



Collaborative Research
and Capacity Building
for a Food Secure World

Welcome to the

FSG 50TH

Anniversary Celebration



Department of Agricultural,
Food, and Resource Economics
MICHIGAN STATE UNIVERSITY

Today's Program

2:00-3:30 Opening Session

- **Eric Crawford** - Professor Emeritus, Michigan State University (MSU)
- **Matin Qaim** – Schlegel Professor of Agricultural Economics and Director at the Center for Development Research of the University of Bonn, Germany
- **Derek Byerlee** – Professor (retired), School of Foreign Service, Georgetown University
- **Jeffrey Bloem** - Research Fellow, Markets, Trade, and Institutions Unit, IFPRI

Discussion

3:30 - 4:25 Research Panel Discussions (moderator - Saweda Liverpool-Tasie)

- **William Masters** - Professor, Tufts University
- **Hope Michelson** - Associate Professor, University of Illinois
- **Vincenzina Caputo** - Professor, MSU
- **Ben Belton** - Associate Professor, MSU

Short Break

4:35-5:30 Partnering and Collaboration Panel (moderator - David Tschirley)

- **Orachos Napisintuwong** - Associate Professor of Agricultural and Resource Economics, Kasetsart University, Bangkok, Thailand (Recorded interview)
- **T.S. Jayne** - University Foundation Professor Emeritus, MSU
- **Ayala Wineman** - Assistant Professor, MSU
- **Madina Guloba** - Research Fellow, Economic Policy Research Center, Kampala, Uganda

2024



Collaborative Research
and Capacity Building
for a Food Secure World

Welcome and Introduction

50th Anniversary of Food Security Group
September 12, 2024

Eric W. Crawford

Professor Emeritus

Department of Agricultural,
Food, and Resource Economics
MICHIGAN STATE UNIVERSITY

FSG50TH



Welcome



- Welcome to all of you who have joined! We are pleased to see you
- We wish we could have gathered in person
- We hope you can participate online without technical issues
- We welcome comments or questions during any part of this program
 - Please use Zoom Q&A
 - The chat feature will be disabled
- Note that this event is being recorded

Overview



We're glad you could join us in:

- Celebrating 50 years of our Food Security Group
- Contributing to discussions on future FSG priorities and key success factors

These brief remarks will cover:

- What is the Food Security Group (FSG)?
- Our goals for this event
- Introduction of speakers and panel leaders

What is FSG?

FSG is a self-organized team within AFRE, largely grant-funded, that carries out empirically based policy-oriented scholarly research, engagement, and capacity-building focused on problems of global food security

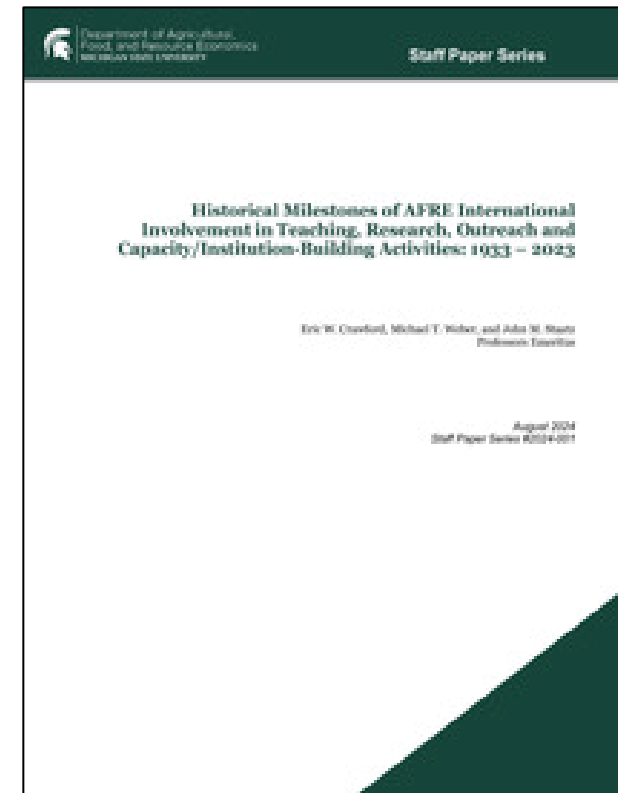
Our Mission

FSG believes that good food and nutrition policy, informed by solid empirical evidence that is generated jointly with local partners, can transform economies and lives in low income countries.



What is FSG? (cont'd)

- Many AFRE faculty have participated in international activities, some through FSG.
- For more on AEC/AFRE international activities since the 1930s, see:
- *Historical Milestones of AFRE International Involvement: 1933–2023* by Crawford, Weber, Staatz (Staff Paper #2024-001, August 2024).
- Available on AgEcon Search:
<https://ageconsearch.umn.edu>.



Why this FSG Anniversary Session?



- This session is part of AFRE's 75th- year celebrations
- Recognition of FSG's 50 years of activities since the mid-1970s, when Carl Eicher's long-term grant-funded projects pioneered what became known as FSG
- **Looking ahead:**
 - Future FSG focus areas?
 - What's needed for continued success in research and policy impact?
 - How can these impacts be achieved?
 - Key: Building partnerships with country and regional institutions to ensure resource sharing, joint research participation, and stronger local policy capacity

Our speakers this afternoon



- To explore future opportunities for FSG, we've invited three distinguished speakers and have convened two panels of discussants
- Bios for Martin Qaim, Derek Byerlee, and Jeffrey Bloem have been shared, but I'll now briefly highlight their profiles, and also those of the two panel leaders



Matin Qaim, the keynote speaker, is the Schlegel Professor of Agricultural Economics and Director at the Center for Development Research of the University of Bonn, Germany.

- Professor Qaim's main research areas are sustainable food systems, poverty reduction, and rural development, which match those of FSG very closely.
- He is a Fellow of the American Agricultural & Applied Economics Association, and President of the International Association of Agricultural Economists.



Complementary Remarks by...

- **Derek Byerlee** began his post-PhD academic career in MSU's Department of Agricultural Economics as an Assistant and Associate Professor from 1971-78, when FSG was first formed.
 - His later career included assignments in the CIMMYT Economics Program and at the World Bank, and recognition as an AAEA Fellow.
- **Jeffrey Bloem** earned his MS degree in AFRE and a PhD in Applied Economics from University of Minnesota. He is currently Research Fellow at IFPRI in the Markets, Trade, and Institutions Unit.
 - He is also affiliated with development-oriented programs at Notre Dame and American University.



We have convened two panels to provide further comments and discussion on research, partnering and collaboration



Discussion Panel Leaders

- **Dr. Liverpool-Tasie** came to AFRE in 2012 with a PhD from University of Illinois. She soon established an award-winning research and teaching program
 - She is currently MSU Foundation Professor in AFRE and Director of a major project in Nigeria and Tanzania on Research Supporting African Micro, Small, and Medium Enterprises to Provide Safe and Nutritious Food. She is also a BIFAD board member.
- **Dr. Tschirley** is an AFRE PhD graduate and long-time faculty member. He has extensive field experience in Africa and Latin America.
 - He is Professor, Co-Director of FSG, and Director of the flagship USAID-funded Feed the Future Innovation Lab for Food Security Policy Research, Capacity, and Influence (PRCI).
 - He received MSU's Ralph Smuckler Award for Advancing International Studies and Programs.

And now, Dr. Qaim!

- Dr. Qaim, welcome and many thanks for joining us





zef

Center for
Development Research
University of Bonn

www.zef.de



UNIVERSITÄT **BONN**



The future of food security research for policy impact

Matin Qaim

Keynote Lecture at the 50th Anniversary Event of the Food Security Group, Michigan State University (MSU), 12 September 2024



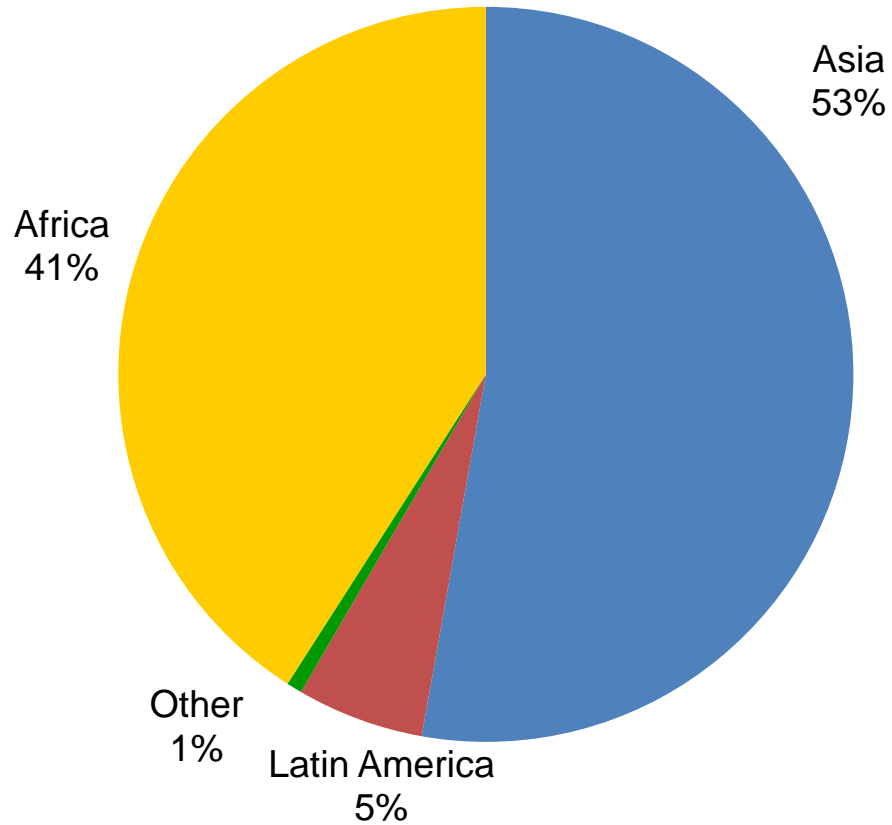
Overview

1. Food security: situation and trends
2. Sustainability challenges: need for food system transformation
3. Research priorities
4. Role of agricultural economics in the changing food systems landscape

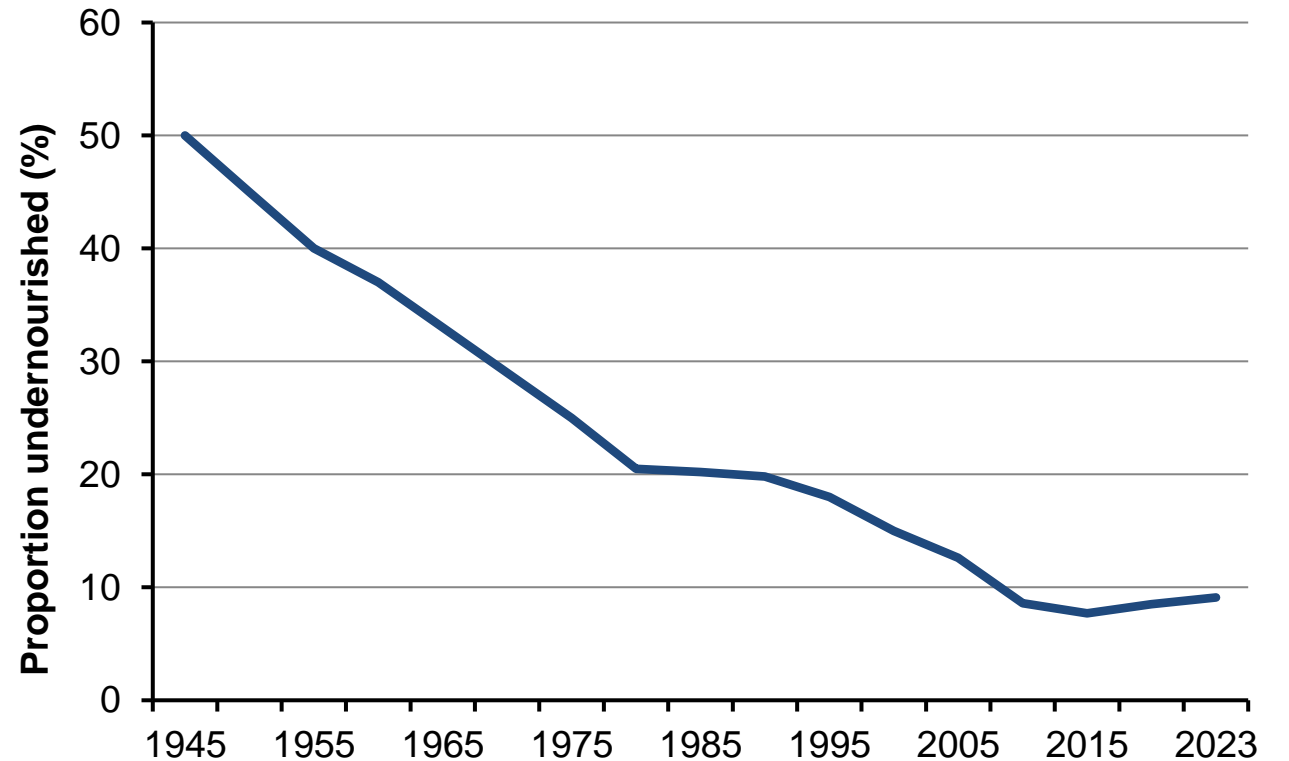


Hunger and food insecurity

More than 700 million suffer from hunger



Prevalence of hunger over time





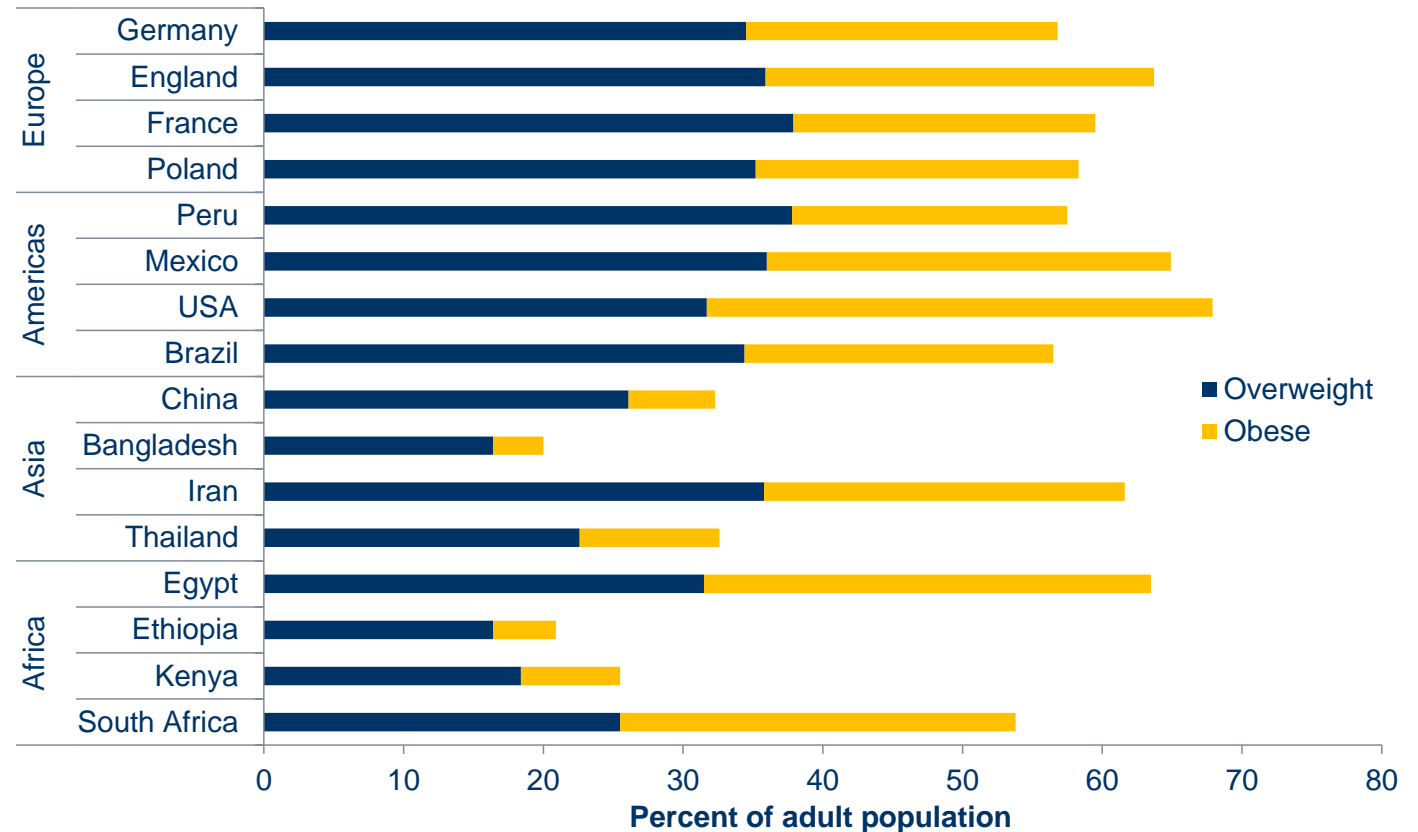
Hunger is only one form of malnutrition

2-3 billion suffer from micronutrient malnutrition (“Hidden Hunger”)

- Iron
- Zinc
- Vitamin A
- etc.



Over 2 billion are overweight or obese



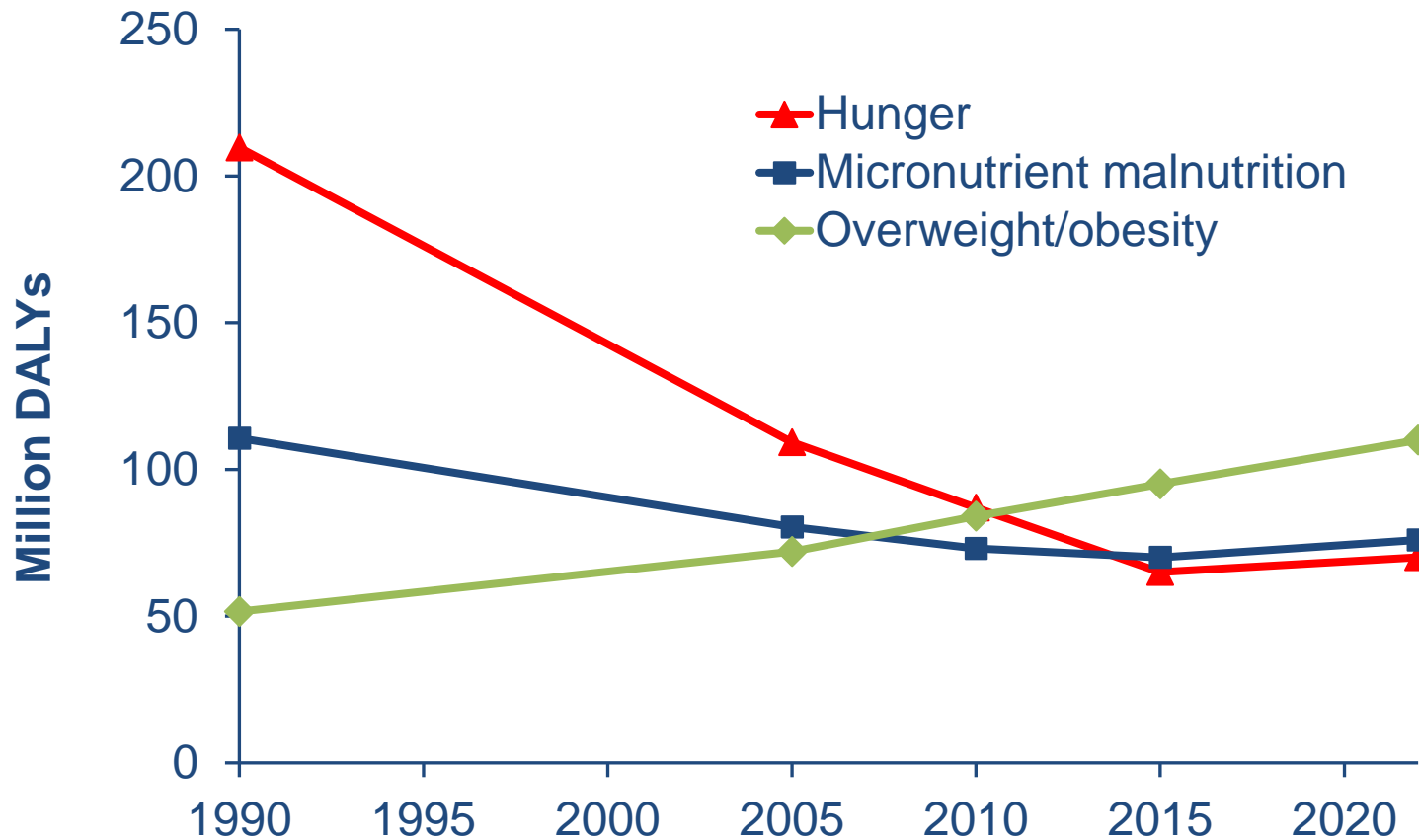
Source: WHO

“Triple burden of malnutrition”



Trends in different forms of malnutrition over time

Development of health burden



- Malnutrition remains widespread problem
- “Zero Hunger” Goal will likely not be achieved by 2030
- The nature of the problem is changing
- Strategies to fight malnutrition have to be adjusted

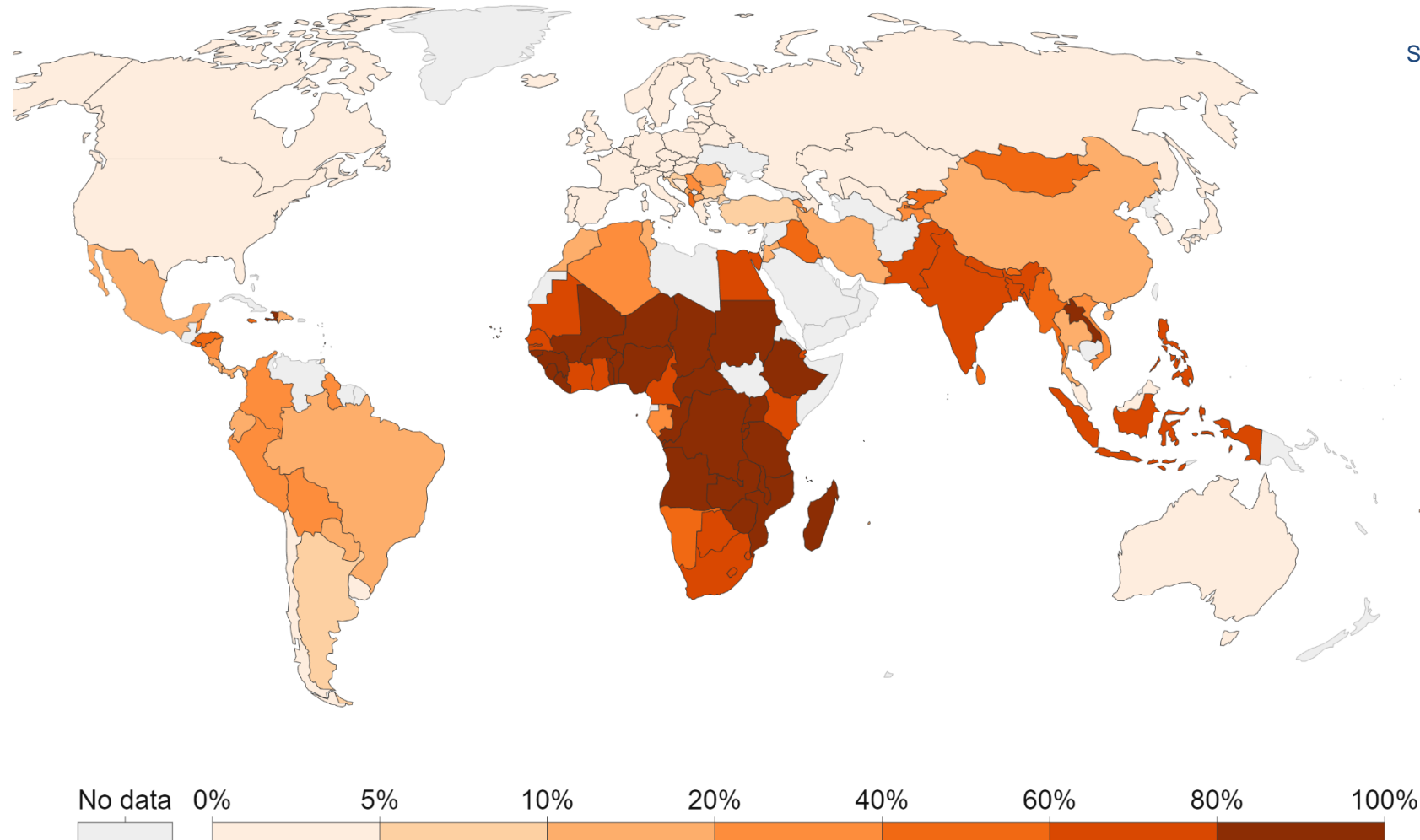


Almost 3 billion (35%) cannot afford a healthy diet

Affordability is a question of:

1. Income
2. Prices

Income and price shocks aggravate the situation

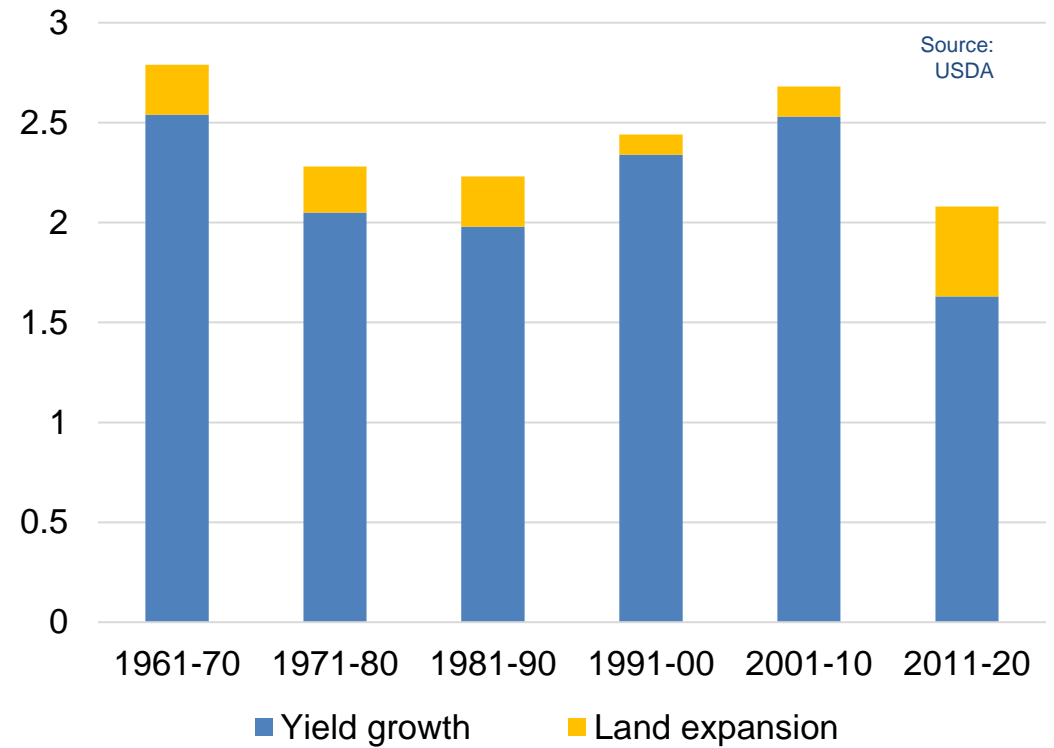




Longer-term price and productivity trends



Global food production growth (%)



- Short-term shocks
- Longer-term supply and demand trends



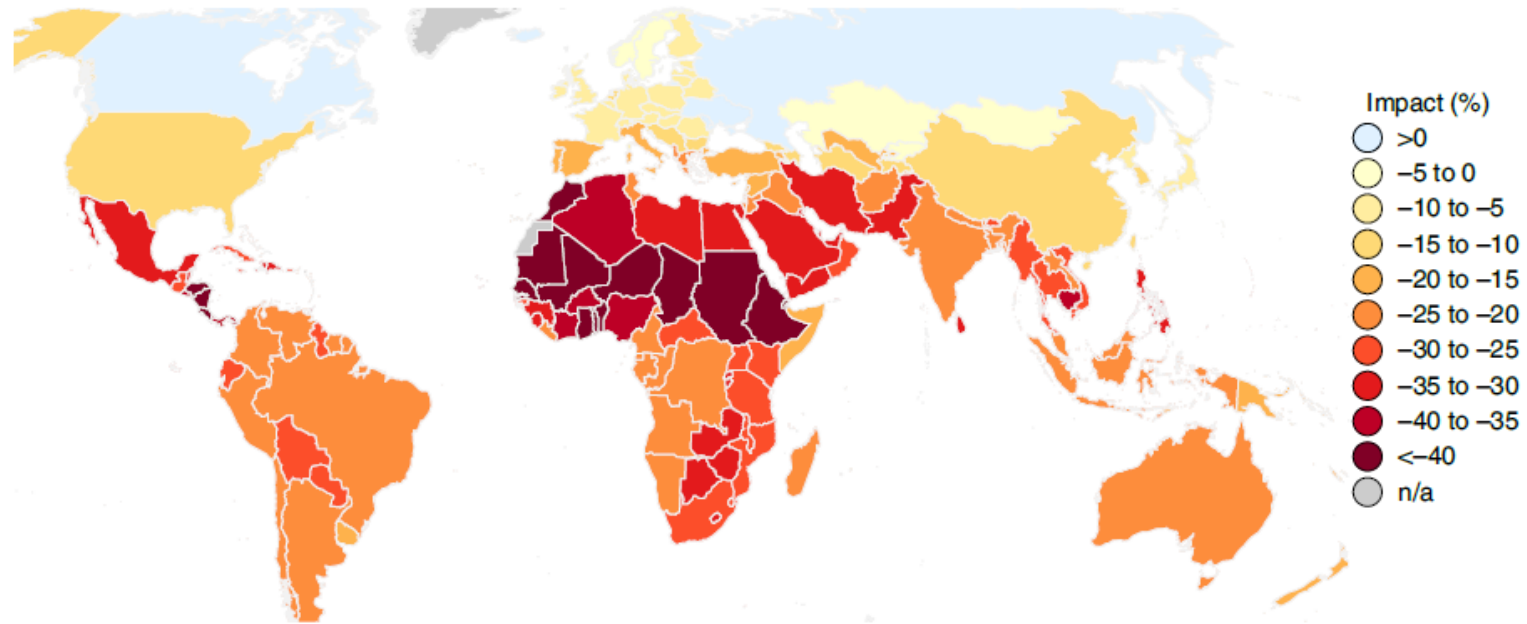
Sustainability challenges

- Population and global demand for food and biomass continue to grow
- Land and water suitable for agriculture are scarce
- Farming is responsible for major environmental pollution (soil degradation, water and air pollution, etc.)
- Food systems account for 80% of biodiversity loss and 33% of global greenhouse gas (GHG) emissions
- If unabated, food systems' GHG emissions alone would suffice to thwart the Paris climate targets





Climate change effects on agriculture (crop yields)



Effects may get worse in the future

Source: Ortiz-Bobea et al. (2021)



What needs to be done?

Major changes in global and local food systems required
“Food system transformation”





What does transformation actually mean?

- Food systems need to become more sustainable (ensuring food and nutrition security for all without overstraining the environment)
- Many changes required in terms of how food is produced, distributed, and consumed
- Change directions, but not necessarily by 180°
- Need to learn from past successes and problems to move forward smartly
- All countries need to act urgently
- Priorities and best leverage points for interventions need to be identified locally (synergies, tradeoffs)





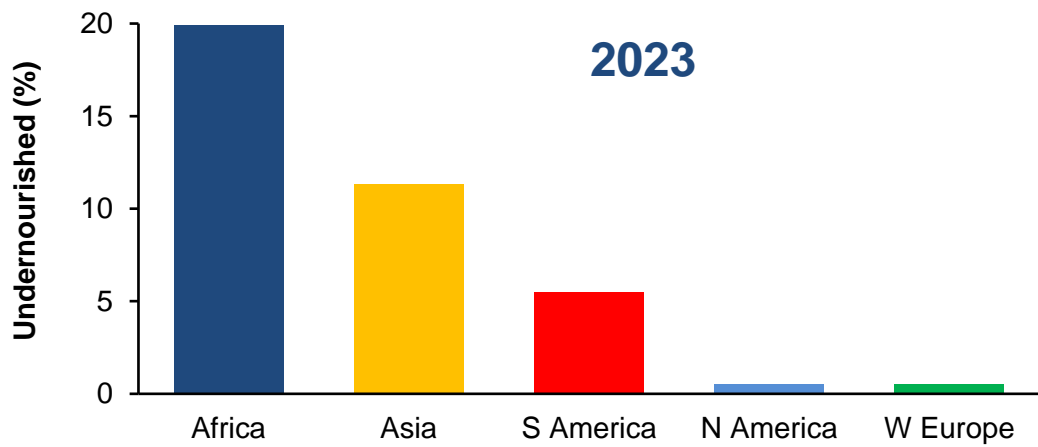
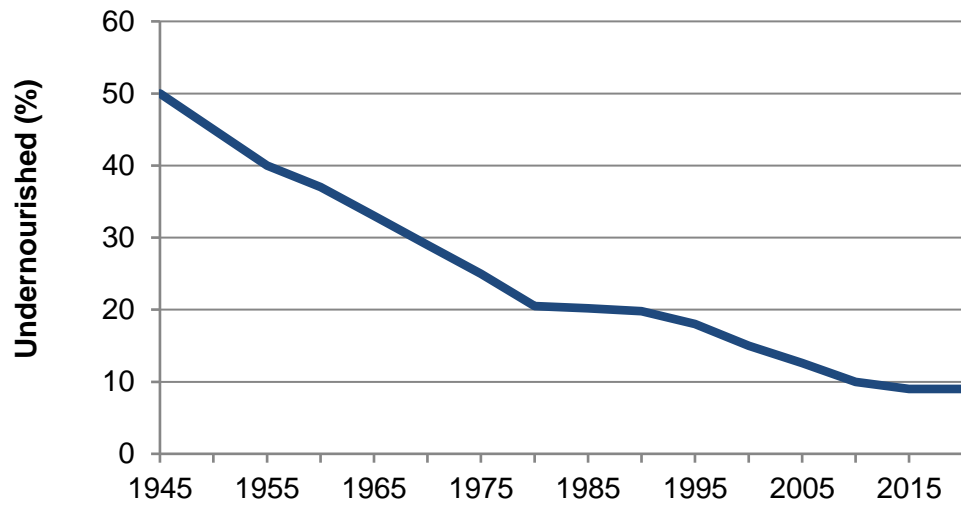
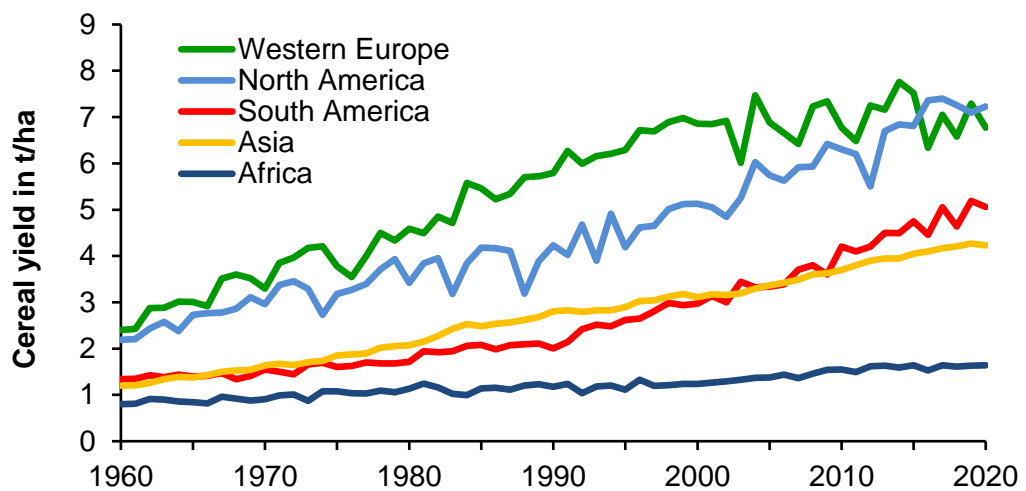
A few research priorities: subjective overview

- A. Sustainable productivity growth
- B. Climate change and food security
- C. Healthy and sustainable diets
- D. Global trade and sustainable value chains



A. Sustainable productivity growth

Historically, yield growth was one of the key drivers of hunger reduction

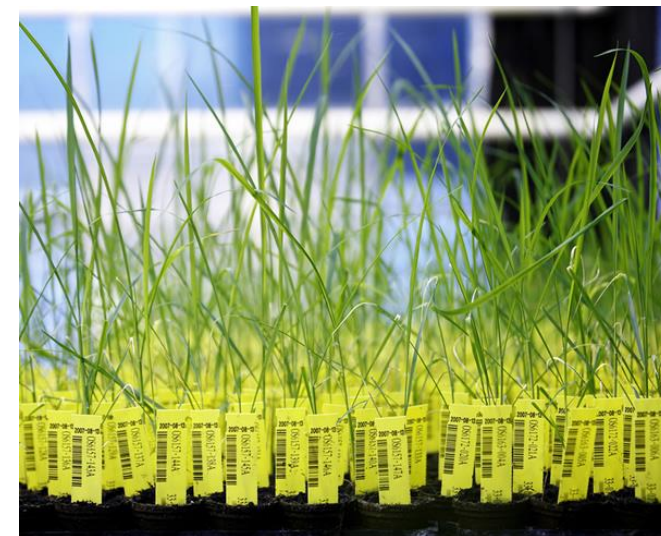


- Productivity growth remains key challenge in Africa
- Yield growth also needed to reduce deforestation (agricultural expansion)



Important research questions on productivity growth

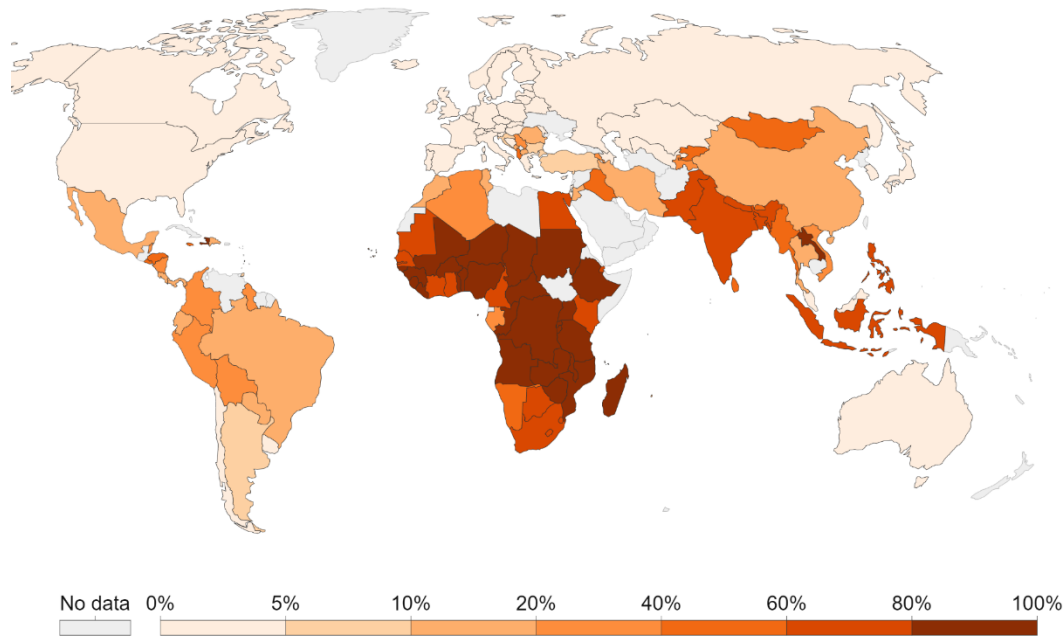
- What type of technologies and technology mixes work best in particular contexts (high productivity – low input – resilience)?
 - Digital technologies
 - New breeding technologies
 - Agronomy (agroecology)
 - Vertical farming, novel foods, fermentation, etc.
- What types of crops/livestock (systems diversity)?
- How to overcome constraints in terms of infrastructure and services (extension, credit, insurance, market access, etc.)?
- How to ensure gender equity?
- How to mobilize major funding (public, private)?





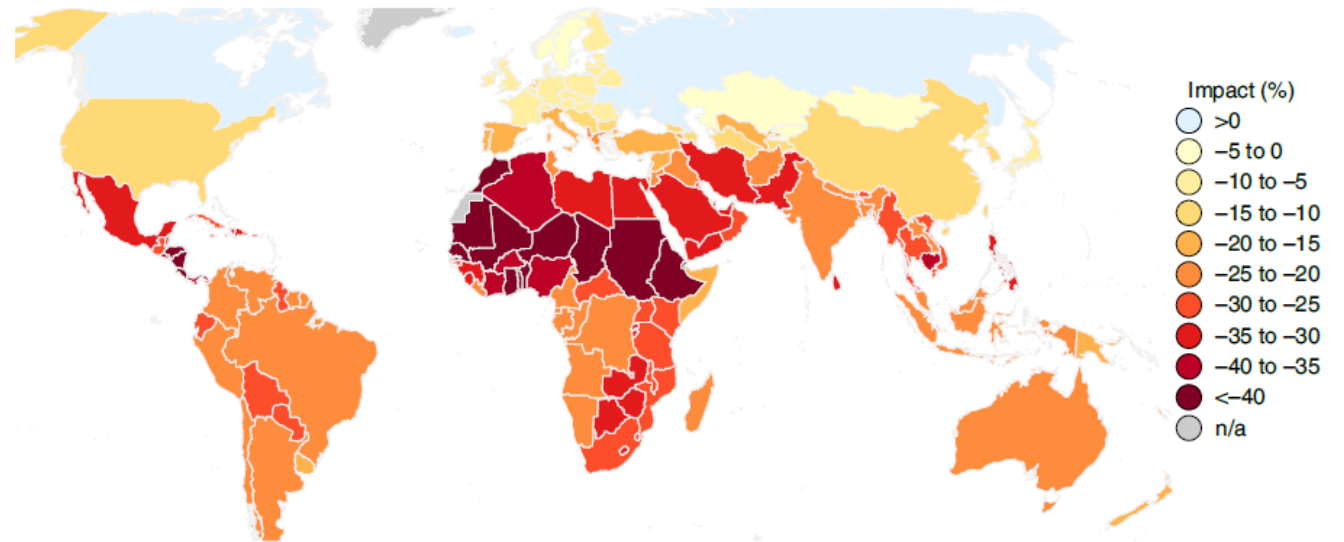
B. Climate change and food security

Share of population that cannot afford a healthy diet today



Source: FAO

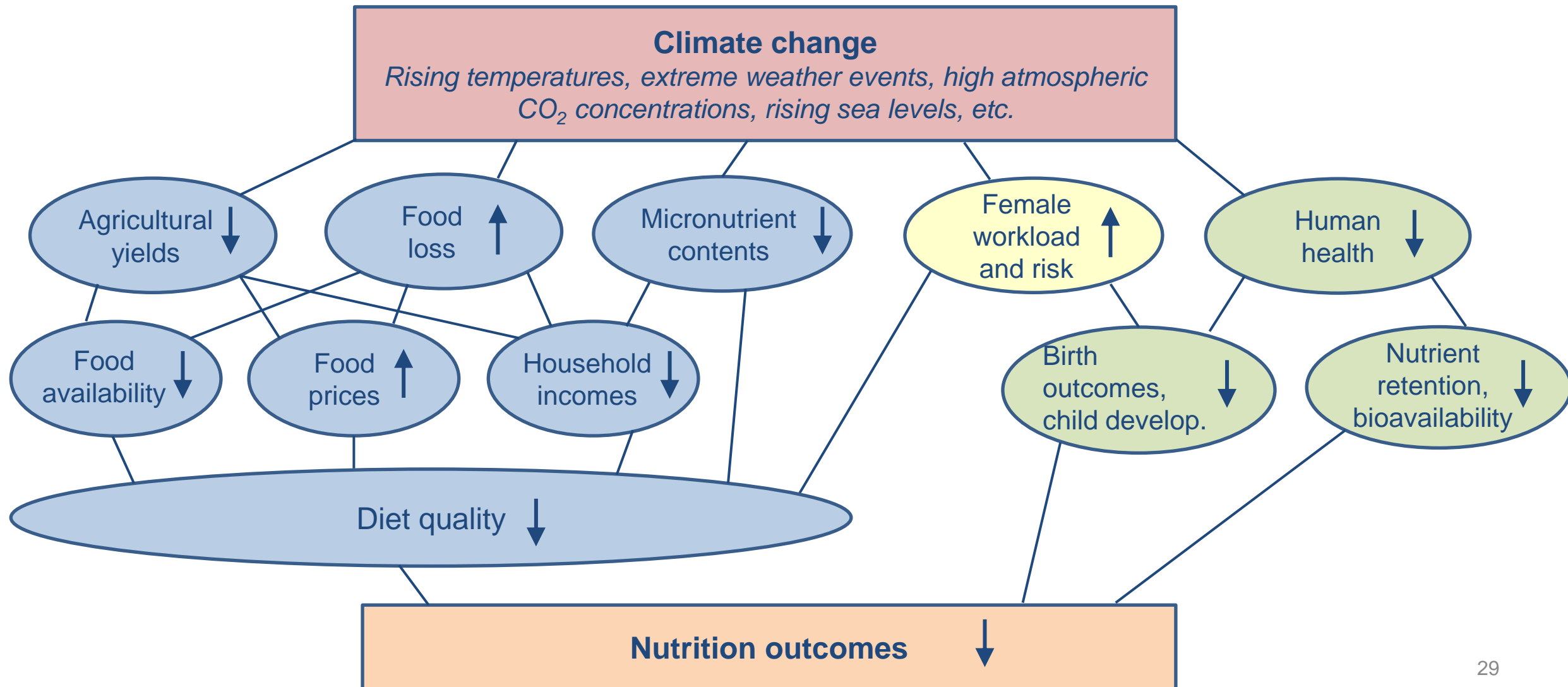
Effects of climate change on crop productivity



Source: Ortiz-Bobea et al. (2021)



Climate change affects nutrition outcomes (mechanisms)





How to improve smallholder adaptation/resilience?

- Better technology
- Better market integration
- Better institutions
- Better social safety nets
- Better rural employment opportunities



Panel data evidence from Ethiopia

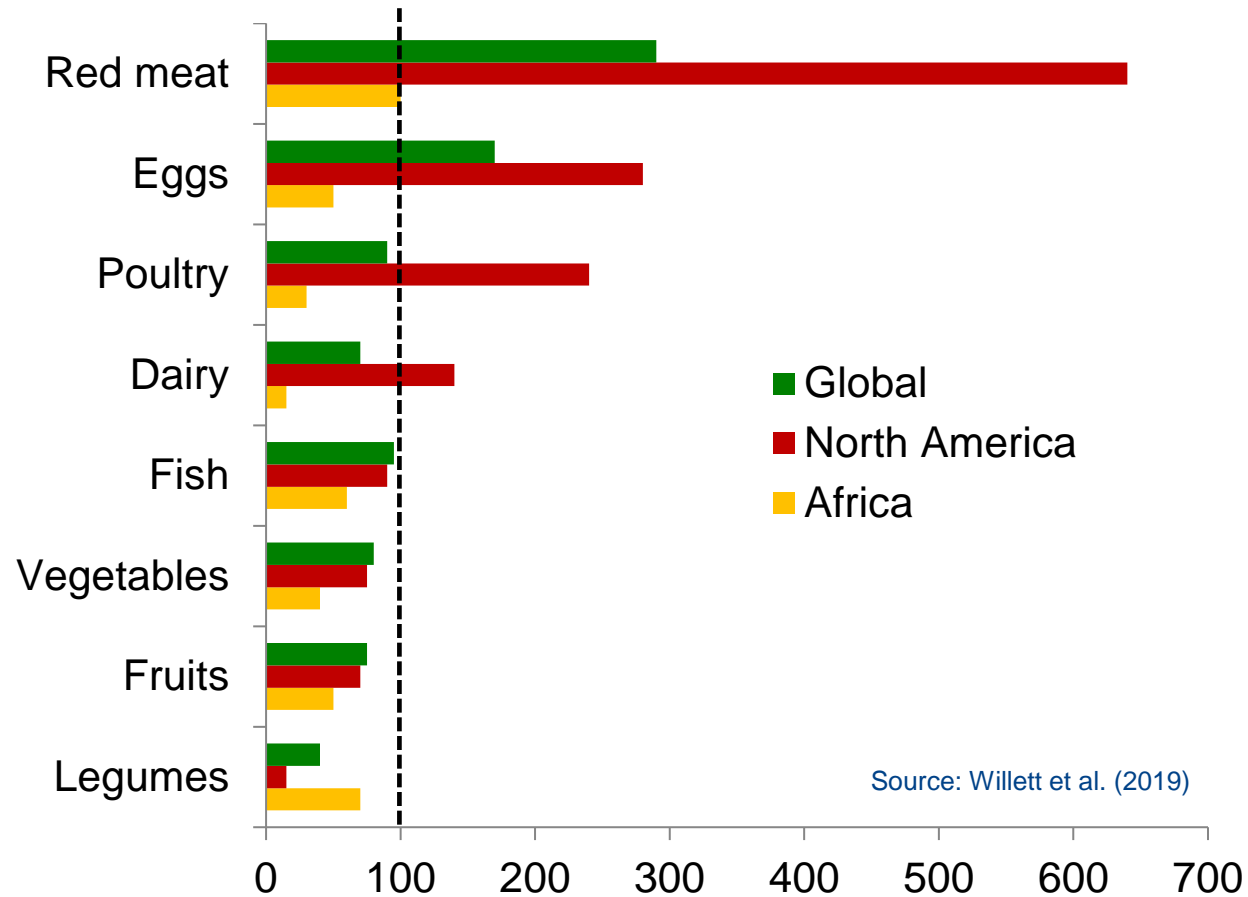
(Musungu, Kubik, Qaim 2024, <https://doi.org/10.1093/erae/jbae020>)

- Drought reduces yield, farm employment, income, and food expenditures
- Drought increases off-farm self-employment, but not wage employment (due to lacking opportunities)
- Off-farm self-employment mitigates negative food security effects of drought

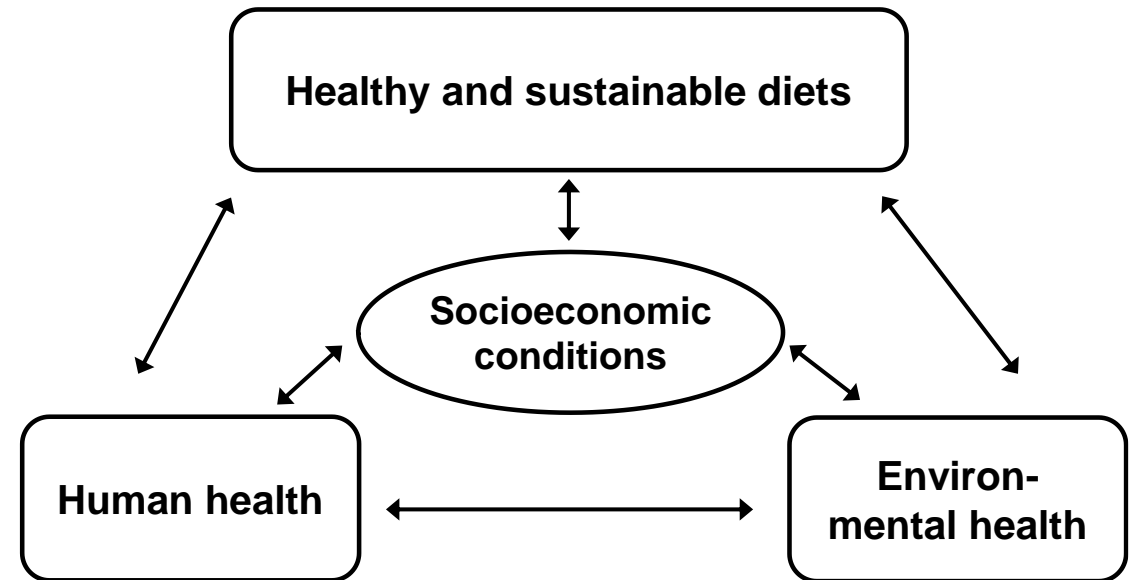


C. Healthy and sustainable diets

EAT Lancet “planetary health diet”



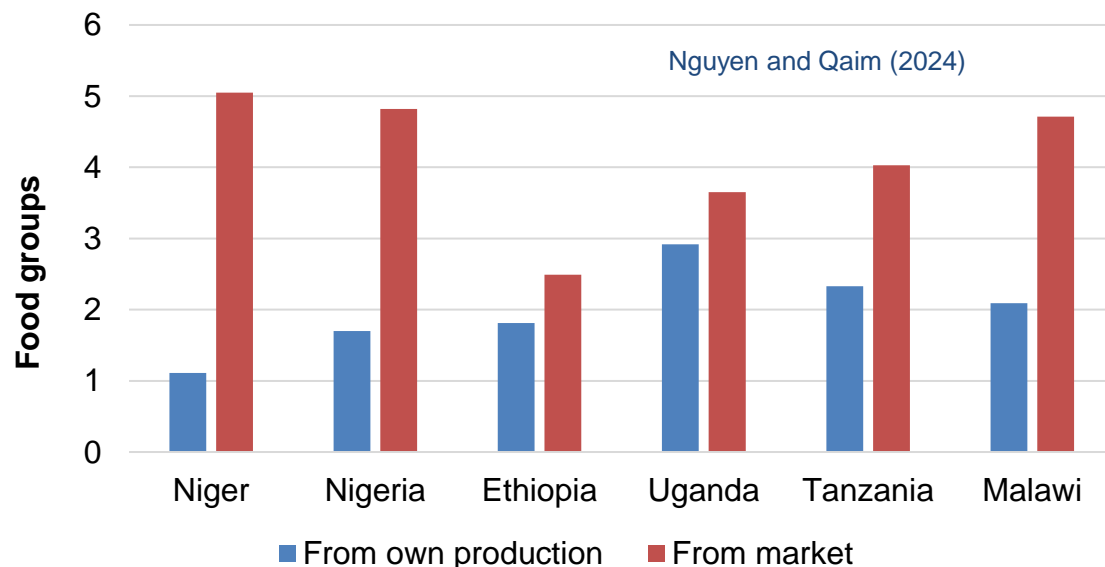
Socioeconomic conditions matter





How can rural and urban diets be improved?

Sources of dietary diversity in rural Africa



- Is increasing farm diversity always the best approach?
- Markets and food environments

Important research questions:

- How to improve food environments?
- How to measure food environments?

Market food variety (MFV) and child nutrition

	HAZ
MFV	0.004**
MFV (fresh food)	0.006***
MFV (moderately processed)	0.032***

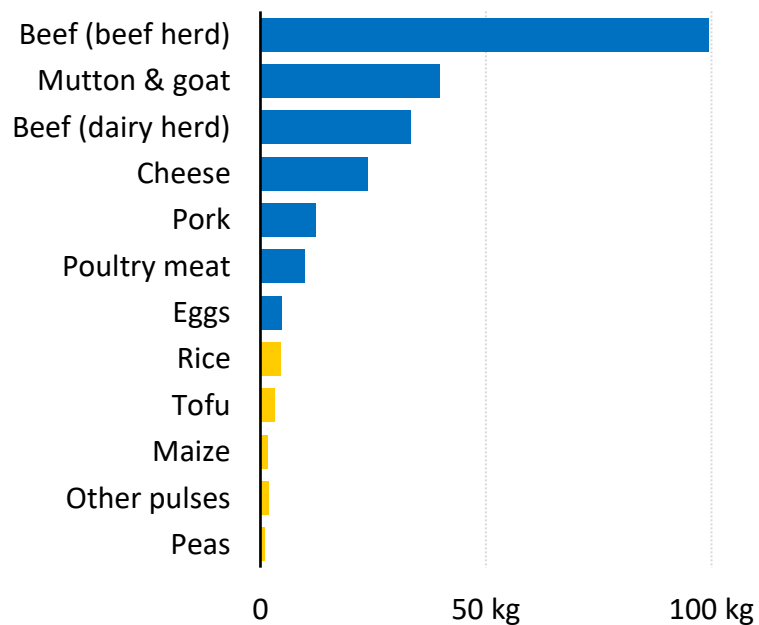
Hülßen, Khonje, Qaim (2024), <https://doi.org/10.1016/j.foodpol.2024.102704>



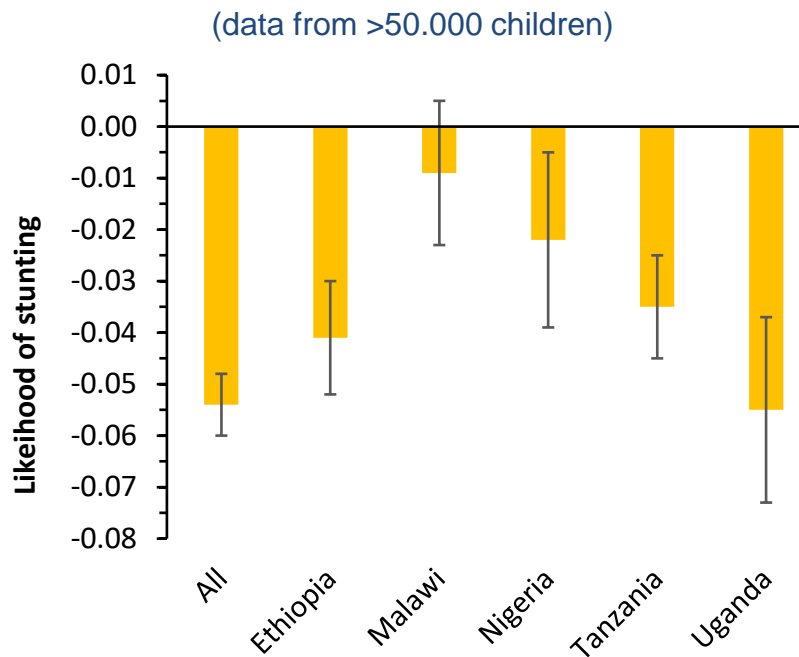
Further questions related to needed dietary change

- Cost of diets (affordability), true cost of food (externalities), what are “good” prices?
- Role of meat and other animal-sourced food (ASF)

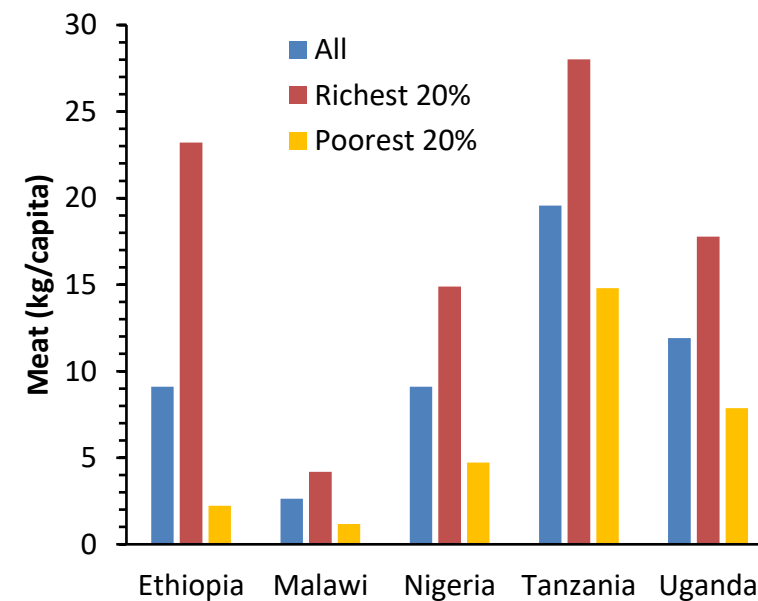
Climate footprint of ASF (CO₂e per kg of food)



Effects of ASF consumption on child nutrition in Africa



Meat consumption in different population segments

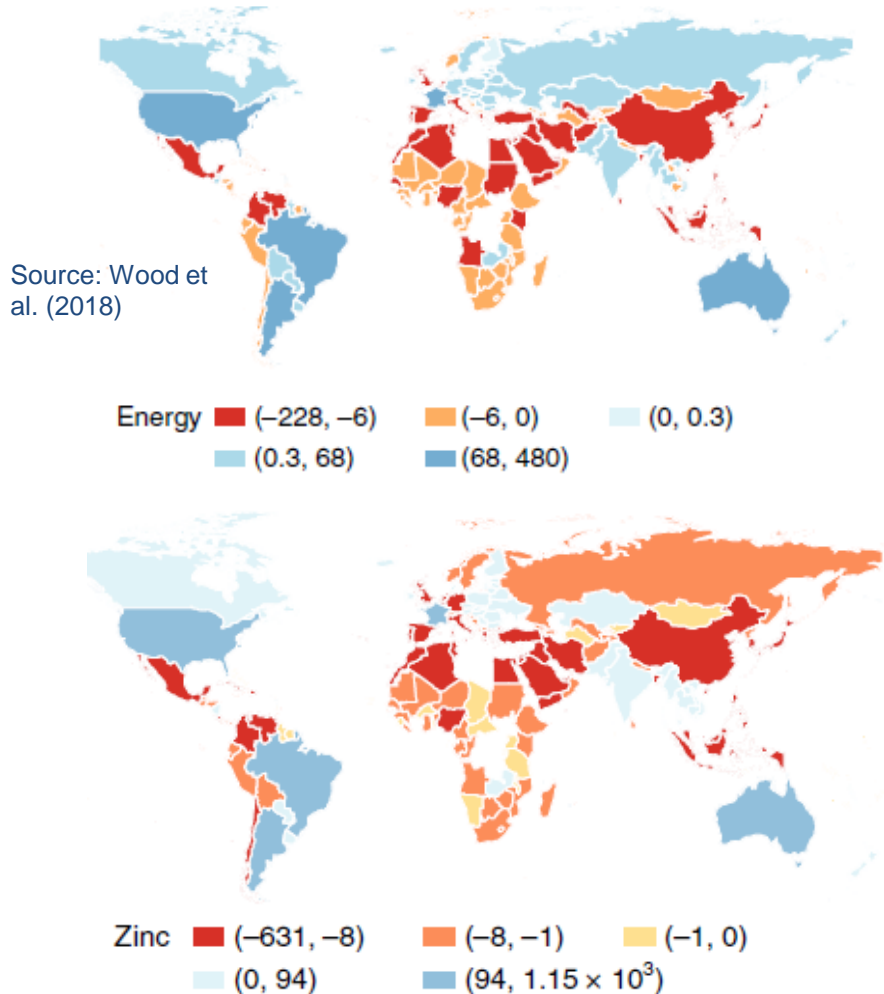


Sources: Parlasca and Qaim (2022), Khonje and Qaim (2024)



D. Global trade and sustainable value chains

Scenarios without trade



Africa's food security depends on trade

Import dependence may change through:

- Local productivity growth ↓
- Population growth ↑
- Climate change ↑

Important research questions:

- How can trade contribute to food systems resilience (local/global shocks)?
- How do international sustainability policies and standards affect food systems in LMICs (biofuels; deforestation-free standards; living-wage standards; EU Green Deal, etc.)?



Role of agricultural economics in the changing food systems landscape

1. We need to understand (i) how more sustainable food systems could look like, **and** (ii) how to get there
2. Both requires solid economics research (market mechanisms, incentives, policies, behavioral constraints, etc.)
3. As agricultural economists we **can** and **must** address these questions in timely and policy-oriented ways (otherwise, we will become obsolete)
4. We need to find the right balance between rigor and relevance
5. We need to cooperate more closely with other relevant disciplines (nutrition, health, climate, environment, agronomy, agribusiness, etc.)

Persistent Policy Puzzles

Derek Byerlee

12 Sept 2024

Motivation

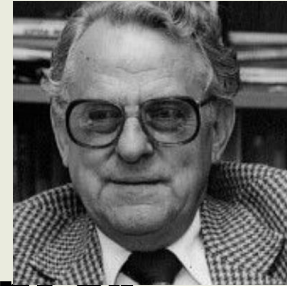
- ◎ Many policy issues on the agenda for 50+ yrs still relevant today
 - MSU Food Security Group has been in a leadership role in many of them
- ◎ Ongoing tensions on role of the ‘development state’
 - WDR 2008—Visible hand of the state
- ◎ Recognize a few MSU pioneers
 - My MSU-FSG history 1963-1979

Three Topics

1. Market development via input subsidies
2. Managing food price volatility
3. Funding R&D

Input Subsidies

- ◉ Major policy thrust for Nigerian Consortium Study 1960s
 - Led by Glenn Johnson
 - Subsidies to incentivize smallholders to plant or replant export crops
- ◉ Fell out of fashion in the Washington consensus
- ◉ Revived as 'smart subsidies' by WB/MSU (Morris et al. 2007) and WDR 2008
 - Targeted, private-sector driven, clear exit strategy

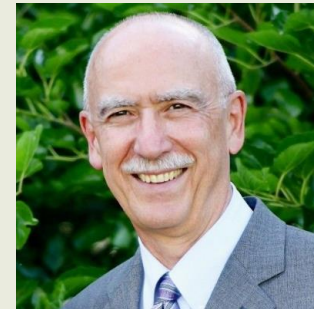


Input Subsidies (cont.)

- ◉ Rapid scale up with food crisis of 2008-12
- ◉ MSU research led by Jayne et al. provided strong evidence base
 - Not smart—neither efficient nor equitable.
- ◉ Some progress on reform but has it been proportional to huge amount of research?
- ◉ Current focus on ‘repurposing’ subsidies but complex set of actors with vested interests
 - My broken spear is in India—spends \$50 B on input subsidies after countless studies on reform

Managing Food Price Volatility

- ◉ Neglect in the 1960s
 - Carl K. Eicher “It is dangerous to think that the number one agric. problem in Africa is to expand food production”
- ◉ Champion for food security from 1970s
- ◉ 1980s--MSU led research on reform of food marketing boards (Weber, Staatz...)
- ◉ 2000s—WB/MSU report on using market-based approaches to manage price volatility

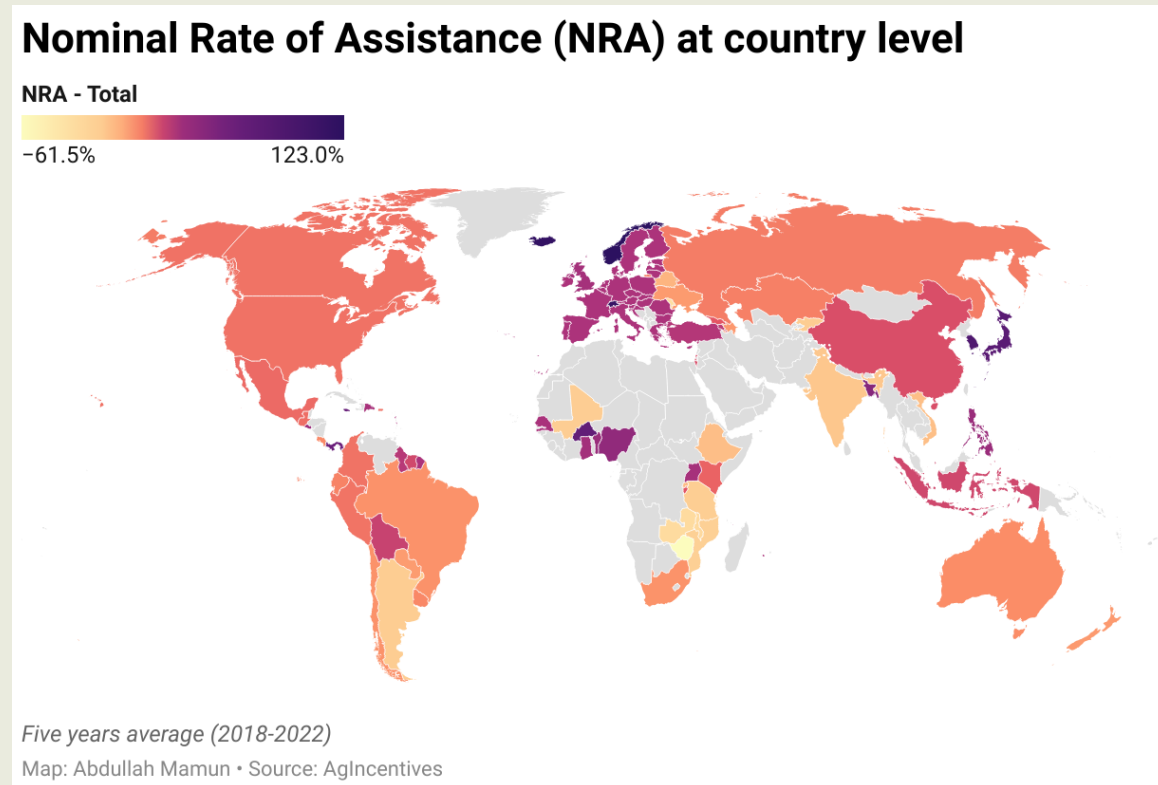


Managing Food Price Volatility

- ◎ 2020s—More frequent shocks in global markets + increased unilateral export bans + weak WTO
 - Justifies direct state interventions?
 - Role for autonomous rule-based strategic reserves?
 - Move to food autarky
 - Quickest through increased protection

Managing Food Price Volatility

- Have coastal African countries moved to EU-levels of protection?
- If so, major implications for poverty and structural transformation?



Funding R&D

- ◎ Wide agreement that public investment in R&D a priority
 - But low investment in national R&D espec. in Africa
 - Low visibility of R&D—crowded out by subsidies
- ◎ Collective action by producers underutilized for export crops, rice etc
 - Output levies could fund one third of R&D and increase relevance (Byerlee, 2011)

Facilitating Collective Action to Fund International R&D



- ◎ Hannah letter to CGIAR 1974
 - Are centers looking at food systems?
 - How are we to assure long-term funding for entire network?
- ◎ Collective action problem much greater today
 - Proliferation of donors, multiple objectives, shift to bilateral aid
 - Especially difficult for 'option goods' such as genetic resources
- ◎ Regional R&D—overlapping domain of funding and beneficiary should make collective action easier
 - Regional R&D especially relevant to Africa 'small-country problem'
 - But members contribute only 2-3% budget of regional R&D such as AfricaRice

Cross-Cutting Issues

- ⦿ Are we working enough across disciplines—political econom, agron, nutrition, ...?
- ⦿ Should we be doing more research on policy processes?
 - Do we need to more rigorously assess impacts of our policy research?
- ⦿ Do we have capacity in MoAgs to seek out and utilize policy research?



The Future of Research in Agricultural Development Economics: What and How



Jeffrey R. Bloem
International Food Policy Research Institute

Michigan State University | September 12, 2024

What kind of research should we do?



What kind of research should we do?*

1. Value chain intermediaries
2. The “triple challenge” to (a) feed the hungry, (b) support good jobs, and (c) protect the environment
3. Measurement of food insecurity

*These are just two ideas, and not an exhaustive list. Lots of cool stuff to work on !



1. Value chain intermediaries (part 1)

- I'm not the first to say that value chain intermediaries are “missing” from much policy discussions and academic research
 - We tend to focus on the extreme ends of the food system: either producers or consumers
 - This is even reflected in how we teach economic theory.
- Most of the time, consumers do not transact directly with the primary producers of their food
 - Food is traded, stored, processed, transported, marketed, etc.
 - These “intermediary” segments add a lot of value to food
 - Play a potentially critical role in the structural transformation process



1. Value chain intermediaries (part 2)

- We need more and better data
 - New sampling and estimation methods
- Careful descriptive research is important and valuable
 - What are the employment opportunities among intermediary firms within agri-food value chains?
 - What segments have the highest compensation rates?
 - What are the demographic characteristics of these jobs?
 - How do these firms conduct their business?
 - Are there existing financial constraints that existing financial products/services don't address?



2. Addressing the “triple challenge”

- The “triple challenge”
 - Extend sufficient, safe, and nutritious food supply to two billion experiencing food insecurity
 - Reduce poverty and improve livelihoods for over 500 million people working within agri-food value chains
 - Limit environmental damage, forest and habitat loss, and greenhouse gas emissions
- Develop and use new methods to link evaluations of development initiatives within agri-food systems with environmental outcomes
 - Identify synergies and trade-offs



3. Measurement of food insecurity

- Challenges to drawing policy conclusions during the COVID-19 pandemic
 - Lots of studies in a short period of time, but very difficult to compare results across studies or even contexts within studies.
- We as researchers (and FSG in particular) should be leaders in:
 - Coordination of measures across time and space.
 - Documenting differences/similarities in measures
 - Macro predictions, survey-based measures of food insecurity, dietary diversity, caloric consumption, hunger, etc.



How should we do this research?



How should we do this research?

- The “credibility revolution” and the value of descriptive research

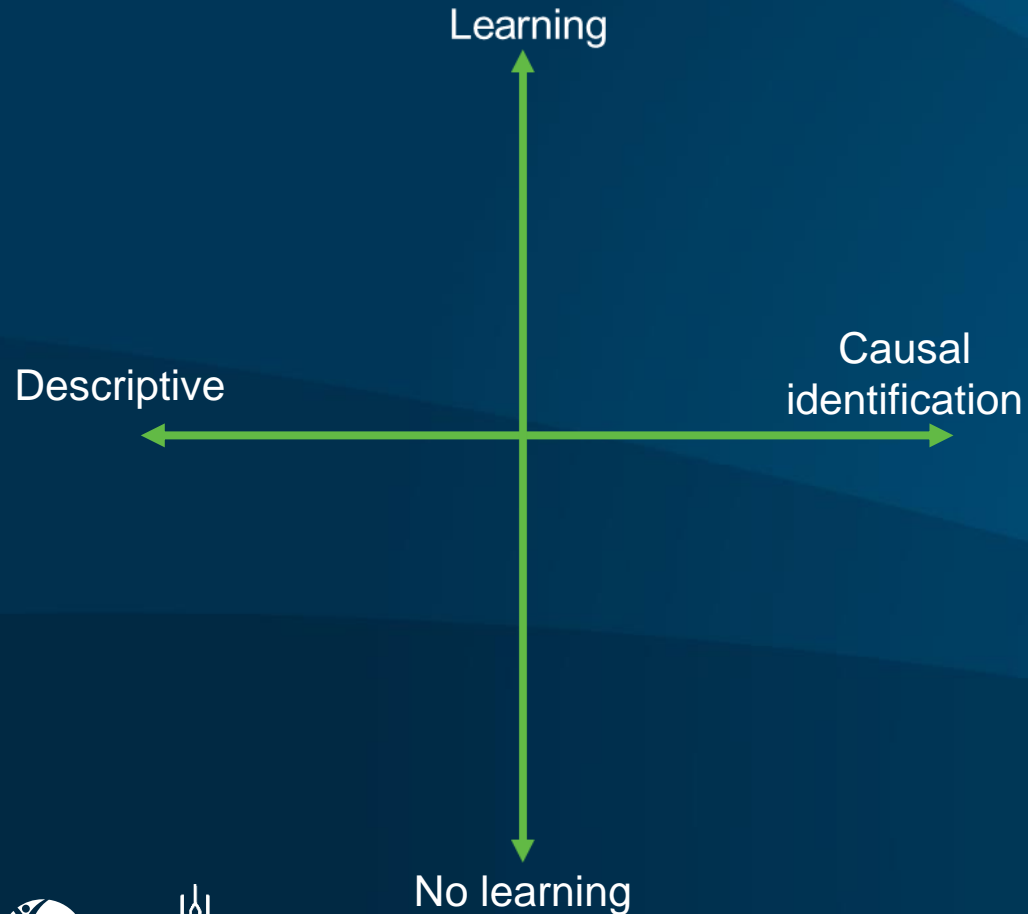


Response 1: Causal identification as the “end” of research

- This is misguided for, at least, two reasons:
 1. It can (note: not always) lead us to only work on specific, perhaps less important, questions
 - This undermines the usefulness of our work in addressing real-world policy questions
 2. It can (note: not always) lead us to over-claim the causal nature of results and limits engagement with methodological or empirical weaknesses
 - This undermines the ability of our work to honestly engage with real-world policy questions



Response 2: Causal identification as a “means” for research



- The way we teach econometrics can sometimes frame identification as a binary concept
 - We either have it or we don't
- In practice, identification is a spectrum
 - Carefully discuss what we can and can't learn from the analysis
 - Instead of showing dozens of robustness checks, do the opposite.
 - Show and discuss “weakness checks”



Thank you!

j.r.bloem@cgiar.org



Indicators of Institutional Capacity

Used by Thom Jayne

“Core” funding

- Ability to make “core investments” that enable the institute to function (finance office, data generation, vehicles, office premises, computer hardware/software, etc)
- Ability to offer 4-5 year contracts to attract/retain qualified staff
- Resources to set up governance structure and operating systems (e.g., strategic plan, protocols, board of directors, etc)

Internally-facing management

- Offers competitive remuneration package to attract/retain high-performing staff
- Favorable work environment: place where staff will want to build a career
- Success in passing financial audits
- Communications, up-to-date website

Externally-facing management

- effective at creating and seizing opportunities
- effective relationships with public & private sector stakeholders
- produces quality peer-reviewed research
- effective policy outreach and engagement
- effective partnerships w/ national/international research units
- success in attracting new/diversified/recurrent funding