GLOBAL FOOD POLICY REPORT IFPRI 2022 | CLIMATE CHANGE & FOOD SYSTEMS

Climate Change and Food Systems

Transformation for Adaptation, Mitigation, and Resilience

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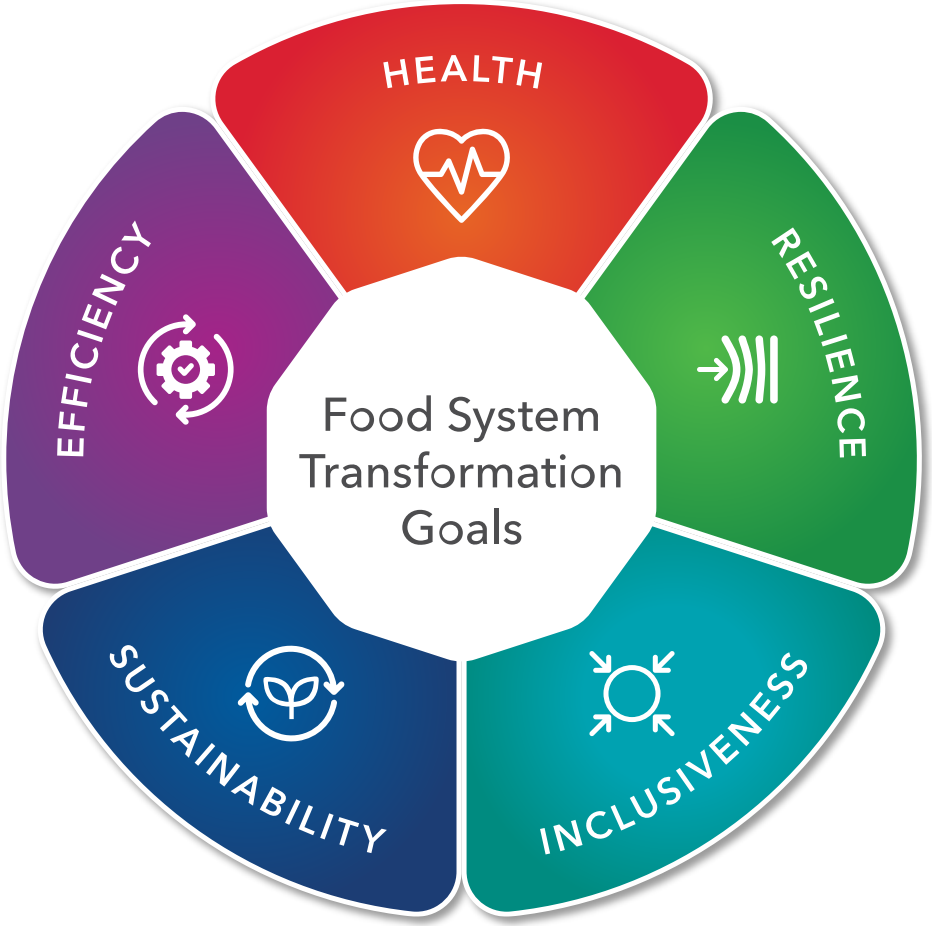
Climate change poses a growing threat to sustainable food systems

- Global food and nutrition security is worsening
  - Malnutrition has been increasing for several years
  - COVID-19
  - Rising conflicts
  - Current war in Ukraine
- Sustainability is threatened by environmental degradation and biodiversity loss
- Climate change poses a growing threat
  - Higher temperatures, changing precipitation patterns, sea level rises, and extreme weather
  - Reducing agricultural productivity, disrupting food supply chains, and displacing communities



International spotlight on food systems and climate change

- Events in 2021 cemented food systems in the climate change and SDG agenda
  - The **UNFSS** produced new commitments and coalitions to pursue the SDGs with a food systems centered approach
  - 2021 **Tokyo Nutrition for Growth Summit** highlighted link between climate change and nutrition challenges
  - At **COP26**, 137 countries pledged to halt and reverse land degradation by 2030

- 2021 commitments will require concrete follow-up
  - Need a significant shift in public and private investment
  - UN Conference on Biodiversity, WTO ministerial conference, COP27, … provide further opportunities to advance action

UNITED NATIONS FOOD SYSTEMS SUMMIT 2021

UN CLIMATE CHANGE CONFERENCE UK 2021

IN PARTNERSHIP WITH ITALY

NUTRITION FOR GROWTH

Food, Health, & Prosperity for All

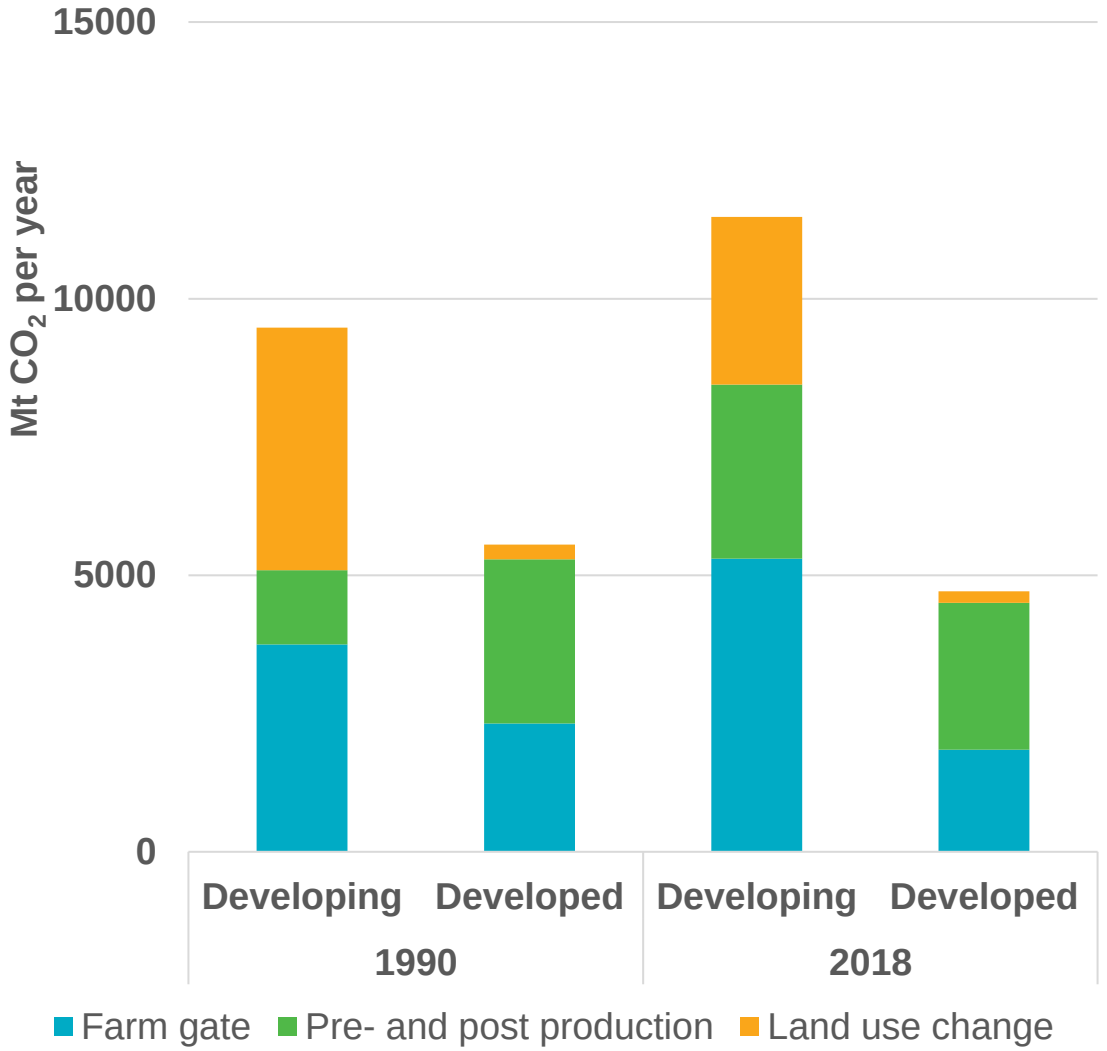
Adaptation

- Adaptation is urgent for food systems
  - Adaptation must address changing growing conditions, water scarcity, destructive weather events, and disruptions along value chains (e.g. price volatility, conflict)
  - But lessons from COVID-19 show that food systems can be adaptive
  - Promising Innovations:
    - Digital technologies
    - New crop varieties
    - Landscape management

} Supported by an enabling environment

Food systems contribute to climate change

- Food systems contribute more than 33% of total emissions and about 21% of total emissions come from agriculture, forestry and other land use (AFOLU).
- Developing country emissions from food systems are large and rising
- AFOLU has serious potential to become a net emissions sink — pulling more GHGs out of the atmosphere than it emits



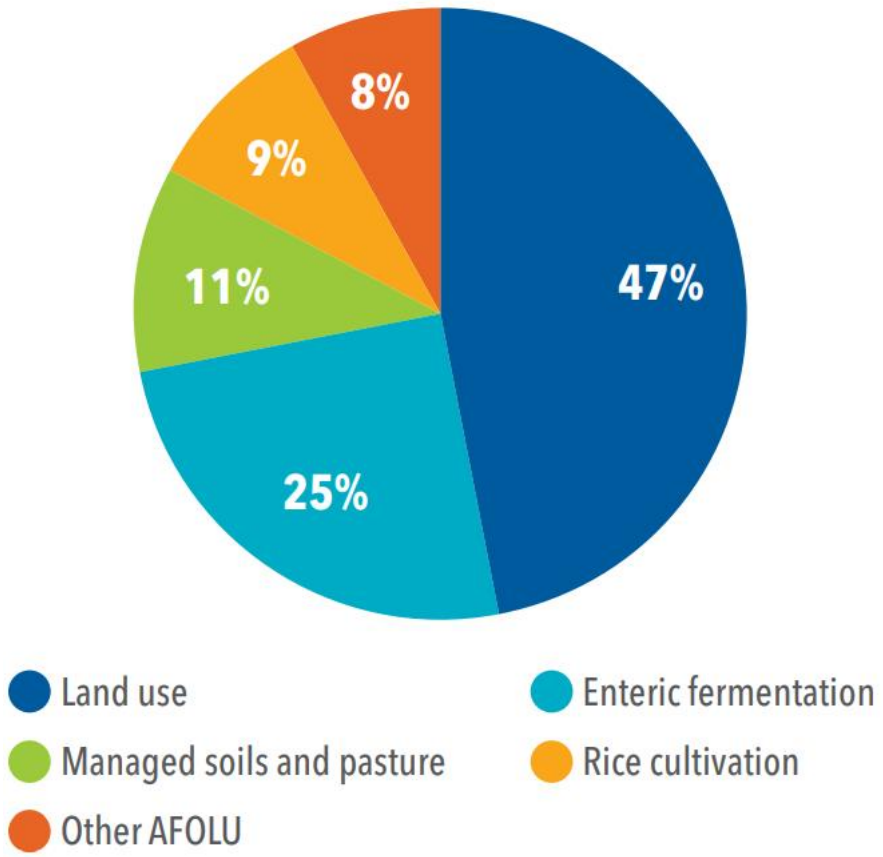
Mitigation

- **AFOLU is the *only* economic sector with serious potential to become a net emissions sink** — pulling more GHGs out of the atmosphere than it emits
- Land use change accounts for half of CO2eq emissions from AFOLU, and offers opportunities to turn landscapes into large net sinks (e.g. US) in developing countries
- But we must also:

Nitrous oxide from fertilizers
Methane from rice & enteric fermentation
Food loss and waste

Sustainable production and healthy diets

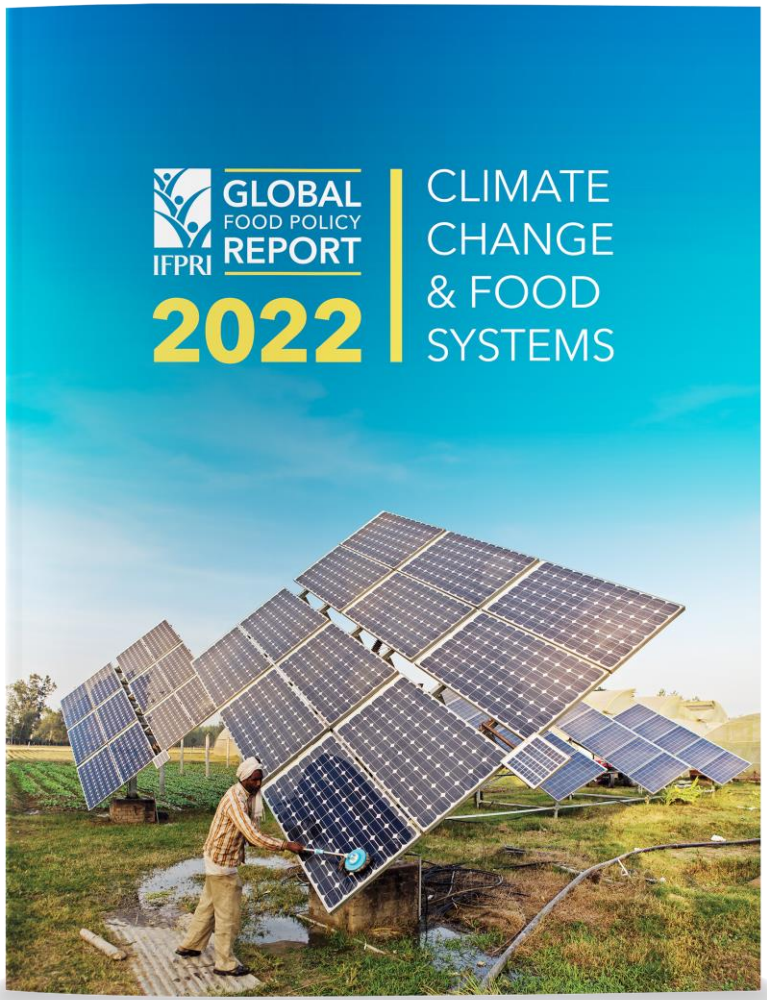
Global AFOLU emissions shares by source



Effective policies are critical for food systems transformation

Appropriate design of policies, institutions and governance systems at all scales can contribute to land-related adaptation and mitigation while facilitating the pursuit of climate-adaptive development pathways – *IPCC 2019*

- Innovation and change require an **enabling environment** of supportive policies and institutions
- Collaboration is needed from the **local to international level**
- Change must be **inclusive** and have safeguards in place to protect vulnerable communities



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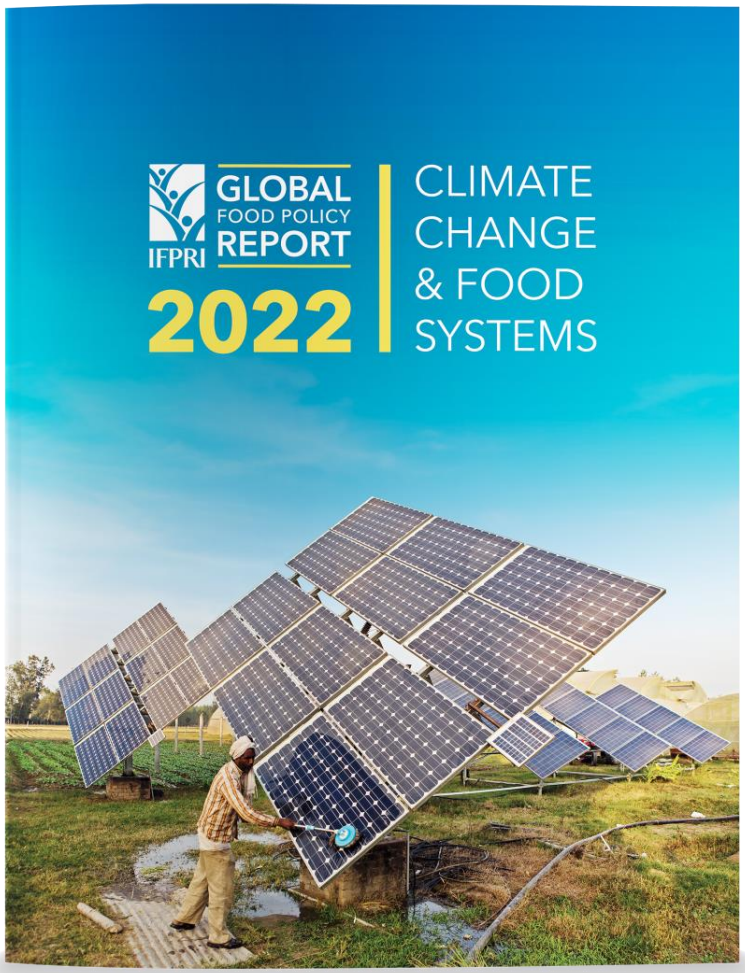

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(+ Six Regional Chapters)

Policy recommendations (1)

- R&D for “disruptive” innovations in production practices
  - Investment in R&D equivalent to 1% of agricultural output could increase food production by 30%
  - Adopting “green” innovations in LMICs could reduce AFOLU emissions by over 40%
  - Double current levels of public investments to reach ~ $15 billion for innovations in LMICs
- Holistic governance/mgmt. of WLE and forests
  - Provide incentives for local governance and integrated landscape mgmt. (e.g. multistakeholder platforms for CC)
  - Strengthen land tenure rights for individuals as well as communities to encourage long-term investment and sustainability
  - Identify productive-use locations that can jointly support energy, water, and food security

Policy recommendations (2)

- Promote healthy diets and sustainable production
  - Use proven fiscal measures to reduce consumption of unhealthy foods and improve access and affordability of healthy foods for over 3 billion people who cannot afford a healthy diet
  - Assist countries in adopting food-based dietary guidelines (e.g. recommended 400 grams of fruits and vegetables per day)
  - Promote a healthy food environment through standards, labeling, and certifications
- Improve efficiency of value chains, facilitate trade, and reduce food loss
  - Promote free and fair trade, while accounting for climate effects of food trade (e.g. pricing carbon)
  - Invest in efficient and safe food storage and transport such as low-emissions cold chains to prevent food loss (currently 8% of emissions)

Policy recommendations (3)

- Ensure inclusion and expand social protection
  - Invest in inclusive soft infrastructure (e.g. digital climate services, insurance, advisory and financial services) for greater productivity
  - Strengthen women's participation in clean energy systems, water, systems, landscape governance, etc.
  - Make social protection "climate smart" by incorporating incentives for sustainable activities and combining with climate investment
- Reorient financial flows
  - Repurpose a portion of agricultural subsidies ($620 billion per year) toward R&D on green innovations
  - Explore innovative tools (e.g. publicly guaranteed green funds, carbon markets, or CC transparency requirements for banks/investors) to increase food systems climate investment to $350 billion per year

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