We, the NCD Alliance and World Cancer Research Fund International, congratulate the authors for a comprehensive V0 draft and welcome this opportunity to comment on the report early enough to allow sufficient time to give proper consideration to the feedback received. Food systems play a critical role in shaping diets and nutrition - two important determinants of diet-related NCDs, including cardiovascular diseases, diabetes and some cancers.

Key messages

1. **Set out a vision for nutrition-promoting and sustainable food systems that defies ‘business as usual’**. In order to do so it is essential that the authors address controversies head on and take clear positions to encourage fundamental shifts in understanding of the issue and ambitious and solution-oriented policy-making.

2. **Focus on the solutions rather than the analysis of the issues**. Much of the analysis the report provides has been well documented elsewhere and could be summarized/annexed so that more space can be given to discussion of the solutions.

3. **Lay out ambitious and practical recommendations for action**. The report should leave policymakers with a clear set of recommendations, practical guidance and a call to action.

4. **Make policy coherence more central to the report**. The report should emphasize the importance of government leadership in both developing and implementing public policies and in bringing together actors across sectors to foster policy coherence and enable joint agenda setting.

5. **Formulate research priorities to reshape food systems**. Fundamental shifts in agriculture and food systems require re-orientation of research and investment agendas.

Consultation questions

1. **The purpose of this report is to analyse the ways in which food systems influence dietary patterns and hence nutritional outcomes. The objective is to focus on consumers and consider sustainability issues. The report aims to be solution oriented and to highlight efficient policies and programs. Are those major objective(s) clearly reflected in the V0 draft?**

   - The report’s introduction conveys a **sense of urgency** to address malnutrition in all its forms through systematic and ambitious interventions throughout the entire food system. Unfortunately, this sense of urgency and the critical message that low-and-middle-income countries “do not have to follow the long and damaging path that many high-income countries have taken, involving the creation of food systems that maximize profits without an adequate focus on nutrition consequences” gets lost quickly in the descriptive tone of the current document that fails to lay out ambitious and practical recommendations for action.

   - The report should frame food systems as a major **opportunity for sustainable human and environmental development** and focus on harnessing synergistic action across the agriculture, health/nutrition, commerce/trade and environmental sectors. **The central question the report should seek to answer is what a good food system looks like and make recommendations for what policymakers need to do to get there.** We therefore encourage the authors to provide more detailed and practical guidance on multisectoral collaboration to achieve policy coherence and create win-win solutions for nutrition, agriculture, the
environment and the economy. The challenge of food systems that do not deliver adequate nutrition to the world’s population while contributing to climate change and environmental degradation on a large scale, is too big and too urgent for the report to avoid taking clear positions.

- **In order to strengthen the sustainability dimension of the report, we recommend that it references the Paris Agreement** of the Conference of the Parties to the United Nations Framework Convention on Climate Change which sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C. Taking bold actions in the food system is an imperative, not an option and an important means to comply with commitments made against the achievement of the Paris Agreement.

- **The report’s recommendations should be underpinned by the recognition that food production needs to shift from food security alone with a focus on quantity and calories to food and nutrition security with a focus on high-quality diets for all** within a system in which a) public policies and private sector actions are aligned toward the goal of accessible, available and affordable healthy diets and b) agricultural practices conserve limited water supplies and promote long-term preservation and restauation of soils, forests and biodiversity.

- **Given the report’s focus on consumers and the food environment, the authors should include a much more in-depth analysis of the commercial drivers of malnutrition in all its forms** and highlight the urgent work that governments must undertake in setting a public policy framework that effectively regulates product formulation, labelling, advertising and promotion, uses context-specific fiscal policies and incentivizes nutrition-promoting private sector actions.

2. Do you think that the overall structure of the draft is comprehensive enough, and adequately considered and articulated? Does the draft strike the right balance of coverage across the various chapters? Are there important aspects that are missing? Does the report correctly focus on the links between nutrition and food systems without straying beyond that?

- **Currently, it is not clear that the solutions rather than the analysis of the issue are the focus of the report**. We propose that the authors consider restructuring the report so that case studies and solutions appear sooner. Furthermore, the report should leave policymakers with a clear set of universally applicable recommendations and call to action.

- **Chapters 2 and 3 on the burden, dietary changes and their drivers are too detailed**. As much of this content has been well documented elsewhere it should be summarized succinctly and referenced well throughout.

- **Policy coherence should be more central to the report** since without it, changes implemented to only one part of the food system will be insufficient. In particular, longstanding division of jurisdictional responsibilities within governments and agenda-setting – between agriculture, health, social protection and commerce – need to be integrated. The Global Panel on Agriculture and Food Systems for Nutrition’s report *Facing the challenges of the 21st century*¹ provides examples of how actions can be aligned for coherence across food systems (e.g. see table 7.7). The HLPE report should build on this work.

- **We propose that the concept of “double-duty” policy actions be discussed in the report based on guidance currently being developed by the WHO**. Double-duty actions are those

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that have the potential to impact multiple forms of malnutrition simultaneously (e.g. undernutrition, NCDs and overweight/obesity), rather than addressing a specific type of malnutrition in isolation. Include examples of double-duty actions as case studies in section 4.1.3. For examples of double-duty actions see brief “Ambitious, SMART commitments to address NCDs, overweight & obesity”.  

3. Does the conceptual framework need to be edited? Simplified? Should “the food environment” as defined in the draft be central to the framework?

- We welcome the emphasis on food environments. However, food environments remain only one component of the food system that affects nutrition outcomes. To ensure accessibility, availability and affordability of nutritious and sustainably produced food, actions across the food system need to be aligned for coherence. For example, policies targeting food environments to influence consumer behaviours will not be effective if policies earlier in the value chain limit the availability of nutritious food.

- The report must include food availability in the definition of food environments. Food availability is distinct from food accessibility and refers to the physical availability of food (in the desired quantities) within the food supply. To be accessible, a food needs to be available within the food supply. Both the food supply and food environments can shape what food is available. Ensure food availability is included whenever food environments are discussed in the report. Currently the report is not consistent in how it describes the food environment’s impact on diets and nutrition. For example, section 1.1.2 does not include availability: “Within the food environment, consumers are influenced by issues of access, affordability and acceptability and by the information available to make choices, be they healthy or unhealthy.” (line 47-48, p. 17) but section 4.1.2 does “The food environment influences diets and nutrition by mediating food availability, access, affordability and acceptability as well as information and guidelines, food composition, branding and quality” (Line 1-2, p. 70).

- More specific comments on the conceptual framework:
  - We recommend clarifying the meaning of the dotted lines around ‘food environments’ within the conceptual framework (Figure 1, page 14).
  - ‘Consumer behaviour’ is described as “choosing where and what food to acquire, prepare, cook, store and eat.” We argue that choice is not an accurate descriptor since people can rarely choose the food environments in which they live, work and play. Depending on the food environment, choice is quite limited.
  - There is overlap in the ‘value chain actors’ and ‘food environments’ (e.g. retail, marketing and advertising). We would argue that retailers, markets, food outlets and restaurants make up a significant portion of the food environment.

4. Are production systems and their role in shaping diets and nutritional outcomes adequately addressed?

- We encourage the authors of the report to consider the analysis and recommendations by the International Panel of Experts on Sustainable Food Systems’ report “From Uniformity to Diversity” and the Global Panel on Agriculture and Food Systems for Nutrition “Food

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systems and diets: Facing the challenges of the 21st century\(^4\), in order to strengthen section 3.2 Food system drivers that impact diets and nutrition (in particular 3.2.1, 3.2.2 and 3.2.3) and to provide more ambitious alternatives to the ‘business as usual’ approach of industrial agriculture and current food production systems in section 4. Garnering quality diets from sustainable food systems. The viability of transitioning to organic and agro-ecological food production in light of increasing global population and urbanisation, and relevant case studies, should receive greater attention.

- We encourage the authors of the report to include issues of dietary diversity within food systems that prioritize mono-cropping of energy-dense staple crops, nutrient content of crops grown on soils lacking nutrients and minerals and the link between soil-degradation and nutrient and anti-oxidant contents of produce, as well as agrochemical exposure and their impact on nutrition and health outcomes.

- We recommend that the report focus greater attention on the role of public procurement in institutionalizing healthy, sustainable diets, shaping norms and incentivizing suppliers and contractors to align their value chains accordingly.

- Importantly, the report should issue a clear call to refocus agriculture research agendas and investments around the aim to achieve healthy diets and truly sustainable production systems recognizing that a paradigm shift and fundamentally different approach may be needed.

5. Does this draft cover adequately the main controversies in the field of nutrition and food systems? Are there any remaining gaps?

- The report does not adequately address the impact the private sector has on food systems, in particular food environments. Foods are being processed more than ever before, shifting the value and power within food systems to the middle of the value chain. As such, decisions made by large agri-businesses, manufacturers and retailers are increasingly shaping food systems and influencing the availability, accessibility, affordability and desirability of food.

- We believe that the report overestimates the role of food fortification and product reformulation in shaping healthier food systems. Even though fortified foods can fill certain nutrient gaps in situations where micronutrient-intake cannot be ensured otherwise, fortification should not be a general strategy for achieving healthy diets for all. Food-based approaches should be the first priority in meeting micronutrient intakes and promoting healthy diets. Similarly, reformulation can reduce the levels of saturated and trans-fats, salt and sugar in a product but does not thereby make the product ‘healthy’ albeit admittedly ‘less unhealthy’. Additionally, there are risks to ‘discretionary fortification’, used by manufacturers as a marketing technique, whereby vitamins and minerals are added to products.\(^5\) This latter approach is particularly problematic as it can and is being used by companies to brand processed food high in sugars, fat and salt as ‘healthy’ in the absence of sophisticated regulation of health claims. Despite the addition of micronutrients to unhealthy food products these may still contribute to overweight and obesity.

- We believe the report should acknowledge the proliferation of ultra-processed foods in the global food system and their role in contributing to overweight/obesity. Ultra-processed foods are typically energy-dense, high in fats, sugars and salt, and low in other


nutrients, micronutrients and anti-oxidants contributing to growing rates of overweight/obesity and diet-related NCDs. They are products that combine (often cheap and low-quality) processed ingredients and make up a large proportion of calories consumed globally. For example, in the US ultra-processed foods have been found to contribute almost 60% of calories and 90% of added sugars consumed. Stricter regulation of health claims on ultra-processed products is required, as are public policies and private sector actions that increase the accessibility, availability and affordability of foods that contribute to healthy diets (instead of ultra-processed foods).

- **When referring to alcohol consumption (p. 20, line 12-13), the report should state that drinking any level of alcohol regularly carries health risks and that drinking in moderation only reduces health risks** (as opposed to being 100% safe) while still contributing empty calories to the diet. Many people do not consider how many calories they consume through alcoholic drinks and dietary guidelines should aim to dispel common myths about alcohol, clearly state what constitutes “moderation” and point to the possible contribution of alcohol to overweight/obesity and NCDs, in particular cancer. Alcohol consumption is linked to an increased risk of six cancers and is classified by the International Agency for Research on Cancer as a carcinogen. Additionally, a recent literature review published in 2016 concluded that regular moderate drinking had no net health benefits compared to abstention or occasional drinking.

- **A significant barrier to policy development and implementation in some parts of the world has been the misleading portrayal of government interventions such as regulation of product reformulation, advertising, and fiscal policies as “nanny-statism”** (e.g. taxes on sugary drinks in the United States). This argument is being propagated by the food and beverage industry to distract from the fact that corporate practices shape food environments and greatly influence consumer choices thereby directly contributing to escalating rates of overweight/obesity and diet-related NCDs. The costs of this epidemic are absorbed by the public, not industry, and public policies to counteract harmful corporate practice are in the best interest of the public.

- **We note that the report does not discuss the issue of meat and overall animal-source food consumption.** Animal-source foods (e.g. dairy, eggs, fish and meat) can be important sources of nutrients, especially for vulnerable populations such as infants, children, adolescents and women of reproductive age. While some populations continue to have insufficient access to these foods, their consumption has reached unhealthy and unsustainable levels in many countries. In addition, the environmental and climate footprint of livestock is significant. By addressing the overconsumption of animal-source foods, in particular red meat, win-win solutions for health and climate can be created. The report should recognize animal-source food consumption as a critical issue for nutrition and food systems discussing both better access in some parts of the world and approaches to decreasing consumption globally, identify case studies that illustrate shifts toward plant-based diets, and possibly formulate a call for research on the issue.

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7. Does this draft adequately show the multiplicity and complexity of diets and nutrition issues across different food systems and specific contexts with a good regional balance?

- The report accurately describes the multiplicity and complexity of diets and nutrition issues across different food systems, but does not adequately address solutions to these issues.
- A good regional balance exists in the case studies highlighted in chapter 4, with over 30 countries included.

8. What areas of the document are in need of strengthening or shortening?

- Section 2.2 Overweight and obesity and its causes and consequences does not address the causes of overweight and obesity. Table 3 includes a short list of factors that increase the risk of obesity, but we find this insufficient. The causes of overweight and obesity are complex, resulting from the interplay of a wide range of physiological, behavioural and environmental factors across the lifecourse.\(^{10,11}\) This complexity should be reflected in this section.

- The report should include more information about the impact of food marketing on the food environment, consumption patterns and food systems. Importantly, the impact of digital marketing needs addressing. Children and adolescents are increasingly targeted by highly effective sophisticated and individualised marketing of foods high in fats, sugars and salt through digital media.\(^{12}\) As there is currently little or no effective regulation, there is an urgent need to act as well as to conduct research to understand how to effectively control this rapidly expanding form of marketing. Digital marketing is capable of tailoring its content based on extensive personal data. Children and adolescents are a particularly vulnerable group as they are extremely susceptible to the power of marketing, which is of particular concern as food preferences developed in childhood influence food preferences in adulthood.

- Though the benefits of breastfeeding are discussed briefly in the report (p.34 line 4-7), the report does not include examples of policies that protect and promote breastfeeding. The only mention of breastmilk substitutes is in the context of trade: “Concerns have also been raised about the impact of trade on the availability and promotion of breastmilk substitutes” (p.54 line 39-40). The implementation of the International Code of Marketing of Breast-milk Substitutes and subsequent World Health Assembly resolutions should be included in the report together with policies that protect and promote breastfeeding. Breastfeeding is a highly cost-effective intervention to prevent both undernutrition and overweight/obesity and protect the health of mothers and should be underlined by the report.

- Table 3 (p. 34) needs updating: Diet-related cancers: for the increases risk column add ‘alcoholic drinks’ and ‘adult attained height’ and replace “salt preserved food and salt” with “Cantonese-style salted fish and foods preserved by salting”. For the decreases risk column, add “coffee” and “diets high in calcium” and remove “vitamin C, beta-carotene, carotenoids

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and folate”. Other sections may also require updating as the reference provided in the report is from 2002.

- **Human rights based approaches play an important role in ensuring food and nutrition security, as well as challenging the unequal socio-economic dimension of unhealthy diets, in many parts of the world and should be given greater priority in the report.** The report of Special Rapporteur on the Right to Food Hilal Elver (A/71/282) should be referenced in the HLPE report.

- **The section on income, food prices and volatility** states on p. 51 that “income growth is seen to be playing an essential facilitating role in reducing malnutrition”. We suggest that this statement be more nuanced taking into account that “as income increases, food scarcity diminishes but the cost of many nutritious foods remains high and the ability to purchase foods that do not support high-quality diets increases”.

- **In section 4.1.4 Knowledge gaps and areas for future work consider including the following:**
  - What kinds of public private partnerships improve diets the most; how to manage conflicts of interest and ensure accountability of all partners?
  - Effective methods for measuring the sustainability and nutritional value of diets.
  - Impact of increased investment in R&D to improve production of nutrient-rich crops (p. 74 raises this issue).
  - Policies that promote sustainable agriculture practices.
  - How to protect health in the context of existing trade and investment agreements. Additionally, how can future trade and investment agreements not only be health-sensitive but health-enabling?

- **As mentioned above, we believe chapters 2 and 3 overall could be shortened.**

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9. Chapter 4, Section 4.1 contains case studies/examples of effective policies and actions in different contexts/countries across the food system for diets and nutrition. Could you offer other practical, well-documented and significant examples to enrich and provide better balance to the variety of cases and the lessons learned, including the trade-offs or win-win outcomes in terms of addressing the different dimensions of diets for FSN?

- **We commend the authors for including a significant number of case studies of effective policies in the report. Learning from existing implemented policies and programmes is a powerful tool to improve policymaking. Lessons can be learned from both effective and ineffective policies. To facilitate the exchange of this type of information, we recommend including a handful of evaluated policies that were found not to be effective with a brief analysis of lessons learned.**

- **Consider including examples of ‘promising policies’ for every sub-section with a detailed description of the policy (similar to the case studies).**

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● The overlap between food system drivers/value chain actors and food environments in the area of retail, marketing and advertising is not adequately addressed. We believe policies targeting retail, marketing and advertising should be included under “retail, marketing and advertising” (p.84) instead of “food acceptability” (p.88) to reflect the fact that it’s the responsibility of manufacturers and retailers to responsibly market and advertise foods.

● For examples of implemented government food policies, visit World Cancer Research Fund International’s NOURISHING policy database: [www.wcrf.org/NOURISHING](http://www.wcrf.org/NOURISHING).

● Additional case studies to consider including:
  ○ We note the importance of case studies highlighting comprehensive approaches to protecting and promoting healthy diets and addressing food security and sustainability concerns through a food systems approach. Unfortunately, there are not many examples of countries which are taking a comprehensive approach involving all relevant sectors. This scarcity of examples is perhaps not surprising but should be pointed out by the authors and discussed.
  ○ We suggest the authors consider showcasing South Korea as an example of a country that has managed to maintain traditional dietary patterns to a large degree and has implemented a number of policy actions to improve the food environment in the areas of nutrition labelling, mandatory nutrition standards in schools, mandatory regulation of broadcast advertising to children for specific food categories, a ban on internet advertising that includes “gratuitous” incentives (e.g. free toys) and a government-led voluntary food reformulation programme.
  ○ Retail, marketing and advertising (p.84)
    ■ Include examples of policies that regulate retail environments, and food marketing and advertising:
    ● Mandatory regulation of broadcast food advertising to children in the UK and South Korea. An evaluation found that restrictions in the UK\(^\text{16}\) were not strong enough to change the exposure of children to advertising of foods high in fat, salt and sugar. Evaluations of South Korea’s regulation\(^\text{17,18}\) were promising, but also suspected that companies shifted marketing channels to those not included in restrictions. These examples emphasise the importance of developing robust, comprehensive policies that carefully define the age of a child, marketing channels and techniques, audience (e.g. marketing directed exclusively to children as well as marketing with a specific appeal to children) and food (e.g. defined as those to be banned and to be promoted using a nutrient-profile).

○ Food affordability (p.84)
  ■ P.84 lines 19-24. While there is great deal of modelling research that has been conducted to assess the impact of taxes and subsidies, implemented taxes are increasingly being evaluated providing an evidence to draw on. The report highlights Mexico’s sugary drinks tax (Box 27). Additional fiscal policies that have been evaluated include:


\(^{17}\) Kim S et al. (2013) Restriction of television food advertising in South Korea: impact on advertising of food companies. *Health Promotion International* 28(1), 17-25

\(^{18}\) Lee Y et al. (2013) Effect of TV food advertising restriction on food environment for children in South Korea. *Health Promotion International* DOI: 10.1093/heapro/dat078
● Denmark’s saturated fat tax (abolished in 2013)\textsuperscript{19,20} decreased the sale of twelve taxed food categories and decreased intake of saturated fat.
● Hungary’s “Public Health Tax”\textsuperscript{21} - decreased consumption of processed foods, especially in poor households.
● Berkeley’s sugary drinks tax\textsuperscript{22} - reduced sugary drink consumption in low-income neighbourhoods (population studied).
● Subsidies - consider also including an example of a policy in a high-income country that targets low income populations. For example, New York City’s Health Bucks programme that incentivises customers on income support to purchase fresh fruits and vegetables at farmer’s markets.\textsuperscript{23}

○ Information and guidelines (p.86)
  ■ Include example of mass media campaign that has focused solely on increasing fruit and vegetable intake (p. 86 line 7)
  ● Western Australia’s “Go for 2&5®” campaign\textsuperscript{24} increased the target audience’s awareness of the recommended servings of fruit and vegetables and resulted in a population increase in fruit and vegetable intake over three years.

○ Food acceptability (p.88)
  ■ Consider moving Canadian example to section “Retail, marketing and advertising” (p.84)
  ■ What people find acceptable is shaped by food preferences. Food preferences are set in childhood, therefore examples of policies working to shape healthy food preferences in childhood should be included here.

● Fruit and vegetable schemes in school: The National Schools Fruit Scheme in the UK\textsuperscript{25} increased dietary fruit intake among young children, as long as the fruit provided was free. Increased fruit intake did not persist beyond the duration of the intervention.\textsuperscript{26} The provision of free fruit in Norway’s School Fruit Scheme\textsuperscript{27} was associated with increased fruit intake of primary school children and their parents.

○ Food accessibility (p.89)

\textsuperscript{21} Bíró A (2015) Did the junk food tax make the Hungarians eat healthier? *Food Policy* 54, 107-115
\textsuperscript{22} Falbe J et al. (2016) Impact of the Berkeley Excise Tax on Sugar-Sweetened Beverage Consumption. *AJPH* 106(10), 1865-1871
\textsuperscript{25} Fogarty AW et al. (2007) Does participation in a population-based dietary intervention scheme have a lasting impact on fruit intake in young children? *International Journal of Epidemiology* 36(5), 1080-1085
\textsuperscript{27} Øvrum A, Bere E (2013) Evaluating free school fruit: results from a natural experiment in Norway with representative data. *Public Health Nutrition* 17(6), 1224-1231
Providing food in schools, hospitals, workplaces and government buildings has the potential to improve diets (p.90 line 2-3), however nutrition standards are needed to ensure the food available in these settings promotes healthy diets. Include examples of policies that set mandatory nutrition standards for foods and beverages available or sold in schools (including canteens, vending machines and other in-school outlets):

- Slovenia’s School Nutrition Law sets mandatory dietary guidelines for all school meals and an evaluation reported high levels of implementation.  

Farm-to-school programmes: In Brazil, in addition to requiring at least 30% of the food purchased through the school feeding programme be bought locally, directly from family farmers, the programme mandates a weekly minimum of fruits and vegetables, regulates sodium content and restricts the availability of sweets in school meals. A school procurement law also limits the amount of processed foods purchased by schools to 30% and bans the procurement of drinks with low nutritional value (e.g. sugary drinks).

10. Section 4.2.2 on “Institutional Changes and Governance Across the Food System Movements for Nutrition” requires more work, and more inclusion of evidence and of the various players. Any inputs on this section are most welcome.

- Nutrition is a cross-cutting issue, requiring multisectoral action. Government leadership is essential to prioritise policy coherence throughout food systems and to harness the various sectors which influence it. Several countries have bodies that provide an advisory role for improving food and nutrition security (e.g. Brazil’s National Food and Nutrition Security Council (CONSEA), the Finnish National Nutrition Council, the Malaysian National Coordinating Committee on Food and Nutrition) and others focused on preventing non-communicable diseases (e.g. high-level ‘NCD Commissions’ that coordinate multisectoral collaboration on NCDs). Importantly, these platforms must bring together all relevant sectors for policy coherence and joint action.

- International advocacy and cooperation (p.104): The International Coalition for Advocacy on Nutrition (ICAN) includes a variety of organizations collaborating on advocacy and accountability towards strong financial, programmatic and policy commitments under the umbrella of Nutrition for Growth (N4G). While N4G has been focused on undernutrition the focus of this group is expanding to include all forms of malnutrition.

- National strategies on nutrition and multisectoral coordination (p.104) consider adding examples of national strategies that focus on malnutrition in all its forms (e.g. Brazil’s 2nd National Food and Nutrition Security Plan 2016-2019 and Malaysia’s 3rd National Plan of Action for Nutrition (2016-2025)).

11. Is the report too technical or too simplistic? Are all the concepts clearly defined?

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31 Forthcoming - the plan adopts a whole-of-government approach and addresses all forms of malnutrition
The report is too long and should be condensed and focus on practical guidance to policy-makers and other stakeholders in the food system.

Terminology

We have noted some incoherency with regards to terminology used throughout the report, including:

- **Malnutrition in all its forms**: We encourage the report to clearly define what is referred to when using the terms ‘malnutrition in all its forms’ and that ‘malnutrition’ in the report is short for ‘malnutrition in all its forms’.

- **Overnutrition**: We discourage use of the term ‘overnutrition’ and propose that throughout the report ‘overweight & obesity’ be used instead. ‘Overnutrition’ is misleading in that calories consumed leading to overweight & obesity are often ‘empty’ of or low in nutrients other than sugars and fats. Therefore, overweight and/or obese individuals are not only harmed by excess body fat leading to chronic inflammation, hormonal imbalances and metabolic disorders which put them at risk of developing NCDs such as type II diabetes, cardiovascular disease and some cancers, but may also suffer from micronutrient deficiencies.

- **Chronic diseases**: We encourage the authors to use the term non-communicable diseases (NCDs) rather than ‘chronic diseases’. Not all NCDs are chronic and importantly some metabolic disorders and diet-related NCDs are reversible when addressed therapeutically early enough.

- **Sugar-sweetened beverages**: We would prefer the use of ‘sugary drinks’ rather than ‘sugar-sweetened beverages’ in line with the WHO recommendations on daily sugar intake which applies to both added and intrinsic sugars.

Specific comments by page/line

- P. 15, line 35-37: It is suggested here that science and technology can help develop more nutritious and healthier foods, including through fortification which can be used to “increase nutrient content of processed food”. We believe that fortification of food should be used to address malnutrition challenges that cannot otherwise be addressed but not as a general strategy to enhance nutrient content of processed food. We therefore suggest that this paragraph be rephrased to introduce specific conditions that would warrant food fortification.

- P. 15, line 45-48: We suggest rephrasing this section as follows: “National level policies involve governments, which could implement strategies and programmes to positively influence diets through fiscal policies (e.g. taxation of unhealthy products, revision of agricultural subsidies), regulation of the sale of unhealthy products in schools and public institutions, public procurement of local and/or organic food, limits on the level of salt and trans-fat in foods, interpretive front-of-pack labelling, and restrictions on food marketing to children and adolescents. Other national policies include land-use and land-tenure laws, and development of physical infrastructure that supports production and promotion of healthy, sustainably grown food, especially by smallholder farmers.”
P. 16, line 9 - 13: The authors may consider recognizing here that an increase in income also leads consumers to purchase organic food or more expensive plant-based alternatives to meat and dairy.

P.17, line 22-30: Discuss both the positive and negative potential for packaging to impact healthy diets. For example, though packaging provides media for conveying information to the consumer (labels), it is also a medium for misinformation and/or misleading information (e.g. dubious health claims).

P. 18, line 5-6: We recommend adding here that exports of fresh fruit and vegetables may lead to “fresh produce and nutritious foods” being unavailable.

P. 18, line 27: We recommend adding “clear and easy-to-read” before “nutrition labels”. In order for nutrition labels to be “a key source of potentially useful information for consumers seeking to make healthier choices”, in addition to being accurate they need to be clear and easy-to-read.

P.18, line 34: Consider expanding on what is meant by ‘the food environment within the household’. We suggest adding the following, “The food environment within the household and settings where individuals learn and work such as schools and workplaces, are also critical to diet quality”.

P. 19, line 4: We recommend adding “minimally processed” before “nutrient-dense foods”.

P.24, line 20-22: “Since 1990, the number of overweight children under five in low-income countries has nearly quadrupled, compared with a decrease of 20 percent among upper-middle-income countries (UNICEF/WHO/World Bank, 2015).” This sentence is inaccurate - there has been no decrease in the percentage of children under five who are overweight in upper-middle-income countries.

P.30, line 6: The International Obesity Task Force (IOTF) is now World Obesity/ Policy & Prevention 32

P30, line 12: Include the following reference for how obesity is linked to cancer: World Cancer Research Fund International. Weight and Cancer 33.

P.32, line 8-9: Clarify which diseases have risen exponentially.

P.33, line 8-13: Prevalence data is given for diabetes, but not for CVD or cancers linked to overweight/obesity. Be consistent across diseases.

P.33, line 25-26: Being overweight or obese is a major risk factor for NCDs, as such it should be included in this sentence: “The focus to reduce NCDs should be to reduce the incidence of the major risk factors such as overweight and obesity, high blood pressure, unhealthy diets and physical inactivity.”

P. 34: We commend the authors for not only highlighting the negative impact of energy-dense, nutrient-poor diets but also expanding on the protective properties of nutritious foods and their role in decreasing NCD risk.

P.48, line 1: “food systems contribute 19-29% of global anthropogenic greenhouse gases (GHG)” - consider providing a further breakdown (with percentages) of how different components of the food system contribute to GHG (e.g. meat production separate from agriculture, etc).

P.48: There is repetition in lines 10-12 and lines 26-29.

32 http://www.worldobesity.org/what-we-do/policy-prevention/
● P.49, line 19-24: This paragraph overemphasizes the change in activity levels and fails to mention the significant increase in availability of ultra-processed food during this time.

● P.56, paragraph beginning line 44: In order for school meals to have a positive influence on malnutrition in all its forms, nutrition standards are necessary - not only for school meals but for all food available in schools.

● P.60, line 22: Define ultra-processed food.

● P.67, line 37-38: Define nutrition-sensitive policies and how they are different from nutrition-specific policies.

● P.68 Figure 27: “Exit and entry points along the value chain for nutrition”. Consider making the distinction between the ‘nutrition entering’ and ‘nutrition exiting’ points along the value chain in the figure clearer (e.g. using different colours).

● P.69, Figure 28: We recommend adding nutrition and food skills education in school to “consumption food utilisation” and nutrition labelling (in addition to food labelling) to “distribution, marketing and retail” in the figure.

● P.70, line 37: We suggest defining “evidence of impact”, for example what is considered an impact (e.g. health outcomes or intermediary outcomes along a pathway of change)?

● P.71: To improve readability of this section, ensure that the sub-headings follow the same order outlined in the conceptual framework. Currently the food environments sub-headings are not aligned.

● P.81, line 6-7: We recommend adding saturated fat and sugar to list of “less healthy ingredients”.

● P.83, line 3-4: We recommend the report avoids using “best buy” terminology as the cost-effectiveness of specific interventions varies by country and is only one criteria used when priority setting. The WHO is moving away from “best buy” language.

● P.83: When discussing policies that address diet-related NCDs, include information about sugar reduction strategies in addition to transfat and sodium reduction policies.

● P.87, line 17-18: Consider providing examples or reference examples of where nutrition labelling has resulted in product reformulation.

● P.88, line 19-20: We recommend using stronger language here: “It is likely that stronger regulatory approaches are needed such as advertising bans to children.” Outline criteria that need to be considered to develop strong regulation (as outlined in our response to question 9).

● P.91, line 3-4: Consider providing an example of a municipal policy that has improved the provision of food (e.g. NYC food procurement standards).

● P.96, line 39: Consider adding FoodSwitch34 to the section that outlines smart apps. The FoodSwitch app is designed to help find out what’s in food and suggest simple, healthier switches.

● P.108, line 22-23: While it’s clear more research is needed to understand the mechanisms of ‘what works’ to effectively influence the food environment to stock/supply healthier food products, in stating “the mechanism of what works is not clear, be it government regulation, industry self-regulation or incentives” the authors do not do justice to what is known. For

example, sufficient research has shown that industry self-regulation of food marketing to children does not work.

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