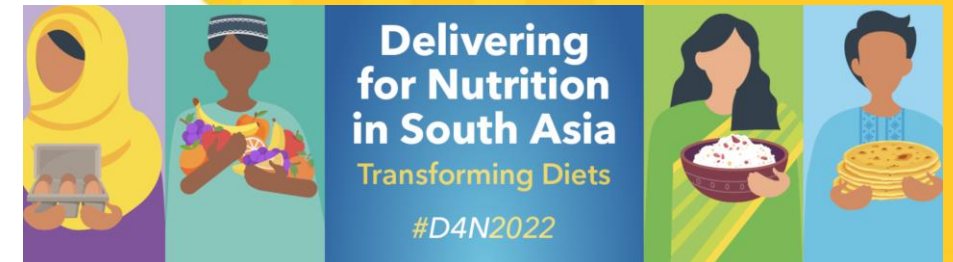





Reflections on agricultural production and diets in South Asia

Timothy J. Krupnik
(and many, many supporting colleagues)

Nov 9, 2022



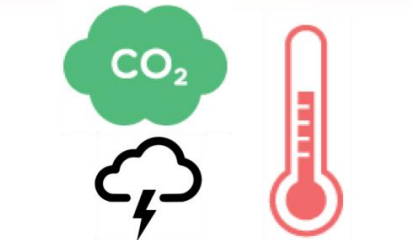
Interlinking challenges confronting South Asia's Agrifood systems




1/4 of all of humanity



World's largest concentration of poverty & malnutrition



World's most crucial climate change 'hotspot'



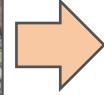
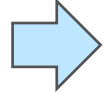
Severe natural resource degradation and pollution



Systematic inequalities

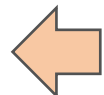


Institutional and policy challenges



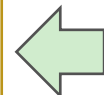
Food production & availability

- High production costs
- Need for diversification
- Unsustainable natural resource use
- Agricultural nonpoint source pollution
- Climate extremes and change
- Greenhouse gas emissions



Food access & affordability

- Connected market systems, but unequal access
- Loss of product quality from field to plate
- Gender and social inequalities
- Unhealthy foods widely available
- Environmental externalities

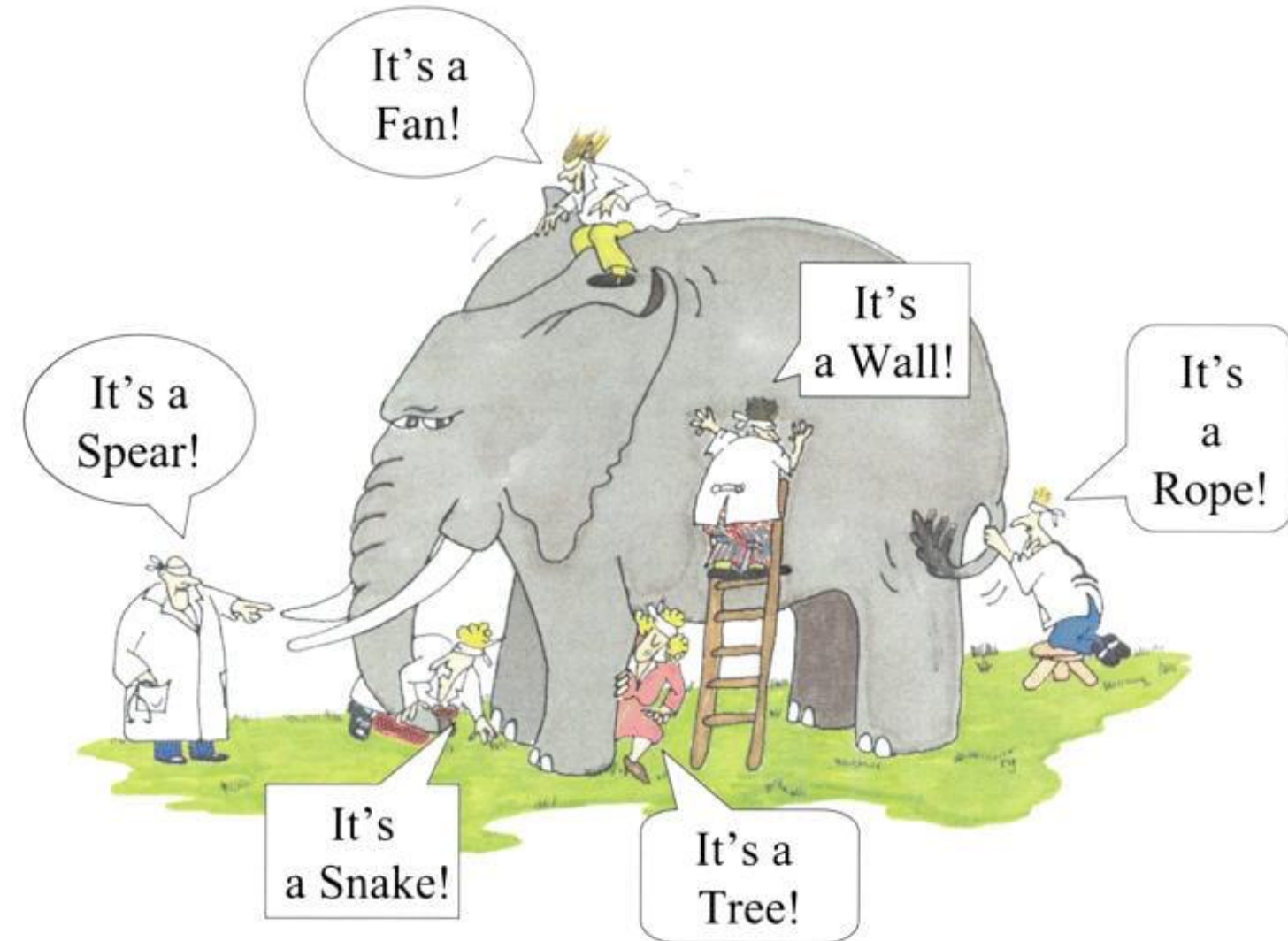


Consumption

- Multiple forms of malnutrition
- Poor diets main contributor to disease Low dietary diversity
- Heterogeneity in access to sufficiently nutritious foods
- Intrahousehold inequities

← Social inclusion challenges (gender, youth, caste, tribe, ethnicity, religion) →

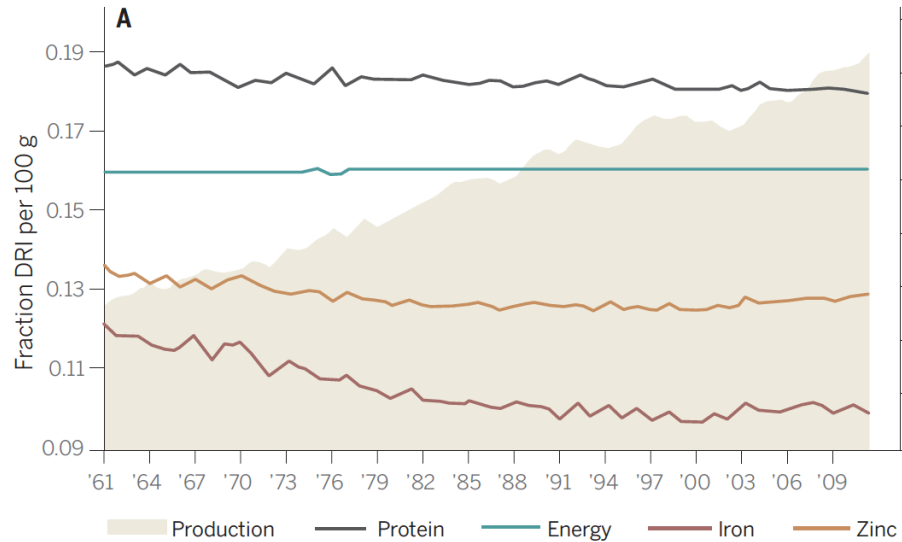
Agricultural production and nutrition: Rethinking critical assumptions



Some common agronomic assumptions

- 'Food security correlates with nutritional security
- Increased production results in increased food availability
- Boosting food production can generate income to purchase more nutritious foods
- Diversified production affects nutritional outcomes
- Agricultural production is the most important part of the food system

New metrics for land-scarce agriculture: The Nutritional yield concept



GLOBAL NUTRITION
*Metrics for
land-scarce
agriculture*
Nutrient content must
be better integrated into
planning

By Ruth DeFries,^{1} Jessica Fanzo,²
Roseline Remans,^{3,4} Cheryl Palm,³
Stephen Wood,^{1,3} Tal L. Anderman⁵*

*Nutritional product yield =
adult eq. obtaining 100% RDI year⁻¹ ha⁻¹*

(or)

*Nutritional land requirement =
Ha to produce 100% RDI adult eq.⁻¹ year⁻¹*

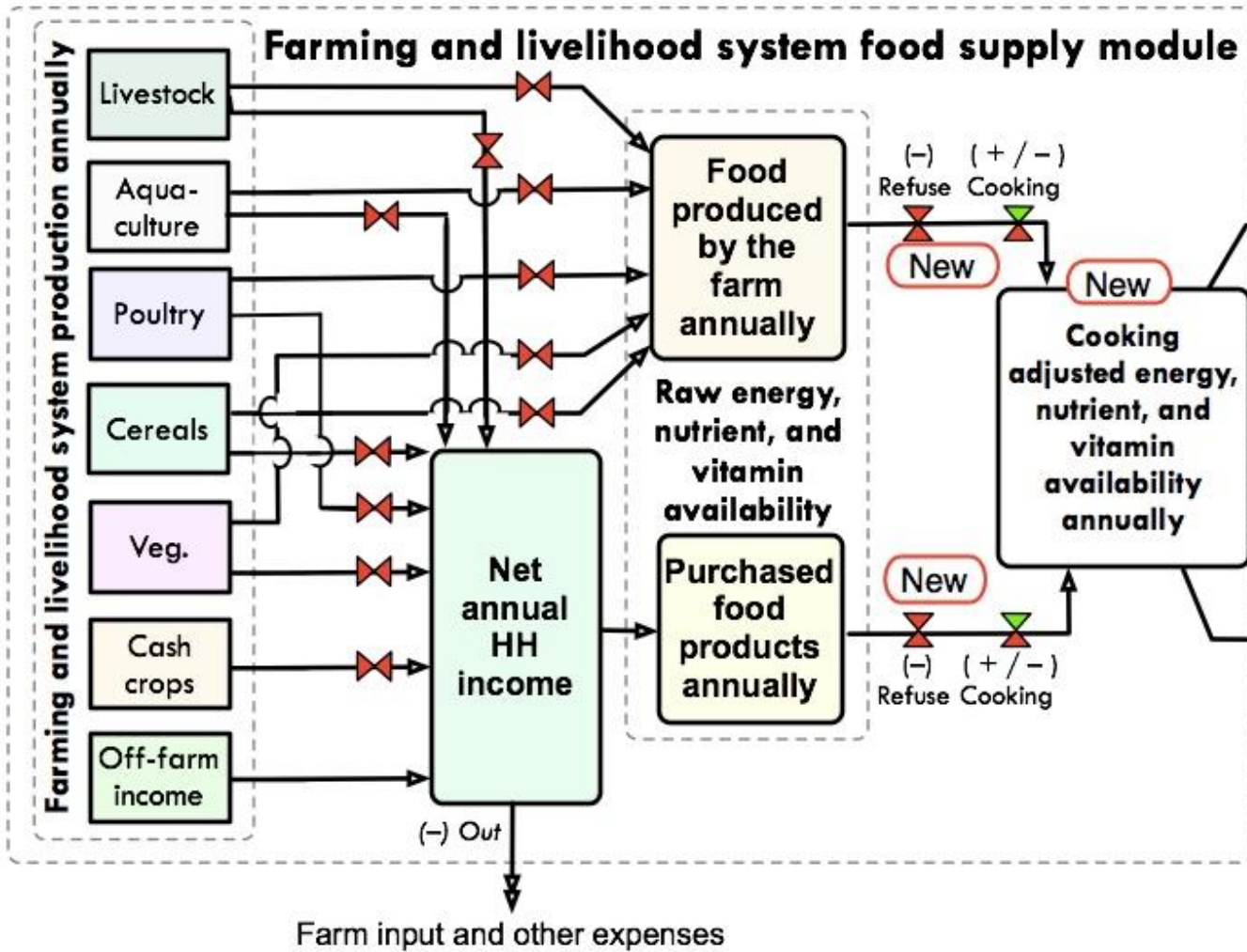
Caveats:

- Conversion factors indicate potential nutrient availability, not actual nutrients consumed
- People do not obtain RDI from single food items
- Farmers do not produce single food items

However:

- Metrics 'open the box' for comparison among food products and production systems
- Can be applied to production and full value chains

Complex interactions – and markets – strongly influence production and consumption



TAFSSA provides impact-oriented research across the agrifood system continuum

1

Inclusive, multi-stakeholder learning platforms and public data systems



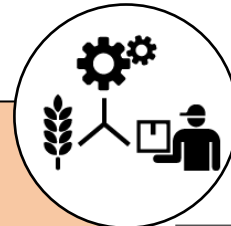
2

Transforming agroecosystems to boost income and diversified food production



3

Evidence and actions boosting access to sustainably produced, healthy diets



4

Behavioural and structural determinants of sustainable healthy diets



5

Building resilience to climate change & mitigating environmental degradation

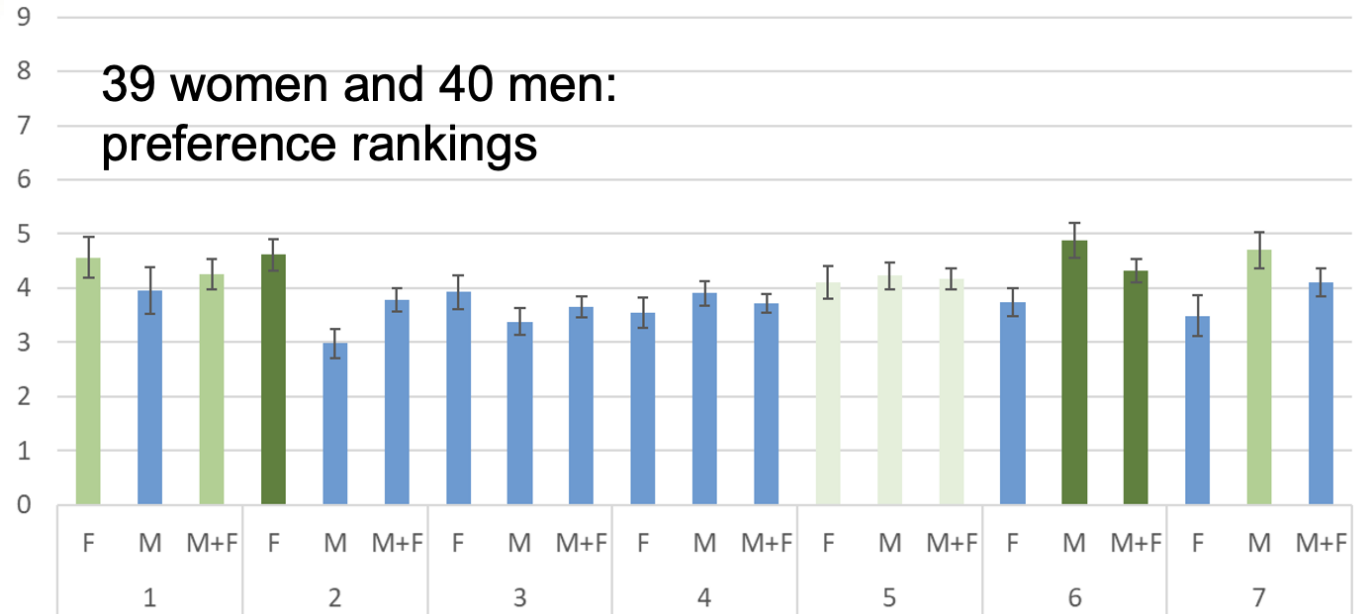


← Social inclusion (gender, youth, caste, tribe, ethnicity, religion) →

(Re)designing cropping systems through farmer-led research in Bangladesh



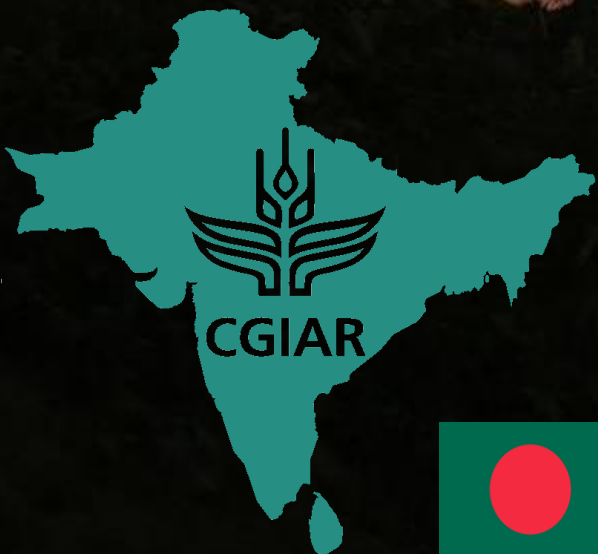
Transforming Agrifood Systems in South Asia



		Average M	Average F	Average M+F
1	Potato - Baby corn - S D Aman Bf	3.95	4.56	4.25
2	Vegetables - Boro Bf -Aman Bf	2.98	4.62	3.79
3	Maize Inter crop - Sorghum - Aman	3.38	3.92	3.65
4	Mustard - Groundnut - Aman	3.90	3.54	3.72
5	Carrot - Maize - Aman	4.23	4.10	4.17
6	Wheat - Jute - Aman	4.88	3.74	4.32
7	Mustard - Maize - Soybean	4.70	3.49	4.10

- 1st choice
- 2nd choice
- 3rd choice

Thank you!



Contact information:

- ✉ Timothy J. Krupnik (t.krupnik@cgiar.org)
- ✉ Purnima Menon (p.menon@cgiar.org)