For our discussion

• **Part 1:** Why are food systems critical for healthy diets and nutrition?
• **Part 2:** What information do typologies provide that help us assess how well food systems are delivering healthy diets?
• **Part 3:** Moving beyond typologies: What information do policymakers need to make decisions about food systems?
• **Part 4:** Why are the voluntary guidelines so central following the HLPE report?
Why are food systems critical for healthy diets and nutrition?
1. Malnutrition in all its forms is a large scale and universal problem

- **2 billion** people lack key micronutrients like iron and vitamin A
- **151 million** children are stunted
- **51 million** children are wasted
- **2.1 billion** adults are overweight or obese
- **38 million** children are overweight
- **2 billion** adults are overweight or obese
- **88%** of countries face a serious burden of either two or three forms of malnutrition

Source: Development Initiatives: 2018 Global Nutrition Report
2. Sub-optimal diets are contributing to the malnutrition burden

### Consumption of food groups and components across income groups, 2016

<table>
<thead>
<tr>
<th>Component</th>
<th>Midpoint of TRMEL</th>
<th>200% Of TRMEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuts and seeds</td>
<td>20.5g</td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td>435g</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>1.25g</td>
<td></td>
</tr>
<tr>
<td>Fruit</td>
<td>250g</td>
<td></td>
</tr>
<tr>
<td>Whole grain</td>
<td>125g</td>
<td></td>
</tr>
<tr>
<td>Omega 3</td>
<td>0.25g</td>
<td></td>
</tr>
<tr>
<td>Polyunsaturated fat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Low income</th>
<th>Lower-middle income</th>
<th>Upper-middle income</th>
<th>High income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>360g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legumes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans fat</td>
<td>0.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturated fat</td>
<td>7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red meat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed meat</td>
<td>22.5g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>2g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar-sweetened</td>
<td>2.5g</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Diets low in nutritious foods are a leading cause of healthy life years lost

Source: Development Initiatives: 2018 Global Nutrition Report
4. Diets, lifestyles and food systems are changing

Urbanization, globalization, economic growth, technological changes for work, leisure, and food processing, mass media growth

Pattern 3
Receding famine, smallholder, rural
- Low variety and diversity of foods
- Low consumption of processed foods
- Labor-intensive

Stunting, Maternal and child Health deficiencies and MNDs
- Slow stunting decline, Slow mortality decline

Pattern 4
Modernized, rural, and more peri-urban, urban societies
- Increased processed, packaged foods — high fat, sodium, sugar
- Caloric beverages and alcohol
- Shift in technology, less labor-intensive work and leisure

Obesity emerges, Diet-related NCDs
- Increased life expectancy but increased disability and NCDs

Pattern 5
Educated, mainly urban
- Reduced highly processed foods
- Increased fruit and vegetables
- Still less labor-intensive work but increased physical activity for exercise

Reduced obesity, Reduced diet-related NCDs
- Extended lifespan, Reduced mortality due to NCDs

Source: Popkin and Drewnowski 1993; Crino et al 2016; Revised Fanzo et al 2017
5. Food systems are transforming at the same time

Per capita away from home food yearly expenditures in select Latin American countries

Projected purchase quantities and market share of modern supply chains for fruits and vegetables in Vietnam

69% packaged foods are not aligned with healthy diets

Trends and patterns in per capita packaged food category sales by region, 2005–2017

Source: Development Initiatives: 2018 Global Nutrition Report

Breakfast cereals
Ready meals
Sweet biscuits, snack bars and fruit snacks
Confectionary
Savoury snacks
Ice cream and frozen desserts
Edible oils
Sauces, dressings and condiments
Processed meat and seafood
Dried processed foods
Baked goods

Source: Development Initiatives: 2018 Global Nutrition Report
Food Supply Chains
- Food production and input supply
- Storage and distribution
- Processing and packaging
- Retail and marketing

Food environment
- Food density - spatial density of foods on offer
- Food prices - price per standard unit
- Product properties - 1) quality and safety, 2) convenience, 3) diversity
- Vendor properties - type of retail outlet or access point, opening hours, payment methods accepted, etc.
- Food messaging - Promotion, advertising, and information about food

Personal Filters
- Economic - income and purchasing power
- Cognitive - information and knowledge
- Aspirational - desires, values, and preferences
- Situational - home and work environment, mobility, location, time resources

Consumer Behavior
- Food acquisition, preparation, cooking, eating habits (meal culture), and storage

Diets

External Drivers:
- Climate Change
- Globalization and Trade
- Income Growth and Distribution
- Urbanization
- Population Growth and Migration
- Policy and Investment
- Socio-cultural context

Food systems are not static

- Food systems are being shifted, shaped, transformed, dismantled.
- Much of that is due to external drivers that +/- impact food system flows and feedbacks, but also supply and demand input/output dynamics.
- Resiliency of systems should also be considered.
- Frameworks don’t really show the dynamism, temporalism, or spatial nature of food systems.
- Need to better understand food systems – their feedback loops and the system in its totality.

Are food systems failing us?

Different narratives about the failure of food systems.

<table>
<thead>
<tr>
<th>The state of play</th>
<th>What is the failure about?</th>
<th>What is threatened and needs to be fixed?</th>
<th>Where do the priorities for action stand?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability of the system to feed the future world population</td>
<td>Food security</td>
<td>Closing the yield gap</td>
<td></td>
</tr>
<tr>
<td>Inability of the system to deliver a healthy diet</td>
<td>Nutrition security and health</td>
<td>Closing the nutrient gap and ensuring the quality of diet</td>
<td></td>
</tr>
<tr>
<td>Inability of the system to produce equal and equitable benefits</td>
<td>Social justice, democratic process, small-scale actors</td>
<td>Decentralization, grassroots autonomy</td>
<td></td>
</tr>
<tr>
<td>Unsustainability of the system and its impact on the environment</td>
<td>Natural resources, agrobiodiversity, energy-water-carbon efficiency</td>
<td>Reducing the food-print of the system on the environment</td>
<td></td>
</tr>
</tbody>
</table>

“our food system is failing us”

Source: C. Béné et al. / World Development 113 (2019) 116–130
More and more, environmental sustainability issues are coming into the spotlight.

Energy use, blue water footprint and greenhouse gas emissions from different food groups in the US

Source: Global Panel on Food and Agriculture For Nutrition Foresight Report 2016
Urbanization, globalization, economic growth, technological changes for work, leisure, and food processing, mass media growth

**Pattern 3**
Receding famine, smallholder, rural
- Low variety and diversity of foods
- Low consumption of processed foods
- Labor-intensive

- Stunting, Maternal and child Health deficiencies and MNDs
- Slow stunting decline, Slow mortality decline

**Pattern 4**
Modernized, rural, and more peri-urban, urban societies
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- Increased life expectancy but increased disability and NCDs

**Pattern 5**
Educated, mainly urban
- Reduced highly processed foods
- Increased fruit and vegetables
- Still less labor-intensive work but increased physical activity for exercise

- Reduced obesity, Reduced diet-related NCDs
- Extended lifespan, Reduced mortality due to NCDs

**Pattern 6**
Educated, mainly urban with some ties back to land, concerns for human & planetary health
- Flexitarian diet
- Minimal packaged foods and reduced waste
- Purposeful activity with public transport

- Reduced obesity, Reduced diet-related NCDs
- Reduced use & degradation of natural resources
- Extended lifespan
- Reduced mortality due to NCDs
- Reduced carbon footprint

*Source: Popkin and Drewnowski 1993; Crino et al 2016; Revised Fanzo et al 2017*
Two causal pathways 'explaining' the equation "sustainability = health" based on the cases of agrobiodiversity use and meat overconsumption.

Source: C. Béné et al. / World Development 113 (2019) 116–130
What information do typologies provide that help us assess how well food systems are delivering healthy diets?
Let’s talk about typologies...

“We can use typologies to better understand a food system, but these typologies do not necessarily help us change it.” - Stefano Prato
What are typologies?

• The study of different types
• Typology most often classifies things by certain commonalities or classifies them by certain differences.
• Using typology helps to better understand certain conditions or factors of those things or how things relate to each other.
What are the advantages of typologies?

• Categorize the complexity of “systems” into specific societal attributes and group together a number of countries that share the attributes without having to do an in-depth and separate analysis for each country.

• Seeks generalizable systemic regularities that permit the grouping of certain societies (or food systems) and contrasts them with others.

• Offered as a didactic apparatus to guide discussion and provides a comparative approach.
What are the limitations of typologies?

• Not all countries fall clearly into one category and there is within-category country variation or may have features of other types.

• Provides crude measures that may conceal conflicting influences on food systems that cannot easily be discerned or may have different affects on outcomes.

• Misses the variability of food systems in countries and more so, food environments.

• Often, national level data, is limited when thinking about the operationalization of food systems at sub-national and micro-national levels.
### Broad trends food system typology example

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Traditional</th>
<th>Structured</th>
<th>Modern / Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of agriculture in GDP</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Urbanization</td>
<td>Rural</td>
<td>Urbanizing to varying degrees</td>
<td>Urbanized</td>
</tr>
<tr>
<td>State of the agricultural economy</td>
<td>Traditional</td>
<td>Modernizing</td>
<td>Industrialized</td>
</tr>
<tr>
<td>Rural income sources</td>
<td>Few opportunities outside agriculture (farming or ag. wage labour), high migration</td>
<td>More diversified opportunities, dualistic</td>
<td>Agriculture and manufacturing, dwindling rural population</td>
</tr>
<tr>
<td>Agriculture’s role in poverty reduction</td>
<td>Agriculture growth stimulates mass poverty reduction via market linkages and labour for traditional export commodities</td>
<td>Ag. growth reduces rural poverty and manages the urban transition. Opportunities in processing and high-value crops in domestic markets</td>
<td>Ag. growth promotes rural income parity, agribusiness provides employment, provision of ecosystem services</td>
</tr>
<tr>
<td>Institutions</td>
<td>State boards</td>
<td>Transitioning</td>
<td>Regulatory</td>
</tr>
<tr>
<td>Examples</td>
<td>Bhutan, Kenya</td>
<td>India, China, Honduras, Mexico</td>
<td>US, EU</td>
</tr>
</tbody>
</table>

- Characteristics used to create the typology are a mix of variables that can be quantified and stylized descriptions of food system elements.
- Makes it easier to include characteristics the authors feel are important, but where data might not be available.
- Could be viewed as subjective.
- There are not clear thresholds that distinguish the types.

## Food value chain typologies example

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>Traditional traders buy primarily from smallholder farmers and sell to consumers and traditional retailers in wet (mostly local) markets</td>
</tr>
<tr>
<td>Modern</td>
<td>Domestic and multi-national food manufacturers procure primarily from commercial farms and sell through modern supermarket outlets</td>
</tr>
<tr>
<td>Modern-to-traditional</td>
<td>Domestic and multi-national food manufacturers sell through the network of traditional traders and retailers (e.g. “mom and pop” shops)</td>
</tr>
<tr>
<td>Traditional-to-modern</td>
<td>Supermarkets and food manufacturers source food from smallholder farmers and traders</td>
</tr>
</tbody>
</table>

A small set of indicators with thresholds are used to group farming systems into types, and decisions regarding the grouping takes place in a hierarchical manner.

A different set of indicators may be examined based on answers at the previous steps.
Typologies to better understand how and where to intervene for nutrition: HLPE approach

**Indicators included in the typology:**

- Dietary energy in food supply (FAO Food Balance Sheet)
- Urbanization (percent, UNDESA)
- Food affordability (index value, Global Food Security Index)
- Presence of food-based dietary guidelines (yes/no, FAO)

**Methodology:**

Countries with all four indicators above the median were classified as **modern** food systems. Countries with all four indicators below the median as **traditional** food systems. Countries with indicators both below and above the median were classified as **mixed** food systems.

- Allows classification based on quantitative indicators for all countries where all the indicators in the typology are available.
- Indicators can be chosen to represent different food system elements (i.e. supply chain, food environment, important drivers).
- May decide that indicators should not be equally weighted.
- Food system types may not always associate with the nutrition outcomes that ring true for users, depending on selection of indicators.

Source: UN High Level Panel of Experts Report on Food Systems and Nutrition 2017
Analysis of nutrition outcomes using HLPE typologies

Source: UN High Level Panel of Experts Report on Food Systems and Nutrition 2017
Many types of food systems & environments

- Traditional food systems
- Mixed food systems
- Modern food systems
The right side of the wheel (blue) illustrates the elements of the food supply chain while the left side of the wheel (green) the elements of the food environment.

1. Darker slices indicate elements of the food supply or environment that need significant investment and interventions to improve or change.
2. Shaded slices indicate elements of the food supply or environment that need some investment to improve or change but not critical.
3. Slices left white indicate elements of the food supply or environment which are important investments but if choices need to be made, they are less of a priority.
Refugee camp, Breidjing Camp, Chad
Smallholder family farm, Ecuador
Wet Market, Delhi India
Street Food Stall, Hanoi Vietnam
Local Fast Food Restaurant, Mr. Biggs Nigeria
Corner Store, East Baltimore
Supermarket
Walk-in Walk-out
YOUR food environment today!
## Pattern 3 Food Environment Typologies: Fewer Choices

<table>
<thead>
<tr>
<th>Access</th>
<th>Daily village kiosk</th>
<th>Daily, local, side of road traditional market</th>
<th>Weekly, regional traditional market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depend on store hours</td>
<td>Depends on store hours Usually in town centers</td>
<td>Depends on weather and ability of farmers to get to market</td>
<td>Depends on weather, roads and ability of farmers to get to market</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affordability</td>
<td>Affordable price point</td>
<td>Affordable price point</td>
<td>Some affordable foods with more expensive animal source foods and some regional specialty foods</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td>Minimum branding and advertisements but some packaged foods</td>
<td>Very minimal branding or advertisement, usually wet markets, fresh foods</td>
<td>Some advertisements, some packaged foods with brands</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>Limited labels and nutrition information, packaged foods with ingredients listed</td>
<td>Limited labels and nutrition information</td>
<td>Limited labels and nutrition information, packaged foods with ingredients listed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composition</td>
<td>Unregulated, poor quality, poor variety, unsafe</td>
<td>Unregulated, limited variety because of seasons, often unsafe</td>
<td>Unregulated particularly meats sold, some variety but dependent on seasons, often unsafe</td>
</tr>
</tbody>
</table>

- MCH deficiencies
  - Stunting and MNDs

- Slow mortality decline
  - Slow stunting decline
### Pattern 4 Food Environment Typologies: Increasing Choices

<table>
<thead>
<tr>
<th>Environment Type</th>
<th>Access</th>
<th>Affordability</th>
<th>Promotion</th>
<th>Information</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supermarket (modern market)</strong></td>
<td>Access often limited in urban centers, requires transport</td>
<td>Processed foods inexpensive, specialty foods, fresh produce, high quality meats and seafood expensive</td>
<td>In-store price promotions (e.g. BOGO) and advertisements</td>
<td>List of ingredients, nutrition facts and front-of-pack nutrient declarations labelled on packaged foods</td>
<td>Uniform and quality controlled, wide variety (independent of seasons), fresh and processed foods</td>
</tr>
<tr>
<td><strong>Wet Market (traditional-to-modern)</strong></td>
<td>Accessible in urban areas</td>
<td>Affordable price point</td>
<td>Very minimal advertisements or branding, limited to branded processed foods</td>
<td>Limited labels and nutrition information, with the exception of branded packaged foods</td>
<td>Limited regulation, some variety but dependent on seasons</td>
</tr>
<tr>
<td><strong>Bodegas and Corner Stores</strong></td>
<td>Easily accessible, particularly in urban centers</td>
<td>Processed foods inexpensive; fresh produce, dairy, and meat expensive</td>
<td>Some in-store advertisements for branded processed foods</td>
<td>List of ingredients and nutrition information for branded packaged foods; limited information for non-branded products</td>
<td>Predominantly poor quality and low variety, particularly for fresh foods</td>
</tr>
<tr>
<td><strong>Fast Food Restaurants</strong></td>
<td>Easily accessible, food swamps in some low-income neighborhoods</td>
<td>Inexpensive; healthier items often more expensive</td>
<td>Price promotions (e.g. value meals), high level of web, print, television promotions, celebrity and athlete sponsorships</td>
<td>Nutrition information available online, limited labeling at point-of-purchase</td>
<td>Uniform and quality controlled; energy dense foods high in fat, salt, sugar</td>
</tr>
<tr>
<td><strong>Street Food Vendors</strong></td>
<td>Easily accessible, particularly in urban centers</td>
<td>Affordable price point</td>
<td>Minimal advertisements or branding, primarily reserved to the cart itself</td>
<td>Limited labels and nutrition information, nutrition information and ingredients on branded packaged foods only</td>
<td>Limited regulation; energy dense foods high in fat, salt, sugar; some food safety concerns</td>
</tr>
</tbody>
</table>

**Increased life expectancy but increased disability**

**Increased NCDs**

**Obesity emerges**

**Diet-related NCDs**
### Pattern 5: Food Environment Typologies - Many Choices

<table>
<thead>
<tr>
<th>Access</th>
<th>Upscale Specialty Market (modern market)</th>
<th>Farmers Market (modern-to-traditional)</th>
<th>Fine Dining Restaurant</th>
<th>Fast Casual Restaurant</th>
<th>Food Trucks (upscale street food)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited to affluent neighborhoods</td>
<td>Limited to specific days of the week and times of the year, may be reduced access in low-income neighborhoods</td>
<td>Limited to affluent neighborhoods</td>
<td>Easily accessible, higher density in affluent neighborhoods</td>
<td>Limited to high-density, affluent neighborhoods</td>
<td></td>
</tr>
</tbody>
</table>

| Affordability | Limited price point, particularly for specialty foods | Price points vary largely depending on location; pay premiums for local, organic, and artisanal items | Higher price point | Affordable price point but more expensive than typical fast food restaurants | Affordable price point but more expensive than typical street vendor food |

| Promotion | Limited advertising, in-store promotions often related to production (local, organic, GMO free) practices | Minimal advertising or branding | Social network promotion; online, city newspaper and magazine reviews | Advertising in web, television, print, billboards; focus on freshness, quality and in some cases, sustainability | Social networking promotion; apps that track food trucks; participation in city events |

| Information | Extensive nutrition and "value" labelling; list of ingredients, some in-store labelling of prepared foods; corporate information campaigns | Limited nutrition information, list of ingredients on some unbranded packaged foods, talking to farmers | Limited nutrition information | Some labeling at point-of-purchase (e.g. kcal), some information on antibiotics and GMOs etc. | Limited nutrition information |

| Composition | Local, organic, GMO free; wide variety, fresh and high quality; specialty processed and prepared foods | Fresh, local, organic, high quality produce; prepared foods with variable nutritional quality | High quality ingredients; may be energy dense and contain high amounts of fat and salt | Fresh ingredients, may be energy dense and contain high amounts of fat and salt | Limited regulation, high quality ingredients, may be energy dense and contain high amounts of fat and salt |

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**Slowing down obesity, and diet-related NCDs**

**Extended lifespan**

**Reduced mortality due to NCDs**
Eight types of retail outlets were counted within buffers of 800m buffers around survey participants homes.

Latent class analysis was used to identify “types” of neighborhood food environments.

This can be more objective than other methods, but requires more data.

**Type 1** – neighborhoods with a variety of food outlets

**Type 2** – neighborhoods with cafes/restaurants and convenience stores

**Type 3** – neighborhoods with few types of food outlets available

Source: Timperio (2018)
Moving beyond typologies: What information do policymakers need to make decisions about food systems?
“You can’t manage what you don’t measure”...but we have enough to act!

• Existing tools used to measure nutrition links to agriculture and other food policy interventions capture only parts of the food system.

• Evidence-based policy making requires more rigorous and specific metrics relating to these elements of the food system and their dynamic interactions over time.

• Evidence-based policymaking requires sound evidence. It is difficult for governments to make improvements in areas that are not well understood and hence not well measured.

• That said, we have significant information to act, and we are urgently required to do so (not having data does not mean one has a “get out of jail free” card)

81% of countries have three or more nutrition targets

Source: Development Initiatives Global Nutrition Report 2018
Progress is needed in six key areas

1. Improving the quality and quantity of data on food intake among different sectors of the population.
2. Reaching agreement on how to measure diet quality.
3. Developing metrics that measure women’s roles in dietary choices.
4. Designing metrics to measure the ‘food environment’, including how different food system domains are linked to, and interact with, the food environment in which dietary choices are made.
5. Devising metrics that measure the healthiness of food systems, all the way from agriculture through markets to people’s actual food consumption.
6. Developing metrics that measure people’s ability to access food of sufficient quantity and quality as well as their drivers of choice.

What do we want to understand about diets?

- What are people eating?
- What is the quality and diversity of what people are eating?
- How much do diets cost?
- Where do people get their food from?
- How do people make decisions about what to eat?
Data visualization tools can be powerful

To enable country stakeholders to:

• better visualize their food systems through a data rich “hub” that is visually appealing, easy to use and understand.

• assess the “temperature” of their food system through a scoring system.

• “macro” compare indicators to their neighbors or to countries which are grouped in the same typology.
Examples of data visualization tools

Source: Research for Development (2018)
United Kingdom
Country report card
Adults

Evidence of Marketing Guidelines/Policy
Evidence of Nutritional Guidelines/Policy
Evidence of Community Interventions
Evidence of taxation on food or beverages
Evidence of Physical Activity Guidelines/Policy
Evidence of National Obesity Strategy/Policy or Action
Evidence of Labelling Regulation/Guidelines
Evidence of any government body published any obesity-related treatment recommendations or guidelines for adults or children?

% Overweight/Obesity in adults living in the UK (2017)

% Overweight and Obesity by age & educational attainment in males in the United Kingdom 2014

% Overweight and Obesity by age & income quintile in males living in the United Kingdom 2014

% Overweight and Obesity by age & educational attainment in females in the United Kingdom 2014

% Overweight & Obesity by age and income quintile in females living in the United Kingdom 2014

United Kingdom

www.worldobesitydata.org
Evaluating national food systems for sustainability metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Indicator</th>
<th>Section Number</th>
<th>Weighting Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Nutrient Adequacy</td>
<td>Non-Staple Food Energy</td>
<td>2.1.1</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Shannon Diversity</td>
<td>2.1.2</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Modified Functional Attribute Diversity</td>
<td>2.1.3</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Nutrient Density Score</td>
<td>2.1.4</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Population Share with Adequate Nutrients</td>
<td>2.1.5</td>
<td>0.20</td>
</tr>
<tr>
<td>Ecosystem Stability</td>
<td>Ecosystem Status</td>
<td>2.2.1</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Per Capita Greenhouse Gas (GHG) Emissions</td>
<td>2.2.2</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Per-Capita Net Freshwater Withdrawals</td>
<td>2.2.3</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Per-Capita Non-Renewable Energy Use</td>
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<td>Animal Health &amp; Welfare</td>
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<td>Food Production Diversity</td>
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<td>Food Safety</td>
<td>Foodborne Disease Burden</td>
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<td>Pre- &amp; Post-Consumer Food Waste &amp; Loss</td>
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SAFA tool

SAFA is a holistic global framework for the assessment of sustainability along food and agriculture value chains. SAFA establishes an international reference for assessing trade-offs and synergies between all dimensions of sustainability.
Data is very political.
Why are the voluntary guidelines so central following the HLPE report?
We have enough evidence to begin
Example: Nutrition along supply chains

Net increase of nutrition along the value chain

Maximize nutrition “entering” the food value chain

- Improved varieties, bio-fortification strategies
- Aflatoxin control, refrigeration
- School feeding programs, voucher schemes, targeting of vulnerable groups
- Fermentation, drying, fortification, product reformulation (reduce salt, sugar, unhealthy fats)
- Messaging on the importance of nutrition, benefits of certain foods
- Home fortification with MNP (fish powders), training in nutritious food preparation, time management, food preservation

Maximize nutrition “exiting” the value chain

- Focus on women farmers, diversification, extension, insects
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- Fermentation, drying, fortification, product reformulation (reduce salt, sugar, unhealthy fats)
- Messaging on the importance of nutrition, benefits of certain foods
- Home fortification with MNP (fish powders), training in nutritious food preparation, time management, food preservation

Input Supply

Production

Post Harvest Storage

Processing

Distribution

Marketing and Retail

Consumption Food Utilization

- Lack of knowledge of improved varieties, nutritious crops
- Lack of access to inputs (seeds, fertilizer, extension)
- Contamination, spoilage
- Nutrient losses during milling, combination with unhealthy ingredients
- “Food deserts”, export/import impacts on prices and availability
- Advertising campaigns for unhealthy foods
- Lack of knowledge of nutrition, nutrient losses during food preparation, addition of salt, sugar, unhealthy fat

There is progress in effective policies and programmes

1. More countries have mandatory fortification
   86 countries now require at least one type of cereal grain to be fortified with iron and/or folic acid. Only 19 countries are still classified with insufficient iodine intake, a dramatic shift from 110 countries in 1993

2. Governments are acting to improve diets
   59 countries impose taxes on sugar-sweetened beverages, many in the context of excess intake: Mexico saw 9.7% decline in spending on sugary drinks within 2 years

3. Multi-sector action in cities is growing
   Decline of obesity in Amsterdam by 12.5%, declines in municipalities in the US

4. Multi-level, community based interventions show rapid impact
   Minimum dietary diversity prevalence increased 5.2%–24.9% in communities with intense activity by “Alive and Thrive” in Ethiopia 2015–2017

Source: Development Initiatives Global Nutrition Report 2018
But we need more policy implementation and scale

Source: Popkins and Hawkes 2016 Lancet Diabetes & Endo
Need for more coherence across policies

Voluntary guidelines on food systems & nutrition

Build on the evidence base outlined in the HLPE report and take it one step further.

• The “what”
• The “how” and the “context”
• The “who”
• The “impact”
Thank you!