Nutrition and food systems

e-consultation on the Draft V0

proposed by the HLPE Steering Committee

From 24 October 2016 to 5 December 2016

Synthesis by the HLPE Secretariat

This consultation on the V0 draft of the HLPE report #12 on *Nutrition and food systems* attracted 86 contributions, from 29 different countries, totalling 265 pages and more than 110 000 words. 19% of contributions come from national governments, 7% from the civil society and NGOs, 13% from the private sector, and 36% from academic/research institutes. 27% of the contributions come from developing countries.

This note proposes a summary of the main comments, referring to the numbered contributions in order to ease the reading. Many contributors sent more detailed comments or suggested text to be directly inserted in the draft (26, 54, 56, 61, 63, 73). Those detailed comments, as well as the references and case studies suggested in many contributions, have been gathered in a specific file and shared with the Project Team.

This note is organised in 6 sections. The first section presents overall appreciations on the report, on its purpose, scope and general orientation. The second is related to the structure of the V0 draft report, the overall narrative and the organisation of the different chapters. The third is about definitions and typology. The fourth and fifth gathers respectively the main gaps and chapter related comments. The last section points out other editing comments.

1) Purpose, scope and general orientation:

Nutrition is a complex issue requiring coordinated action / policy coherence across many sectors including health, social protection, education and WASH (water sanitation and hygiene), food, agriculture, commerce and trade (3, 4, 8, 79, 81, 84) in order to fulfil the Right to Adequate Food and Nutrition (84). There is an increasing consensus that we need a change of paradigm because present food systems result in unhealthy diets, unsustainable footprints, and impoverishment of small scale producers (4, 84). Since the problem is diets, the report should start from diets and, in particular, dietary transition (commodification of food and globalization) (4, 84). Healthy diets are at the heart of the report (82).

A **Human Rights** approach is essential for this report (1, 53, 61, 66, 68, 76, 81, 84): right to adequate, nutritious and culturally acceptable food (50, 80, 84), right to health (84). The draft should address the question of access and control over natural resources as well as the specific rights of workers, women, children, indigenous people (84). Food security, food sovereignty and the right to food are primary objectives of the food system, not corporate profits (84). The VGGT and VG on the Right to Food should be considered as basic references (50, 66), as well as the International Convention on the rights of the Child of 1989, the African Charter on the rights and welfare of the Child of 1999 (55), and the report of the Special Rapporteur on the Right to Food (A/71/282) (81). Food acquires its value by virtue of its necessity for survival (8): therefore we should speak of “chains of increasing cost” rather than “food value chains” (8). Malnutrition has to be addressed as a human rights violation (1,

61, 76, 84) as well as junk food (50). **Food sovereignty** debate is not given enough space in the draft (quoted only twice) (1, 17, 53, 66, 84).

The report should be better inserted in the **global political context** and linked to the mandate and work of CFS (84) and should refer more clearly and consistently to the 2030 Agenda and to the interlinkages among SDGs (8, 27, 31, 50, 51, 77, 80). SDG2 cannot be achieved without addressing the root causes of malnutrition: poverty, inequalities, healthy lives… which in turn require decent employment (50). The draft should also refer to / give more space to: the ICN2 Framework for Action (26, 82), the UN Decade for Action on Nutrition (35, 38, 82), CBD - COP12/Decision 21 and Aichi targets - (27, 54), to the 5 principles of sustainable food and agriculture endorsed by FAO/COAG (59). The HLPE report should be an important tool to help operationalising the **ICN2 Framework for Action** (26, 82). It should reference and **address specifically** the **9 ICN2 recommendations** for sustainable food systems enabling healthy diets, and those on trade and investments (82).

The draft should be **global in scope.** It should include more data from developing countries or identify data gaps (41, 44): for instance, Africa is missing in tables p39-42 (41). More attention should be given to the foodprint of countries (41, 44). The report should rely on factual information existing on the ground over different parts of the globe to get any practical utility (18).

The draft should be **better balanced:** some items/controversies are presented in a very biased way (58, 73). The draft does not cover the diversity of production / food systems: it is biased (48) towards industrial-scale food production to the detriment of smallholders, farming families (4, 11, 17, 59, 84), and pastoralists (59). The report should strike the right balance between developed vs. developing countries; smallholders vs. industrial agriculture; obesity vs. undernutrition; (26) high-tech vs. low-tech but **accessible** solutions (26, 41, 44, 77); technology vs. indigenous knowledge (84); rural food systems vs. urban food systems (66). Many small scale farmers are **net food buyers** (41, 44), smallholders produce 70% of world's food but many face food insecurity and malnutrition (51, 66, 68, 84). The draft does not give enough space to **agro-ecology** (17, 66, 81, 84).

Consumer focus is important (32, 60) but the report is skewed (68) because **production** systems/**farmers** and food **producers** and **traders**/ rural communities receive very limited attention, although they have a major role in shaping diets and nutritional outcomes of food systems (17, 41, 44, 62, 66, 72, 73, 75, 77). The draft should refer to the 2016 HLPE report to get a balanced description of the sustainability challenges of all agricultural **production** systems (62). The draft should consider various future scenarios: e.g. the "business as usual" scenario: 70% increase in food production by 2050 (FA0, 2009) (47) but also the 20% increase projected as a result of achieving SDGs (FAO-UNIDO event 2016) (50).

The real substance of HLPE reports is to present the point of controversy and bring science into the policy debate: there is little **controversy** presented in this draft (55, 73). The draft should better tie past HLPE reports (social protection, water, climate change, price volatility, food losses and waste) into this topic of "Nutrition and food systems" (55, 80) and refer also to previous CFS policy recommendations, especially "connecting smallholders to markets" (80, 84).

2) General comments: overall narrative

This timely report (48, 50, 82) covers a wide range of complex issues with a holistic/systematic perspective (8, 32, 38, 42, 47, 52, 53, 56, 58, 71, 77, 81). The major objectives of the report are clearly reflected in the V0 draft (23, 25, 53, 58, 83). The draft is well written (38), comprehensive (8, 11, 13, 17, 19, 21, 23, 25, 34, 38, 47, 50, 52, 55, 56, 58,

65, 79, 81, 83) and well articulated / balanced / structured (25, 32, 33, 35, 42, 46, 47, 50, 53, 58, 83). The report is really interesting and informative (6, 10, 23, 35, 37, 46, 60, 62, 66) for specialists and policy-makers (14). It is neither too technical nor too simple (41, 44, 46, 47, 53, 62, 83). The solution oriented approach is welcome (32, 60), but at this stage, the report is more descriptive than solution oriented (68, 72, 75, 81, 85) and is not conducive to inform policy making (84). In that perspective, chapter 2 and 3 should be shortened to give more place to solutions in Ch4 (81, 85). The report will be useful for research, education and cooperation activities (23).

Other contributions consider that the V0 draft is too long, too broad (1, 5, 28, 68, 72, 77, 81, 84), and too academic to be digested (1, 68, 72). It is not clear who is the main audience for the document (21, 33). The draft must be cut to have a significant policy impact on CFS (1, 34, 84). The draft can be strengthened by simplifying the language and the graphs can be more explicit (30). This early version of the report, still **needs to focus** on key factors (17, 28, 84). The draft **still lacks a strong storyline** (11, 74): there is a notable gap between the analysis (Ch2, 3) and the conclusions (Ch4) (84). Reorganization of sections might help: e.g. overlaps between sections 4.1 and 4.2 (11); 3.2 and 4.1 (28). One contributor suggests to focus on “Food systems and their effect on sustainable diets” (68). We are still discussing the same issues since 40 years: lessons learned on why things don’t work would enrich the final product (21, 29). Is the objective to analyze the influence of different food systems on nutrition or to analyze the drivers of dietary changes? (73).

The draft could start with the major food systems trends (e.g. supermarket revolution, agricultural intensification and specialization, globalization-localization, increased (ultra-) processing, food safety, corporate concentration…), assess how those trends influence diets and sustainability in different settings or for different population groups and suggest recommendations based on the reality of those trends. And to skip or greatly reduce the very general parts in the beginning. (5).

The draft could describe the food system, identify its elements put to dubious use, identify the policies needed to improve the situation, the strategies for their implementation and examples of good practices that may be adapted for use in specific locations; this draft could also make better use of appendix (see proposed outline) (8).

As fundamental sections of the report are missing - including the summary and recommendations (47, 60, 84), the section on conflicts of interest (84), and the typology (62, 72, 84) - a second consultation should be held before the finalisation of the report (51, 56, 60, 62, 75, 80, 84). The report could develop recommendations on how to reshape the supply chain of concrete “healthy diet components such as fruits and vegetables (82). The HLPE report could build on the recommendations from the WHO-ECHO report (82). The report should formulate the specific priority policy changes that need to be made at the local, national, regional and global level (84).

3) Definitions, terminology, typology

Good **definitions** are essential (22). The boxed definitions are useful, good, clear and grounded on previous work (17, 25, 53, 72).

However, the draft should make a consistent (1, 60, 62, 72, 75, 81), and clear (8, 42, 56, 62) use of **terminology**, in line with already existing / agreed UN, SUN and ICN2 language on **malnutrition** (1, 80, 61, 84). The terms “healthy and unhealthy diets” (60, 62, 66, 76), “nutrition-sensitive approaches or programmes” (1, 42, 84), “high-quality diets/eating patterns” (42), or “healthier food” (56, 62), “(ultra) processed foods” (60, 62, 68) are mentioned but not defined or not clearly defined in the V0 draft. By “consumer” does the draft

mean “final consumers”? (8). Terms must be used consistently, e.g.: “overnutrition” vs. “overweight and obesity” (81); “chronic diseases” vs. “NCD” (81); “food systems” vs “value chains” (11, 22, 65, 72); “diets for health” vs. “healthy diets” (42, 60, 62); “healthy foods” vs. “healthy diets” (56, 62); “dietary” vs. “eating” patterns (60, 62). Loose use of the terms “fish” and “seafood”: do they include shellfish, freshwater fish, seaweeds and other aquatic plant? (22). Use “food or supply chain” rather than “value chain”, “sugary” rather than “sugar sweetened” beverages (84).

The term “healthy food” has little meaning and should be avoided (56, 62, 75). The statement (p18 line 41-43) is close to a clear definition for healthy diet (60, 62). The Brazilian government endorsed a definition of “adequate and healthy diet” (76). Add a definition of “healthy diet” referring to the WHO Healthy diet fact sheet (2015) (82).

For the sake of consistency, the definition of “**food system**” should not differ from the one of (HLPE, 2014), widely endorsed and used within and beyond the UN system (44).

The definition of **diet** could be improved by including the concept of **dietary diversity** (17). Add a sentence in the definition of sustainable diets in line with (FAO, 2012) (41, 44) and delete the second sentence of definition 4 on diet (56).

The notion of **“food environment”**, is central for this report (13, 14, 22, 25, 28, 48, 53, 56, 58, 66, 77, 81, 85), but needs clarification (17, 22, 72) and can create confusion with the current acception of “environment” (8). PT needs to explain why the definition in the draft differs from recent reports (GLOPAN Foresight, FAO Compendium on nutrition sensitive agriculture indicators, Herforth and Ahmed 2015) which considers “food environment” as **the range of foods that are available, affordable, desirable, and convenient** (83)**.** If “food environment” is to be central to the report it should be addressed in greater depth (83). Food availability is not consistently included in the definition of food environment throughout the report, and the limit is not clear between value chain and food environment (retailers, restaurants… are part of food environment) (81). The concept of “food environment” adds nothing that is not covered by “food system” (73) and reduce the apparent importance of production issues (75). The report should focus on **sustainable** food environments/diets rather than “healthy” food environment/diets as sustainability includes health – a definition is suggested (41, 42, 44). It’s important to recognize the mediating role of food environments on what people eat: the central message should be that food systems need to make healthier food more available, accessible and acceptable – three pillars of food environments (28). The report should include more information about the impact of food marketing, including digital marketing, on food environment, consumption patterns and food systems (81)

A **typology of food systems** will be key to the success and impact of this report and should become a benchmark for describing and analysing food systems (17): the expected outcome of this work is not to design an “ideal” food system (48) but to look how to improve the nutritional and environmental outcomes of different existing food systems (17, 48). This typology should help governments to identify and categorise the different food systems **within** their respective countries in order to develop appropriate policy and legislation: we **would caution against the categorisation of countries by food system-type**, due to the wide diversity of food systems found within each country based on the different livelihoods strategies employed by different communities (51). Rather than trying to categorize countries’ food systems, the report should concentrate on identifying elements / characteristics in food systems that promote or undermine nutrition and the policies underpinning these (84). We need not only a typology of food systems but also a **typology of countries** according to the performance of their food systems (83). Hard to see the value added of such a typology since the proposed indicators are not tightly correlated with nutrition outcomes (73).

A typology of different food systems could be elaborated and then, once the types are named and defined, they can be questioned or illustrated with available quantitative data (17). "Imported foods/total food supply" could be a key variable to describe different food systems (not only at the country level) (17). This typology could build on: CFS-CSM typology of farming groups (17); UNSCN report "Investments for Healthy Food systems" (65, 66, 82); Global Nutrition report 2015 (82); UNEP IRP report on Food systems and natural resources (48); IFAD 2016 Rural development report (83); Gustafson et al. (2016) and their seven food system metrics (60, 62); Gomez and Ricketts (2013) food value chain typologies (83). **The list of indicators used for the typology** could be improved using: the Food sustainability index of BCFN based on 58 indicators (69), the logistic performance index (WB and FAO), the GDP per capita as a proxy of affordability and food utilization indicators, as well as the indicators proposed in Herforth and Ahmed 2015 (83).

Taking the **food environment concept** as a **categorizing tool** should help avoid repetitions and focus on the most direct/important links between food systems and diets (28, 33). Such a **typology of food environments** should be built upon the following characteristics: urban vs. rural, developed vs. developing countries, social classes (richer vs. poorer neighborhoods), traditional vs. industrial farm and food systems (48)

Given the diversity of situations, the report cannot give ready answers for all situations: it is therefore more important to provide a relevant framework on how to analyze each situation and identify potential points of intervention (48).

4) Main gaps in the V0 draft

Still a long way to go till the final report. This section lists some key issues missing, overlooked or to be better covered in the report. The first subsection focuses on the challenges, the second on the possible solutions. Each subsection is structured around the different elements of the conceptual framework.

Challenges for food security and nutrition, causes of malnutrition:

Nutrition and Health outcomes:

- **Health:** Antimicrobial resistance (AMR) is a major health issue rooted in food production: it is mentioned once but needs to be better reflected (22, 56, 59, 70), in line with the 2016 HLPE report (62). Links between health, diets and nutrition outcomes need to be better highlighted (11, 22). Role of gut health in nutrition (55). **One Health** approach (64). Issue of medicalization of many nutrition interventions and disembedding of nutrition with food (84).
- **Nutritional needs:** Take into account the different nutritional needs along the **life cycle** (infant, child, teenager, adult, pregnant or old) (6, 8, 40, 66, 70, 83, 84), as well as the **intra-household** distribution of food (11, 22). Importance of early / adequate nutrition during the first 1000 days and beyond (82, 83); and importance of maternal nutrition and young girl nutrition in addressing malnutrition in next generations (82). Food for brain: impact of food on mental health (19). Obesity is related to the "energy balance": it does not come solely from industrial food but also from change in labor habits / physical activities (29)."Good nutrition" refers to a recommended amount of nutrient depending on age, sex, physiological status, physical activity (40).
- **Economic burden of malnutrition:** hunger and chronic malnutrition cost 450 billion USD per year for developing countries (3). Undernutrition represents between 3 and

16% of GDP lost annually in Africa and Asia (31). **Boosting nutrition can boost growth:** GBP16 generated for every pound invested in nutrition (31).

- Alcoholic beverages are not mentioned in the report (9, 48): risk for health of any level of alcohol consumption (81, 82).

Sociocultural drivers:

- **Poverty** is the main cause of malnutrition (3, 70, 82). **Inequalities** and **poverty alleviation** (impact of households income on food security and on nutrition) are overlooked (1, 14, 80). The report must focus on feeding the poor and the poorest and this will contribute to the development of effective policies and programmes (14). The links between income, diet and nutrition must be further explored (84).
- **Gender,** as a transversal issue, needs a more comprehensive discussion throughout the whole report (11, 41, 44, 55, 66, 77, 84) on women's empowerment and control of resources (see IFPRI findings) (11). Gender issues include: unemployment increasing rates, male out-migration from rural areas, education role in migration, illiteracy among women (24). The gender section in the current draft fails to address the issue of women's rights (see CFS recommendations following the HLPE 2016 report on SADL) and to provide an adequate gender analysis: women's education and reduced hunger, shared care and feeding work across genders… (84).
- Need for stronger focus on affected/**vulnerable groups** (4, 66, 82, 84), in Ch2, 3 and 4 (84): **farmers** (16), **small scales food producers** (11, 66, 84), poor populations (17). Youth, smallholders and women could be further streamlined in the report, not only under subsection "vulnerable group" (44).

Demographic drivers:

- **Urbanisation** is a key dimension (4, 80): the opposition (p50) between urban and rural infrastructure is misleading and reductive (4). The New Urban Agenda adopted in Quito could provide additional language (4). The Milan Urban Food policy Pact could be mentioned in a box (4). **Urban population growth** and **migration of rural youth into cities** (6, 8). Distinguish between urban rich and urban poor (11, 17). Impact of (peri-) urban agriculture (17, 26, 77, 84), livestock (17) and collective/community gardens (7, 42) on FSN. Urban food governance (17). Are the contrasts between urban and rural diets sufficiently explored (22).
- **Conflicts** (3, 86) and **forced displacements** (70, 83). Humanitarian and protracted crisis' impacts on diets and malnutrition patterns and trends are not addressed (4, 77, 83) (e.g. Syria) (4). Food assistance (83). Conflicts and migration due to climate change (66). In extreme cases food systems are arenas of oppression, subjugation and abuse of power (83).

Biophysical and environmental drivers:

- **Water and sanitation** (11, 22, 70)
- **Environmental challenges:** reduce food **environmental footprint** (3, 16) within the 9 planetary boundaries, which could be described in a box (70, 77); (agro-) **biodiversity loss** (8, 27, 38); **soil** degradation/management (16, 17, 27, 70); **desertification** (27); **water waste** (62), water footprint and management (16, 27), **water access** and scarcity is an important challenge (62, 66), in particular in Africa (62). Scale is not the primary determinant of unsustainable practices: the draft creates a false equivalence between "industrial" scale agriculture and environmental degradation (29, 60, 62, 64)

- **Climate change** (84, 86)**:** importance of "**climate-smart**" agriculture and food system (11, 17, 20, 36), interaction between temperature, humidity, soil (18). Contribution of chemical fertilizers to GHGs (66, 84). The draft should refer to the Paris Agreement (81)
- **Land grabbing** is missing in the draft (1). Ensure the appropriate allocation of land and its tenure to enable sustainable and diverse agricultural production (70).
- **Natural disasters** (3)

Political and economic drivers: governance

- **Governance** is a major / central issue (4, 28, 84): the draft should better define the role, obligations and responsibilities of states and other actors (50, 82, 83), as well as the role of different **institutions** and the institutional dysfunctions (4). Governance, accountability and financing needs to come through more strongly (11, 70, 81 82). Very little in the draft on the role of other sectors in shaping the food system (11). The draft emphasises **"nutrition specific"** over **"nutrition sensitive"** intervention (43). The role of consumers' associations is not covered (26). The draft should highlight the role of **social movements** in raising awareness and partially determining a shift in consumer demand (28). Fragmentation of nutrition policies and programmes (84). Need for participatory and democratic governance (84)
- **Trade** (48, 62), including international trade (4, 8): impact of international trade on resilience of local food systems (4, 84). Negative impact of **trade agreements (NAFTA…)** on food security and nutrition (1, 77). Bilateral trade agreements vs. multilateralism (86). Promotion of **cash crops** instead of **food crops** in developing countries (8). The role of trade and agricultural subsidies could be more clearly stated in shaping consumption (32, 70, 82).
- **Vested interests, conflicts of interest** and **power relations** in food systems are not adequately covered (1, 53, 61, 62, 66, 71, 81, 84). See WHO publications on conflicts of interest related to nutrition (82). Private sector influence on CODEX (1). Concentration of power (35, 84), merges and acquisitions (86): a lot of brands are owned by a few companies (35), 13 food conglomerates own 26% of the global market (76).

Food value chain:

- **Private sector:** Roles (positive and negative) of private sector (producers, processors, retailers,… including "big", transnational companies) in shaping eating and drinking habits and in addressing food security and ensuring nutrition outcomes (1, 35, 46, 48, 59, 61, 62, 67, 68, 79, 81, 82, 83, 84), through **packaging**, **marketing** and **advertising** (8, 34, 84). Private sector is the major actor of food value chains: 80 to 90% of food processors enterprises in developed countries are SMEs (74). Distribution of **profit** along the food value chain (32). How to engage the private sector more effectively, what incentives are needed, where the conflicts lie? (85).
- More attention should be given to the role of the **distribution system** (hypermarkets, supermarkets, retailers) in shaping consumption and production (4, 48, 62, 68, 84) as well as to the **"last mile" issue** for isolated households (83). **Supermarket revolution:** increasing dominance of supermarkets promotes a new food system: apparent diversity of food due to packaging, limited amount and diversity of fresh food, exclusion of small producers (9). The **food service sector/catering** is largely missing: in many countries out of home consumption is more than 50% (48, 68). The draft should describe the differentiated impact of local / territorial / national / global markets on nutrition and food systems (80, 84).

- **Food losses and waste** (18, 27, 62, 73) do not receive enough attention (41)**:** Minimize FLW and redirect surplus to food insecure people (16). FLW increase with the length of food chains / complexity of food systems (8). Importance of waste, residue and nutrient cycling in the farm and food system (17, 18)
- **Food processing methods** (58, 66)**:** what's the business logic, and what's the impact (on health, nutrition, environment, energy consumption) of (ultra) processed foods (15, 48, 81, 84). Examine the use of **chemical preservatives** and **additives** (9, 13), lack of clear propositions (15). Not all processed foods are nutrient poor and energy dense (22). Promote on farm or close to farm processing of food (47). Food processing aims at guaranteeing food safety and shelf life (67). Food processing is not only about food fortification (74). Lack of clear propositions regarding **food processing** (15). Need to limit food processing (84). Food value chains should be mirrored better in the risks they currently present (86).

Food environment:

- **Sustainable food production** and **consumption** (23, 27, 41): the draft focus on nutrition and health outcomes but should also pay attention to all the 3 dimensions of sustainability –not only environmental but also socio-economic determinants or impacts of food systems and of nutrition choices (23, 41, 43, 44, 48, 50, 60, 62, 75, 77, 84). Governments have the responsibility to create an environment enabling food producers to provide healthy food at affordable prices while respecting social and environmental dimensions of sustainability (50). Sustainability performance in all systems depends on management practices and skills (56, 62).
- **Food price** (3, 32) and **affordability** (8, 27), in relation with **food quality** (8, 28, 50), are important drivers of consumption. The report should stress the need of calculating the **real costs of food** and call for more **transparency** in the food value chain (50, 70). Positive social impacts of decent food prices paid to farmers (50). Food price crisis of 2008 (4). **Over commercialisation** of food and **speculation** (8). Some of the drivers of food price volatility are mentioned, not all (84)
- **Food quality** (62)**:** fat, salt and sugar and CVD/NCD (53, 55, 56, 62), **junk food** (9, 43) produced for private companies profit not for nutritional outcomes (9). Impact of pollution, of agrochemicals, of **water** and groundwater **contamination**, on food quality (and nutritional and health outcomes) (18, 43, 81). Influence of environment (including soil) on nutritional quality of food is not fully covered (37, 81). High yields vs. quality (37).
- **Food safety** (5, 38, 56, 60, 62, 86): The food safety section is still to be developed (22). **Standards** applied on food quality and food safety: traceability and accountability (42, 70). In addition to food safety, processing and packaging also add economic value to the product (11, 53). Importance of cold chains for perishable products, including fruits, vegetable, and dairy products (56, 60, 62)

Consumer behaviors:

- **Consumers habits / behavior** (66): **food convenience** (6, 8) and time availability (41), important role of **youth** (and youth food habits) in shaping future food systems (6, 41, 44). Consumer needs should be problematized and delinked from monetary purchasing power (84).

Solutions (and their limits) to be discussed in the report:

Food value chain:

- **Resource efficiency** to better manage trade-offs between environmental and FSN objectives (16). **Sustainable intensification** of agriculture (36, 47) could improve FSN while limiting deforestation (64). Need for agro-ecology and climate based food systems (17, 84). Importance of increasing **yields** through innovation: provide farmers access to quality inputs and corresponding knowledge (47, 62, 64).
- "**Food system resilience**" is not mentioned in the draft and should be addressed especially in the context of conflicts and crises (82). Expand on the concept of shocks and flaws in food systems (83).
- Role (and limits) of **technologies: bio-technologies** and **GMOs** should be presented in a more balanced way (9, 29, 41, 43, 64). Drought resilient varieties (27). Drop by drop irrigation (27). Limits and impact on environment of profit driven **technologies** (18). Conservation and precision agriculture help soils retain water, reduce costs, improve soil health and preserve water quality (64). The risks associated to different technologies should be assessed (84).
- **Investment** (1, 66) in R&D (11), in agricultural production (77, 82), logistics and good governance (62), infrastructures (3, 77) and trade and their impacts on nutrition outcomes (77). Role of foreign direct investment (84) in the nutrition transition, Hawkes, 2006 (6). Responsible investment in agriculture and food chain (77).
- **Food fortification** (3, 10, 37) or **supplementation** (47). Food fortification or supplementation do not contribute to sustainability (4, 84) and do not address the needs of those (subsistence farmers) who do not normally purchase food (20). The report should assess the possible access to (bio)fortified products for the poorest (80). Folic acid fortification is controversial (43). The issue of micronutrient supplements vs. food based solutions would need more discussion (26). **Biofortification** (62) is a promising innovation to improve micronutrient intake and status (38). Fortification and biofortification are different in term of process, content, issues and targets (38, 84). The report should use the official definition for biofortification (38), based on WHO definition (73). Controversies around fortification often related to misused/misunderstood terminology (47). Fortification should not be a general strategy: food based approaches (balanced and diversified diets) should be the first priority in meeting micronutrients intakes and promoting healthy diets (81, 84). The draft should address the risks of (bio-) fortification (84). The draft fails to analyse the two critical and opposed paradigms of **agro-biodiversity** and **food fortification** (84).
- Increase **dietary diversity** (81, 84) building on local wild and cultivated **biodiversity** and ecosystems (4, 54, 84) and on traditional farming systems (18). **Biodiversity conservation** both ex-situ and in-situ for dietary diversity and for its insurance value (38, 54). Women's empowerment impact on child dietary diversity (11). Positive impacts on health of dietary diversity (54). Promotion of **wild foods** for dietary diversity and quality has to be balanced against the risks for biodiversity (42).
- **Fair trade** of **quality products** (4, 84).
- Maintain and attract **youth** in rural areas and the agricultural sector (8, 11, 44)

- Support the small-scale farmers / small restaurants / independent retailers: contribution to employment and to FSN (8).

Consumer behaviours:

- Importance of **education, information** and **advice** on good nutrition (in particular for women and children) to generate **consumer behavior** changes (3, 8, 13, 20, 26, 53, 54, 55, 56, 58, 59, 62, 66, 67, 77). Brazilian food and nutrition education agenda (76). Information must be part of a larger "educational" strategy (26). No examples of policies and programmes aimed at improving consumer awareness (26). Professional training (26), transfer of knowledge, innovation and technology (36, 62), and **capacity building**, in particular for farmers (34, 49). Importance of food and nutrition education in agricultural schools as well as for subsistence farmers and their families, mostly depending on their own production (34).
- **Physical activity** (in particular for children) (3).

Governance: policies, programmes and institutional actions:

- **Multistakeholder initiatives / partnerships** (81, 83): Sustainable Food systems Programme of the UN 10YFP on SCP (41, 44, 77). MSI are essential to address multiple challenges of FSN (see SDG17) and can contribute to create new standards: examples given in (77). Role and limits of **public private partnerships** (1, 53, 62, 64, 71, 81, 84).
- **Social protection:** impact of large-scale social protection programs on diets (11). Targeted welfare investments to help the most vulnerable (73). **Conditional cash transfers** (53).
- Need for a **territorial** approach to food policies (4). No **universal balanced diet**: depend on the life cycle and on the specific habitat in which the person live (**climate, geography, soil)** (8).
- **Fiscal policies and incentives** (81, 84). WHO (2016) recommends a 20% tax on sugary drinks (84). The example of Mexico tax on sugars should be analysed (9, 11, 83, 84). Mixed outcomes of **taxes** and **subsidies** (75)**.** Taxes on **ultra-processed** (1) or junk (50) **foods**. Input subsidies (irrigation, fertilizer) (18). Provide evidence on the impact of fiscal tools on obesity and NCDs (62).
- **Regulation** (13, 16) of food systems at local level from a **right to food** perspective (4). Respect of legal frameworks and regulation (84). Regulation: of product formulation (81), of **marketing**, promotion and **advertising,** in particular for children and adolescents (1, 3, 42, 46, 50, 58, 77, 81, 82, 84) on all media channels (84); and of **sale,** in particular for (ultra-processed) foods (1, 3, 84). How can regulation work in a globalized world (42)? The draft should cover not only regulatory but also **voluntary** approaches (58), such as organic production (74, 81), and involvement of the private sector in those voluntary initiatives (67, 74).

Food environment:

- **Food labelling and certification** (38, 42, 58, 77, 81, 84). Impact and limits, opportunities of Front-of-Pack labelling are unduly addressed (43, 56, 58, 84).
- **Breastfeeding** (3): long term benefits of breastfeeding for nutrition status and health later in life (82, 84): the draft should address the question of breastmilk substitutes and refer to the International Code of Marketing of Breast-milk substitutes (56, 71, 81, 82, 84), and include examples of policies that protect and promote breastfeeding (81, 84).

- **Public catering/procurement:** school canteens, hospitals, public cafeterias, retirement homes (…) are key entry points for promoting more healthy and sustainable diets – see examples in (4, 8, 46, 54, 58, 81). Nutritional impacts of school feeding need a more nuanced discussion (26). Successful initiatives of public food procurement in Brazil (54, 76).
- **Re-localize food systems** (4, 50, 77): revisit **traditional diets** (4), go back to local knowledge (11), to traditional farming practices adapted to soil and climate conditions (18). Ensure harmonious articulation of local, national, regional and global food systems (4). Support **local markets, farmers' markets, short food chains** (4, 50, 84), direct sale from producer to consumer (77) and circular economies (84). Local foods are often perceived as "food for the poor" (54). The contribution of informal food systems (including informal markets) to FSN is missing in the draft and would deserve more research (41, 74, 77).

Diets:

- Importance for health and nutrition: of **animal-sourced foods**, including dairy products (51, 56, 60, 75, 86), as a source of protein and micronutrients (59); of **fruits and vegetables** (8), **pulses** (12), **underutilized food crops** (13, 54), including medicinal plants (54). The issue of meat and animal-sourced food consumption is not discussed in the report (81, 84). The role of **fibers** should be further developed (62). Need to develop **alternative sources of protein** (62). Improve varieties of orphan crops (41) or local crops through participatory plant breeding approaches (44). New evidence suggests that dietary recommendations should shift towards a dietary pattern approach, including aspects of taste, balance, accessibility, affordability, rather than focus on single nutrients (56, 60, 62).
- **Fish** and **Seafood** (19, 52)**:** fish not only efficient converters of feed into protein (22, 52, 78) but also source of highly bioavailable micronutrients (22), including iodine (10, 22), and omega 3 essential fatty acids (EPA, DHA) (22, 78), vital for brain development in the first 1000 days (78). Oceans overlooked in the report as an important potential source of food (as well as employment and livelihoods) in the future (10). Aquatic animal production systems have lower carbon, nitrogen and phosphorus emissions per kg of output compared to terrestrial (52). Important contribution of fish in lowering NCDs (10, 78). Fish and Seafood would deserve a separate chapter/section in the draft (10), referring to the HLPE report on Fisheries (52). Major fisheries or aquaculture systems and their impact on FSN are not described – aquaculture now main source of fish consumed (22, 52). Small Island Developing States are ignored in the draft (22). Some small indigenous fish species consumed in Bangladesh contains 115 times more Vitamin A per gram than silver carp (54)
- Get **protein from plants**, particularly in dry LMIC (33)
- **Mediterranean diet** (4, 23) – as well as **Nordic diet** (4) and **DASH diet** (56, 62) - should be better defined (56, 62) and given more space in this report, not only as a healthy diet but also as a sustainable lifestyle and cultural model (23).

5) Chapter–specific observations

Introduction:

Two contributors (29, 64) questions the relevance of figures of USD3 trillions for the environmental costs of industrial farming.

Chapter 1. Approach and conceptual framework

The following elements could be distinguished in a food system: yielder system, transport system, storage system, preserver system, preparation (both refiner and culinary) system; as well as the seller system (8). **Packaging** and **advertising** systems increase the cost without increasing the value of food (8).

The conceptual framework does a good job of incorporating all the elements of the food system within a one page graphic (85). It may be factually correct but it is inadequate as it does not expose the tensions, between hegemonic global industrial food system and local food systems, that influence dietary choices and, therefore, does not highlight useful pathways for policy action (84). The industrial food system should be assessed as a problem rather than a solution to malnutrition and sustainability (84). The analysis should cover the standardization and growing uniformity of agricultural production, food and diets (84).

The conceptual framework is overly complex (83) and can be improved and simplified (25, 28, 42). The framework in the 2013 SOFA is clear (83). In the conceptual framework, cultural norms (22) and structural political drivers (1) are missing; population growth is missing as a driver (11); all types of drivers (gathered in one rectangle) have impacts on all components of the conceptual framework (23, 83); the arrows are not clear (83) and many feedback loops missing (48, 73, 77, 84), e.g. to show impacts of diets on value chain actors choices … (23, 26); there is a powerful bi-directional relationship between food systems and dietary patterns behaviours (43, 73); socio-cultural drivers should be more elaborated – beliefs and perceptions are strong drivers of consumer choices, even in situations of scarcity (see 26); choice of the consumers may be limited (81, 84); the elements in the “diets box” of the diagram do not correspond with the definition of diets (p12) (66); what’s the meaning of the dotted box around food environment? (81)

The conceptual framework of UNEP IRP report on Food systems and natural resources (Ch8) (48), and the UNSCN report on Investment for Healthy food systems (65, 66) could be useful references.

Section 1.1.2 links the elements of food systems with diets but not with nutrition : vulnerable groups should be mentioned earlier in the report (66)

Chapter 2. The Burden

This chapter could be shortened (some materials put in annex) as burdens of malnutrition are already well covered by other reports: here we need to focus on the impacts of food systems on nutrition throughout the life cycle (66, 68 ,72, 73, 75). The concept of the double burden of malnutrition is framed quite negatively (48), is not well articulated and shall be examined at individual, household, national, regional and global level (42, 55). The distribution of burdens shall not be presented only across the regions but also across vulnerable populations (84). PT is invited to use the latest available (WHO) data to describe the burdens of malnutrition and the corresponding trends (82).

In section 2.1, the definition of stunting is not in line with ICD 11 (WHO international classification of diseases). The focus on Pacific region in section 2.2 is welcome (79). Chapter does not address the causes of overweight and obesity (81) and of micronutrient malnutrition (84). May be worth to add a section 2.3.4 for Zinc deficiency, a list of “other important micronutrients” is also suggested (33). Many food related NCDs are missing (48).

Chapter 3. Dietary Changes and their Drivers

In chapter 3, the discussion on **animal sourced food** is not well balanced, inconsistent (see 3.1.1 and 3.1.3), and not in line with the 2016 HLPE report on livestock (56, 62, 75).

Some sections in Chapter 3 would deserve their own report (climate change, urbanization, globalization, culture and religion aspects) but their content is generic and not particularly solution oriented (56).

Section 3.1 do not consider the Pacific region (79). Section 3.2 needs more elaboration (48). The assumption that healthy diets are more expensive (p51) needs to be substantiated: need to look the food budget as a whole (4, 84). Section 3.2.3 on trade seems a bit biased (48, 56, 73), gives an overly positive picture of trade (84). This section could be more realistic (36) more accurate (62). Some sections (food prices, population…) look very lengthy (73). The section on socio-cultural drivers needs a total rewrite (84). The section on "social networks" should go under socio cultural drivers and should cover the role of social media (83).

Chapter 4. Garnering Quality Diets from Sustainable food systems

Chapter 4 (and particularly section 4.2.2) is weak and biased (17) should be strengthened and restructured so as to help the readers differentiate main points from details (47). Too much emphasis is given to high-tech modernization and too little to existing alternative systems (short circuits, participatory guarantee systems, community based systems, organic agriculture, geographical indications…) (74).

The draft currently includes two separate frameworks (fig 1 and section 4.1.2), this is redundant and confusing (73).

Efficient policies and programmes are well highlighted in the case studies (41, 44, 47, 83), section 4.1, but a conclusion is lacking on what are the main constituents of an effective policy or program (47). The draft should provide less examples but analyzed more in depth, with the view to illustrate possible policy options (84). In that perspective, the draft should: focus on the achievements of those policies and programmes rather than on programmes that have just started (56, 62, 75), focus on well documented examples (58). Case studies should also consider combination of measures that often has a strong impact on nutrition (58). The report should include cases studies illustrating the concept of "double-duty actions" addressing multiple forms of malnutrition (81, 82). The report should rely more on **traditional, indigenous** and **experiential knowledge** on nutrition and diets (4, 27, 84) and include more case studies promoting agro-ecology, community based agriculture, access to land through agrarian reform, territorial markets, public procurement (84).

One contribution supports the case study on Australian Health Star Rating (HSR) system (79), while others recommend that this system is not cited in the document (43, 84). Add a case study on South Korea (81). WFP implement nutrition sensitive programmes in the framework of the Purchase for Progress (P4P) approach that should be presented as relevant case study in this report (83). The case of Chile combining marketing regulation labelling and taxation should be included as a very comprehensive example of demand side policies for healthy diets; the Indian national food security act should be included (84).

Section 4.2: could be strengthened, many more solutions are available (41, 44): the report should provide more concrete conclusions regarding possible pathways (58) building on the categorisation of food systems (65). The section 4.2.1 on **technology** looks biased: some parts might come from "fabricated evidence source" (1). The draft emphasises new technologies and innovation: traditional farming and food production practices should be given equal or greater attention: a deeper understanding of those traditional practices,

contributing to sustainable and healthy diets, should be identified as a key area for future research (51, 84).

Section 4.2.2. What's the value added of the section on "Agricultural heritage and precise targeting"? (42). Section 4.2 focuses on food system supply interventions (1) however, the biggest constraints are on the demand side, i.e. on the **social determinants of nutrition** (1). More attention should be given to agricultural policies and innovations enabling sustainable and nutrition sensitive agricultural development (47, 80). PT should add examples of national strategies that focus on malnutrition e.g.: Brazil's 2nd national food and nutrition security plan 2016-2019 and Malaysia's 3rd national plan of action for nutrition 2015-2025 (81). The "Dietary Guidelines for the Brazilian Populations" are a useful reference (1, 53)

Section 4.2.3 on social movements is confusing (42), should be removed (62) or should not focus only on CSM (41) and should provide a more nuanced an in-depth reflection on the contribution of social movements to the nutrition agenda (51). Given its important role in food systems, the private sector should be included as a key area of focus in section 4.2.3 (79)

Section 4.2.4 should mention the need for nutrient content data (32, 59). The draft could build on FAO/INFOODS food composition database (54). The statement p108 "Concerning agriculture, there are already emerging hypotheses and little empirical evidence on the role of agriculture and other nutrition-sensitive sectors on nutrition" is not consistent with the importance given in the report to improvements in agriculture (26).

Nutrition governance must be inserted in a wider perspective and cannot be dealt with independently of national and global economic and political governance (1).

6) <u>Editing, references.</u>

Sources of tables and figures are important and not always provided (22, 82). PT is invited to check the quality / uncertainty / consistency of data used in the report (62, 75, 77). Some figures or graphs (e.g. fig 26) are not easy to read and to understand (77)

The project team should check the scientific quality of the references and avoid opinions, ideological and unreferenced statements (56, 62, 64, 75), inaccurate statements (81), or statements not supported by references quoted (60, 62, 75). Avoid outdated references (73, 77)

The quality of the draft could be further improved avoiding repetitions– e.g. p48, L10-13 and L26-29 - (22, 81) and redundancies.