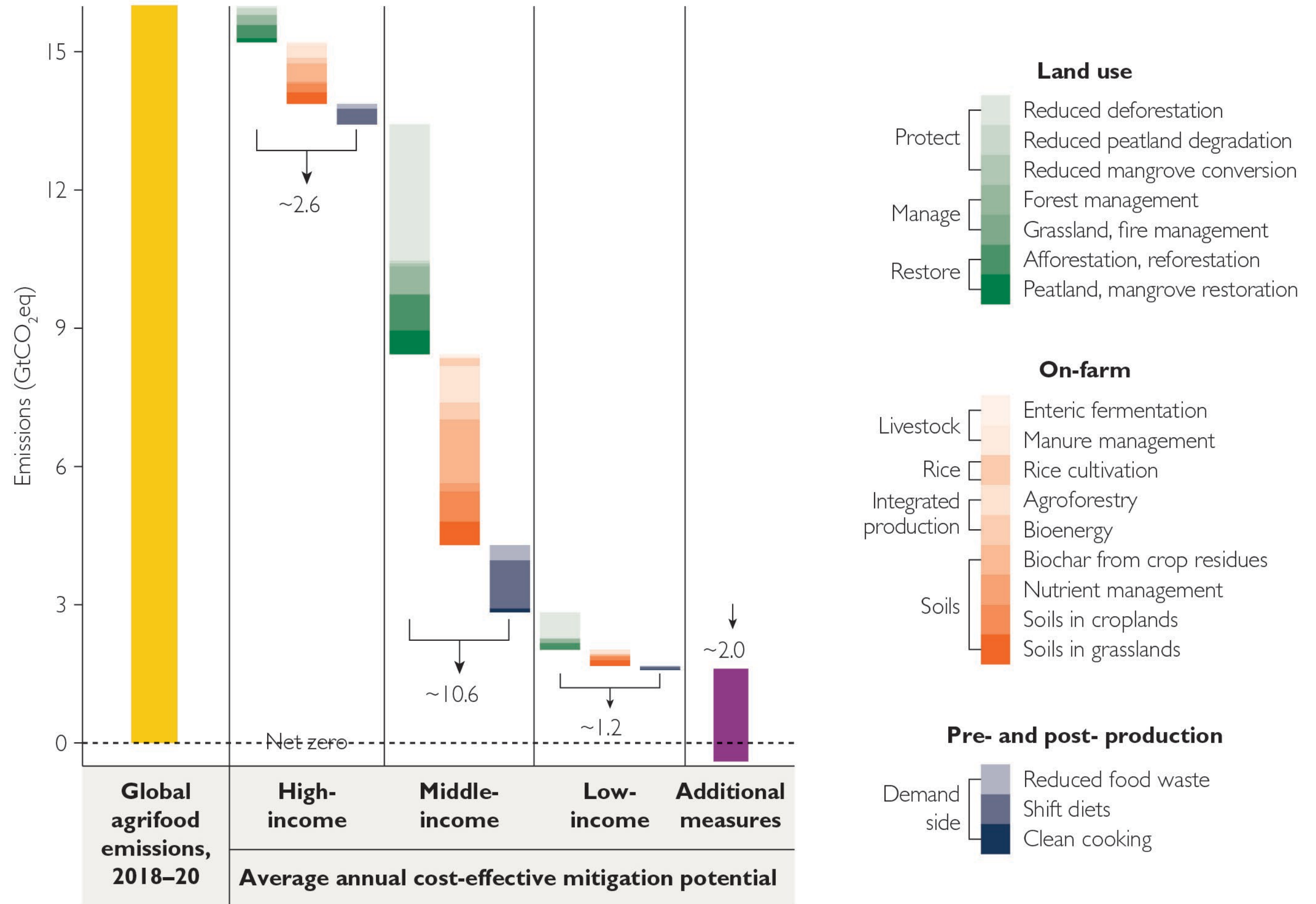
- MICs hold 3/4 of the cost-effective mitigation opportunities from agriculture, forests, land use, and demand-side measures.
- These technologies are readily available, and some are cost-saving.
- There is no inherent tradeoff between mitigation and food security, because agriculture's triple wins can help break the vicious climate circle.



Cost-effective annual mitigation potential (<\$100/tCO₂eq)

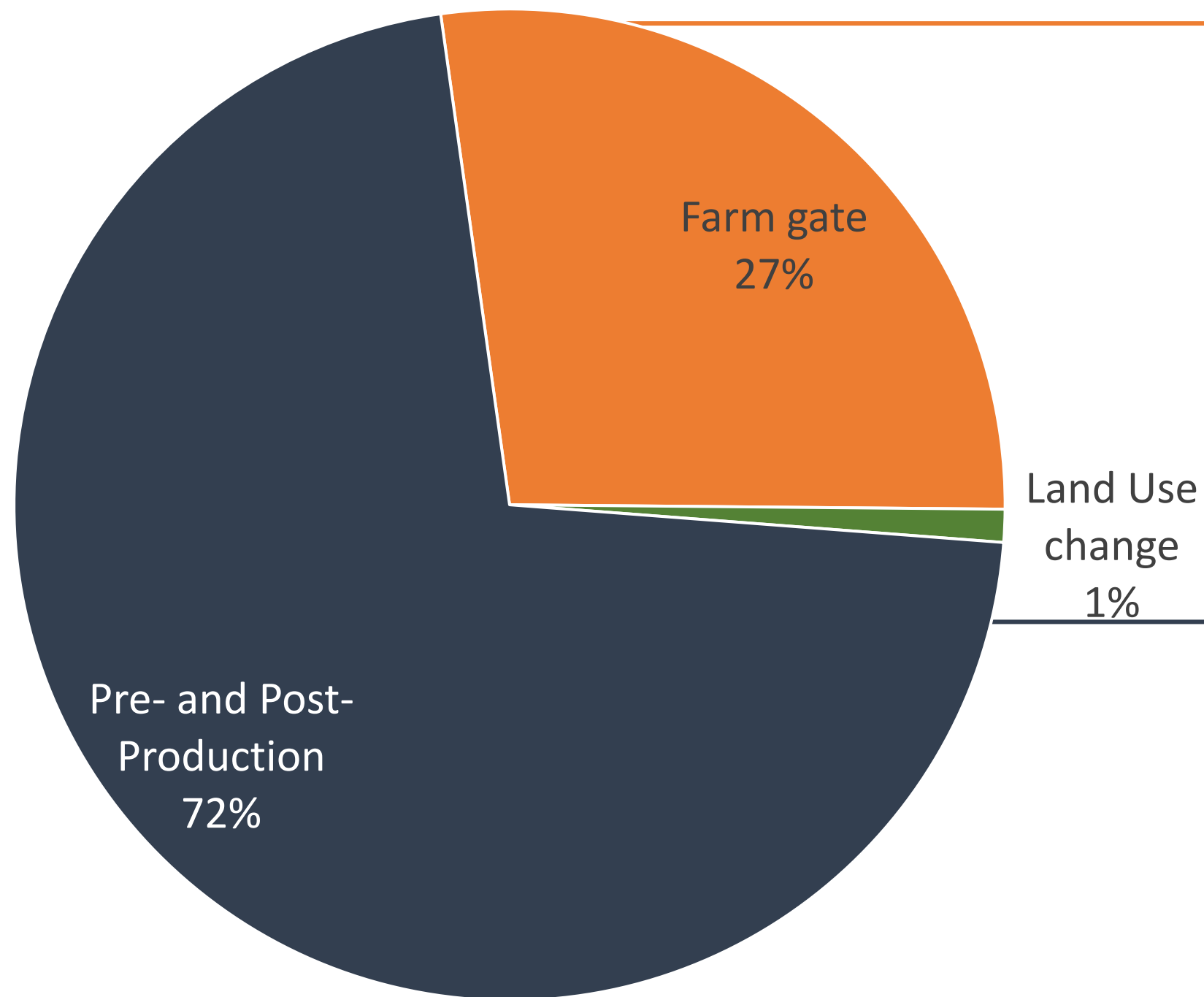
Source: World Bank using data from World Bank and Roe et al., 2021

The Recipe:
 By 2050, cost-effective mitigation action in agrifood can reduce greenhouse gases by over 16 gigatons a year, achieving net zero emissions



AN IN-DEPTH LOOK AT COUNTRIES AND PRODUCTS

Japan's agrifood emissions (2019-2021 average): 161 Mt CO₂e



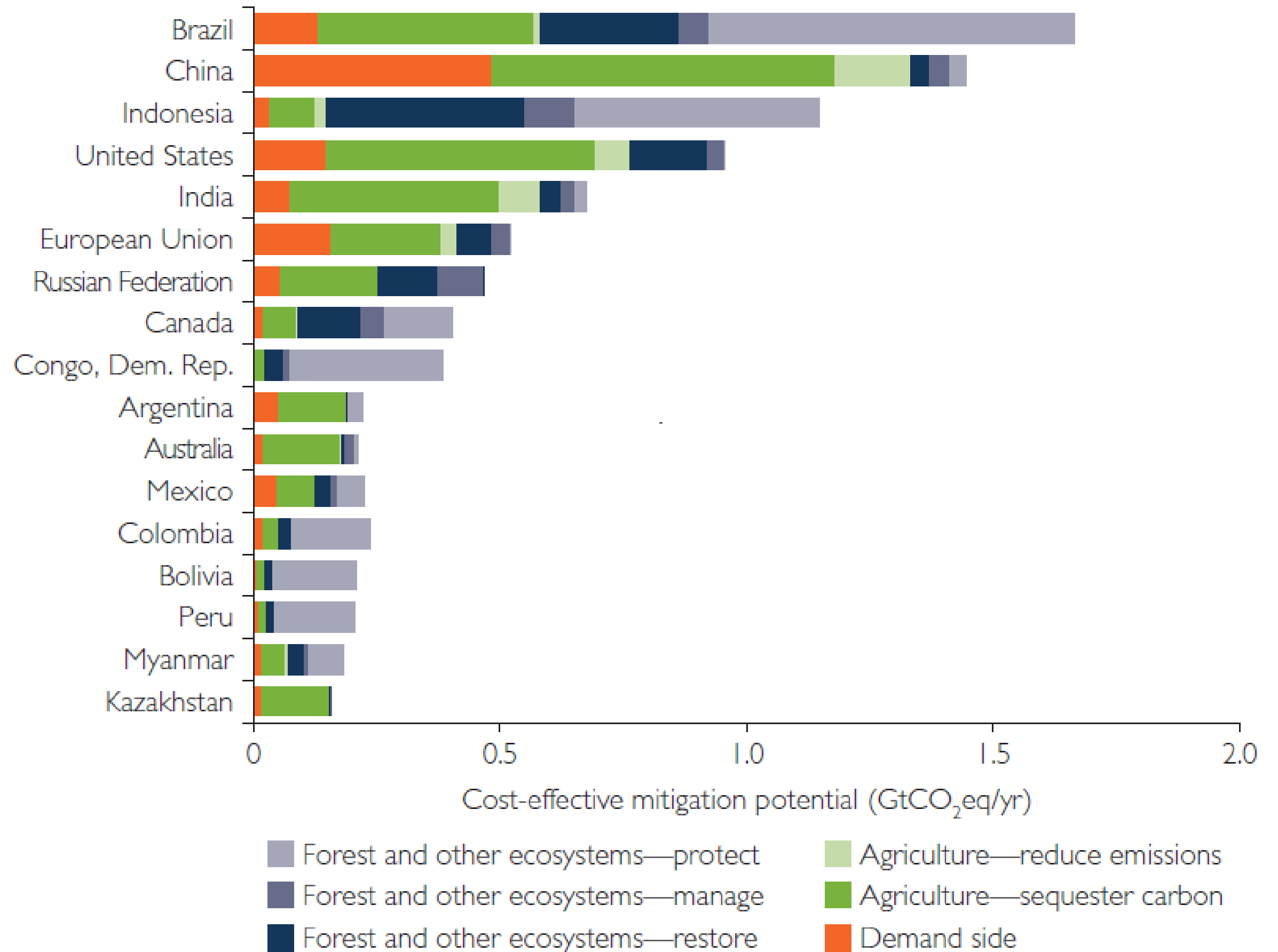
Farm Gate Emissions

On-farm energy use	10.7%
Rice Cultivation	5.1%
Enteric Fermentation	3.8%
Drained organic soils	3.2%
Manure Management	1.4%
Synthetic Fertilizers	1.2%
Others	1.1%
Manure left on Pasture	0.9%

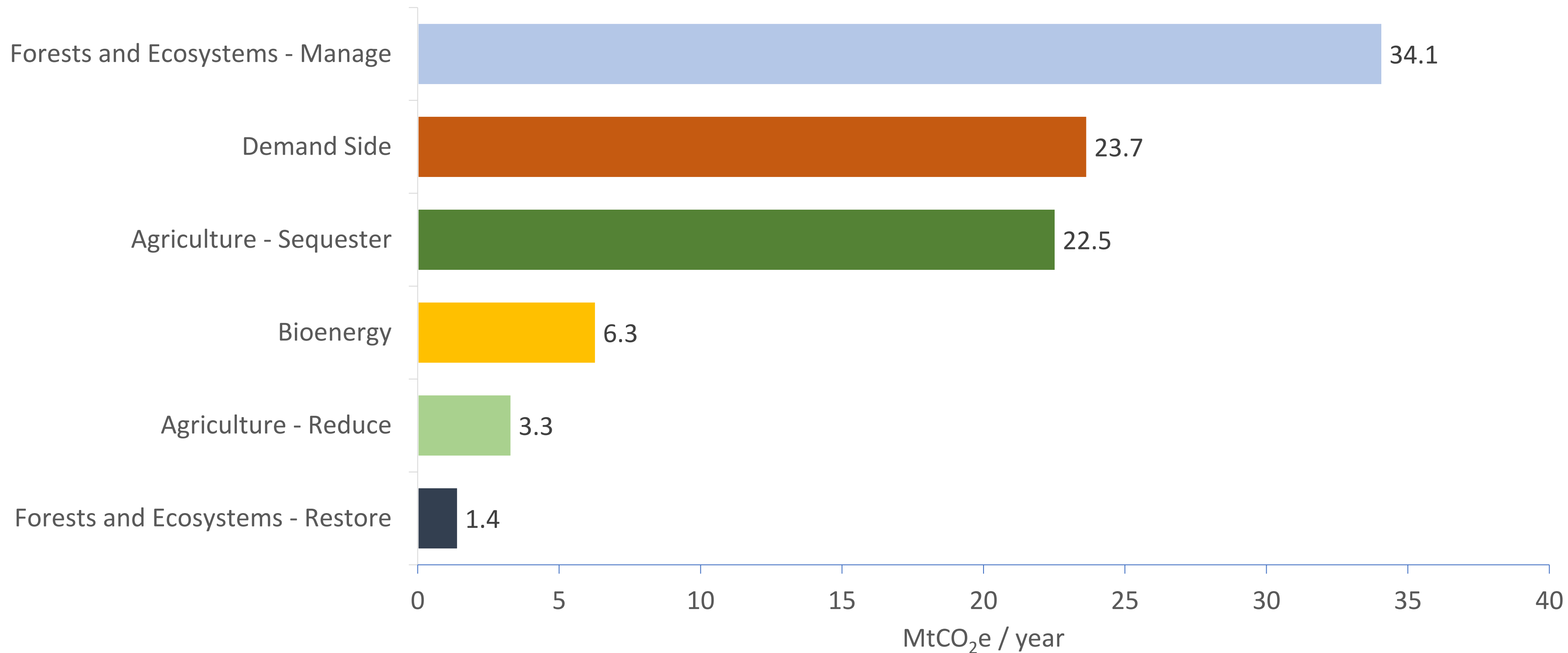
Pre- and Post-Production Emissions

Food Retail	19.2%
Food Processing	13.0%
Food Transport	12.7%
Food Household Consumption	11.0%
Agrifood Systems Waste Disposal	7.5%
Food Packaging	4.5%
Fertilizers Manufacturing	2.8%
Pesticides Manufacturing	0.8%

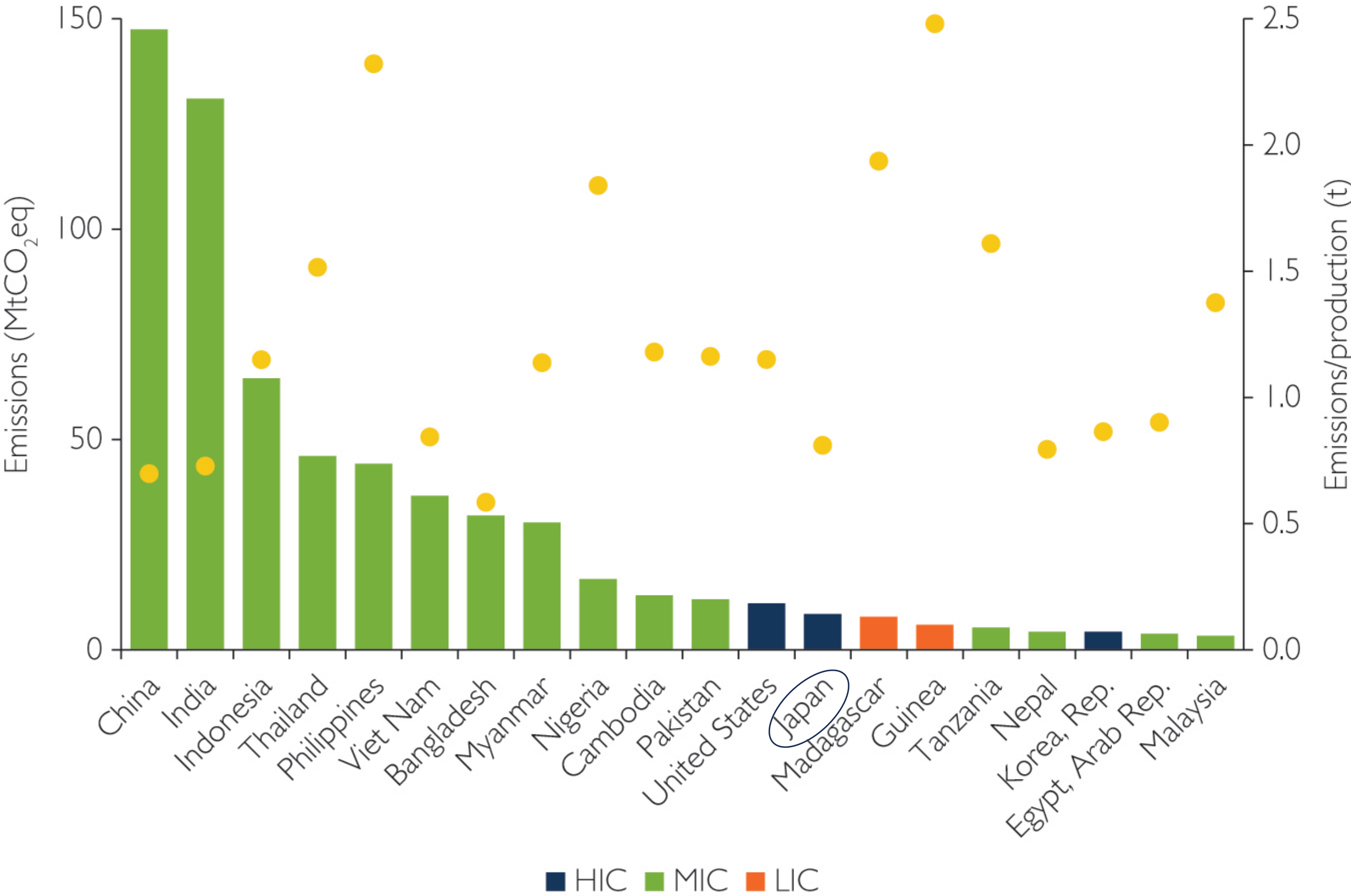
Countries have specific pathways for reducing their agrifood system emissions in the most impactful and affordable way



Japan can mitigate 91 MtCO₂e in agrifood emissions per year at costs below \$100 / tCO₂e



Most Rice Emissions Are from Larger Countries with the Most Rice Production —but Emissions Intensity Varies Widely Among Them



HOW TO MOVE FORWARD?

The Recipe is doable, and every country can contribute

High-income countries can lead the way



- Promote renewable energy in agrifood
- Provide more financial and technical support to low- and middle-income countries
- Shift subsidies towards low-emission foods

Middle-income countries have the greatest potential



- Reduce conversion of forests and plant trees
- Cut methane in livestock and rice production; manage soils sustainably to store carbon
- Use cleaner and more energy-efficient pre- and post-production processes

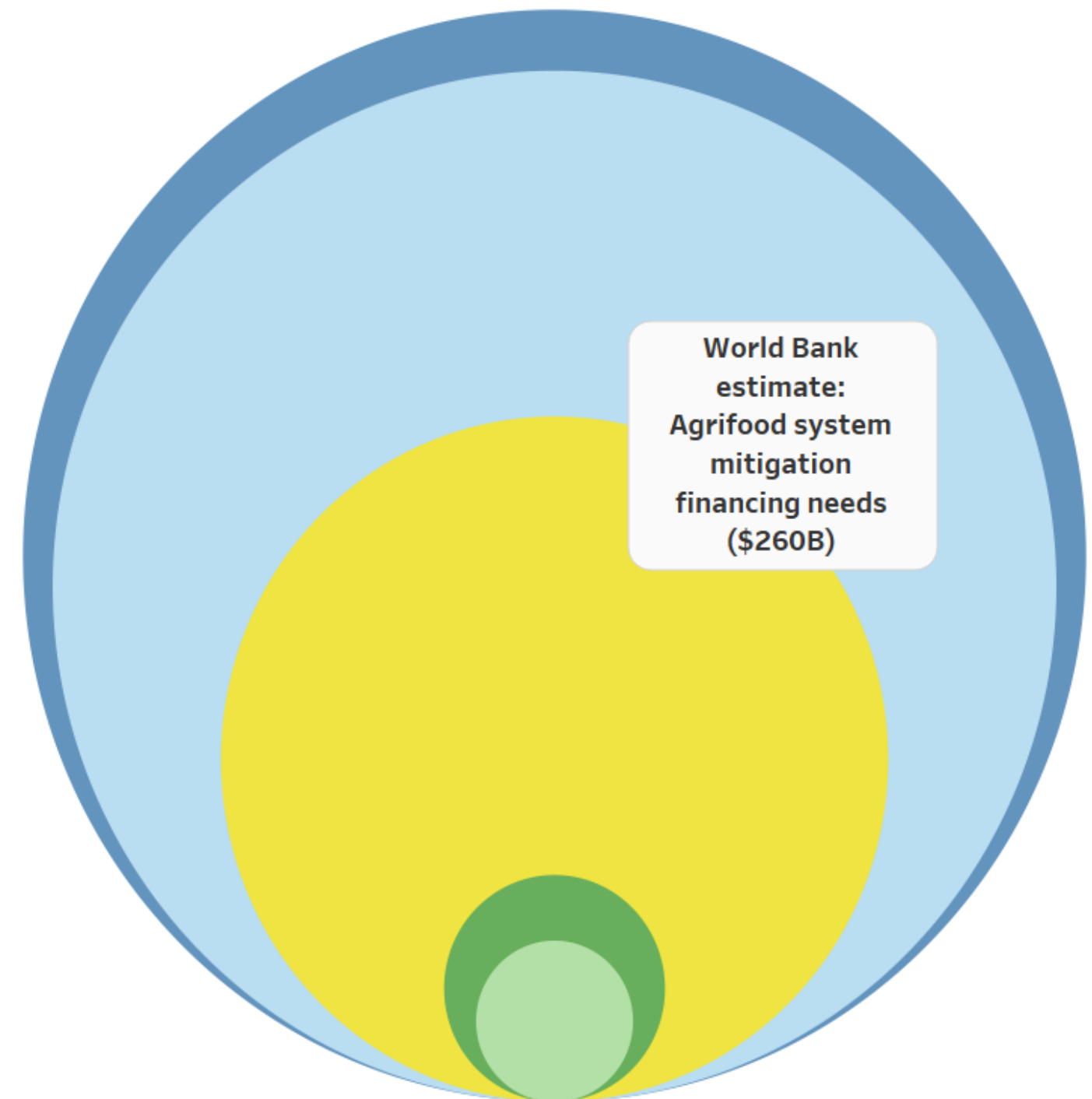
Low-income countries can play a proactive role



- Bypass high-emissions development paths
- Preserve and restore forests
- Improve agricultural practices through climate-smart agriculture techniques

Finance for agrifood mitigation is very low and should be scaled up significantly

- Only 4% of total climate finance and 2% of mitigation finance goes to agrifood.
- Annual investments in mitigation need to increase by 18x to US\$260 billion to halve agrifood emissions by 2030.
- Repurposing US\$70 billion of public spending towards climate-smart action can cover 25-30 percent of the cost.



Creating an enabling environment can help scale up financing, and allows all income groups to contribute to the net zero transformation



Inclusion

Governments and civil society collaborate to ensure an equitable and just transition



Investments

Make private investments less risky and strengthen carbon markets



Incentives

Repurpose agriculture support toward low-emission agrifood technologies



Institutions

Rapidly shift climate institutions' focus toward agrifood mitigation



Information

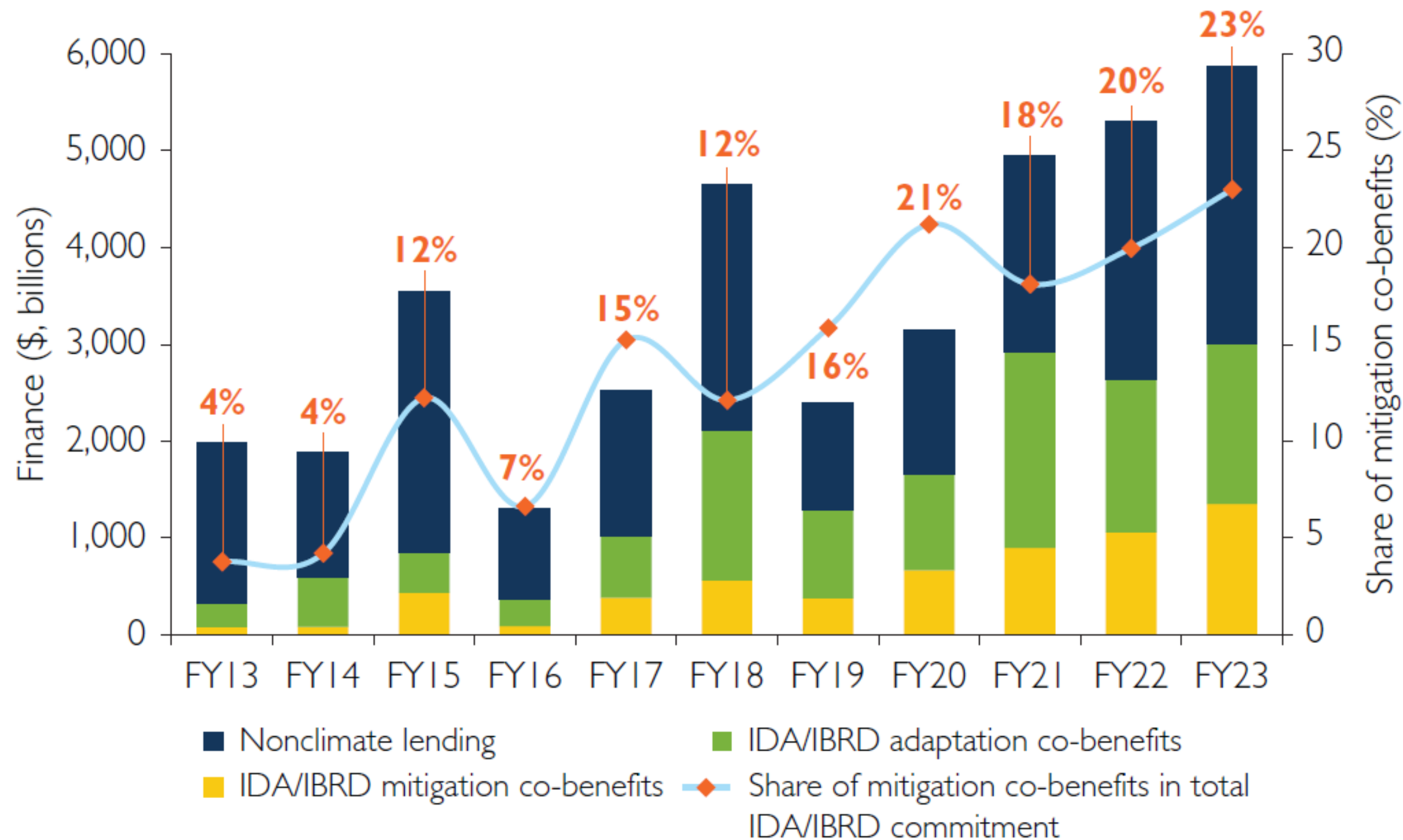
Capitalize on low-cost digital technologies to improve GHG measurement



Innovation

Invest in R&D to make nascent agrifood mitigation technologies cost-effective

The World Bank's climate finance for Agriculture and Food has increased 8-fold since the Paris Agreement



- \$3 billion in new financing for climate-smart agriculture in 2023
- **Now at around 60% climate co-benefits in our portfolio**
 - **23% mitigation co-benefits**
- Potential to **scale up mitigation**, as adaptation is around 70% of World Bank climate finance in agrifood.

Next steps: Actions to implement the Recipe

Inform Country Action



- Identify and prioritize cost-effective mitigation options to guide climate-smart investments: Global Marginal Abatement Cost (MAC) Database
- Develop country-level Food System Climate Action Plans (FS-CAPs) to scale up investment and policy action
- Improve agrifood emissions measurement for better management and finance mobilization

Increase Leverage



- Build partnerships and coalitions
 - Cooperate on solutions and technologies
- Mobilize concessional finance for low-emissions investments: use public resources to leverage private investments through innovative finance

RECIPE FOR A LIVABLE PLANET



Thank you!

