Addressing off-farm impediments to global food security

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3 take-away messages

1. Not only has the riskiness of agricultural production been increasing this century, but so too have global market and policy uncertainties faced by farmers and agrifood businesses.
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2. To boost global food security and generate more-sustainable food systems and more-resilient climate-smart farmers, the following are needed:
   -- better markets for the services of natural capital,
   -- more public investment in agricultural research and in rural infrastructure in developing countries (DCs), and
   -- more public-private collaboration to up-scale innovations pertinent to the needs of DC farmers and agrifood businesses.
1. Not only has the **riskiness** of agricultural production been increasing this century, but so too has **global market and policy uncertainty** faced by farmers and agrifood businesses.

2. To **boost global food security** and generate **more-sustainable food systems** and **more-resilient climate-smart farmers**, the following are needed:
   - better markets for the services of **natural capital**,
   - **more public investment** in agricultural research and in rural infrastructure in developing countries (DCs), and
   - **more public-private collaboration** to up-scale innovations pertinent to the needs of DC farmers and agrifood businesses.

3. The returns from such investments would be enhanced if there was **less government intervention in national agrifood markets**, to ensure better use of the world’s current agricultural resources, & **of prospective technologies**, by getting prices right.
First message: not just riskier, also more uncertainty for farmers

- Agric **production** and **trading** has always been risky
  - e.g., yield fluctuations due to variations in seasons, and fluctuations in int’l prices and exchange rates

- Those risks have **increased this century**
  - i.e., their probability distributions have widened (e.g., due to climate changes), but are still **known**

- But **market** and **policy uncertainties** also have increased (**unknown** probability distributions)
Three types of increased uncertainty

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2. Technology uncertainty: in responses to, e.g., changes in climates, and in preferences of consumers (wanting meat and dairy substitutes; demanding that goods be produced more sustainably, ...)

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3. **Policy uncertainty**: speed of globalization plus ICT revolution has led to anti-globalization populism and more erratic trade-restrictive measures
Global economic policy uncertainty index

Source: www.policyuncertainty.com
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   - The world had more populist governments in the 2010s than in any previous decade since 1900
Populist governments since 1900
(Source: Funke, Schularick and Trebesch, 2021)
Rise of populism

Populism leads to economic nationalism and trade protectionism, and so to less multilateralism and slower economic growth (Funke, Schularick & Trebesch 2021)
Yet the world needs faster economic growth to reduce poverty, and more multilateralism to generate more key global public goods to:

- slow climate change
- reduce biodiversity loss
- lower communicable health risks
Some sources of greater uncertainty

- **China** (greatest gainer from globalization) is now more assertive & less reliable as a trading partner.

- **Russia**, having become a major exporter of grains, fertilizer & hydrocarbons, has disrupted those markets by aggressive interventions, especially in Ukraine, that have triggered trade sanctions.

- **US** had a populist President (& may again after 2024)
  - Weakened US hegemony, triggered tariff ‘wars’, and undermined WTO, IPCC, WHO

=> Heightened risk of international conflict
THIS LATEST ROUND OF TRADE TALKS HAS ME A LITTLE WORRIED...
To boost **global food security** & generate **more-sustainable food systems** and **more-resilient climate-smart farmers**, the following are needed:

-- better markets for the services of **natural capital**,  

-- **more public investment** in agricultural research and rural infrastructure in developing countries (DCs), &  

-- **more public-private collaboration** to up-scale innovations pertinent to the needs of DC farmers
Markets for the services of natural capital

- Efficient use of **farmland** requires secure property rights and markets for sale, leasing, etc.

- Likewise **irrigation water**: establish property rights, markets for their sale & lease, and policies for altering allocations/year according to seasons

- plus taxes (not subsidies) on polluting farm inputs

- plus markets for **sequestering carbon in soil**

- plus markets for **other ecosystem services** (e.g., tree planting to reduce loss of biodiversity)
More public investment in agricultural research and rural infrastructure …

... especially in developing countries where underinvestment is rife (Rao, Hurley & Pardey, 2020)

Desirable not least because benefits are shared between producers (higher incomes all along the supply chain) and consumers (lower food prices)
More public-private collaboration to up-scale innovations pertinent to small farmers in DCs

- USAID’s Development Innovation Ventures
  - supports innovators & researchers to test new ideas, take strategic risks, build evidence of what works, and advance the best of those with evidence of impact, cost-effectiveness, and a viable pathway to scale and sustainability.

- Univ. of Chicago’s Innovation Commission for Climate Change, Food Security and Agriculture (see COP28)
  - looking to support adaptation innovations that are difficult to up-scale commercially, and
  - Will also encourage private-sector mitigation innovations, by offering advance market commitments (as already used to encourage vaccine development).
The returns from such public and private investments would be enhanced if there was less government intervention in national agrifood markets, to ensure better use of the world’s current agricultural resources, and of prospective technologies, by getting prices right.
What’s wrong with current ag policies?

1. Still very **price-supportive**, including in some DCs, which **helps richest farmers most** and **hurts poorest food consumers most**

   WTO’s current focus on agrifood **subsidies** is not enough: **import tariffs** still contribute >90% of global welfare cost of agric support policies (so domestic subsidies <10%, see Anderson et al., 2023)
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2. They still **insulate** against international food price spikes

   yet that’s ineffective if both exporting and import-competing countries try to reduce transmission of int’l price spike to their domestic markets: it’s like everyone standing in a football stadium hoping to see better (Martin & Anderson, 2012; Jensen & Anderson 2017)
Real international food and energy prices are spiking more frequently this century
(Source: World Bank Pink Sheets, to July 2023)
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2. They still **insulate** against international food price spikes

3. Their reform would improve global econ welfare, but not boost global food output or lower food prices much
   - Need to do more to **boost global food and nutrition security** & the **sustainability of food production systems** (Gautam et al., 2022)
What can be done?

- Individual farmers: can diversify their crops to reduce risk and uncertainty

- Individual agrifood traders: can diversify their foreign country engagement to reduce risk of trade restriction shocks & economic coercion

- National governments: can re-purpose current policies of farm support for better economic, environmental and social outcomes
Ag market price supports are very **inefficient**, very **inequitable**, and **anti-trade** (i.e., biased toward least-competitive farm industries in each country)

Thus **reducing them** would lower the economic & environmental cost of supplying the world’s food ...

... and **becoming more open to trade** would boost economic growth

and lower poverty in agrarian economies by boosting demand for farm outputs ()
Scope for re-purposing supports for farmers

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- Thus reducing them would lower the economic & environmental cost of supplying the world’s food ...
- ... and becoming **more open to trade** would boost economic growth
- Govts. could then focus on providing **direct income support** to just neediest farm h’holds plus data, info, etc. to **build their resilience**
Share of adults with a bank or mobile-money account (%)

Farm production contributes non-trivially to global environmental damage

- >1/4th of **GHG emissions** (IPCC 2020), and
- key contributor (with deforestation) to **biodiversity loss** (Dasgupta Report 2021)

So farmers need to be **incentivized to mitigate**

- Will happen as carbon taxing and emissions trading become more widespread
  - but much work is needed to improve environmental impact reporting in agrifood systems (Deconinck, Jansen & Barisone 2023)
What else is wrong with current ag policies?

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- Farmers also need to adapt to climate change
  - CC is lowering their productivity (especially in the tropics), thereby raising consumer prices of food, and
  - it’s adding to volatility of ag output quantities & prices
  - so R&D needs to generate more climate-smart innovations
Implications for Crawford Fund

- Keep supporting wider adoption of pertinent farm technologies in DCs
  - Contributes to ag growth and poverty reduction (World Bank 2007; Heady & Hirvonnen 2023) and hence improves nutrition

- Complement that with dissemination of alternative policy options in DCs where current policies are wasteful, or where tighter environmental standards are required to retain market access abroad?
Thanks!
References cited