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Analysis of the NDCs in Asia

Gaps and opportunities in the agriculture sectors

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Regional context for climate action in agriculture sectors

Basis for NDCs from Asia

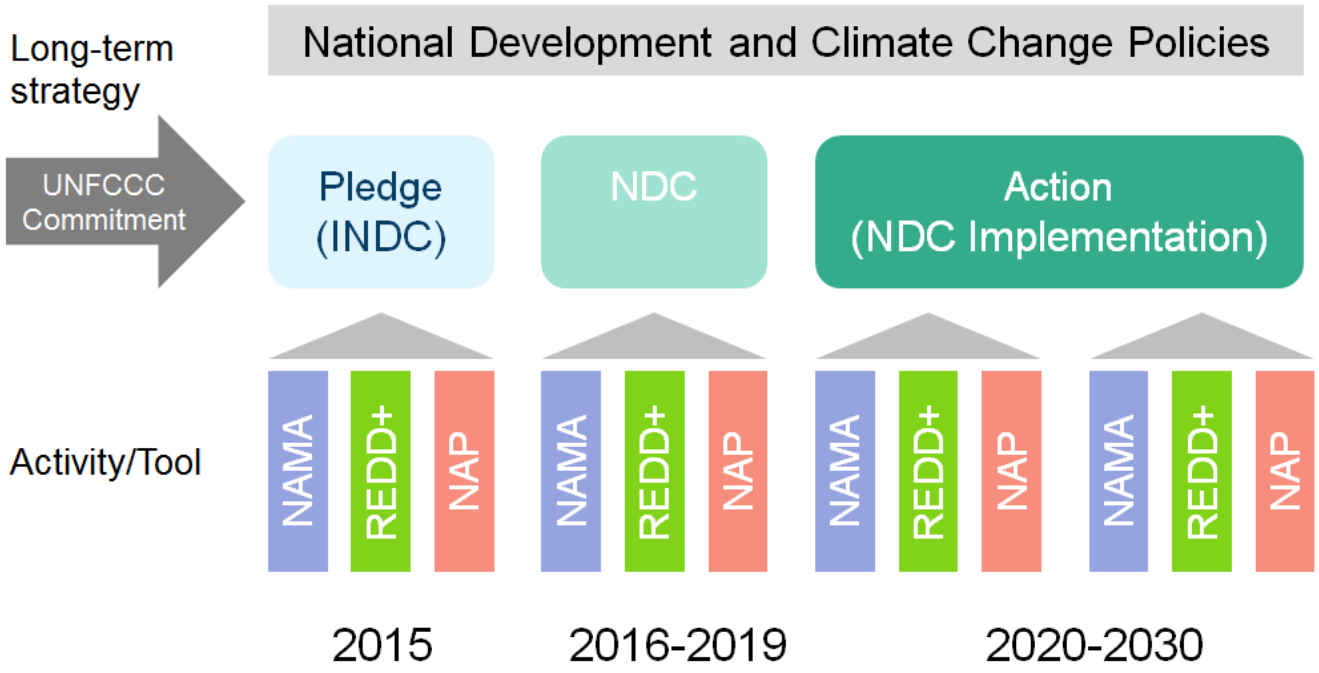

Figure - Relationship between INDCs and other UNFCC planning mechanisms

Adapted from: GIZ, 2015

- **NDC key planning document** for future climate change action
- **Rules-based system** implies need for **standardized approaches**
- Countries ability to access support may be related to ability to **demonstrate ambition** and **articulate needs**
- Ambition and needs are **shaped by** the **sector context**

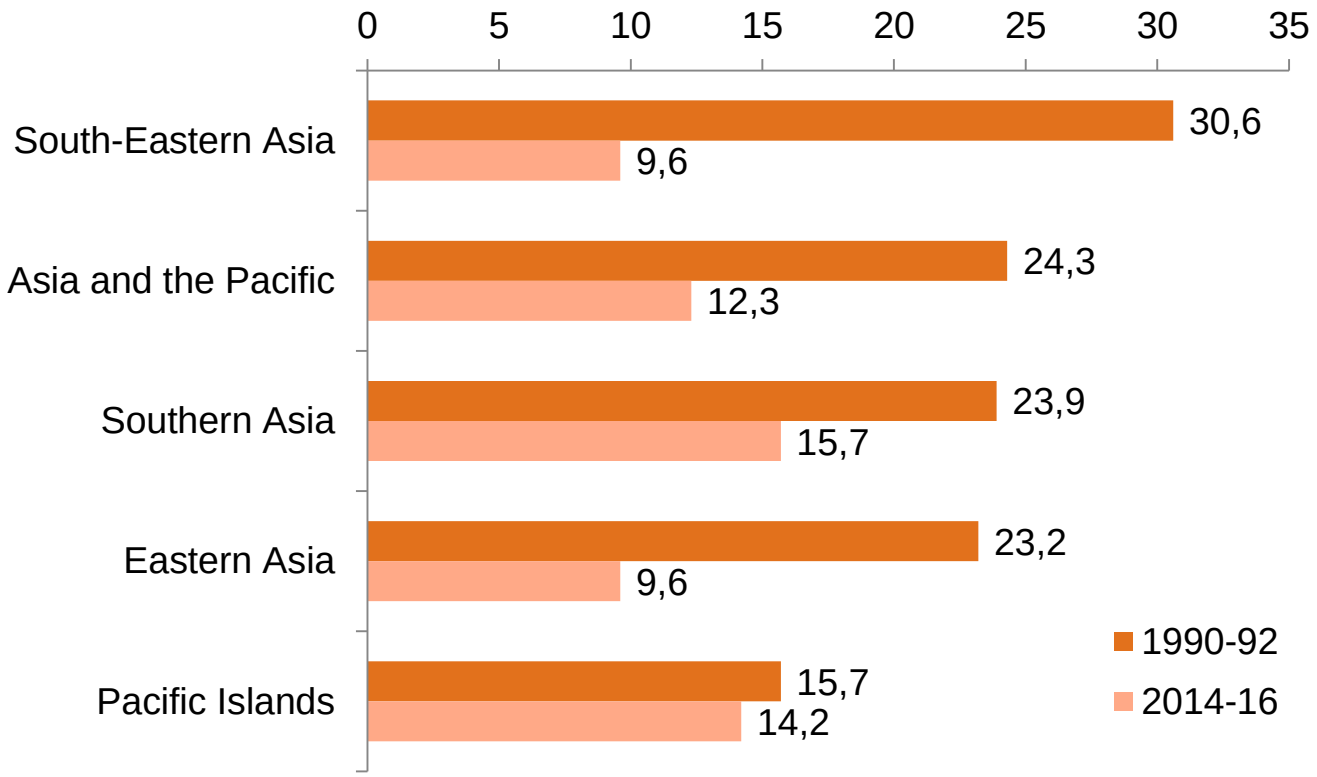

Figure - Share of undernourished people: then and now
Percentage

Source: FAO, 2015

- **Significant progress** made in **reducing hunger** in Asia over the past two decades
- Strong development outcome achieved through **income growth**
- A **key** factor was that economic **benefits** were **channeled**, in part, **to the poor**
- Improved **agricultural productivity** was a core **driver**

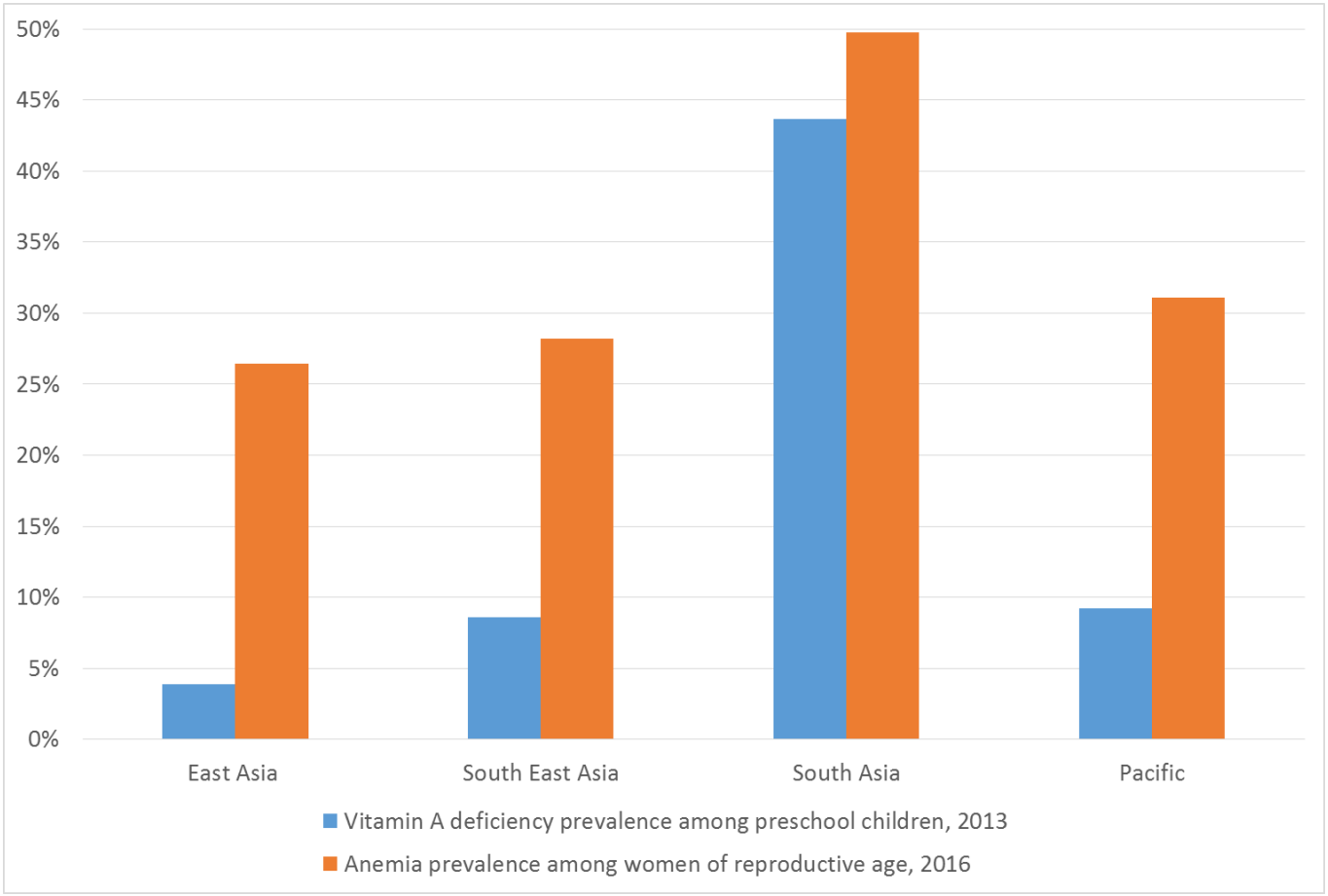

Figure – Micronutrient deficiency rates among children and women by sub-region (latest year available)

Source of raw data: GNR (2013) and WHO (2016).

Note: Vitamin A deficiency is estimated for children under the age of five. Anemia prevalence is estimated for women of reproductive age.

- Growing **inequality**
- **Poor nutrition** & micronutrient deficiencies **persist**
- **Gains** in addressing **undernourishment stagnating**
- **Obesity** & **diabetes** are growing **problems**

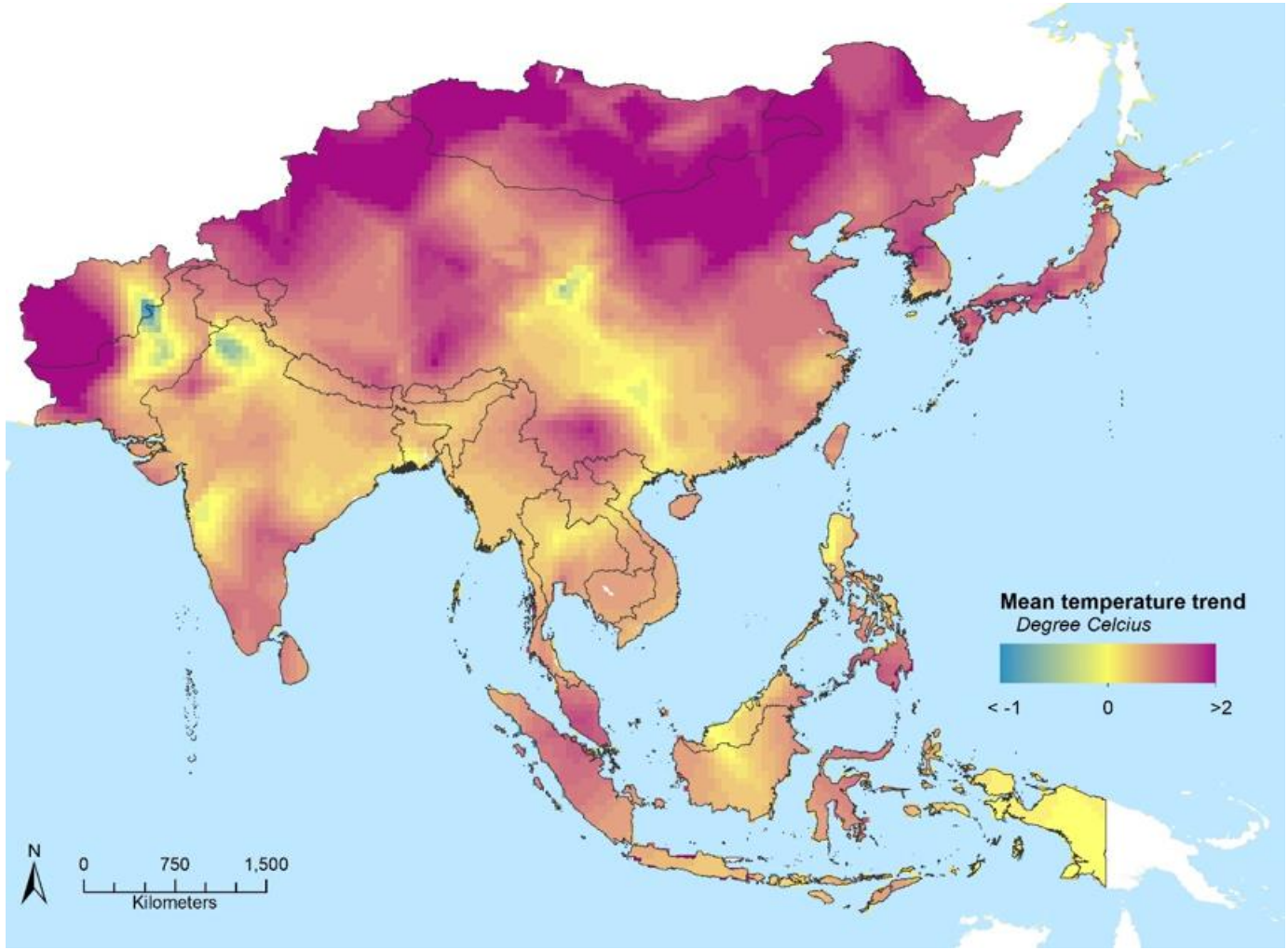

Figure - Linear trends of annual mean temperature from 1951 to 2012

Prepared by: IWMI. **Source**: Global Climate Monitor system (Camarillo-Naranjo et al., 2018)
Note: The trends are derived from Climatic Research Unit (CRU) Time-Series (TS) Version 3.21 of high resolution (0.5 x 0.5 degree) gridded data of month-by-month variation in climate (UEACRU TS3.21, 2013)

- Observed **increase** in **extreme** climate and weather **events** and **moderate** temperature and precipitation extremes
- **Increased incidence** of weather and climate related **disasters confirmed** in **NDC submissions**
- Identified by FAO as one **possible reason** for recent increase in **undernourishment**

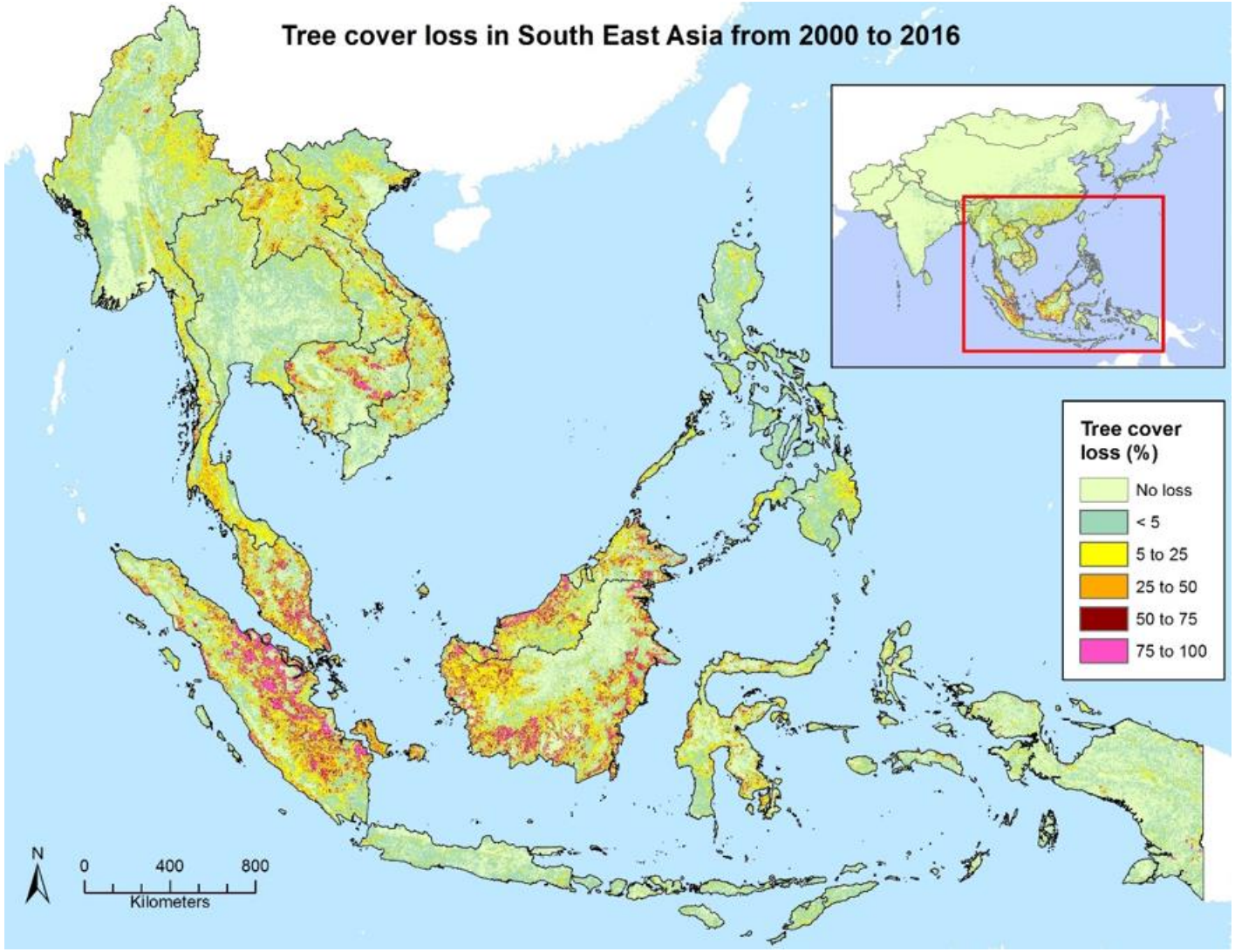

Figure - Areal percentage of tree cover loss at 1-km^2 spatial resolution

Prepared by: IWMI. **Source**: Hansen et al. 2013

Note: Tree cover includes all vegetation exceeding 5m in height: natural forests and plantations across a range of canopy densities aggregated from remote sensing based assessments at 30m resolution

- The **LULUCF sector** constitutes a **net sink** in Asia
- But **deforestation** and **biomass burning** has been **significant** in recent decades and still persists
- Extent of **forest degradation** is also **poorly understood**
- Emissions from **poor soil management** practices also **significant**

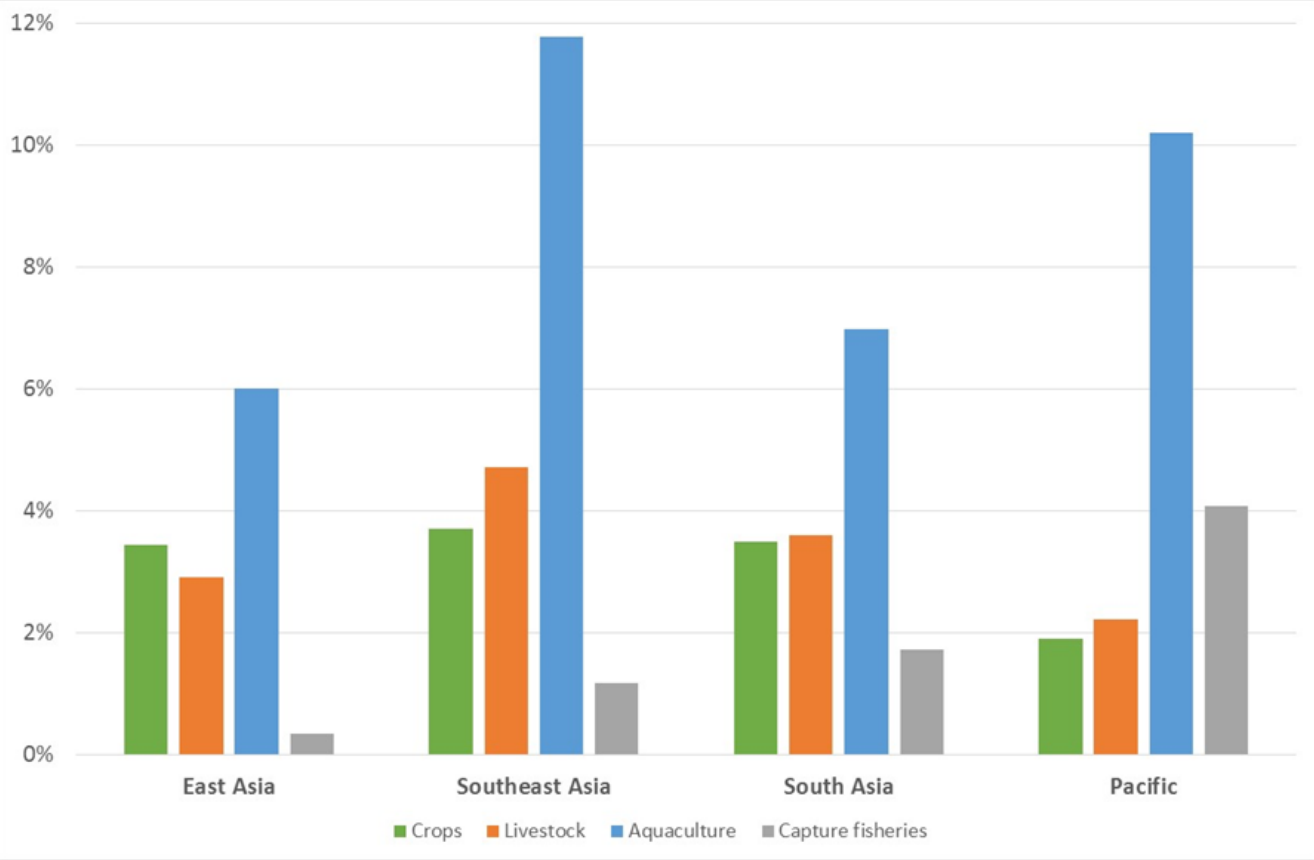

Figure – Average annual percentage growth in production for subsectors, 2000 – 2015

Sources of raw data: FAO (2018a), FAO (2018b).

Note: Annual average growth is calculated using linear regression of the log of production versus time. For crops and livestock, production is measured using FAO's gross production index. For aquaculture and capture fisheries, production is measured in tons. Calculations for crops and livestock refer to the period 2000 – 2014, and for fish refer to 2000 – 2015.

- **Trends** in **consumption** of **animal products** has **grown** and will **intensify** into the future to match new demand
- **Increasing emissions** profile of agriculture
- **Ability** to **quantify GHG emissions** and mitigation in these sectors is still **limited**

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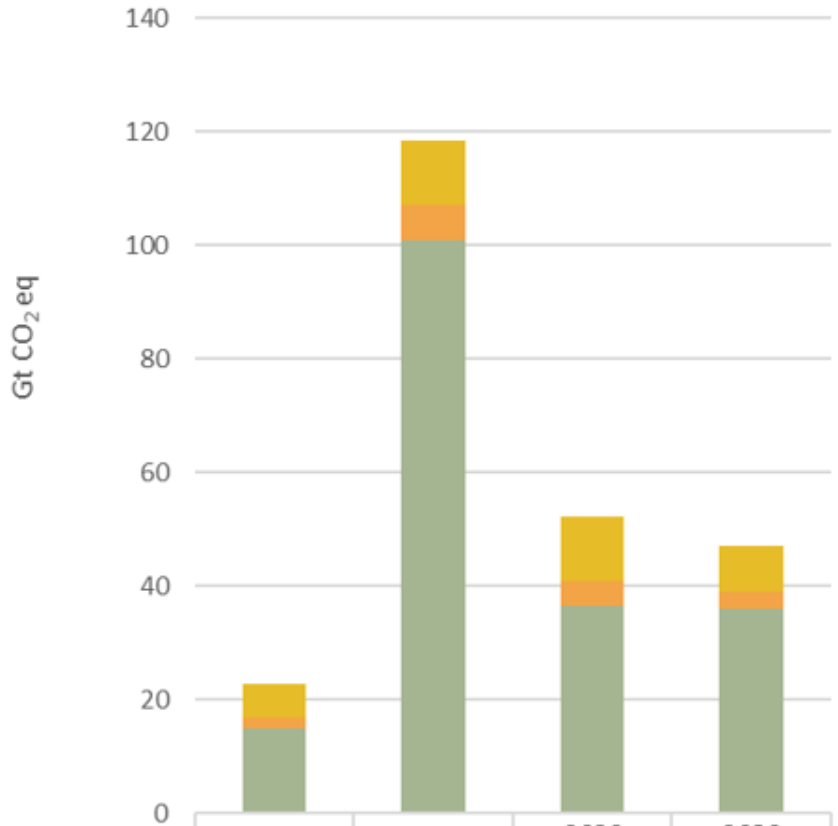
Regional contributions in agriculture

Analysis based on NDCs and NCs from Asia



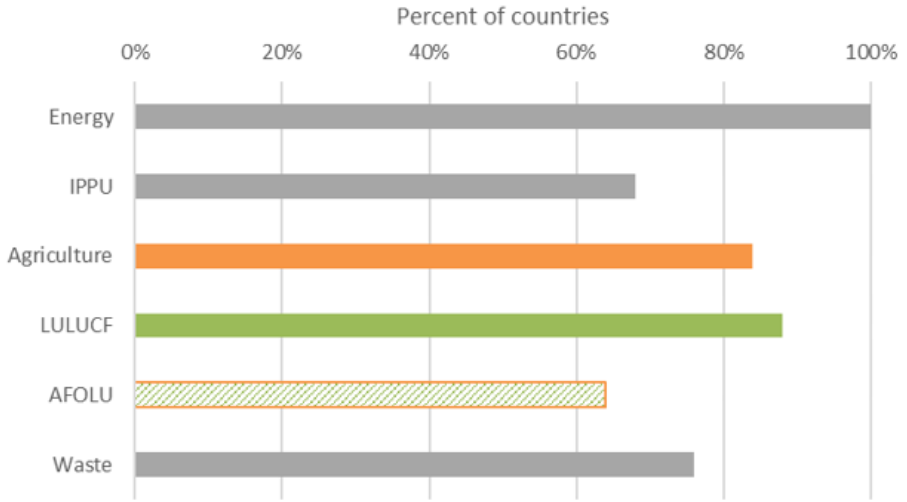
	2015*	2030 Baseline*	2030 Unconditional NDC Target	2030 Combined NDC Target
Southern Asia	5.95	11.38	11.34	7.91
South-Eastern Asia	1.84	6.38	4.44	3.01
Eastern Asia	15.08	100.76	36.48	36.10

Figure – Historical (2015), Counterfactual (2030), and unconditional and combined mitigation scenarios (2030) in Asia

- Under the mitigation scenario, total **net emissions** in the region are expected to **fall** by roughly **60 percent** compared to the 2030 counterfactual scenario
- Net emissions at the regional level are **still double** by **2030** even under NDC implementation

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

A



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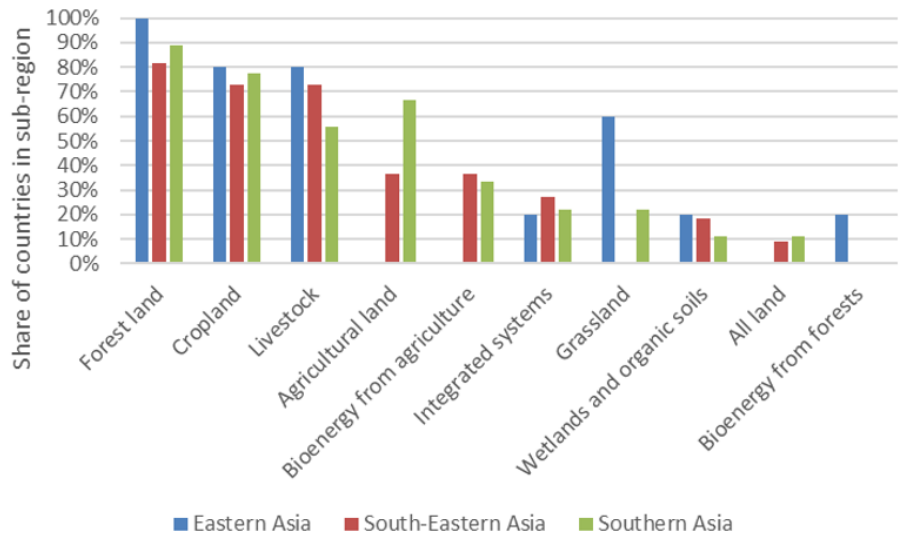


- Majority of **countries include** the **agriculture** sector (85%) and the **LULUCF** sector (90%) in their general mitigation contributions – largely as non-GHG targets or policies and measures
- **Policies or measures** cited by countries in Asia are **mostly biophysical-related approaches**

Figure – Share of countries in Asia with general mitigation contribution by IPCC sector (A) and with mitigation policies and measures by sub-region and land-use/sub-sector type (B)

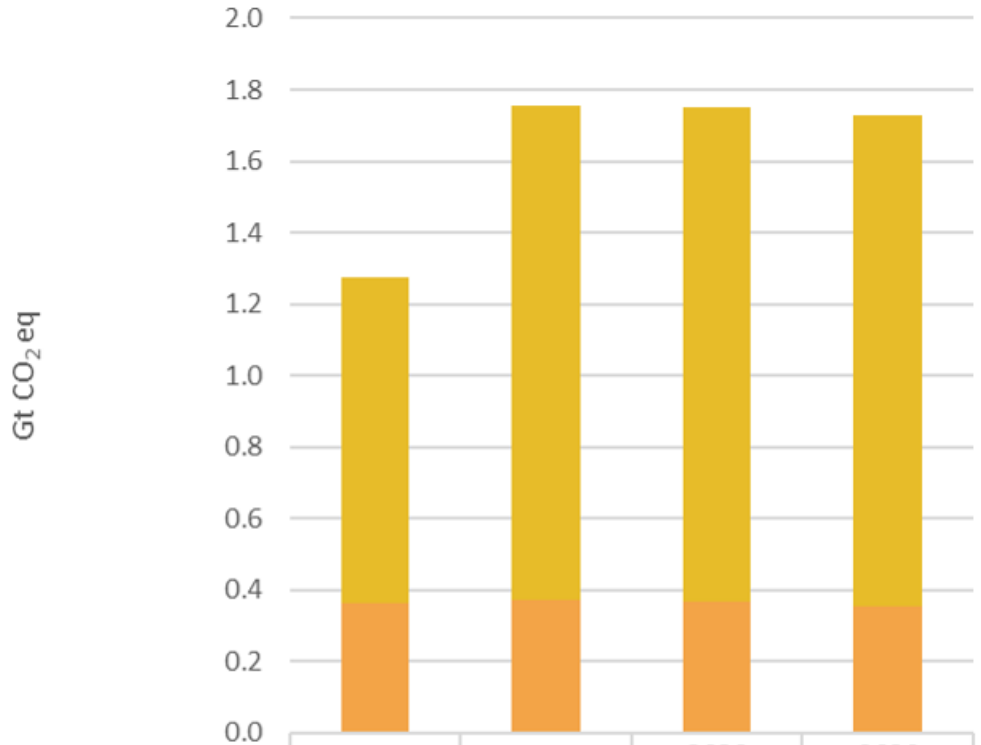
Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

	2015*	2025 Baseline*	2025 NDC Unconditional Target	2025 NDC Target	2030 Baseline*	2030 Unconditional NDC Target	2030 Combined NDC Target
Southern Asia	-0.32	-0.20	-0.20	-0.20	-0.19	-0.19	-0.74
South-Eastern Asia	0.36	0.18	-0.17	-0.41	0.15	-0.37	-0.69
Eastern Asia	-0.73	-0.79	-0.79	-0.79	-0.81	-0.81	-0.81

Figure – Historical (2015), Counterfactual (2025/2030) and unconditional and combined mitigation scenarios (2025/2030) for the LULUCF Sector in Asia

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- Based on country submissions **LULUCF removals** are expected to **increase** by **25 percent** in **2030** under the **NDC** mitigation scenario
- **Measures** include **SFM**, agroforestry, afforestation/ reforestation, reducing deforestation, forest conservation and fire management



	2015*	2030 Baseline*	2030 Unconditional NDC Target	2030 Combined NDC Target
Southern Asia	0.91	1.38	1.38	1.37
South-Eastern Asia	0.36	0.37	0.37	0.35

Figure - Historical (2015), counterfactual (2030) and unconditional and combined scenarios under NDC conditionality (2030) in the agriculture sector

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- Total **emissions** from the agriculture sectors expected to **increase** by around **40 percent** compared to historical levels (South & Southeast Asia only)
- Implementation **NDC measures** would result in **emissions reduction** of around 2% compared to the 2030 counterfactual
- Estimates only as **very few** policy and measures designed in a way that emissions **can be quantified**

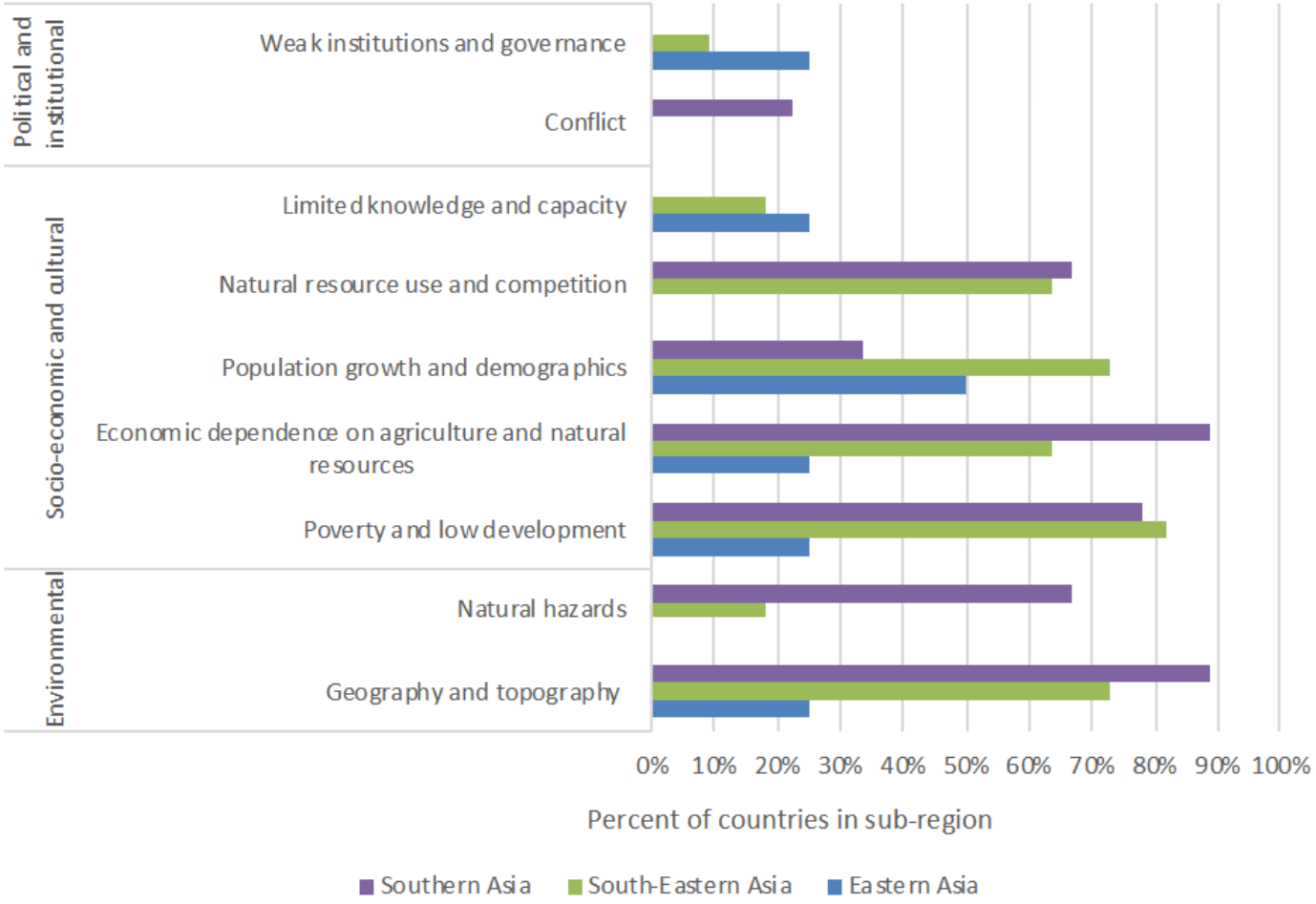


Figure – Share of countries with a non-climatic driver of climate change vulnerability out of countries with climate impacts reported by sub-region and stressor type

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- Environmental, social, economic, cultural, political and institutional **variables**, or **stressors** that **exacerbate vulnerabilities** to climate change
- Poverty and low levels of development, geography and topography and dependence on agriculture and natural resources largest **non-climatic drivers** of **vulnerability**

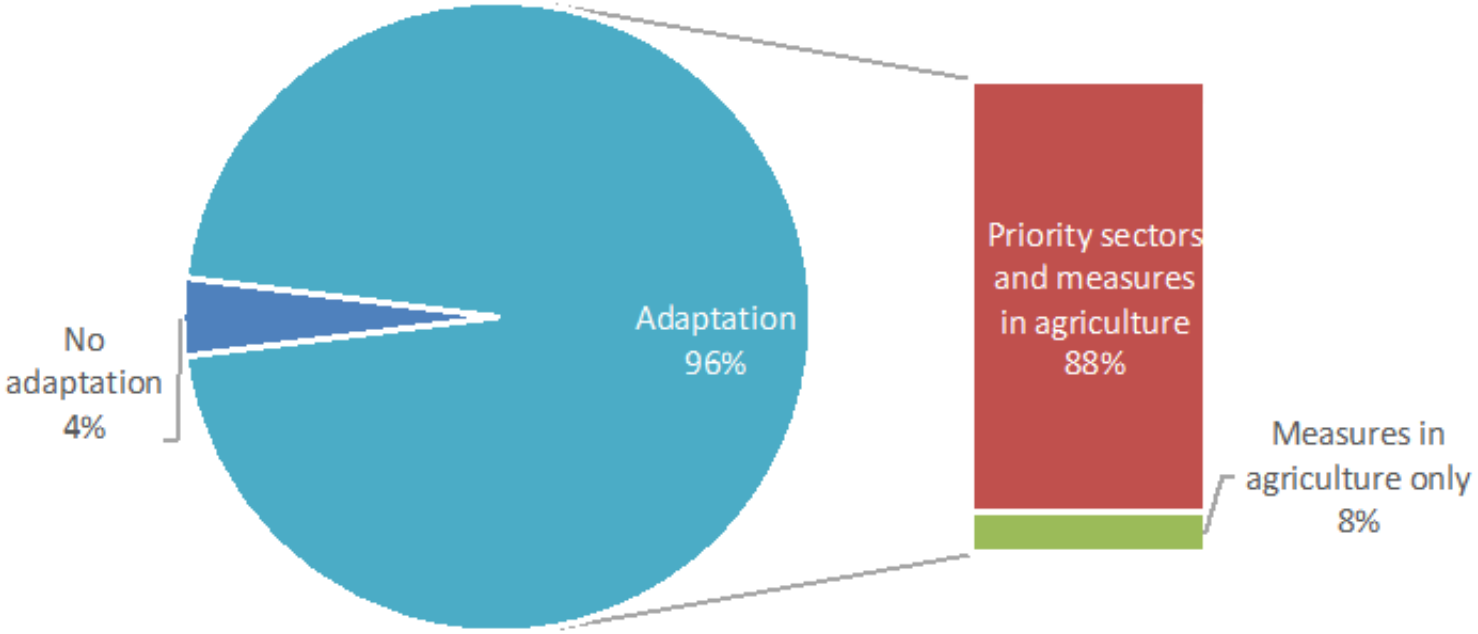
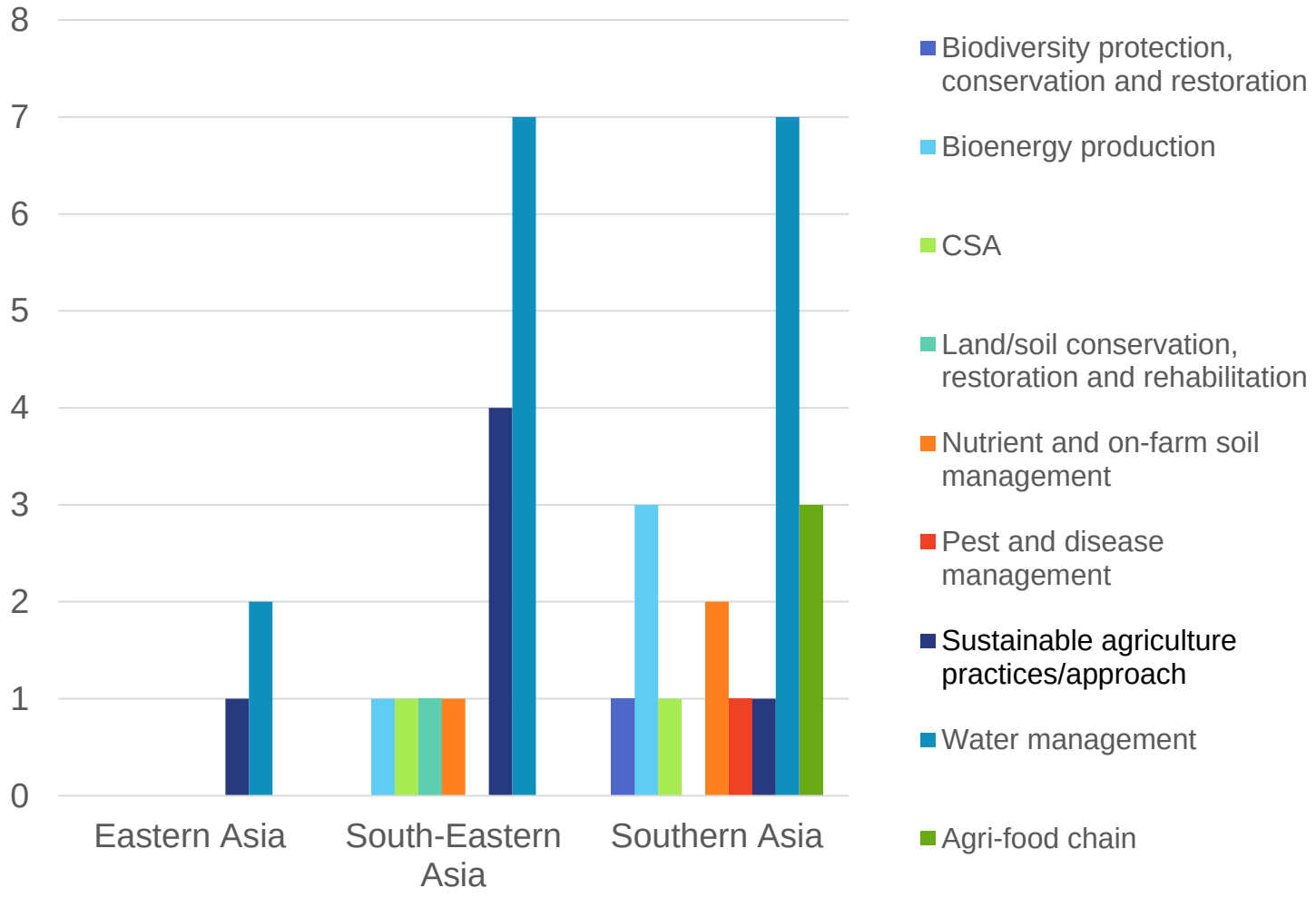


Figure – Share of countries with adaptation in the agriculture sectors

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- **Adaptation** in **agriculture** is a **key priority** for most countries in the region
- Number of **priority sectors** and **cross-sectoral priorities** in **ecosystems** and **social systems** as part of their adaptation strategy in the agriculture sectors



- **Key sector adaptation measures** include plant management, water management, nutrient and on-farm soil management and general crop management

Figure – NDC/NC Actions by sub-sector by sub region

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

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Gaps and opportunities

Based on NDCs and NCs from Asia

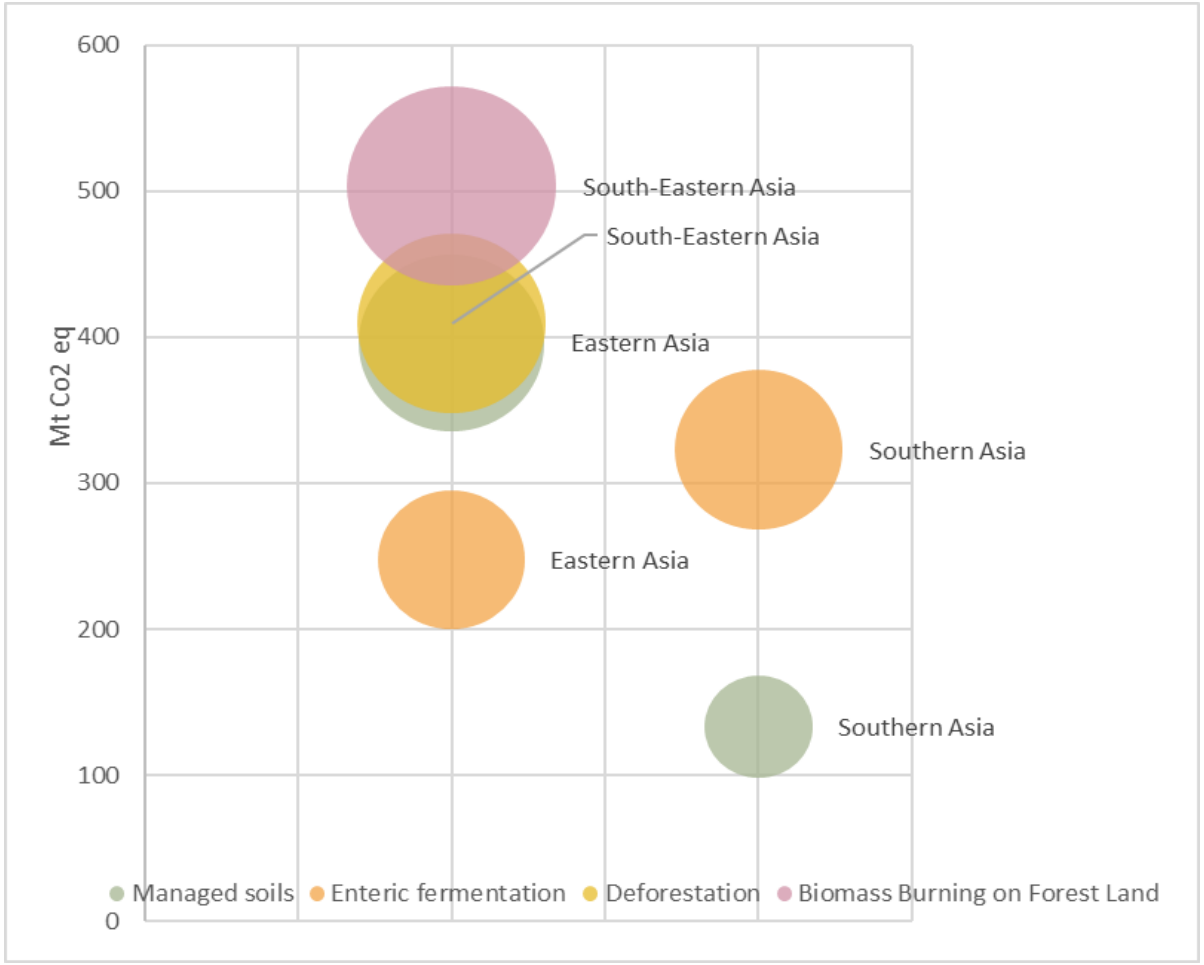

Figure – GHG Hotspots in Asia in the AFOLU sector by major category and sub-region

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- Emissions **hotspots** are a possible **basis to target** areas for:
  - **Improved monitoring and reporting** systems
  - Designing **quantifiable policies** and **measures**
  - **Increased action** subject to **conditional** finance and support
- Policy **coverage gaps** identified
- **Implementation gap** likely to be much **greater**

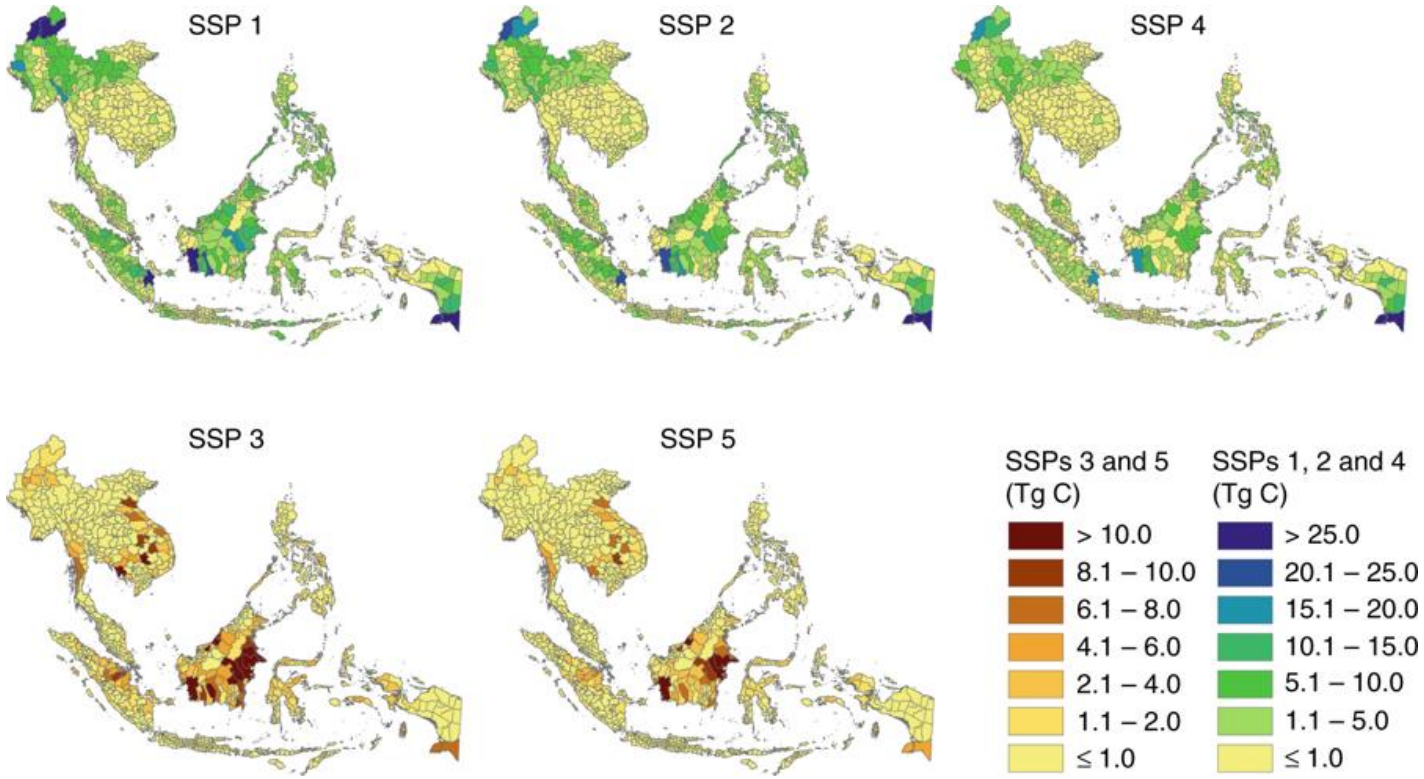

Figure – Province level distribution of the projected aboveground forest carbon stock (AFCS) gains and losses in Southeast Asia (2015–2050)

Source: Estoque et al., 2019

- Recent assessments suggest that outlook for **forestry sector** is **more complicated** than suggested by the NDCs
- **Economic development pathway** will be **crucial** for realizing NDC ambition
- **Co-benefits**

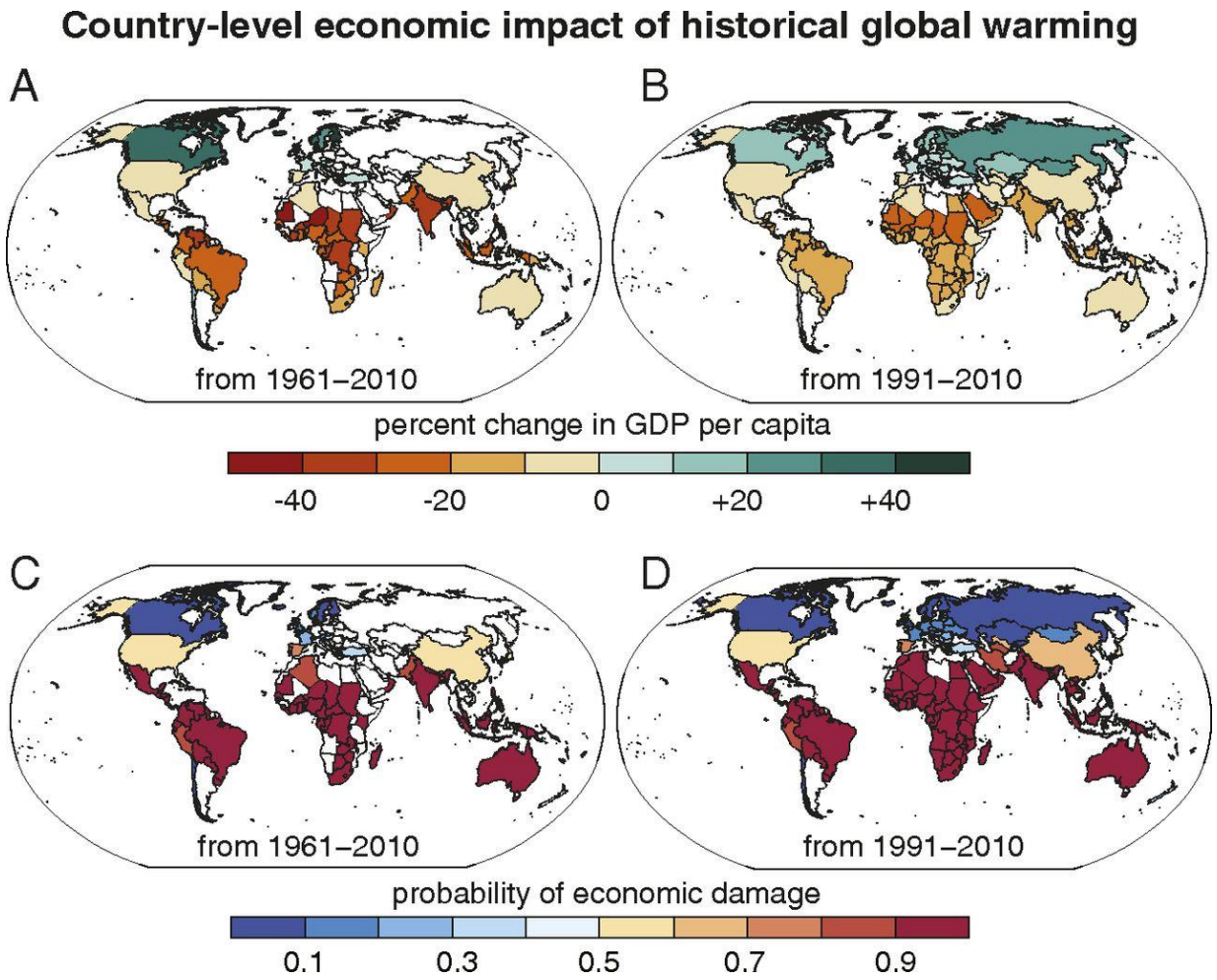

Figure – Country-level economic response to global warming

Source: Diffenbaugh & Burke, 2019

- Understanding of **climate change impacts** on **food security** remain poorly understood
- Further **verifiable**, knowledge required from countries on:
  - Impacts including **losses and damage**
  - Adaptation **metrics, baselines** and tracking
  - **Effectiveness** of adaptation **options**
  - Needed **financial** and **capacity support**

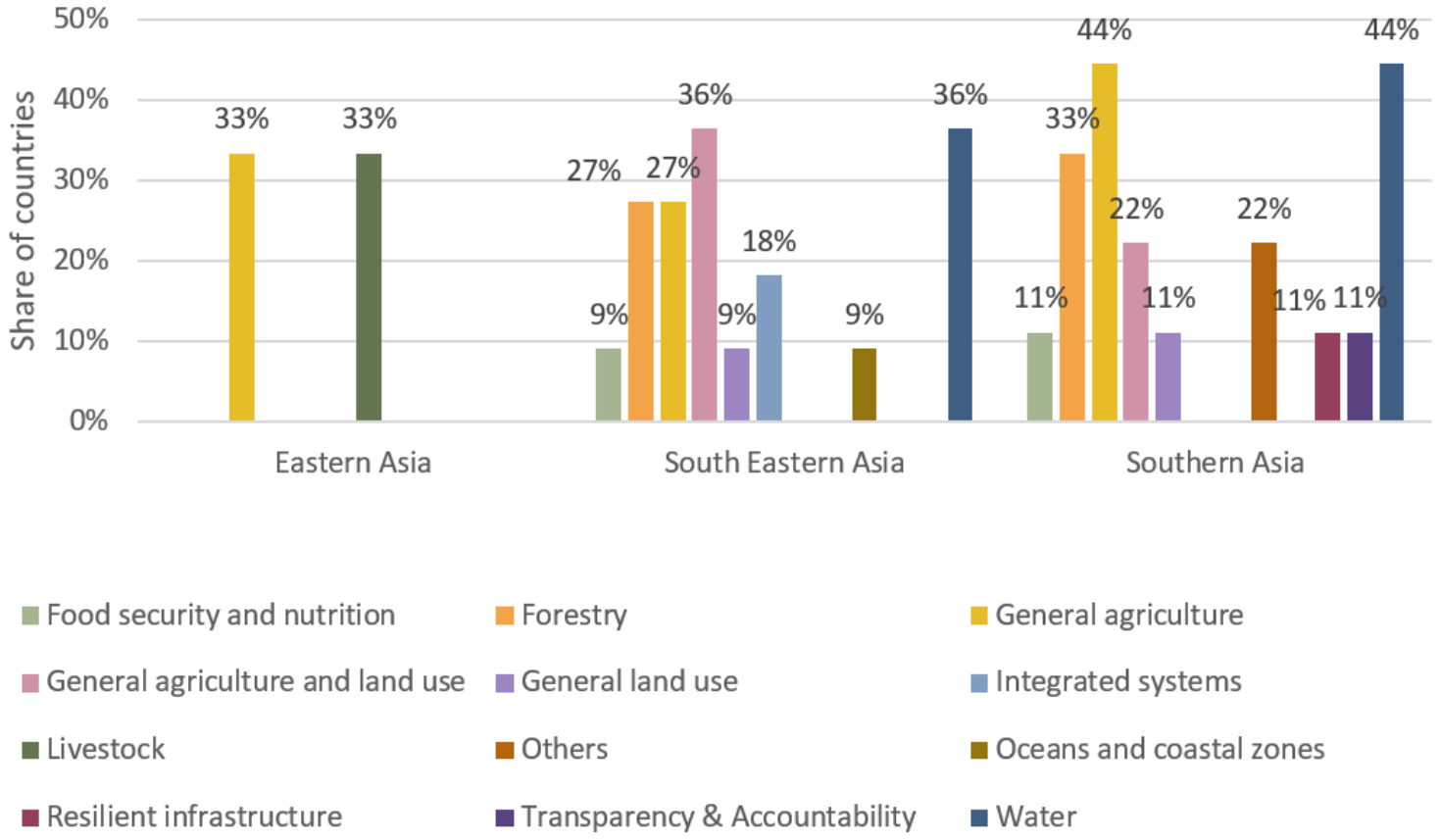

Figure –Share of countries with technological support and/or capacity building needs by priority area in agriculture by and sub-region

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- **Lack** of **financial resources**, **technical capacities** and weak **institutional arrangements** are main **barriers** to technology dissemination and uptake in Asia
- **Need** for **additional support** and resources for implementing mitigation and/or adaptation contributions

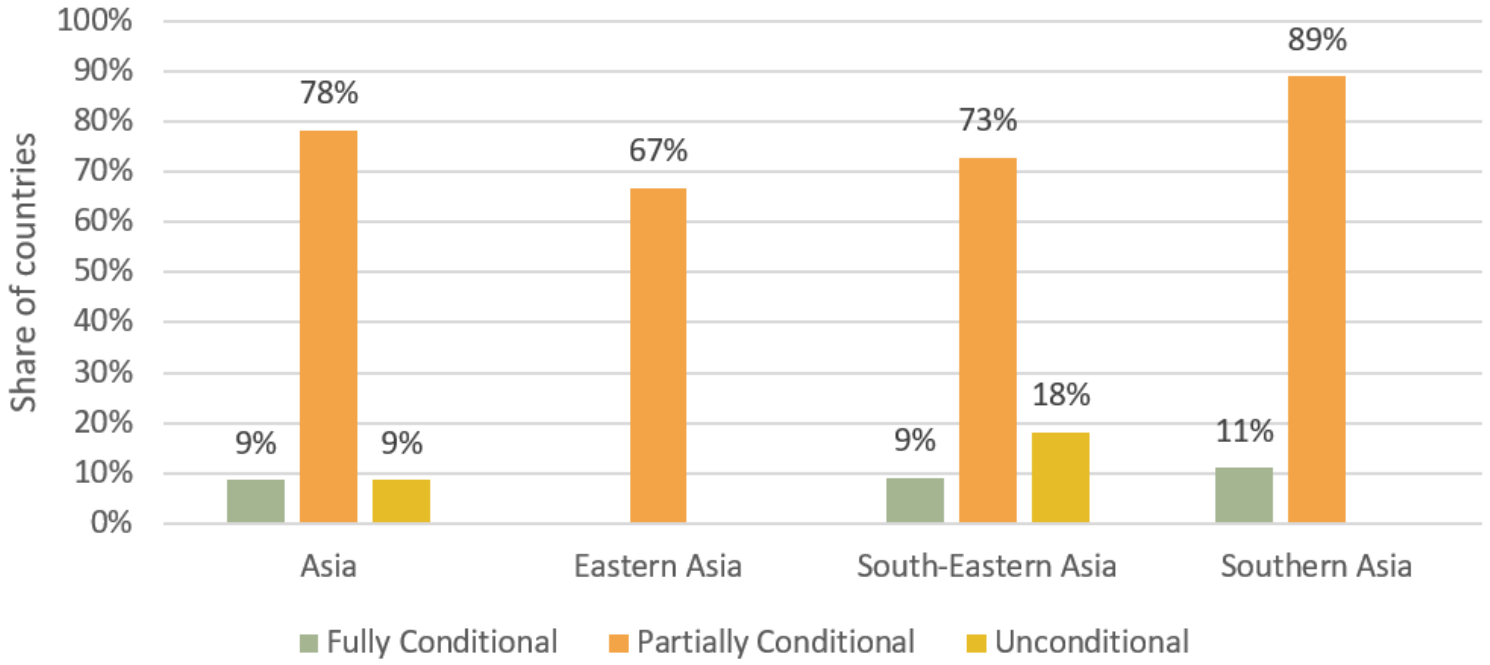

Figure – Share of developing countries with NDCs that are fully, partially or not conditional to the provision of finance by sub-region

Source: FAO 2019 Forthcoming based country NDCs, NCs and BURs

- **Access** to additional **financial resources** is a **prerequisite** for achieving the climate goals and targets in country NDCs
- NDC implementation in Asia is associated with a reported **1.6 billion USD**
- However represents the financial needs expressed by **only one-third** of the countries in the region

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Conclusions

1. Strong need for countries in Asia to better articulate potential ambition and need for support to take action on climate change in agriculture
2. NDC contributions from the region are significant – but gaps and missed opportunities exist
3. Data and information for comparing, accounting and reporting against NDC contributions could open up opportunities for finance and enhanced action

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Thank you

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