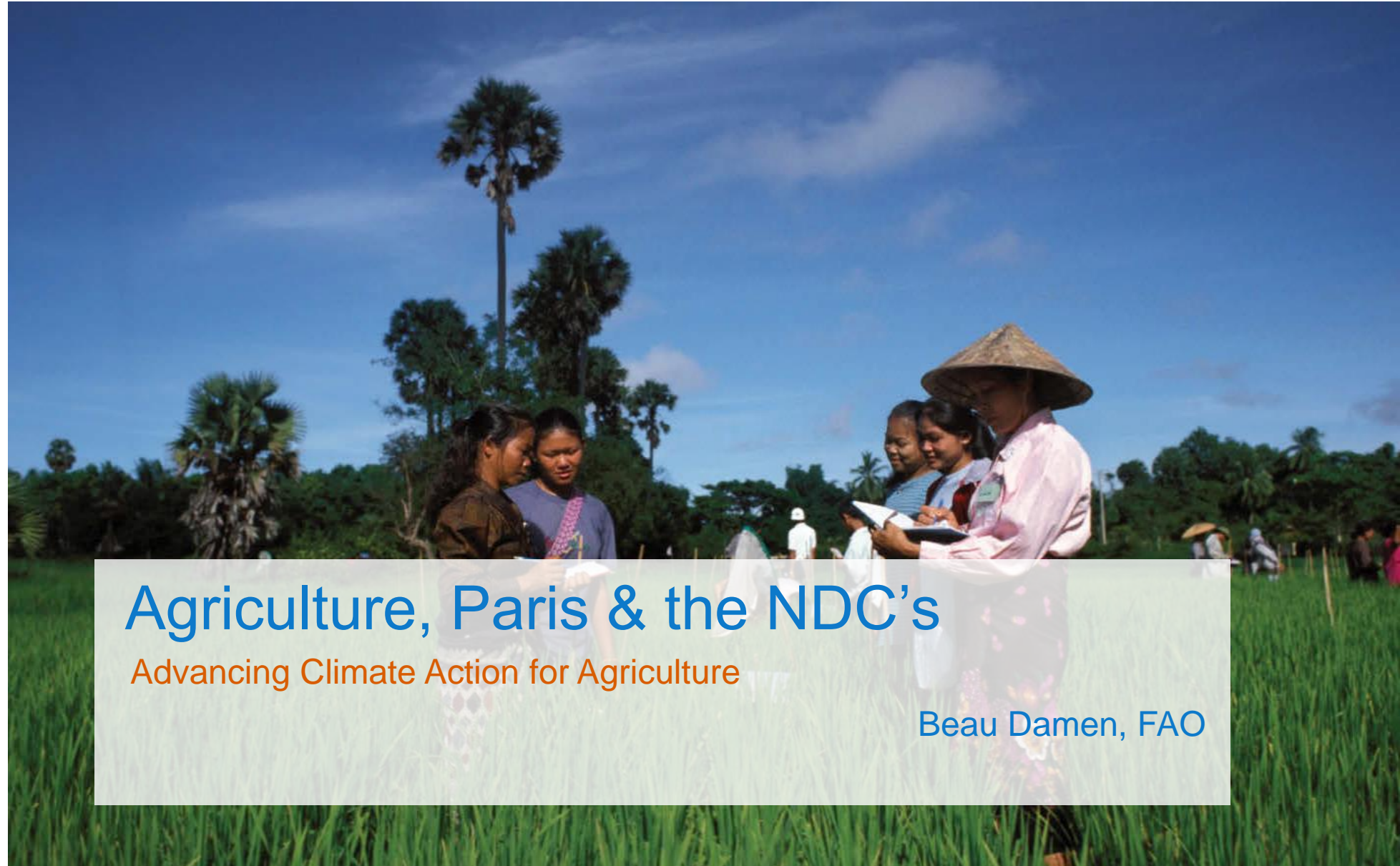




Food and Agriculture
Organization of the
United Nations



Agriculture, Paris & the NDC's

Advancing Climate Action for Agriculture

Beau Damen, FAO

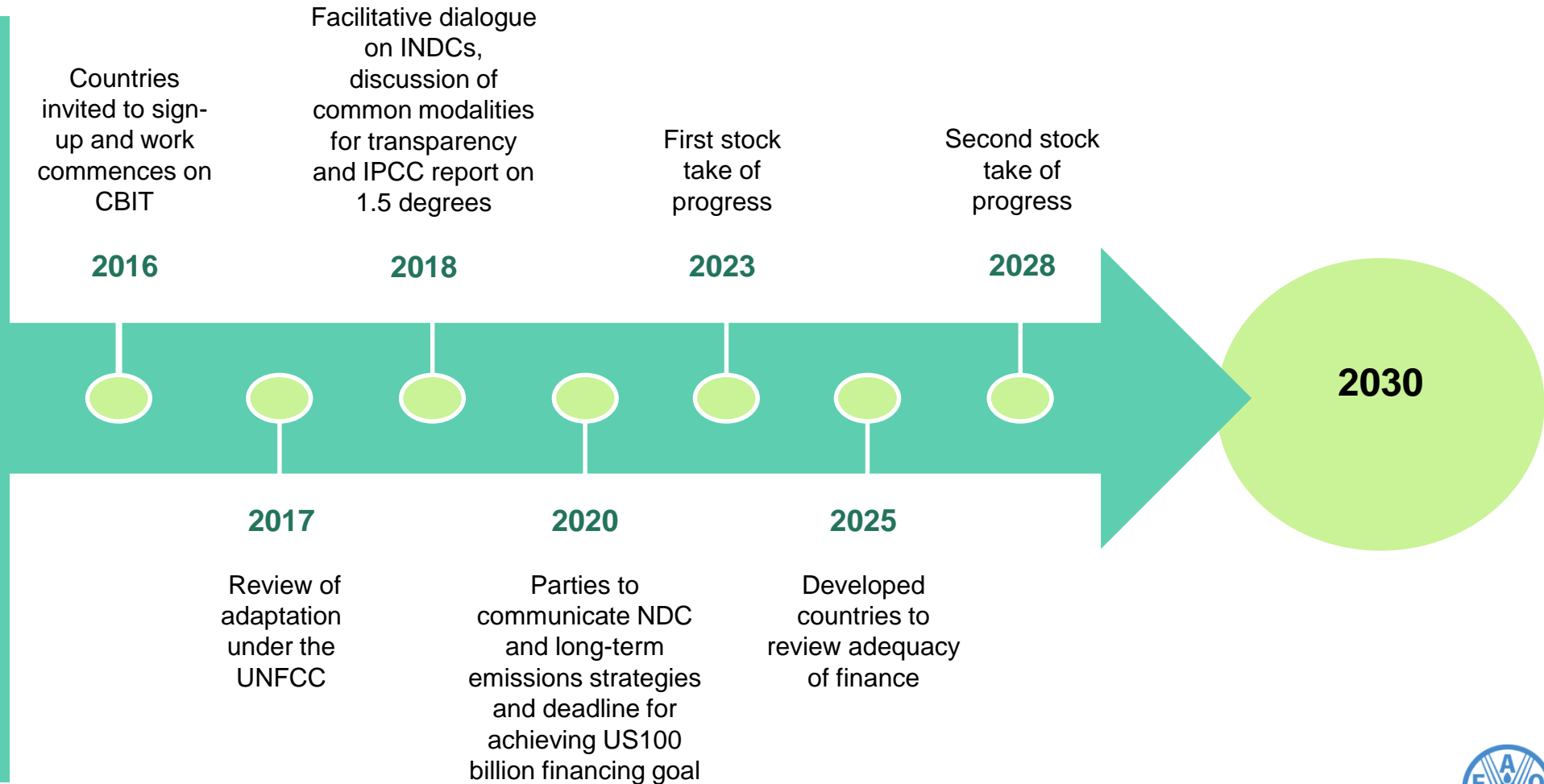
Overview

1. Paris Agreement, NDCs and agriculture
2. Challenges
3. Gaps
4. Opportunities
5. Conclusion – Climate Action for Agriculture

Road ahead for the Paris Agreement

Paris Features

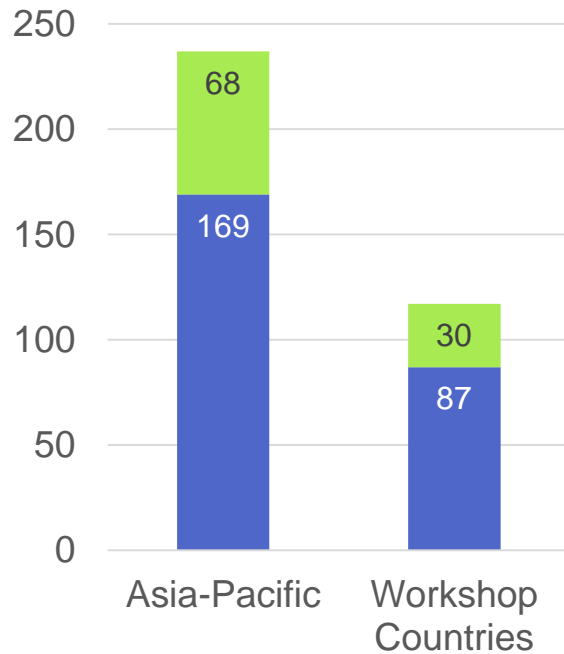
- Global (55 rule)
- Country driven
- Partially-binding
- Special long-term role afforded to sinks
- Transparency key tool for implementation
- Equal importance of resilience and adaptation



NDCs and Agriculture & Land-use

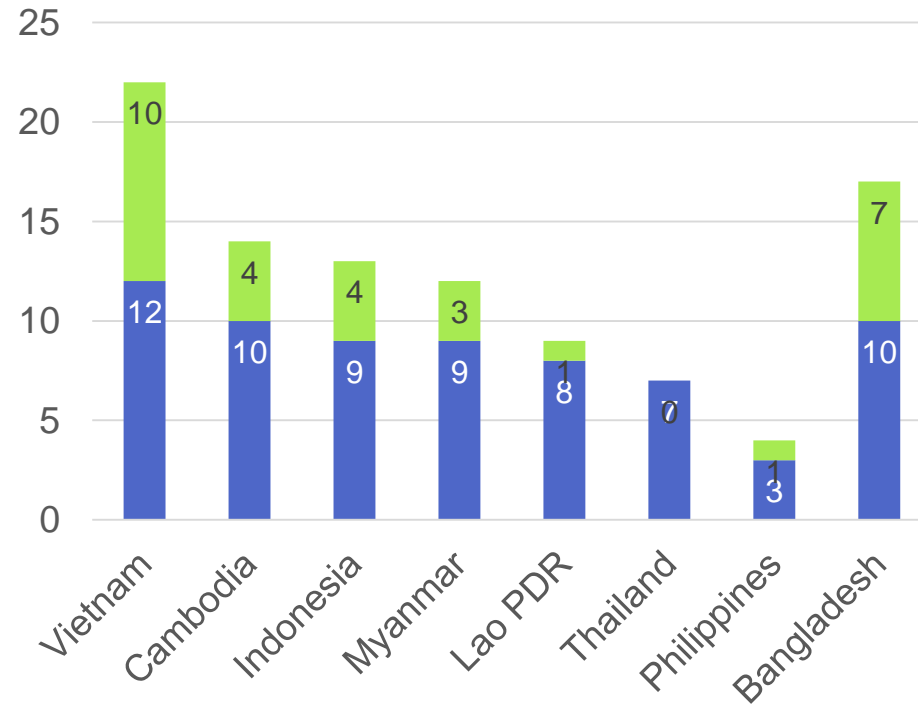
INDC actions identified for ag and land use

Number of actions



Number of INDC actions identified for agriculture and land-use sectors

Number of actions

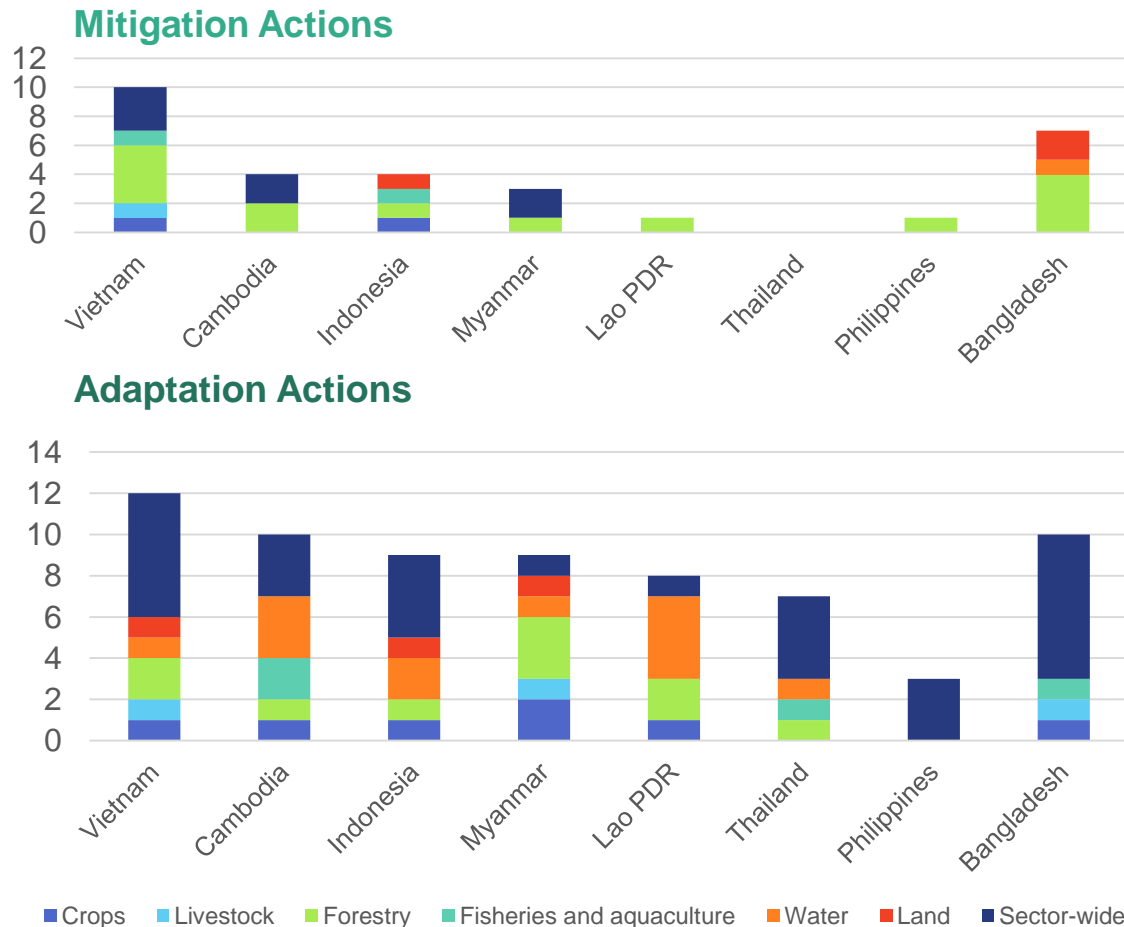


- Under the **Paris Agreement** countries in **Asia** have **signaled Agriculture** (crops, livestock, forestry, fisheries and aquaculture) as a **key concern**
- Countries here have identified **98 INDC priority actions** for the **Agriculture** sectors

NDCs - A tool for regional collaboration

INDC Actions by sector

By country



- Key areas of **common technical focus**:
 - Forestry
 - Water management
 - Climate planning and policy
 - DRR & Early Warning
 - Resilient crop production
- **ASEAN collaboration** through AMAF common position is a **good example** of using the NDCs to coordinate for action

NDCs - Challenges

Transparency



Scaling-up



Finance



Images:

<http://content.presspage.com/uploads/942/green-finance.jpg?10000>

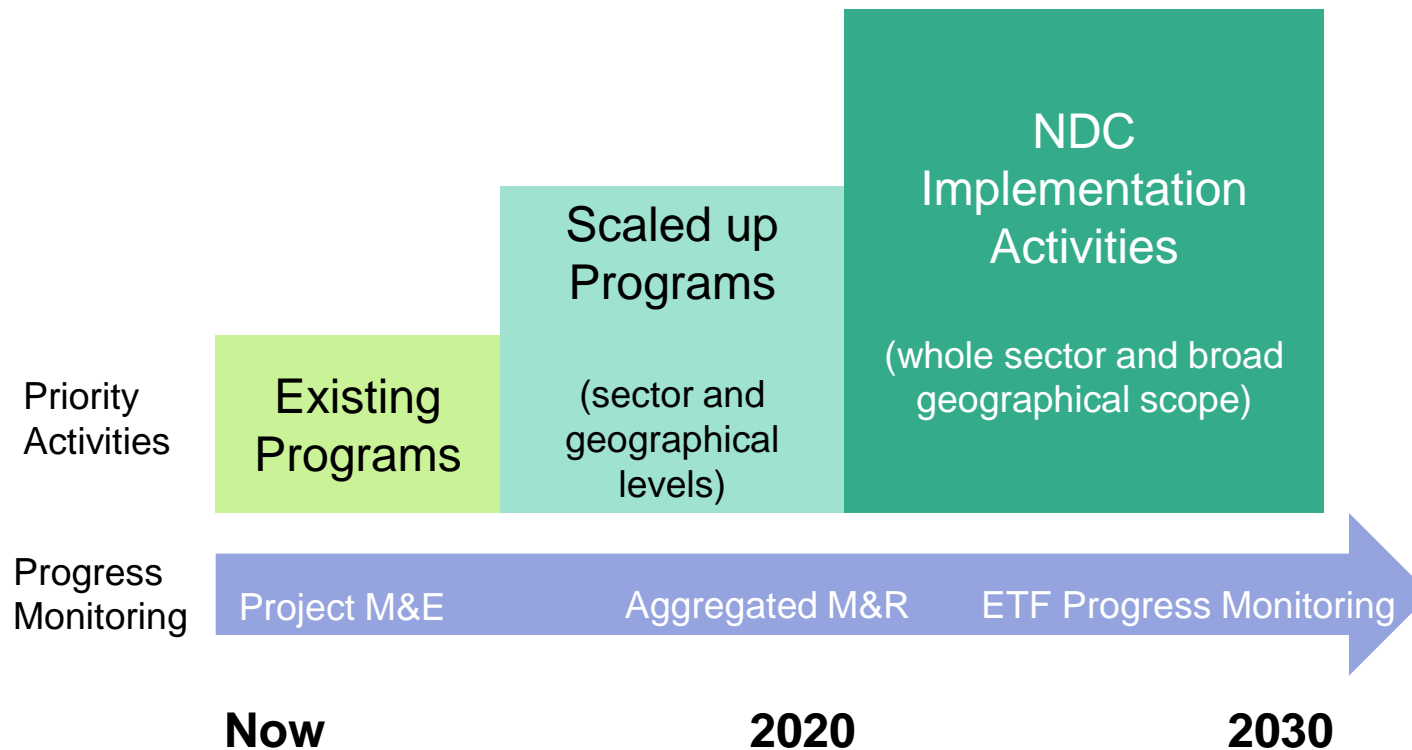
http://insight.jbs.cam.ac.uk/assets/2016-04-22_news_scaleupproblems-883x432.jpg

<http://content.presspage.com/uploads/942/green-finance.jpg?10000>



Implications of the Paris Agreement

NDC implementation timeline – Escalating programming and reporting requirements
(Illustrative example)

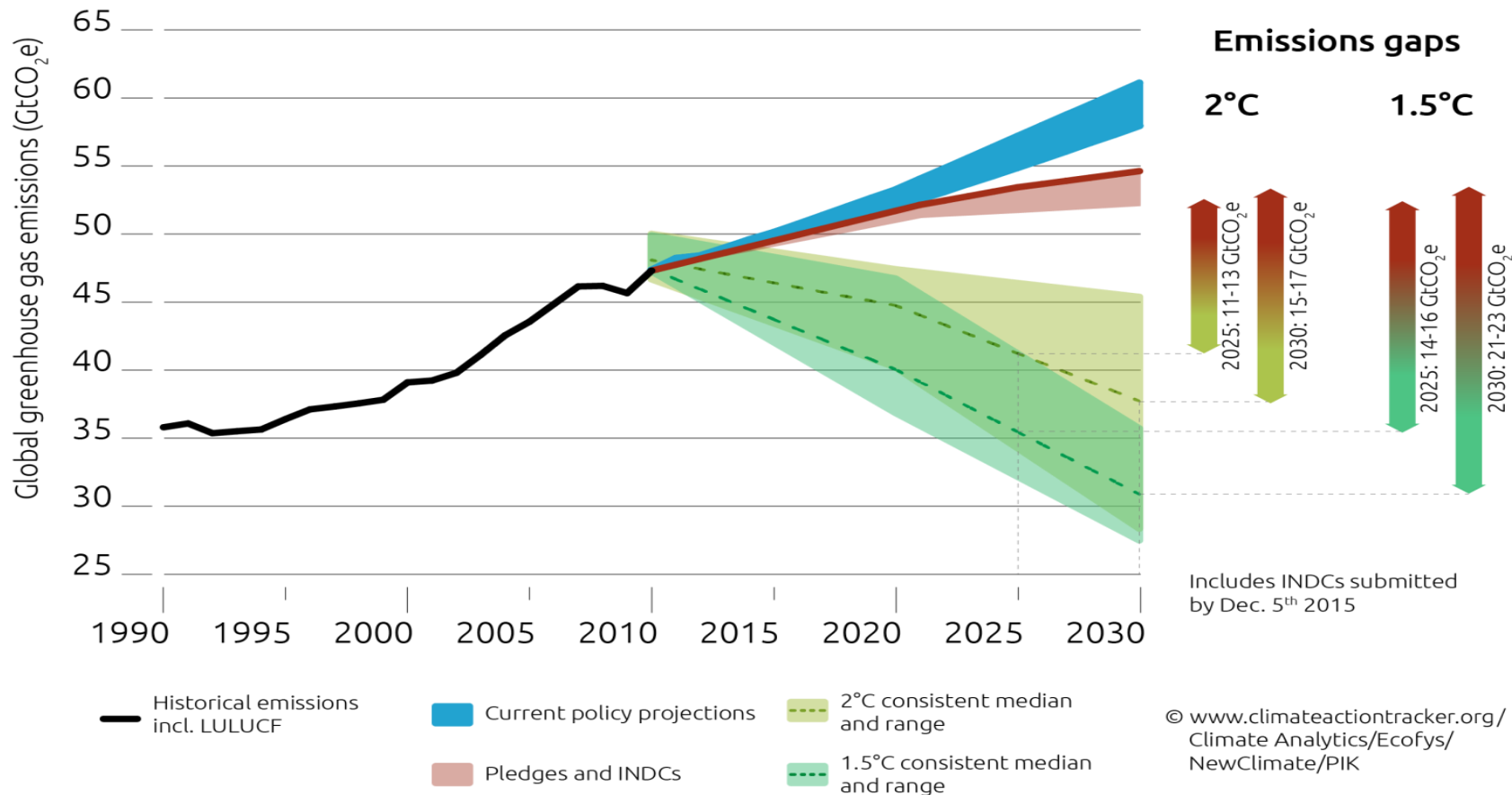


- **NDC key planning document** for future climate change action
- **Rules-based system** implies need for **standardized approaches**
- Countries ability to access support may be related to ability to **demonstrate ambition** and **articulate needs**

A case for more ambition

Emissions gaps between current pledges and temperature goals

GHG emissions, GtCO₂e per year



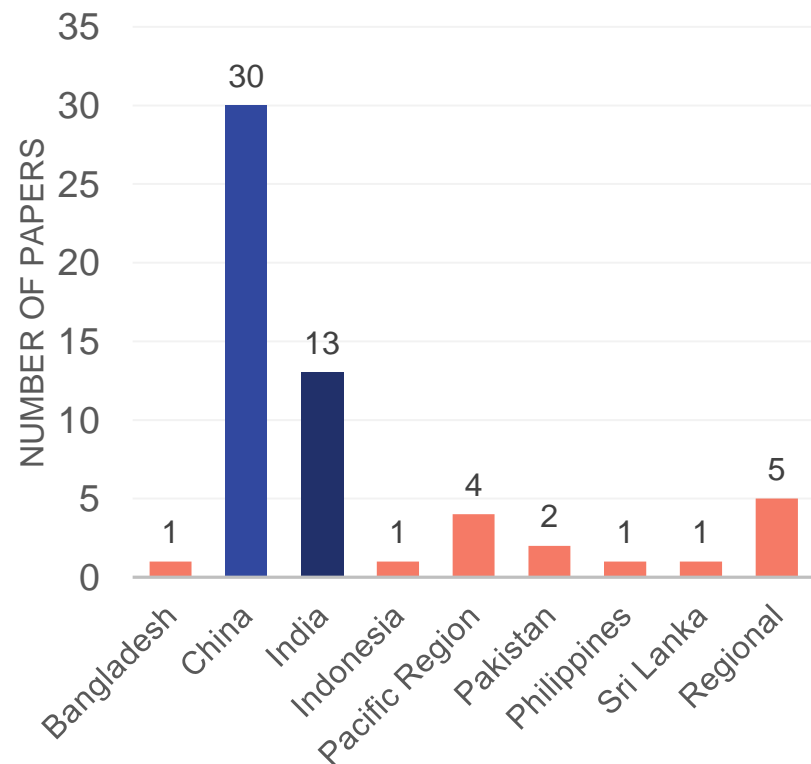
- Despite its significance **Paris will not be enough**
- By 2030 the **emissions gap** to keep us on 2 degree pathway could be as much as 15-17 GtCO₂e
- More if 1.5 degrees is our goal
- Ambition presents **opportunities and challenges** for agriculture

Source: CAT, 2016

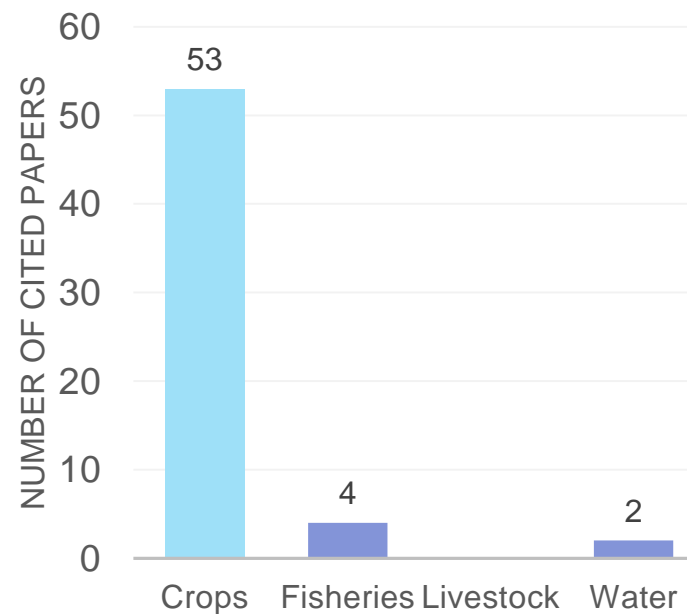


Key knowledge gaps - climate & food security

Number of papers on impacts cited by country in the IPCC AR5 chapter on food security*



Number of papers on impacts cited by broad sub-sector in the IPCC AR5 chapter on food security



- Understanding of climate change impacts on food security outlined in IPCC AR5 is **limited**
- **Knowledge** related to climate impacts on food security is **based almost solely on studies looking at crops production**
- Further **verifiable**, knowledge on adaptation options is required

Key knowledge gaps – Mitigation & Agriculture

- Objectively the **agriculture** and land-use sectors have a potentially **important contribution** to make if we are to avoid potentially dangerous climate change
- Agriculture contributes ~5.0 to 5.8 GtCO₂e/yr or **~11% of total anthropogenic GHG emissions**, not including land use change
- Estimated that nearly **70% of the technical mitigation potential** in the agricultural sector occurs in **tropical agriculture***
- But **technical information** about **how much** mitigation is needed in the sector versus **how much is feasible** remains **poor**
- **Estimated** that to stay within the **2°C limit** a realistic annual **goal for agricultural emissions reductions** is about **1 GtCO₂e/yr****
 - **Without properly accounting** for the carbon sequestration potential of **agricultural soils**

Sources:

* Rosenstock et al 2016

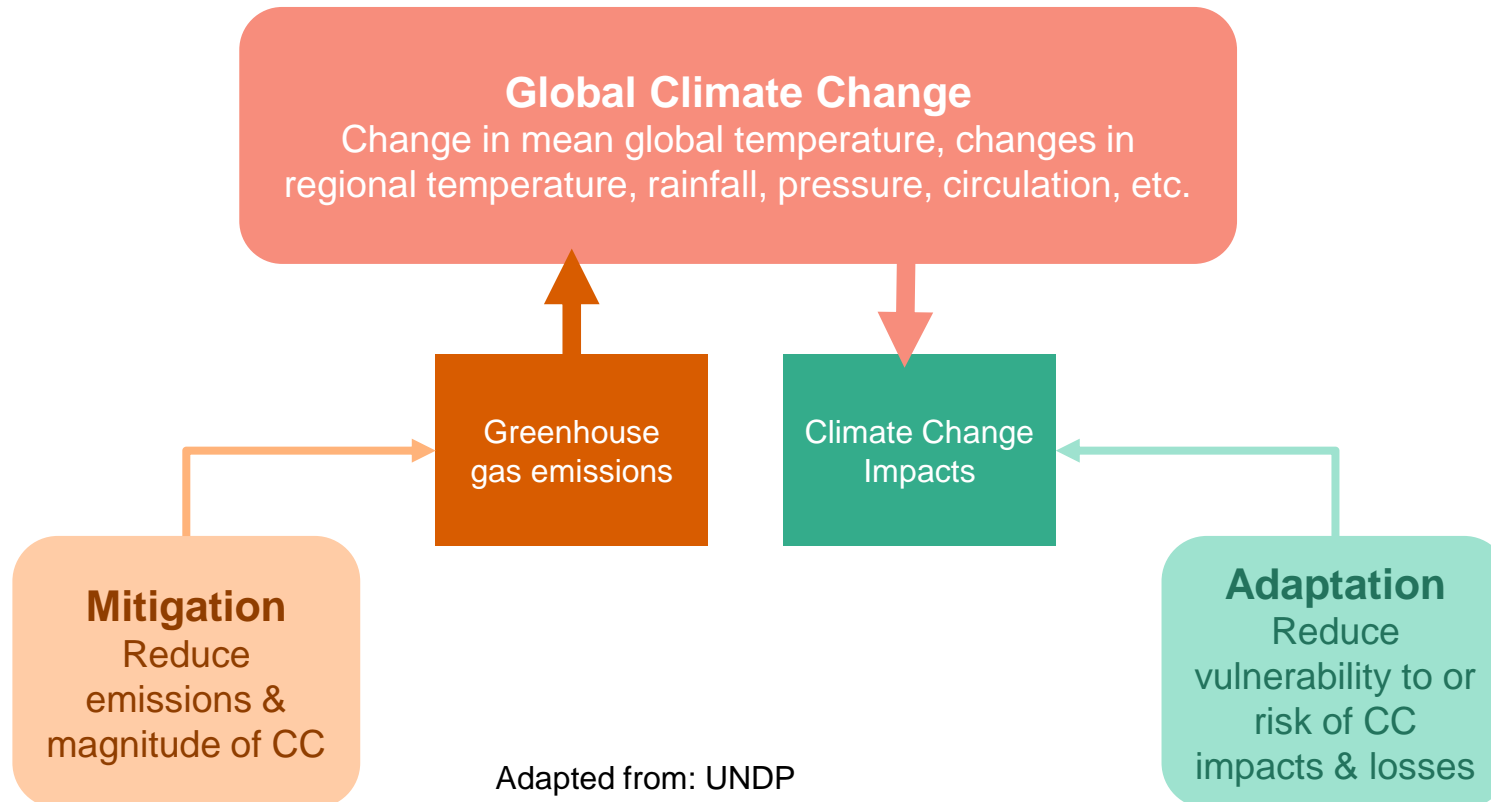
** Wollenberg et al 2016



Traditional View: Mitigation and Adaptation

Climate Change Mitigation and Adaptation

Illustrative example



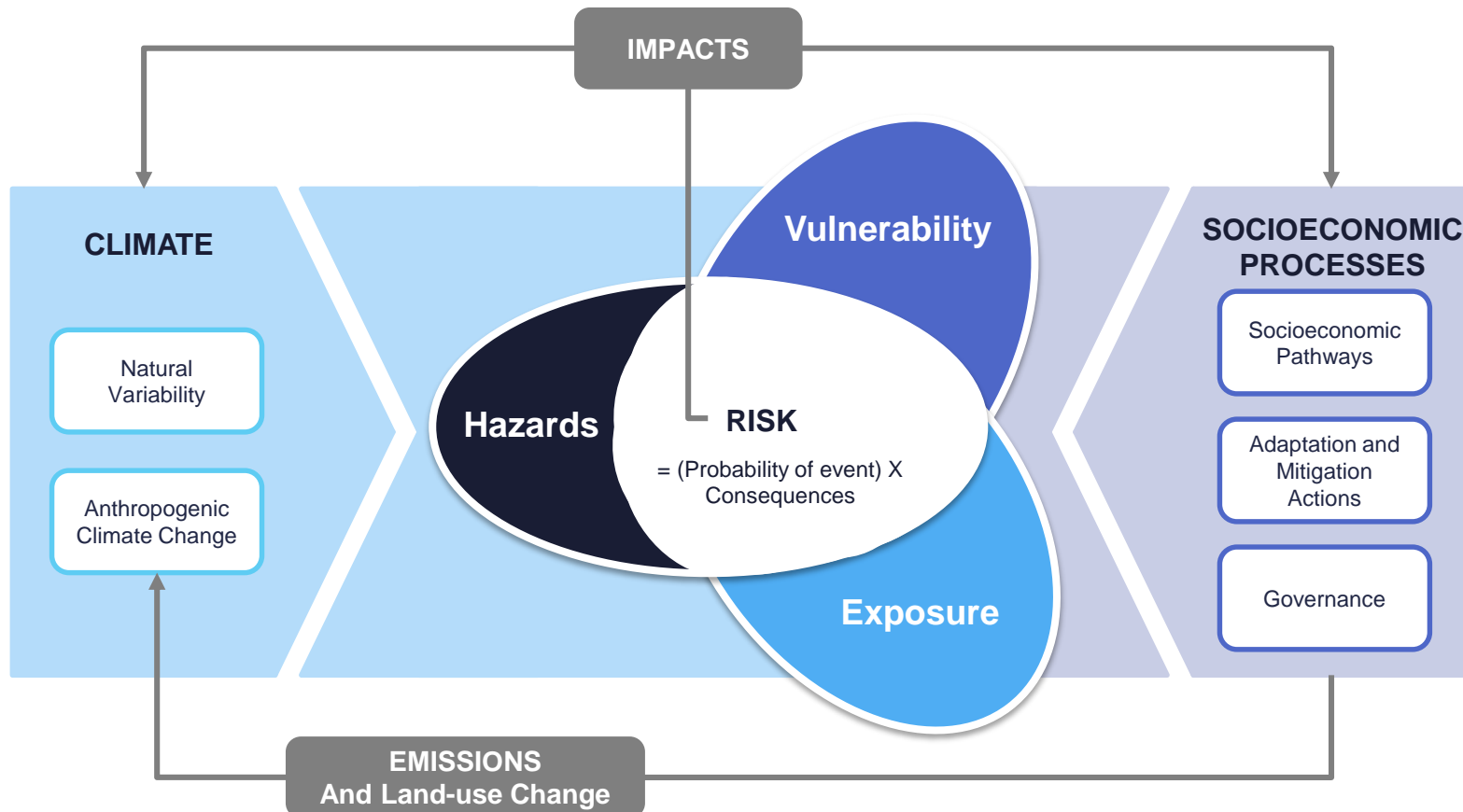
- **Mitigation** is a human intervention to reduce the sources or enhance the sinks of greenhouse gases
- **Adaptation** is the process of adjustment to actual or expected climate and its effects.
 - In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.
 - In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.
- Mitigation and adaptation are separate

Source: IPCC, 2014

Systems view: Adaptation and mitigation linked

Schematic of the interaction among the physical climate system, exposure, and vulnerability producing risk

Illustrative example



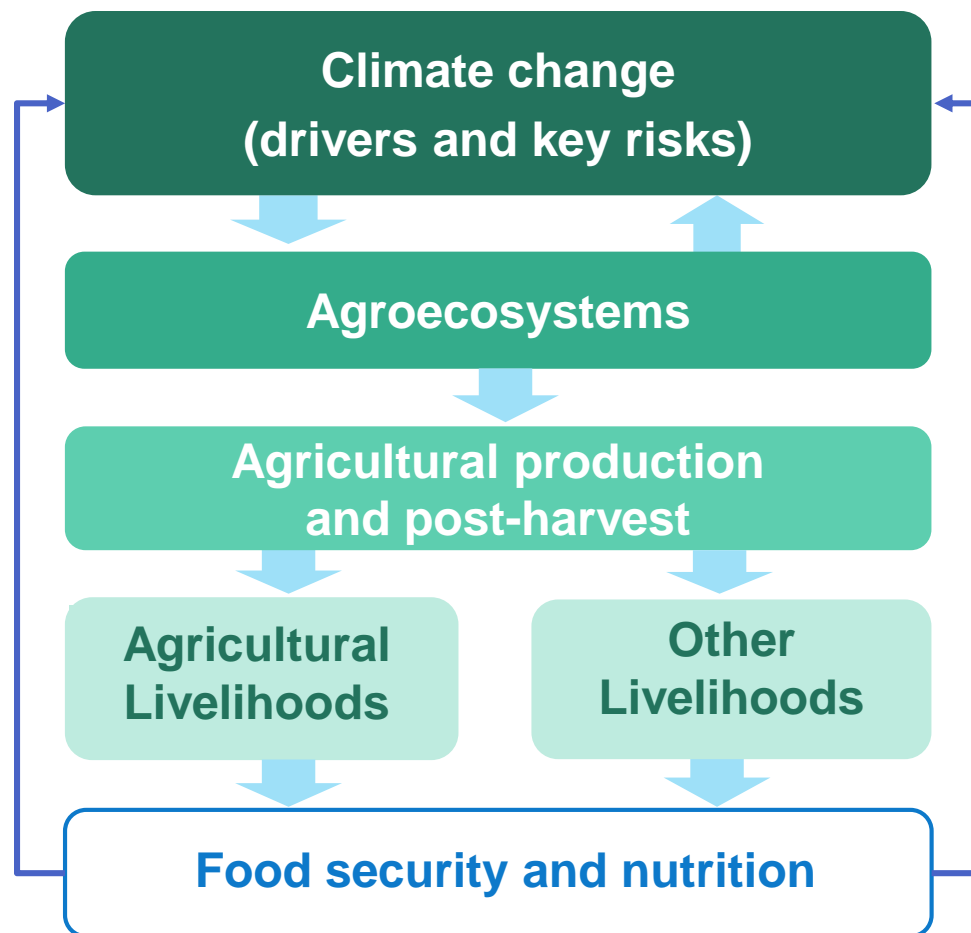
- Risk of climate-related impacts results from the **interaction** of climate-related hazards with the vulnerability and exposure of human and natural systems
- Mitigation and adaptation activities are **socio-economic processes** that **influence** both **drivers and impacts** of climate change
- **Linked actions of equal importance**

Source: IPCC (2014)



Systems view of climate and food security

Links between climate change and food security (Illustrative example)



- **Systematic view** shapes thinking at FAO on climate change and food security
- **Food security** is **impacted** by both climate change **drivers and impacts**
- Action to address near and long-onset impacts from climate change to **enhance resilience essential**
- Action to **address emissions** – in any sector – will **lessen risks** and strengthen food security over time

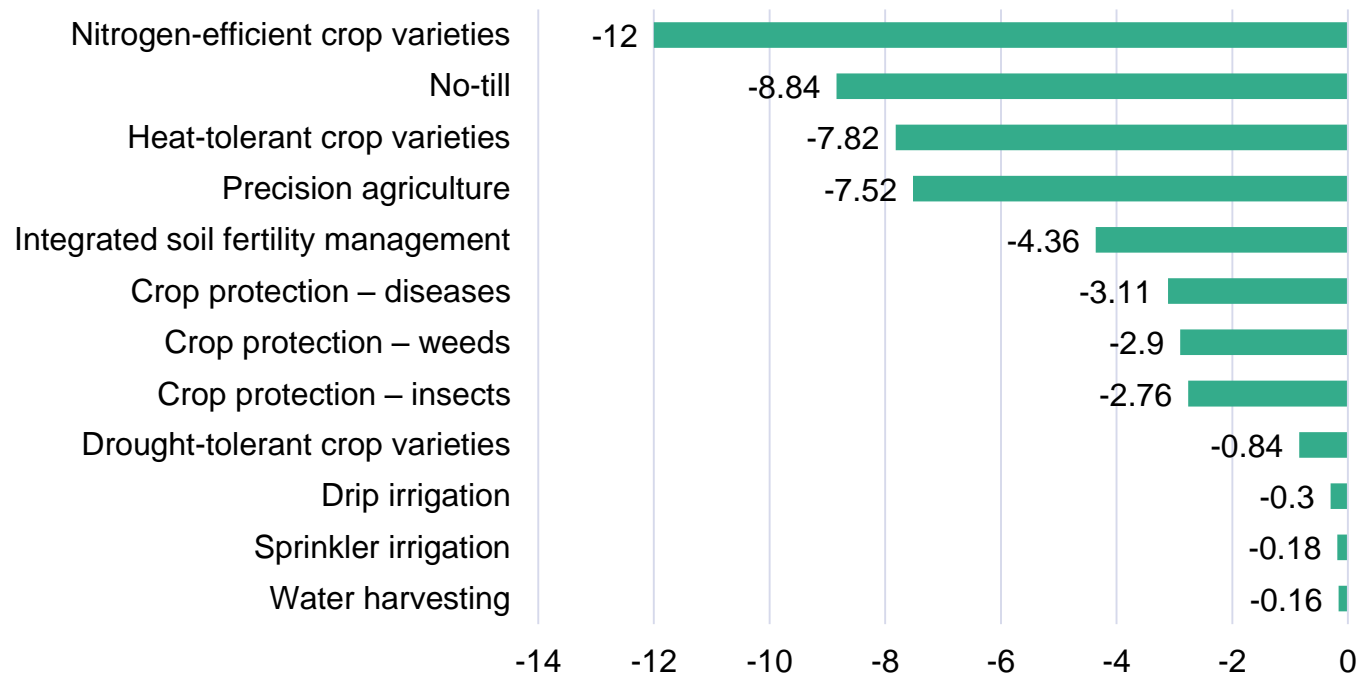
Source: FAO, 2016



Improved production systems enhance food security

Change in 2050 in the number of people at risk of hunger, relative to the baseline scenario, after adoption of improved agricultural technologies

(Percentage difference in population at risk)



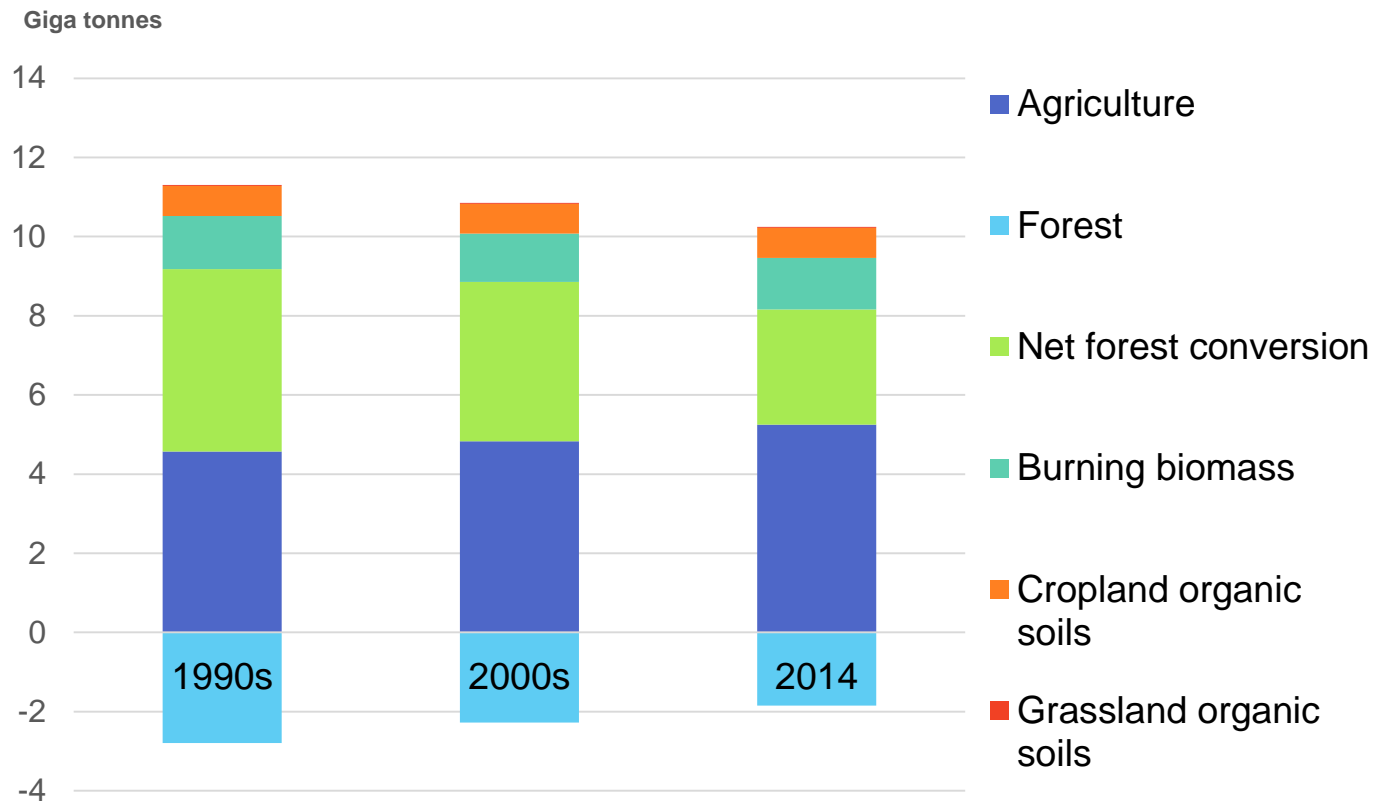
Source: FAO, 2016

- **Smallholder agriculture** particularly **vulnerable** to climate change risks and impacts
- Rural women are among the most vulnerable
- Evidence growing that we can **improve smallholder resilience** through:
 - **Improved production systems**
 - Building more **resilient livelihoods** for vulnerable populations



Synergy between mitigation and adaptation

Annual average net emissions/ removals from AFOLU in CO2 equivalent
(Economic mitigation potential, Gt CO2)



Source: FAO, 2016

- More efficient production and **lower intensity** of emissions
 - Investments in yield improvements
 - Resource-use efficiency in aquaculture and fisheries
 - Reduction of on-farm losses
- Creating **carbon-rich landscapes**



Climate-Smart Agriculture

More Productive

Resilient

Low Emission



Evidence-based

Flexible

Responsive

Climate-Smart Agriculture



Tapping into support

- **Data** for comparing, accounting and reporting against NDC contributions could open up opportunities for finance
 - for both mitigation and adaptation
- **Mitigation:** Grants, Results-based payments, Green bonds , credits and market mechanisms
- **Adaptation:** Grants, Payment for results, Impact bonds
- Important to remember these types of instruments involve both:
 - **Benefits** in terms of improved opportunities to access support; and
 - **Costs** in terms of increased requirements for data management, analysis and reporting and increased scrutiny

Conclusion – Climate Action for Agriculture

- Paris Agreement has implications related to **rules, ambition and needs**
- Agriculture is **unique**
- **Agriculture** has an **important contribution** to make in combating climate change
 - Adaptation, food security and agricultural livelihoods
 - Sinks
 - Potentially also through improved production systems and mitigation
- There are significant **knowledge gaps** with respect mitigation in agriculture
- **More information** and **new ways of thinking** may be required to resolve these issues, develop widely accepted and useful approaches
- **Significant technical support** will be **essential** to realize agriculture's potential contribution





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Thank You