**HLPE 3rd Note on Critical, Emerging and Enduring Issues - consultation on the V0 draft**

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**Collection of contributions received**

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# Topic note

The Committee on World Food Security, the foremost intergovernmental and international evidence-based and multi-stakeholder platform related to food security and nutrition, mandated its High Level Panel of Experts on Food Security and Nutrition (HLPE) to “identify emerging issues, and help members prioritize future actions and attentions on key focal areas” (CFS reform Document, 2009). In October 2013, the CFS requested the HLPE to produce a Note on critical and/or emerging issues (CEI) affecting food security and nutrition (FSN). This request came in the context of the CFS’s own ongoing discussion on the selection and prioritization of its activities. The HLPE published this first CEI note in August 2014. In October 2015, at its 42nd Plenary Session, the CFS decided that this HLPE note shall be updated at least every four years, depending on funding availability and the HLPE workload, and released in due time to be used at the starting point for the process of elaboration of the following CFS multi-year programme of work (MYPoW). The second note on CEI (2017) informed the MYPoW 2020-2023. The HLPE is now developing the third note, which has been renamed “Note on critical, emerging and enduring issues” (CEEI), recognizing that some of the key issues affecting food security and nutrition continue to exist, to inform the preparation of the MYPoW 2024-2027.

This [**draft note**](https://assets.fsnforum.fao.org/public/V0%20Draft%20HLPE%20CEEI%203rd%20note%20e-consultation_0.pdf) identifies seven key issues affecting FSN (presented in no particular order):

1. **Building resilient supply chains for FSN**
2. **Urban and peri-urban food systems**
3. **Conflicts and the fragility of food systems**
4. **Revitalizing climate policies for FSN**
5. **Recognizing the role and rights of food system workers**
6. **Building a meaningful interface for diverse knowledges and practices for FSN**
7. **Emerging and re-emerging infectious diseases challenging FSN**

This [**V0 draft of the CEEI note**](https://assets.fsnforum.fao.org/public/V0%20Draft%20HLPE%20CEEI%203rd%20note%20e-consultation_0.pdf) is published for e-consultation on the FSN forum platform from 25 April to 17 May 2022.

***Questions to guide the e-Consultation on the scope of the report***

With this e-consultation, the HLPE Steering Committee is seeking your feedback.

In particular, you are invited to:

1. **Share your feedback on the proposed list of selected critical, emerging and enduring issues (CEEI):**
	1. Are the seven CEEI identified by the HLPE the most important issues affecting food security and nutrition, globally and in specific contexts?
	2. Are there any other key issues that should be added and elaborated? If yes, please provide a justification of why they are “critical”, together with relevant literature and data.
	3. All the issues are interlinked, however, for the purpose of analysis and focus they have been presented separately. Please let us know if in your view some of the issues could be combined, or if the linkages between different issues should be further strengthened in the analysis.
2. **Share your inputs on one or more of the seven CEEI listed:**
3. Are the drivers and trends identified fully capturing the link of each respective CEEI with FSN outcomes?
4. Is there any aspect of direct or indirect FSN outcome that should be further elaborated?
5. Is there any missing reference to key literature and data?
6. Is the list of questions identified for each CEEI adequate to guide the development of a report on the topic? Would you suggest any additional questions or dimensions that should be further elaborated?

We thank in advance all the contributors for reading, commenting and providing inputs on this V0 draft of the CEEI 3rd Note. We look forward to a rich and fruitful consultation!

*Évariste Nicolétis, HLPE Coordinator*

*Paola Termine, HLPE Project Officer*

# Contributions received

## Yacob Aklilu Gebreyes, Livestock Trade Services (LTS), Ethiopia

Dear sir/madam,

I think you need to include emerging and re-emerging pests (Fall Army worm, Locusts, etc.) and possibly plant diseases as separate issue or in combination with human pandemic.

Regards,

Yacob

## Jane Battersby, University of Cape Town, South Africa

The document has done well to identify these 7 key (and interlinked) issues.

In response to the first prompt.

1) I believe that these 7 are well selected and address many of the key concerns going forward. However, I wonder if there is a need to address two issues more overtly - although they do thread through the text. The first is the role of large scale private sector actors and Big Philanthropy in shaping the food system and food system politics. It is implicit in the framing of the first key issue, but I believe it warrants far greater attention. Bene's 2022 paper addresses why this is essential (Béné, C., 2022. Why the Great Food Transformation may not happen–A deep-dive into our food systems’ political economy, controversies and politics of evidence. World Development, 154, p.105881.) And in the wake of the wide spread criticism of the UNFSS last year and the role of these actors, it seems important to address. This is even more evident in the work on nutrition transitions as per Phil Baker, Ron Moodie inter alia.

The second issue the explicit of inclusion of enhancing Agency of consumers and food systems actors within food systems transformation. This is implicit, paricuarly in key issue 5, but given the HLPE 2020 report framing, I would have expected a stronger focus on enhancing agency and on addressing factors that undermine agency.

In response to the second prompt

2) a) Key issue one needs to be more overt about the power of the corporate sector is shaping food systems and its politics (see above)

b) Within key issue 2 there could be a stronger presentation of the extent and nature of urban food insecurity (perhaps building on Tefft, J., Jonasova, M., Adjao, R. and Morgan, A., 2017. Food systems for an urbanizing world and perhaps focussing on dietary change e.g. Demmler, K.M., Ecker, O. and Qaim, M., 2017. Supermarket shopping and nutritional outcomes: a panel data analysis for urban Kenya (No. 858-2016-60246)..). Within the focus on urban there needs to be consideration of the drivers of transformation of urban food systems from an urban perspective. The inclusion of material on the importance of the informal retail sector is well noted, and yet the section fails to address where some the factors impacting this vital sector intersect with urban mandates and the urban political economy (Battersby, J., 2017. Food system transformation in the absence of food system planning: the case of supermarket and shopping mall retail expansion in Cape Town, South Africa. Built Environment, 43(3), pp.417-430., Battersby, J. and Muwowo, F., 2018. Planning and governance of food systems in Kitwe, Zambia: A case study of food retail space. In Urban food systems governance and poverty in African cities (pp. 128-140). Routledge.). The issue of the assumed absence of an urban food systems mandate is crucial here, and it may be worth engaging the New Urban Agenda's framing of the role of urban food systems in urban well being.

3) Given current experiences, I do wonder if the conflict key issue doesn't a require a module that focusses on the impact of conflict beyond national borders?

4) The framing of the climate policies section should be broadened to explicitly consider food system impacts of climate change, beyond the productive realm. Climage change will impact (is impacting) as points along the food supply chain, and impacting consumers ability to safely acess and store food. Indeed, it may be pushing consumers towards more shelf-stable highly processed foods. Sorry for self-citing again - but this may be useful: Battersby, J., 2013. Urban food security and climate change: a system of flows: In Climate Change, Assets and Food Security in Southern African Cities (pp. 46-67). Routledge. It is also worth being more explicit about how climate change impacts with affect different sectors within the food system differently, with smaller scale and informal sector actors being more likely to more severely impacted by weather events which destroy critical infrastrcture and resources. There is a need for a strong equity lens in this section.

5) Here it is important to note that there is a real challenge on accessing data on food sector employment outside of the agricultural sector. The disaggregation of ILO labour force data does not allow one to extrapolate food system specific data. This makes it really difficult to assess and monitor food based livelihoods and rights violations. Figure 3 in this paper illustrates some of the challenge of estimating livelihood data (Fanzo, J., Haddad, L., Schneider, K.R., Béné, C., Covic, N.M., Guarin, A., Herforth, A.W., Herrero, M., Sumaila, U.R., Aburto, N.J. and Amuyunzu-Nyamongo, M., 2021. Rigorous monitoring is necessary to guide food system transformation in the countdown to the 2030 global goals. Food Policy, 104, p.102163.) There is a long term need to modify modes of data collection. What cannot be measured, cannot be managed, and decisions about what is important to be measured need to be more transparent and consequences of failure to measure for effective governance and transformation must be flagged.

6) Within this key issue I think there needs to be more explicit engagement about how and why different forms of knowledge have been excluded and presentated as marginal in food system transformation processes. There was a lot written about this in the context of the UNFSS last year (Turnhout, E., Duncan, J., Candel, J., Maas, T.Y., Roodhof, A.M., DeClerck, F. and Watson, R.T., 2021. Do we need a new science-policy interface for food systems?. Science, 373(6559), pp.1093-1095.). This then returns to the critical questions of the power of large food corporations and Big Philanthropy in shaping the accepted knowledge systems informing policy, as well as questions of enhancing agency.

I look forward to seeing the next draft.

## John McCormack, Word Vision, United States of America

The drivers do capture and identify the links between CEEI and FSN outcomes, however the focus appears more on the drivers relationship with international trade and food systems. Maybe some discussion needs to take place around the role of International food systems versus local and regional food systems and the pros and cons of both. Certainly in times of major shocks and stresses such as Ukraine conflict for example the question might be asked because of the high connectivity/integration of the global food systems around specific commodities, what if our food production systems were not so heavily integrated at global level and the focus was more on local and regional food systems meeting the needs and demands of consumers and on strengthening local actors in those food systems, would that have a mitigating effect on shocks and stresses in comparison to the impact on a global food system which in many cases is what we have around certain specific commodities.

Is there any aspect of direct or indirect FSN outcome that should be further elaborated?

Is there any missing reference to key literature and data?

In relation to Question 2, 4 and 5, the following coment is made.

In relation to Q4, this might need further breakdown and elaboration as clearly the food systems be it global, regional and or local, the challenge faced by food systems is how best to deliver and make available critical food security foodstuffs (cereals, etc.) in times of major shocks, such as conflict and trade disruption , e.g. Ukraine conflict as an example. The question should be asked, in light of major disruptions to food supply and the weaponize of food and food trade in times of conflict can we evolve food systems and agreements around food supply to better address a) local, b) regional, c) international food supply systems that abide by international agreements and that food systems should not be weaponized.

Q5: What is the case for adoption of more localized and regional food systems and the enhancement and strengthening of smallholder producers in these systems to ensure local and regional viability and sustainability of such systems and their contribution to overall food systems resilience, is there a need to have a better balance between riles of large agribusiness and food systems actors with that promoting and strengthening local systems, local actors to better feed into and fir with a regional and global systems. Corporate farming versus family and smallholder farming?

Q2 second part of question should we be placing greater emphasis on local and regional food systems, strengthening them and their respective actors with a greater emphasis on family farms and on smallholders role in such systems and leading to shorter food supply chains as a mitigating effort against major shocks and stresses, notably conflict role in disruption.

## Rodney Cooke, CGIAR, Italy

V0 draft of the CEEI note for e-consultation: Observations by Rod Cooke (CFS advisory Group member representing CGIAR).

Thanks for your invitation of 26 April to comment. The seven CEEI stated in the covering note are:

**1. Building resilient supply chains for FSN
2. Urban and peri-urban food systems
3. Conflicts and the fragility of food systems
4. Revitalizing climate policies for FSN
5. Recognizing the role and rights of food system workers
6. Building a meaningful interface for diverse knowledges and practices for FSN
7. Emerging and re-emerging infectious diseases challenging FSN.**

The seven CEEI identified by the HLPE are very broadly based and cover the most important issues affecting food security and nutrition. The trends identified, aspects described and references listed in some of the CEEI are somewhat narrow and should be expanded. I offer comments below.

**1. Building resilient supply chains for FSN.**

I note that the title is now in the V0 Building resilient and equitable supply chains for FSN. I had argued for this in my mail of 29 March to CFS. That mail gave several supporting references to the supply chain /value chain literature.  I now add an update on the evolving CGIAR research portfolio: one of the new research initiatives has the title  ‘Rethinking Food Markets and Value Chains for Inclusion and Sustainabilities’. This provides many recent references and analyses for consideration by the HLPE team.

This Initiative aims to provide evidence on what types of bundled innovations, incentive structures, and policies are most effective for creating more equitable sharing of income and employment opportunities in growing food markets, while reducing the food sector’s environmental footprint.

This objective will be accomplished through:

* Making globally integrated value chains inclusive, efficient, and environmentally sustainable.
* Innovation for inclusive and sustainable growth of domestic food value chains.
* Innovations and policy design for development of cross-value chain services to leverage new employment and income opportunities.
* Knowledge tools for policy coherence and market reform for inclusive and sustainable food market transformation.

A full description of this initiative (and associated references) can be found on the cgiar.org site under ‘Portfolio Explorer’.

**2. Urban and peri-urban food systems**

I noted in an earlier exchange last March that Peri-urban food systems have been studied by many groups and are very country/location specific; a key factor being changing peri-urban land values – often a hot political issue. I recommend an approach that would ease any derived policy convergence would be along the lines of ‘ Strengthening food systems in the context of urbanisation and rural transformation’.

HLPE 15 (2020) on building a global narrative to 2030 included as recommendation 9:

‘ADDRESS THE SPECIFIC NEEDS OF DIVERSE RURAL AND URBAN CONTEXTS IN FORMULATING FSN POLICIES’. The associated text – to revisit in this consultation to strengthen the drivers and key questions -includes:

1. Ensure more equitable access to land and productive agricultural resources for small-scale producers who remain vital providers of food and food security in much of the less industrialized world.
2. Encourage investment in rural infrastructure development, agricultural services and access to markets, in order to mitigate rural to urban migration.
3. Develop policies that are targeted to helping people living with poverty in rural and urban areas to access nutritious food and healthier food environments.
4. Ensure that FSN policies and programmes connect growing rural and urban food needs, including in small- and medium- size towns, to sustainable livelihoods in the countryside that appeal to young people.
5. Support private and public sector investment in, and state-facilitated development of, peri-urban and urban agriculture in order to bring fresh foods, especially perishable horticultural products that are rich in micronutrients, closer to markets.

In box 14 of that HLPE 15 report there is **DEFINING A ROBUST RESEARCH AGENDA. That note identified the several issues as being critical and emerging; the first one noted was  ‘anticipating the inter-connected future of urbanization and rural transformation’.**

In that context, I add an update on the evolving CGIAR research portfolio: one of the new research initiatives has the title Resilient Cities Through Sustainable Urban and Peri-Urban Agrifood Systems.This Initiative aims to support a vibrant, largely informal urban and peri-urban agrifood sector, to help improve sustainability, equity and opportunity growth, and mitigate risks to human and environmental health. This objective will be accomplished through:

* **Enabling sustainable production of nutritious foods in (peri-) urban zones**, by identifying, adapting, piloting and scaling technologies and institutional innovations together with local partners and in collaboration with local governments.
* **Building inclusive and sustainable food markets and safeguarding supply chains**, by identifying ways that urban food marketing contributes to city resilience through two pathways: 1) building on the sociocultural benefits and convenience of local ‘wet’ markets for low-income consumers, and 2) safeguarding food supply against losses and waste.
* **Strengthening circular bioeconomy, food safety and the urban environment**, through, for instance, supporting private and public actors with technologies, business and finance models for a more circular bioeconomy; and supporting municipal authorities with adoptable strategies and guidelines to maintain food safety in growing informal urban and peri-urban food production systems and supply chains.
* **Improving food environments and consumer behavior for nutrition**, by characterizing food environments, dietary patterns, and their drivers and variations across seasons for key target groups; and creating a toolkit for assessing urban and peri-urban food environments and diets, with guidance for how to improve these.
* **Strengthening the evidence base and research and innovation capacities for urban and peri-urban agrifood system governance and growth**, by developing a cross-sectoral urban and peri-urban agrifood systems resilience framework; supporting urban agrifood startup enterprises to translate research outputs into marketable innovations; and establishing a virtual center providing knowledge, research and capacity development support.

A full description of this initiative (and associated references) can be found on the cgiar.org site under ‘Portfolio Explorer’.

**3. Conflicts and the fragility of food systems**

HLPE 15 (2020) on building a global narrative to 2030 included as recommendation 10: ‘ADDRESS THE FSN NEEDS OF THOSE AFFECTED BY CONFLICTS’. The associated text, pertinent to the ‘drivers’, includes:

Provide timely, adequate and nutritious emergency food relief for people affected by conflicts, including displaced people.

Ensure the availability of clean and adequate water and sanitation to facilitate food production, preparation and utilization in conflict and post-conflict situations.

As emergency relief is phased out, rebuild the conditions to have normal functioning food systems in post conflict situations.

Revitalize development and governance capacity and expertise in areas relevant to sustainable FSN during conflict and in post-conflict situations.

The recent HLPE paper on the Ukraine crisis discussed at the CFS B/AG meeting on 28 April updates some of this thinking

**4. Revitalizing climate policies for FSN.**

This should replay the CFS 49 (October 2021) discussion and background documents on the three UN Rio Conventions and FSN. That event addressed the issues critical to the world’s food security and nutrition, as a follow up to the Ministerial Round Table held at the UNFSS Pre-Summit, where links between the Conventions were highlighted as they relate to food security. An IFPRI/CGIAR speaker at CFS 49 discussed the role of research in supporting the Rio Conventions, and noted that a lot of today’s challenges are a result of under-investment in research, especially research focused on environmental challenges. Noting that governments currently spend more than USD 700 billion annually to support farmers and food production, less than 3% of this goes towards agricultural innovation, and that CFS intervention called for incentives to induce a change.

CFS 49 also included a Monitoring Event: CFS Policy Recommendations on Climate Change and Water. This discussed the use and application of the CFS policy recommendations on Food Security and Climate Change (2012) and Water for Food Security and Nutrition (2015). An earlier presentation by the HLPE considered these reports, and the scope for improvements in these areas. CGIAR inputs are included in that CFS 49 background document. An especially relevant CFS 49 Side event was SE 13 October 14: ‘Innovation as a force for good in the fight against climate change and malnutrition’, that SE explored many of these climate policy issues.

In that context, I now add an update on the evolving CGIAR research portfolio one of the new research initiatives has the title ClimBeR: Building Systemic Resilience Against Climate Variability and Extremes.

This Initiative aims to transform the climate adaptation capacity of food, land and water systems in six low- and middle-income countries, ultimately increasing the resilience of smallholder production systems to withstand severe climate change effects like drought, flooding and high temperatures. This objective will be accomplished through:

* **Reducing risk in production system-linked livelihoods and value chains at scale**, through agricultural risk management, digital agro-climate services, climate-smart agricultural innovations, diversifying production systems and reducing nutritional impacts of climatic risks.
* **Building production-system resilience through recognizing the relationships among climate, agriculture, security and peace**, by providing robust science on the climate security and agriculture nexus, and designing evidence-based environmental, political and gender equitable solutions.
* **Developing adaptation instruments to inform policy and investment**, integrating a top-down approach using participatory scenario workshops, in-country task forces and knowledge integration workshops; and a bottom-up collective imagination of futures, incorporating existing innovative grassroots practices and ensuring the inclusion of women, youth and marginalized groups.
* **Multiscale governance for transformative adaptation**, through: developing and integrating bottom-up multiscale polycentric governance frameworks for reducing systemic cascading risks; co-demonstrating transformative adaptation options with relevant actors to illustrate applicability across scales; and co-developing “champions of change” to advocate for multiscale polycentric governance.

A full description of this initiative (and associated references) can be found on the cgiar.org site under ‘Portfolio Explorer’.

The CFS Voluntary Guidelines on Food Systems and Nutrition (2021) are structured around seven focus areas encapsulating cross-cutting factors that are relevant for improving diets and nutrition. The second focus area is: ‘Sustainable Food Supply Chains to Achieve Healthy Diets in the Context of Economic, Social and Environmental Sustainability, and Climate Change’. This focus area includes ‘seeks to mainstream climate adaptation and mitigation and promote the sustainable use and management of natural resources’. The associated text bears re-visiting by HLPE in this consultation.

**5. Recognizing the role and rights of food system workers**

HLPE 15 (2020) on building a global narrative to 2030 included as recommendation 1: ‘UPHOLD THE CENTRAL ROLE OF THE RIGHT TO FOOD AND OTHER HUMAN RIGHTS IN FSN’. The associated text, useful to strengthen this CEEI, includes:

1. States should take stronger actions to honour their obligations and duties to respect, protect and fulfil the right to food and protect agency. This affects all states in the world in a spirit of solidarity.
2. Empower citizens as food system participants, especially women, indigenous people, migrant workers, displaced people and refugees and other vulnerable people and communities to exercise agency over their own livelihoods and ensure access to diverse, nutritious and safe food.
3. Ensure that food systems are more equitable and work for the world’s most marginalized producers, consumers and workers. The global private sector has a great responsibility here.
4. Provide support services and social protection, including in crises and complex emergencies.
5. The CFS should formally strengthen the Voluntary Guidelines on the Right to Food, by moving from “progressive realization” to “unconditional realization.”

That HLPE 15 report presents six dimensions of Food security and one of those is ‘Agency’. The text relating to that aspect includes consideration of human rights and disparities in wealth, income and power dynamics.

**6. Building a meaningful interface for diverse knowledge and practices for FSN**

There is a vast literature on this topic. Much of that is captured in the evolving CGIAR research portfolio: one of the new research initiatives has the title Harnessing Digital Technologies for Timely Decision-Making Across Food, Land and Water Systems. This provides a rich source of relevant issues and recent references.

**This Initiative aims to support sustainable and inclusive transformation of food, land and water systems by bridging the gender and urban-rural digital divide, improving equitable access to and quality of available information and systems, and strengthening local capabilities to best make use of the potential of digital technologies.**This objective will be accomplished through:

* **Enabling environment for digital ecosystems**, including policies, investment plans, frameworks, and innovation support systems, to strengthen local digital ecosystems and support the access of agrifood system actors to digital technologies and their management of climate and market risks.
* **Bridging the gender digital divide**, by developing a suite of tools and guidelines to track digital inclusion and present options to strengthen the empowerment and resilience of marginalized women and girls.
* **System dynamics modeling for food, water, and land resource management**: Building on system dynamics modeling with real-time data, the Initiative aims to complement natural resource management initiatives in the region with a next-generation decision support system.
* **Real-time monitoring of food systems for decisions** to inform multiple stakeholders who make time-critical decisions to respond to variation and shocks.
* **Enabling digital platforms and services for research and development practitioners**, facilitating user-specific, appropriate delivery of administrative and private data for the inclusive benefit of the public, and for more effective evidence-based decision making in food-water-land systems in a climate crisis.

**7. Emerging and re-emerging infectious diseases challenging FSN.**

In the CFS advisory group, we have had several discussions on the need for a ‘One Health’ approach; including presentations and side events at CFS 47 (February 2021). Much of that is captured in the evolving CGIAR research portfolio: one of the new research initiatives has the title Protecting Human Health Through a One Health Approach.

**This Initiative aims to demonstrate how One Health principles and tools integrated into food systems can help reduce and contain zoonotic disease outbreaks, improve food and water safety, and reduce anti-microbial resistance, benefitting human, animal, and environmental health.** This objective will be achieved through:

* **Pre-empting the emergence and spread of zoonoses** with epidemic and pandemic potential at the interface of wildlife, livestock, and people, including in bush meat value chains.
* **Reducing the burden of foodborne disease**with a focus on animal-source and other perishable foods, including in informal and traditional food systems.
* **Reducing the selection and spread of anti-microbial resistance** from livestock, fish and crop production systems.
* **Improving waste and water management**, with a focus on pollution from livestock and aquaculture, including zoonotic pathogens, antimicrobial residues and antimicrobial resistant bacteria and resistance genes.
* **Testing the effects of capacity building, incentives, and monitoring** on behavior of value chain actors and government personnel providing support or oversight for relevant sectors. Assessing the cost-effectiveness of innovations and the private and public cases for investment.

A full description of this initiative (and associated references) can be found on the cgiar.org site under ‘Portfolio Explorer’.

I hope that these comments are useful to the HLPE team taking these CEEI forward.

Dr R D Cooke

CFS Advisory Group member, representing the CGIAR System Organisation

## Lal Manavado, Independent analyst/synthesist, Norway

Comments on the Critical, enduring and Emerging Obstacles to FSN

Before we are able to determine that something is a critical obstacle to FSN, it would have had to endure for some time. Otherwise, there is nothing concrete for us to examine and assess its role as critical or not. As for the emerging obstacles, they may vary widely; we will discuss them later on. For the present, we may anticipate some of them in generic terms, but whether they would be critical, enduring or transient obstacles to FSN can only be ascertained with certainty only after they have taken place, hence this change of heading.

Before we talk about the seven items identified as obstacles to FSN, it would be useful to consider what may be reasonably considered to be a serious hindrance to FSN. Nobody could question the obvious fact that world’s food security and nutrition depends on the influences exerted on what generates food and on the appropriateness and the competence with which it is used. Food systems are the tool used for this purpose. Like all tools, they could be well or ill designed which represents their structural suitability to achieve FSN.

Even a sound tool may be put to some inappropriate use. We will expand on this problem later on. Likewise, the finest tool in the world in incompetent hands would not achieve much. Finally, we need to consider apart from food systems and the people who operate and use it, what other physical resources are essential for its operation. These then, constitute the three logically distinct but inseperable dimensions of food security and nutrition:

* Structural suitability of a food system adequately to perform its function; we have purposely represented a food system as a conceptual entity in order to emphasise the vital importance of both our notion of it and the material resources necessary to make it real and operational.

Consider a car, unless we have a correct notion of parts needed to build a car and where and how they are to be fitted together, our effort would not succeed. Then again, we may have the correct notion, but may not be able to obtain the right components or would procure unsuitable ones because someone has persuaded us to do so or for diplomatic reasons. All these would yield poor returns. System thinking, when judiciously used, enables us to distinguish between the conceptual and the material requirements necessary to achieve a given objective.

* People; we all are the end-users of one or more food systems. However, some are also workers/operators of an element in a food system eg., farmers and food transporters.
* Material resources; the critical ecosystem services necessary here include a salubrious climate, an adequate water supply and soil fertility. Next comes seeds, animals, prudent supplementation and the implements and equipment a food system requires.

It is easy to understand that if any one of the foregoing three were to disappear, the question of food security and nutrition would become merely academic. This implies that any adverse influence on any of them is an obstacle to achieving FSN. That presents us with a new challenge; what criteria may we justifiably use to ascertain what is a critical, enduring or an emerging obstacle to FSN.

This is a very serious problem; first, some of the greatest obstacles to FSN would have to be overcome by domains other than food and agriculture. In the ongoing discussion on this forum on “Reducing Inequity and Inequalities in Food Security and Nutrition”, we have dealt with them as the first order causes of inequity and inequalities in FSN. Briefly, current population growth and inter-policy disharmony between food and agriculture and other policies seem to be the most difficult obstacle to FSN we would have to surmount.

Perhaps, it is the awareness of the nature of these two critical problems that has steered this discussion into what we have termed the second order causes of inequity and inequalities in FSN i.e., those causes within the perview of food and agriculture authorities. Even though this restriction would be rather infelicitous to our success, we will try to confine ourselves to those implicit guidelines.

In our previously noted contribution, we have shown that a food system consists of eight sub-systems. In order of their emergence into the real world, they are as follows:

1. The yielder sub-system; when man appeared on earth, this was simply his environment as it is for other living things. Invention of agriculture and/or animal husbandry represent using a part of our environment to produce one or more of selected species. Such a part may vary in size and the types of food produced therein.
2. Harvester sub-system; beginning with hunting and gathering, this sub-system has technically advanced to combined harvesters etc. However, the original mode of hunting and gathering may be still seen among the fishermen and nut gatherers in Amazonas.
3. Culinary sub-system; it involves the preparation and consumption of harvested food. At first, harvested food was consumed on the spot as all the other primates do, and gradually sophisticated food preparation prior to consumption evolved giving birth to culinary traditions.
4. Transport sub-system; its emergence as a component of a food system seems to be contemporaneous with the formation of family groups and dawning of cooking. Greater security and improved taste of food are the motivators of its appearance. One should not overlook the fact that food carried on somebody’s back and in a refrigerated aeroplane are merely technically different but generically identical instances of transport sub-system.
5. Storage sub-system; Even at the hunter-gatherer stage of our evolution, it is conceivable that man occasionally managed to procure more food than could b consumed at once. This enabled our ancestors to store the surplus in some makeshift manner. Soon, humans developed early methods of food preservation like smoking meat and drying seeds, which raised the importance of its storage. Thus, food storage in a hollow of a tree and in a modern refrigerated facility serve the same basic function.
6. Preservation sub-system; this emerged before the invention of agriculture as has been described by many anthropologists. When food was available in abundance, smoking and preserving it in wild honey has been observe in Neolithic cultures. Later on, more advanced methods like salting, converting raw food into other commestables like cheese or preserving it under refrigeration were developed.
7. Supplementation sub-system; need for this appeared after the invention of agriculture, for using a limited part of our environment to cultivate a few species of food plants rapidly depleted the eco-system services in that area as it seriously disturbed the qualitative and and the quantitative equilibria among the living species there. These equilibria are essential for the maintenance of the availability of those services. Their artificial supplementation includes crop rotation, irrigation, use of fertilisers, bio-cides etc. Later on, it was directed at increased food yield by selective breeding, research etc. Thus, the purpose of this sub-system is to increase the food yield by supplementing the available eco-system services ordeveloping improved species or both.
8. Trade sub-system; the last sub-system of our food systems to appear, it represents three distinct orders. The first order food trade emerged with the advent of division of labour in human societies. At first, it consisted of exchanging food for other goods, but when value tokens were invented, food trade involved producers selling their produce for money. The second order food trade appeared when an intermediary purchased food from a producer in order to sell it to an end-user or another intermediary for profit. An intermediary may sell food in any form, for instance, raw preserved or ready-to-eat food. The third order food trade involves a first intermediary purchasing a future harvest at a low price to sell it to a second intermediary at a higher price. Then the latter may sell it to a third intermediary either as a future harvest or as actual produce to be sold. At first limited to the output of yielder sub-systems, trade has now encroached into every sub-system of our food systems with grave consequences for food security and nutrition.

It is difficult to see any other justifiable description of what may constitute a food system. Nobody with the slightest knowledge of human social evolution could deny the primacy of yielder sub-system, that the first six elements of food system were already in place before agriculture was even invented and that the trade sub-system is a recent addition to our long and enduring use of food systems. We urge the HLPE to disregard any literature or authority that denies the obvious facts of human social evolution and postulates representing some untenable revision of history.

Moreover, it is time the authorities and experts ask themselves the obvious; would anybody with a vestige of intelligence engage in food trade if it already did not have a value? Trader did not create a demand for food. The demand for it arose before trade because after air and water, it is the most essential thing for life. Let our reasoning be firmly anchored to reality, for it is there those who are hungry and ill-nourished await our actions in real time. Thus, the value of food is intrinsic.

Critical obstacle 1.

Therefore, it would be reasonable to single out problems with food systems as a critical obstacle to FSN. However, this problem has three facets:

* The structural suitability of the food system to output a sufficient quantity of food of adequate quality and variety to meet the nutritional needs of its end-users. When it does so, it has been put to its appropriate use.
* If a structurally suitable food system is not used appropriately, that must be rectified as soon as possible. West African pea nut export that led to wide-spread protein malnutrition among children is an example of this. Prior to this export which was carried out on the recommendation of World Bank and IMF to raise national GDP, an ample supply of pea nuts was available to people at a low cost.
* The structure of a food system may become unsound when trade sub-system diverts it away from its proper purpose; this becomes especially pernicious when a yielder sub-system is expanded into already cultivated and unused arable land to produce a cash crop for export. Unfortunately, this is a fairly common occurrence in countries where hunger and malnutrition is prevalent.
* System requirements; Let us begin with the obvious. No yielder sub-system could be established and run where where any one of the three essential eco-system services are absent. They are a salubrious climate, an adequate water supply and soil fertility. Forstalling any scientistic objections, extensive erection of green-houses would cause such interference with the solar heat exchange between earth and space, it would result in drastic climatic events, not to mention the loss of bio-diversity building those entails.

The other system requirements which are determined with respect to the possibilities of a given area and what is desired as a food system’s output, includes seeds, animals, farm implement, equipment etc. In selecting them, pains should be taken to ensure their appropriateness i.e., that they are the most suitable for the purpose within the competence of their users.

Thus, a combination of flawed food system design and its inappropriate use represents a critical and an enduring obsgtacle to FSN.

Critical obstacle 2.

A sustainable output of the requisite food is a necessary condition for FSN. Assuming that structurally suitable food systems are in place and are put to appropriate use, ensuring their sustainability requires the following:

* Availability of adequate eco-system services which include a salubrious climate, an adequate water supply and soil fertility; if insufficient, prudent supplementation may be used to make up some of the short fall. It must be remembered that excessive supplementation would only exacerbate the problem. Robustness of a food system would increase with its rising ability to produce more while using less than the available eco-system services. Food systems could be pro-active in minimising their use of eco-system services and/or contributing to their replenishment thus:
1. Increased agricultural bio-diversity.
2. As far as possible, choice of food produced is guided by the local food culture.
3. We will not enumerate techniques such as mixed culture, use of green manure and many other ways and means which the reader may easily find elsewhere.
4. Robust and resilient food systems are those which depend on food species that have been used in an area for generations. Extreme care should be exercised when introducing foreign species to a food system. It should always be guided by local nutritional needs and culinary traditions and their impact on the robustness and resilience of the food system involved.
* Unsound structure of food systems; this commonly happens when a Yielder sub-system is made to depend on mono-culture and excessive use of supplementation i.e., use of fertilisers, bio-cides, irrigation etc. Not only does this render food systems rather vulnerable, but they do also result in soil salination and loss of green cover. The Aral Sea disaster and deforestation of Amazonas to raise beef cattle are respective examples of this. Their effect on global eco-system services needs no elaboration.
* Strategic food reserves; it is comparatively seldom we encounter epidemics or pandemics of sufficient virulence to disable a significant number of those who run our food systems. In recent years, nothing was deadlier than Ebola epidemic, but its impact on food production was not great while it was otherwise with the current Corona pandemic. Even though they are more predictable, natural disasters may have an even greater impact on FSN either by destroying crops and animals or by depriving them of some essential eco-system service.

The sole rational response to such disasters would be to establish a sufficient array of strategic food reserves to ensure an adequate emergency food supply so that all efforts may be directed at restoring the damage to food systems or the health of its operators. As we have noted, third order food sales would present an undesirable stumbling block to the deployment of such reserves.

Therefore, it would be reasonable to regard the use of materials and methods that imperil the sustainability of food systems and failure to establish adequate food reserves as a critical and an enduring thret to FSN. ‘Climate smart’ is a phrase inadequate for our purpose, for it is only one of the three eco-system services necessary for agriculture.

Critical obstacle 3.

* The people; we will first consider the role of workers/operators and then proceed to the end-users.
* Inequity in how the gains from running food systems is shared have grave consequences for FSN. Although not complete, some of the most important aspects of it are given below:
1. Apart from its higher echelons, other workers in food systems are ill paid while in affluent countries, some of them are subsidised by their government. This has already made it difficult to induce the younger generation to replace aging workers. Obviously, this is unfair and unacceptable, hence requires immediate remedial action.
2. The above has been an enduring problem. Its magnitude has escaped the attention of authorities in affluent countries, because the trade sub-system has taken over family farms and small to medium holdings to create highly mechanised industrial farms that employ monoculture and much supplementation. As their consequences are well known, it is imperative to reverse this trend both in affluent and other countries.
3. Inadequate pay has already created an under-class of migrant agriculture workers in many developed countries. While they have to endure insults to their dignity, their absence would make huge food losses with serious results.
4. Meanwhile, this migration of agriculture workers has serious repercussions for the food production in their home countries. Thus, ensuring a decent and an equitable income to all workers in groups I to IV is of critical importance.
5. In less affluent countries, more and more young adults refuse to engage in agricultural pursuits owing to poor pay and the low social status those accord them. This has led to an ever-increasing incidence of child labour in food systems. As the meagre wages of such children often contributes to family income, family-wide malnutrition is unavoidable. An equitable income for workers would help to ameliorate both these social evils.
* Worker’s competence; we need a two-pronged approach to ensure food system workers competence. In affluent countries, educational institutions dedecated to the purpose train their students in ‘scientific and yield-based agriculture.’ This involves and excessive supplementation and the use of a limited number of food plants and animals. Former is injurious to the environment hence reduces the available eco-system services and the latter makes food systems vulnerable and their outptput more or less unvaried. Thus, end-users are compelled to be satisfied with a possible ample diet with little or no variation. We suggest this trend to be reversed, emphasis on quantity at any cost should be replaced by quality and variety with environmental benignity.

The second prong of our approach is directed at the less affluent countries. According to the available information, family owned and small holdings are the major food producers in many parts of the world. Here, the operator competence assumes a very great importance. Not only it is crucial to ensure and adequate food production, but it is also essential to set up and run sustainable food systems that are put to their appropriate use.

We will not recommend any specific methodology for exclusive use, for what is suitable for any of the first seven sub-systems of a food system could vary widely. This makes specific recommendations not only counter-productive, but also dangerous. Farmers, fishermen and other food gatherers usually have a reasonably good idea of what to grow, when and how much fish they may take, what items are available, where and when it is best to harvest and so on. What is required is appropriate technical training when required; this applies not only to the yielder sub-system, but also to all the others.

However, we will offer a few guidelines for such training with a view to enabling the workers to earn a decent income and to enhance the local FSN:

1. Setting up on-the-job training with every emphasis on the practical and appropriate; young people should be encouraged to join and suitable incentives offered.
2. Encourage and support cooperative food systems including common purchasing units to cut down costs.
3. Link the output of the first seven sub-systems of food systems with worker-owned cooperative sales outlets; these may be food shops, restaurants etc.
4. Whenever such outputs permit, food and agriculture authorities may purchase the excess to establish local food reserves.
5. Discourage the production of ‘ecological food’ so that some intermediary may purchase it at a low price and sell it in nearby cities at a very high price. Sadly, this brand of altruism by ‘educated entrepreneurs’ is becoming common in countries hunger and malnutrition are serious. Better local FSN is far more desirable than a slight improvement in the nutrition of some in a distant urban area.
6. A sustained campaign to increase the public awareness of the importance of food production, the prestige it deserves and culinary enjoyment.

Now to all of us; in affluent countries, we have been remiss at neglecting dietary competence as an important part of our general education. Unless we knew what is appropriate to eat in order to obtain a wholesome, varied and balanced diet necessary for nutrition and culinary enjoyment, where to procure it and how to prepare it for consumption, physical availability and affordability of food would not ensure us an adequate nutrition or culinary pleasure. In fact, it could result in some waste of good food.

In less affluent countries, this is more serious, for targeted promotion of foreign industrial comestibles has made young people reject far more nutritious and suitable local food leading to an increased incidence of NCD’s among them and waste of local produce. This is very serious in urban areas of poor countries where it would be folly to waste any scrap of food. Immediate steps to introduce aggressive dietary education with emphasis on local food culture is highly recommended.

It is obvious flaws in operator training and neglect of public dietary education constitute a critical and enduring obstacle to FSN; we have already mentioned how quantity-intensive agriculture education has rendered food systems vulnerable by using limited number of food species while its inadequacies have reduced the food production in less affluent countries. Universal neglect f dietary education has promoted food waste as well as to a rising incidence of NCD’s.

Enduring problem 1.

* Most authorities and organisations including FAO speak of the trade sub-system of food systems as their most important component. This is patently unjustifiable; inequity in it is responsible for the following problems:
1. Low income of farmers, fishermen and other food gatherers.
2. Increasing difficulty in inducing young people to engage in agricultural pursuits.
3. In affluent countries, the high cost of farmer subsidies.
4. Loss of employment due to family farms and small holdings being taken over by agro-industry.
5. Increased vulnerability of food systems owing to the reduced bio-diversity In yielder sub-systems.
6. Environmental degradation and soil salination due to excessive supplementation to increase yields, hence profit.
7. Food waste; rather than giving a mile long list of references, we would like to invite every interested person to take a look in the dust bin of any big food shop after closing time to see how much food is thrown out. If such items were sold at half price when nearing the ‘best before date,’ many more less affluent people would have been able to afford a better diet. Obviously, this is counter to the spirit of entrepreneurship.
8. Increasing loss of dietary diversity; mono-culture and food monopolies are the main causes of this.

In our contribution mentioned earlier, we have outlined how a sense of proportion and common decency may be introduced into food systems in general and their trade sub-system in particular.

Enduring problem 2.

This problem is concerned with all workers involved in a food system, especially farmers, fishermen and other food gatherers. It has two dimensions; first, is their land tenure. Food gatherers’ right to collect food from an ancestral area is often flouted by industry and/or commerce, particularly in parts of South America. An analogous problem for the local fishermen is that with or without the connivance of their government, foreign factory ships often exhaust their traditional fishing grounds. The unfairness of this and its impact on the local FSN needs no further comment.

The second aspect of this enduring problem is the failure of the authorities and/or training institutions to increase the relevant competence of those food producers. We do not suggest an academisation of the subject, but rather a solid, practical training. At the same time, the authorities have often failed to establish and support a suitable way for those food producers to acquire suitable tools. Much effort and potential harvests have been lost owing to this.

Extending this to end-users, we find the situation is no better among them. The sad fact is that some decades ago, many countries included some dietary education in schools. Unfortunately, owing to the recommendation of certain pedagogues, it was dropped from school curricula as unnecessary. This is one of the factors that has contributed to improper nutrition in many countries with accompanying child obesity and a rising incidence of NCD’s.

Enduring problem 3.

We will call this the problem of competence allocation, for it is concerned with deploying the relevant capability in the right place. Even though errors here may not be critical, they could have serious consequences for FSN. As technical expertise comes in a wide variety of shapes, shades and relevance, it is necessary to outline a general frame of reference.

Using them in their technical sense, expertise may be needed at the global, regional and local levels. When applied to the world, FAO is a global organisation, WHO has regional offices that include several countries, and at the local level, FAO has its national offices. When we consider the organisations in a country, its national government is ‘global’ for the land and is generally divided into administrative regions while its towns and villages are its local divisions.

Therefore, the primary task at the global level is to design a policy aimed at achieving a well-defined objective eg., FSN and a sound implementation strategy. This calls for an understanding of the full extent of the need a policy is intended to address, and a knowledge of the best generic ways and means of achieving it. It is crucial that such ways and means are generic, for their national implementations are likely to display great variation. This expertise would always strive to facilitate inter-policy harmony.

Seen from a world-wide perspective, expertise required at the regional level would be concerned with adapting the previous implementation strategy so that it may suit the regional conditions. Going to local i.e., national level, further adaptation of a regional strategy may be required to attain the national part of a global effort.

Now we begin to approach the time when a considerable deployment of expertise may be needed. National government would pass on its general implementation strategy to regional authorities. They would adapt it with reference to concrete possibilities and national food needs. For example, it would repay an arid region with a long coastline to concentrate more on fisheries than on agriculture. But what sort of fisheries should be established or expanded ought to be determined by the local workers. Here, specific relevant expertise may be fruitfully deployed.

The secondary function of a global organisation is that of a facilitator. It could provide a variety of suitable material resources and relevant competence at the field level, fisheries in our example. Some may vigorously object to our deployment of most expertise at the field level. But that is where action is, that is where food is produced. This secondary function naturally requires sufficient support personnel.

In our view, most policies are encumbered with an enormous amount of superfluous verbiage. A policy expressed in more than 200 to 300 words is in the danger of becoming a rambling discourse containing logically incoherent elements contributed by a group of individuals with their own vested interests.

Implementation strategies suffer even more of this defect. Should an implementation strategy exceed 600 to 800 words, one may be certain that it is riddled with field activities that do not constitute a strategy. We have seen ‘strategies’ ten to fifteen times this length, most of which described what to be done at the field level. This represents a misplaced use of field expertise at a higher level.

As far as we know, competence to formulate harmonious policies and implementation strategies is hard to come by. It is not the lack of intelligence that causes the problem. So far, policy makers have acted in isolation i.e., concentrating only on their own area without taking into account the consequences of their work on the other policy domains. This has been and still is defended with tooth and claw to uphold ‘institutional autonomy.’ We regret to say the best efforts to change this has been limited to the invention of a redundant phrase ‘thinking in silos’ when reductive thought has been with us for centuries.

Comments on the seven points.

1. Building resilient supply chains for FSN.

Resilience is an attribute of sustainability of a food system. Therefore, one ought to look at what would adversely affect a food system, not at just one attribute of its sustainability. Besides, we cannot see why the phrase ‘supply chain’ is used her as though such a thing could exist independently of the other seven sub-systems of a food system.

2. Urban and peri-urban food systems.

Apart from home gardens, allotment gardens were once common in Berlin, London and Oslo. These were primarily for a single family’s use. Market gardens on the other hand were and are commercial. It is difficult to see why this activity should be considered to be a separate food system that deserves special attention. We believe the improvements proposed for food systems above can be easily applied to them.

3. Conflicts and the fragility of food systems.

We have covered fragility as man-induced vulnerability, a dimension of sustainability, hence it has already been subsumed earlier. We cannot see how food and agriculture authorities may intervene in conflict resolution as surgical use of force and skilled diplomacy are not within their range and scope.

4. Revitalizing climate policies for FSN.

A salubrious climate is one of the three requirements for sustainability, an adequate water supply and soil fertility are the others. Agriculture could act prudently with respect to all three, but the biggest adverse influence on them come from trade and industry. We have already outlined what contribution food production could make as a component of an integrated action to enhance its sustainability.

5. Recognizing the role and rights of food system workers.

We have used system analysis to place them and end-users as a necessary condition for setting up and using food systems. We have also identified their training and income as critical for FSN.

6. Building a meaningful interface for diverse knowledges and practices for FSN.

Please see enduring obstacle 3 above.

7. Emerging and re-emerging infectious diseases challenging FSN.

Food and agriculture authorities can only mitigate this problem by the establishment of strategic food reserves. We have already dealt with this problem as one subsumable under sustainability. We recall a television programme just before Corona pandemic when an ‘expert’ from the most affluent European country publicly ridiculed the idea of such a food reserve. Wrong interface for that expert?

We will conclude our remarks with an observation for the consideration of the panel. Apart from the biological activities of plants and animals involved in agriculture, we believe that everybody would agree on the fact that all human actions in food systems are motivated by an intention. While genetic and environmental factors ‘drive’ the behaviour of those plants and animals, people still have the capacity to decide what to do. Therefore, it ill becomes us to talk about drivers in connection with something man-made like modern food systems which are manned by sentient beings. Let us not turn ourselves into things wittingly or unwittingly. Perhaps, ingrained greed for profit and power may turn some into driven things.

Best wishes!

Lal Manavado.

## Morrine Omolo, University of Minnesota - Twin Cities, United States of America

I'd suggest considering 2 additional items:

1. **Whose knowledge REALLY counts?** Yes, I see the topic on the appreciation and application of diverse knowledge. However, it is one thing to simply explore and talk about this, and a whole new way of thinking requiring humility and re-learning (especially for academicians) to truly value indigenous knowledge and the different ways of knowing. For example, who decides the curricula content of the formal food science and nutrition programs in the Academy? The types of grains, vegetables, etc. to be explored? The types of research worth funding? History gives us confidence that communities all over the world can, and have fed themselves for centuries. It is only when imbalances creep in that some flourish at the expense of others.
2. **We need to re-think the cosmetic nature of the agri-food systems**. There are many initiatives now seeking to re-purpose food that would otherwise not be "good looking enough" to appear on supermarket shelves in many developed nations. As long as part of the world has the luxury of throwing away food because it does not look as we've been accustomed to, while people in other parts of the world barely have enough to eat, we will continue to chase our tails on the matter of food and nutrition security. A lot of these foods that end up as waste are imported, which means critical resources from the exporting countries were used to produce food for other countries, while domestic markets struggle.

## Sara Hoogerwerf, FAO

Confronted with an increasing inflation and rising prices of staple foods, it is urgent to focus efforts on those points in the food systems that can facilitate availability, accessibility and desirability of healthy and diversified foods, especially for the most vulnerable populations and groups. As FAO-ESN Team, we believe that, being food environments the interface between food supply and demand and including a series of market and non-market based factors that influence people’s food acquisition and consumption, they are critical for food security and need to be taken into consideration in nutrition-sensitive strategies. In fact, food environments are an emerging, but promising area of work. Interventions can range from the consumer-end ‘backwards’ to the retail management and/or ‘outwards’ to address enabling environment and regulating policies. Therefore, we strongly suggest considering food environments as a key issue affecting FSN and include it either as an additional separate topic or as a crosscutting issue, as it is interlinked with all the other issues presented.

In the last year, our team's work focuses on the food retail environment ("critical", as it "influences all aspects of the food environment", i.e. what foods are available, their price, quality, convenience and promotion), and in particular on the mapping territorial markets, which, being at the heart of local food systems, are crucial for ensuring food security and nutrition in the territories in which they are embedded and thus in influencing food patterns. Reference can be made to our first-hand data collection on 60 territorial markets in 8 countries, carried out over the past year. The initiative was done using [FAO methodology](https://www.fao.org/documents/card/en/c/cb5217en/) for mapping of territorial markets, which was developed **as a direct response to 2016 CFS policy recommendations "Connecting Smallholders to Markets**", referring to the need to collect comprehensive data on formal and informal markets, rural and urban and linked to local, national and regional food systems. The initiative produced a valuable set of data on both retailers and consumers who attend these local, territorial markets, and the data can be disaggregated by gender, age, different food groups (and more).

The whole methodology is designed to inform policy-making processes that seek strategic entry points in the food systems for improving local diets and nutrition. We strongly believe that territorial markets represent this crucial entry point for working on the systemic change for increasing availability, access and desirability of healthy and diversified foods for low-income consumers. Moreover, our analysis on the effects of the rise in food prices induced by the COVID-19 pandemic in the mapped countries, provided insights on the importance of making territorial markets more resilient to price volatility and to different types of shocks, including conflicts. This demonstrates that improving and investing in territorial markets is a sine qua non condition to build the overall resilience of food systems and to protect consumers’ diets.

In addition to this comment, we attach a short document that further illustrates the role of territorial markets in shaping healthy diets supported by concrete examples from our mapping exercise.

Attachment:

<https://assets.fsnforum.fao.org/public/discussions/contributions/Territorial%20markets%20and%20diets%20.pdf>

## Anna Rosales, Institute of Food Technologists, United States of America

Thank you for the opportunity to provide input on the Critical Emerging & Enduring Issues draft. We agree with the seven issues affecting FSN and would recommend integrating the following topics:

1. **Resiliency**| What does a successful resilient food system look like? Review successes in resiliency that have happened over the past few years and acknowledge the areas where the food system has been resilient during crisis and understand what made those pieces more resilient than others.
2. **Consumer Behavior** | Understand the impact of consumer behavior and retailers on supply chain resiliency. Impacts of hording and demand can wreak havoc on traditional supply and demand estimates creating greater disparities.
3. **Efficiency**| Often viewed in opposition to resiliency, in many instances, efficiencies may also contribute to resiliency (e.g., automation can improve efficiency and reduce the need for human labor during a pandemic). It would be valuable to further explore efficiencies that may enhance resiliency.
4. **Digitization**| What info needs to be captured and shared with trading partners?

Kind regards,

Anna

## Urbano Fra.Paleo, University of Extremadura

Please find below some comments regarding the V0 draft.

I am also available for contribution in case this input regarding integrated hazard and disaster risk is taken into consideration.

With kind regards,

Urbano Fra

1. Identification and conservation of agrobiodiversity allows for increasing food security since these are species adapted to local environments, and is closely associated to CEEI 4, as they may better respond to changes in environmental conditions.

2. Urban planning should be taken into consideration to support Urban and peri-urban food systems since current regulation in cities and market value of land limit opportunities for cultivation and food production. A change in regulation of urban development and market is required to avoid land use conflict and competition.

3. Disaster risk is not being taken comprehensively and as a whole into consideration as a critical, emerging and enduring issue. Two disaster-related CEEI (3. Conflicts and the fragility of food systems; 7. Emerging and re-emerging infectious diseases challenging FSN) have been included.

However, with the adopted approach it does not fully reflect the complexity of disaster, including the cascading effects, the vulnerability of farmers, crops and livestock, and the continuity of production-supply. After disaster there is a loss of livelihoods, and source of income in the case of cash crops, that drives communities into increased poverty, rural flight, or displacement. Additionally, displaced communities who migrate to cities also lose their farming culture, that is not transmitted to younger generations, and acculturation takes place.

This also applies to coastal communities, who are dependent on fishing, shellfishing, or are gatherers of various marine resources. Coastal communities suffer the double impact of coastal and land hazards, increasing their vulnerability as well as disaster loss and damage.

Two recent publications by UNDRR/ISC have identified the most critical hazards, classified and described them.

The[UNDRR/ISC Sendai Hazard Definition and Classification Review Technical Report](https://www.undrr.org/media/47681/download) (2020),  and [Hazard Information Profiles: Supplement to UNDRR-ISC Hazard Definition & Classification Review](https://www.undrr.org/media/73913/download) (2021)

This classification also raises the significance –among others- of biological hazards, one of the eight classes, since there is a high number of pests and animal diseases that represent a hazard for farmers and rangers and their livelihoods, a challenge for farming practices and management.
In sum, the approach adopted in the report regarding critical, emerging and enduring issue matches the issue of hazard, as a trigger of disasters, with great significance for rural communities. This raises the question of having a specific issues relating to Recognizing the role natural hazards and disaster.

## Felipe Dizon, World Bank, United States of America

HLPE 3rd note on critical, emerging, and enduring issues (CEEI)

World Bank - Consolidated Comments

The draft note on CEEI identifies seven key issues affecting FSN:

1.    Building resilient and equitable supply chains for FSN 2.    Urban and peri-urban food systems 3.    Conflicts and the fragility of food systems 4.    Revitalizing climate policies for FSN 5.    Recognizing the role and rights of food system workers 6.    Building a meaningful interface for diverse knowledges and practices for FSN 7.    Emerging and re-emerging infectious diseases challenging FSN

Below are comments from the World Bank for the first three issues.

**(1) Building resilient and equitable supply chains for FSN**

The World Bank is currently preparing a flagship report “From Surviving to Thriving: Making Cities Green, Resilient, and Inclusive”, which could potentially include relevant insight for this issue on resilient supply chains. This report will look into how food systems interface with climate and cities: including: (a) poor diets for the urban poor, (b) the impact of climate shocks in rural production centers on food prices in cities, (c) the impact of climate change and urban expansion on rural and peri-urban productive land, and (d) interventions and recommendations for building better urban food systems.

In particular, under (b), the literature on the importance of resilient transport systems will be highlighted. Roads and road quality are known to reduce poverty and increase consumption, to reduce price volatility, and to help households cope with shocks (Dercon et al., 2009; Ndiaye et al., 2015; Shively and Thapa, 2016; Nakamura et al., 2019). Roads are important for food security in times of disasters. Economic losses from transport disruptions increase linearly with the duration of disruptions- which calls for quick repairs but also flexible procurement strategies (Colon et al., 2021).

Colon, Celian, Stephane Hallegate, and Julie Rozenberg. (2021). “Criticality analysis of a country’s transport network via an agent-based supply chain model.” Nature Sustainability, 4: 209-215.

Dercon, S., D. O. Gilligan, J. Hoddinott, and T. Woldehanna. 2009. “The Impact of Agricultural Extension and Roads on Poverty and Consumption Growth in Fifteen Ethiopian Villages.” Am. J. Agric. Econ. 91: 1007–21.

Nakamura, S.; Bundervoet, T.; Nuru, M. (2019). Rural Roads, Poverty, and Resilience Evidence from Ethiopia; The World Bank Group Poverty and Equity Global Practice: 2019.

Ndiaye, M., E. Maitre d’Hôtel, and T. Le Cotty. 2015. “Maize Price Volatility: Does Market Remoteness Matter?” Policy Research Working Paper 7202, World Bank, Washington, DC

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**(2) Urban and peri-urban food systems**

We welcome this potential focus on urban and peri-urban food systems, as it is one that will undoubtedly play a crucial role in ensuring a sustainable food system transformation. It is a broad, complex and cross-cutting topic that could easily encompass discussions on the other six CEEIs, but it is also one that lacks a clear understanding amongst the public and stakeholders. This incoherence is exacerbated by the general dearth of city-level data, analyses and empirical evidence to support and inform decision-making on urban and peri-urban food issues, and what does exist is of inconsistent quality and availability. This lack of an evidence base makes it difficult for policymakers to plan, prioritize, design and track interventions related to urban and peri-urban food systems. It would be good to bring out these issues in the Rationale section. Furthermore, the drivers and trends laid out in the Rationale and Key Questions sections deal primarily with the social and economic dimensions of urban and peri-urban food systems’ effects on food security and nutrition outcomes. It does not treat the environmental dimension with the same level of detail. More information could be included on the agriculture sectors’ role in global environmental change and how the incorporation of climate-smart agriculture and/or circular economy practices in urban and peri-urban agriculture can provide immense climate co-benefits, as well as enhance climate resilience.

As mentioned above, the upcoming World Bank flagship report described above on Cities will cover the impact of climate change and urban expansion on rural and peri-urban productive land. Initial analysis and review highlights that how we address climate change has implications for land use. Under a sustainability pathway, cropland will stop expanding and pastures for animal grazing will decline. Urban land will expand. Most urban expansion will be converted from (productive) croplands, followed by forests. This could reduce food production absent measures to encourage compact urban development or to offset the impacts of horizontal urban expansion. Encouraging more compact urban development entails limiting horizontal expansion. Offsetting the impacts of horizontal expansion on food production includes enhancing agricultural productivity and reducing food loss and waste. These offset measures are key, because in addition to land constraints, agriculture faces climate-related productivity losses and urbanization-related labor constraints.

In addition to the upcoming flagship report, existing World Bank reports on the issue of urban food systems include:

G. Acharya, E. Cassou, S. Jaffee, and E. Ludher (2021) RICH Food, Smart City. World Bank

J. Tefft, M. Jonasova, R. Adjao, and A. Morgan (2017). Food Systems for an Urbanizing Worlds. World Bank and FAO.

World Bank, FAO, and RUAF Foundation (2017). Urban Food Systems Diagnostic and Metrics Framework.

J. Tefft, M. Jonasova, F. Zhang, and Y. Zhang (2020). Urban Food Systems Governance: Current Context and Future Opportunities. FAO.

**(3) Conflicts and the fragility of food systems**

We find that the general framing is appropriate, but it would be good to cite some of the work that has already advanced deeper examinations of how to address food insecurity in FCV settings. In particular, the CFS should consider referencing the World Bank's recent publication on how to build stronger agri-food systems in FCV (see <https://openknowledge.worldbank.org/handle/10986/36497>). On the proposed key questions, it would be good to expand on Question 6 and ask how UN resolution 2417 (the prohibition on using food as a weapon of war) can be better enforced. Additionally, there was no mention of how to address food security data challenges in FCV contexts, especially in situations in which there are fundamental differences of opinion between humanitarian and government counterparts which can derail and even inhibit collective recognition of an emerging food security crisis (as was the case more recently in South Sudan in which the Integrated Food Security Phase Classification process broke down).

## Ben Ross, Australian Embassy to Italy, Australia

Australia welcomes the opportunity to comment on the HLPE 3rd Note on Critical, emerging and enduring issues: V0 draft for consultation.

Australia understands that this paper will underpin the future work of the HLPE for the MYPoW 2024-2027 and we acknowledge the seven critical issues presented. We highlight that the significant food security and nutrition impacts arising from the COVID-19 pandemic and the conflict in Ukraine underscore the need for the MYPoW 2024-2027 to respond and adapt to evolving global agri-food system dynamics and challenges. In this regard, we seek confirmation that the seven topics and guiding questions identified have been elaborated with adequate consideration of the wide-ranging implications of the Ukraine conflict.

We would also appreciate further information on the selection process for the seven issues presented within the paper and as a general comment, suggest that there could be greater recognition of the ways that the seven key issues are interlinked.

Australia also highlights the need for continued efforts to collate research that is balanced, scientifically-based, and that objectively informs the future findings and conclusions of HLPE products. Accordingly, we encourage the questions outlined in the report be framed in an open-ended fashion that allows for comprehensive and considered exploration of the issues. This will assist the HLPE to identify solution pathways that are stakeholder-driven, informed by scientific evidence, are appropriate to national contexts, needs and priorities, and are non-prescriptive.

Additionally, we provide the following specific comments:

* Supply chain resilience is an important topic that deserves significant attention, particularly in light of the Ukraine conflict, and we emphasise the need to take a comprehensive approach when considering supply chain dynamics and food system resilience. For instance, international trade and specialised global supply chains are fundamentally important for boosting resilience, alongside and in tandem with, local or national supply chains and markets. Attention should also be given to the value of the multilateral system and the importance of strengthening the global rules-based trading system, including international standard setting bodies.
* The section on resilient supply chains could also benefit from a broader exploration of enduring disruptors (not just recent novel disruptions), such as the increasing frequency and/or severity of natural disasters/climate events.
* We highlight that an inclusive approach should be taken when it comes to assessing the critical role of modern science and technology, alongside other forms of innovation such as those developed from traditional knowledge. Facilitating the uptake of all forms of innovation, as appropriate, is crucial for increasing farm productivity, profitability as well as environmental sustainability and climate resilience.
* This paper (and subsequently the forward workplan of the HLPE) should seek to be inclusive and relevant to the broad spectrum of farm business models and contexts globally, and not seek to elevate certain systems and approaches over others.
* We reiterate the importance of the One Health approach for prevention of future zoonotic disease outbreaks and pandemics. A strong commitment to the One Health approach will be essential to optimise the health and wellbeing of people, animals and ecosystems, that underpin sustainable and resilient food systems – and should be strongly reflected within the paper and future workplan of the HLPE.
* We suggest there is a need to better integrate climate adaptation and mitigation policies – as well as other goals – as this is a basic challenge that should not be overlooked. Additionally, a broad ranging analysis that considers the impacts of technology, innovation and climate financing, as well as the impact of climate policies, would be useful.
* The paper could more strongly explore issues relating to protecting and enhancing the natural resource base upon which agri-food systems depend, including by promoting healthy soils.

## Peetambar Dahal, University of California, Davis, USA, United States of America

This suggestion refers to the data value chain and conceptual matrix (Example 4; page 17).

Food safety is recognized as one of the cross-cutting issues in nutrition. However, both natural (mycotoxins) and artificial (pesticides) food contaminants are widespread in food systems in many developing countries, compromising nutrition and health. Good Agricultural Practices and Integrated Pest Management (IPM) could reduce the food contaminants in both low and high moisture foods. Postharvest good practices like **cold chain** for**high moisture content** foods improves quality by minimizing nutrient loss.

Analogous new ***dry chain*** management for **low moisture content**foods/feeds products could protect annual dry product losses to rainfall/floodings and insect and toxic mold infestations, improve disaster resiliency, food security, and trade ratios.

Thus, cross cutting issues and policyies should include food contaminant reduction strategies in both low and high moisture content food/feed products and sensitive monitoring programs as in the developed countries.

Bradford KJ, Dahal P, Asbrouck JV, Kunusoth K, Bello P, Thompson J, Wu J (2018) The dry chain: reducing postharvest losses and improving food safety in humid climates. Trends in Food Science and Technology 71: 84-93. <https://doi.org/10.1016/j.tifs.2017.11.002>.

Claes J, De Clercq D, Denis N, Fiocco D, Katz J (2021) How to reduce postharvest crop losses in the agricultural supply chain? McKinsey & Company. <https://www.mckinsey.com/industries/agriculture/our-insights/how-to-reduce-postharvest-crop-losses-in-the-agricultural-supply-chain>.

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## Ernie Shea, Solutions from the Land, United States of America

Dear FSN Moderator-

The seven critical, emerging and enduring HLPE issues included in the V0 draft of the HLPE 3rd Note on Critical, Emerging and Enduring Issues are well articulated and high profile concerns. Thank you for the opportunity too provide input into the development of this document.

Attached for your consideration is an 8th key issue- The role of agriculture in concurrently delivering ecosystem services and food and nutrition security. While aligned with other issues in the V0 draft, the delivery of quality ecosystem services in support of robust local and global food systems, is essential and a distinct emerging and critical issue.

Please feel free to reach out to us if you have any questions or need any additional information.

Kind regards,

Ernie

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**Candidate submission for V0 draft of the HLPE 3rd Note on Critical, Emerging and Enduring Issues**

**Topic- The role of agriculture in concurrently delivering ecosystem services and food and nutrition security**

**Rationale**

More than a decade ago, cultivated ecosystems covered ¼ of the terrestrial surface of the earth; six times more water was held in reservoirs than flows in natural river channels; and more than half of the services that ecosystems provide to the world were degraded (Walker and Salt 2006). Today food and agricultural systems are at an inflection point as the rate of productivity gains are slowing and unlikely to meet anticipated growing global population demands for food by the year 2050 (Jones et al. 2021). And although productivity per unit of land area has increased greatly over the past 100 years, there are absolute limits to the amount of fresh water and arable land available (Tittonell 2014; Pretty 2021; Engler 2021). ***Increases in production must be accomplished with fewer resources and under conditions of declining biodiversity and increasing risks to ecosystem health. This means we must better understand coupled human-natural system relationships and find ways to concurrently be productive and effectively protect and renew our natural resources*** as we adapt to unexpected events like COVID disruptions to supply chains, limits to resources and changing market and climate conditions (Morton & Shea 2022). Farmers know there are difficult challenges ahead, are eager to learn more about how to leverage whole system relationships and already are experimenting and embracing new strategies and technologies to improve the sustainability of food systems deliver solutions to Sustainable Development Goals (UN 2021; SfL 2021).

Many food systems stakeholders are calling for bigger thinking and the transformation of current linear systems of agriculture and food into circular systems that better reflect the complex interactions among human and natural systems and their behaviors under stress conditions. Circular systems mimic nutrient and energy flows in closed loop cycles of growth, decay and reuse found in natural systems where one organism’s waste is another organism’s food. Linear systems of pre-production, production, post-harvest and consumption use land, water, energy, nutrients, labor, and capital as external inputs and discard waste at almost every stage in the process (Jones et al. 2021). It is costly to build landfills and store waste materials indefinitely. More importantly these discards result in the loss of valuable resources-nitrogen, carbon, water, waste byproducts and other raw materials that in circular systems could be managed and reintroduced into productive use and extend the capacity of our resource base to meet expanding agriculture and food needs.

***Circular economy systems models and technologies offer alternative transitional paths*** within food and agriculture value chains to 1) design out waste and pollution (recover discarded wastes for productive uses); 2) continually reuse products and materials; 3) protect and renew natural systems; and 4) provide for economic benefits (Morton & Shea 2022). Minimizing input resources, transforming subsystem processes, leveraging interconnections among associated subsystems, capturing resources for reuse or other system inputs from recovered discarded materials, and harnessing breakthrough advances in biology and digital technologies can increase the circularity of existing systems. Our best hope for finding solutions and managing the changes we are encountering now and in the future is to better understand how complex systems work on many levels (Meadows 2008) and develop innovative collaboration strategies that reinforce structures and behaviors that enable us to achieve shared goals like the United Nation Sustainable Development Goals (UN SDGs) for 2030.

These goals – an end to hunger, a restoration of water resources, enhancement of biodiversity, ensure livelihoods and a curbing of climate change, among others – conjure a bold vision that is possible only through an ambitious framework that brings humankind together to build a better world, with systematic international cooperation and strategic design to bring human systems into alignment and harmony with natural systems (SfL 2021). Towards this end, agriculture has a unique opportunity to advance a new vision for how sustainably managed farms, ranches and woodlands can deliver near-term and scalable ecosystem service solutions to the “mega challenges” of our times.

**Key questions that could be addressed in this report?**

What enabling polices, programs, partnerships, markets, finance mechanisms are needed to improve the sustainability of food systems and simultaneously scale up the delivery, at a landscape scale, of ecosystems services from agricultural operations?

What are the barriers to the adoption of circular economic systems in the ag sector?

What examples of innovation can be cited to demonstrate the value and importance of ag ecosystem services?

How can producers be rewarded not just for producing commodities, but for the water they filter and store, the carbon they sequester, the biodiversity and wildlife habitat they enhance, the economic growth and local wealth they generate and the improved of life they produce?

How can research processes be prioritized and streamlined to integrate agriculture and forestry with conservation goals and ecosystem services?

How can we expand and accelerate farmer-to farmer experimentation and knowledge sharing on ecosystem services delivery?

What overlapping or contradictory police sand regulations need to be reduced or eliminated?

**8. The Role of Agriculture in concurrently delivering ecosystem service and food and nutrition security**

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##  Claudia Tonnini, Permanent Representation of the Federal Republic of Germany to the UN Organizations in Rome, Germany

**Committee on World Food Security (CFS): HLPE 3rd Note on Critical, emerging and enduring issues - Preliminary V0 draft for CFS Bureau information**

**Here: GER (Germany) position on the HLPE Note**

GER thanks the High Level Panel of Experts on Food Security and Nutrition (HLPE) for preparing and sharing the Preliminary V0 draft HLPE 3rd Note on Critical, emerging and enduring issues. We highly welcome the opportunity to provide input through the consultation process.

As stated in the consultation process on identifying topics for the HLPE Report 2024, we agree on the relevance and urgency of all proposed themes. However, in the light of current challenges, the two topics “Conflicts and the fragility of food systems” and “Emerging and re-emerging infectious diseases challenging FSN” particularly stand out in our view. As the world is currently facing a worsening global food security crisis, increased efforts are needed to address the root causes and main drivers of food insecurity and malnutrition worldwide, including poverty, inequalities, climate change, biodiversity loss, forced migration and conflicts. Moreover, the COVID-19 pandemic and the global economic recession had demonstrated the profound impact infectious diseases can have on global food security and nutrition. Following up on the GER position on possible themes for the HLPE report 2024, we suggest that the importance of strengthening the resilience of food systems to pandemics and health crises is also considered as part of the HLPE’s proposal on emerging and re-emerging infectious diseases. Against the background described, we believe that also the topic “Building resilient supply chains for FSN” is of great importance and timeliness. For Germany, the aspect of sustainability in those supply chains is an important factor. In conclusion, in our view, the topics “Urban and peri-urban food systems”, “Revitalizing climate policies for FSN”, “Recognizing the role and rights of food system workers” and “Building a meaningful interface for diverse knowledges and practices for FSN” are also useful starting points. In order to avoid duplication, we recommend building on existing CFS policy products, where possible.

In addition to the excellent suggestions already made, we suggest to consider the following proposal, as noted in the GER position from 31 January 2022(1): To support the uptake of CFS policy products consideration could be given towards a separate workstream to an in-depth internal debate on enhanced efforts by the CFS and its stakeholders to increase global awareness and use of all CFS Voluntary Guidelines and Policy Recommendations.

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(1)GER initial input on the “Open Guiding Questions” within the Group of Friends of the CFS Chair– Implications of the UN Food Systems Summit (UNFSS) on CFS

## Kameswararao Chiruvolu, Private, India

HLPE 3 rd Note on Critical, emerging and enduring issues V0 draft for e-consultation

**Building resilient supply chains for FSN**

* ‘Sustainability’ and ‘resilience’ are often misused terms. Currently there are no sustainable systems, there are no energy efficient resilient systems. Sustainability requires adaptation to evolution process which in turn depends on migration in adverse climate conditions. Resilience requires expensive energy to develop or maintain existing system under severe weather conditions like global warming.
* Evolution process: Evolution of life on the planet Earth is a continuous process. Evolution process of human activity (life) on the planet Earth is cyclic in nature. (Evolution process cycle diagram attached) Adapting to the current cycle of evolution process is the Necessity of every successful living organism. Necessity is the mother of Invention. Invention leads to Development. Development may trigger next cycle in the Evolution process.

There are different but important roles of several disciplines during the evolution process cycles. 1) Learning from the past mistakes, difficulties, disasters and natural calamities should drive research in Science, Technology, Engineering and Mathematics (STEM) to reduce the shocks in the future. 2) Research in STEM is not enough to tackle current problems like pandemics, new, unknown and unforeseen situations. Able administration and efficient management are necessary to provide scientific solution adoptable and acceptable to all players in systems. 3) There is need for economic and geopolitical equality in providing relief to effected people, leaving no one behind on the planet.

* Adapting to predictable shocks is advantageous to food system actors over resilience. Extreme weather conditions, forest fires in dry season, heavy rain fall, massive floods in river basins during rainy season are predictable shocks. They occur year after year. Efficiency oriented food system approach may not be suitable for predictable shocks. Local, co-operative, people centric approach may be effective, it may not be as efficient as global food chain, necessary local food reaches the effected population quickly. Watchful local co-operatives/ NGOs integrate available global component with nearby local food in meeting the FSN of the effected population. Earth quakes, tsunamis are mostly unpredictable, there are no known methods to the recovery and transform stages of resilience to unpredictable shocks.
* Farmers gets paid less for their produce, where as they have to pay higher price for the food they consume. Farmers increase agricultural production using more chemical fertilizers and chemical pesticides. Their economic status hardly improves with enhanced production because of the increase in cost of fertilizers and pesticides. Income of small farmers and agricultural workers is vulnerable to weather changes and natural calamities.
* Milk is produced in villages and transported to processing units located elsewhere. The milk after processing and packaging sold at higher price in the same village. Low cost equipment for milk cream extraction in small volume is available in the market. Milk after extracting cream can be given back to dairy farmer along with part of the cream. Dairy farmer will be getting back milk plus part of the cream. Cream may be sold or used in household for making some other food product. Cream extraction center can accumulate the cream collected in a day and sell it in the market. It is a win -win situation for dairy farmer and milk cream extraction center.
* Encourage self-reliance. Distribute development and decentralize administration to ensure nutritious food to disadvantaged populations in epidemics and shocks due to natural disasters.
* Integrate long shelf -life food products with fresh local food items to meet special dietary requirement of aged and vulnerable.
* Value addition in food system has large potential in income generating activities in villages. Value addition to the food can be made with fresh, organic farm products like fruits, vegetables, eggs, fish and meat available in plenty in the villages. Value addition to food products with local cultural habits leads to increased consumption of goods and services in food sector. There is scope for innovation and increasing economic value in these activities. Investments in expensive infrastructure development, rapid transport of perishable goods and cold storage facilities are not required.
* Promote ‘blue food’ (fresh water prawns and small fish like herrings). Blue food from fresh water bodies is likely to provide another income generating opportunity to youth living inland (non- coastal) and hill regions, nutrition security to the people living in villages, will reduce the emissions due to transportation of wet and fresh aqua food from coastal area to inland, reduce the need of cold storage facilities and highspeed transportation, reduce emissions. Greenhouse gases from fish is less compared to chicken, pig and cattle.
* As a part of ‘leave no one behind’, motivate small farmers in high value and labour-intensive food grains cultivation. Initiate steps to increase participation of small farmers, agricultural workers in food chain value addition (goods and services) to reach income at par with other manufacturing and service sectors.

**Urban and peri-urban food systems**

* Automation and work from home have brought a major change in food habits and lifestyle of people living in cities. Reduced physical activity and commuting to work spot resulted in sedentary life style and associated health issues. Excessive food consumption coupled with sedentary lifestyle increased obese people percentage in the world. People are aware of the problems with obesity and climate change, but have little information to act on. Aggressive marketing by few food manufacturers is only adding confusion. There is need for simpler food labelling to help the novice in making proper decisions regarding healthy meals.
* Current food labelling with nutrition information and contents needs a revision. Labelling each food packet with dietary energy in Kcal, total weight, carbo hydrates in grams, protein in grams and fat in grams, and ‘carbon foot print’ in CO2eq will increase the awareness about food, nutrition and climate impact of the food at hand. Simple instructions on every ready to eat meals with age group, vegetarian/ vegan/ standard, breakfast/ lunch/ snacks/dinner, add salt/sugar according to the taste, salad/ sauce/ cream included will be more convenient to busy office goers and tired house makers.
* “Locally produced food can be easily made accessible to the vulnerable and resource-poor by increasing food availability, enhancing nutrition, improving farmers’ livelihoods in peri-urban and creating job opportunities in the urban areas. By adding value within local supply chains and markets, this approach contributes to improved local revenues” [1].
* Integrate long shelf -life food products (including those from global food chains) with fresh local food items to make healthy and tasty meals following local food preparation habits and meeting dietary requirement in informal settlements.
* Bridge the rural urban gap in the standard of living. Train and motivate rural youth in marketing, using digital technology and e-commerce in creating a vibrant atmosphere in villages. Trained youth at VLIC (Village Livelihood Information Consultation center) provides information on food, health and education sectors as a paid service. Youth at VLIC may partner with farmers, landless agricultural workers in micro and small enterprises to increase income level of self and other farmers and landless agricultural workers. (VLIC block diagram is attached)

 **Conflicts and the fragility of food systems**

* Encourage self-reliance. Distribute development and decentralize administration to ensure nutritious food to disadvantaged populations in epidemics and shocks due to conflicts.
* “Locally produced food can be easily made accessible to the vulnerable and resource-poor by increasing food availability, enhancing nutrition, improving farmers’ livelihoods and creating job opportunities for other disadvantaged groups. By adding value within local supply chains and markets, this approach contributes to improved local revenues” [1].
* Integrate long shelf -life food products (mostly from global food industry) with fresh local food items to meet dietary requirement, local food habits of conflicts effected population.

**Revitalizing climate policies for FSN**

* Considerable research is required to understand the effect of climate changes on food system. Reducing carbon emissions in food system is only a part. Slope soil instability causing landslides, mudslides and devastating floods in agricultural fields needs to be studied. Root site-occupancy during the transition period from clear felling and replanted trees growth plays critical role in slope soil stability [2].

**Recognizing the role and rights of food system workers:**

* Rights of food system workers can be ensured by motivating them in income generating activities. Per capita GDP is one indicator for additional income generating opportunities to women, food system workers, especially those in informal and seasonal contractual arrangements, small farmers, landless agricultural workers and other vulnerable groups. It may be argued that not everyone reaches the per capita GDP. However, the national GDP will increase, those exceeding per capita GDP will have a higher target to achieve, those unable to achieve per capita GDP will be trained to take different opportunity. On the long run, national GDP will increase and there will be improvement in the working and living conditions of all.
* A correlation coefficient of 0.84, which indicates a strong positive linear correlation, between GDP and CO2 emission is observed. This indicates that as GDP increases, CO2 emissions also increase almost proportionally. The estimation of GDP long-run equation indicated that that the CO2 emissions are negative related to the economic growth.[3]

**Building a meaningful interface for diverse knowledges and practices for FSN**

* Food security and nutrition plays a key role in Sustainable Development Goal1(SDG1) of UN: ‘zero hunger’ and elimination of all forms of malnutrition. The difference between ‘food security’ and ‘protein adequacy’ is not clearly communicated. In many countries vulnerable groups consume more carbohydrates instead of protein to meet the dietary energy requirement. Cost of protein is much more than cost of carbohydrates. There are no protein foods being provided under most of the nutrition programmes– possibly due lack of availability, affordability and/or awareness on food groups and dietary adequacy and frequency [4,5].
* In the WHO recommended healthy diet there are no guidelines on quality and quantity of protein [6]. Many countries are yet to prepare their own guidelines. **Statistics reveal that 93% of Indian population are unaware of ideal protein requirement per day with pregnant ladies on the top (97%), followed by lactating mothers (96%) and adolescents (95%) [7]. Situation in other countries is not much different.**
* Animal studies indicates that “Maternal protein restriction leads to hyperresponsiveness to stress and salt-sensitive hypertension in male offspring” [8]. Further research on similar studies on PEM (protein energy malnutrition) in humans is required. It is necessary to study the possibility of PEM related malnutrition from pregnant ladies to male children. In the meantime, protein requirement guidelines of pregnant ladies should be prepared. There are several research reports with contradicting results on protein quantity and quality [9-14]. Currently, high pressure marketing effort is used about protein adequacy. The number of obese people worldwide is increasing.

**Further research is required to**

* **Ascertain the role of slope soil stability during rainstorm. It will be of significance because the agencies/ countries benefitting from timber trading, clear-felling of trees and reforestation could be different from the effected communities/ countries with human habitats in the nearby region due to frequent landslides, mudslides and catastrophic floods [15-22].**
* **Study the role of protein quantity and quality such that the risk of obesity, adiposity, and associated NCD (Non Communicable Diseases) in the world decreases.**

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Dr. C V Kameswara Rao, M. Tech, Ph.D

Information Practitioner (voluntary)

Health, food, nutrition and climate change

## Veronica Villa, ETC Group, Mexico

May 17, 2022

RE: INPUT FOR  HLPE’S CRITICAL, EMERGING AND ENDURING ISSUES (CEEI) CONSULTATION

Submitted by Long Food Movement partners IPES-Food and ETC Group.

To the HLPE CEEI Consultation Committee,

We are writing in response to the CEEI consultation question, “Are there any other key issues that should be added and elaborated? If yes, please provide a justification of why they are “critical”, together with relevant literature and data.”

The [Long Food Movement](http://www.ipes-food.org/pages/LongFoodMovement) initiative worked to chart potential food systems trajectories to 2045, via different scenarios. To this end, project partners undertook a multi-year, multi-method process to identify new and emerging food systems issues. Based on this extensive research and outreach, project partners would like to propose the addition of two key issue areas to the list of potential CEEI:

1. Assessing Impacts of New and Emerging Technological Trends on FSN;

2. Preparing for Future Disruptive Events.

Please find brief information on each theme below.

1. Assessing Impacts of New and Emerging Technological Trends on FSN

Some of our basic assumptions about food systems – that food is grown by farmers, with soil and sunlight  – are being upended by emerging developments. There are four key overlapping domains where highly disruptive innovations are likely to be rolled out over the next 25 years: digitalization, automation, molecular technologies, and nature modification. Delivering ‘climate resilience’ and ‘nature-based’ solutions is a big part of their promise to policymakers. But in a post-pandemic world, the previously dystopian notion of a fully automated food chain without human workers is also being advanced as a solution for food safety, hygiene, and resilience to labour shocks.

These technologies are driving unprecedented corporate consolidation – and the trend is showing no signs of slowing down. The biggest change is the arrival of new players: specifically the marriage between Big Ag and data platforms. For agri-food companies, data strategies are not just a means to capture new efficiencies in food, but also to benefit from ‘surveillance capitalism’, whereby data giants amass and leverage data itself as a new form of capital. Amazon and Microsoft provide most of the world’s cloud computing infrastructure and are partnering with agribusiness-led digital platforms to deliver the weather, agronomic, and production data to and from precision farming systems. Farm equipment giants are embracing the digitalization wave and building the hardware and software for so-called 'precision' or 'digital' agriculture into their tractors and harvesters.

Digitalization is also providing an incentive for agribusinesses to forge partnerships with specialized technology companies. For instance, the agricultural sector will become second only to the military in its drone usage over the next five years. Meanwhile, the commodity titans are forging alliances around emerging digital technologies (especially blockchain and AI) to automate grain and oilseed trading, and as a general tool for traceability, transparency, and control of infrastructure.

The rush to access new e-retail and food delivery markets – accelerated by the pandemic – is also producing new food industry giants. E-commerce companies led by Amazon and China’s JD.com are now among the top ten retailers globally. New behemoths are forming as the global North’s food logistics firms and data platforms merge with e-commerce leaders in emerging markets. Amazon, Alibaba, Microsoft, Google (through its Alphabet X) and Baidu are also moving into the production part of the food chain, with digital ag firms highly reliant on their cloud, AI, and data processing services.

The growing financialization of the food system – coupled with the new technologies on offer – is also creating a new tier of (largely invisible) agri-food giants. A handful of mega-size equity firms have sensors, data streams, and financial fingers in every point along the food chain. Judging by recent developments, asset management firms are now out to buy stakes in all of the biggest firms. Some analysts are calling this practice, known as horizontal shareholding, ‘the greatest anti-competitive threat of our time’. The biggest asset management companies like Blackrock, Vanguard, State Street, Capital Group and Fidelity have designated funds for investments in food and agriculture, allowing investors to go into farming without owning land. These five companies own 10–30% of the shares of the top agri-food firms, and similar stakes in e-retail and cloud services. Alternative asset managers that control hedge funds (e.g. Blackstone) have been aggressively investing in agribusinesses and agricultural land in the global South, including in Brazil, where the firm was identified as a direct driver of Amazon deforestation. The advent of large-scale aggregated food system data, combined with AI, can provide hedge funds with novel instantaneous insights to drive commodity speculation – so called High Frequency Trading.

These trends will be amplified by ‘fintech’, i.e. the electronic payments, cryptocurrencies and electronic loans that are changing what money is and how it is handled. The super-computers needed to power fintech are administered by big companies – often financial firms – with the means to set up blockchains on one end, and consumer banking services on the other. Meanwhile, these blockchains are becoming a tool for corporations to both mine data on consumer behaviour, and transform (in their favour) the logistics, handling, and production systems that manage food chains – with little regard for labour, equity, or ecological impacts.

As a result of these trends, the big visible names in food by 2045 are most likely to be today's data processors, e.g. Amazon, Alphabet (Google), Microsoft, and Alibaba – as well as the telcos who control the data pipes and 5G networks. These and other data giants are also buying up and adding to the hyper-accelerating Internet network of cables, fibers, 5G, mobile, satellite, and edge networks. Others – including Elon Musk – are deploying internet beaming satellites to position for agridigital domination from the skies. In parallel, well known agribusinesses such as Bayer, Yara, and John Deere are reinventing themselves as rich data providers and combining data and biotech capabilities into biodigital strategies.

But new technologies, especially digital ones, develop differently in rich and poor regions of the world. For most of the small-scale agricultural world, new technologies are often deployed as instruments of control (population, individual and economic), community espionage and information mining.

Over time, it may not be the cloud, hardware, network, or interstellar layer that directs the digital food chain, but instead opaque asset management firms who are pulling the strings in the background. And with various forms of corporate consolidation continuing apace, by 2045 the big names will be considerably bigger and more powerful than they are today.

It is clear that these trends will have extensive impacts on all aspects of food systems. In order to protect and support food security and nutrition for people around the world, it will be necessary for the CFS - members and partners - to have the capacity to assess and contend with new and emerging technological issues. We therefore urge the HLPE to consider this theme among the CEEI.

2. Preparing for Future Disruptive Events

In the wake of the Covid-19 pandemic and the invasion of Ukraine, there is no longer any question that repeated food system disruption is to be expected into the future. Whether this will be due to multi bread-basket failures, the collapse of the Internet, embargoes at food trade “choke” points - or more pandemics and wars - future disruptive events are going to happen, we just can’t be sure of when and how.

Future disruptive events (sometimes called ‘Grey Swans’) are unpredictable in date and detail, yet can still be anticipated and planned for. They tend to arise from plausible conditions and come with relatively predictable – and usually compound – risks and opportunities: hurricanes, floods, and droughts are followed by epidemics and famines; food failures often have multiple sources; and every so-called large-scale ’natural’ disaster can reasonably be assumed to instigate an economic disaster that can trigger a political upheaval.

The CFS, members and partners - if using a long-term strategic lens - will be much better placed to support food security and nutrition in these critical moments, rather than to navigate cycles of crisis management. The CFS would benefit from having two key elements - an early warning system, and an early listening system - in place. These would allow member countries and CSIPM partners to anticipate and recognize coming upheavals; and to build response strategies that address the immediate crisis, including a plan for how to maximize food security and nutrition in the restructuring that inevitably follows disruption. With recent world events continuing to significantly impact FSN, there is no reason (nor excuse) for food system actors to be unprepared for future disruptive events in the years ahead. We therefore encourage the HLPE to consider the theme of “Preparing for Future Disruptive Events.”

Attachment:

<https://assets.fsnforum.fao.org/public/discussions/contributions/LFMExecSummaryEN.pdf>

## Margaret Koyenikan, University of Benin, Benin City, Nigeria

V0 DRAFT OF THE CEEI NOTE FOR E-CONSULTATION

The identified CEEIs are crucial issues to sustainable food security and nutrition (FSN). Each issue is inevitably broad since any attempt to narrow down issues to specifics will amount to a litany of issues that could make the report verbose. However, I feel inequality and inequity in food systems could stand alone, although they were captured under some of the CEEIs.

Building resilience in food systems for sustainability is the goal of all the efforts that will be put into the system including this consultation.  This is why many of the CEEIs such as rural-urban continuum, climate change, conflicts the fragility issues featured prominently- seem like duplications. Revitalizing climate policies and infectious diseases are environmental issues which could be merged as such. Climate issues are not limited to policies alone but also other relevant issues were identified. The issue could be tagged Climate Change in food systems or Climate Change and infectious diseases challenging in food systems.

The drivers and trends identified as they are well captured

Questions

The following could be considered

Building resilient supply chains for FSN- The roles of research and innovations in building resilience need to be highlighted

Urban and peri-urban food systems- The need to capture rural in this heading in order to highlight issues of migration and agricultural employment for youth.

Conflicts and the fragility of food systems- Local conflict resolution strategies.

Revitalizing climate policies for FSN- reflect content in the title of the issue.

Recognizing the role and rights of food system workers- the roles of those working in the formal sector in the food systems at local levels are not covered.

Building a meaningful interface for diverse knowledges and practices for FSN- The need to highlight information management and how food systems actors could benefit from digitization.

Emerging and re-emerging infectious diseases challenging FSN. The need to address what know about infectious diseases and preventing them.

## Jessica Bridgers, World Federation for Animals, United States of America

Please find attached comments from the World Federation for Animals on the V0 draft of the HLPE 3rd Note on Critical, Emerging and Enduring Issues.

We thank you for this opportunity to share our input.

Sincerely,

Jessica

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**Suggested Questions for Consideration in HLPE 3rd Note on Critical, Emerging and Enduring Issues**

We welcome the HLPE 3rd Note on Critical, Emerging and Enduring Issues, especially at this juncture with the looming triple planetary crisis of climate change, biodiversity loss and pollution, which are aggravated by unsustainable food systems, and with the further exacerbation of food insecurity by COVID-19, a disease which very likely arose from close interactions between people and wild animals. Thus there are numerous emerging issues on the human-animal-environment interface which must be considered in this 3rd note.

We offer the following suggestions for consideration in the report.

**Urban and peri-urban food systems**

Urban and peri-urban food systems have the potential to increase zoonotic risk by bringing large human and animal populations into close contact. Therefore, we suggest a question that would elaborate what policies can foster a One Health approach and reduce the risk of emergence and transmission of new zoonotic diseases in urban and peri-urban food systems.

**Revitalizing climate policies for FSN**

We appreciate that the environmental footprint of intensive animal agriculture has been recognized in the rationale for this issue.

We also are pleased to see the suggestion for evaluation of recent developments and methods such as ““green economy”, “circularity”, “climate smart agriculture”, “precision agriculture””, etc., and their “compatibility with principles of climate justice, to prioritize rights and livelihoods of vulnerable groups such as smallholder and subsistence farmers, food systems workers, indigenous peoples, women and children, especially in fragile geographies.” However, we would add to this list also “animal health and welfare” as 182 countries have agreed to implement the World Organisation for Animal Health animal welfare standards, and the recent resolution at UN Environment Assembly-5.2 which noted “that the health and welfare of animals, sustainable development and the environment are connected to human health and well-being”.

Finally, we note that the recent IPCC assessment report on mitigation highlights the positive role of plant-based diets, stating in the [Technical Summary](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_TechnicalSummary.pdf):

*“Diets high in plant protein and low in meat and dairy are associated with lower GHG emissions (high confidence).” pp TS-89*

*“Emerging food technologies such as cellular fermentation, cultured meat, plant-based alternatives to animal-based food products, and controlled environment agriculture, can bring substantial reduction in direct GHG emissions from food production (limited evidence, high agreement)” pp TS-89*

*“The indicative potential of demand-side strategies across all sectors to reduce emissions is 40-70% 13 by 2050 (high confidence) … Mitigation strategies can be classified as Avoid-Shift-Improve (ASI) options, that reflect opportunities for socio-cultural, infrastructural, and technological change ... The greatest Shift potential would come from switching to plant-based diets.” pp TS-98*

In line with these issues, we would suggest a question that can address how consumption and production patterns can mitigate or exacerbate climate risk, and what policies can be used to shift consumption and production to be more climate resilient.

**Recognizing the role and rights of food system workers**

HLPE Report 10 “Sustainable Agricultural Development for Food Security and Nutrition: What Roles for Livestock?” acknowledged the poor working conditions and low wages faced by workers in intensive animal agriculture. This link has been exacerbated during COVID-19, as workers in the [intensive livestock sector suffered higher rates of infection](https://www.frontiersin.org/articles/10.3389/fvets.2020.585787/full) due to working conditions and lack of labor protections.

We therefore suggest augmenting the first question in this section as follows:

*How to improve the working and living conditions of all food system workers, especially those in the* ***animal production and processing sector*** *and informal and seasonal contractual arrangements?*

**Emerging and re-emerging infectious diseases challenging FSN**

We are pleased to see a section focusing on disease emergence, but we are surprised that this section does not explicitly reference animal health and welfare or zoonotic disease. While we welcome the reference to the One Health Commission, it would be more relevant and timely to reference the One Health High Level Expert Panel (OHHLEP) which comprises the FAO, World Health Organization, World Organisation for Animal Health and UN Environment Programme.

We welcome the definition of One Health as defined by the OHHLEP:

*“One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems.*

*It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent.*

*The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.”*

We also note that the guiding principles of the OHHLEP One Health Definition includes:

*“Socio-ecological equilibrium that seeks a harmonious balance between human-animal-environment interaction and acknowledging the importance of biodiversity, access to sufficient natural space and resources, and the intrinsic value of all living things within the ecosystem.”*

 And:

*“Stewardship and the responsibility of humans to change behaviour and adopt sustainable solutions that recognize the importance of animal welfare and the integrity of the whole ecosystem, thus securing the wellbeing of current and future generations.”*

Although the Rationale for this section could be improved, the questions in this section are generally good, especially questions 3, 4 and 5. However, we would recommend using a stronger One Health lens when examining the available data and information and developing conclusions for this Note.

## Permanent Delegation of Brazil to FAO, IFAD and WFP

Note Verbale from Embassy Brazil, Italy - Comments on the Consultation opened to Members of the Committee on Food Security (CFS) regarding the HLPE's 3rd Note on Critical, Emerging and Enduring Issues

Attachment:

<https://assets.fsnforum.fao.org/public/discussions/contributions/Comments%20to%20consultation%20of%20CFS.pdf>

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The Permanent Delegation of Brazil to FAO, IFAD and WFP presents its compliments to the Food and Agriculture Organization of the United Nations and, regarding HLPE’s 3rd Note on Critical, Emerging and Enduring Issues, has the honor to convey some comments to the consultation opened to members of the Committee on World Food Security (CFS).

2. Firstly, Brazil would like to express its preference for Key issue number 1 (“Building resilient supply chains for food security and nutrition”) and would also like to highlight the importance to add the following reflections for further elaboration by HLPE:

* How do tariff and non-tariff barriers to free international trade affect agricultural production, commercialization and distribution in supply chains?
* How does agricultural subsidies distort international food prices?
* How does export restrictions and other “ad hoc” measures may distort international food prices?
* How do unilateral sanctions affect inputs supplies, essential to food production?
* What can be done to strengthen transparency in international markets?

3. Additionally, Brazil would like to express its opposition to include extraneous subjects to the discussions of CFS, as suggested in Key issue number 3 (“Conflicts and the fragility of food systems”), as the focus of all investigations held by HLPE should be directly related to food security and nutrition, and should not abduct topics pertaining to other fora.

4. Finally, Brazil would like to underscore its opposition to researches and debates outside the mandate of CFS, based on HLPE’s reports, which have shown a clear trend to include the broader concept of “food systems” instead of prioritizing that of “Food Security and Nutrition”.

The Permanent Delegation of Brazil avails itself of this opportunity to renew to the Food and Agriculture Organization of the United Nations the assurances of its high consideration.

## Magdalena Gajdzinska, Research Policy Officer, European Commission DG Research and Innovation, Belgium

Dear Sir/Madam,

Below are comments from the European Commission's Directorate-General for Research and Innovation, for the first three items:

**1) Building resilient supply chains for FSN**

The pandemic and the war in Ukraine have also magnified several differences that are not directly mentioned in the narrative, such as (a) the **greater vulnerability of the poor and other disadvantaged groups**(e.g., women, youth, the landless and refugees); (b) the important **regional and national differences** in policy reactions, demographics, food and economic system structures; (c) the **digital divide** between rich and poor (e.g., internet access and disruptions in schooling in developing countries).

Additional suggested questions:

* How can access/investments to information and communications (e.g., early warning systems, development of improved data and indicators, and digital technology) be increased to **anticipate shocks**?
* What are the various instruments needed to **absorb shocks**(e.g., better access to finance and liquidity, infrastructure and digital connections, and R&D for improving food production systems)?
* How can transformation in **governance models** support the transition towards resilient food systems?

**2) Urban and peri-urban food systems**

In the narrative there is a strong focus on the importance of the municipal governments in FSN, however, national activities including political will and finance are needed too to drive impactful change at larger scales.

Additional suggested questions:

* How to engage citizens and empower them to drive inclusive change and provide next to top-down also bottom-up approaches?
* What are the main lock-ins at different levels preventing FSN in urban and peri-urban settings and how to overcome them?

**3) Conflicts and the fragility of food systems**

While short term emergency support measures are important, they do not replace the importance of refocusing the food sector in the long run towards **sustainability and resilience. Food sustainability is fundamental for food security.** Innovation through research, knowledge, technology, agro-ecology and adoption of best practices can mitigate pressure on costs without hurting production capacity, leading to long-term progress in productivity to achieve the green transition.  The current crisis confirms that we need to accelerate the food systems transition towards sustainability to better prepare for future crises.

Additional suggested questions:

* How can research and innovation help mitigate food insecurity?
* How can the UNFSS coalitions assist and be the enablers of change for food sustainability and resilience to ensure food security?

Best regards,

Magdalena GAJDZINSKA

Research Policy Officer

Plant production, food safety and microbiome

##  Stefano Mifsud, USUN Mission, Rome, United States of America

Below are USG comments on the Zero Draft of the HLPE’s 3rd Note on Critical, Emerging, and Enduring Issues :

The United States appreciates the HLPE’s efforts in producing this Zero Draft of the 3rd Note on Critical, Emerging, and Enduring Issues (CEEI).  While we see value in addressing several of these issues, we see particular relevance in the original three that the HLPE identified, on which we’ve previously provided comment:

1. Building resilient supply chains for FSN

2. Urban and peri-urban food systems

3. Conflicts and the fragility of food systems

Revitalizing climate policies for FSN is certainly relevant but may be best addressed as a cross-cutting theme for all CEEI’s that form the basis of the MYPoW.  This perhaps answers question 1c., which asks whether any of the issues can be combined.  With regard to the rationale and the key questions, we believe more emphasis could be placed on the positive role that innovations in agriculture can play to mitigate the food security impacts of climate change, including precision agriculture, biotechnology, climate smart agriculture, and more.

While we agree that issues 5 (Recognizing the role and rights of food system workers), 6 (Building a meaningful interface for diverse knowledge and practices for FSN), and 7 (Emerging and re-emerging infectious diseases challenging FSN) are indeed critical issues, it is less clear how the CFS would tackle them within its mandate and MYPoW, given the extensive overlap they have with subjects such as labor rights, intellectual property, and health.  Given that the MYPoW is limited and that we must identify the most critical, enduring, and emerging issues relevant to the CFS, we encourage the HLPE to move forward with the first three issues.

For each of the CEEIs, it is paramount that the HLPE consider and respect the work and mandate of other international bodies.  The added value of the CFS’s Multi-Year Program of Work (MYPoW) is in its ability to fill gaps in existing policy guidance and compliment the work of other bodies.  Therefore, ensuring that each of the CEEIs are closely linked to food security is important for maintaining an appropriate scope that stays within the expertise of the HLPE and CFS.

## Veronica Villa, ETC Group, Mexico

**Contribución de ETC Group a la consulta electrónica sobre el borrador V0 de la nota CCED del GANESAN**

[**www.etcgroup.org**](http://www.etcgroup.org/)

3ª Nota del GANESAN sobre Cuestiones críticas, emergentes y duraderas

1. Compartir sus comentarios sobre la lista de las cuestiones críticas, emergentes y duraderas seleccionadas:

¿Son las siete CCED identificadas por el GANESAN los problemas más importantes que afectan la seguridad alimentaria y la nutrición, a nivel mundial y en contextos específicos?

¿Hay otras cuestiones clave que deberían ser añadidas y desarrolladas? En caso afirmativo, proporcione una justificación de por qué son "críticas", junto con la literatura y los datos relevantes.

Las nuevas tecnologías de edición genética, como la denominada “impulsores genéticos” pueden presentar amenazas hacia distintos sistemas alimentarios. Los impulsores genéticos se han probado en amarantáceas consideradas malezas, para devolverles la vulnerabilidad a los pesticidas. Las amarantáceas son alimento principal en poblaciones del sur de México y los Andes. El cruzamiento entre especies que incorporan impulsores genéticos y especies convencionales, así como el desplazamiento de los genes de organismos impulsores-genéticos hacia sistemas alimentarios que tienen amarantáceas, amenazan distintos sistemas alimentarios. Los impulsores genéticos están ganando legitimidad como estrategia de conservación, de control de poblaciones consideradas plagas. El avance de los impulsores genéticos y sus posibles implicaciones para los sistemas alimentarios podría tomarse en cuenta como CCED por el GANESAN.

Literatura:

Grupo ETC, 2018, “Exterminadores en el campo”. Impulsores genéticos: cómo favorecen la agricultura industrial y amenazan la soberanía alimentaria”. Disponible en castellano, inglés y francés en: [*https://www.etcgroup.org/content/forcing-farm*](https://www.etcgroup.org/content/forcing-farm)

CSS / Ensser/ VDW, 2021, Genetically engineered gene drives: IUCN report on Synthetic Biology lacks balance. A critique of the IUCN report ‘Genetic Frontiers for Conservation: An assessment of synthetic biology and biodiversity conservation’ –with regards to its assessment of gene drivesMay 2021, Authors: Mark Wells, PhD & Ricarda Steinbrecher, Ph

Disponible en inglés, castellano y francés en

<https://genedrives.ch/new-publications/>

## Brian Baldwin, PSM, Italy

Please see attached the consolidated PSM comments.

The PSM comments reference the ‘issue’ separately submitted by Solutions for the Land and this is also attached.

Regards

Brian Baldwin, CFS/PSM

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**PSM comments on Note on Critical, Emerging and Enduring Issues (CEEI), May 2022**

1. In the light of both the COVID-19 pandemic and the Ukraine conflict, the topic of **Building resilient supply chains for FSN** continues to be a key issue. Risks to global food security are arising from conflict, climate change, tight supplies, plus human and animal health challenges, all of which are affecting supply chains. Further development of this topic would need to ensure that analysis and research is balanced and scientifically based. International trade and global supply chains are key for boosting resilience, working closely with local, national, and subregional supply chains and markets. The Agricultural Market Information System (AMIS)-FAO provides substantive data and analysis on many of the parameters and issues to be discussed. In this context would also be important to assess the value of the multilateral system over the last 2-3 years (in particular) and the importance of strengthening the global rules-based trading system (e.g., WTO), including international standard setting bodies (e.g., CODEX) and the importance of strengthening transparency in international markets. Keeping global food, feed, and inputs (including seed and fertilizer) trade open is essential. Import dependent countries may want to build more flexibility into their trade policies, to facilitate trade. It is especially important not to impose export restrictions on humanitarian food purchases by the UN’s World Food Program. This objective analysis requires a multi-stakeholder approach, recognizing national contexts, needs and priorities.

2. The CEEI topic, **Conflicts, and the fragility of food systems**, has already been highlighted by the PSM through the Advisory Group discussions as providing the basis to take forward, and build on, the CFS Framework for Action for Food Security and Nutrition in Protracted Crises (CFS-FFA) and its application to recent and current events and evolving FSN needs at country level. This topic also gives the opportunity to reinforce domestic social protection measures and related food requirements and the need to prioritize agriculture now and in the long term. Target 1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable The topic also gives the possibility to combine with the CEEI topic Recognizing the role and rights of food system workers. The Coalition of Action on Decent Work and Living Incomes and Wages for All Food Systems Workers, established during the Food Systems Summit, has focussed on essential food systems workers whose livelihoods need to be improved and made equitable including:

* Farmers - smallholders, family farmers, sharecroppers (tenant farmers)
* Waged agricultural workers, including those in aquaculture and on plantations
* Wage and self-employed workers in forestry, nursery, drinking water, irrigation, as well as barefoot technicians, hunter-gatherers and landless laborers
* Fishers and pastoralists
* Food processing, manufacturing, and packaging workers
* Transport, distribution, and delivery workers including food delivery riders
* Food retail workers in supermarkets and shops/groceries, market workers, street vendors
* Food preparers, cooks, and servers.

Key areas for further work (and therefore building into the questions posed by the CEEI) include (i) improving data collection on food system livelihoods including workforce statistics e.g., workforce numbers and composition; Improving labour market governance and institutional frameworks; Institutionalising labour and other human rights in food systems at the transnational and international level; and promoting decent employment in food systems, with a focus on more and better jobs for youth. This would include improving a fair repartition of the value added along the value chains to promote fair prices for small-scale producers, traders and processors, and fair wages for all workers through institutional arrangements, enabling policies and regulations by promoting tiny and microenterprises of the poor, small, and marginal farmers, linking them directly to market and facilitating scaling of their micro-Agri SMEs to assist in the overall recovery from conflict and fragility.

3. The CEEI topic **Revitalizing climate policies for FSN** provides the basis for comprehensive CFS membership collaboration and action are needed from the UN, donors (and with donor focus on RBAs), research bodies, international finance institutions, private sector, particularly farmers, and civil society. This gives the opportunity for a comprehensive analysis that considers the impacts of technology, innovation, and the evolving climate financing possibilities from public and private sector. The topic also gives the opportunity to include much of the focus of the CEEI Building a meaningful interface for diverse knowledges and practices for FSN. In particular, as noted in the development of the issue “modern techniques have the potential to contribute to improving resource efficiency, strengthening resilience and social equity through FSN-oriented innovations such as biofortification, drones and sensors to allow precision farming, mobile-based weather information to mitigate the impacts of climate change, agronomic practices to reduce greenhouse gas emissions, amongst others (World Bank 2021).” The linkage of these CEEIs would be mutually reinforcing and would emphasize the importance of a food systems approach to the natural resource base, including the need for healthy soils. It would be important to ensure that CFS’s ultimate policy guidance be applicable to the broad spectrum of farm business models and contexts globally, and not seek to elevate certain systems and approaches over others.

4. The CEEI **Building a meaningful interface for diverse knowledges and practices for FSN** also notes that “Farmers on the ground, drawing on local knowledge, however, can be equally adept at safeguarding soil, plant and animal health, or water quality” (Swaminathan, 1997). In this regard, as included in the questions guiding the e-consultation, the addition of a further issue ‘**The role of agriculture in concurrently delivering ecosystem services and food and nutrition security**’ together with key questions and references provides further perspectives and approaches to both the analysis of climate policies and broadening the knowledge base to address FSN.

Attachment:

<https://assets.fsnforum.fao.org/public/discussions/contributions/V0%20Draft%20HLPE%20CEEI%203rd%20note%20e-consultation_0.pdf>

## Magdalena Ackermann, Society for International Development, Italy

**CSIPM Comment to HLPE consultation on the V0 draft of the HLPE 3rd Note on Critical, Emerging and Enduring Issues (CEEI), 22 May 2022**

**A. General remarks:**

The periodic HLPE CEEI note is a highlight of the CFS policy process, since it represents the moment in which this unique team of analysts is given an opportunity to step back from specific assignments and share with CFS Members and participants its overall reflections regarding what is on the horizon to which the Committee needs to be attentive. Framing the context of this reflection is, of course, a fundamental part of the exercise. Past CEEI notes have defined the terms ‘critical and emerging’ and have clarified the criteria for identifying them [1]. We urge the HLPE to revisit and deepen this framing section of the note in light of the updated conceptual and policy frameworks as described in the 2020 HLPE global narrative report, taking into account the 6 dimensions of FSN, and given the addition of the term ‘enduring’. We welcome the fact that the scope is further expanded to the notion of “enduring” issues. This recognizes the need not only to identify critical and emerging issues, but also to look at WHY already existing issues are not being addressed adequately. In clarifying what is meant by “enduring”, it is critical that the note identifies the structural causes or drivers of why many issues are not just persisting but **worsening**.

We also welcome the inclusion of some themes of high importance to the CSIPM, such as the those on revitalizing climate policies for food security and nutrition and on recognizing the role and rights of food system workers. We note that, the issue of agricultural workers’ rights was already a pressing one presented by the CSIPM on 2016 [2], and it is still and should be addressed by the HLPE note on CEEI.

The CSIPM recognizes that, although certain issues have been analyzed by the HLPE, discussed and negotiated at the CFS, they have not been addressed appropriately and therefore remain critical and enduring. We refer to our critical assessments of the policy convergence processes related to Food Systems and Nutrition and s to Agroecology and other Innovations, motivated by the fact that the outcomes were inadequate to address the concerns of our constituencies and communities. Despite widespread political engagements to end hunger, among other international commitments, there is a growing gap between engagements and policies, on the one hand, and the realities and challenges faced by the communities in their territories on the other. The CEEI report should identify the critical issues that point to systemic failures of the current dominant agro-industrial food system, further aggravated by the COVID-19 pandemic and the food price crisis resulting from the war in Ukraine. This gap also highlights the need for much stronger food governance mechanisms at different scales and across different sectors.

This worsening reality calls, as the HLPE global narrative highlighted, for a comprehensive food systems analysis of the different issues and the need for radical transformation of food systems. The CEEI note should apply this systems analysis, point to links between the CEEIs and explain why certain issues need to be prioritized by the CFS on the basis of their capacity to bring about transformational leverage of food systems rather than simply making incremental contributions to “improving” or “alleviating” impacts without addressing the root causes of the CEEIs. The 0 draft is limited in this respect as it is mainly a description of 7 separate issues.

The HLPE CEEI note will be a major contribution to the CFS 50 in a context of one of the **most severe multi-layered food crisis**in decades. Therefore, it should further build on and update the analysis of the trends, challenges and opportunities of the global narrative report, including the causes, vulnerabilities and obstacles exacerbated by the COVID-19 pandemic, the war in Ukraine and other conflicts, and climate impacts. The multiple crisis highlights the need for global coordination, as already recommended in recent HLPE reports. This note should include elements on how improved coordination and good governance can be envisaged at different scales and across sectors.

**B. Propositions of other relevant issues**

Several themes have been highlighted in the consultations within the CSIPM. As highlighted in the [CSIPM comments on the proposed HLPE theme for the 2024 report](https://assets.fsnforum.fao.org/public/discussions/contributions/EN%20CSIPM%20Comment%20HLPE%20consultation%20Inequalities%20Report.pdf), the three topics proposed by the HLPE note, as integrated in the 0 draft, are all relevant to CSIPM constituencies. Several issues put forward previously by the CSIPM remain pressing and critical: agrobiodiversity and genetic resources [3], impacts of trade policies [4]. The issue of **how to achieve radical transformation of food systems** remains on the agenda, as was shown by the low ambition of the CFS outcomes on agroecology and food systems and nutrition. Other issues have been identified as pressing critical issues: market concentration [5], growing landlessness, migration, human rights violations, food governance.

Compared to the previous HLPE notes on CEI, the specific issue of “**Strengthening governance of food systems for an improved FSN**” has not been taken up as a separate issue. Past note highlighted that “Agriculture and food systems will need a radical transformation in the future decades. This will require an improved governance. Among the key challenges: how to better articulate governance systems at different scales and across different sectors in the overall framework of the 2030 Agenda and in the perspective of the progressive realization of the right to adequate food?” [6]  This issue is even more urgent today.

The current food multilayered food crisis has shown the**dependencies and fragility of international trade and global value chains**, as well as the resilience of local, diversified, agroecological territorial food systems. The HLPE already identified the need to address the impacts of Trade on FSN as a critical issue [7]. The report “Voices from the ground” underlined that the COVID-19 crisis “has demonstrated that increased liberalisation of trade goes hand in hand with increased vulnerability and shocks for food importing countries. While regional and international trade can play an important role in the short term to prevent hunger and food-related conflicts, it must be subject to enforceable regulation that upholds the public interest. States must reaffirm their sovereign regulatory role over markets, including through stopping food-related speculation and derivatives, regulating prices, public procurements, public storage and market regulation, secure land and resource rights, enforced labour inspections and mandatory environmental laws.” [8] The UN Special Rapporteur concludes that “Until now, trade policy has primarily focused on economic frameworks and has either ignored or marginalized people’s human rights concerns. (…) International trade is of particular importance and a core element that must be addressed to ensure the full realization of the right to food. [9] This has becoming even more pressing today with the current crisis. It is further marginalizing small scale food producers who are the main protagonists for feeding the world sustainably.

With the current food price crisis we face, the third in 15 years, there is once again a re-emerging issue we face that was identified in the first HLPE note: “The increasing role of financial markets in food security and nutrition” [10]. This shows that the CEEI note should analyze why measures taken since the food crisis of 2007-08 have been insufficient. Financial markets play a major role in many dimensions of food systems. They are evident in the consolidation of power concentration in food systems, including through land grabs, acquisitions, investments in technologies. Financial markets are also important in commodity markets with, among others, indexed commodity funds, that link a number of commodities together, shifting the investor’s interest away from prices in any given commodity towards risk-hedging investments in a bundle of unrelated commodities. The **rules of investment and finance**are profoundly important in shaping economies and the transition of food systems.

To conclude, we urge the HLPE to develop a note that identifies the structural causes or drivers of the multilayered food crisis that need be addressed to achieve the urgent and radical transformation of our food systems grounded in human rights. The CFS has the mandate and the capacity to address the fragilities of the world’s food system which the current crisis is dramatically highlighting. It has the mandate to coordinate responses that place the needs of workers, migrants, women, smallholder food producers, Indigenous Peoples, consumers, the urban food insecure, refugees and displaced, the landless and communities in protracted crises at the center of policy proposals.

[1] See, [https://www.fao.org/fileadmin/user\_upload/hlpe/hlpe\_documents/Critical\_Emerging\_Issues/HLPE\_Note-to-CFS\_Critical-and-Emerging-Issues\_6-August-2014.pdf p 3 to 5](https://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical_Emerging_Issues/HLPE_Note-to-CFS_Critical-and-Emerging-Issues_6-August-2014.pdf%20p%203%20to%205)

[2] <https://www.csm4cfs.org/wp-content/uploads/2016/02/CSM-Proposal-Plantation-Workers-for-CFS-MYPOW-2018-19.pdf>

[3] <https://www.csm4cfs.org/wp-content/uploads/2016/02/CSM-Proposal-HLPE-Report-on-Coherence-in-the-Global-Governance-of-Genetic-Resources-15_04_2016.pdf>

[4] <https://www.csm4cfs.org/wp-content/uploads/2016/02/CSM-Proposal-HLPE-Report-Trade-15_04_2016.pdf>

[5] <https://www.csm4cfs.org/wp-content/uploads/2016/02/CSM-Proposal-Market-Concentration-for-CFS-MYPOW-2018-19.pdf>

[6] <https://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/HLPE_Note-to-CFS_Critical-and-Emerging-Issues-2nd-Edition__27-April-2017_.pdf>

[7] <https://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/HLPE_Note-to-CFS_Critical-and-Emerging-Issues-2nd-Edition__27-April-2017_.pdf>

[8] <https://www.csm4cfs.org/wp-content/uploads/2020/12/EN-COVID_FULL_REPORT-2020.pdf>

[9] <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N20/191/75/PDF/N2019175.pdf?OpenElement>

[10] <https://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical_Emerging_Issues/HLPE_Note-to-CFS_Critical-and-Emerging-Issues_6-August-2014.pdf>

## Mylene Rodríguez Leyton, Universidad Metropolitana de Barranquilla, Colombia

**Aportes al Foro:3ª Nota del GANESAN sobre Cuestiones críticas, emergentes y duraderas - consulta sobre el borrador V0**

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**1. Compartir sus comentarios sobre la lista de las cuestiones críticas, emergentes y duraderas seleccionadas:**

a. ¿Son las siete CCED identificadas por el GANESAN los problemas más importantes que afectan la seguridad alimentaria y la nutrición, a nivel mundial y en contextos específicos?

Las 7 cuestiones mencionadas son claves e importantes para la seguridad alimentaria y la nutrición; si bien representan los aspectos más relevantes de estos últimos tiempos de pandemia, sugiero que podría incluirse también no solamente el papel de los derechos de los trabajadores del sistema alimentario sino el enfoque del derecho humano a la alimentación.

b. ¿Hay otras cuestiones clave que deberían ser añadidas y desarrolladas? En caso afirmativo, proporcione una justificación de por qué son "críticas", junto con la literatura y los datos relevantes.

En mi concepto falta desarrollar la dimensión nutricional de la seguridad alimentaria más allá de ser abordada como una consecuencia de los aspectos claves a tratar, puede revisarse como la situación actual de malnutrición se afectó por la pandemia COVID 19 y sus posibles efectos en otros aspectos claves y como las situaciones de exceso de peso y su relación con las enfermedades no transmisibles y sus efectos sobre el sistema de salud y la productividad.

Para el tema relacionado con la pandemia COVID 19 y los efectos de en la seguridad alimentaria y nutricional abordar las lecciones aprendidas especialmente en lo relacionado con las medidas de contención durante la cuarentena, para lo cual envío las referencias mencionadas a continuación.

**Referencias sugeridas**

1. Global assessment of the impacts of COVID-19 on food security:
<https://reader.elsevier.com/reader/sd/pii/S2211912421000833?token=DF56C3C22A4821298DE651EA56F41AA07FF20E6E68640BCE76620B67F5812EBF5E17F53A78B29CD39D306B28C1A97306&originRegion=us-east-1&originCreation=20220524000424>

2. COVID-19’s impacts on incomes and food consumption in urban and rural areas are surprisingly similar: Evidence from five African countries:
<https://reader.elsevier.com/reader/sd/pii/S2211912422000244?token=C837E59F29444B34008C765C4C8F7488F5EC946FC715A1837513F770A2384B6C71A01331BE1BF6D95BE69FEBD2882BD9&originRegion=us-east-1&originCreation=20220523230321>

3. The logics of war and food (in)security
<https://reader.elsevier.com/reader/sd/pii/S2211912422000256?token=9A960A1ADACA93384042DBA35D47E0933C5CDE317D2EA590575BE0EE01D88FA656E1B432F81F8DF01F0803841E848872&originRegion=us-east-1&originCreation=20220523230410>

## Jacopo Valentini, WFP, Italy

**Comments on the draft HLPE 3rd Note on CEEI from WFP’s Climate & Disaster Risk Reduction Programmes Unit:**

**1. General Comment:** *The Note on Critical, Emerging and Enduring Issues” (CEEI) affecting Food Security and Nutrition (FSN) is addressing the issues in a silo, while we know that climate, conflict, covid etc. interact and operate in a system. We need to focus on addressing those issues systematically and holistically and develop policies and programing that align objectives, incentives and finance. Maybe a food systems lens could help solve this challenge.*

**2. Comments specifically regarding Revitalizing Climate Policies for FSN:**

a. In what ways have our understandings of the dynamics between climate change, FSN and food systems changed since the HLPE report on climate change was published in 2012? What are the implications of our current understanding of the links between climate and FSN for food security investments and policies and nutrition outcomes? To what extent do the most recent climate policy agreements address food security and climate interactions, and what additional policy directions are needed?

*The understanding has changed, also thanks to the UNFSS, the policies however are lagging behind.*

b. What regions and populations are most negatively affected by the synergistic dynamics between climate change and food systems? What are the food systems and regions that contribute most to these dynamics?

*Not sure if this framing is useful, as all regions and populations are affected. Maybe better to phrase it in a way to understand how different regions and populations are affected.*

c. To what extent do recent climate-focused technologies and practices for food and agriculture represent real opportunities to build climate resilient food systems and what are their potential costs and challenges might arise especially on fragile groups and fragile environments?

*This is a large topic and basically includes the UNFSS game changing solutions. Here maybe a stock take of what UNFSS Alliances and coalitions are working on could help.*

d. What measures are best suited to building more climate resilient food systems for small-scale producers and other vulnerable and marginalized food system actors?

*Again a very large and ambitious topic and UNFSS solutions could shed light.*

e. What specific role and policy developments are needed to recognize the role of women in FSN in times of climate emergency and natural disasters?

*What about youth?*