

Sustainable Diets: Health, Social, Environmental, & Political Dimensions for Nepal

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For Our Discussion

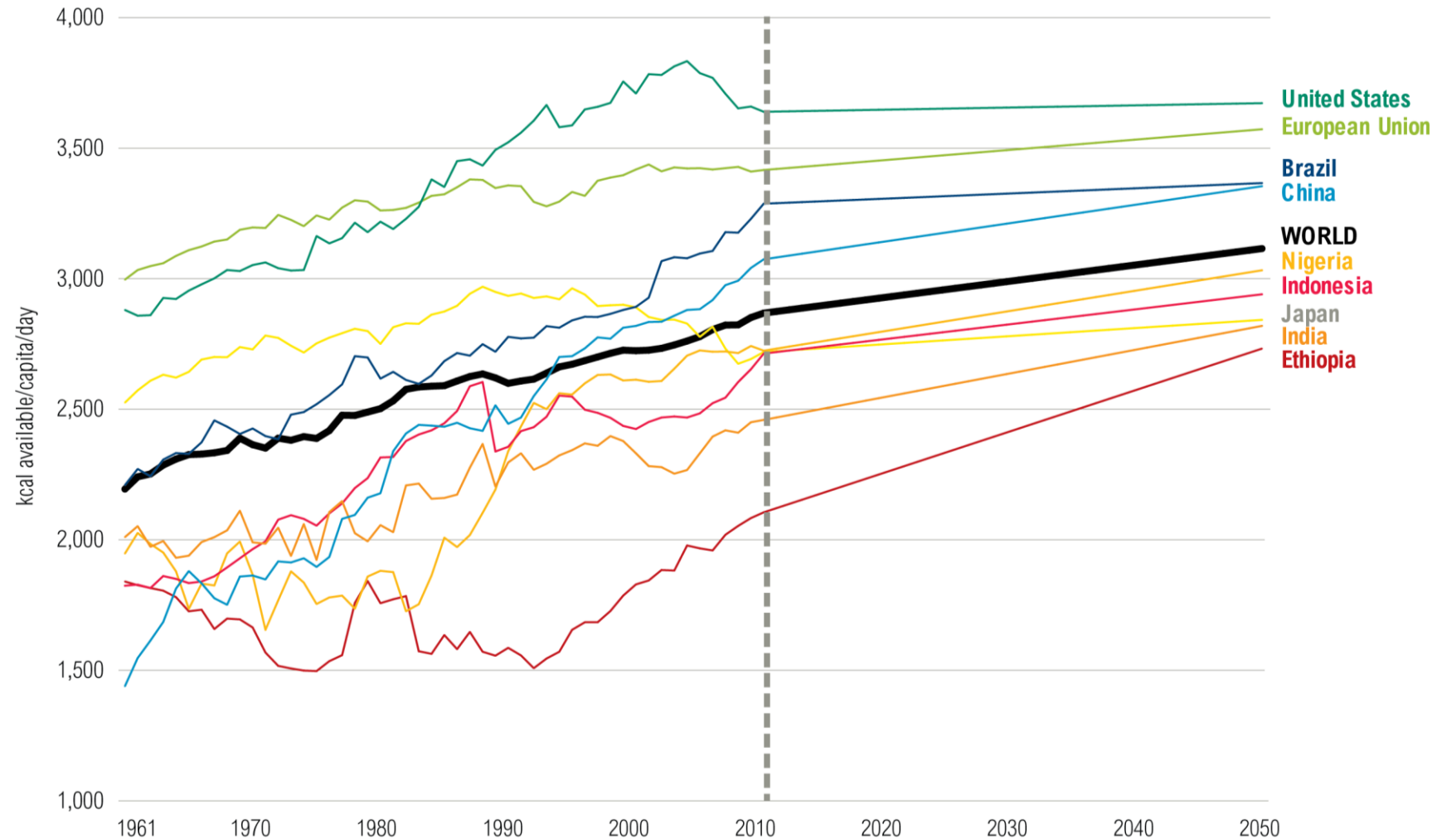
- Transitioning Diets and their Implications
- Implications of Diets in the Nepal Context
- A Re-emerging Idea: Sustainable Diets and their Challenges
- Suggestions for the Future

Transitioning Diets and their Implications

1. Too much
2. Poor quality
3. Not affordable
4. Not sustainable



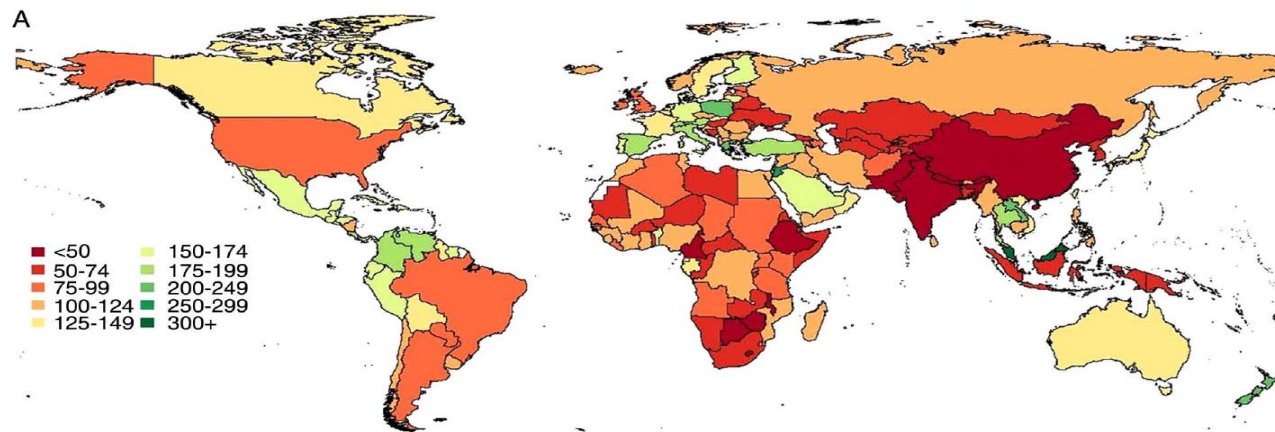
1. Too Much



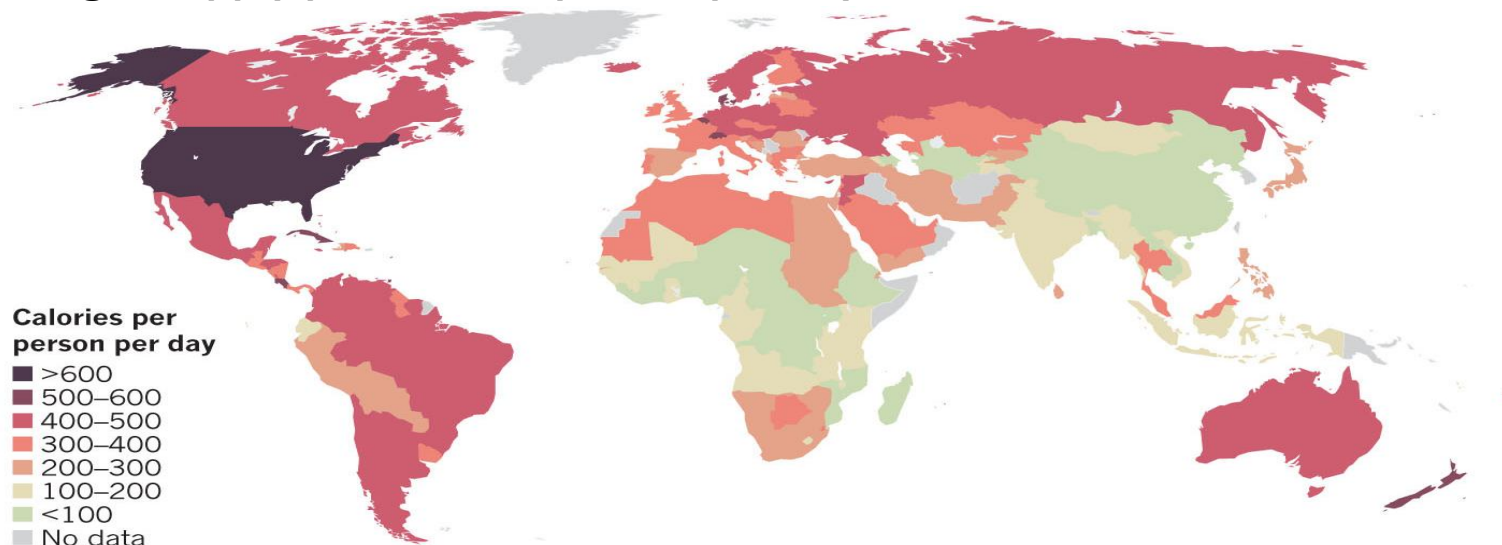
Nepal = 2,673

2. Poor Quality

Global mean intake of fruit for adults > 20 years of age in 2010



Global sugar supply per calories/person/per day in 2008



3. Not Affordable

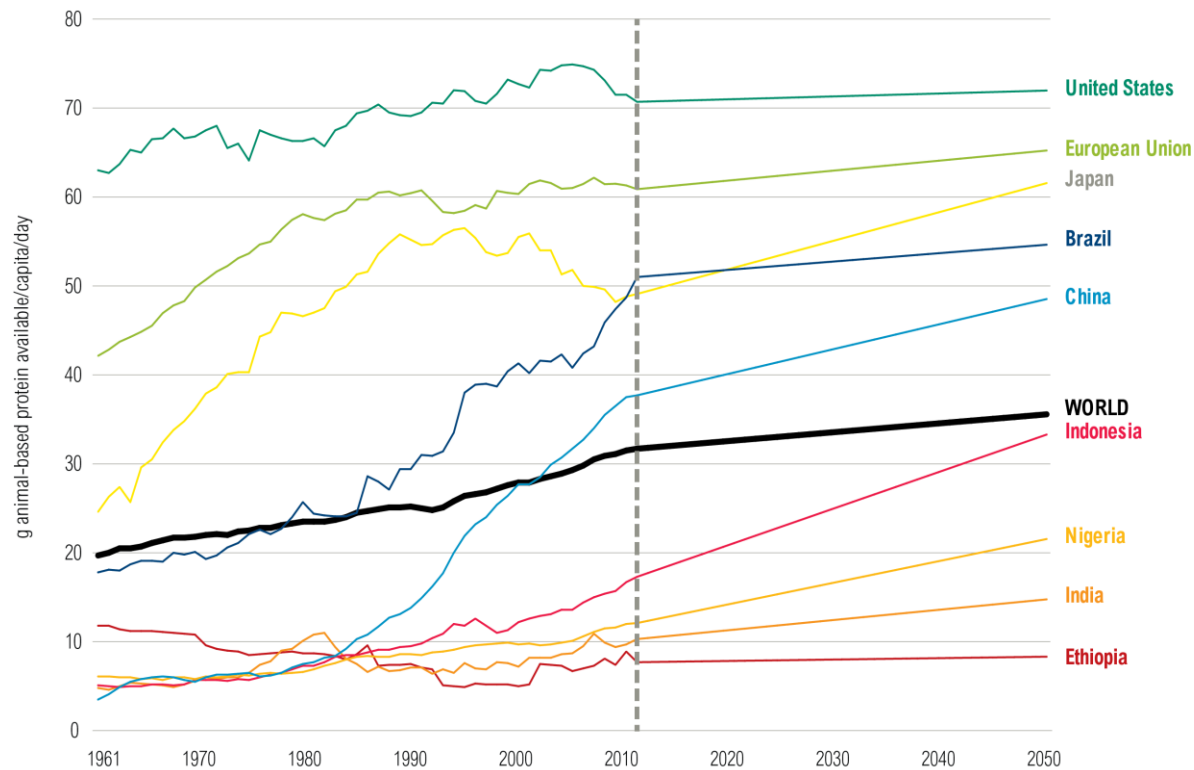


Source: World Bank Global Consumption Database. <http://datatopics.worldbank.org/consumption/sector/Food-and-Beverages>.

Note: Calculated based on total consumption value in 2010 (\$PPP [purchasing power parity] Values) in developing countries. Consumption groups defined based on global income distribution data: poorest = \$2.97 per capita a day; poor = between \$2.97 and \$8.44 per capita a day; middle = between \$8.44 and \$23.03 per capita a day; wealthier = above \$23.03 per capita a day.

4. Not sustainable

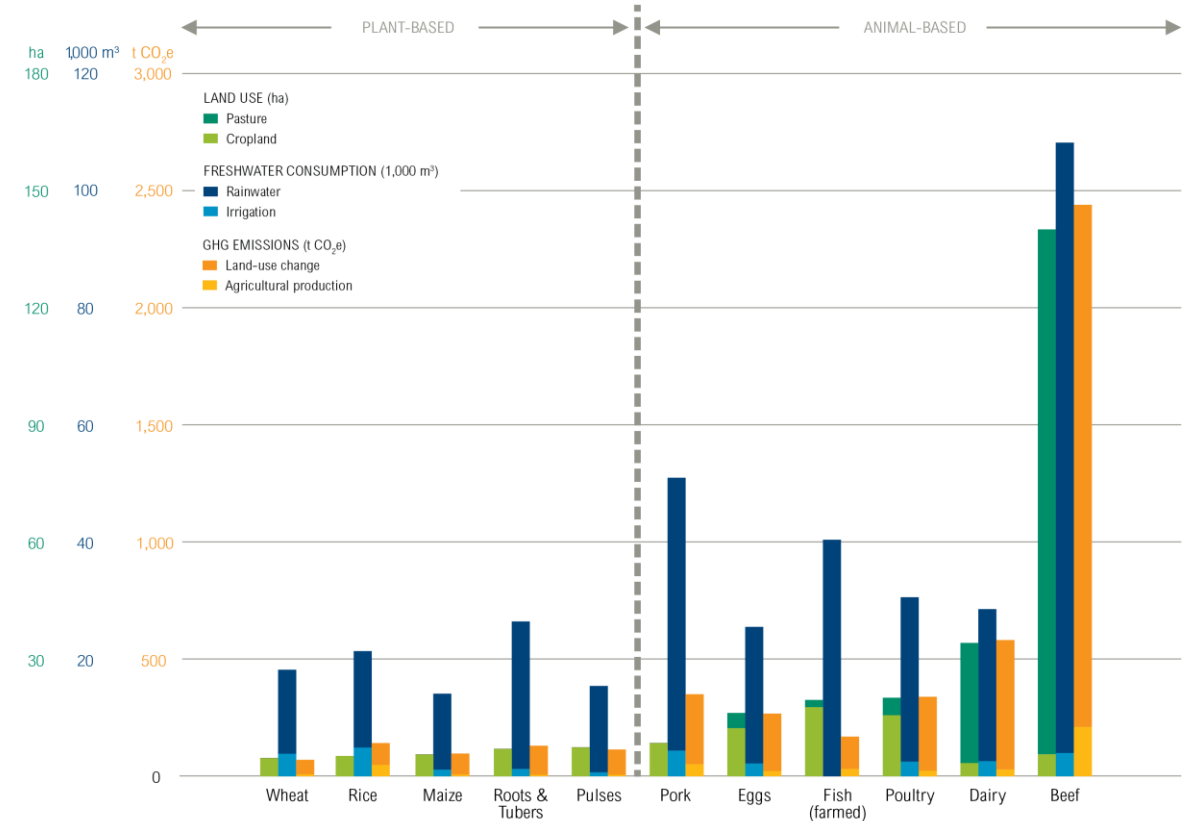
People Are Consuming More Animal-Based Protein



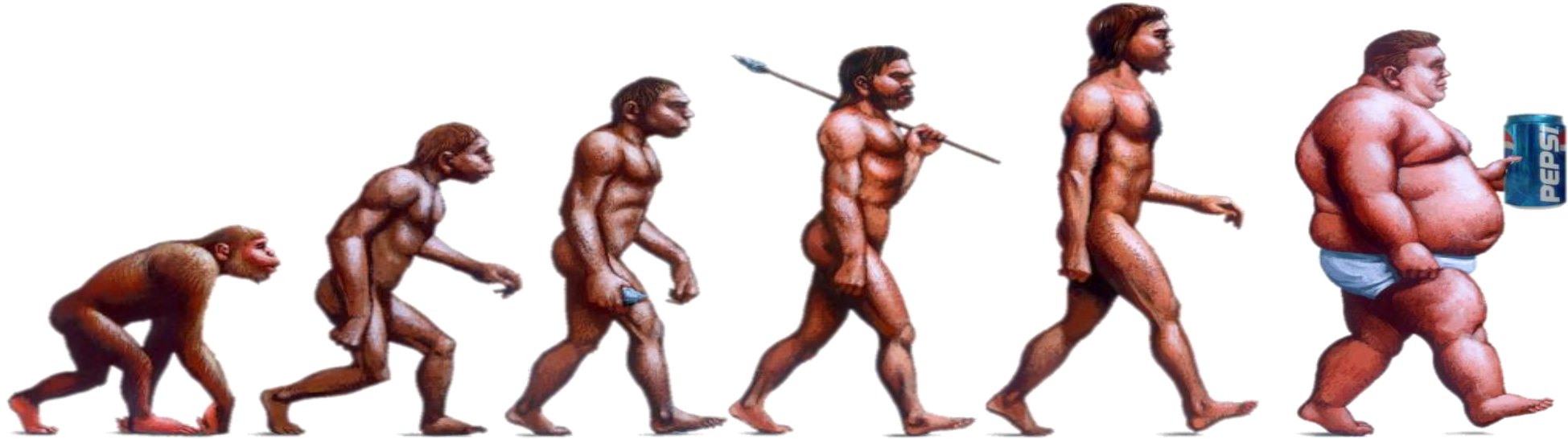
Nepal = 11.46 g/capita/day

Animal-Based Foods Are More Resource-Intensive than Plant-Based Foods

PER TON PROTEIN CONSUMED



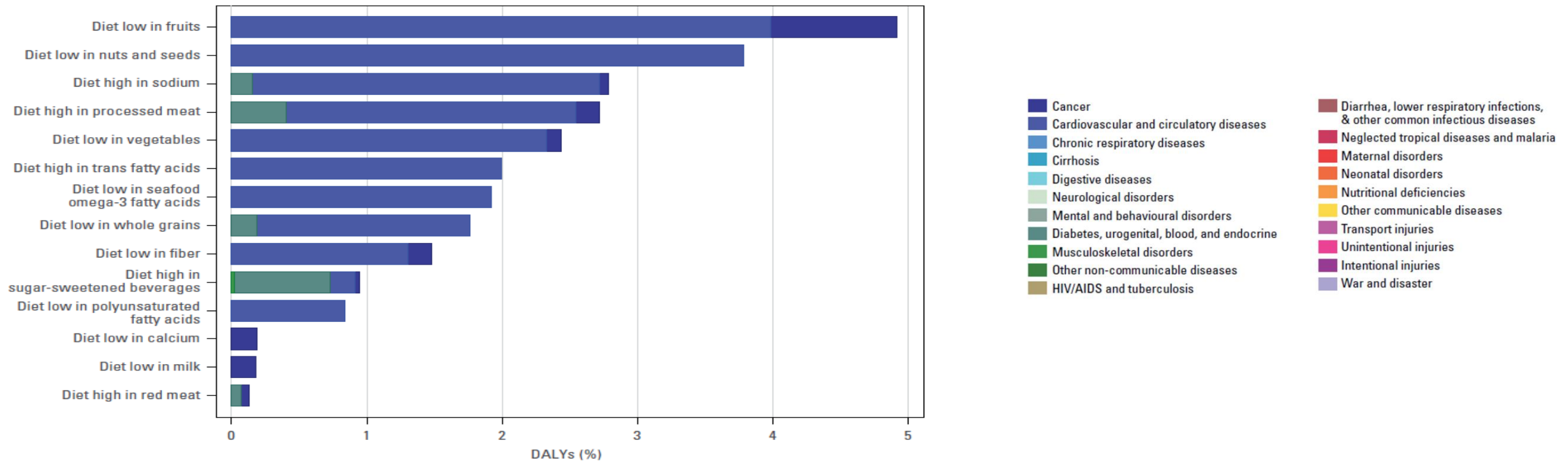
The Implications of Our “Choices”



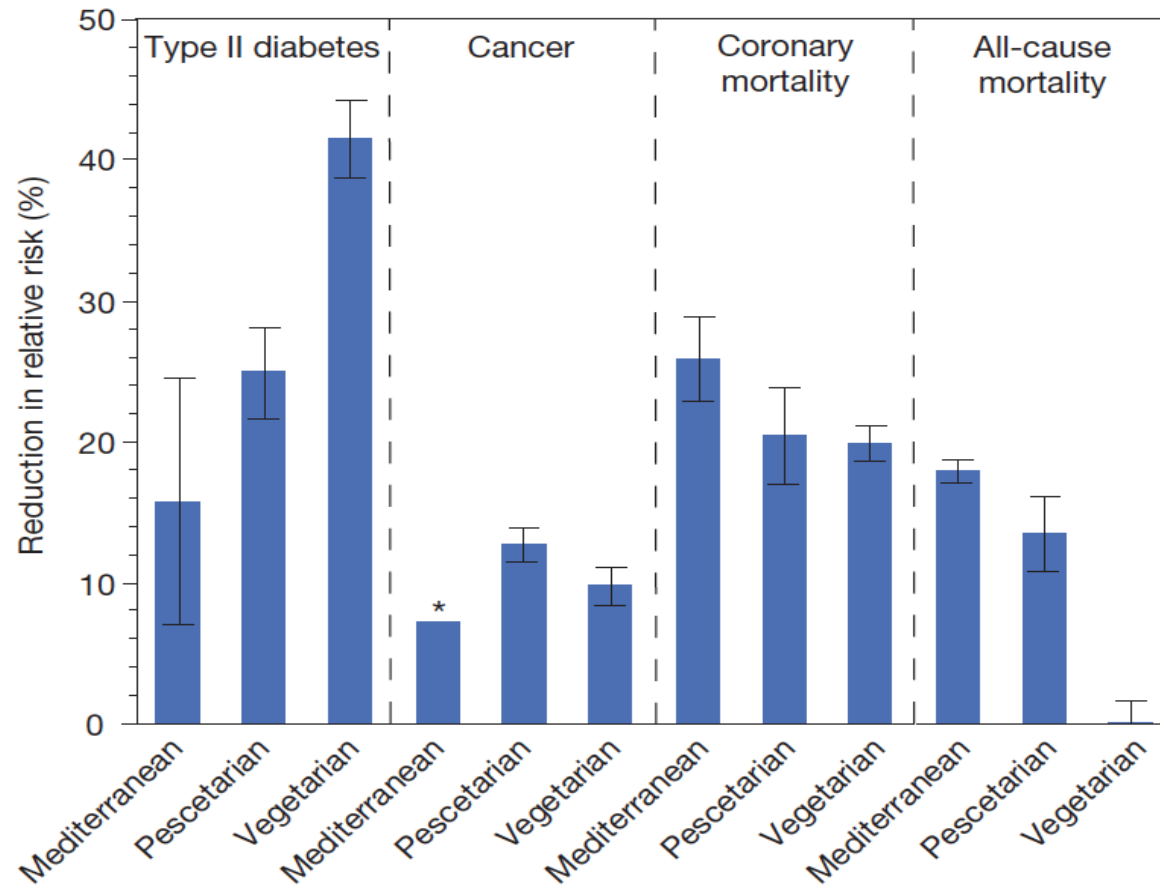
1. Health Consequences
2. Environmental Consequences
3. Social Inequity Consequences
4. Ethical and Justice Consequences

1. Health: Diet Risk is the Largest on Disease Burden

Dietary risks accounting for 11.3 million deaths and 241.4 million Disability Adjusted Life Years

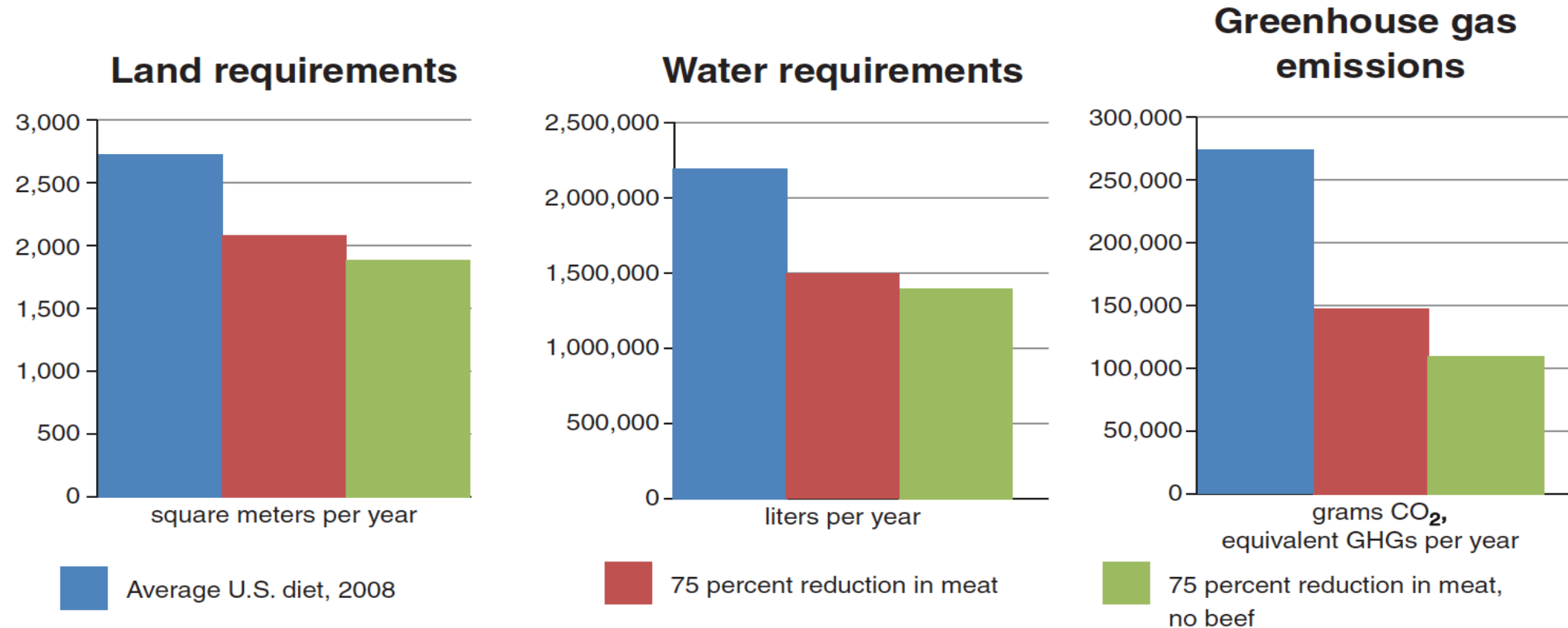


And what you eat matters



2. Environment: Humans are not the only sufferers

The agriculture sector accounts for **24%** of total GHGe globally with livestock production accounting for nearly **80%** of the sector's emissions

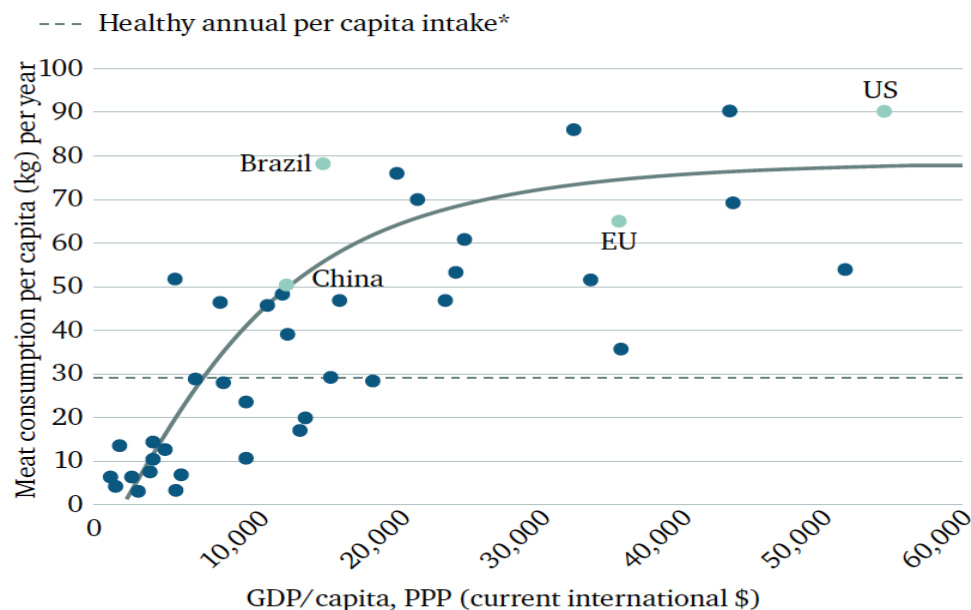


3. Social Inequity Consequences

- The NEED VS ACCESS: In the high- and middle-income countries and among urban populations in all income countries, meat and dairy consumption is rising (exceptions). Whereas, in many low-income countries, populations cannot access or afford animal source foods and these are of critical importance to growth, development and wellbeing.
- QUALITY: Quality varies all over the world and is it fair to promote healthier meats that are largely inaccessible to most of the world?
- CONSEQUENCES of DECISIONS: Those most vulnerable and in low income countries will suffer the most from high-income country decisions regarding the environment, natural resource depletion and climate change.

Inequities of Animal Source Foods

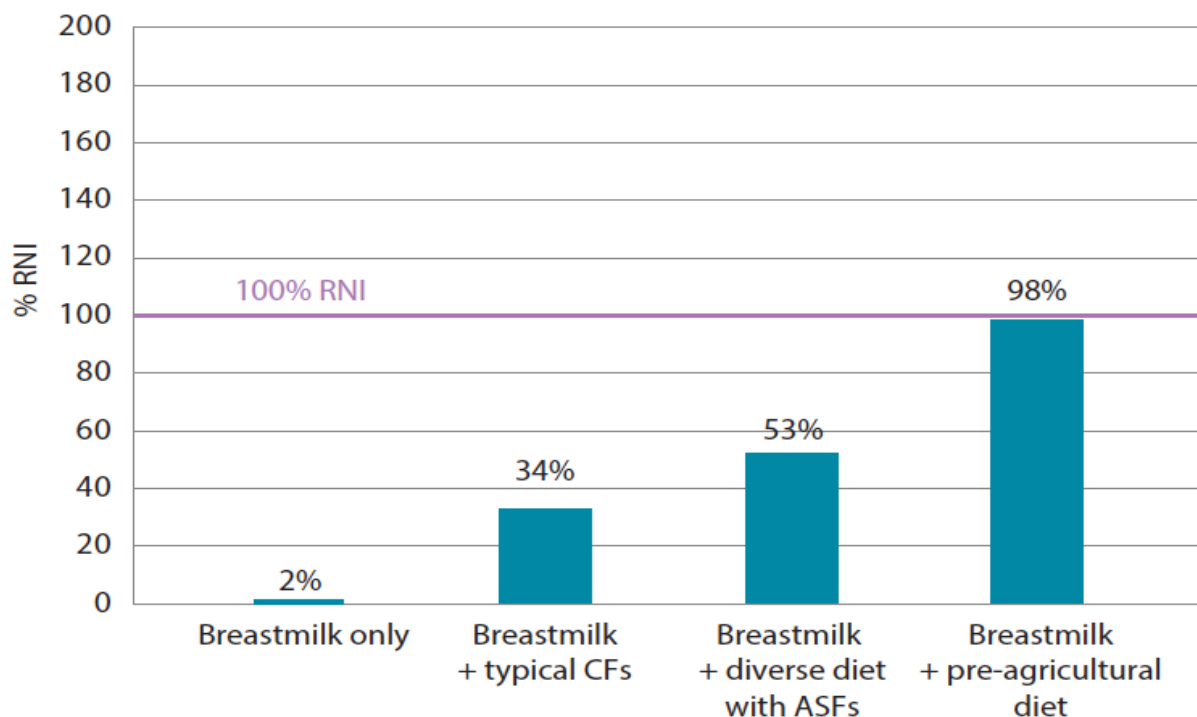
Per capita meat consumption and GDP, by country, 2014



*Annual per capita intake of meat (beef, pork and chicken, but also including eggs) deemed a healthy level: calculated on the basis of per capita daily consumption levels (including losses at household, food service and retail level) in Stehfest et al. (2009), who estimated these levels based on the Harvard Medical School's Healthy Eating Pyramid (Willett (2001)).

Source: Authors' analysis based on GDP data from the World Bank (2014b) and meat consumption data (kg per capita of beef, veal, pig, poultry and sheep (retail weight)) from OECD/FAO Agricultural Outlook. The trend line marked is adapted from FAO (2009b).

Estimated iron intake at 9-11 months of age



4. Ethical Consequences

- “Does man have the right to eat wrongly?”
- There are ethical non-insular consequences to the way we consume and produce food from environmental and health perspectives:
 - Underdevelopment of nations
 - Epigenetic arguments
 - Deteriorating environmental stewardship and ecosystem services
- Poor animal welfare and their health
- Less food “sovereignty” (control of our local food system)



Implications of Diets in the Nepal Context



Copyright: Bread

Food Security? No, Rice Security! Access to Quality Diets is an Issue

“The diet was found to be monotonous and rice contributed to about 60 % of the energy intake.”

Table 4 Percentage who consumed main types of dishes for breakfast, lunch and dinner, and the dishes' contribution to energy intake (based on three 24 h recalls), among lactating women (*n* 466) aged 17–44 years, Bhaktapur municipality, Nepal, January 2008–February 2009

Dish	Breakfast*		Lunch†		Dinner‡		Contribution to energy intake (%)
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	
Rice	99.6	464	32.2	15	99.6	464	49
Vegetable curry (<i>tarkari</i>)	97.0	452	65.0	303	95.9	447	11
Pickles	57.5	268	20.4	95	47.9	223	1
Lentil soup (<i>dal</i>)	50.0	233	8.8	41	50.6	236	3
<i>Roti</i> (unleavened bread)	6.7	31	34.1	159	0.6	3	3
Beaten rice (flattened rice)	6.0	28	63.9	298	10.9	51	12
Tea	86.9	405	62.4	291	5.2	24	5

*Breakfast includes foods and drinks consumed from 06.00 hours in the morning to 12.00 hours.

†Lunch includes foods and drinks consumed from 12.00 to 18.00 hours.

‡Dinner includes foods and drinks consumed from 18.00 to 0.00 hours.

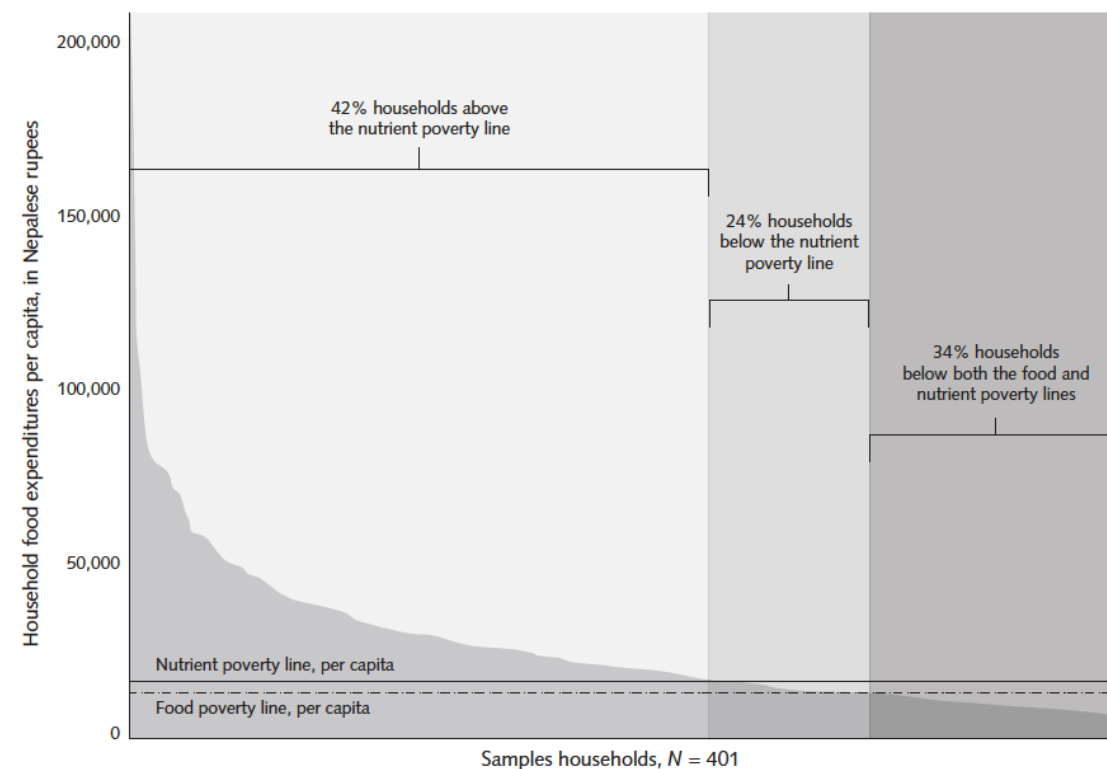
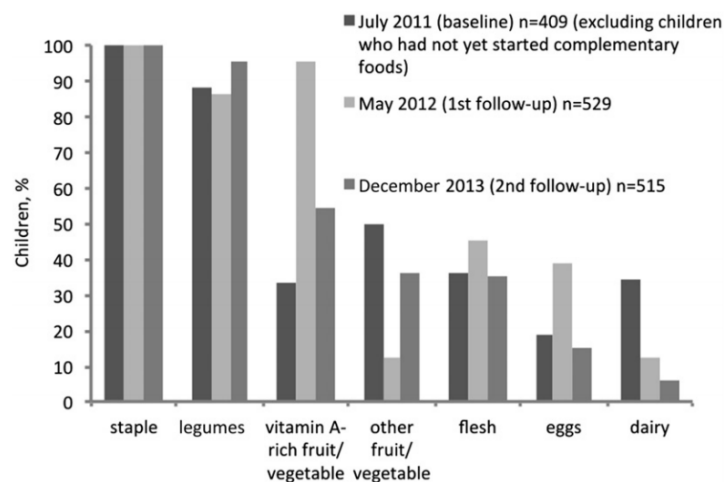


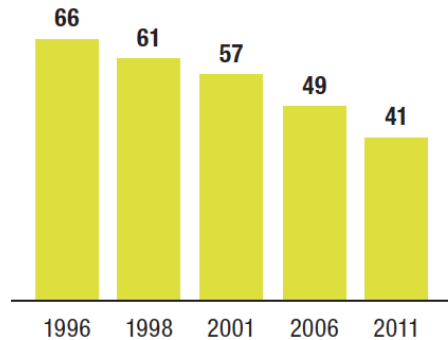
FIG. 1. Prevalence of food-poor and nutrient-poor households and distribution of per capita household food expenditures in mountain region, Nepal. 1,000 Nepalese rupees = US\$11.72

What do you see?



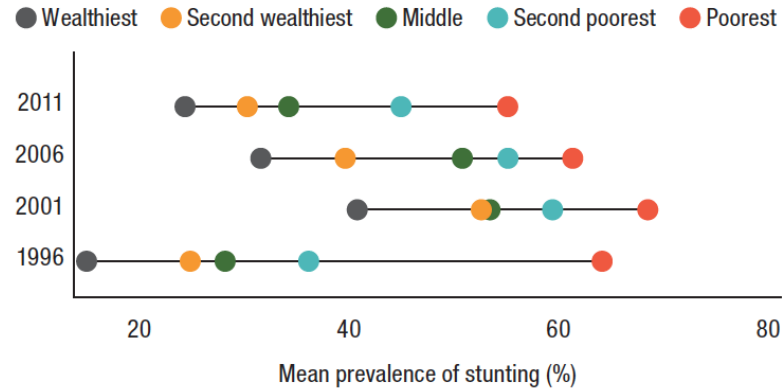
Nutrition Outcomes for Nepal

PREVALENCE OF UNDER-5 STUNTING (%)



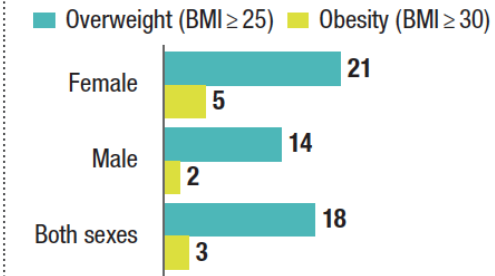
Source: UNICEF/WHO/WB 2015.

CHANGES IN STUNTING PREVALENCE OVER TIME, BY WEALTH QUINTILE



Source: DHS surveys 1990–2011 adapted from Bredenkamp et al. 2014.

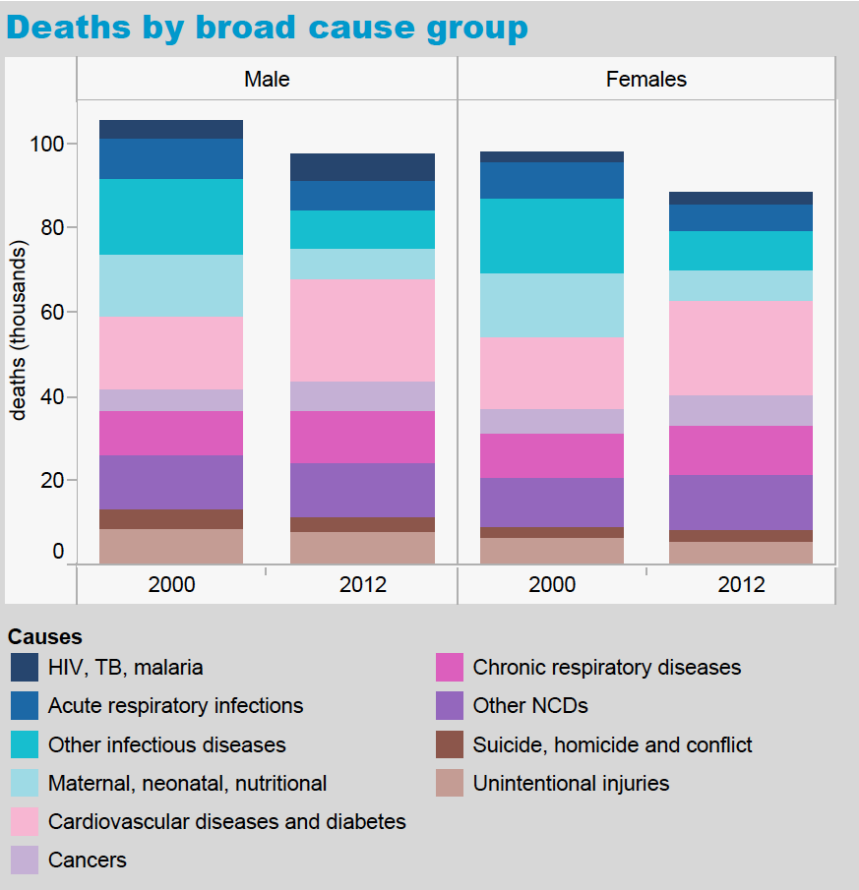
PREVALENCE OF ADULT OVERWEIGHT AND OBESITY, 2014 (%)



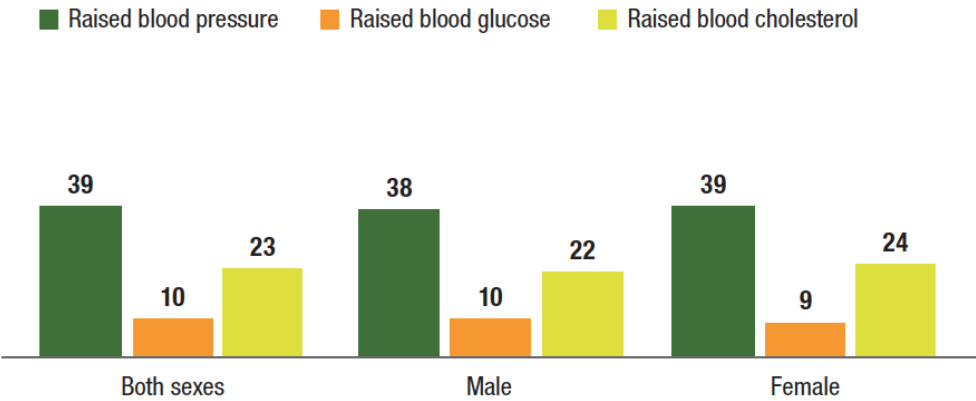
Source: WHO 2015.

Note: BMI=body mass index.

Shifts in Disease Burden for Nepal



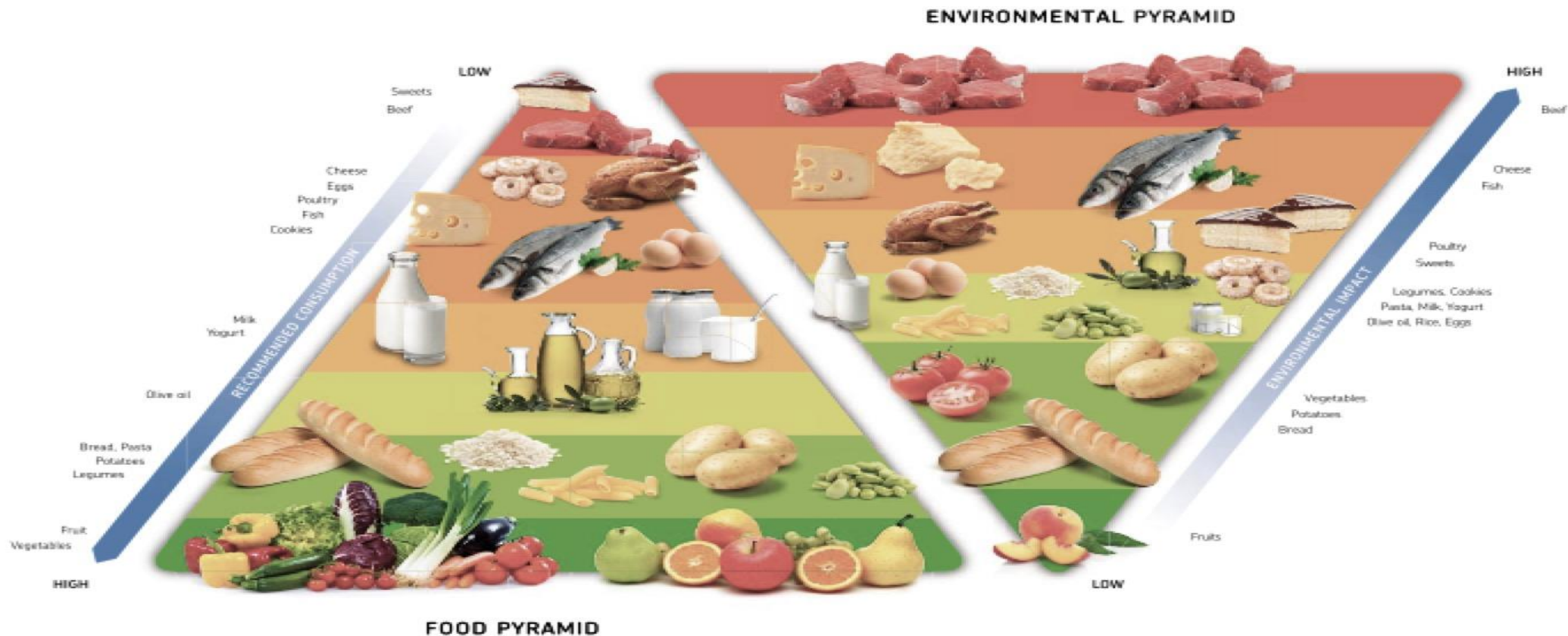
METABOLIC RISK FACTORS FOR DIET-RELATED NONCOMMUNICABLE DISEASES, 2008 (%)

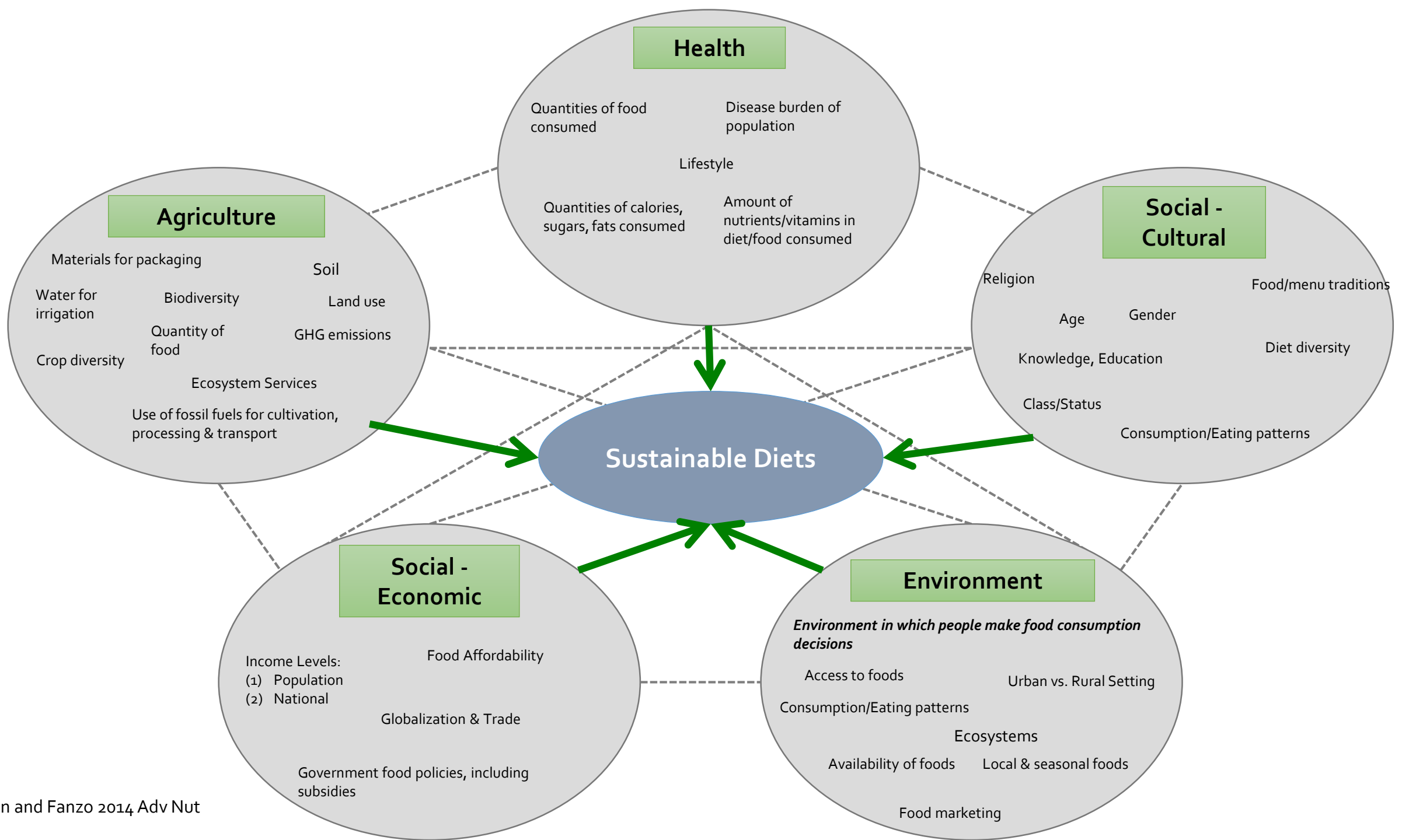


Source: WHO 2014.

A re-emerging idea: Sustainable diets and their challenges

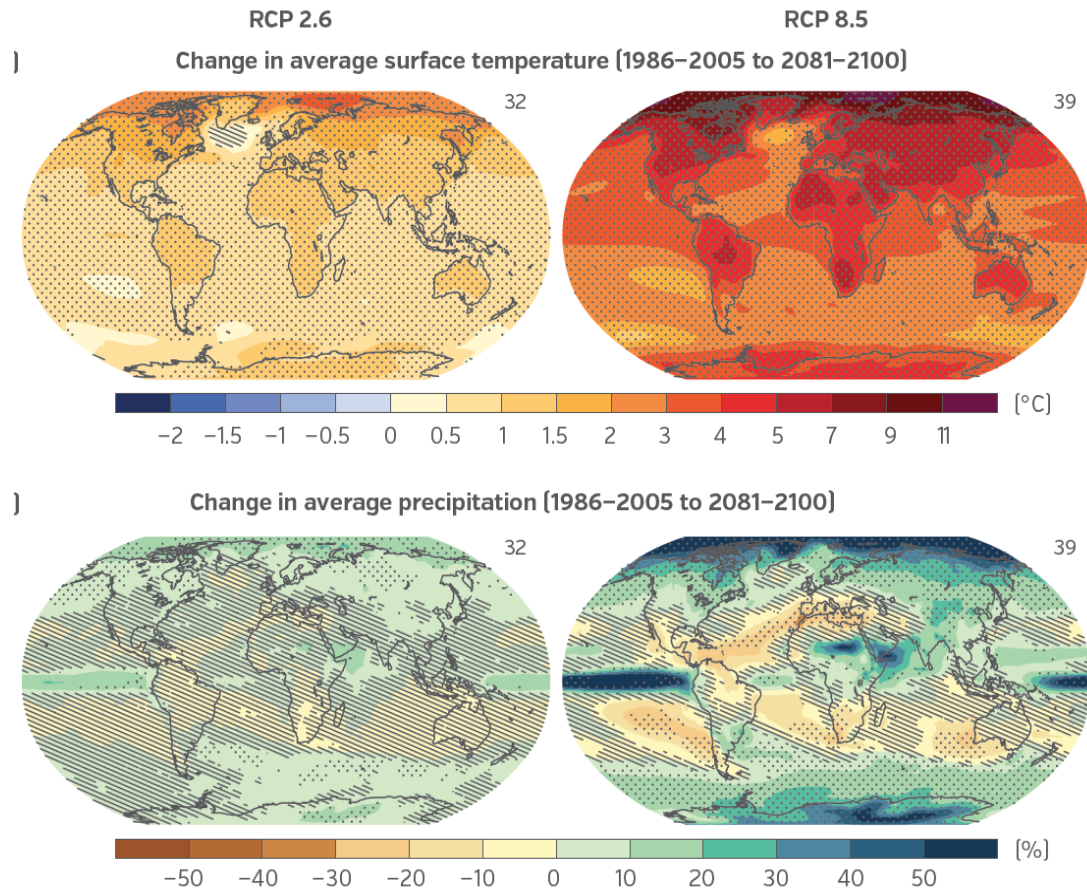
Sustainable diets are those diets with **low environmental impacts** which contribute to **food and nutrition security** and to **healthy life** for present and future generations.





Challenges: Climate change & severity of natural disasters

“geological uncertainties”

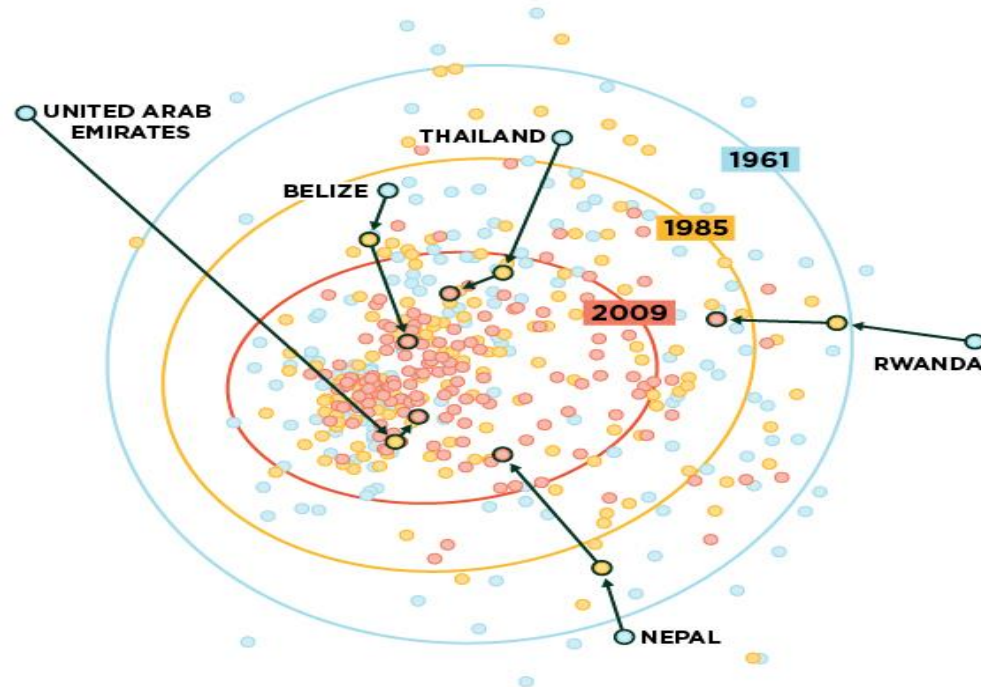


Depletion of Natural Resources in the Food Supply

A study of the world's countries finds that over the last 50 years, diets have become ever more similar.

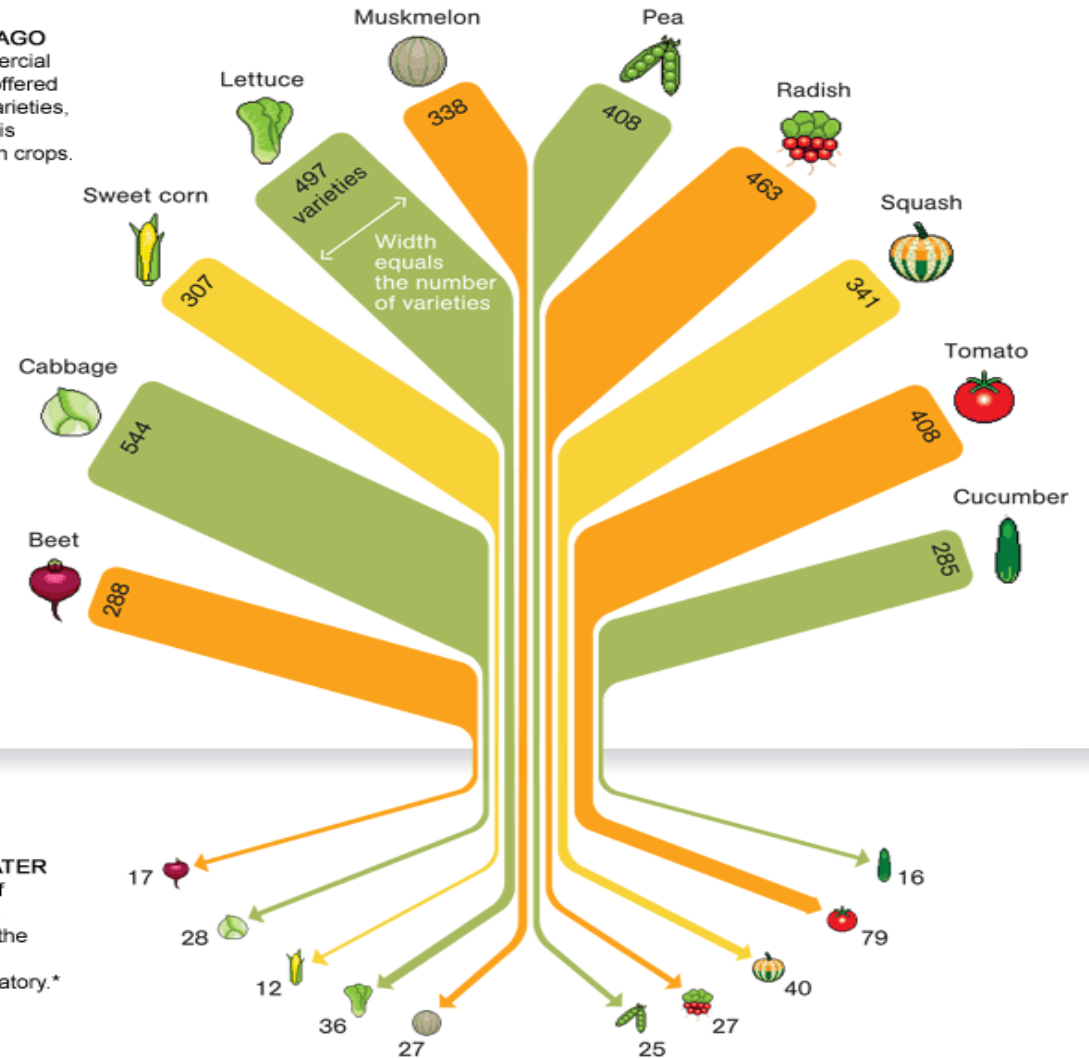
Each country's food supply composition in contribution to calories in:

● 1961 ● 1985 ● 2009



Source: Khoury et al. 2014, Proc. Natl. Acad. Sci. USA.

A CENTURY AGO
In 1903 commercial seed houses offered hundreds of varieties, as shown in this sampling of ten crops.



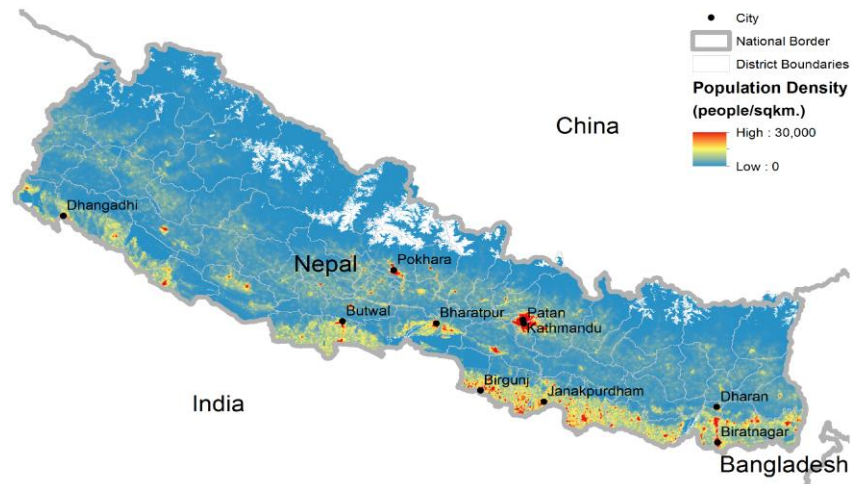
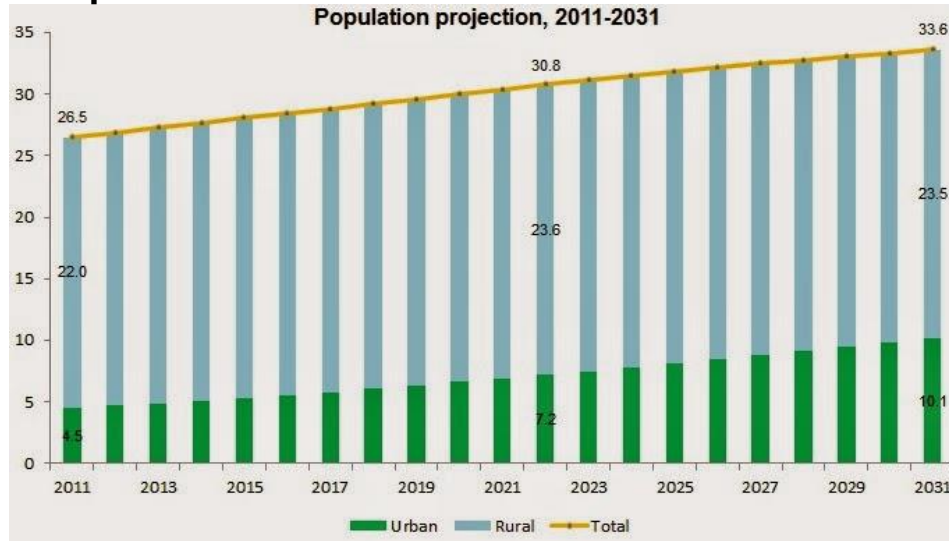
80 YEARS LATER
By 1983 few of those varieties were found in the National Seed Storage Laboratory.*

* CHANGED ITS NAME IN 2001 TO THE NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION

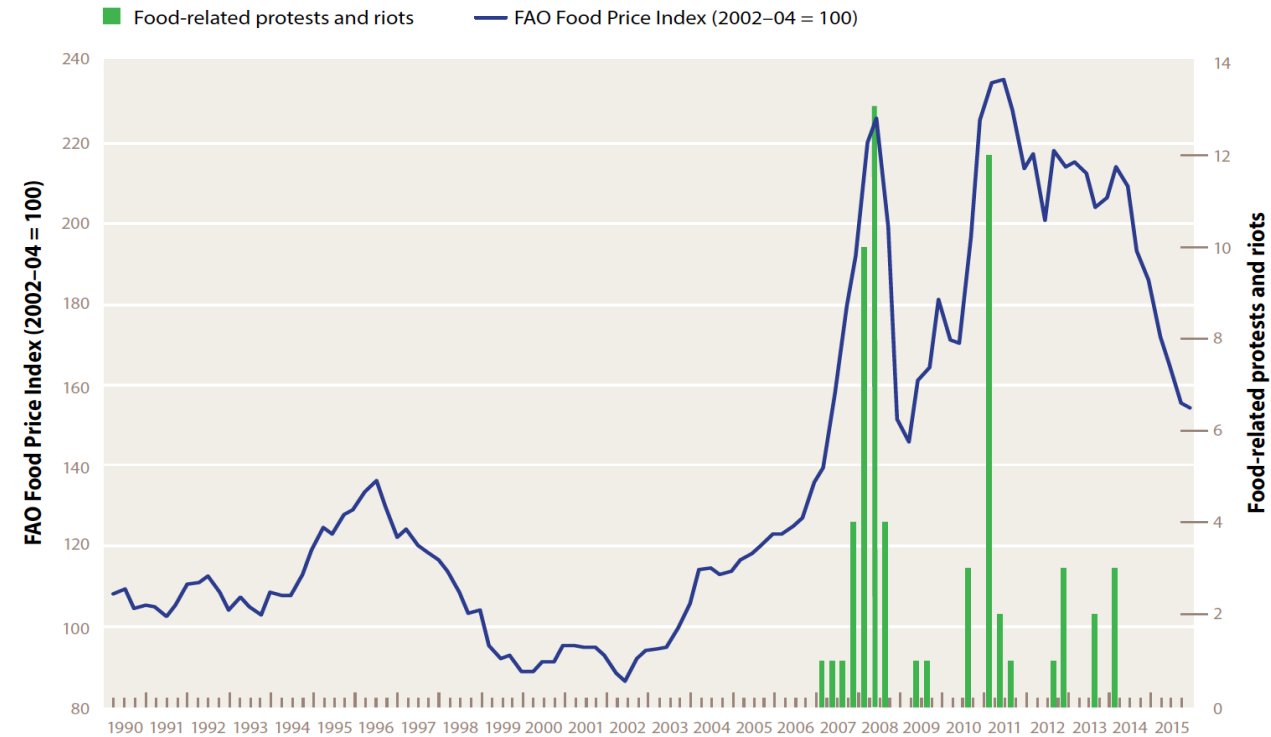
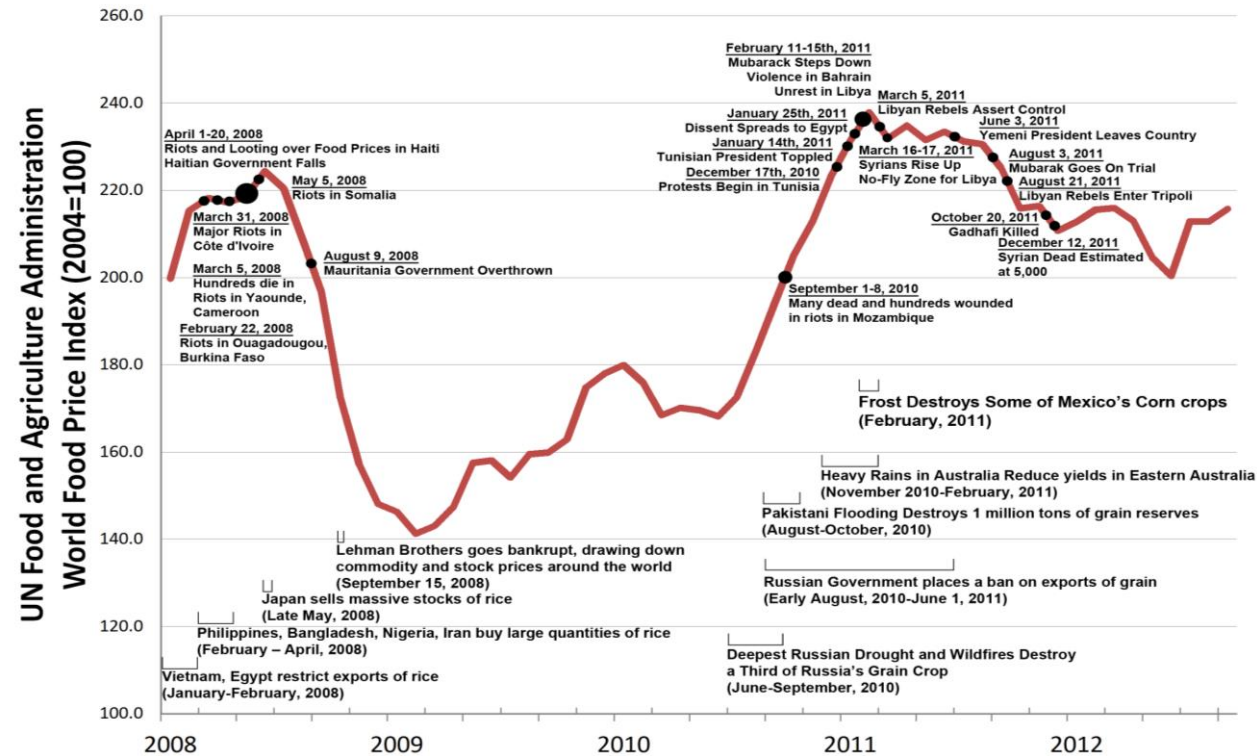
JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUI SOURCE: RURAL ADVANCEMENT FOUNDATION INTER

Population Growth & Pressure, & Urbanization

Nepal's Growth

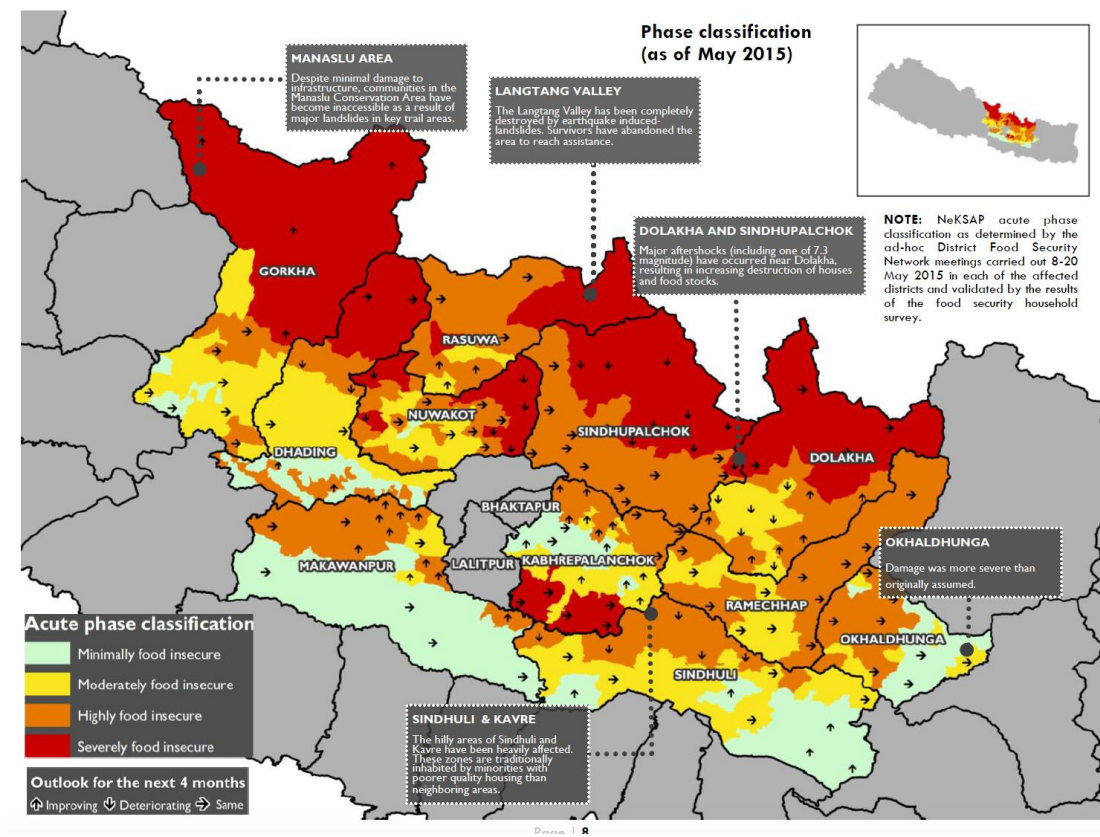


Food Crises & Social Unrest



Andrew Holland Arab Spring and World Food Prices: <http://www.americansecurityproject.org/climate-security-report>; Hendrix C (2016) When Hunger Strikes: How Food Security Abroad Matters for National Security at Home. The Chicago Council on Global Affairs, Chicago USA.

Shocks to the System Impact Diets



SEVERELY FOOD INSECURE (PHASE 4)

240,000 (total population)

HIGHLY FOOD INSECURE (PHASE 3)

1.1 million (total population)

MODERATELY FOOD INSECURE (PHASE 2)

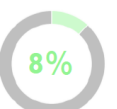
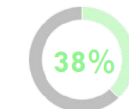
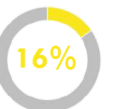
930,000 (total population)

MINIMALLY FOOD INSECURE (PHASE 1)

774,000 (total population)

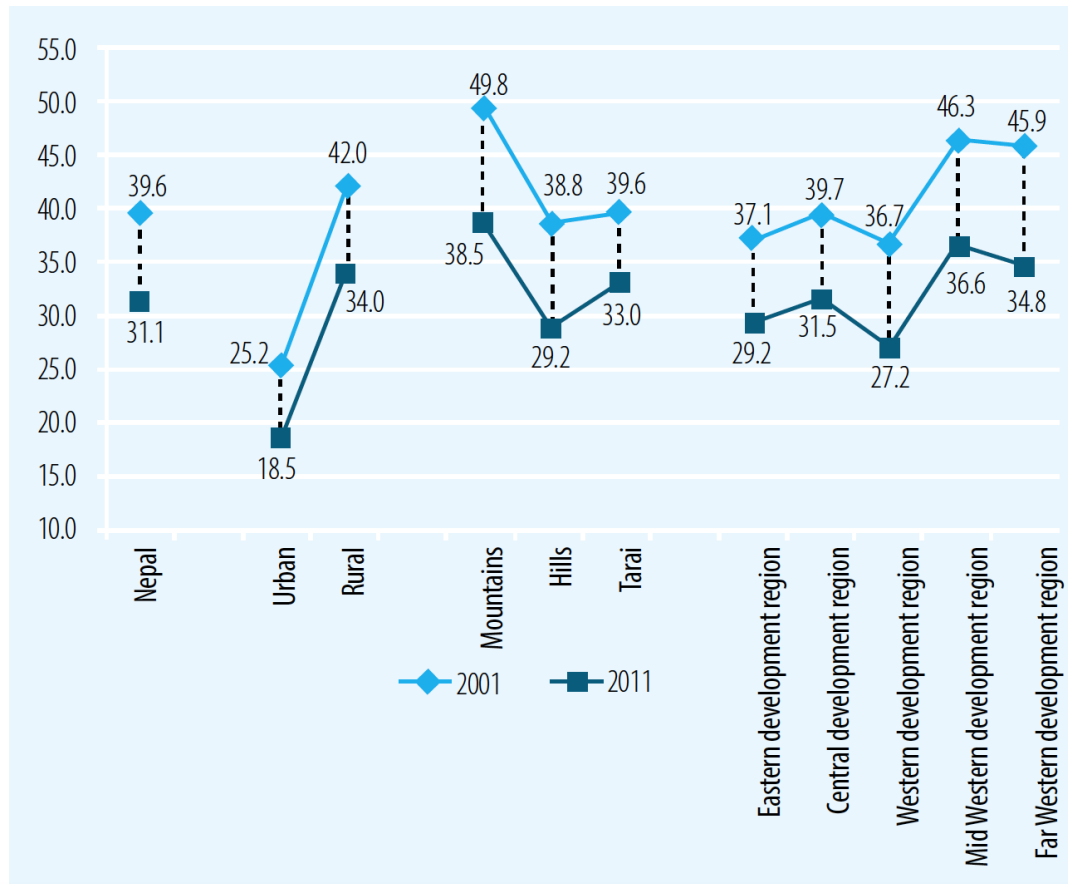
Poor & borderline food consumption (FCS < 42)

Poor dietary diversity



Suggestions for the Future: Three Focuses

HPI scores across areas and regions, 2001 and 2011



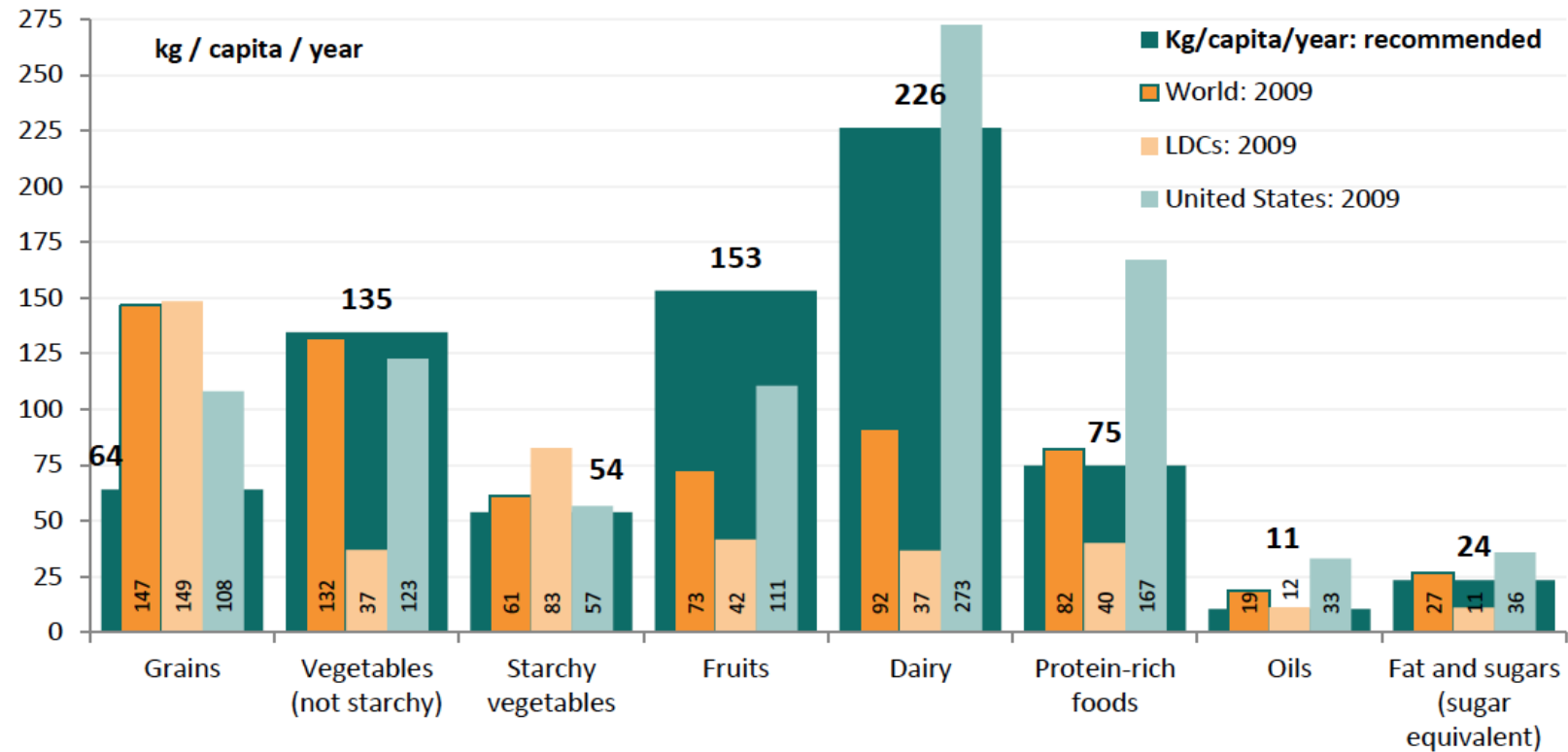
While, Nepal has made great strides in reducing undernutrition, there will be significant challenges to further reduce stunting, while mitigating the obesity epidemic.

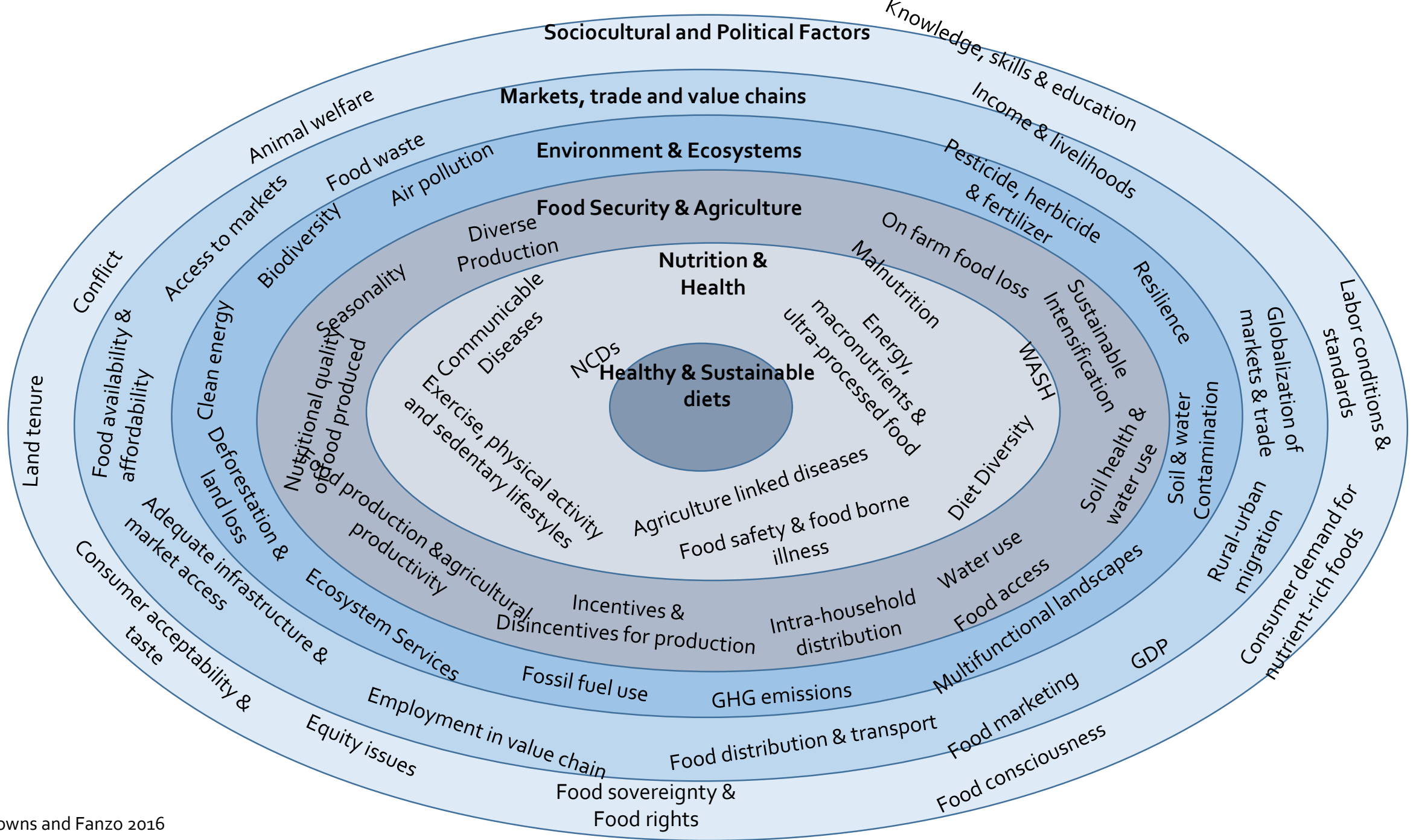
Nepal is no longer isolated the food environment and subsequently diets, are affected by food policies in other countries, trade, and globalization.

Global Action Matters

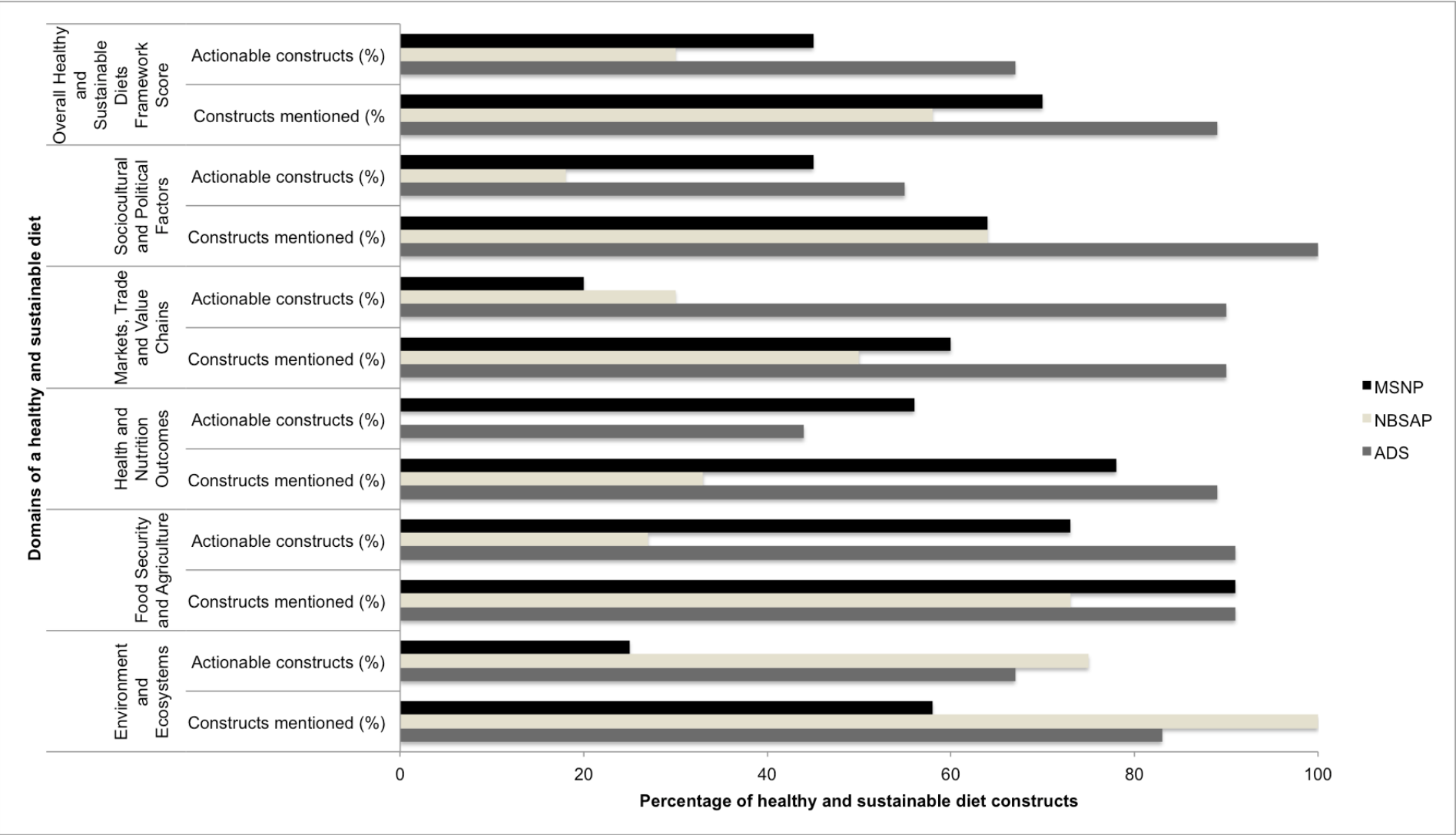


1. Better Alignment of Policies & Sustainability

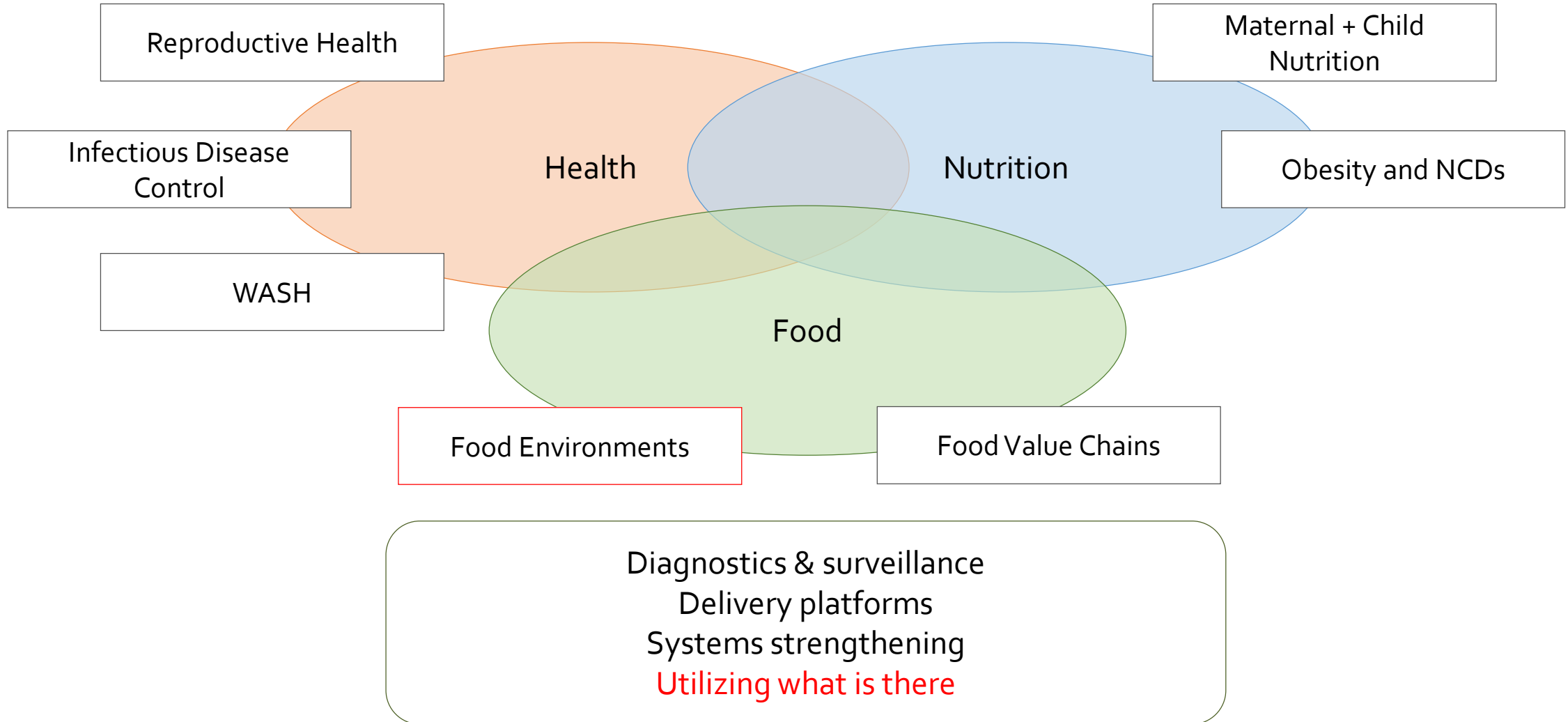




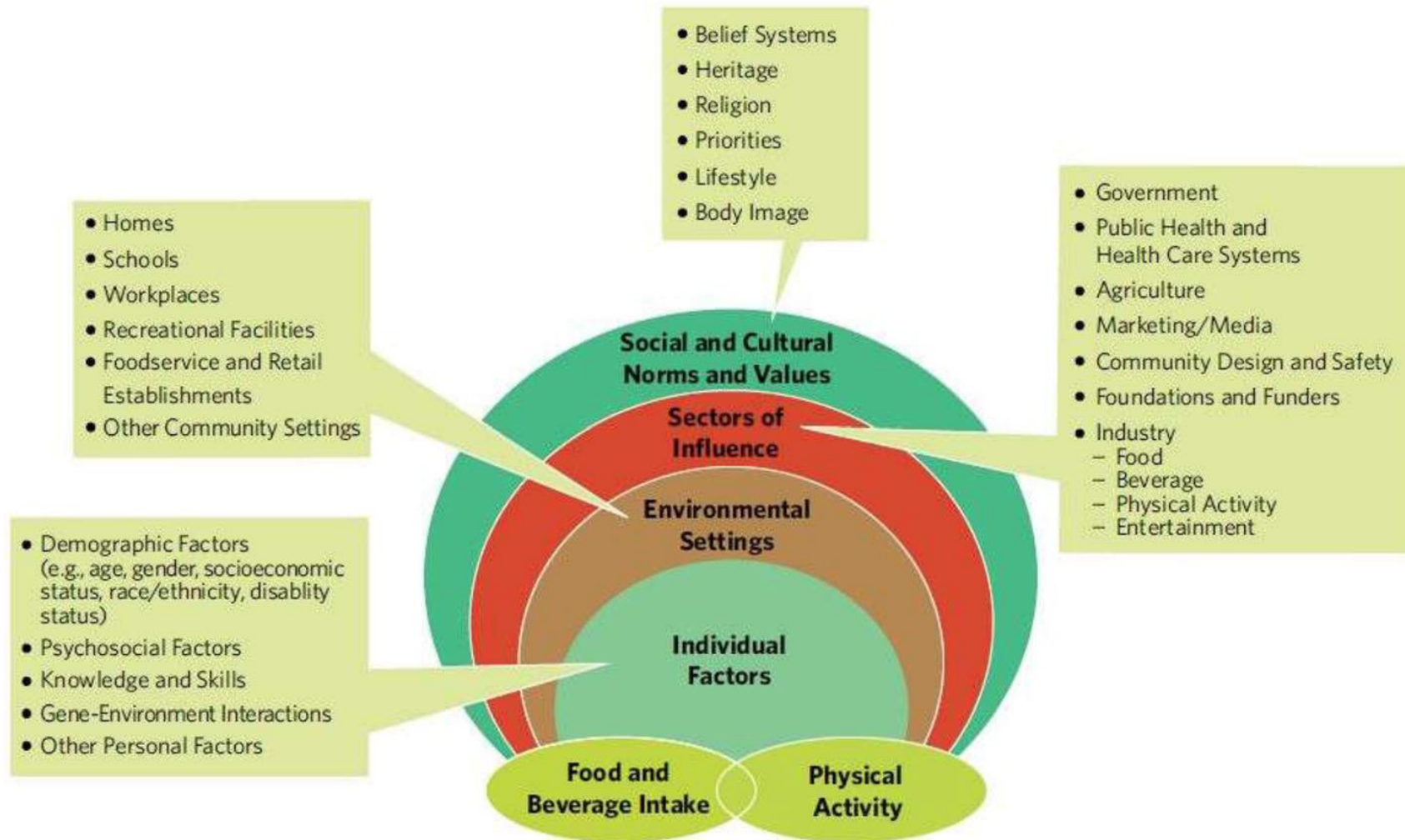
Nepal's Agriculture Strategy: Most “Sustainable”



2. Better Program Sensitivity & System Interactions



Food Environment: Where the Consumer Engages and Makes Behavioral Decisions

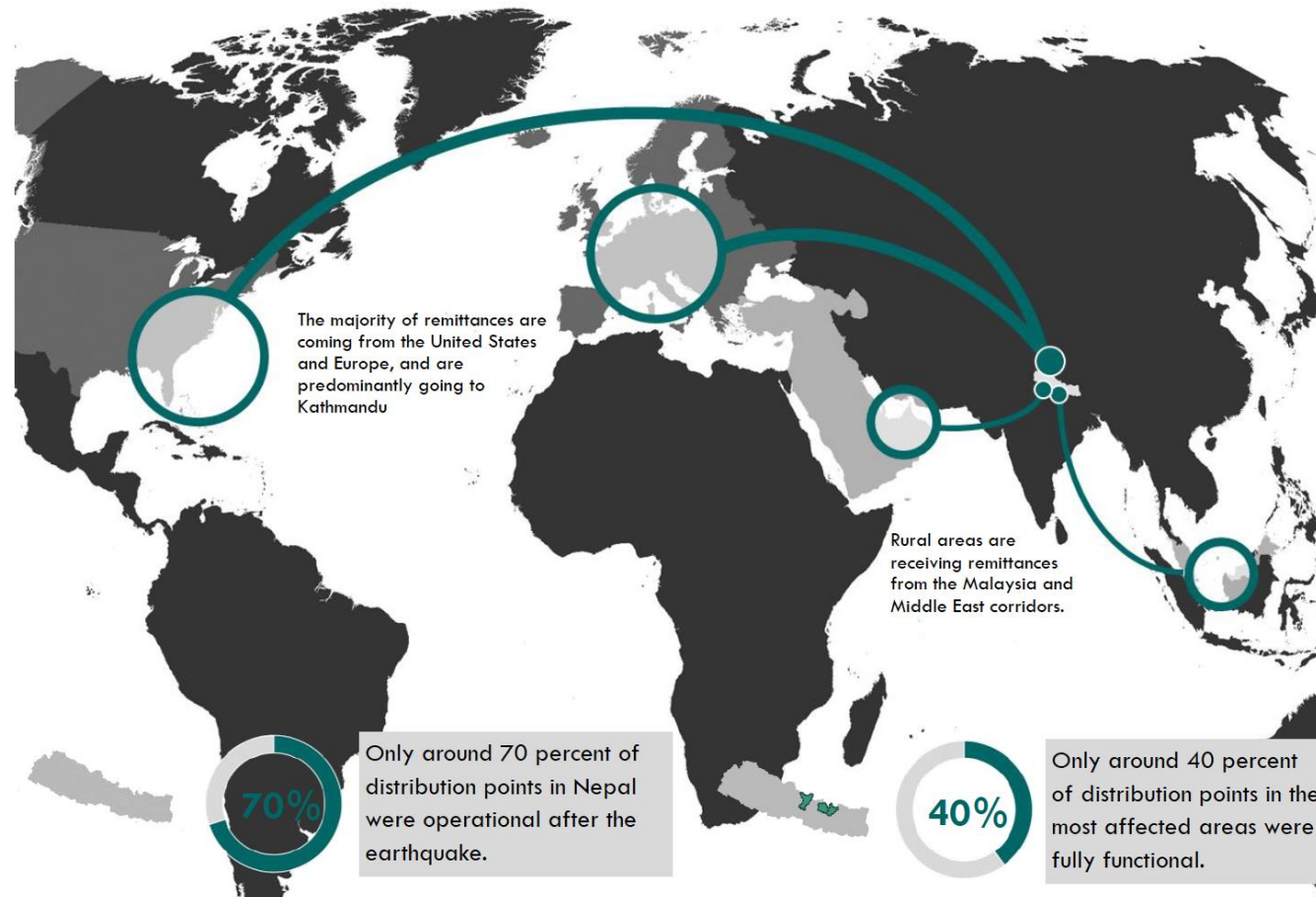


Food Environment is Globalized, Especially in Urban Settings





How Remittances are Spent is an Entry Point



Original Article

A Systematic Review of the Effect of Remittances on Diet and Nutrition

Anne Marie Thow, PhD¹, Jessica Fanzo, PhD², and Joel Negin, PhD³

Abstract

Background: Remittance income is rising rapidly in most low- and middle-income countries. Despite nutrition being a key policy priority for health and development, we know little about the effect of remittance income on diets and nutrition.

Objective: To identify the effect of remittance income on nutrition.

Method: Systematic review of English-language studies providing information on the impact of remittances on food consumption, food expenditure, or measures of nutritional status, using a narrative synthesis approach for analysis. We searched the English-language published and gray literature using key words "remittances," "nutrition," and "diets."

Results: This systematic review identified 20 studies that examined the effect of remittance income on food consumption, dietary intake, and nutritional status, 2 of which were qualitative studies. Overall, the quality of the studies was weak to moderate. These studies show that remittances can increase access to (purchased) food and may have a consumption smoothing effect, reducing households' vulnerability and leading to improved food security and reductions in underweight. However, remittances appear to have little effect on markers of chronic undernourishment. The studies also suggest that the extra income from remittances may compound trends toward purchasing less healthy (nontraditional) foods that are associated with the nutrition transition.

Conclusion: There is an urgent need for further research on the effect of remittances on nutrition and diets, with remittance income forecast to rise rapidly into the future. Programs to ensure that those households receiving remittances move beyond just meeting sufficient calories and improve dietary quality could create nutritional benefits.

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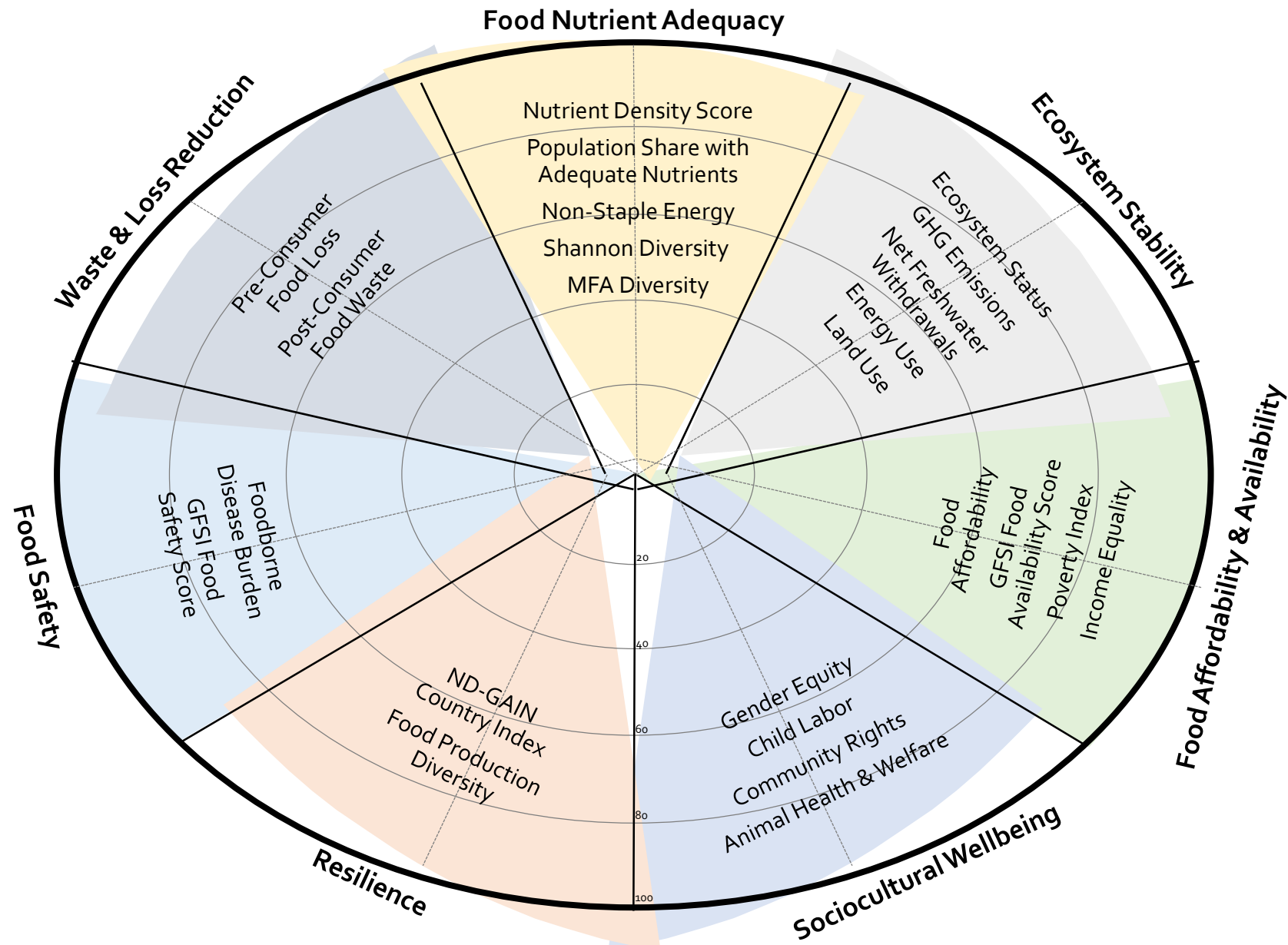
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3. Better Metrics and Embracing Complexity



Thank you!



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