

# Senior Expert Contributions to OneCGIAR Program Development Food Systems and Nutrition Netherlands-CGIAR Partnership



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The aim of this two-pager<sup>2</sup> is to provide input for the OneCGIAR investment plan. Notably to identify key research challenges within the OneCGIAR impact areas, how these areas interact with Dutch policy priorities and how the challenges could be addressed / strengthened.

## Relevance

Diets and the food systems that deliver them are at the nexus of the critical global challenges associated with malnutrition, human health, natural resource degradation, climate change and poverty. Poor quality diets are a root cause of morbidity, mortality and malnutrition, more so than many other global health challenges. Undernutrition (stunting and wasting) is reducing too slowly, micronutrient deficiencies ('hidden hunger') persist and overweight, obesity and diet-related non-communicable diseases (NCDs) are rising, the fastest in low-income countries. While the poorest persistently suffer from (periods of) hunger lacking diverse, safe and nutrient-rich foods, others shift rapidly to diets with more or too much calories, animal-sourced foods and with foods not supporting health such as ultra-processed foods. All need a transition towards healthier dietary patterns and this requires major reforms in food systems at every stage from production through retail to consumption addressing the inadequate availability, physical accessibility, affordability and desirability of improved diets. These transitions meet

economic, social and cultural barriers: food insecurity affects around 700 million people in the world, healthy diets are unaffordable for an estimated 3 billion people globally; due to rapid urbanization the distance between where food is grown and where it is consumed is growing; shifts to unhealthy dietary habits due to rising income and changing food preferences; limited time (due to women's labor force participation) and space (due to poor housing conditions) for food preparation; and food environments that promote ready-to-eat, cheap convenient, and ultra-processed foods. The food system reforms for healthier diets should go hand-in-hand with reduction of environmental degradation, safeguarding employment and income to reduce poverty and inequality, and building resilience to future shocks. The context-dependent nature of the food system-diet nexus further challenges the needed reforms from local to global scales. While global consensus and national commitments are growing around the need for this transformation, robust scientific evidence to guide this process is missing.

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<sup>3</sup> Healthy diets promote all dimensions of individual health and prevent diet-related non-communicable diseases and malnutrition in all its forms. Healthy diets ensure adequate amounts of fruits, vegetables, nuts, seeds, whole grains, legumes, sufficient intake of starchy staples and animal-sourced foods (preferring milk, egg, poultry and fish) and limited or no intake of foods, food groups, and nutrients that have could lead to health risks when eaten in excess such as free sugars (including sugar sweetened beverages), total energy and type of fat, salt, red and processed meat and ultra-processed foods. A healthy diet is also safe with minimal levels, or none if possible, of pathogens, toxins, and other agents causing foodborne diseases. For infants, a healthy diet is comprised of exclusive breastfeeding for the first six months of life, and complementary feeding of adequate, safe, and nutrient-dense foods after six months of age, including continued breastfeeding to age two years.

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## Key research challenges

Using the diet, nutrition and health challenges faced by the poor as a starting point, evidence is needed to guide food system reforms that make that healthy diets<sup>3</sup> become more available, physically accessible, affordable and desirable to all individuals, while improving environmental sustainability, reducing poverty, and increasing social equity and inclusiveness. Starting from the consumer perspective, research challenges are related to the choices that different food system actors (consumers and public and private actors in the food environment and along the food value chains) make in relation to the type, quality, safety, sustainability, and pricing of foods and the drivers of these choices (e.g. political, economic, socio-cultural and demographic factors). Priority research questions addressed are (details in Annex 1):

- How can **healthy and sustainable diets**, defined in the local context, be used to guide local and global food system reforms?
- Which (individual and household) determinants of **consumer dietary choices** can be leveraged to improve the healthiness of the diet?
- How could urban and rural **food environments** be shaped to increase access to safe and affordable foods necessary for a healthy diet?
- How can midstream actors in **middle of agri-food value chains** be mobilized to improve the distribution, quality and safety of healthy foods?
- How can technical, governance and behavioural factors be **balanced** to optimize diet, nutrition and health impacts, minimizing possible negative social and environmental impacts and strengthening equity, and inclusion?
- What **policy incentives, investments and regulations** are needed to overcome trade-offs and support synergies between consumer dietary choices, the food environments and the middle of value chains?

In all research questions, close attention is paid to the empowerment process of women and youth, the interactions between formal and informal sectors, and to the interactions between urban, peri-urban and rural areas. The role of key stakeholders (government, private sector, civil society) play in achieving healthy and sustainable diets through food system reform in all research questions is addressed.

The **intended outcome** is a set of scalable evidence-based strategic program, strategies and policy options, packaged for different actors and settings depending on stage of food system development and related dietary challenges, to improve nutrition and health through diverse, nutritious and safe diets resulting from sustainable and inclusive food systems.

## Approach

Initial focus is on four regions: **West and Central Africa, East and Southern Africa, South Asia, and Latin America**. These regions differ considerably with respect to the burden of malnutrition, food system characteristics, and the nature and severity of the environmental unsustainability of these systems. Within each region, countries will be chosen as a specific focus and special attention is paid to fragile areas.

The **challenge of the transition and reform agenda** has consequences for engagement in the science community, and research methods used will gear towards co-creation, experimentation, foresight and scenario analysis and reflexive learning.

A **global framework** guides the research but specific research questions and actions reflecting the regional specificities and demands (see Annex 2) are identified at regional and national levels through an **multi-stakeholder engagement process** with relevant public, private, civil society, and research partners.

Initially, engagement will result in 1) *an outline of priority challenges and key knowledge gaps* that address (regional) demands and support the transformation of food systems to deliver better diets in an inclusive and sustainable manner; 2) *Identification of a compelling theory of change and impact pathways* for food system innovations, interventions and incentives for *regional-specific leverage points*, and 3) *Co-defining of generic research questions*, research strategies and methods, and learning trajectories.

Continued engagement throughout the program ensures continuous feed-back, learning and adaptation of research to stay relevant for the local context. Specific mechanisms for South-South sharing and learning will be established across regions and for different groups of stakeholders (governments, private sector, civil society and national researchers), as a way to ensure that lessons derived from specific regions (e.g. how acute prevalence of obesity in Latin and South America is being handled) can benefit other regions where similar issues are just emerging (e.g. West Africa). Through this formal South-South exchange, the objective is to strengthen the learning but also accelerate the scaling-up process around innovations for food system reform and its governance.

## Linking to Dutch policy and CGIAR priorities and initiatives

This research will be embedded in the research programme of the **System Transformation Science** group and will contribute directly to three of the five **OneCGIAR Impact Areas** (Nutrition, Health and Food Security; Gender Equality, Youth and Social Inclusion; and Poverty Reduction,

Livelihoods and Jobs) and indirectly to the two remaining impact areas (Environmental health and biodiversity and Climate adaptation and greenhouse gas reduction). It will closely collaborate with the Nutrition, Health and Food Security and Gender platforms and contribute to the other initiatives in the Systems Transformation Science Group. This research responds to the key Dutch food policy challenges as highlighted in the Kamerbrief 2019, and, conform the recommendations of the IOB, addresses acceleration progress on SDG2, perspective of consumers, empowerment of women (and youth), relevant trade-offs in food system outcomes and interests, and responsiveness to national and regional to accelerate progress. The research involves Dutch knowledge partners (e.g. WUR) and several development NGOs and private sector parties (e.g. SNV, East-West Seed, Rijkswaam, GAIN), and builds on expertise gained through coordination by WUR of the flagship research programme on Food Systems for healthier Diets (A4NH-CGIAR), the KB programme on food and water systems, and partners with several CGIAR Centres, (notably IFPRI, The alliance of CIAT and Bioversity, IITA, ILRI, CIFOR/ICRAF), non-CGIAR centers (WorldVeg) and local and regional networks in Africa and Asia.

## Annex 1

Elaboration of knowledge gaps to be addressed in key research questions:

- *How can **healthy and sustainable diets**, defined in the local context, be used to guide local and global food system reforms?*

WHO, Global Burden of Disease Group and Eat Lancet identify optimal levels of intake of different food groups but need thorough evidence-based translation into culturally appropriate food-based dietary guidelines (FBDGs) reflecting the local context. These guidelines do not only inform the public what to eat to prevent malnutrition, but also facilitate policy decisions. FBDGs are not available or need major revisions, incorporating safety and sustainability considerations, in many LMIC especially in Sub-Saharan Africa. Although there is some evidence on consumer understanding and adoption of FBDGs, there is no information available on the use and impact of using FBDGs in guiding policies or programmes investments toward healthy diets through food system reforms.

- *Which (individual and household) determinants of **consumer dietary choices** can be leveraged to improve the healthiness of the diet?*

Current evidence is generally limited to consumers of high-income countries. Current studies and interventions to influence consumer choices do not differentiate between segments of consumers and do not address how men and women differentially make food choices. Innovations address specific contexts and are limited in

scope, and provide little evidence on impact due to poor methodology and study designs. Evidence addresses selected aspects of consumer choices (such as costs, taste) failing to address the complexity of consumer choices. Effective bundling of behavior change communication interventions with innovations in other components of the food system need to be identified for maximal impact.

- *How could urban and rural **food environments** be shaped to increase access to safe and affordable foods necessary for a healthy diet?*

Current evidence is limited to high-income countries and to formal markets. Studies address selective aspects of the food environment and its associations with consumers diets and other outcomes. This evidence fails to provide in the wild, cultivated and informal food environments and do not provide a holistic view of the interactions between individuals, households, and their food environment. Present evidence does not reveal how men and women might differentially experience the food environment. Another limitation is the use of static geospatial methods: dynamic geospatial approaches are needed to provide a detailed assessment of consumer's exposure and interaction with the environment. There is little evidence on the various prisms through which government actors perceive informal food vendors. Inconsistencies, contradictions, and bottlenecks in the regulatory landscape faced by informal vendors need to be identified and addressed. Ways should be identified to make interventions respond better to consumer choices, and to make successful interventions more powerful and scalable.

- *How can midstream actors in **middle of agri-food value chains** be mobilized to improve the distribution, quality and safety of healthy foods?*

It is important to understand how various technologies and institutions can be harnessed to reduce transaction costs between the farmer and retailer for nutritious and safe foods, so that both risks for value chain actors and costs to consumers can be reduced. Evidence for innovations in product tracing, cold chains, vertical integration, and finance that can make value chains work more efficiently especially for healthy foods is needed, focusing on technologies that can be used by SMEs and the informal sector.

- *How can technical, governance and behavioural factors be **balanced** to optimize diet, nutrition and health impacts, minimizing possible negative **trade-offs** with social and environmental impacts and strengthening equity, and inclusion?*

Food systems analysis should identify potentially conflicting objectives across or trade-offs between the multiple food systems actors, drivers and food systems

outcomes. Whereas the healthy diets objective seems well aligned with attaining environmental sustainability of food systems, other trade-offs may exist between the desired diet by consumers, the economic objectives of producers (e.g. farmers, food processors, traders, and food and beverage companies) and the social objectives of governments, which all need to be weighed and managed carefully. A key component is to understand and quantify macro- and microscale trade-offs that exist between different food systems outcomes and food system actors. At a macro scale, if food systems are optimized for diets, how might that affect incomes or income distribution and the environment? What is the effect of climate and climate changes policies on food prices and affordability? At a micro scale, if retailers shift their focus to healthier foods, what (if anything) do they give up in profits? If consumers have to shift to healthy diets, what would they have to give up in terms of preferences and what would be the effect to affordability? Quantifying answers to these types of questions – and answers could differ depending upon drivers and regional or national characteristics – would help define targets of a food systems transformation while minimizing adjustment costs.

- **What policy incentives, investments and regulations are needed to overcome trade-offs and support synergies between desired food system outcomes, and interests of different stakeholders and their constituencies?**

Evidence of policy investments and regulations such as labelling, regulation on advertising, and taxes and subsidies are often limited to high-income countries and there is limited evidence whether the existing policies are conducive and how they need to be adapted in different settings. Investments in research should be made in low- and middle-income countries for testing of interventions which are impactful in one food systems type for adoption and effectiveness in another food systems type. Nudges to drive healthier consumer choices, food environment adaptations and effective interventions to increase supply and affordability of healthy foods, should be adapted to and tested in countries characterised by rural, traditional or emerging food systems.

Comprehensive impact evaluations of policies and programs in the food environments or food systems are needed to evaluate what works to improve diets among the poor, how it works and at what costs.

Most interventions targeting the consumer, food environment or supply of nutritious foods are developed as stand-alone interventions focusing on a single component of the food systems. Though such interventions may be effective within their 'food systems component', there is no alignment, cohesion or connectedness of interventions across food systems components which work in tandem

toward desired impacts. While consumer and food environment interventions are mainly developed for more complex food systems, nutrition sensitive agricultural interventions are more directed to the rural/traditional and informal/expanding food systems. There is as of yet no effort nor evidence of the design of coherent and connected interventions or simultaneous implementation across the complex food systems to create a multiplier effect on desired health and environment outcomes of the food systems at scale. This asks for strong food system governance, but it is unknown what that would entail.

## Annex 2

Description of food systems and dietary challenges by region ([www.foodsystemdashboard.org](http://www.foodsystemdashboard.org), accessed 5 January 2020).

**West and Central African** food systems can be characterized as rural/traditional moving to informal/expanding, with food production depending on smallholders focusing on staple crops with low yields and large food losses and waste, smaller but fast growing urban populations. Food insecurity is still a large problem. Quantity and diversity of foods available vary by season and food is mainly sold in informal markets. Modern food supply is coming up and processed foods are only starting to be available. Few food quality standards are in place. Diet diversity is low, with low consumption of protective foods. The population is still suffering from undernourishment and undernutrition, while overnutrition is rising rapidly in urban but also in rural areas.

The **East and Southern African** region comprises food systems that are emerging and diversifying, with an increased number of medium- and large commercial farms co-existing with large numbers of small-scale farms. Modern supply chains are developing rapidly also for fresh foods. Supply chains become longer and more complex, (ultra) processed foods are more available also in rural areas and there is less seasonal fluctuation in availability and pricing of perishable foods. Supermarkets are common even in smaller cities. Food safety and quality standards exist but are only enforced within formal markets. Greater proportion of countries have adopted food based dietary guidelines. Undernutrition is reducing although at a slow pace, and the problem of overnutrition is rising rapidly together with diet related non-communicable diseases. Diet diversity is increasing but also consumption of unhealthy foods also rises rapidly.

**Southern Asia** characterized by a mixture of informal/ expanding, emerging/diversifying with some having characteristics of a modernized/formalized food system. The characteristics as described for West, East and Southern Africa are also present in Southern Asia. Overnutrition is a fast growing nutrition problem (even if it is still less prevalent

than in West and Southern Africa), alongside with micro-nutrient deficiencies. Dietary diversity is high, but still insufficient consumption of protective foods, while consumption of unhealthy foods is increasing. Health burden of NCDs is high.

Latin America shows to be fully modernized/formalized going towards industrialized/consolidated food system, with larger farms relying on mechanization and input-intensive practices, market consolidation is common, long and complex food systems, and there is growth in luxury food retail. There is a large share of processed and dry foods and low-income consumers are much likely to shop them. Supermarket density is high. Food labelling is emerging for ultra-processed foods. Overnutrition is the largest nutrition problem although there are still some 'pockets' of undernourishment and undernutrition. Inclusion of this region serve as a 'model' for learning in the other regions where similar issues are emerging.