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What can food systems transformation deliver

Patrick Webb

25 Jan 2023

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Food systems transformation

- Make healthy diets affordable to all
- Make the production systems supporting healthy diets sustainable
- Improve equity and livelihood resilience across food systems
- Build decent jobs across the food sector (not just in agriculture)
- Contribute to national and climate change goals
- Build consumer knowledge and demand for health diets
- Significantly reduce health spending on diet-related diseases

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Poor diets are now responsible for a quarter of all deaths

- a 15% rise since 2010

GLOBAL NUTRITION REPORT

Find out more in the
2021 Global Nutrition Report
globalnutritionreport.org

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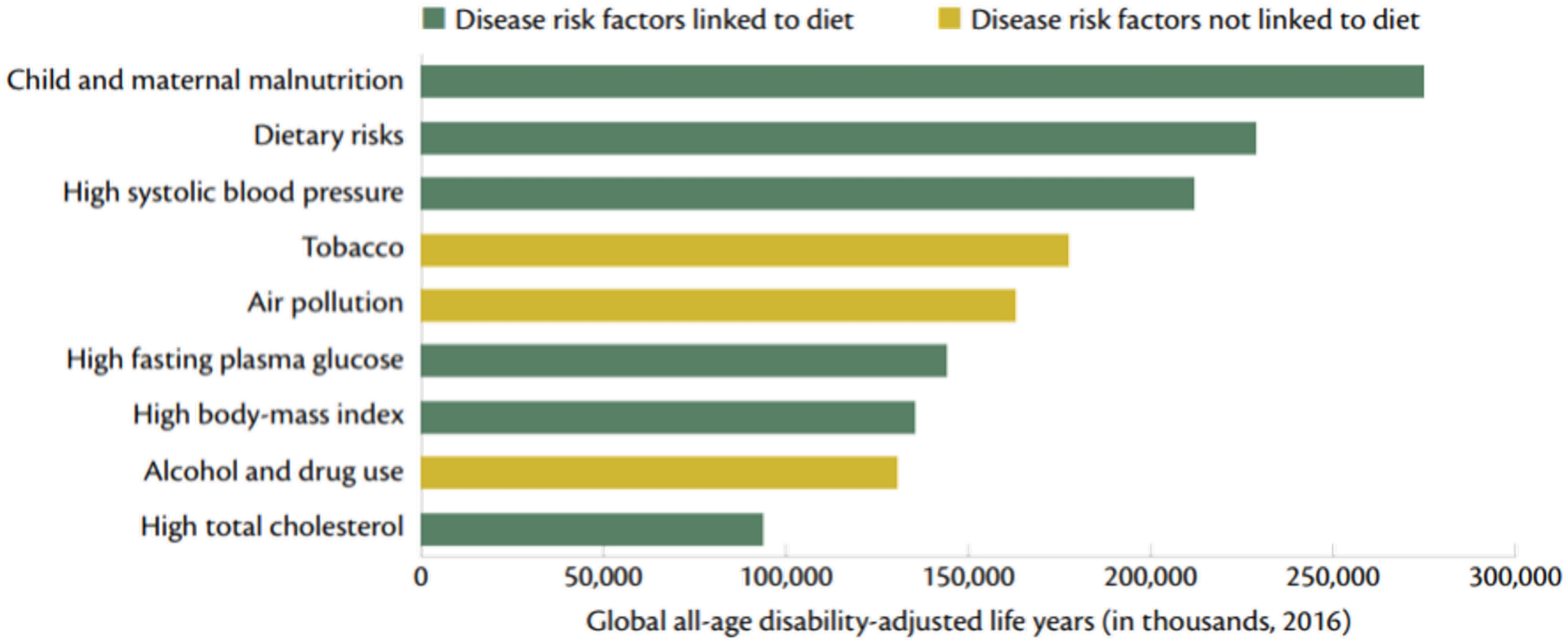
Diet related factors account for **six of the top nine** contributors to the global burden of disease



Source: Global Burden of Disease Study 2016 Collaborators (2017, Table 4).

Note: The graph shows global disability-adjusted life years (DALY's) attributed to level 2 risk factors in 2016 for both sexes combined.

Diabetes is becoming one of the biggest killers in Nepal. Here's everything you need to know about the risk

Sandesh Lamsal
November 14, 2022

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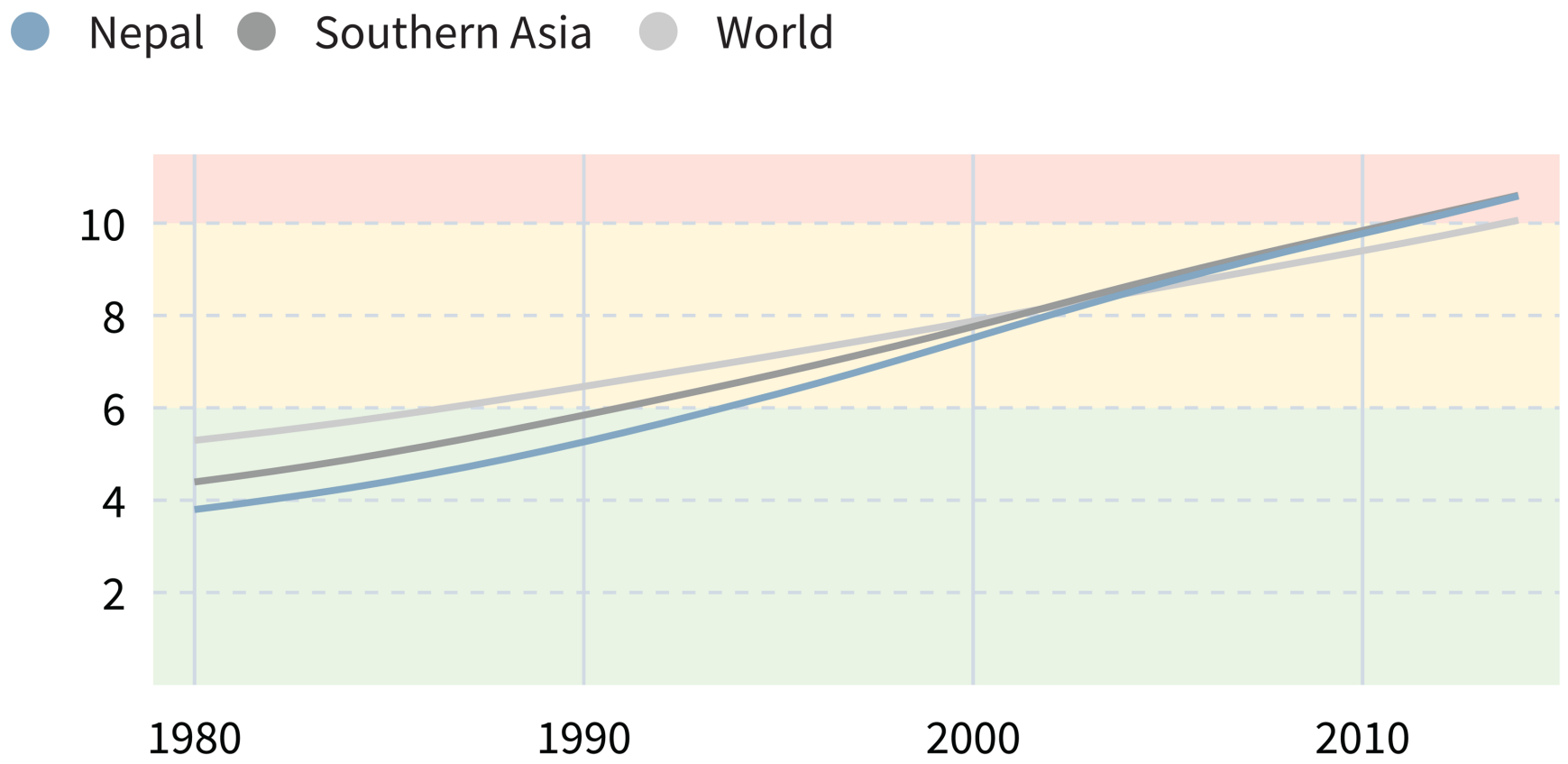
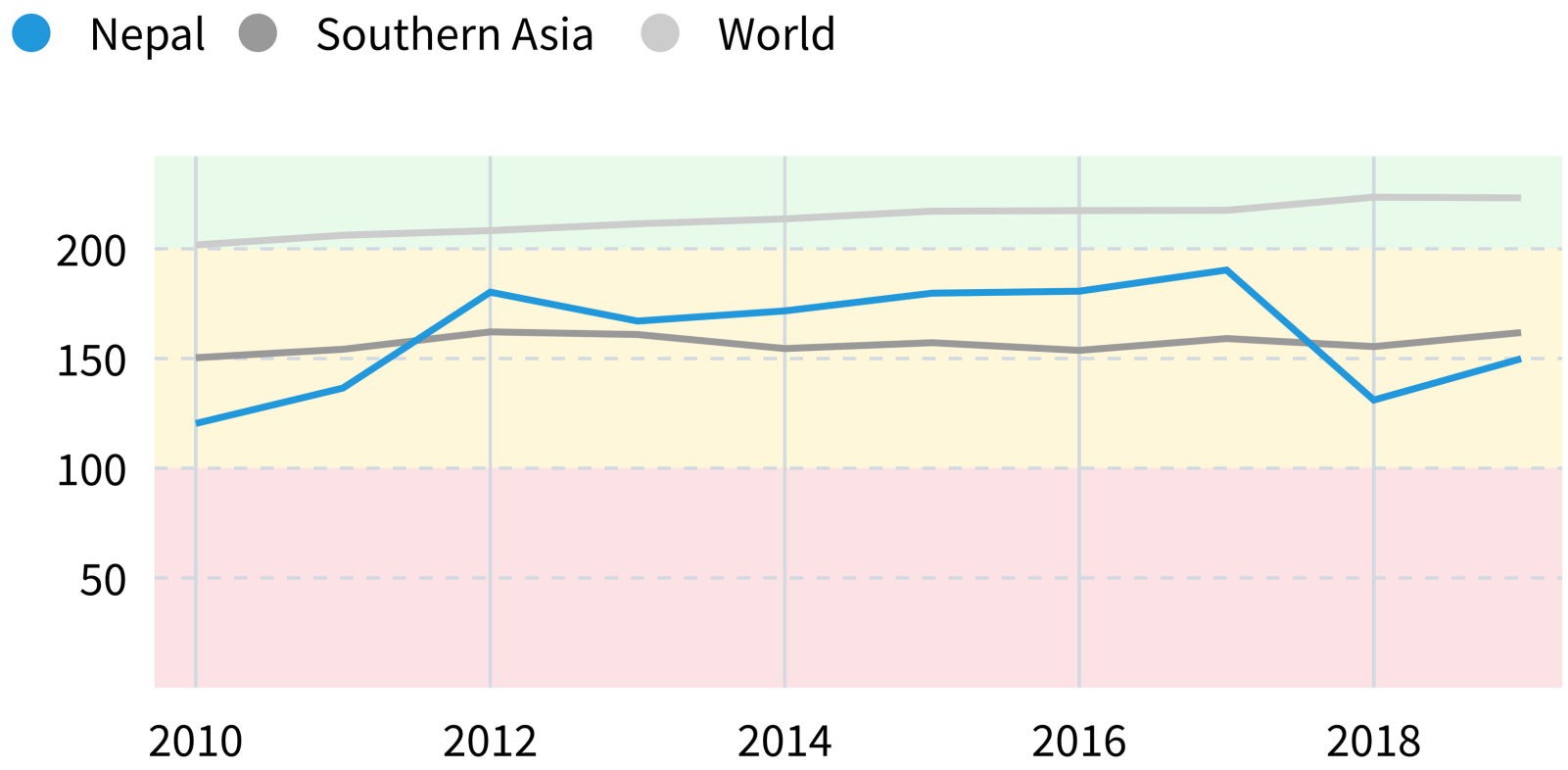
Adult diabetes prevalence (%)

Outcomes › Noncommunicable diseases



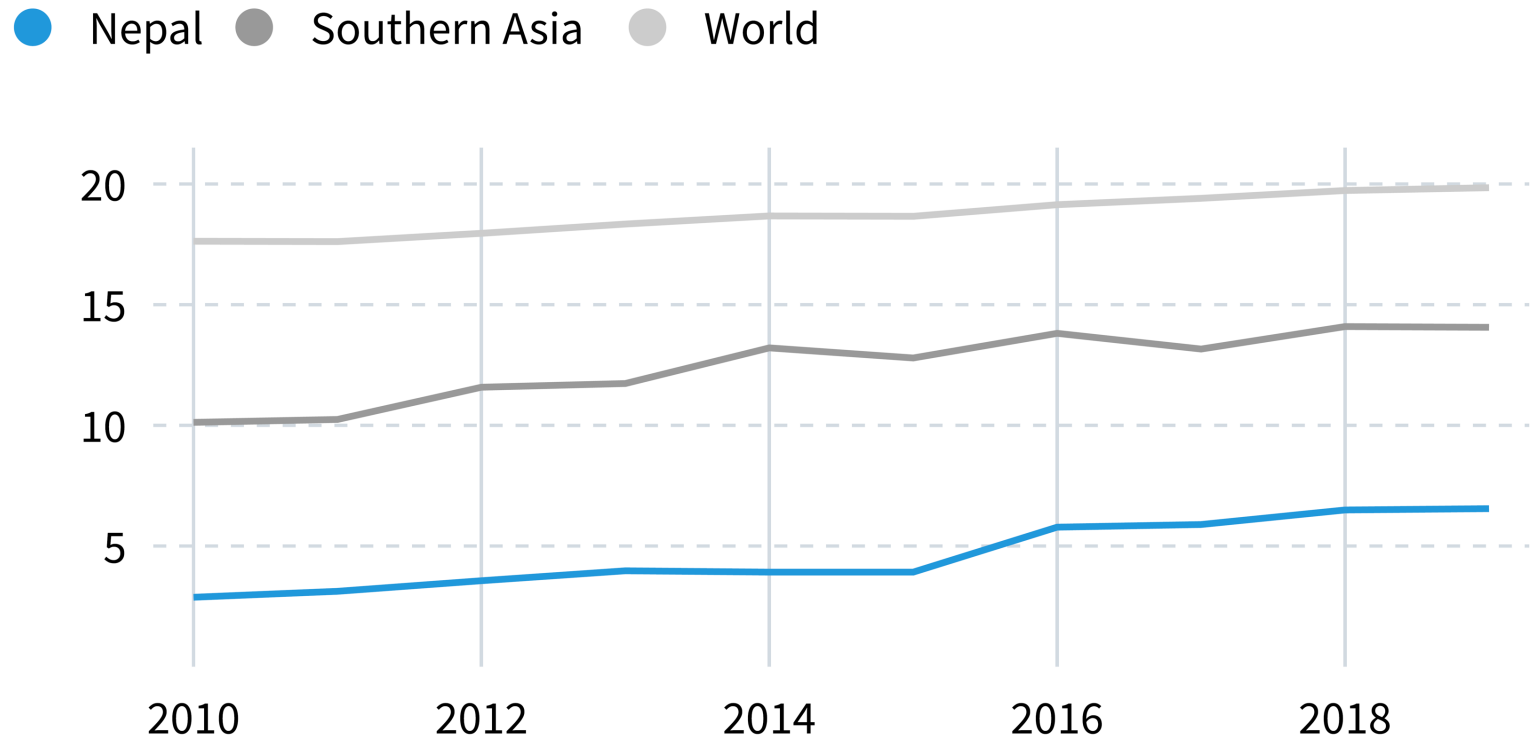
Supply of fruit (g/capita/day)

Food Environments › Food availability



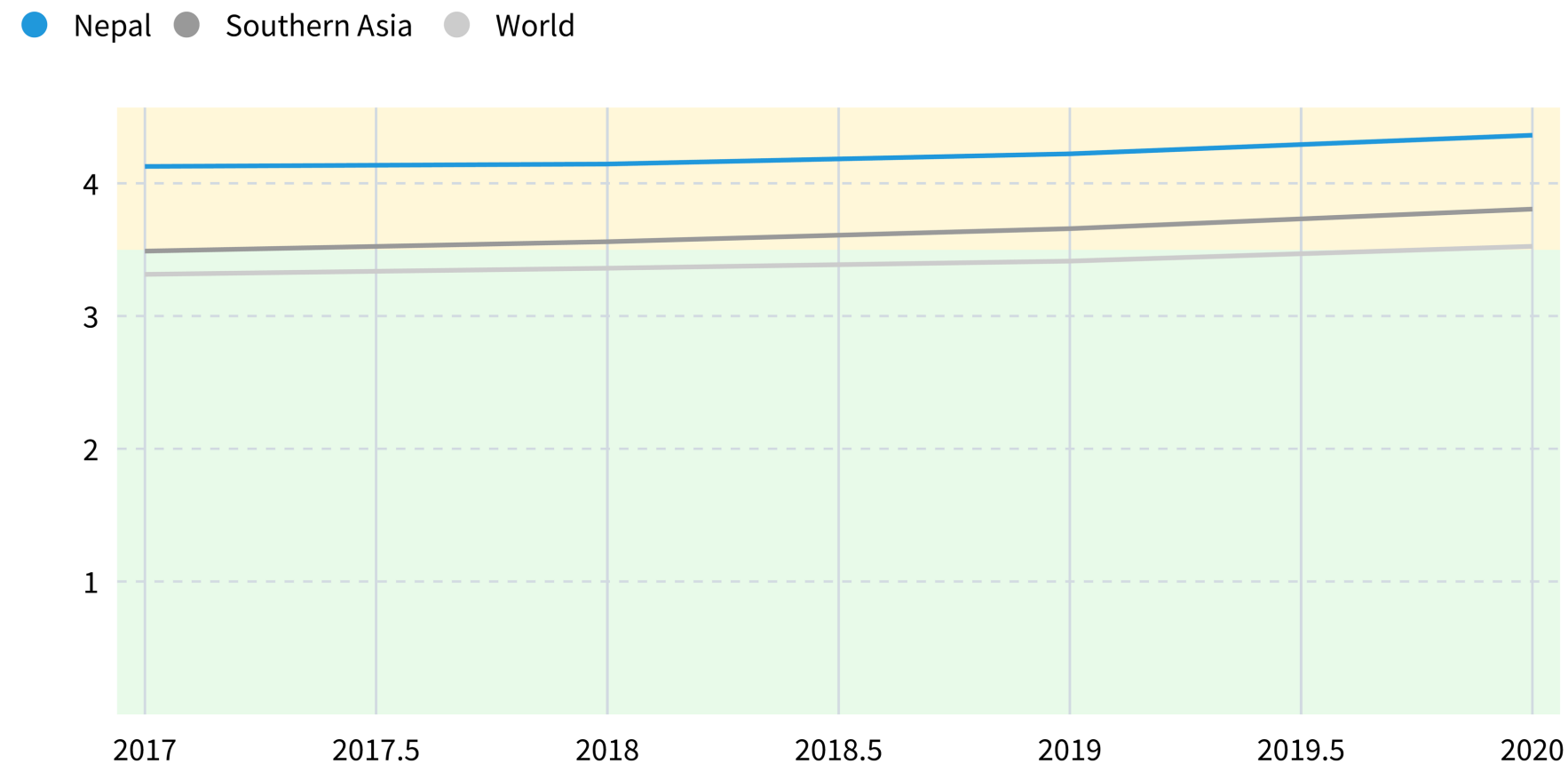
SOURCE: FAO

Supply of eggs (g/capita/day)
Food Environments › Food availability



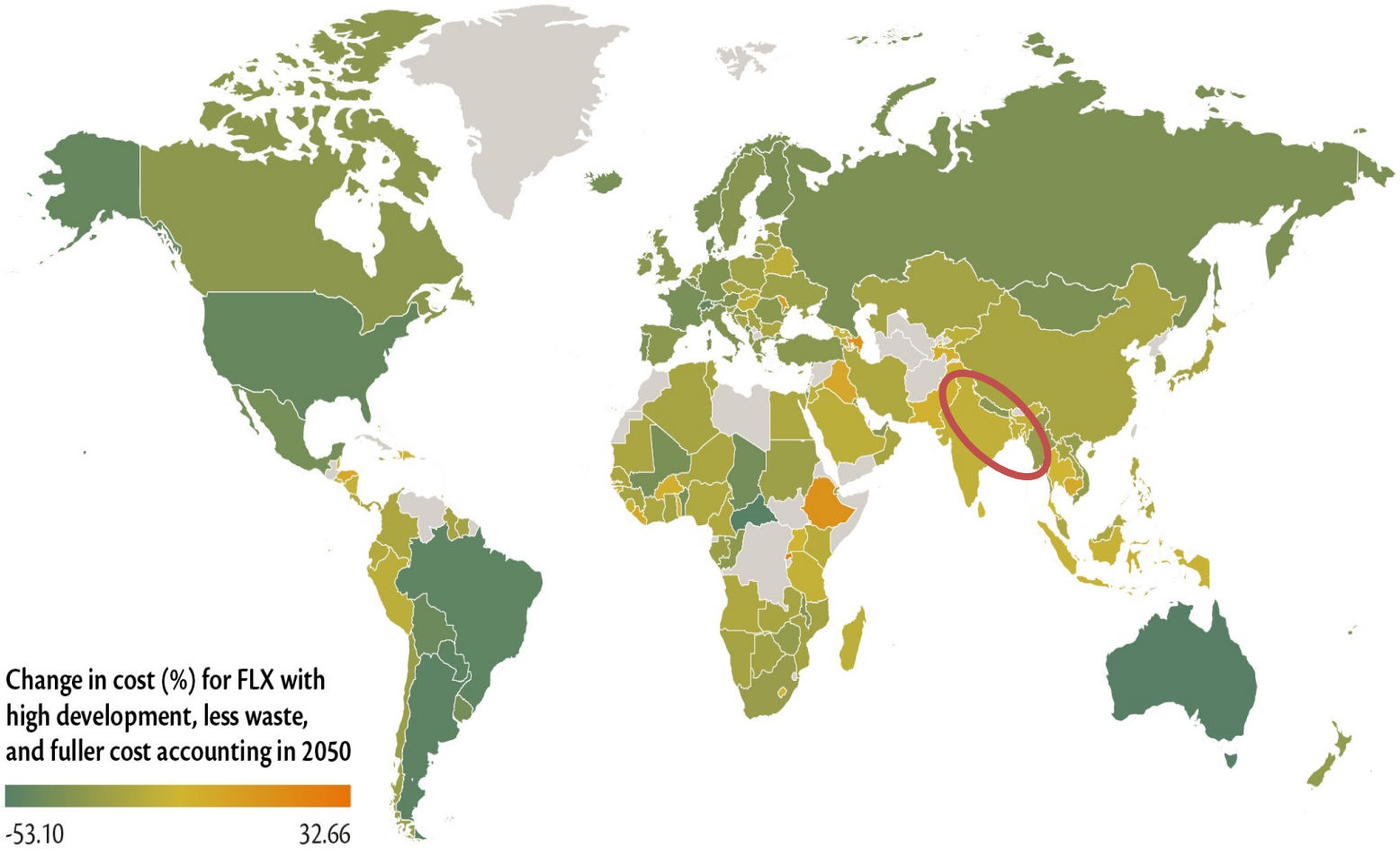
SOURCE: FAO

Cost of a healthy diet (PPP dollar/person/day)
Food Environments › Food affordability



SOURCE: Food Prices for Nutrition DataHub and the State of Food Security and Nutrition in the World 2022

Projected change in cost of a flexitarian diet between 2017 and 2050

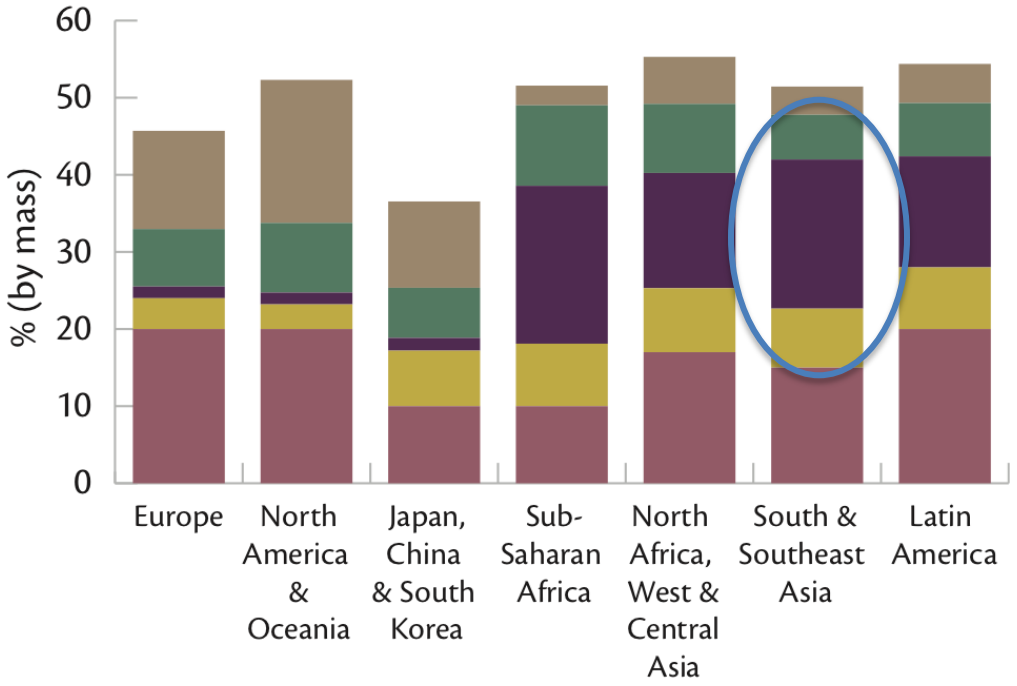


If the right policy actions and investments were to be implemented at scale, their combined effects on prices would be to reduce the overall cost of sustainable, healthy diets.

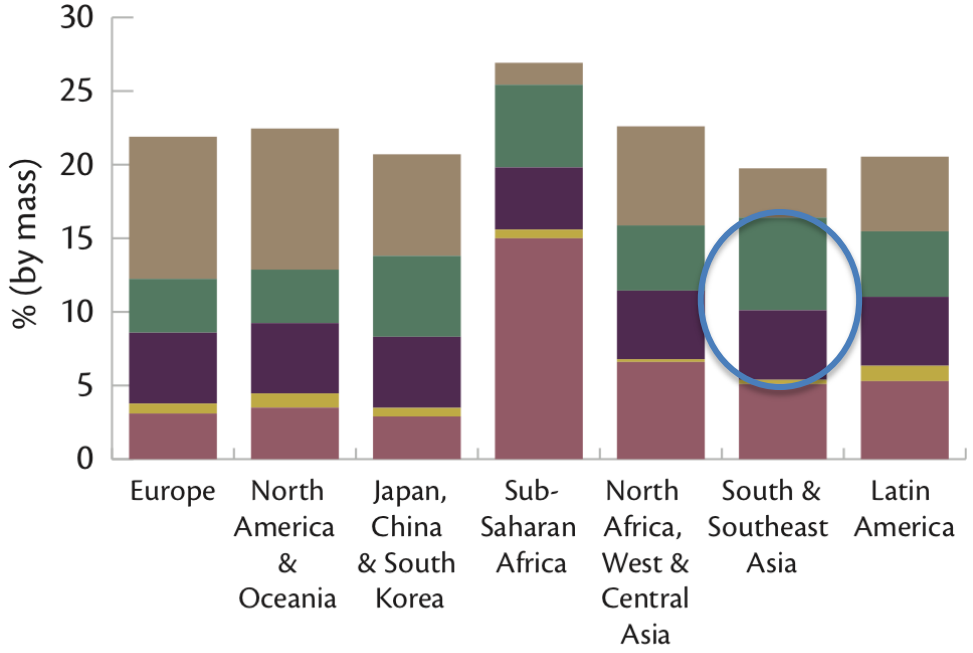
Source: Springmann et al. (2021) Lancet Planetary Health

Patterns of loss and waste – not the same everywhere

Loss of *fruits and vegetables*



Loss of *meat and meat products*



Consumer level waste
Post-harvest handling/storage
Distribution/retail level
Agricultural production
Transformation and packaging

***Source**: FAO report 'Global food losses and food waste – Extent, causes and prevention'*

Solutions exist throughout the value chain

Agricultural production	Post-harvest handling/storage	Transformation/ packaging	Distribution/ retail	Consumer level waste
During or immediately after harvesting on the farm	*After leaving the farm for handling, storage and transport*	*During industrial or domestic processing and/or packaging*	*During distribution to markets, including at the wholesale and retail markets*	*In the home or business of the consumer, including restaurants and caterers*
Improve agriculture extension services	Improve storage technologies (see Table 4)	Improve supply chain management	Provide guidance on food storage and preparation	Improve access to storage facilities
Improve harvesting techniques	Improve handling to reduce damage	Improve packaging to keep food fresher for longer, optimize portion size and gauge safety	Make cosmetic standards more amenable to selling 'imperfect' food (e.g. with irregular shape, blemishes)	Address improper storage at consumption level
Improve access to infrastructure and markets	Improve infrastructure (e.g. roads, electricity access)	Reprocess or repackage food not meeting specifications		Improve consumer cooking skills
				Conduct consumer education campaigns (e.g. general public, schools, restaurants)

Source: Hanson C, Mitchell P. 2017. *The Business Case for Reducing Food Loss and Waste.*

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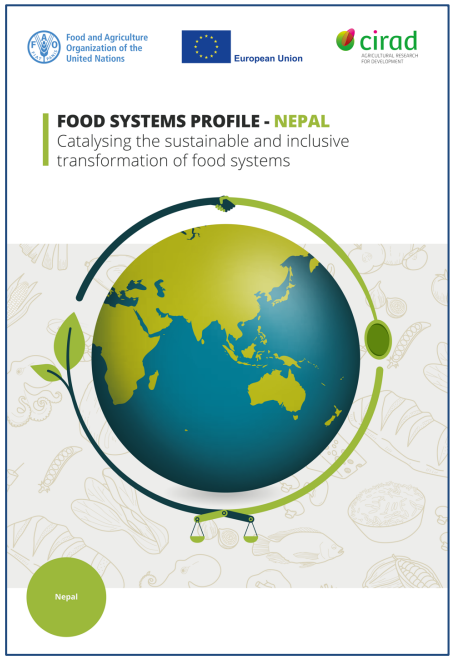
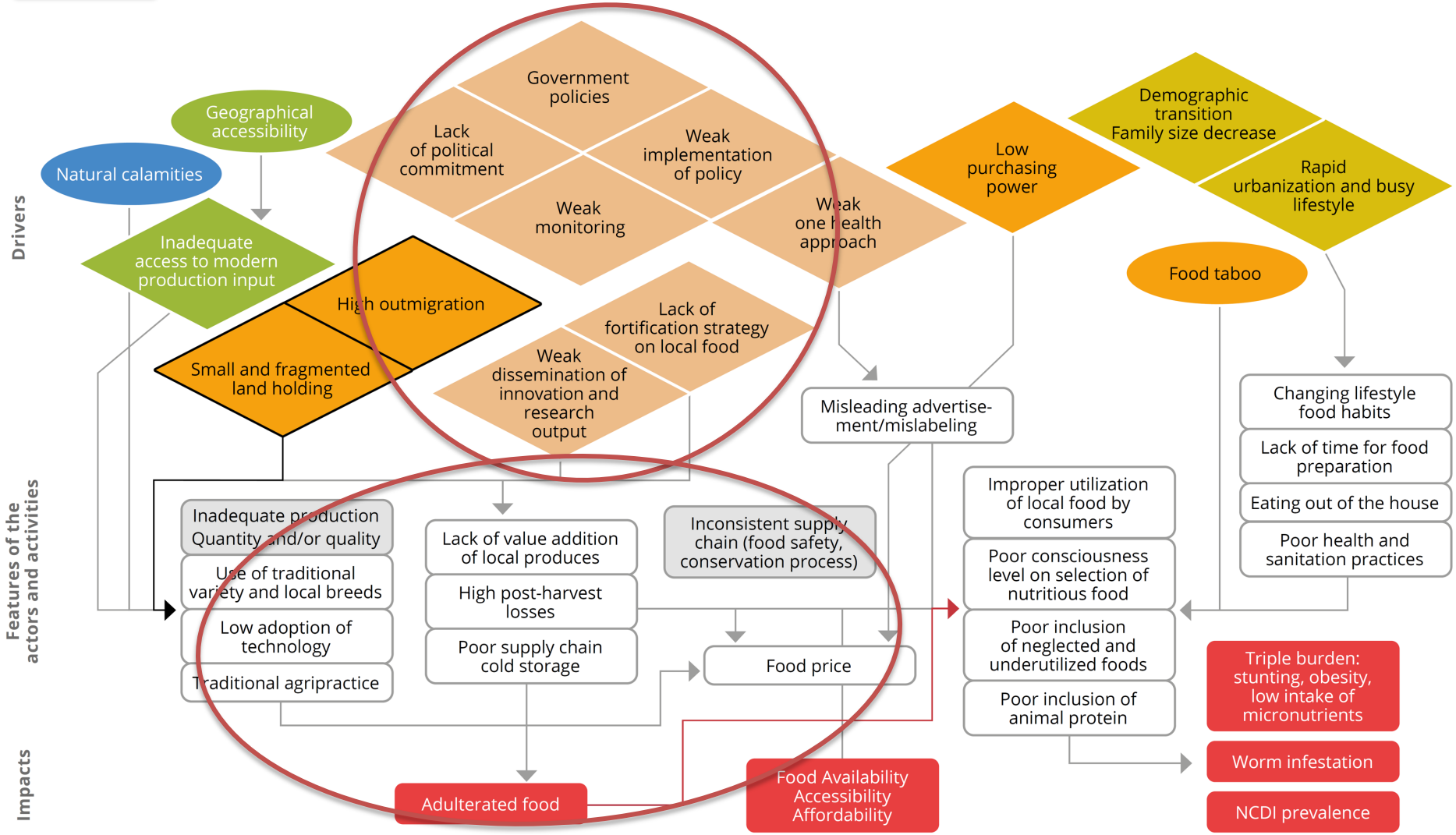


The Food System in relation to the Food Security, Nutrition and Health dimension



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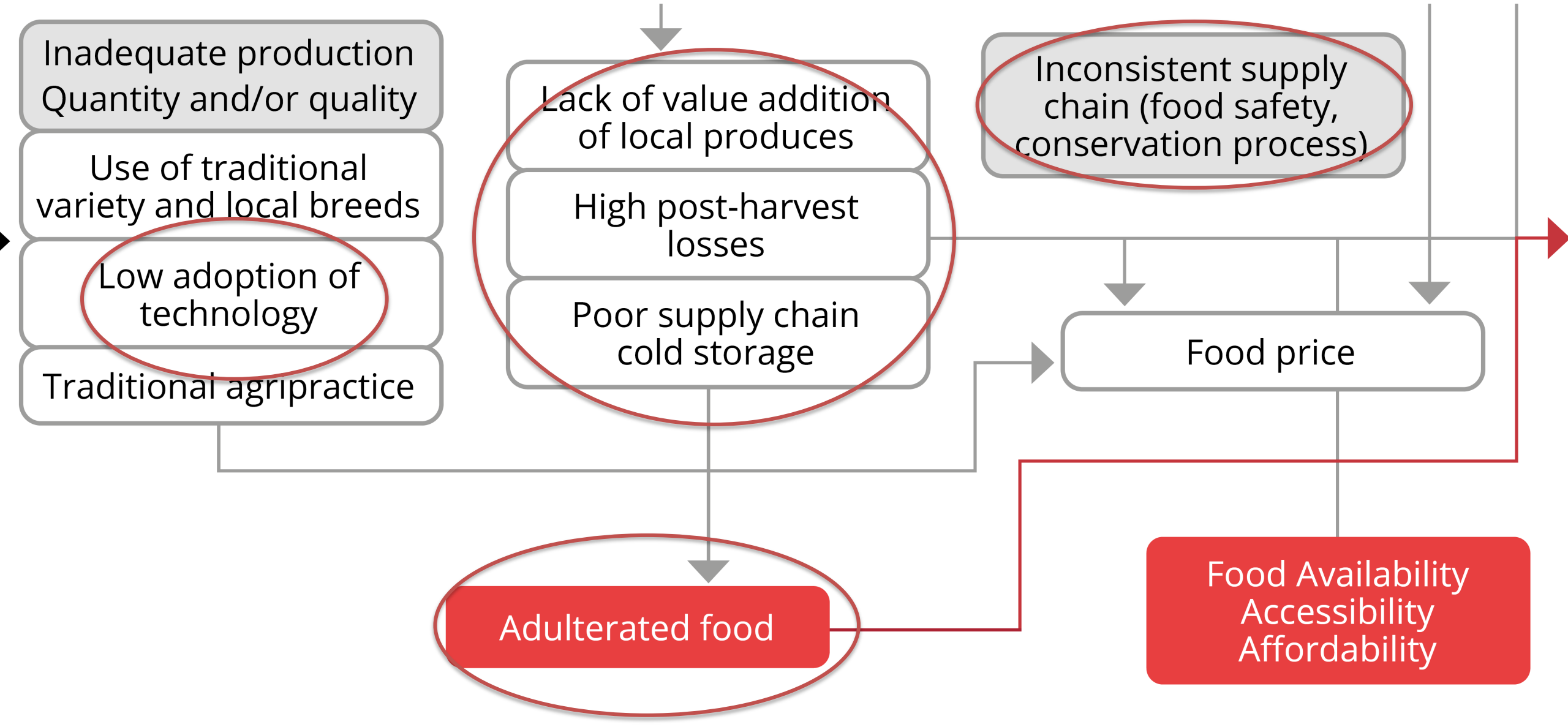
Inadequate production
Quantity and/or quality
Use of traditional variety and local breeds
Low adoption of technology
Traditional agripractice
Lack of value addition of local produces
High post-harvest losses
Poor supply chain cold storage
Inconsistent supply chain (food safety, conservation process)
Food price
Adulterated food
Food Availability
Accessibility
Affordability

Nepal's National Pathways for Food Systems Transformation (2021)

- Recognize the role of private sectors in food production/value addition and engage/involve them.
- Develop framework for the private sector engagement in producing healthy foods, popularizing healthy dietary pattern.
- Value chain development of local crops /commodities based on green technologies/regenerative agriculture practices in partnership with private sector.

A positive food system transition "will require **public policy leadership and private-sector technological *innovation*** alongside consumers who culturally value and can afford healthy, sustainable diets."

Source: Moberg et al. (2021) Combined innovations in public policy, the private sector and culture can drive sustainability transitions in food systems. *Nature Food*

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Policy Area	Policy Objective
Institutional Architecture for Improved Policy Formulation	Develop predictable, transparent, inclusive, evidence-based policy for accelerated policy improvement and implementation in support of poverty reduction and improved nutrition
Enabling Environment for Private Sector Investment	Increase competitiveness and reduce barriers to stimulate private investment in agriculture, which increases incomes for smallholders and firms, and generates employment
Agricultural **Markets & Trade** Policy	Increase efficiency, stability and transparency in domestic and cross-border trade consistent with international agreements to spur inclusive economic growth and foster increased private sector investment in agriculture
Agricultural Inputs Policy	Enable the private sector to develop, commercialize and broadly disseminate improved inputs to smallholders to increase smallholder productivity and incomes
Land and Natural Resources Tenure, Rights and Policy	Establish effective institutional arrangements, rules and mechanisms that recognize the legitimate land and resource rights of all users, including women, pastoralists and vulnerable populations, to stimulate transformative and sustainable investments in both land-based and non-agricultural, income-generating assets
Resilience and Agricultural Risk Management Policy (**Risk & Resilience**)	Enable smallholders, communities and countries to mitigate and recover from risks, shocks and stresses to agriculture, in a manner that reduces chronic vulnerability and facilitates inclusive growth
Nutrition Policy	Reduce under-nutrition with a focus on women and children—in particular the 1,000-day period from pregnancy to a child's second birthday
Mutual Accountability^	Align stakeholder commitments to further sector objectives and enable stakeholders to hold themselves and others accountable for execution of their commitments and overall sector growth
Land and Resilience^	A combination of the primary policy areas of Land and Risk & Resilience
Same	A category denoting that the secondary policy area is the same as the primary policy area

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A novel measure of developing countries' agricultural and food policy readiness ☆

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ABSTRACT

Positive agricultural and food policy environments are critically important to the success and inclusiveness of agricultural growth and transformation. Despite the catalytic potential of enabling policies, countries vary in their willingness, capacity, and ability to improve policy: in other words they have varying degrees of policy readiness. The profession has spawned a plethora of 'policy readiness' indices over the past decade. These indices are welcome first steps, but they are non-statistical compilations of a collection of inherently different measures with unclear relationships: to borrow Ravallion's term, they are mash-up indices.

In this paper we propose a novel, empirically-based policy readiness index. In contrast to prior literature, we approach the problem from a measurement perspective. This perspective enables us to aggregate items into a multi-component index such that their combination achieves superior statistical properties and assures cross-country comparability, through the application of Rasch modeling. With these empirical qualities, the meaning and robustness of the scores then become clear. We apply the model to a unique data set of policy actions prioritized in 2012/13, and the extent to which these actions were executed by Fall of 2015. The results are statistically- and measurement-valid measures of both country policy readiness and the degree of difficulty of various dimensions of policy actions.

The resulting policy readiness scores are a novel index that significantly advances the dialogue on countries' abilities to execute those agricultural and food policy changes that are priorities for accelerating agricultural transformation.

Policy implications include continued support for capacity building in low-readiness countries and cross-country support through continental or global processes for lowering the burden across all countries of making progress in the most difficult policy areas.

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1. Introduction

Positive agricultural and food policy environments enable the private sector—including smallholders—to invest profitably, and thus are critically important to the success and inclusiveness of agricultural growth and transformation (Barrett, Christiaensen, Sheahan, & Shimeles, 2017; Oehmke, Naseen, Anderson, Pray, & Moss, 2016; Oehmke, Young, Bahiigwa, Blackie, & Post; World Bank, 2007). Policy innovations can catalyze agricultural transfor-

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Levels of "policy readiness" for innovation in agriculture

Country/Region	Total Score	Total Count	Obs. Avg.	Fair Avg.	Policy Readiness	Model Std. Error	Infit Mean Square
Guatemala	37	14	2.64	2.75	2.46	.48	0.97
Honduras	28	11	2.55	2.70	2.25	.49	0.94
Central America Region	41	18	2.28	2.41	1.44	.32	0.37
Mali	18	8	2.25	2.40	1.42	.48	0.46
Rwanda	37	17	2.18	2.36	1.33	.32	0.89
East Africa Region	37	18	2.06	2.25	1.12	.30	0.95
Nepal	14	7	2.00	2.22	1.06	.48	1.01
Tajikistan	14	8	1.75	2.15	0.95	.42	0.24
West Africa Region	37	27	1.68	1.91	0.57	.25	0.51
Mozambique	45	27	1.67	1.86	0.49	.23	1.41*
Ghana	31	17	1.82	1.83	0.45	.29	1.34
Zambia	22	13	1.69	1.82	0.44	.34	0.32
Liberia	14	9	1.56	1.80	0.40	.39	2.17*
Southern Africa Region	20	13	1.54	1.80	0.40	.32	1.37
Ethiopia	58	35	1.66	1.77	0.36	.21	1.27
Malawi	20	12	1.67	1.76	0.35	.34	1.15
Uganda	33	21	1.57	1.66	0.21	.26	0.53
Cambodia	13	9	1.44	1.64	0.19	.39	1.16

Green = Good

Mustard = Moderate

Source: Oehmke et al. 2022.

What role for government in food systems transformation?

- Key aspects of government policy support include:
  - **R&D** - publicly funded post-farmgate research, training, challenges
  - **Regulatory environments** (e.g., food safety regulations, advertising rules)
  - **Direct government support** (e.g., fiscal incentives, food item subsidies)
  - **Infrastructure** (energy and roads, but also recycling, waste disposal),
  - **Endorsement and Procurement** (promotion of key foods (subsidies), state procurement (e.g., in school meals), public information campaigns (e.g., tv promotion of 'small fish for healthy kids' in Bangladesh)
  - **Dialogue** – facilitating consultation to find cooperative solutions.

Conclusions

- Time to think about protecting gains in nutrition through **healthy diets for all**.
- Focusing on how to achieve viable food systems that support affordable healthy diets goes beyond policies and individual programmes. **Systemic thinking now needed** to connect the dots that link producers, consumers and everyone in between.
- Nepal has committed to food system transformation. That requires all stakeholders (public+private) to engage, **be accountable, document progress** made and innovate – not just on the farm, but in the food markets, in companies, and across government.