



Food and Agriculture Organization  
of the United Nations

# Closing

Transformation to low emissions  
and resilient agrifood systems

27 September 2022





# The case for action – Part 1

1. IPCC says limiting warming levels to 1.5 by end of century is possible but needs major paradigm shifts in 2020s.

*Since Agriculture and livestock continues to be a major GHG contributor, countries need transformational shift and investments in low carbon practices that arrest emissions of major greenhouse gases (CH<sub>4</sub> and NO<sub>2</sub>). This would include restoring carbon sinks through REDD+ activities and regenerative agriculture, and stepping up reductions in food loss and waste.*

2. Since CH<sub>4</sub> has an atmospheric half-life of less than a decade, cuts in CH<sub>4</sub> emissions have a larger impact than CO<sub>2</sub> emissions in the short term.

*This means that scaling up agri-food system mitigation efforts would pay off significantly if done immediately.*



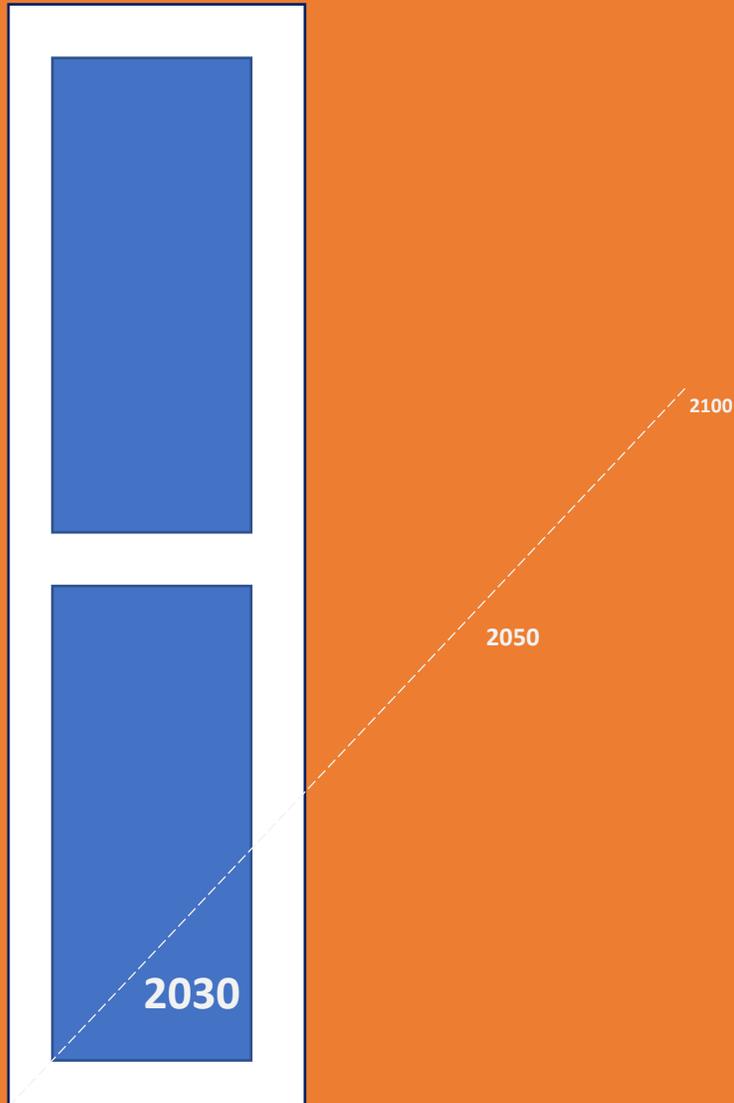
## The case for action – Part 2

3. With every additional increment of global warming, the report states that “changes in extremes continue to become larger” and specifically “extreme heat thresholds relevant to agriculture are projected to be exceeded more frequently.

*Agriculture and land use sector will be severely impacted by extreme heat and agricultural and ecological droughts and livelihoods in crop production, livestock and fisheries will be severely at risk.*

4. Even in the very low-emission scenario (i.e., the SSP1-1.9 scenario), the 1.5°C warming threshold is more likely than not to be reached or exceeded in the near-term (2022-2040). Agriculture adaptation efforts therefore need to be prioritised.

*These should address risks to smallholder farmers, fishers, indigenous groups, vulnerable women and youth from extreme heat, increased evapotranspiration and increase in agricultural droughts.*



# A narrow window

- Climate impact drivers of importance to agrifood systems have already changed or are changing compared to past climate conditions
- System-wide impacts of such changes could have been significant – reducing agricultural productivity by almost 20 per cent between 1961 and 2020
- Past investments in agricultural R&D were crucial in offsetting larger negative impacts
- Early investment is required to ensure that agrifood systems can withstand future shocks and avoid dangerous change
- Narrow window for action corresponds with the commitment period of the Paris Agreement



# What we prioritized

- Strengthening policy, financial support and spread awareness of climate change
- Integrated approach, coordination and political will
- Scientific knowledge sharing and capacity building
- Institutionalize and binding ASEAN climate policy and action



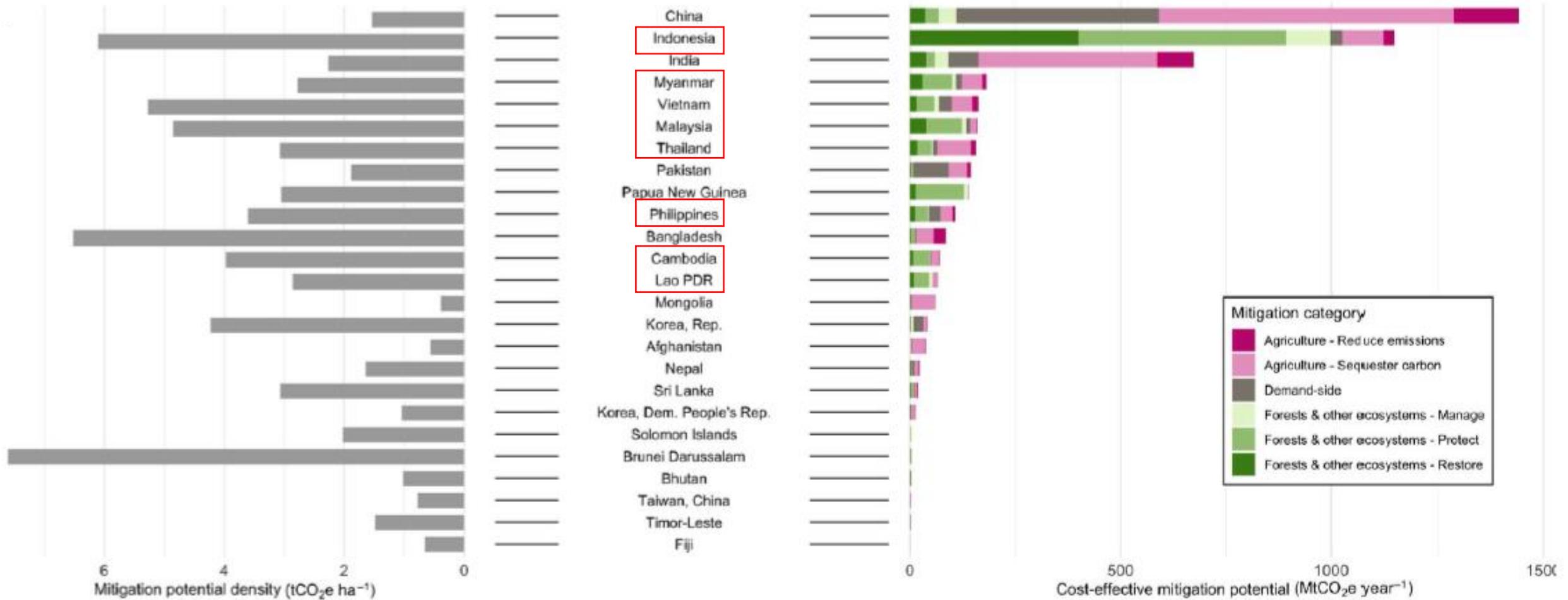
# Foundations for action

Mechanism	Policy Instrument	Description
Long-term strategies (LTS) for low emission and resilient development	<ul style="list-style-type: none"><li>Article 4 of the Paris Agreement</li></ul>	<ul style="list-style-type: none"><li>Encourages countries to formulate and communicate long-term low greenhouse gas emission development strategies</li></ul>
Sustainable financing mechanisms	<ul style="list-style-type: none"><li>Article 6 of the Paris Agreement</li></ul>	<ul style="list-style-type: none"><li>Pathways to leverage resources for climate action: -<ul style="list-style-type: none"><li>Cooperative approaches (Article 6.2 – ITMOs);</li><li>New crediting mechanism for promoting mitigation and sustainable development (Articles 6.4–6.7);</li><li>Nonmarket cooperative approaches (Articles 6.8 and 6.9)</li></ul></li></ul>
Enhanced Transparency for climate Action	<ul style="list-style-type: none"><li>Article 13 of the Paris Agreement</li></ul>	<ul style="list-style-type: none"><li>Requires tracking progress towards Parties' NDCs with information on the implementation and achievement of the NDC</li><li>Includes information on mitigation and adaptation activities as well as technical and financial requirements</li></ul>



## Status of policy commitments for carbon neutrality

Achieved	Adopted a Law	Policy Document	Declaration/Pledge	Not Yet Considered		
Bhutan	Fiji	Australia	<b>Cambodia</b>	Afghanistan	Pakistan	Azerbaijan
	Japan	China	<b>Indonesia</b>	Armenia	Palau	Georgia
	Maldives	Kazakhstan	<b>Lao People's Democratic Republic</b>	Bangladesh	Papua New Guinea	Iran (Islamic Republic of)
	New Zealand	<b>Malaysia</b>	Marshall Islands (the)	<b>Brunei Darussalam</b>	Russian Federation (the)	Tajikistan
	Republic of Korea (the)	Nauru	Nepal	Kyrgyzstan	Samoa	DPRK
		<b>Singapore</b>	Solomon Islands	Kiribati	Tonga	Philippines
		Sri Lanka	<b>Thailand</b>	India	Türkiye	Mongolia
		Uzbekistan	<b>Viet Nam</b>	Micronesia	Tuvalu	Timor-Leste



**Figure** - Total cost-effective mitigation potential by mitigation category (colored bars) and mitigation density of cost-effective potentials (gray bars), by country

Source: Roe et al, 2021



## Key technologies & approaches for carbon neutrality

### Forests - Protect

- Reduce deforestation
- Reduce mangrove loss
- Reduce peatland destruction

### Forests – Manage

- Improve forest management
- Grassland fire management

### Forests – Restore

- Afforestation and reforestation
- Mangrove restoration
- Peatland restoration

### Ag –Reduce emissions

- Enteric fermentation
- Manure management
- Nutrient management
- Rice cultivation

### Ag – Sequester

- Agroforestry
- Biochar
- Soil organic carbon in crop lands
- Soil organic carbon in grasslands

### Demand

- Clean cookstoves
- Reduce food waste



# Challenges

- Technologies unproven at scale – Feasibility?
- Potential trade-offs with other sustainable development priorities including food security
- Equity
- Non-permanence
- Leakage
- Maladaptation



Where to next?