



United Nations  
System

Standing  
Committee on  
Nutrition

# SCN NEWS

No 40 2013 ISSN 1564 - 3743

## CHANGING FOOD SYSTEMS FOR BETTER NUTRITION

### In this issue:

Changing food systems

*Feature papers*

*Case studies*

Programme News

Speakers' Corner

Publications

Interview with Alan Berg

Bulletin Board

POLICY PRODUCTION CONSUMPTION STUNTING  
OBESITY FAT TAX SAFETY TRADE NUTRITION STORAGE  
GLOBALIZATION FOOD MARKET SUPERMARKET FOOD  
LABELS FOOD CHANGE ACCESS AFFORDABILITY  
SUSTAINABILITY FARM FORK WATER PROCESSING  
PRICES WELL-BEING HEALTH DIETS DIVERSITY MODERN  
GOVERNANCE MICRONUTRIENTS BIOFORTIFICATION  
SMALLHOLDERS FARMER TRADITIONAL ECOSYSTEM





## About *SCN News*

*SCN NEWS* is a publication issued yearly by the United Nations System Standing Committee on Nutrition. It provides information on issues of importance and sharing of experiences in the field of international nutrition. Manuscripts submitted for consideration are reviewed, although publication is not guaranteed. Every effort is made to ascertain the validity of the information contained in UNSCN publications. Content accountability and responsibility for all articles belong to the individual authors, including accuracy of the references provided. The content of the *SCN NEWS* does not necessarily represent endorsement or an official position of the UNSCN or its constituencies. All links to websites and online information in this publication were accessed between May 2013 and March 2014, unless otherwise indicated.

The *SCN NEWS* editorial team sincerely thanks the esteemed external reviewers who provided very valuable comments on the feature papers.

To contribute to future issues of the *SCN NEWS*, or to be added to or removed from our mailing list, please send an email to [scn@who.int](mailto:scn@who.int) or register to our [mailing list](#).

**Editorial team:** James Garrett, Lina Mahy, Sabrina Ionata Granheim, Cécile Jonckheere, Thahira Shireen Mustafa

**Copyright note:** Readers are encouraged to review, summarize, reproduce or translate this document as a whole or in part, but please attribute to the UNSCN.

---

# CONTENTS



## [4 Chair's Round-up](#)

## [6 Editorial](#)

## [10 Feature Papers. Part I: What is going on?](#)

[10](#) Development partners and country programming in nutrition and agriculture: preview of findings from a landscape review. *By Janice Meerman et al.*

[19](#) The nutrition sensitivity of agriculture and food policies: a summary of eight country case studies. *By Jessica Fanzo et al.*

[26](#) Health, nutrition and agriculture: can the prevention of NCDs be an entry point for policy alignment in low- and middle-income countries? *By Vanessa Candeias and Carl Lachat*

[33](#) Key Recommendations for Improving Nutrition through Agriculture: establishing a global consensus. *By Anna Herforth and Charlotte Dufour*

## [39 Feature Papers. Part II: What is needed to promote system change?](#)

[39](#) Identifying effective food systems solutions for nutrition and noncommunicable diseases: creating policy coherence in the fats supply chain. *By Corinna Hawkes et al.*

[48](#) A practical approach to facilitate food system change and link nutrition and agriculture: lessons from the Southern Africa Food Lab experience. *By Milla McLachlan*

[55](#) Strengthening capacities for enhancing the nutrition sensitivity of agricultural policy and practice. *By Stuart Gillespie and Barrie Margetts*

## [61 Case Studies. What are countries doing? What do they need?](#)

[61](#) Mainstreaming nutrition in agriculture investment plans in sub-Saharan Africa: lessons learnt from the NEPAD CAADP Nutrition Capacity Development Initiative. *By Charlotte Dufour et al.*

[69](#) The Toronto Food Policy Council and the Toronto Food Strategy: focusing on food systems and health at the city-region level. *By Catherine L. Mah et al.*

[72](#) Brazil's Food Purchase Programme: linking farmer and consumer to promote change in food and agriculture systems and the right to adequate food. *By Arnaldo Campos et al.*

[77](#) Nutrition in agriculture: a short history of the role of the UNSCN in advocacy, research and convening power. *By Richard Longhurst*

[82](#) Voices from the field: Ghana. *By Thahira Shireen Mustafa and Lina Mahy*

[85](#) Voices from the field: Rwanda. *By Lina Mahy and Thahira Shireen Mustafa*

## [87 Speakers' Corner](#)

[87](#) What if food is considered a common good? The essential narrative for the food and nutrition transition. *By Jose Luis Vivero Pol*

[92](#) A conversation with Jose Luis Vivero Pol about "What if food is considered a common good?". *By C. Peter Timmer*

[95](#) Lancet's micro-focused recommendations for reducing malnutrition are too narrow for the real world complexity of food and nutrition outcomes. *By Uma Lele*

## [99 Obituaries](#)

## [103 Programme News](#)

## [117 Publications](#)

## [121 Interview](#)

[121](#) Visionary at the conception: An interview with Alan Berg, international nutrition pioneer. *By James Levinson*

## [135 Bulletin Board](#)

# CHAIR'S ROUND-UP



*Ramiro Lopes da Silva*  
*UNSCN Chair*  
*Assistant Executive Director of the World Food Programme*

Dear SCN News reader,

On 7 June 2013, the Principals of the UN Nutrition family (FAO, IFAD, WFP, WHO and UNICEF) signed a letter formally endorsing the UN System Network for Scaling Up Nutrition (SUN). The letter emphasizes that the UN Agencies are committed to continuing their assistance to improving nutrition efforts at country level and simultaneously increasing and enhancing UN global collaboration and coordination.

In August 2013, I as Chair of the UNSCN joined 140 participants from 18 countries in Africa, including UN Country Teams working on nutrition, REACH facilitators, country representatives and development partners in Nairobi, Kenya, to discuss collaborative and optimal joint support

to countries in their national efforts to scale up nutrition and to discuss a common understanding of the roles and responsibilities of each of the UN Agencies. During this meeting, the UN System Network for Scaling Up Nutrition (SUN) was also formally launched. The UN Network is a cultural revolution: it is us finding ways to overcome identified weaknesses and challenges in reaching nutrition goals and committing to work better together, building on the good country experiences and exciting progress that is taking place globally.

In early 2014, the Principals of FAO, IFAD, WFP, WHO and UNICEF requested their Regional and Country Representatives to support joint UN efforts and to collectively support the development of national nutrition strategies and plans. A UN Network Work Plan for 2014-2015 and a joint Global UN Nutrition Agenda are under development. The UN is clearly and collectively making tangible progress and impact on nutrition.

We have entered a new era of collaboration on nutrition, characterized by renewed commitment of a diverse range of stakeholders to sustainably eliminate the multiple burdens of malnutrition. Undeniably the burden of malnutrition is multifaceted with coexistence of undernutrition, micronutrient deficiencies and overweight exemplified by obesity and noncommunicable and chronic diseases. One in four children in developing countries under the age of five (162 million children) are stunted due to chronic undernutrition and 51 million wasted (acute undernutrition). Micronutrient malnutrition or “hidden hunger” affects around 2 billion people (over 30% of the world population) with serious public health consequences. At the same time 44 million children under five years of age are overweight, and obesity affects around 500 million adults, increasingly in low- and middle-income countries.

The UN Secretary-General Ban Ki-moon, in his statement for World Food Day 2013, indicated that “*the key to better*

*nutrition, and ultimately to ensuring each person's right to food, lies in better food systems, smarter approaches, policies and investments encompassing the environment, people, institutions and processes by which agricultural products are produced, processed and brought to consumers in a sustainable manner".* Addressing stunting, sustainable and resilient agriculture and food systems are a component of the UN SG's vision reflected in the [Zero Hunger Challenge](#).

*Changing food systems for better nutrition* has been selected as the theme for this 40th edition of the SCN News. Food systems are becoming more complex and have undergone considerable changes driven by the volatility of food prices, competing use of foods for the production of biofuels, the impact of climate change on food security and on biodiversity, the changing demand for food driven by population growth and increasing urbanization which in turn has led to changes in lifestyle and consumption patterns.

Have food systems changed for better nutrition? Can food systems be changed for better nutrition? And if they can, how can these changes be achieved? This issue of the SCN News, edited by James Garrett from IFPRI, provides current information on what is being done by countries and by international stakeholders to ensure that nutrition considerations are built into agriculture and food system policies for better nutrition outcomes. Knowledge gaps exist and the evidence base is still small but, as we have tried to demonstrate in this SCN News edition, there are tools available and interesting examples of nutrition-sensitive agriculture initiatives. Furthermore, the importance of a

comprehensive, multisectoral approach to address malnutrition must not be forgotten. Both long-term and short-term strategies have a role to play to enable access to good nutrition for the most vulnerable groups of the population.

On 19-21 November 2014, the high-level International Conference on Nutrition (ICN2) jointly organized by FAO and WHO will take place in Rome, and the UNSCN Secretariat is actively involved in the organization of the event. It is anticipated that a political outcome document developed through a process led by the Member States will be endorsed. This conference should become the game changer in the process of ensuring that food systems respond to health needs through equitable and ecosystem-friendly policies and as part of a comprehensive and multi-sectoral approach.

I would like to recognize the Governments of Germany and Flanders for supporting the development and publication of the SCN News and also thank the UNSCN Executive Secretary, Dr Francesco Branca, and the UNSCN Secretariat in Geneva for their excellent support and hard work.

**Ramiro Lopes da Silva**

*UNSCN Chair*

**Ramiro Lopes da Silva**, a Portuguese national, is the Assistant Executive Director of the World Food Programme (WFP) and became the 11th UNSCN Chair on 1 October 2011. Mr Lopes da Silva began his career with WFP in 1985 as a Food Aid Logistics Coordinator during the Great Horn of Africa and Sahel drought emergency. He has since held senior management roles in operations in many countries, including Afghanistan, Angola, Ethiopia, Iraq, Pakistan and Sudan. He has held other senior positions in WFP including Director of Transport and Logistics, Special Envoy of the WFP Executive Director for the Afghanistan Crisis, Director of Emergencies and Deputy Chief Operating Officer. In addition to his WFP responsibilities, Mr Lopes da Silva served as the UN Assistant Secretary General and Humanitarian Coordinator for Iraq from 2002 to 2004 and also as Senior Advisor to the United Nations Under-Secretary-General for Humanitarian Affairs in 2004.



# EDITORIAL



*James Garrett*

*Guest editor, SCN News 40*

*Senior Research Fellow , Poverty, Health, and Nutrition Division, International Food Policy Research Institute (IFPRI)*

There is no way around it. When we talk about promoting nutrition-sensitive agriculture, we are talking about changing agriculture and changing food systems. We are talking about going beyond projects to deal with strategies and policies. And we are talking about working with multiple actors and multiple sectors as we bring agriculture to the nutrition table to work in tandem with others, particularly those from health, education, and water and sanitation.

With growing attention to nutrition–agriculture linkages, understanding how to create nutrition-sensitive agriculture and food systems is an essential task for the future. System effects are necessarily more profound and broader than those of projects since they affect nutrition and diets at the population level. But system change is difficult. For

agriculture, it means dealing with a mostly private sector with a large and diverse set of actors, from poor small-holders to large global businesses. Working under a myriad of agronomic, political, social, technological, cultural and economic conditions, these actors propel the entire system. They provide inputs, carry out production, storage, and processing activities and transport goods to the consumer.

Systems thinking is increasingly reflected in the nutrition strategies of development agencies, the knowledge agendas of international research institutes, and the publications of UN agencies, NGOs and leading global fora.<sup>1</sup> But this bringing together of agriculture and nutrition is not new. Food is after all the foundation of nutrition, and as Richard Longhurst reminds us [in this issue](#), more than 75 years ago, the League of Nations was already reporting on the connection between nutrition, health, agriculture and economics. The multisectoral planning initiatives of the 1970s were also an explicit recognition of the links between agriculture and nutrition. In the decades following, however, attention waned.

In recent years, attention to the links between nutrition and agriculture has grown again. Often these links show up as agricultural components in a nutrition project, or vice versa. Other studies detail the pathways through which agriculture influences nutrition. Encouragement to take a broader view and develop nutrition-sensitive agriculture and food systems (after all, those pathways operate within complex systems) has been more recent. A major question then is how to take advantage of opportunities to improve nutrition throughout the system, so that when taken as a whole the system is more environmentally and socially sustainable, more gender-sensitive and more likely to improve nutrition.

<sup>1</sup> Among others, [USAID's draft strategy for nutrition](#), the [CGIAR's work on nutrition-sensitive value chains](#), FAO's [The State of Food and Agriculture 2013](#), ACF's [Sowing the Seeds of Good Nutrition](#) and The Chicago Council on Global Affairs' [Bringing Agriculture to the Table](#).

This question underlies the papers in this issue. Although diets and food systems are changing, the main concern of this issue is not about changes from traditional to modern food systems, from local systems to global enterprises, or from less to more processed foods. Rather, it is about how to transform food systems, whatever the context, to make them more likely to improve nutrition. It begins from the fact that agriculture is fundamental to good nutrition. And to bring the positive power of agriculture to bear, we must ensure that food systems are in fact designed and managed to maximize agriculture's contribution.

Making food systems more nutrition-sensitive should help to improve diets for everyone, for those in developed as well as developing countries, for the poor as well as the better-off, for infants and young children as well as older individuals, and for the undernourished as well as the obese and overweight. The specific policies, investments and programmes needed to improve nutrition will differ, of course, depending on dynamics, context, and the nutrition problem at hand. But the main focus is the same: better diets and a more supportive, nutrition-sensitive food system.

### **This issue: *Changing Food Systems for Better Nutrition***

With this perspective, this issue of SCN News provides an overview and insights into how to change food systems for better nutrition. [Part I of the Feature Papers](#) provides a review and preliminary inventory of current activities at global and country levels that aim to integrate nutrition and agriculture. By framing the multiplicity of programming and policies in this area, these papers help us see the commonalities, exclusions, strengths and weaknesses in the current state of work, as well as the possibilities for complementarities, harmonization, coordination and alignment among actions as well as actors.

[Part II](#) considers how to accomplish change and presents practical approaches and tools for how to incorporate nutrition into agriculture and food systems. Papers in this section show how applying a nutrition and health lens to food systems identifies where to intervene and which actors to target in order to achieve greater systems focus on the nutrition objective. Other papers describe a comprehensive approach to system transformation and emphasize that capacity strengthening must be given priority if change is to happen and be sustainable.

The [case studies](#) provide examples of what countries and cities are actually doing and actually accomplishing, drawing international examples from Africa, Brazil and Canada. In [Voices from the Field](#), officials from Ghana and Rwanda report on their efforts to create more nutrition-sensitive agriculture and say what they need in order to accomplish that task. Cross-sectoral capacity and understanding top the list.

Of course, some would argue that the changes described here are not enough. A proposal for a radical overhaul of food systems thus enlivens [Speakers' Corner](#): should we consider food a common good, much like health or education, in order to eliminate malnutrition? Or by reducing the influence of the market, would that have the opposite effect? A [separate essay](#) in this section stresses that the contribution of agriculture to nutrition is often overlooked and urges renewed attention.

This issue also has the usual [Programme News](#) and [Publications](#) sections which here highlight the latest activities and knowledge on the links between agriculture and nutrition. An [interview with Alan Berg](#) provides an entertaining walk through the history of efforts to bring nutrition and agriculture together.

### **Observations on the way forward**

The papers remind us that the breadth and depth of the interface between nutrition, agriculture and food systems vary over the lifecycle. Good nutrition for all ages is essential, but many recommended actions in the agriculture sector focus on dietary change, actions that will have the most effect on older children, youth and adults. The links between nutrition, agriculture and food systems for infants and the youngest children are more subtle, though still significant and mainly through maternal nutrition, nutrition knowledge, and the mother's work inside and outside the home, especially agricultural labour. And so, when discussing agriculture, food systems and nutrition, we must be clear about what impacts on what aspects of nutrition for which groups we are really talking about, and so what specific actions we should take to have a reasonable impact on the group of interest.

Guidance on how to create nutrition-sensitive agriculture and food systems is not deep. Yet surely no one would argue that there is no evidence that agriculture and food systems do not matter to nutrition. In fact, we know quite a bit. We know that availability, accessibility and consump-

tion of a diverse set of foods matters, for instance. Following from that, we know that income and prices matter to production and consumption choices, and efficient input and output markets underpin getting those prices right. It is important as well to take steps to improve processing, storage and transport to preserve nutrient values from farm to table.

We know too that a mother's status and role in the family are important. And that education, knowledge and information are essential to closing the loop between production and consumption. (The evidence may sometimes seem equivocal, but really, if information did not matter, would food companies spend billions of dollars on marketing?)

Of course, as the contributors note, the quest for evidence should continue about what exactly to do to change food systems, to what effect and at what cost. Questions remain on what policies, programmes and investments are needed to make agriculture and food systems more nutrition-sensitive under specific conditions, what should be their exact design, how can they best be rolled out and managed and stitched together, and how can we understand and shape the surrounding, enabling environment, including building commitment, capacity, platforms for learning and mechanisms for multisectoral action.

Given the need to work at the level of sectors and systems and the importance of management to success, much of the evidence will likely come from experiential learning (learning by doing and sharing experiences) and through use of general models rather than from randomized controlled trials. Of course, quantitative as well as qualitative methods will be needed to generate this knowledge.

Some common themes that might guide future actions emerged from the feature papers and case studies:

- Working with multiple actors across multiple sectors, including government and the private sector, is a given.
- ◊ Agriculture and food systems are largely run by the private sector. Engaging with the private sector is challenging. From small farmers to large companies, the case must be made that nutrition is part of their business and that incorporating nutrition in their business calculations makes economic sense. Agriculturalists also need to

understand that increased food production and income from agriculture are not sufficient to eliminate hunger, and that agriculture has additional roles to play in creating a more nutritious food system for all as well.<sup>2</sup> Getting agriculture on board may require overcoming the somewhat paradoxical perception among many in agriculture that, on the one hand, agriculture has nothing to do with nutrition and, on the other, that through increased food production and income, it has everything to do with nutrition.

- ◊ Strong government commitment and institutions are needed to provide strategic and sectoral leadership. Appropriate policies, investments, incentives and regulations can shape the private sector response.
- Despite differences in perspective between those in nutrition and in agriculture, common ground can be found. Strategies, policies and programmes can be designed that are a win for both. Some approaches and tools already exist to help sectors work together, something absolutely essential to progress. Entry points for collaboration must be found where the added value of integrating nutritional considerations is clear. Stakeholders need to go through a process, which takes time, so they understand the problem, the perspective of the "other side" and their own role in contributing to as well as solving the problem.
- Stakeholders may need incentives to act, and they will need to know what to do and what to expect. Sharing of experiences and development of analytical and managerial tools will help support this objective. For now, we have limited specific examples on how to overcome challenges at the systems, policy or business level.
- Well-defined objective, process and impact indicators that reflect clear impact pathways are needed. Clear objectives and workplans help stakeholders to rally around the cause and to know exactly what they should do and how it makes a difference. Robust analyses and systematic monitoring and evaluation are essential to making policies and programmes more effective and to developing convinc-

<sup>2</sup> The SCN News 39, entitled [Nutrition and Business: How to engage](#), covers this topic in depth.

ing arguments about the importance of linking agriculture and nutrition.

- ◇ We need clear goals and indicators to know when we actually have created nutrition-sensitive agriculture and food systems and to provide a polestar for action.
- ◇ Some areas where information for decision-making, most often at the country level, is now lacking include: production (statistics for a wider range of foods, including traditional foods and fruits and vegetables); consumption (validated indicators of the diversity and quality of diets for different groups; easy-to-use and context-relevant food composition data, including for uncultivated foods; measurement and monitoring of disaggregated consumption patterns); supply chains (costs and benefits of specific interventions); and metrics for programme design and operation.
- In many situations, capacity for carrying out a programme to develop nutrition-sensitive agriculture is lacking. Professionals with cross-sectoral expertise are few. Awareness among stakeholders of the importance of agriculture and food systems to nutrition and possibilities for action is low. Capacity needs to be strengthened in all areas that support integrative and cross-sectoral work. This includes capacity for leadership, management, knowledge, and programme design and operations as well as ability to support coordination platforms and conduct analytical work on strategy, policy (especially on incentives), finances and human resources.

In my perspective, there are two other areas that this is-

sue was not able to address but deserve our attention. If food systems change is to occur, we also need to understand the politics behind it and to have the economic analyses to support it. Areas for work thus include the identification of win-win policies, which could also include considerations of wins for gender and sustainability; economy-wide analyses of macroeconomic justification for and impacts of nutrition-sensitive agriculture, such as implications for production and consumption patterns and expenditures, not just impact on health; policy processes around nutrition-agriculture, including the translation of evidence into action, coalition building, and multisectoral and multiactor collaboration.<sup>3</sup>

With the rise of globalization, climate change, new technologies and urbanization, among other factors, we all certainly recognize that agriculture and food systems are changing. But we also want to change systems, as malnutrition continues to affect many millions and the ongoing challenges to environmental sustainability and gender equity need to be addressed.

While the nexus between agriculture and nutrition is clear, how to maximize the benefits of their interconnectedness has always been a conundrum, technically and operationally. The contributors to this issue, and hopefully the readers, sense the possibilities. This SCN News issue presents a status report, concrete experiences, an expression of needs and approaches for moving forward to create more nutrition-sensitive agriculture and food systems. Gaps in information, capacity, incentives and mechanisms to encourage collaboration remain. Nevertheless, building on these concepts and experiences, we can address these gaps, so that nutrition is truly integrated into agriculture and food systems, that minds are changed and actions taken.

**James Garrett** is a Senior Research Fellow at IFPRI. He is currently based in Rome as coordinator of a partnership between IFAD and the CGIAR's programme on Agriculture for Nutrition and Health. The partnership aims to strengthen nutrition in IFAD's organizational strategy, advocacy, projects and grants. He previously served as lead consultant in development of FAO's nutrition strategy. He has worked at IFPRI as leader of the Mozambique country programme and of research programmes on policy processes for food and nutrition and on urban food and nutrition security.

<sup>3</sup>On the economic aspects, see presentations of the [UNSCN Meeting of the Minds on the Nutrition Impact of Food Systems](#) (Geneva, 25–28 March 2013). On issues of politics, political economy, governance and institutional issues, see, among others, Pinstrup-Andersen, ed. (1993) *The Political Economy of Food and Nutrition Policies*; Heaver (2005) *Strengthening Country Commitment to Human Development*; Benson (2008) *Improving Nutrition as a Development Priority*; Natalicchio et al. (2009) *Carrots and Sticks: the political economy of nutrition policy reforms*; Reich and Balarajan (2011) *Political economy analysis for food and nutrition security*; Pelletier et al. (2012) *Nutrition agenda setting, policy formulation and implementation*; Mejía Acosta and Fanzo (2012) *Fighting maternal and child malnutrition*; Gillespie et al. (2013) *The politics of reducing malnutrition: building commitment and accelerating progress*; and Nestle (2013) *Food Politics*.



# FEATURE PAPERS

---

## Part I: What is going on?

---

### Development partners and country programming in nutrition and agriculture: preview of findings from a landscape review

Janice Meerman,<sup>1§</sup> James Garrett<sup>2</sup> and Marzella Wüstefeld<sup>3</sup>

<sup>1</sup> Independent Consultant, San Francisco, United States of America

<sup>2</sup> International Food Policy Research Institute, Rome, Italy

<sup>3</sup> United Nations System Standing Committee on Nutrition, Geneva, Switzerland

§ Corresponding author. Email: [Janice@meerman.us](mailto:Janice@meerman.us)

*Author statement: The authors declared not having any conflict of interest.*

#### Introduction

As the idea of bringing agriculture more dynamically into the nutrition picture has gained traction in recent years, many development partner agencies and organizations have embarked on programming initiatives that aim to make agriculture more nutrition sensitive. In 2013, the UNSCN commissioned a review of country-level programming in nutrition and agriculture to provide a consolidated overview and to raise awareness regarding these initiatives. Over 20 organizations, including UN agencies, multi- and bilateral development organizations, research centres and international nongovernmental organizations (NGOs), were contacted. Information was gathered on

programming through e-mail correspondence, semi-structured informant interviews, and a desk review of published and grey literature.

This issue of the SCN News presents an opportunity to report findings thus far. To date, just over 60% of the organizations that were contacted have been reviewed. Work is ongoing and the full report will be published soon on the UNSCN website.<sup>1</sup>

#### Framing the review: impact pathways and cross-cutting issues

Most of the discourse on making agriculture work for nutrition is framed according to a range of pathways. These

---

<sup>1</sup> Janice Meerman was lead consultant for the review on which this paper is based. Noreen Mucha (independent consultant) assisted with the collection of data from selected agencies for that review, and her contributions are gratefully acknowledged. Marzella Wüstefeld (UNSCN Secretariat) provided overall guidance. The Canadian International Development Agency (former CIDA) provided funding.

pathways include consumption out of own-production; rises in agricultural income through increases in production or productivity; technologies and systems that improve or preserve the nutritional content of foods, either at the farm level (such as soil health and biofortification), through marketing or processing (including fortification); increases in production, processing or marketing efficiency that improve relative prices for more nutritious foods; macroeconomic policies, including trade, that affect food production and prices; and attention to the roles and empowerment of women (among others, World Bank 2007, Gillespie 2013, Ruel et al. 2013, Webb 2013, Meeker and Haddad 2013, USAID 2013).

A number of cross-cutting issues underlie the effectiveness of these different pathways and so were useful to keep in mind when assessing the programming landscape:

**Empowering women.** Now recognized as fundamental to increasing nutrition sensitivity of agriculture. Women make up a large percentage of the agricultural labour force in developing countries, and the resources and income flows that women control have disproportionately positive impacts on nutrition security. Women's social status, control over resources, time allocation and health and nutritional status are key mediators in the pathways between agriculture inputs, intra-household resource allocation and child nutrition (Ruel and Alderman 2013).

**Building resilience.** Essential to strengthening local food systems and to changing local dietary practices. It decreases susceptibility to shocks and volatile food prices and reduces risk aversion. The latter is especially relevant to increasing the nutrition sensitivity of agriculture, as risk aversion can pose a major impediment to production diversification and other nutrition-promoting activities.

**Integrating nutrition education.** Raising incomes and improving food security are not enough in and of themselves to improve nutritional outcomes (World Bank 2007, IYCN 2011). As such, integrating nutrition education into agricultural interventions is essential to achieving the social and behavioural changes necessary for improved nutrition outcomes.

## What programmes were reviewed?

Formal inclusion criteria were not developed prior to undertaking the review. However, to the extent possible, the exercise reviewed programmes that reasonably fit the

definition of nutrition sensitivity provided in the recent *Lancet Series on Maternal and Child Nutrition* (Ruel and Alderman 2013). That is, interventions or programmes that address the underlying determinants of foetal and child nutrition and development (namely, food, care, access to health services, and a safe and hygienic environment) and that incorporate specific nutrition goals and actions. Programmes that explicitly incorporate nutrition objectives and concerns in actions to affect agriculture and food systems in order to improve diets and raise levels of food and nutrition security (FAO 2013a) were also included.

Programmes that did not explicitly incorporate nutrition components in their design, but which had high potential to impact nutrition, posed a challenge for the review. These types of programmes are extremely common within agencies whose mandates include food security and rural development. In some cases "retrofitting" to include a specific nutrition component is occurring; however, in others the nutrition objectives remain implicit. When cited in the full review, these types of programmes are highlighted as not containing an explicit nutrition component.

## Who is doing what? Some examples

Organizations for which the review had collected substantial information by the end of 2013 are noted in Table 1. Some significant actors are not included, and as such the listing is incomplete. Nevertheless, the agencies that are represented cover a range of types. This analysis thus provides a sample of activities that development partners are undertaking, rather than a comprehensive tally.

Given the heterogeneity of the actors profiled, it is not surprising that the review unpacked a wide variety of approaches targeting actors at different levels and locations in the food and agriculture system. However, despite varying organizational missions and structures, some common categories of activities emerged. Across the board, programmes appeared to take into consideration the pathways described above, with the cross-cutting issues providing subtext.

While the range of programmes will grow as additional information is received, interventions reported thus far tend to focus on integrating nutrition at different points in the food system, from production to consumption; to piggyback on agriculture to deliver interventions from other sectors; to guide or harmonize policies and actions

**Table 1. Organizations that submitted a response (by the closing of this edition).**

<b>UN Agencies</b>
Food and Agriculture Organization of the United Nations (FAO)
World Food Programme (WFP)
World Health Organization (WHO)
<b>Research Organizations</b>
Institute of Development Studies (IDS)
International Food Policy Research Institute (IFPRI)
<b>Multi- and Bilateral Agencies</b>
United States Agency for International Development (USAID)
World Bank (WB)
<b>International NGOs</b>
Action Against Hunger (ACF)
Helen Keller International (HKI)

through international standards; or to address knowledge or capacity gaps. These approaches can be categorized as follows:

- Production of nutrient-dense foods for home consumption (including related processing and preservation);
- Production, processing and marketing to improve the nutritional quality of consumption (including nutrition-sensitive value chains, biofortification, fortification, “home grown” school feeding);
- Agricultural programmes used as nutrition-specific service delivery platforms;
- Capacity strengthening;
- Guidelines and standards;
- Programme and policy research.

Production for household consumption seeks to turn the focus of household or community production to nutrition. This includes support to homestead production for fruits and vegetables, small animals and fish. Behaviour change communication, as a way to promote the links between increased and diversified production and actual changes in dietary intake and introduction of labour-saving tools and technologies (especially to facilitate work by women), are important components of these programmes.

While these programmes directly target production for consumption, other programmes focus on changing the nature of production, processing and marketing so that the diet is improved, through increasing diversity of consumption or enhancing the nutrient values of foods themselves. These programmes are more commercially oriented, but look past increasing producer income to consider how to improve the quality of consumption as well. For example:

- **Nutrition-sensitive value chain development** promotes the production and sale of high-nutrient foods (e.g. legumes, animal-source foods, fruits and vegetables) or food products (e.g. a groundnut-based weaning mix). These programmes assume that impact on nutrition will come through greater availability of more diverse, nutritious foods to (targeted) consumers or to producers who will consume out of their own production (somewhat similarly to home gardens, but here the main focus is on commercial production). Attention to food safety, usually with regard to aflatoxin contamination, is often a component of these programmes.
- **Biofortification** uses conventional and sometimes transgenic methods to breed food crops to have increased nutritional value. Examples include provitamin A orange-fleshed sweet potato, maize, plantains and cassava; high-zinc rice and wheat;

iron-fortified pearl millet and beans; and high-iron rice (Saltzman 2013).

- **Micronutrient fortification** of commonly consumed foods and condiments (e.g. flour, salt, sugar, vegetable oil, milk, soy sauce) has long been recognized as an important strategy for increasing the micronutrient content of available foods. Fortification holds substantial potential for collaboration with the private sector on nutrition-sensitive value chain development (GAIN 2013).
- **School feeding programmes** supplied partially or wholly by local producers are typically pre-existing school feeding programmes that have been retrofitted to include a “home grown” component. These programmes are a relatively new concept and aim to increase availability of and access to nutritious food for both schoolchildren and smallholders. They also aim to increase market access (and reduce risk aversion) for smallholders via increased demand for locally produced nutritious foods (Espejo et al. undated, FAO 2013b) (see also [Campos et al. in this issue](#)).

Other interventions focus less on agricultural production but use agriculturally oriented programmes as delivery platforms for complementary interventions. A classic example is adding infant and young child feeding (IYCF) or other nutrition counselling activities to food security or rural development projects. Other examples are interventions that provide nutrition information or counselling as part of input subsidy programmes, cash transfer or other social protection schemes, or through farmers’ collectives, rural community groups and other informal organizations.

Capacity strengthening initiatives for improving nutrition through agriculture aim to reinvent nutrition’s role in the food security policy dialogue. In terms of policy advice and advocacy, this requires convincing decision-makers that maximizing production of staple foods and other commodities is insufficient in and of itself to reduce household food insecurity and malnutrition. Despite a critical mass of evidence in support of this point, the general consensus in many countries is that food security is best measured by national grain stock levels and that positive nutrition outcomes will follow automatically from improved food security and income growth (World Bank 2013).

National Agriculture Plans and National Development Frameworks are entry points for capacity building programmes aiming to dispel this notion and to make agriculture more nutrition sensitive ([see Dufour, in this issue](#), for one example). These programmes work directly with government personnel from agriculture and nutrition to develop a unifying nutrition strategy endorsed across sectors, as well as legislation that includes explicit nutrition objectives and indicators.

Normative agencies, like WHO and FAO, are involved in developing guidelines and standards that help to shape agriculture and the food system more broadly. Food-based dietary guidelines (FBDGs) and food labelling may encourage changes in food consumption patterns, along with education and promotional materials. Codex Alimentarius harmonizes international food standards, guidelines and codes of practice to ensure food safety and fair trade practices for food (Codex Alimentarius 2014).

A number of consortia and agencies are currently conducting country-based programme and policy research on strengthening the links between nutrition and agriculture. The overarching goal of these programmes is provision of evidence for pro-nutrition policy reform and for effective programming in agriculture and related sectors. The scope of research is thus very wide, covering all other programme areas cited above.

Table 2 summarizes examples from different agencies in terms of what they are currently doing in nutrition–agriculture programming. Worth noting is the fact that many of these organizations are already partnering or collaborating with others. FAO, for example, has partnerships across government and academia; and IFPRI is working with international NGOs to carry out monitoring and evaluation activities. This raises the possibility of coordinated action that could greatly enhance the impact of programming and support to country governments and actors as each organization plays its key role. For example, research organizations provide the evidence for action, which is then funded by multi- and bilateral agencies. These activities are then carried out together with country partners and international NGOs, who are likewise supported by logistic, technical and coordinating support from UN agencies.

This work of the international community, the focus of this review, is, of course, guided by country governments and done in partnership with country organizations.

Table 2. Organization programming examples.

Organization	Area of Work / Programme Type [countries]	Programme Description
<b>UN AGENCIES</b>		
Food and Agriculture Organization of the United Nations (FAO)	<i>Delivery Platform / Research</i> Improving the dietary intakes and nutritional status of infants and young children through improved food security and complementary feeding counselling (IMCF) [Cambodia, Malawi]	Improve dietary intakes and nutritional status of infants and young children through complementary feeding using local foods. Evaluate impact of programme that combines nutrition education for IYCF with promotion of production and consumption of local foods.
	<i>Capacity Strengthening</i> CAADP Nutrition Capacity Development Initiative [51 countries in sub-Saharan Africa]	Subregional workshops in west Africa, east and central Africa, and southern Africa to integrate nutrition into agricultural investment plans.
	<i>Guidelines and Standards</i> Codex Alimentarius Food-based dietary guidelines (FBDG) [global]	See under WHO.
World Food Programme (WFP)	<i>Production, Processing, Marketing</i> Purchase for Progress (P4P) [20 countries in sub-Saharan Africa, Latin America and the Caribbean, Afghanistan]	Increase participation of local small farmers in WFP procurement activities through increased access to local markets, improve availability of and access to nutritious food for participating producer households.
	<i>Production, Processing, Marketing/ Research</i> Homegrown School Feeding Programme (HGSF) [20 countries with case studies of Brazil, Ghana, India and Thailand]	Collaboration between WFP, the Gates Foundation, the New Partnership for Africa's Development (NEPAD) and other partners to develop a systematic approach to design and implementation of school feeding programmes that use locally procured food.
World Health Organization (WHO)	<i>Guidelines and Standards</i> Food-based dietary guidelines (FBDG) [global]	Develop procedural manual on FBDGs to explain the concept and give practical guide to countries on how to develop them.
	<i>Guidelines and Standards</i> Codex Alimentarius [global]	Through the Codex Alimentarius Commission, established by FAO and WHO, develop harmonized international food standards, guidelines and codes of practice to protect the health of the consumers and ensure fair practices in the food trade.
<b>RESEARCH ORGANIZATIONS</b>		
Institute of Development Studies (IDS)	<i>Production, Processing, Marketing / Research</i> Strengthening Agri–food Value Chains for Nutrition [Ghana, Nigeria, Tanzania]	Identify opportunities for creation of nutrition-sensitive value chains by the private sector; map current and potential value chains for nutrition; provide case study examples.
	<i>All Areas / Research</i> Leveraging Agriculture for Nutrition in South Asia (LANSA) [Afghanistan, Bangladesh, India, Pakistan]	Examine how South Asian food and agriculture policies can be designed to increase impacts on nutrition, especially women and adolescent girls.

Table 2. Organization programming examples (cont.)

Organization	Area of Work / Programme Type [countries]	Programme Description
<b>RESEARCH ORGANIZATIONS (cont.)</b>		
International Food Policy Research Institute (IFPRI)	<i>Production, Processing, Marketing / Research</i> Realigning Agriculture to Improve Nutrition (RAIN) [Zambia]	Aim to reduce malnutrition through integrated agriculture, health and nutrition interventions. Monitor and evaluate interventions, whose implementation is led by Concern Worldwide.
	<i>All Areas / Research</i> Transform Nutrition [Bangladesh, Ethiopia, India, Kenya]	Create feedback loop between actionable evidence on upscaling direct nutrition interventions and improving capacity and enabling environment for nutrition-sensitive interventions, with multiple research and implementation partners.
	<i>All Areas / Research</i> Agriculture for Nutrition and Health (A4NH) [34 countries in Latin America and the Caribbean, Africa, and Asia and the Pacific, including Turkey]	Led by IFPRI in partnership with other research institutes of the Consultative Group on International Agricultural Research (CGIAR), explores how to maximize the health and nutrition benefits of agriculture through research and capacity strengthening on value chains, biofortification, integrated programmes and agriculture-associated diseases.
<b>MULTI- AND BILATERAL AGENCIES</b>		
US Agency for International Development (USAID)	<i>Production, Processing, Marketing / Capacity Strengthening / Research</i> Feed the Future [Bangladesh, Cambodia, Ethiopia, Ghana, Guatemala, Haiti, Honduras, Kenya, Liberia, Malawi, Mali, Mozambique, Nepal, Rwanda, Senegal, Tanzania, Tajikistan, Uganda, Zambia]	Integrate nutrition into agricultural project designs which cut across programme types.
	<i>Research</i> Strengthening Partnerships, Relationships and Innovations in Nutrition Globally (SPRING) [Bangladesh, Burkina Faso, Haiti, India, Niger, Nigeria, Tajikistan, Uganda]	Review and analyse Feed the Future projects to determine opportunities to make them more nutrition sensitive.
World Bank (WB)	<i>Capacity Strengthening</i> South Asia Food and Nutrition Security Initiative (SAFANSI) [Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka]	Increase commitment of governments and development partners to more effective and integrated food and nutrition policies and investments.
	<i>Capacity Strengthening</i> SecureNutrition [global]	Host virtual platform to narrow knowledge gaps on nutrition-sensitive service delivery and monitoring and evaluation within agriculture.

Table 2. Organization programming examples (cont.)

Organization	Area of Work / Programme Type [countries]	Programme Description
<b>INTERNATIONAL NGOS</b>		
Action Against Hunger (ACF)	<i>Production, Processing, Marketing / Delivery Platform</i> Maximizing the Impact of Food Security and Livelihoods Interventions [Afghanistan, Burkina Faso, Central African Republic, Chad, Myanmar, Nigeria, West Bank and Gaza Strip]	Support emergency nutrition activities within a resilience framework that promotes longer-term food security through home gardens, post-harvest handling and processing and other agriculturally related interventions, along with actions to improve water and sanitation, health and hygiene.
Helen Keller International (HKI)	<i>Production: Household Consumption</i> Enhanced Homestead Production (E-HFP) [Bangladesh, Burkina Faso, Cambodia, Côte d'Ivoire, Indonesia, Mali, Nepal, Niger, Senegal, Tanzania, the Philippines, Viet Nam ]	Promote homestead food production at household and village level.

## Challenges to implementation

Organizations mentioned a number of challenges to implementing these sorts of activities, including:

**Sustaining integration and coordination between line ministries and other government actors.** By definition, integrating nutrition into agriculture, or agriculture into nutrition, requires working across sectors. However, multisectoral programming is widely recognized as difficult and presents substantial challenges in practice for central and other levels of government.

Challenges include lack of knowledge regarding the impact of agriculture and other sectors on nutrition; constraints posed by institutional and sectoral administrative structures; limited resources in terms of staff time, budgets, and related disincentives; and the political economy of cross-sector work (Garrett and Natalicchio 2011, IFPRI 2012, World Bank 2013, Gillespie et al. 2013, Ruel and Alderman 2013, Levinson and Balarajan 2013). Difficulties in addressing complicated gender issues, targeting mismatches, and monitoring (explored below) further complicate efforts at integration and coordination. For example, national grain stock levels continue to be upheld as an important measure of food and nutrition security in many countries. In this context, where production of staple crops is paramount, most government actors involved in agriculture have little incentive to reconcile these multiple challenges in order to work more closely together. In

some cases, coordination and capacity problems of international organizations themselves (donor operating restrictions, poor internal coordination, limited nutrition staff at country level ) compound the challenges for country governments (du Vachat 2013).

**Identifying and reaching target populations.** The vast majority of nutrition-oriented interventions target women of child-bearing age and children under five. Target populations for food security and agriculture-based activities have a much wider scope. They are likely to include “smallholders” but may also include “producers”, “low-income consumers”, “value-chain actors” and a variety of other demographics that may not necessarily have much overlap with a population targeted according to nutrition criteria.

Targeting challenges may be even more pronounced if the programme focuses primarily on rural development or agricultural growth, as opposed to food and nutrition security. A tricountry review (Burkina Faso, Kenya, Peru) by ACF found that nutritionally vulnerable families are rarely targeted as beneficiaries for medium- and longer-term interventions focused on overall sectoral growth (du Vachat 2013).

Gender-based targeting issues also pose a problem, as conventional agriculture-based projects may end up supporting men more than women. For example, SPRING’s review of USAID’s Feed the Future projects (see Table 2) found that male smallholders were the primary benefi-

ciaries of a majority of projects. While presumably due to a constellation of factors, the importance of extension services in this context cannot be overstated. In most countries, agricultural extension services traditionally are staffed by and serve men. The end result may be that women extension agents and recipients receive less technical information and training than men (Fanzo et al. 2013).

**Identifying appropriate nutrition indicators for agricultural projects.** Given the multisectoral nature of the causes of malnutrition, of which adequate quantity and quality of food is only one, there is some question as to whether nutritional outcomes measured by anthropometry are the most appropriate indicators of the impact of agriculture on nutrition. Proxies such as dietary quality and dietary diversity, while imperfect, may be the highest level indicators for which it is realistic to expect observable changes in agricultural projects (FAO/WHO 2014, Rose, Lockett and Mundorf 2013). SPRING's 2013 review of the programme (see Table 2), for example, cautions that stunting could be too high level an indicator for many Feed the Future projects to deliver within their project cycle. As a result the review recommends adding periodic measurement of more proximate intermediate indicators, such as household level dietary diversity, to the programme's design (Du 2013).

**Sustaining integration of nutrition indicators in agricultural project design.** Conventional nutritional analysis of a target population includes assessment of micronutrient status, collection of anthropometric data and context-specific understanding of the causes of malnutrition. Staff with this expertise are often limited to a small nutrition division or unit within the Ministry of Health and may have limited or no reach into the Ministry of Agriculture. As a result, sustained monitoring and evaluation of stunting and other nutrition indicators in agricultural projects can pose a problem. Successful integration would require the understanding and support of the project managers and other actors based in agriculture and dedication and capacity on the part of the nutrition specialists. In many countries and projects, neither variable is guaranteed.

## Conclusion

These challenges to implementation hint at how difficult it is to make agriculture truly nutrition sensitive. Despite

the fact that nutrition is now climbing higher on many countries' political agendas, agricultural growth and production of staple crops continue to be the paramount objectives of agricultural decision-makers. Many of these government actors still see little reason, and have few incentives, to incorporate nutrition sensitivity within more usual sector objectives of higher production and productivity.

As such, it is essential to generate more evidence and guidance on how the goals of increasing agricultural growth and improving nutrition are compatible. There is scope for winning on both fronts. Herforth and Dufour ([this issue](#)) outline some *Key Recommendations for Improving Nutrition through Agriculture* that make some suggestions for project and policy design. In most cases, the programmes reviewed here follow those guidelines via explicit consideration of empowerment of women, resilience building and nutrition education.

Realistically, of course, win-wins are not always possible. In those situations, policy choices must be made. A primary consideration then would be at least to "do no harm" to nutrition. In some instances, improving nutritional outcomes, which will improve economic productivity in the longer term, may require lowering short-term economic growth. However, this type of trade-off is highly compatible with pro-poor development goals such as gender empowerment and social welfare. As such, social imperatives can be created in situations where a short-term economic one cannot.

Continued dialogue and concrete examples of how to make these integrated programmes and policies work effectively can help move the nutrition and agriculture communities closer together, increase buy-in by both, contribute to the layout of a broad framework for future priorities in nutrition-sensitive development in agriculture and other sectors and, ultimately, support changing food and agricultural systems for better nutrition. These objectives inform this entire issue of the SCN News and are why information, evidence and advocacy from development partners, other sectors, and initiatives like the Scaling Up Nutrition Movement are so important.

As noted above, this landscaping exercise is not yet complete. Nevertheless, especially when considered with the following two papers, sharing of these preliminary findings will hopefully be useful for increasing awareness of how development organizations are tackling the chal-

lence of integrating nutrition and agriculture in their programming. As such the stage is set for this issue.

## References

- Codex Alimentarius (2014) *About Codex* (webpage). ([online](#))
- Du L (2013) *A Landscape Analysis of Linkages between Agriculture and Nutrition in Nineteen Feed the Future Country Programs* [PowerPointslides]. AgN-GLEE Workshop: Washington DC. ([online](#))
- Du Vachat E (2013) *Sowing the Seeds of Good Nutrition: Making Agricultural Policies Deliver Better Nutrition*. Action Against Hunger: Paris.
- Espejo F, Burbano C, Galliano E (undated) *Homegrown School Feeding: A Framework to Link School Feeding with Local Agricultural Production*. World Food Programme: Rome.
- Fanzo J et al. (2013) *The Integration of Nutrition into Extension and Advocacy Services: A Synthesis of Experiences, Lessons and Recommendations*. Global Forum for Rural Advisory Services: Lindau.
- FAO (2013a) *Nutrition-enhancing agriculture and food systems*. Online discussion from 30 June to 28 July 2013. Global Forum on Food Security and Nutrition. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- FAO (2013b) *Alimentación Escolar Directa de la Agricultura Familiar y las Posibilidades de Compra: Estudio de Caso de Ocho Países*. Brazilian Federal Government and Food and Agriculture Organization of the United Nations: Rome.
- FAO/WHO (2014) *Proceedings of the Preparatory Technical Meeting for the Joint FAO/WHO Second International Conference on Nutrition (ICN2)*. Food and Agriculture Organization of the United Nations: Rome, World Health Organization: Geneva.
- Feed the Future (2013) *2013 Progress Report: Growing Innovation, Harvesting Results*. United States Agency for International Development: Washington DC.
- GAIN (2013) *Annual Report 2012-2013*. Global Alliance for Improved Nutrition: Geneva.
- Garrett J, Natalicchio M (2011) *Working Multisectorally in Nutrition: Principles, Practices, and Case Studies*. International Food Policy Research Institute: Washington DC.
- Gillespie S et al. (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet*, 382 (9891), pp. 552–569.
- Herforth A, Jones A, Pinstруп-Andersen P (2012) *Prioritizing Nutrition in Agriculture and Rural Development: Guiding Principles for Operational Investments*. World Bank: Washington DC.
- IFPRI (2012) *Women's Empowerment in Agriculture Index*. International Food Policy Research Institute: Washington DC.
- IYCN (2011) *Nutrition and Food Security Impacts of Agriculture Projects*. Infant and Young Child Nutrition Project. United States Agency for International Development: Washington DC.
- Levinson F, Balarajan Y (2013) *Addressing Malnutrition Multisectorally: What have we learned from recent international experience?* UNICEF Nutrition Working Paper. UNICEF and MDG Achievement Fund: New York.
- Meeker J, Haddad L (2013) *A state of the art review of agriculture-nutrition linkages: An AgriDiet Position Paper*. Institute of Development Studies: Brighton.
- Saltzman A et al. (2013) Biofortification: Progress toward a more nourishing future. *Global Food Security*, 2 (1), pp. 9–17.
- Rose D, Lockett B, Mundorf A (2013) *Diet Matters: Approaches and Indicators to Assess the Role of Agriculture in Nutrition*. Food and Agriculture Organization of the United Nations: Rome.
- Ruel MT, Alderman A, the Maternal and Child Nutrition Study Group (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382 (9891), pp. 536–551.
- USAID (2013) *Agriculture-to-Nutrition Pathways*. Background document for the Agriculture and Nutrition Global Learning and Exchange Event, Bangkok, March 19-23, 2013.
- Webb P (2013) *Impact Pathways from Agricultural Research to Improved Nutrition and Health: Literature Analysis and Research Priorities*. Background Paper prepared for the ICN2. Food and Agriculture Organization of the United Nations: Rome.
- Webb P, Kennedy E (2012) *Impact of Agriculture on Nutrition: Nature of the Evidence and Research Gaps*. Nutrition CRSP Research Brief: 4. Tufts University: Boston.
- World Bank (2007) *From Agriculture to Nutrition: Pathways, Synergies and Outcomes*. World Bank: Washington DC.
- World Bank (2013) *Improving Nutrition through Multisectoral Approaches*. World Bank: Washington DC.

### The Right to Food Forum

The [Right to Food Forum](#) is an online community of people interested on advancing the implementation of this human right. It offers an interactive platform for open dialogue, learning and knowledge sharing aimed at promoting and informing the international debate on how the human right to food approach can help to create a world without hunger and malnutrition.



Hosted by FAO through its [Global Forum on Food Security and Nutrition](#), the Forum organizes online discussions on key issues allowing stakeholders such as academics, researchers, development practitioners, human rights defenders and experts from governments, civil society and private sector to share their experiences and learn from each other.

You can join the Right to Food Forum by visiting [their website](#).

# The nutrition sensitivity of agriculture and food policies: a summary of eight country case studies

Jessica Fanzo,<sup>1§</sup> Carl Lachat,<sup>2</sup> Thalia Sparling<sup>3</sup> and Ted Olds<sup>4</sup>

<sup>1</sup> Institute of Human Nutrition and the Center on Globalization and Sustainable Development, Columbia University, United States of America

<sup>2</sup> Department of Food Safety and Food Quality, Faculty of Bioscience University of Gent, Belgium

<sup>3</sup> Institute of Public Health, University of Heidelberg, Germany

<sup>4</sup> Independent Consultant, United States of America

§ Corresponding author. Email: [jfanzo@gmail.com](mailto:jfanzo@gmail.com)

*Author statement: The authors declared not having any conflict of interest.*

## Introduction

Agriculture and food systems throughout the world have evolved to become more complex and globalized (Nugent et al. 2011, FAO 2013a). The nutritional quality of food production, processing and consumption – as determined by the food system – is intrinsically related to the World Summit goal for all people to have the opportunity to lead a healthy and active life (FAO 1996). Nutrition-sensitive agriculture aims to maximize the positive impact of the food system on nutritional outcomes while minimizing any unintended, negative consequences of agricultural policies and interventions for the consumer (Ruel et al. 2013). It is placing a nutrition lens on the food and agricultural sector as a whole without detracting from the agriculture sector's own goals, which historically focus on increasing production and improving income (Herforth et al. 2012).

The complex role of agriculture policies in the food system is well understood, but their impact on nutrition is less well known (WHO 2013). Debate continues between those who suggest that agricultural policy should play a large role in producing nutritious food and those who believe that it is more important for agricultural policy to focus on feeding the planet and promoting economic development by increasing production, especially that of cash crops. This paper highlights the gaps in our under-

standing of effective nutrition-sensitive policies and commitments and provides an overview of the food-agriculture policy landscape as it relates to nutrition by summarizing eight in-depth country case studies commissioned by the United Nations System Standing Committee on Nutrition (UNSCN) ([available online](#))<sup>1</sup>.

## Methodology

### Objectives

These studies, undertaken by a number of independent consultants, examined the nutrition sensitivity of agriculture and food policies in eight developing countries, namely Brazil, Malawi, Mozambique, Nepal, Senegal, Sierra Leone, South Africa and Thailand. The authors of this paper were tasked with consolidating and summarizing these reports, which are [published in full by the UNSCN](#). This paper presents a brief survey of initial findings.

The major objectives of these eight country studies were:

- To identify and describe food and agriculture strategies, policies and investments that incorporate nutrition-sensitive actions and recommendations.
- To describe policy processes and the political environment around nutrition-sensitive food and agriculture policy-making and identify factors contrib-

<sup>1</sup> The studies were conducted by the following independent consultants: Anne-Marie B Mayer (Malawi); Carl Lachat and Eunice Nago (Senegal); Hettie Schönfeldt, Prof JF Kirsten and Prof M McLachlan (South Africa); Jessica Fanzo and Danielle Andrews (Nepal); Kraissid Tontisirin, Visith Chavasit, Tipvon Parinyasiri, Mayuree Ditmetharaj, Patchanee Intaraluk and Sauwalak Kittiprapas (Thailand); Margaret Akinyi Wagah, Mohammed Ajuba Sheriff and Aminata Shमित Koroma (Sierra Leone) and Sabrina Ionata de Oliveira Granheim (Brazil and Mozambique). Their work and contribution are gratefully acknowledged.

uting to or impeding collaboration and cooperation between relevant ministries.

### Country selection process

The eight countries analysed in this report were selected based on their representation of different stages along the nutrition transition, stated commitment to nutrition as expressed through the Scaling Up Nutrition (SUN) Movement or other actions, expressed interest in the work and their having potentially relevant agriculture policies in place. In each country, agriculture is an important economic driver, and each has a multisectoral nutrition plan. Of the eight countries, five have signed up to SUN.

### Data Collection

Preparation of the studies began in 2013, with a group of experts convened by the UNSCN working to agree on a common methodological approach for the case studies, a detailed framework of analysis and a list of research questions (UNSCN 2013).

The studies were carried out for each country by individual consultants, under the guidance of the UNSCN. Data collection included a review of existing policies and relevant secondary data and in-country consultations. Data collection was done in two parts. The first part consisted of a desk review prior to a country visit. In the second part, consultants travelled to the countries to gather additional information on strategies, policies and investments in food and agriculture; their influence on nutrition; institutional capacity; level of stakeholder participation; cross-sectoral collaboration and alignment; and the overall nutrition political economy.

In-country work consisted of interviews with national government policy-makers and other experts in specific sector areas relevant to nutrition, mainly agriculture but also education, health and environment. Most of the consultants collaborated with country counterparts to organize a feedback session with relevant stakeholders that were contacted during the field visit.

An overarching framework, based on agriculture–nutrition pathways outlined by Gillespie and Harris (2012) as part of the Tackling the Agriculture–Nutrition Disconnect in India (TANDI) project (Figure 1) and the *Key Recommendations for Improving Nutrition Through Agriculture* (see [Herforth and Dufour in this issue](#)), was developed to guide the data collection and analysis for each

## Key messages

Food and agriculture policies and programmes have a major role to play in improving nutritional outcomes in a country.

\*\*

Many of the policies analysed in the case studies incorporated nutrition objectives, had indicators to measure progress, targeted the vulnerable and women, and focused on diversified food production. However, some policies did not emphasize interventions to improve processing, storage, marketing and utilization of foods. Very few have assessed impact of their food and agriculture policies on nutritional outcomes.

\*\*

Developing nutrition-focused human resources capacity is a critical component of implementing multisectoral approaches to achieving food and nutrition security.

\*\*

Robust and innovative monitoring and evaluation are essential to understanding the impact and effectiveness of nutrition-focused policies and programmes.

\*\*

The rising levels of overweight and obesity, which often exist alongside undernutrition, are a challenge that must be addressed in all countries studied.

case study. Each case study consisted of three areas of data collection and analysis. They were: (i) perform a situation analysis; (ii) analyse the nutrition sensitivity of the specific agriculture and food policies and frameworks that currently exist; and (iii) describe policy processes and alignments including cross-sectoral communication and coordination, monitoring and evaluation frameworks. Following country visits and data collection, data was analysed and a case study drafted. The draft report was sent for feedback, and contributions and revisions from national focal points that participated in the in-country visit were also included.

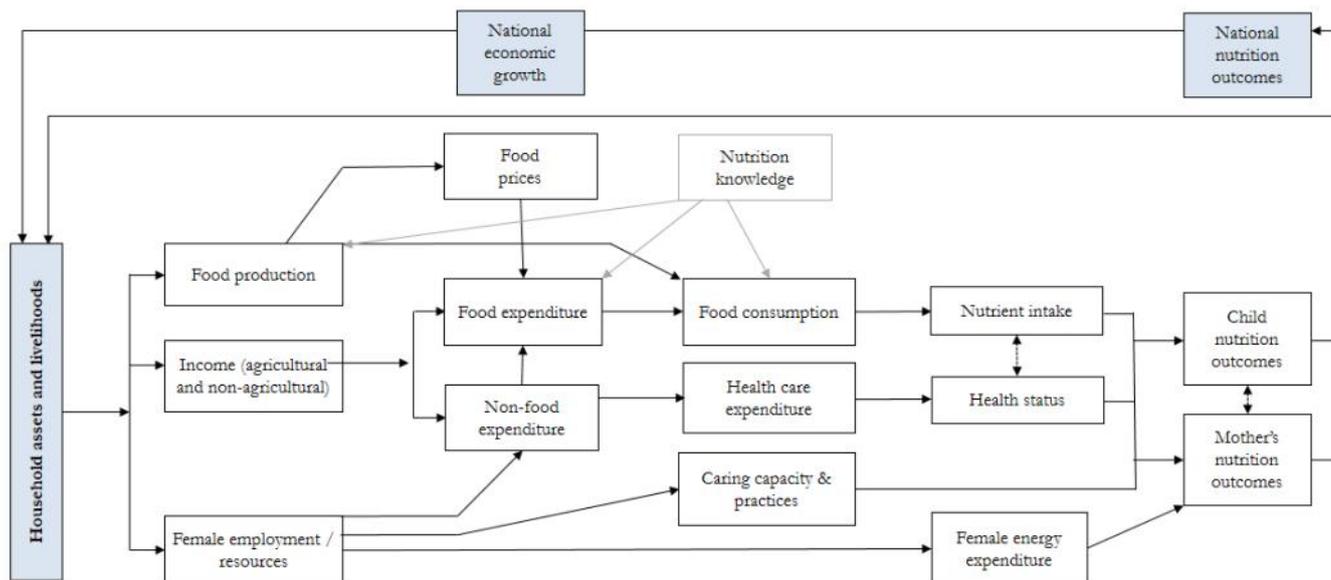
## Findings and Discussion

### Situation analysis of food systems

Each of the countries studied are in transition, both in their agriculture and food systems as well as the nutritional status of the population. They can be grouped into different stages (see Box 1, based on Paarlberg 2012). Of the countries studied, Malawi, Mozambique, Nepal, Senegal and Sierra Leone are in the first stage of the nutrition

**Figure 1. Framework adapted for the eight country study analysis.**

Source: adapted from Gillespie and Harris 2012 and Heady 2012.



transition. Brazil, South Africa and Thailand are moving through the second stage of the nutrition transition (Figure 2).

**Nutrition-sensitive analysis of food and agriculture policies**

Figure 3 summarizes the major agriculture and food policies of each country with respect to the five policy-related Key Recommendations. For each category, the authors constructed one composite score. Nutrition strategies themselves were not analysed in this synthesis report.

Country contexts are very different, yet common patterns of the underlying dynamics linking nutrition to agriculture exist. Strong government commitment to improving nutritional outcomes is a crucial first step, and all of the countries demonstrate this commitment to some degree. However, efficient food systems, institutional capacity, incentives for multisectoral collaboration and dialogue and monitoring and evaluation systems are the mechanisms through which these commitments are realized. As shown in Figure 3, countries have done a fair job in increasing incentives to diversify production as well as improving access and consumption of nutritious foods, but more can be done. Most countries lack the ability to measure and monitor consumption patterns and dietary diversity. One reason is due to disjointed information systems across ministries, but there is also a lack of tested, validated indicators to measure diversity and quality of diets, and food composition databases are often outdated

or non-existent. Most countries have done well in empowering women through agriculture and social protection policies and investments. Analytical and implementation capacities remain a gap in almost all countries, from community to university levels. Multisectoral strategies and true integration across sectors is a mixed bag. Some countries have good intent to coordinate, but intent and action are worlds apart. A few countries are doing actual cross-sectoral work.

All countries have done quite well in ensuring that nutrition objectives, goals and indicators are embedded within their strategies; however, translating this into programmes and practices is another reality. Almost all policies focus on increasing food production, which is the mainstay of modern agriculture but not the sole or perhaps even most important means for agriculture to improve nutrition. There is also an emphasis on women-led agriculture. Bolstering the engagement of women on an economic and developmental level within agriculture is increasingly recognized as an important investment, and there is strong evidence that targeting women improves nutritional outcomes (Smith and Haddad 2002). Some countries lack emphasis on post-harvest storage and processing as part of improving nutritional quality and of creating more nutrition-sensitive value chains.

We are just beginning to understand the concrete factors that link agriculture and nutrition. It is clear that better capacity and understanding will benefit every country studied. Governments that achieve significant gains in

### Box 1. The Three Stages of the Nutrition Transition

Source: adapted from Paarlberg 2012.

**STAGE ONE:** The average diet is generally low in calories and micronutrients, and food is often sourced from smallholder and subsistence farms. This stage is accompanied by high rates of undernutrition and of infectious diseases.

**STAGE TWO:** The average diet is in transition to a diet that provides adequate basic energy for most of the population but with little diversity and an inadequate balance of nutrients. This stage is accompanied by undernutrition with an increasing burden of overweight and obesity and noncommunicable diseases.

**STAGE THREE:** People have access to an affluent diet that is energy dense and rich in fat, salt, and highly refined carbohydrates. The food supply systems are abundant and diverse. This stage is accompanied by a high prevalence of diet- and lifestyle-related health problems linked to obesity.

nutritional outcomes through improving agricultural policies and programmes will be at the vanguard of a new methodology and have the opportunity to significantly contribute to learning in this area. Countries like Brazil and Thailand have already demonstrated valuable lessons, both in terms of successes and opportunities. As both countries continue to work to eliminate undernutrition while also stepping up interventions to address the increasing rates of overweight and obesity, it is critical for them to continue to build capacity that can implement, assess and mitigate the growing obesity trends.

### Analysis of policy processes and alignments

**Multisectorality:** Nutrition is often considered an institutional orphan that does not fit neatly into the defined scope of work of any one ministry. Ministries tend to prioritize more explicit sector goals at the expense of nutrition objectives. Many food and nutrition security policies incorporate agricultural objectives, but this is not generally reciprocated by the agricultural sector. Most agricultural policies focus primarily on production and sale of cash crops and lack explicit nutrition-focused objectives. However, some countries, such as Brazil, Nepal, Senegal, and Sierra Leone, do explicitly recognize the multisectoral nature of nutrition.

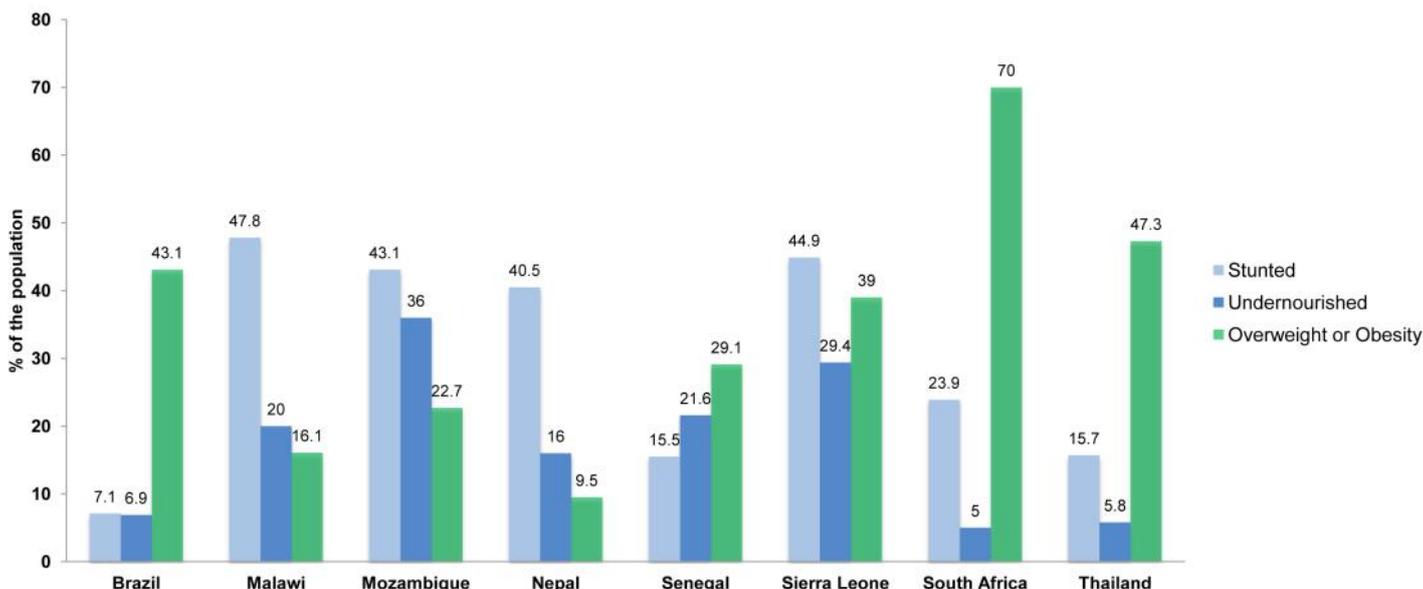
**Enabling environment:** Challenges related to fostering an enabling environment were among the most pervasive barriers to achieving positive nutritional outcomes. An enabling environment is one where the political and policy processes build and sustain momentum for the effective implementation of actions to reduce malnutrition (Gillespie et al. 2013). Most agriculture policies concentrate on increasing production of cash crops and econom-

ic growth. These priorities do not naturally coexist with those of nutrition-sensitive agriculture, such as increasing production of nutrient-dense foods, improving food processing and storage to retain nutritional value and targeting populations that are vulnerable to malnutrition.

**Capacity and coordination:** The lack of expertise and coordination between ministries is another challenge, with perhaps the exception of Brazil and Thailand. Effective nutrition-sensitive agriculture requires expertise not only in nutrition but also in food systems, agricultural production, business enterprise, community engagement and health. Many of the countries' key stakeholders recognized that there are few to no agricultural policy-makers or programme personnel who also have expertise in health and nutrition. The objectives of nutrition, agriculture and health are intrinsically related and often mutually reinforcing. A clear understanding of those relationships among policy-makers, achieved through improved education in nutrition-sensitive approaches and a mutual language for engagement, can break down many of the barriers to collaboration.

**Information and measure:** Finally, effective monitoring and evaluation systems are essential for policy-makers to achieve substantive gains in nutrition-sensitive agriculture. Each of the major food and agriculture policies had some issue with the monitoring and evaluation frameworks. Some of the issues are due to a lack of evidence that still exists around the links and synergies between agriculture, nutrition and health. Clear and defined metrics should be developed to guide operational programmes in agriculture and health toward common goals, and governments should measure and evaluate the contributions of agriculture and food to diet quality and

**Figure 2. The burden of undernutrition, overweight and obesity in the eight countries studied.**



**Legend:**

Data is expressed as a percentage of the population stunted (light blue), undernourished (dark blue) and overweight or obese (green).

Stunted: percentage of children under the age of five who are moderately or severely stunted (Nutrition Landscape Information System – NLiS and Demographic and Health Surveys – DHS).

Undernourished: percentage of the population who are undernourished (FAO).

Overweight and obesity: percentage of women ages 15 to 49 years with a body mass index of 25 or greater (NLiS, DHS).

health. Rigorous monitoring and evaluation systems will equip policy-makers to be more focused and data-driven in their responses to nutrition challenges and facilitate a more productive dialogue among relevant stakeholders. In addition, the growing ubiquity of real-time data collection allows for rapid assessment of implementation needs.

**Lessons Learnt**

The links between nutritional outcomes and broader agriculture and food systems are undeniable in their potential to combat hunger and malnutrition, but how to strengthen these links? From the country studies we can identify a number of lessons and areas for future work.

**Lesson one:** Operationalizing policies requires a new way of working. Ministries must create systems to engage in policy dialogue around nutrition, allocate sufficient funding for sector-specific nutrition activities and be held accountable for achieving positive nutritional outcomes. Donors should be a part of that collaborative process, facilitating cross-sectoral planning and implementation of nutrition-sensitive agriculture activities.

**Lesson two:** Many of the countries have yet to monitor operational progress at a national, centralized level. As countries begin to implement programmes, they will have the opportunity to undertake analyses beginning at baseline to elucidate the factors that hinder or advance implementation and to uncover best practices for mitigating challenges. The inclusion of concrete and robust metrics will help assess process and impact and identify relevant externalities. Thus far, no consensus has been reached on what a comprehensive set of indicators should look like. A full set of indicators must take account of specific vulnerable populations, such as women, traditional and indigenous populations and those living in fragile states; the relative effect of policies on both underweight and overweight and obesity status; the geographic distribution of impact, particularly between rural and urban populations; the macroeconomic impacts of such policies, particularly on food prices and trade; and the effect on a range of environmental factors and vulnerability to severe climate events.

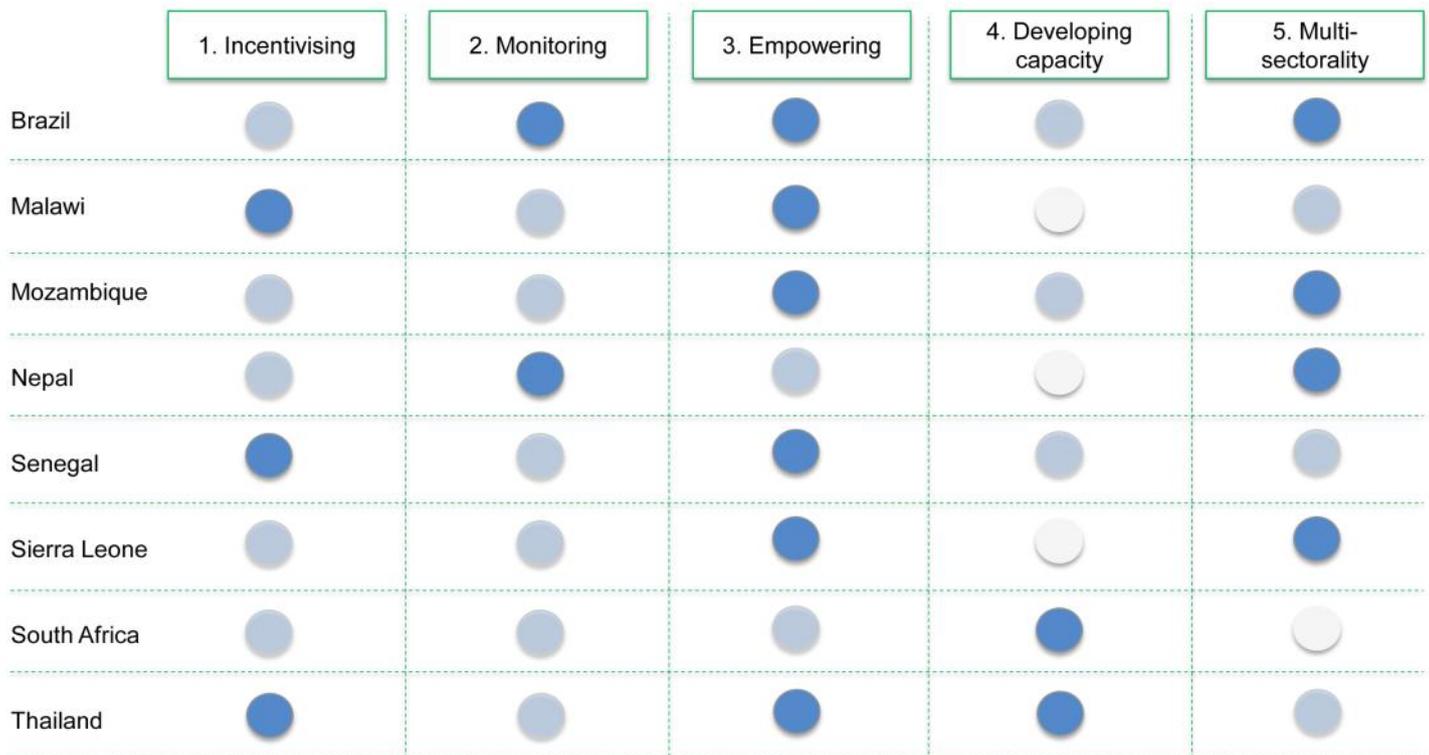
**Lesson three:** Implementation of nutrition-sensitive agriculture also relies on a workforce with the relevant skills

and understanding. As discussed, there is a lack of expertise in nutrition in most study countries, and even fewer people with substantive cross-sectoral knowledge (see Gillespie and Margetts paper in this issue). An effective implementation plan must include a human resources strategy to assess the existing skills gaps and to build the required expertise.

**Lesson four:** There are also a number of externalities and

components around “*what we don’t know that we don’t know*” with respect to nutrition-sensitive agriculture. External drivers such as population growth, urban migration, and environmental risk and climate volatility will have less predictable effects on food and nutrition security and complicate efforts to develop nutrition-sensitive policies and programmes. The free movement of ideas and technology across borders in an increasingly global-

**Figure 3. Rankings of countries food and agriculture policies in meeting the Key Recommendations for Integrating Nutrition into Agriculture.**



**Food and agriculture policies can have a better impact on nutrition if they:**

1. Increase incentives for availability, access, and consumption of diverse, nutritious and safe foods through environmentally sustainable production, trade and distribution.
2. Monitor dietary consumption and access to safe, diverse and nutritious foods. The data could include food prices of diverse foods and dietary consumption indicators for vulnerable groups.
3. Include measures that protect and empower the poor and women. Safety nets that allow people to access nutritious food during shocks or seasonal times when income is low; land tenure rights; equitable access to productive resources; market access for vulnerable producers. Recognizing that a majority of the poor are women, ensure equitable access to all of the above for women.
4. Develop capacity in human resources and institutions to improve nutrition through the food and agriculture sector, supported with adequate financing.
5. Support multisectoral strategies to improve nutrition within national, regional and local government structures.

**Legend:**

The table summarizes the rankings of the major agriculture and food policies of each country analysed with respect to the five policy-related Key Recommendations into one composite score across all major food and agriculture policies analysed. The circles indicate the following: the dark blue indicates that the recommendation is adequately addressed, medium blue signifies that the recommendation is partially addressed but not completely, and very light grey indicates that the recommendation is not addressed or included in the policy. Nutrition strategies themselves were not analysed in this synthesis report.

ized planet will play a role in determining future production and consumption patterns. The international community needs to understand the resulting impact on nutritional outcomes. Policies need a longer-term horizon that internalizes these shifts, as well as the monitoring systems and metrics to interpret long-term effects and changes. Researchers and policy-makers need to advance the dialogue about what works in nutrition-sensitive agriculture.

**Lesson five:** It is unclear how countries will effectively address the dietary and nutrition transition. This remains a central issue for the agriculture sector and its cooperation with other sectors such as health and education. Issues of globalization, trade, the food industry and urbanization will only become more intertwined with each other and with food systems across countries, regions and the globe. It is unclear how to mitigate the *globesity* trend of increasing overweight and obesity through the agriculture sector. Very few countries at the moment have effectively tackled this issue (see [Candeias and Lachat](#), and [Hawkes et al. in this issue](#) for an overview and possible approaches).

The upcoming [Second International Conference on Nutrition \(ICN2\)](#) is an excellent opportunity to provide policy guidance to countries to ensure agriculture is better responding to health needs, and to enable stakeholders to jointly move the nutrition agenda forward.

## References

FAO (1996) *Food Security Definition at World Food Summit*. Food and Agriculture Organization of the United Nations: Rome.

FAO (2013) *State of Food and Agriculture*. Food and Agriculture Organ-

ization of the United Nations: Rome. ([online](#))

Gillespie S, Harris J, Kadiyala S (2012) *The Agriculture–Nutrition Disconnect in India. What Do We Know?* International Food Policy Research Institute: Washington DC.

Gillespie S, Haddad L, Mannar V, Menon P and Nisbett N (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet*, 382 (9891), pp. 552–569. DOI: 10.1016/S0140-6736(13)60842-9

Heady D (2012) *Turning Economic Growth into Nutrition-Sensitive Growth*. 2020 Conference Paper. International Food Policy Research Institute: Washington DC.

Herforth A, Jones A, Pinststrup-Andersen P (2012) *Prioritizing Nutrition in Agriculture and Rural Development: Guiding Principles for Operational Investments*. World Bank: Washington DC.

Nugent R (2011) *Bringing Agriculture to the Table: How Agriculture and Food Can Play a Role in Preventing Chronic Disease*. Chicago Council on Global Affairs: Chicago.

Paarlberg R (2012) *Governing the Dietary Transition: Linking Agriculture, Nutrition, and Health*. In: Fan S, Pandya-Lorch R (eds) *Reshaping agriculture for nutrition and health*. International Food Policy Research Institute: Washington DC.

Ruel MT, Alderman H, the Maternal and Child Nutrition Study Group (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382 (9891), pp. 536–551.

Smith LC, Haddad L (2002) How Potent Is Economic Growth in Reducing Undernutrition? What Are the Pathways of Impact? New Cross-Country Evidence. *Economic Development and Cultural Change*, 51, pp.55–76.

UNSCN (2013) *Meeting of the Minds Report*. United Nations System Standing Committee on Nutrition: Geneva.

WHO (2013) *Global nutrition policy review: What does it take to scale up nutrition action?* World Health Organization: Geneva.

## Agriculture–Nutrition Community of Practice (Ag2Nut CoP)

### Who are we?

We are a global network of professionals working on issues pertaining to the intersection of agriculture and nutrition. The group is informal and designed to facilitate information sharing and networking.

### What are the objectives of the CoP?

The CoP is designed to be a virtual space for sharing resources to build a common evidence pool, facilitating communication across sectors and developing key messages to communicate to the broader development community. We wish to break down the silos that separate agriculture from nutrition through creating opportunities for cross-sectoral dialogue on issues of mutual interest. The group has facilitated face-to-face meetings at various conferences and events since mid-2010, held periodic thematic discussions by conference call and disseminated research findings/tools/guidance materials. The outcomes of the group evolve with the needs of the members.

### How to join?

You can subscribe by clicking [here](#).



# Health, nutrition and agriculture: can the prevention of NCDs be an entry point for policy alignment in low- and middle-income countries?

Vanessa Candeias,<sup>1§</sup> Carl Lachat<sup>2,3</sup>

<sup>1</sup> Global Health and Healthcare, World Economic Forum, Geneva, Switzerland

<sup>2</sup> Department of Food Safety and Food Quality, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

<sup>3</sup> Nutrition and Child Health Unit, Institute of Tropical Medicine, Antwerp, Belgium

§ Corresponding author. Email: [vanessa.candeias@weforum.org](mailto:vanessa.candeias@weforum.org)

## Introduction

Noncommunicable diseases (NCDs), namely cardiovascular diseases, cancers, chronic respiratory diseases and diabetes, are the leading cause of death globally. They are responsible for 63% of deaths, with the majority of the disease burden in low- and middle-income countries (LMICs) (WHO 2011). NCDs are not only a health issue causing immense human suffering but also present a threat to development. Nearly one half of all NCD deaths are premature and affect people in their productive years. Hence, they reduce the ability of individuals to work while imposing limitations on the ability of families to raise their income, in turn endangering economic competitiveness across borders (WHO 2011). Worldwide, over US\$30 trillion of cumulative output losses can be expected in the next two decades due to NCDs (Bloom et al. 2011).

However, 80% of cardiovascular problems and 40% of cancers can be prevented by tackling key risk factors, in particular unhealthy diets, physical inactivity and harmful use of alcohol and tobacco (WHO 2011). For example, reducing individual salt intake to about 6g per day could prevent annually about 2.5 million deaths globally (He & Macgregor 2004). Insufficient fruit and vegetable intake contributes to 2.7 million NCD-related deaths per year (Hall et al. 2009).

The priority given to NCDs in the international health agenda has been on the rise. This was particularly visible in the run up to the [UN General Assembly on Prevention and Control of NCDs](#) in September 2011. Following HIV/AIDS in 2001, this was only the second time in the history

of the UN that the General Assembly met on a health issue. The UN General Assembly adopted a *Political Declaration on Prevention and Control of NCDs* (UN 2011), recognizing that a whole-of-government and whole-of-society approach is needed to effectively respond to the challenges posed by NCDs and that countries should build their policies to respond to such a challenge. Among others, the *UN Political Declaration* makes a strong call for multistakeholder partnerships to be leveraged for the effective prevention of NCDs.

As a result of this process, WHO has developed the [Global Action Plan for the Prevention and Control of NCDs for 2013-2020](#) and a set of voluntary targets that enable monitoring and evaluation of progress across countries and regions in the fight against NCDs. Under the auspices of WHO, various high-level declarations frame the agenda for NCDs (WHO 2003, WHO 2004, WHO 2010) and highlight the need for analysing country policies as they are developed to respond to the various national priorities, needs and international calls. Spearheaded by the [NCD Alliance](#), nongovernmental and civil sector mobilization has also gained traction, and technical experts have joined forces in various groups that have diverse objectives.

This paper notes the significance of NCDs as a global health issue and highlights their connection with agriculture and food systems. This connection is primarily established through increasingly unhealthy dietary patterns.

The paper argues that current policies and programmes aimed at tackling NCDs need to take agriculture and food

systems more into account, as these systems are intimately related to the causes of NCDs and also provide entry points for actions to improve diets and address the rising prevalence of NCDs. The paper recognizes the influence of broad policies (rather than just projects and programmes) on making key structural changes in health and agriculture agendas and acknowledges the systemic nature of both the health and agriculture spheres. Recognizing that the primary purpose of food and agriculture systems is to provide a sufficient, safe and diverse food supply for good health, the paper considers how to strengthen the links between NCD, nutrition and agriculture policies and how this may lead to progress in all three agendas, particularly in LMICs. It also notes the importance of ensuring policy coherence in addressing issues that cut across agriculture, food and health systems ([see Hawkes et al. in this issue](#)). It highlights the needs for exceptional levels of collaboration and coordination across sectors and actors, that is, working with food producers, marketers and processors as well as consumers to strengthen policies to prevent NCDs and modify the factors affecting availability, access and choice of foods in order to deliver positive outcomes for nutrition, health and agriculture.

## Overview of the policy landscape for food, agriculture and NCD prevention in LMICs

This section reviews national policies that address NCDs to investigate to what extent they apply a comprehensive approach and work through multiple sectors and stakeholders.

### Areas of action in policies for NCD prevention in LMICs

Various initiatives have been launched to monitor policy developments aimed at improving diets and preventing NCDs worldwide. International databases such as the WHO European Database on Nutrition, Obesity or Physical Activity ([NOPA](#)) and the Global Database on the Implementation of Nutrition Action ([GINA](#)) (WHO 2013, 2013b) provide an overview of national action on key risk factors for NCD prevention, including those related to nutrition. In addition, a number of recent studies reviewed shed light on the content of policy documents.

A structured content analysis of national nutrition, NCD

and health policies published between 2004 and 2013 reviewed the national policy response to NCDs in 116 LMICs (Lachat et al. 2013). Policies that included actions targeting salt, fat, fruit and vegetable intake or physical activity were found in 47% (54/116) of LMICs reviewed. Only 12% (14/116) had policies that addressed all four risk factors. 25% (29/116) addressed only one of the risk factors. In addition, 20% (23/116) of the countries had specific strategies to limit dietary salt intake, with eight detailing national targets to limit salt intake. Nearly 17% (20/116) included actions to modify fat intake with six countries mentioning specific national fat intake targets. Compared to the other dietary risk factors, the objective of increasing fruit and vegetable consumption had the highest coverage, being in 31% (36/116) of the policies reviewed.

WHO has also recently published the [Global Nutrition Policy Review](#). A total of 119 of 123 WHO Member States<sup>1</sup> responded to one or more modules, and 54 countries provided complete answers to the survey. Four areas of nutrition were considered in the review of policy content: undernutrition, obesity, infant and young child nutrition and vitamins and minerals. 46% of the 123 countries covered these four nutrition areas in their national policies. For obesity and diet-related NCDs, 88% of the 54 countries included such content in their policies, with the following variation per region: 81% in the African Region, 92% in the Region of the Americas, 75% in the Eastern Mediterranean Region, 91% in the European Region, 75% in the South-East Asia Region and 100% in the Western Pacific Region (WHO 2013c).

### Strategies, stakeholders and sectoral collaboration

In terms of policy implementation activities and mechanisms, the most common strategies are education and awareness-raising that target the general public (Lachat et al. 2013, WHO 2013c). National dietary or food guidelines are education tools frequently reported, as well as mass media campaigns and distribution of specific educational materials. Government strategies targeting specific actions by the private sector, academia or nongovernmental organizations were less frequently encountered compared to those towards the general public or policymakers in other government sectors. It is widely accepted, however, that the environmental context drives indi-

<sup>1</sup> Even though 119 responded, WHO uses the denominator 123 to report occurrence for all LMIC. For the 54 countries that responded to the seven modules, further analyses were conducted and those results are presented using 54 as a denominator.

vidual diets and lifestyle and that, in order to be effective, policies need to incorporate actions that change the environment in which individuals and their families live, such as quality, quantity, portion sizes or price of dietary choices and the built environment (Swinburn et al. 1999, Daar 2007, WHO 2011).

Regarding multistakeholder collaborations, most countries reported that partnerships or collaborations were in place to implement activities to tackle NCDs at the country level. However, the existing partnerships included collaboration mainly among healthcare teams, patients and communities (not between public sector, private sector and civil society) and the majority focused on prevention of tobacco use and diabetes (84% and 81%, respectively) (WHO 2012). While these collaborations have the potential to be helpful, the scope of sectors and stakeholders involved in the collaborations needs to be broadened to maximize the reach and impact of the policies being implemented, and mechanisms to assess accountability and commitment to action need to be assessed rigorously.

It is apparent from the reviews that most nutrition- or diet-related policies originate in the Ministry of Health. Of the 54 policies reviewed (Lachat et al. 2013), 63% (34/54) were published solely by the Ministry of Health in each country. Very few policies were presented as being a joint effort between various ministries (exceptions in this regard are Bulgaria, India, Indonesia, Malawi, Nepal, Sri Lanka and Viet Nam). The nutrition policies of Angola, Maldives and Swaziland were integrated with food security, and the Ministry of Agriculture was the main line ministry in charge in these countries. Across policies, involvement from Ministries or Departments of Education, Trade or Finance was variable and normally restricted to policy implementation.

## Gaps and opportunities in policies for NCD prevention, nutrition and food and agriculture systems

In reviewing the national strategies and other policy documents, the following issues emerged as major policy gaps in linking prevention of NCDs and malnutrition with actions in food and agriculture systems:

- **Policies for the prevention of NCDs through healthy diets are not formulated with a comprehensive food-systems-centred approach and therefore tend to miss**

### Key messages

The prevalence of noncommunicable diseases (NCDs) has been on the rise with serious social and economic consequences. In response to this rise, there has been high-level commitment and global mobilization to prevent and control NCDs.

\*\*

To date, however, comprehensive action for NCD prevention is often lacking at the national level. Identifying specific entry points at country level for other sectors such as agriculture or nutrition is a promising way to leverage concerted action.

\*\*

Policies and programmes aimed at tackling NCDs need to integrate agriculture and food systems approaches, as these have the potential to create an environment conducive to promoting healthy nutritional status for all.

**opportunities to address nutritional deficiencies (underweight and micronutrient deficiencies) at the same time as addressing NCDs (obesity, overweight, cardiovascular diseases, diabetes and cancer).** Every aspect of food systems can influence the availability and accessibility of diverse, nutritious foods and thus the ability of populations to choose healthier diets (Hawkes 2012). Therefore, policy development and implementation with a food systems approach will likely result in healthier dietary patterns with a lower risk of NCDs and nutritional deficiencies. However, most policies analysed, whether they are health, nutrition or NCD policies, had a vertical focus on a specific risk factor (e.g. salt reduction or increased fruit and vegetable consumption). Even when aiming to be more inclusive, this tended to be limited to increasing the breadth of messages delivered through education and awareness campaigns for consumers, as opposed to comprehensive approaches that targeted, for example, price or availability of fruits and vegetables.

- **Policy documents usually fail to articulate specific and measurable policy goals, objectives, targets, timelines and deliverables.** This often prevents stakeholders from rallying around and contributing to the achievement of objectives or targets. The [WHO voluntary global NCD targets for 2025](#) provide a starting point for countries looking to define their own targets and considering how to achieve these goals in a systemic way

(WHO 2013a). The goals on halting obesity and diabetes and the 30% relative reduction in mean population intake of salt/sodium are particularly linked to nutrition and food systems.

- When policy implementation strategies are described in the documents, they mostly provide very **limited and vague descriptions of needed resources (human, technical or financial), work plans and the specific roles or responsibilities of stakeholders** expected to be involved in the policy implementation process. This lack of detail and transparency in terms of what needs to be done by whom does not help ensure a coordinated response from all stakeholders and potentially limits the scope of stakeholder mobilization.
- **Plans and mechanisms to foster multistakeholder collaboration are absent in the policies analysed.** Most strategies included in the policies were directed towards government agencies and consumers. Hardly any targeted the business community, international agencies or civil society. Establishing effective and transparent platforms to promote collaboration between the public and private sectors and civil society stakeholders will be key to implementing actions to transform food and agriculture systems. For example, changing the supply chain for fats and oils or integrating iodized salt throughout the food production chain will only be possible with concerted action between public and private sectors.
- **The policies lack incentives for cross-sectoral collaboration between health, nutrition and agriculture.** Adequate collaboration between stakeholders in the health, nutrition and agriculture space will be essential to ensure a multisectoral response to all forms of malnutrition. Financial or policy incentives may trigger such collaborations. For example, the EU School Fruit Scheme has national and local implementation but was stimulated and partly funded at the European level by the Directorate-General for Agriculture and Rural Development of the European Commission.
- **Monitoring and evaluation plans tend to be absent** from the policies. Adequate planning of monitoring and evaluation activities at the national level is crucial for obtaining insights and in-depth understanding of strengths and weaknesses of policy and programme implementation, for tracking the success of NCD policies and for sharing lessons learnt.

- **Accessibility to official country policies is often poor.** Most of the policy documents are not easily and readily available for consultation. Better sharing of policies and of best practices and lessons learnt with regards to policy development and implementation will incentivize positive progress.

Several opportunities to address these gaps are apparent:

***a. Look at NCD prevention, including nutrition aspects, with a food systems lens***

Identify solutions that allow the integration of the prevention and control of chronic diseases with prevention and control of undernutrition, as well as agricultural growth and food security. The process followed for the development of the *Obesity System Map* in the project Tackling Obesities: Future Choices, by the UK Government's Foresight Programme can provide some ideas as to how to go about this (Butland et al. 2007). Development of the map took several sessions with participants from various sectors, including public and private sectors and civil society. The outcome was a map which illustrated the complexity and interconnectedness of the underlying causes of obesity. More simplified versions of this type of exercise can be conducted for various pillars of food systems analysis: (i) production "up to the farm gate" (research and development, inputs, production, farm management); (ii) post-harvest value chain (transportation, distribution, marketing, storage, trade, processing, retailing); and (iii) consumers (advertising, labelling, education, safety nets) (IFPRI 2012).

***b. Building and increasing capacity of policy-makers at the national level to work across sectors and stakeholders***

Each sector tends to have its own leadership, objectives, language, culture and way of working. There is a pressing need to build the capacity of policy- and decision-makers, to bring different sectors together, truly understand each other and look for shared goals and win-win situations across sectors as diverse as health, agriculture, food production, water, environment, education, social and welfare protection, labour and trade. This will require strong leadership to assemble the relevant information and committed stakeholders who will build and coordinate responses. This is not a panacea as various initiatives for multistakeholder nutrition planning have met failures (Field 1987, Jonsson 2010). But building a food systems

map that outlines critical stakeholders influencing the food system can be a first step in understanding the need for cross-sectoral collaboration. More can be done, however, to share policies, priorities and practices across sectors and to understand different stakeholders' values, needs, purposes and ways of operating in order to be able to incentivize different sectors to contribute to a common goal.

In addition to the complexity of working across sectors with a specific type of stakeholder (e.g. only nongovernmental organizations, academic institutions or the private sector), it is important to build the capacity of public and private sector or civil society stakeholders to work collaboratively towards common goals. Stakeholders will have to be able to overcome their differences; share their expectations for the outcomes of the collaborative work; agree on objectives, timelines and deliverables; and build trust that is robust enough to last through the achievement of the agreed objectives. Often mechanisms for transparency and accountability need to be created, all of which require exceptional coordination, negotiation and leadership skills (WEF 2014). Country- and regional-level training offers a good entry point to start building these skills and move towards a joint agenda (WEF 2013).

### ***c. Share policies, knowledge, best practices and monitoring and evaluation results***

Additional instruments and platforms to share lessons learnt among public sector, private sector and civil society on how to link agriculture, health and nutrition in policy development and implementation are needed to complement existing activities (WHO 2013b, WHO 2013). An open access, full text global repository of initiatives, data, commitments and policies to address NCDs will contribute to global- and national-level leadership and shared accountability in the fight against NCDs. In addition, focusing on sharing results and monitoring and evaluation practices will also facilitate the involvement of national researchers beyond the level of identifying issues and landscaping the prevalence of risk factors and diseases. Investment and mobilization of local research capacity for the prevention, management and monitoring of NCDs is essential for building evidence and best practices.

A critical issue is the need to promote accountability of decision-makers, governments, private sector and civil society to each other as well as across countries. New efforts have been launched to monitor policy implemen-

tation and will enable comparing what is done with what was planned, as well as adapting plans where they are inadequate. The *NOURISHING framework* (Hawkes et al. 2013) and the *INFORMAS initiative* (Swinburn et al. 2013) provide a comprehensive set of indicators to monitor food environments. Clearly, additional efforts to assess actual implementation of policies, resources allocated and their effectiveness in countries around the world will require additional resource investment, data collection efforts and transparency from governments. Ensuring buy-in of national policy makers in efforts to monitor NCD risk factors is a logical next step, and valuable lessons can be learned from the fight against undernutrition and from the Scaling Up Nutrition (SUN) Movement (Gillespie et al. 2013).

## **Entry points connecting NCDs, nutrition and agriculture**

The momentum around NCD prevention and policies provides several entry points for interaction with nutrition and agriculture strategies. Recognizing food producers, manufacturers and distributors as key stakeholders in the nutrition, health and agriculture arenas, we outline four examples of opportunities to act in nutrition and agriculture and food systems. These pathways of action are complementary to the pathways for agricultural interventions to improve nutrition (Ruel and Alderman 2013), and to the agricultural development programmes and activities to help alleviate poverty, a major cause of nutrition and health problems in LMICs.

- The **promotion of fruits and vegetables** is a priority area for many nutrition policies in LMICs. Current challenges to increasing fruit and vegetable consumption are linked to weaknesses in production, post-harvest and storage and infrastructure that limits distribution of fruits and vegetables in a timely and efficient way. Achieving the recommended daily intake of 400g of fruits and vegetables per person will require an agricultural response that leads to increased efficiency throughout the production and distribution chain, ensuring that availability, safety and accessibility of fruits and vegetables are secured. Consumer demand needs to be significant in order to ensure an adequate response and uptake of the investment made in production and in the post-harvest end of the value chain for fruits and vegetables. While agriculture must continue

to enhance productivity, it needs to pay more attention to what is produced to ensure increased availability of nutrient-dense foods such as fruits, vegetables, legumes, nuts, oilseeds and animal products from more sustainable production systems. Production interventions are more effective when they are sensitive to gender roles and combined with nutrition education (IFPRI 2012, FAO 2013).

- Various nutrition, food and health policies with strategies for NCD prevention contained specific measures for **salt iodization**, but only some of these developed strategies to reduce or manage dietary salt intake (Lachat et al. 2013). Working with in-country salt producers to ensure universal salt iodization while at the same time working with food producers and consumers to reduce overall salt intake serves both the under-nutrition and NCD objectives. Here again, this can only be achieved by aligning consumer education and awareness with an adequate response from the food production side, not only in the production, storage and handling of iodized salt but also in its incorporation in processed foods.
- The **informal food sector** and other informal food handlers along the value chain also need to be involved. The informal food sector can be defined as those small producers, manufacturing enterprises, traders and service providers involved in legal and unrecognized activities related to food that primarily use traditional supply chains. In LMICs, populations tend to acquire a significant proportion of their food through the informal food sector, either by buying directly from the farmer or eating outside the home (Lachat et al. 2011). Nutrition, health and agriculture policies can yield positive results if they integrate measures that leverage the inclusion of the informal food sector by training farmers and food handlers in healthy diets and nutrition. Such training can potentially improve the nutritional quality of the foods and beverages available, as well as improve food safety at preparation and distribution points.
- The possibility of convergence around NCD, nutrition and agriculture policies is perhaps largest around the **provision of sustainable diets**. Healthy diets are expected to have a lower environmental output (Barilla Centre for Food and Nutrition 2012). As defined by FAO and Bioversity International (FAO 2010, p.1), sustainable diets are “*those diets with low environmental*

*impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources”*. The concept of sustainable diets has the ability to serve and drive both the health and agriculture agendas as they connect to nutrition (Lang 2013). Along these lines, there have been various attempts to develop and promote sustainable food-based dietary guidelines, but clear action at national policy level has been weak.

## Conclusion

Global interest in NCD prevention is considerable. To date, however, comprehensive action for NCD prevention is often lacking at the national level. Identifying specific entry points at country level for other sectors such as agriculture or nutrition is a promising avenue to leveraging concerted action. Such an approach would rationalize policies and potentially bring benefits to stakeholders across sectors. Most importantly it would maximize positive health outcomes to the populations. Policy alignment across sectors and incentives to create supportive environments need to be identified for win-win outcomes that promote health and food and nutrition security and foster agricultural growth.

Identifying entry points for nutrition and agriculture in the NCD agenda is largely driven by context and hence needs to take place at the national level. It will require a process of priority setting across policies, sectors and stakeholders and will hinge on high-level leadership, dialogue and mutual understanding.

Representatives from various stakeholders need to take cross-sectoral action and look for opportunities to create formal arrangements, assign responsibilities and develop intersectoral negotiation and decision-making skills. Collaborations between the agriculture and health sectors can lead to substantial improvements in diet quality and health outcomes in developing countries, but they can flourish only if certain human and institutional challenges are overcome.

## References

- Barilla Centre for Food and Nutrition (2012) *Double Pyramid 2012: enabling healthy food choices*. Barilla Centre for Food and Nutrition: Rome. ([online](#))
- Bloom D, Cafiero E, Jané-Llopis E, Abrahams-Gessel S, Bloom L, Fathima S et al. (2011) *The Global Economic Burden of Noncommunicable Diseases*. World Economic Forum: Geneva.
- Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J et al. (2007) *Tackling Obesities: Future Choices – Project report*. Foresight programme of the UK Government: London. ([online](#))
- Daar A et al. (2007) Grand challenges in chronic non-communicable diseases. *Nature*, 450 (7169), pp. 494-496.
- FAO (2007) *Promises and challenges of the informal food sector in developing countries*. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- FAO (2010) *International scientific symposium Biodiversity and sustainable diets: United against hunger*. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- FAO (2013) *The State of Food and Agriculture 2013*. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- Field JO (1987) Multisectoral nutrition planning: a post-mortem. *Food Policy*, 12, pp.15-28.
- Gillespie S, Haddad L, Mannar V, Menon P, Nisbett N (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet*, 382, pp.552-569.
- Hall JN, Moore S, Harper SB, Lynch JW (2009) Global variability in fruit and vegetable consumption. *American Journal of Preventive Medicine*, 36, pp.402-409.
- Hawkes C, Friel S, Lobstein T, Lang T (2012) Linking agricultural policies with obesity and noncommunicable diseases: a new perspective for a globalising world. *Food Policy*, 37(3), pp.343–353.
- Hawkes C, Jewell J, Allen K (2013) A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obesity reviews* 14 (Suppl. 2), pp.159–168.
- He FJ, Macgregor GA (2004) Universal salt reduction. *Hypertension*, 43, pp.E12-E13.
- IFPRI (2012) *Global Food Policy Report*. International Food Policy Research Institute: Washington. ([online](#))
- Jonsson U (2010) The rise and fall of paradigms in world food and nutrition policy. (Commentary). *World Nutrition*, 1 (3), pp. 128-158.
- Lachat C, Nago E, Verstraeten R, Roberfroid D, van Camp J, Kolsteren P (2011) Eating out of home as a risk factor for poor diets: a systematic review of the evidence. *Obesity Reviews* 13(4), pp.329–346.
- Lachat C, Otchere S, Roberfroid D, Abdulai A, Seret FMA, Milesevic J, Xuereb G, Candeias V, Kolsteren P (2013) Diet and Physical Activity for the Prevention of Noncommunicable Diseases in Low- and Middle-Income Countries: A Systematic Policy Review. *PLOS Medicine*, 10, e1001465. ([online](#))
- Lang T (2013) *Some Thoughts for ICN 2013*. PowerPoint presentation. Meeting of the Minds organised by the UNSCN. United Nations System Standing Committee on Nutrition: Geneva. ([online](#))
- Ruel MT, Alderman H (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382, pp.536-551.
- Swinburn B, Egger G, Raza F (1999) Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Preventive Medicine*, 29, pp.563-570.
- Swinburn B, Sacks G, Vandevijvere S, Kumanyika S, Lobstein T, Neal B et al. (2013) INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. *Obesity Reviews*, 14, pp.1-12.
- UN (2011) *Political declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases*. United Nations: New York. ([online](#))
- WEF (2013) *Multistakeholder Collaboration for Healthy Living*. Toolkit for Joint Action. Developed by the World Economic Forum's Healthy Living Initiative and the Pan American Health Organization in collaboration with Bain & Company. World Economic Forum: Geneva. ([online](#))
- WEF (2014) *Collaborating for Healthy Living: From Bottlenecks to Solutions*. An Insights brief from the World Economic Forum Healthy Living Initiative prepared in collaboration with Bain & Company. World Economic Forum: Geneva ([online](#))
- WHO (2003) *WHO Framework Convention on Tobacco Control*. World Health Organization: Geneva. ([online](#))
- WHO (2004) *Global Strategy on Diet, Physical Activity and Health*. World Health Organization: Geneva. ([online](#))
- WHO (2010) *Global strategy to reduce the harmful use of alcohol*. World Health Organization: Geneva. ([online](#))
- WHO (2011) *Global status report on noncommunicable diseases 2010*. World Health Organization: Geneva. ([online](#))
- WHO (2012) *Assessing National Capacity for the Prevention and Control of Noncommunicable Diseases*. World Health Organization: Geneva. ([online](#))
- WHO (2013) *European database on nutrition, obesity and physical activity (NOPA)*. WHO European office: Copenhagen. ([online](#))
- WHO (2013a). *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. World Health Organization: Geneva. ([online](#))
- WHO (2013b) *Global Database on the Implementation of Nutrition Action (GINA): Policies in Senegal*. World Health Organization: Geneva. ([online](#))
- WHO (2013c) *Global nutrition policy review: What does it take to scale up nutrition action?* World Health Organization: Geneva. ([online](#))

# Key Recommendations for Improving Nutrition through Agriculture: establishing a global consensus

Anna Herforth<sup>1§</sup> and Charlotte Dufour<sup>1</sup>

<sup>1</sup> Food and Agriculture Organization of the United Nations, Rome, Italy

§ Corresponding author. Email: [anna@annaerforth.net](mailto:anna@annaerforth.net)

*Author statement: The authors declared not having any conflict of interest.*

## Introduction

Currently, both agriculture and nutrition have the world's attention. Since the 2008 food price crisis, investments have been rising in agriculture, increasingly focused on smallholder and women farmers. At the same time, as the prevalence and consequences of malnutrition on human capital have become clearer and more widely recognized, 50 countries have committed to improving nutrition as members of the [Scaling Up Nutrition \(SUN\) Movement](#), launched in 2010. Because malnutrition has multiple determinants, the SUN Movement calls for two kinds of actions to improve nutrition: those direct or nutrition-specific interventions that affect the immediate determinants of nutrition (food/nutrient intake and disease); and nutrition-sensitive interventions that affect the underlying determinants of adequate nutrition, to which a major contributor is agriculture (SUN 2010).

Given this background, national governments and operational staff in donor and nongovernmental agencies have increased their requests for assistance and guidance from international development partners on how to improve nutrition impact through agriculture. For example, through the inclusion of nutrition as Pillar 3 in the [Comprehensive Africa Agricultural Development Programme](#) (CAADP), African nations focus attention on this area. At the [Nutrition for Growth Summit in June 2013](#), G8 countries committed US\$ 19 billion to nutrition-sensitive actions, primarily through agriculture (DFID 2013). But in contrast to the direct interventions, which have been reviewed in detail in the *Lancet Series on Maternal and Child (Under)Nutrition* in [2008](#) and [2013](#), little clear guidance has been accessible on what to do to improve nutrition through agriculture.

In recent years, however, a consensus has taken shape,

captured by the [Key Recommendations for Improving Nutrition through Agriculture](#) described here. These recommendations are already being employed in a number of efforts around the world, thereby bringing to bear the best of collective organizational knowledge and experience. They represent a well-vetted current consensus among development partners about what can be done in agriculture to have the highest likelihood of improving nutrition. For reasons discussed below, these recommendations are principles applicable across contexts, rather than specific interventions.

In order to provide some context to the recommendations, this paper describes the process that led to their development, notes how they are currently being used and discusses opportunities for their further use and development. In collaboration with many others, the authors of this paper led the process of developing the recommendations.<sup>1</sup>

## Developing the Recommendations

### Part 1: Discovering an implicit consensus

In the last several years, many development institutions sought to answer the question of what can be done in agriculture to improve nutrition, to guide their own investments or provide technical assistance. Many papers and strategies have recently appeared on the topic, in addition to a spate of meetings, symposia and other events. In 2010, an [Agriculture–Nutrition Community of Practice \(Ag2Nut CoP\)](#) was formed, as an informal, unaffiliated, volunteer forum to meet and discuss how we, and our respective institutions, were approaching agriculture–nutrition linkages. At first consisting of only a few development professionals meeting face-to-face in the Washington DC area, the group has grown organically and ex-

ponentially, mainly through word of mouth, to over 900 members from 67 countries by 2014, and holds regular discussions through electronic fora. Based on this group's initial conversations, many different people and institutions appeared to approach agriculture–nutrition linkages in a similar way. Thus there was an opportunity to make transparent the ideas already being promoted by development partners around nutrition and agriculture and to examine critically whether there was or was not a common vision.

In response, FAO agreed to sponsor a report to identify and analyse current agriculture–nutrition guidance and strategies of international development institutions. Ag2Nut CoP members, many of whom had personally contributed to such documents in their own work, were a primary source of information. Through this effort, 53 publications were identified that had been published by over 30 development institutions<sup>2</sup> on the theme of linking agriculture and nutrition, almost all within the last five years. These included several kinds of reports: guidance documents containing widely applicable principles or lessons learnt; UN interagency guidance that reflects consensus across many multilateral organizations; statements and strategies of institutions' own approaches to the issue; manuals for field staff to operationalize the linkages; and explorations of the evidence base.<sup>3</sup> All the documents explicitly sought to be based in evidence and field experience. The resulting report, the [Synthesis of Guiding Principles on Agriculture Programming for Nutrition](#), was published by FAO in 2013.

The main conclusion was that a strikingly strong consensus exists among development institutions on a discrete set of principles for how nutrition can be improved through agriculture. The review identified 20 themes that came up in the guidance documents of almost every institution (FAO 2013a, 2013b). Of the 20 themes identified, ten were discussed by 90–100% of institutions; eight were

discussed by 75–80% of institutions; the remaining two were discussed by 60% of institutions. These common themes emerged as guiding principles for agriculture's key roles in improving nutrition.

An extensive consultative process ensured that the report's conclusions were based on an accurate representation of what contributing organizations had published. Inputs and feedback to the final report came from over 70 individuals from over 30 organizations, including authors of the original guidance notes reviewed, members of the Ag2Nut CoP, FAO internal reviewers and others.

## Part 2: Consultative process toward an explicit consensus

The *FAO Synthesis Report* (FAO 2013a) established that there was indeed a common vision among development institutions for how agriculture could improve nutrition. However, there were also gaps identified,<sup>4</sup> partly based on the fact that the 20 principles in the report reflected only those institutions that had published guidance. In order to address the gaps in existing guidance, and increase ownership among a broader range of stakeholders, the authors undertook a series of consultative activities toward a concise, co-owned statement. The series of consultative activities included:

- Three conference calls in the Ag2Nut CoP. Members contributed comments (verbal and written) to a one-page draft consensus statement based on the *FAO Synthesis Report*, which was revised iteratively based on each of the calls and comments submitted via email.
- An online open discussion titled [Making agriculture work for nutrition: Prioritizing country-level action, research and support](#) on the Food Security and Nutrition Forum in November 2012. Further emphasis was placed on environmental sustainability and

<sup>1</sup> The authors were involved in this process in terms of participating from the beginning in the Agriculture–Nutrition Community of Practice discussions, guiding the work done under the sponsorship of FAO, and continuing the activities needed to produce the Key Recommendations. Anna Herforth was the lead consultant in compiling the inputs and producing the *FAO Synthesis Report* as well as the recommendations. Charlotte Dufour was the project manager for the work done, providing strategic direction and shepherding the process.

<sup>2</sup> As of February 2013, these institutions included: A2Z (USAID-funded project now closed), ACDI/VOCA, ACF, AED (now closed), AGRA, AVRDC (The World Vegetable Center), Bill & Melinda Gates Foundation, Bioversity International, CGIAR, Concern Worldwide, EC, DFID, FANTA (USAID-funded project), FAO, Fintrac, GAIN, HKI, ICRW, IDS, IFAD, IFPRI, IYCN (USAID-funded project now closed), The McKnight Foundation Crop Collaborative Research Program, Save the Children UK, USAID, The World Bank, WFP, WorldFish Center, World Vision International, UN HLTF and UNSCN. Since the publication of the *Synthesis Report* in February 2013, other institutions may have joined this list.

<sup>3</sup> The *FAO Synthesis Report* focused on in-depth analysis of the guidance documents and UN interagency guidance. These guidance reports were published by ACF, Bioversity International, European Community, FAO, FANTA Project (USAID-funded), IYCN (USAID-funded), IFPRI, Save the Children, World Bank, World Vision International, UN HLTF, and UNSCN.

solutions appropriate for local contexts, including underutilized crops.

- Presentation and discussion of the principles at four [Global Learning and Evidence Exchange workshops \(AgN-GLEEs\)](#)<sup>5</sup> organized by USAID’s Strengthening Partnerships, Results, and Innovations in Nutrition Globally project (USAID-SPRING) from November 2012 to June 2013. These workshops focused on strengthening USAID’s [Feed the Future](#) investments to improve nutrition in 19 countries. Interactive discussions with USAID country mission staff underscored the issues most applicable for staff faced with designing and implementing nutrition-sensitive projects.
- Presentation of the principles for discussion at USAID’s Board for International Food & Agricultural Development meeting in 2012 and the 2012 meeting of the Association for International Agriculture and Rural Development.
- Presentation of the principles for discussion at the [Meeting of the Minds on Food Systems and Nutrition](#), held by the UNSCN in March 2013. Participants emphasized that it would be useful to have a brief policy/advocacy statement, in addition to the programming principles.

The result of all these discussions was a co-owned statement reflective of the stakeholder input received, including ten key recommendations for agriculture programming, and five for policy. The focus on programming as well as policy represents the current consensus that agriculture can improve nutrition through two levels: (i) improving conditions for nutritionally vulnerable producer households directly, and (ii) improving the food system so that nutritious diets are easier to obtain for all consumers.

One of the limitations of the Key Recommendations is that because there was a desire to make them concise, there is little detail supporting each recommendation. Many institutions, however, have elaborated their experiences and recommendations for implementation. The original [FAO synthesis paper](#) is a helpful reference docu-

ment to support the Key Recommendations because it synthesizes what has been written about each theme. It also provides an annex of references and tools related to each theme.

At present it is not possible to estimate the impact of following each recommendation independently or in combination. Impact will depend on the policies or interventions used to implement the principles, how well-fitted they are to the context and how well they are carried out. This is related to the fact that the recommendations are not specific interventions but rather commonly agreed principles.

### Why principles and not interventions?

The Key Recommendations demystify what can be done in agriculture to improve nutrition. Achieving consensus on issues that touch livelihoods, equity and common goods (as agriculture does) commonly requires significant discussion or even negotiation. It is a rare situation where there is such broad agreement on a complex issue, informed by values as well as science, among many stakeholders. This presents countries and their development partners with immediate opportunities to start acting on the consensus.

Still, these recommendations are not nearly as specific as the direct nutrition interventions recommended in the [Lancet Series on Maternal and Child Nutrition](#) (Bhutta et al. 2013) and the SUN Framework. “Empower women” is a principle, while “vitamin A supplementation for children age 6–59 months” is an intervention. The latter is certainly easier to plan and budget for. Some partners have wondered, what then are the most effective intervention(s) in agriculture to improve nutrition, and can they be scaled up?

The consensus developed around principles, rather than specific interventions, primarily because principles represent the only generalizable evidence relevant to all the various environments where agriculture policies or programmes could be implemented. The appropriateness and effectiveness of interventions will vary by context, while the principles are seen as valid across all contexts.

<sup>4</sup> These gaps are enumerated in the *Synthesis Report* (FAO 2013a). They included the need for increased collaboration with agriculture professionals, and greater attention to (i) food policy, (ii) improving market access for smallholders, (iii) reducing post-harvest loss, (iv) environmental sustainability, (v) effective delivery of nutrition education. Operationally, gaps in practice-based evidence (i.e. delivery science), costing, capacity, and incentives were identified.

<sup>5</sup> In Africa, Asia, Latin America and the Caribbean and Washington DC.

## Key Recommendations for Improving Nutrition through Agriculture

Food systems provide for all people's nutritional needs, while at the same time contributing to economic growth. The food and agriculture sector has the primary role in feeding people well by increasing availability, affordability, and consumption of diverse, safe, nutritious foods and diets, aligned with dietary recommendations and environmental sustainability. Applying these principles helps strengthen resilience and contributes to sustainable development.

Agricultural programmes and investments can strengthen impact on nutrition if they:

1. **Incorporate explicit nutrition objectives and indicators into their design**, and track and mitigate potential harms, while seeking synergies with economic, social and environmental objectives.
2. **Assess the context at the local level, to design appropriate activities to address the types and causes of malnutrition**, including chronic or acute undernutrition, vitamin and mineral deficiencies, and obesity and chronic disease. Context assessment can include potential food resources, agro-ecology, seasonality of production and income, access to productive resources such as land, market opportunities and infrastructure, gender dynamics and roles, opportunities for collaboration with other sectors or programmes, and local priorities.
3. **Target the vulnerable and improve equity** through participation, access to resources, and decent employment. Vulnerable groups include smallholders, women, youth, the landless, urban dwellers, the unemployed.
4. **Collaborate and coordinate with other sectors** (health, environment, social protection, labor, water and sanitation, education, energy) and programmes, through joint strategies with common goals, to address concurrently the multiple underlying causes of malnutrition.
5. **Maintain or improve the natural resource base** (water, soil, air, climate, biodiversity), critical to the livelihoods and resilience of vulnerable farmers and to sustainable food and nutrition security for all. Manage water resources in particular to reduce vector-borne illness and to ensure sustainable, safe household water sources.
6. **Empower women** by ensuring access to productive resources, income opportunities, extension services and information, credit, labor and time-saving technologies (including energy and water services), and supporting their voice in household and farming decisions. Equitable opportunities to earn and learn should be compatible with safe pregnancy and young child feeding.
7. **Facilitate production diversification, and increase production of nutrient-dense crops and small-scale livestock** (for example, horticultural products, legumes, livestock and fish at a small scale, underutilized crops, and biofortified crops). Diversified production systems are important to vulnerable producers to enable resilience to climate and price shocks, more diverse food consumption, reduction of seasonal food and income fluctuations, and greater and more gender-equitable income generation.
8. **Improve processing, storage and preservation** to retain nutritional value, shelf life, and food safety, to reduce seasonality of food insecurity and post-harvest losses, and to make healthy foods convenient to prepare.
9. **Expand markets and market access for vulnerable groups, particularly for marketing nutritious foods** or products vulnerable groups have a comparative advantage in producing. This can include innovative promotion (such as marketing based on nutrient content), value addition, access to price information, and farmer associations.
10. **Incorporate nutrition promotion and education** around food and sustainable food systems that builds on existing local knowledge, attitudes and practices. Nutrition knowledge can enhance the impact of production and income in rural households, especially important for women and young children, and can increase demand for nutritious foods in the general population.

*(continues on the next page)*

One of the Key Recommendations, indeed, is to assess the context and ensure participation, a critical step to design feasible actions to enhance nutrition.

Principles also have the potential to be far wider-reaching than interventions. Specific interventions might appear as only a small portion of agricultural actions and budgets,

while principles can be integrated across the agriculture and food sector. Virtually all agriculture policies and programmes will have some effect on food environments, women's empowerment or health and sanitation environments, whether or not the effects are intentional. The principles can help ensure that these impacts are more likely to be positive for nutrition.

## Key Recommendations for Improving Nutrition through Agriculture (cont.)

Agriculture programmes and investments need to be supported by an enabling policy environment if they are to contribute to improving nutrition. Governments can encourage improvements in nutrition through agriculture by taking into consideration the five policy actions below.

Food and agriculture policies can have a better impact on nutrition if they:

1. **Increase incentives (and decrease disincentives) for availability, access, and consumption of diverse, nutritious and safe foods through environmentally sustainable production, trade, and distribution.** The focus needs to be on horticulture, legumes, and small-scale livestock and fish – foods which are relatively unavailable and expensive, but nutrient-rich – and vastly underutilized as sources of both food and income.
2. **Monitor dietary consumption and access to safe, diverse, and nutritious foods.** The data could include food prices of diverse foods, and dietary consumption indicators for vulnerable groups.
3. **Include measures that protect and empower the poor and women.** Safety nets that allow people to access nutritious food during shocks or seasonal times when income is low; land tenure rights; equitable access to productive resources; market access for vulnerable producers (including information and infrastructure). Recognizing that a majority of the poor are women, ensure equitable access to all of the above for women.
4. **Develop capacity** in human resources and institutions to improve nutrition through the food and agriculture sector, supported with adequate financing.
5. **Support multisectoral strategies to improve nutrition** within national, regional, and local government structures.

\*\*\*

*The present Key Recommendations for Improving Nutrition through Agriculture target policy-makers and programme planners. These recommendations are based on the current global context and may be updated over time as challenges and opportunities to improve nutrition through agriculture shift.*

## How the Key Recommendations are being used

The Key Recommendations usefully articulate what nutrition-sensitive agriculture is. The recommendations have already been employed to build awareness and as a framework or checklist for policy and programme design and analysis. For example:

### a) Awareness-building and training:

- The Key Recommendations have been used to advise ministries of agriculture in selected countries in their nutrition-related planning, in particular through the NEPAD-led CAADP Nutrition Capacity Development Initiative (see [Dufour et al., this issue](#)).
- They are being used to help inform staff in USAID's [Feed the Future](#) programme, following the [AgN-GLUE workshops](#) in 2012–2013, in a [series of briefs](#) (Herforth and Harris 2014) and seminars, and through technical support provided by [SPRING](#).
- Civil society organizations (CSOs), such as World

Vision International and ACF International, have used them for informing and training staff.

### b) A framework or checklist for policy and programme analysis:

- The [UNSCN supported analyses in eight countries](#) to describe the nutrition sensitivity of relevant national food and agriculture policies (see [Fanzo et al in this issue](#)) used the Key Recommendations as a guide or checklist.
- ACF International applied the five policy principles in [country case studies](#) on agriculture policy.
- USAID's [SPRING](#) project used them in a landscape analysis of Feed the Future projects in all [19 countries](#) where the programme is operating to understand the potential for current projects to improve nutrition.
- The [Secure Nutrition platform](#), housed by the World Bank, has used them to categorize [projects from around the globe](#) that have bridged agriculture and nutrition.

## Opportunities for future use and improvement

These Key Recommendations reflect the desire for a systemic shift in agriculture and food systems to support human well-being and environmental sustainability more fully. Implementation, however, will not be accomplished in a matter of a year or two. Major barriers to implementing the recommendations are gaps in information, capacity and incentives. Information on diverse food affordability and consumption patterns is lacking in many countries, making it difficult to plan agriculture strategies and investments in line with consumer needs. Furthermore, even where there is interest in creating more nutrition-sensitive agriculture policies and programmes, there is a lack of awareness of agriculture–nutrition linkages, and a paucity of professionals who combine expertise in nutrition and agriculture to provide technical support. Most importantly, incentives within the agriculture and food sectors are primarily for the maximization of income. Sustainability and scale will come when incentives for producers and agri–food firms to supply diverse, nutritious foods are aligned with consumer needs.

The Key Recommendations will continue to be made available to country governments and development institutions through various networks so they are freely available as a public good.

FAO plans, as part of its strategic planning, to develop and disseminate guidelines and good practices for improving nutrition through agriculture based on the Key Recommendations and to promote their use at global, regional and national levels. The Recommendations are being used in the CAADP Nutrition Capacity Development process follow-up, which will facilitate their use in country investment planning. There are other opportunities for dissemination, such as through the SUN Movement, agricultural technical agencies and the Second International Conference on Nutrition (ICN2). They could form the basis of a core training for agriculture–nutrition consultants, to support policy and programme development, monitoring and evaluation.

There is space for strengthening operational guidance on the basis of the Key Recommendations. Sponsored by FAO, the authors are developing a guidance checklist tool based on the Key Recommendations, which could be used to guide the design of agriculture programmes and investment portfolios and to assess their nutrition sensitivity.

There are also opportunities to draw attention to the policy recommendations. For example, a critical data need is to monitor dietary consumption and access to safe, diverse and nutritious foods. Such data are not currently collected in any coordinated way to inform policy, yet they are essential to assessing the effects of food system changes on nutrition. This major food data gap merits advocacy, particularly with regard to the Post-2015 Development Agenda.

By establishing a consensus around a common vision, the *Key Recommendations on Improving Nutrition through Agriculture* are a significant step toward changing food systems for better nutrition. They can be used to support changes in incentives, information, and capacity for improving food and nutrition security for all – and alignment in how stakeholders can support that vision.

## References

- Bhutta ZA et al (2013) Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *The Lancet*, 382 (9890), pp. 452–477.
- DFID (2013) *Nutrition for Growth Commitments: Executive Summary*. Department for International Development. ([online](#))
- FAO (2013a) *Synthesis of Guiding Principles on Agriculture Programming for Nutrition*. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- FAO (2013b) *The State of Food and Agriculture 2013: Food Systems for Better Nutrition*. Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- Herforth A, Harris J (2014) *Understanding and Applying Primary Pathways and Principles*. Brief #1. Improving Nutrition through Agriculture Technical Brief Series. USAID-SPRING Project: Arlington. ([online](#))
- Scaling Up Nutrition (2010) *Scaling Up Nutrition: a framework for Action*. ([online](#))

Want to receive our daily updates on global nutrition?

Follow us on [Twitter @UNSCN](#) and like our [Facebook](#) page at

<https://www.facebook.com/UnitedNationsStandingCommitteeonNutrition>

# FEATURE PAPERS



---

## Part II: What is needed to promote system change?

---

### Identifying effective food systems solutions for nutrition and noncommunicable diseases: creating policy coherence in the fats supply chain

Corinna Hawkes,<sup>1,2,3§</sup> Anne Marie Thow,<sup>4</sup> Shauna Downs,<sup>4</sup> Annie L Ling,<sup>5</sup> Suparna Ghosh-Jerath,<sup>6</sup> Wendy Snowdon,<sup>7</sup> Emily H Morgan,<sup>8,2</sup> Ismail Thiam,<sup>9</sup> Jo Jewell<sup>1</sup>

<sup>1</sup> World Cancer Research Fund International, United Kingdom

<sup>2</sup> Leverhulme Centre for Integrative Research into Agriculture and Health, United Kingdom

<sup>3</sup> Centre for Food Policy, City University, London, United Kingdom

<sup>4</sup> Menzies Centre for Health Policy, University of Sydney, Australia

<sup>5</sup> Health Promotion Board, Singapore

<sup>6</sup> Indian Institute of Public Health-Delhi, Public Health Foundation of India

<sup>7</sup> Pacific Research Centre for the Prevention of Obesity and Non-communicable Diseases, Deakin University and Fiji National University, Fiji

<sup>8</sup> London School of Hygiene and Tropical Medicine, United Kingdom

<sup>9</sup> Gaston Berger University, Senegal

§ Corresponding author. Email: [c.hawkes@wcrf.org](mailto:c.hawkes@wcrf.org)

*Author statement: The authors declared not having any conflict of interest.*

#### Introduction

It is evident that our global food system is not delivering optimal nutrition and health. Millions of people continue to be undernourished, while others consume diets which elevate their risk of developing noncommunicable diseases (NCDs) (Lim et al. 2013). Yet the food system has considerable – and largely untapped – potential for implementing effective policy solutions to poor nutrition and health.

The potential for such policy solutions emerges because policies that are upstream in the food system influence the environment in which we make our food choices. These upstream food and agriculture policies affect what is grown, raised, processed, marketed, distributed, traded and sold, which in turn affects what food is available, affordable and acceptable for consumers. These policies thus have the potential to leverage positive change for entire populations, not just the subgroups typically targeted by specific interventions and programmes.

Currently, however, most policy actions being taken by governments and other stakeholders to promote healthy diets and prevent NCDs are occurring closer to the consumer, in the downstream end of the food system. These policies mostly emerge from the health sector and include setting standards for nutrition labelling and claims, providing healthy foods in public institutions and similar settings, using economic tools to affect food affordability and purchase incentives, restricting food advertising and other forms of commercial promotion and targeting behaviour change directly through devices such as public awareness campaigns, nutrition advice and counselling in health care settings and improving nutrition education and skills ([WCRF International 2014](#)).

These actions are an essential part of the policy response. But their aims and objectives may be undermined by policies upstream in the food system. There may also be further policy actions more upstream in the food system that could complement these more downstream policies. There is also the question of the interests of the wide array of economic actors in the food system. Are the down-

stream policies discordant with their interests, thus leading to push back? Or can policy solutions be found which benefit upstream actors, such as family farmers?

The good news is that better understanding the links between upstream and downstream policies and actions can help us reshape food systems for NCD prevention, as well as nutrition and health more broadly. It can do so by identifying (i) how policies at the downstream end of the food system can be reinforced by upstream actions; (ii) where effective upstream solutions lie more generally; and (iii) how food system actors are affected.

In this paper, we focus on how food systems solutions to create greater coherence between food systems and the prevention of nutrition-related NCDs can be identified. To do so, we apply a nutrition and health lens to food system analysis. Such analysis, for which a range of methods is available (Box 1), can help to understand how upstream and downstream factors affect producer and consumer choices. As a concrete unit of analysis, we use the food supply chain – the processes and actors that take food from farm to fork and the inputs and outputs of these

#### Box 1. Some methods to analyse food systems from a nutrition and health perspective

**Problem and solution trees (PASTs).** This is a participatory approach to uncovering the layers of factors that contribute to a particular problem, and then developing potential solutions. Applied to nutrition problems, PASTs can assist with assessing the barriers and opportunities in the food supply chain for achieving dietary objectives. The first step is to identify the leading dietary problems in the country, such as high intake of sugar-sweetened beverages or low intake of fruit. The method brings together a multisectoral group of stakeholders from across government and nongovernment sectors for a participatory workshop. Using the trigger question “why”, participants work back from a problem statement to assess the causes of the problem. Once the problem trees are completed, the stakeholders brainstorm and prioritize solutions. The approach is particularly suited for data-poor settings and has the added benefit of enhancing understanding of the nutrition issue by those involved in the process. It has been used in Fiji and Tonga by researchers from Deakin University, Australia (Snowdon et al. 2008, 2010).

**Consumption-oriented food supply chain analysis.** This type of analysis involves a critical examination of the incentive structure underpinning decisions at each link in a particular food supply chain. The objective is to identify points where policy changes could be made to leverage positive effects across the supply chain (Hawkes 2009). The idea is that upstream tipping points have the potential to realign the incentives in the food system with public health goals. The methodology draws on reviews of secondary data, analysis of documents and, where possible, qualitative fieldwork to build a historical overview of how and why a particular food supply chain has developed over time. This technique focuses on identifying how policy interventions aimed at improving the quality of the food supply impacts the food system as a whole. It is used in the India case study presented in this paper, in combination with the PAST method.

**Value chain analysis.** This is a tool drawn from the business management field for examining the supply chain of a specific product and uncovering ways to create or add value for consumers (and financial returns for chain actors). It can be applied to the food system to identify opportunities to increase the supply of and demand for nutritious foods, such as fruits, vegetables and low-fat dairy products (Hawkes and Ruel 2010). The methodology begins with consumer research to define the value of a product from the perspective of consumers, then draws on a range of methods (such as participatory mapping, interviews, observations and secondary data reviews) to assess how effectively and efficiently the chain delivers that value. It also helps to identify any challenges or bottlenecks. This information can be used to inform targeted interventions to improve the availability, affordability and acceptability of nutritious foods. Recently, the approach has been used by researchers from the London School of Hygiene and Tropical Medicine to study Fiji’s fruit and vegetable sector.

processes. Food supply chains can also be analysed as value chains, in which particular attention is paid to how economic value is created and added in the chain, and by and for whom.

We illustrate how food systems solutions can be identified using two examples from the fats supply chain. The first case study focuses on methods developed by researchers in India, a very large, lower-middle income country. The case study provides an example of a systematic approach to identifying supply chain bottlenecks to reducing the availability and consumption of trans fats. The second case study comes from Singapore, a small, high-income country. The case study presents an example of a collaborative approach to improving the quality of fats in the supply chain, focusing on saturated fats.

Any diet, food or nutrient could be the focus of this form of analysis. Here we focus on saturated and trans fats. Both fats are linked to an increased risk of cardiovascular disease (CVD) (EHN 2011, Pedersen et al. 2012). Estimates suggest that replacing 2% of energy from trans fats with polyunsaturated fats would lower the risk of coronary heart disease by 24% (Mozaffarian and Clarke 2009). Fats are also energy dense, and energy-dense foods can lead to excessive intake of energy (calories). Owing to the poor health outcomes associated with the consumption of saturated and trans fats, WHO recommends replacing them with unsaturated fats (WHO 2013).

Fats are also very relevant from an economic perspective. National and international policies, implemented largely for economic objectives, have led to the rising dominance of soybean oil and palm oil in world markets over the past decades (World Bank and IFC 2011, Hawkes et al. 2012). Production of palm oil increased more than fourfold between 1990 and 2012, from 11.5 million to 50 million tonnes (FAO 2013). Soybean oil production has almost trebled, from 15 million to 41 million tonnes. To significant economic benefit, a handful of countries have specialized in producing and trading these oils. Soybean oil has a relatively healthy fatty-acid profile, but is widely used in partially hydrogenated vegetable oils which have high levels of trans fats. Similarly, palm oil contains high levels of saturated fats and can also be partially hydrogenated into trans fats. Base palm oil is often processed into refined, bleached, deodorized palm oil, but in its original red (crude) form, it is an excellent source of vitamin A.

## Developing a methodology to identify supply chain solutions to the intake of trans fats in India

In India, the main source of trans fats is partially hydrogenated vegetable oils (PHVOs). PHVOs are manufactured from basic vegetable oils and trans fats are created in the process. In the case of India, PHVOs have historically been manufactured from domestically produced oils, but more recently palm oil has been used as the base oil. PHVOs comprise 10% of the edible oil market in India, of which the majority is *vanaspati* (DVVOF 2013). *Vanaspati* is a vegetable *ghee* used in bakery products, fried snacks and foods sold by street vendors. In the northern states, it is used as a household cooking oil (L'Abbe et al. 2009, Agrawal et al. 2008, Ghafoorunissa 2008). The next largest source of PHVOs is bakery shortening (approximately 35%). *Vanaspati* and bakery shortening can contain over 50% trans fats (L'Abbe et al. 2009).

Although the levels of trans fats are high in foods that contain PHVOs (Agrawal et al. 2008, Ghafoorunissa 2008, Reshma et al. 2012), there are currently no estimates of intake at the population level in India. Nevertheless, because of the significance of PHVOs in the Indian food supply chain, alongside high rates of CVD (Reddy et al. 2005), the Ministry of Health and Family Welfare, health professionals and consumer organizations have expressed concern about the high levels of trans and saturated fats in PHVOs.

In light of this concern, in 2010 the Food Safety and Standards Authority of India (FSSAI) proposed a regulation designed to limit the intake of trans fats. The regulation targets manufacturers of PHVOs and sets an upper limit of 10% trans fats in PHVOs, which should be further reduced to 5% over three years (FSSAI 2010). It also requires mandatory labelling of saturated and trans fats. The regulation was published on 27 June 2013. The date for complying with the provisions was extended until December 2013, but is reported to be not yet actively enforced.

The regulation, if enforced, has direct implications for the fats supply chain in India: users of trans fats, including the food industry, street vendors and consumers, would need to replace PHVOs with alternative oils or reduce the level of trans fats in PHVO (Box 2). This applies to both cooking oils and oils used in processed products.

### Box 2. Reformulating PHVOs

There are several options for reformulating products that contain PHVOs. These are primarily dependent on the product's application. For frying applications, saturated or unsaturated oils can directly substitute PHVOs. Products that require a more solid fat, such as bakery products, can be reformulated using:

- a) a PHVO with lower levels of trans fats, usually using palm oil as the base oil (trans fats are reduced to less than 10%, but saturated fats are high);
- b) oils high in saturated fats (e.g. palm, butter or fully hydrogenated fats); or
- c) shortenings/*vanaspati* with lower levels of saturated fats (containing no trans fats) that blend hard fractions (e.g. palm stearin or interesterified fats) with unsaturated oils (Downs et al. 2013).

A more detailed description of the applications of different oils for product reformulation can be found in Tarrago-Trani et al. (2006).

In this context, researchers at the University of Sydney in collaboration with the Public Health Foundation of India conducted a consumption-oriented food supply chain analysis to systematically identify challenges to reducing the use of trans fats by manufacturers, street vendors and consumers and, consequently, where potential solutions lie. Figure 1 outlines the steps taken by the researchers to map the food supply chain. These were:

**Steps 1 to 3:** The first step was to map the food chain from inputs into agriculture to consumption. The organizational, financial, technological and policy characteristics at each part of the supply chain and corresponding incentives and disincentives were then identified.

**Steps 4 and 5:** The way in which the characteristics affect the availability, affordability and acceptability of fats was examined, as was how factors could be leveraged to improve the quality of fats in the food supply. Existing data, documentary analysis and interviews with key stakeholders from multiple sectors were used to obtain the necessary information to complete the food supply chain mapping.

**Step 6:** A combination of PASTs and logic models was then used to identify potential policy interventions aimed at improving the quality of fats in the Indian food supply chain (Snowdon et al. 2008, 2010). Problem areas in the chain were identified by examining where existing characteristics, incentives or disincentives had a detrimental effect on the availability, affordability and acceptability of both healthy (unsaturated) and unhealthy (saturated and trans) fats in the country.

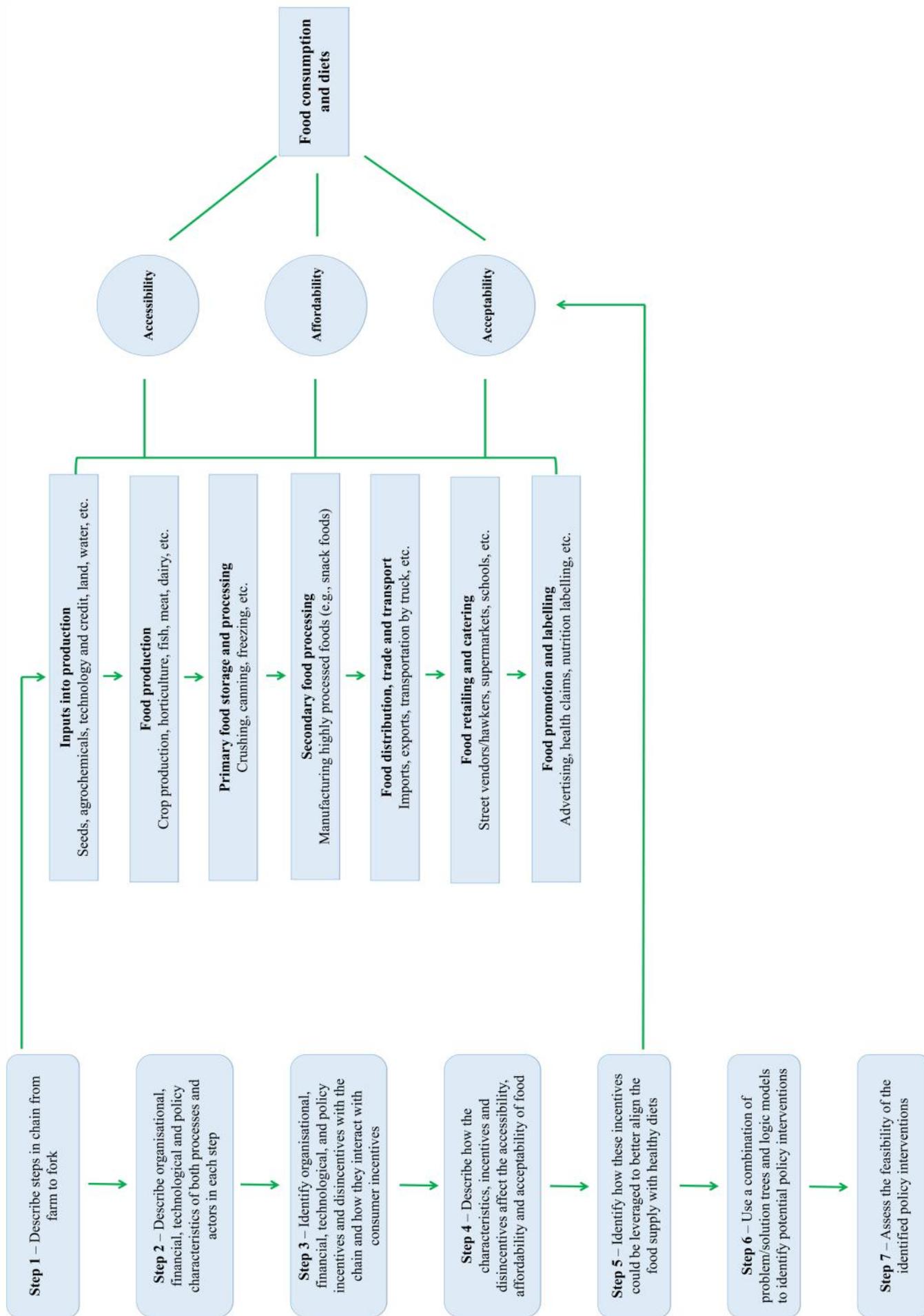
**Step 7:** Interviews with key informants were conducted to examine the feasibility and acceptability of the proposed policy options.

Initial results of this study (Downs et al. 2014) indicated the practical utility of the method in identifying areas requiring greater coherence between the proposed regulation and the upstream trans fats supply chain. Several nodes of the food supply chain were identified as being particularly critical. Beginning with agricultural trade, the analysis found that the low cost of palm oil creates an incentive for importing it. Oil processors then have the incentive to use it as a base oil for PHVOs, thus perpetuating the use of low-cost trans fats. Consequently, manufacturers have a cost incentive to use these PHVOs in bakery products and other goods. Food processing has also been targeted as a priority investment sector by the government, leading to a variety of incentives to improve the affordability of processed foods (e.g. decreasing an excise tax on foods that may contain trans fats, such as biscuits and other packaged foods). This could potentially lead to increased utilization of PHVOs by manufacturers.

PHVOs, typically *vanaspati*, are also widely used by street vendors. Street vendors are price conscious given the nominal profit they make, and their choice of cooking fat is likely to be strongly influenced by price and consumer preference for a particular texture of food achievable using a low-cost oil. Any upstream investments to increase the affordability of healthier oils for use by street vendors for deep frying could lead to significant changes in fat intake by people who purchase food regularly from street vendors.

The low domestic production and yields of traditional oils such as mustard, rapeseed, groundnut, safflower and sesame perpetuate the cost advantage of imported palm oil. In 2011–12, 18.9 million tonnes of edible oils were available for consumption in the country, of which only 9 mil-

Figure 1. Mapping the food supply with consumption-oriented food supply chain analysis. Source: based on Hawkes 2009.



lion tonnes came from domestic sources (DVVOF 2013). Moreover, the average yield of oilseed production in India is far lower than observed in other countries worldwide. Thus domestic oils are more costly than imported palm oil, which reduces the incentive to use them as a substitute for PHVOs and increases the incentive to use palm oil (in its unhydrogenated form). Using unhydrogenated palm oil to substitute for PHVOs would reduce trans fats in the food supply but at the cost of raising the intake of saturated fats.

This analysis helps to identify points of entry for policy change to increase the incentives for actors in the food supply chain to produce and use healthier fats. Potential ways to do so are to: (i) strengthen domestic supply chains of healthier oils; (ii) promote direct investment in processing technology to reduce the need for hydrogenation; (iii) provide direct incentives to industry to increase the use of healthier oils in product reformulation; and (iv) promote other actions to discourage partial hydrogenation.

### **Implementing food system actions in the Healthier Hawker Programme in Singapore**

In Singapore the [Health Promotion Board \(HPB\)](#), an organization under the Ministry of Health charged with overseeing public health promotion, has taken a range of actions to try to reduce the intake of saturated fats. One of these initiatives, the *Healthier Hawker Programme*, has undertaken interventions at various points along the supply chain. The programme aims to increase the use of cooking oil with lower saturated fat content by food vendors (so-called hawkers) at hawker centres.

Hawker centres are large, open-air food courts originally constructed to house street hawkers and provide them with clean water and sanitation facilities. Food sold at hawker centres is important in the Singaporean diet because it is both affordable and accessible. A typical dish costs around SG\$ 3.00 (currently around US\$ 2.35), and there are over 100 hawker centres distributed among Singapore's residential and commercial districts. In the 2010 National Nutrition Survey, 57% of respondents reported that they usually eat at least one meal a day at hawker centres (Health Promotion Board 2013). Individuals who eat out four or more times a week typically consume 36 g of saturated fats a day. Hawkers make extensive use of palm oil in their food preparation, and the food sold is

thus high in saturated fats. As in India, palm oil is imported as a low-cost oil, which is particularly easy to do in Singapore given its proximity to the leading exporting countries.

The HPB worked with local manufacturing companies and with the Singapore Food Manufacturers' Association to increase the availability of cooking oil with lower levels of saturated fats. They produced oil blends that retained the cooking and organoleptic properties desired by hawkers, but with 25% less saturated fat than palm oil (38 g per 100 g of oil). Projections made by the HPB of Singapore indicate that a switch to cooking oil with lower saturated fat content by a third of hawkers in a hawker centre would reduce the average intake of saturated fats by 10%.

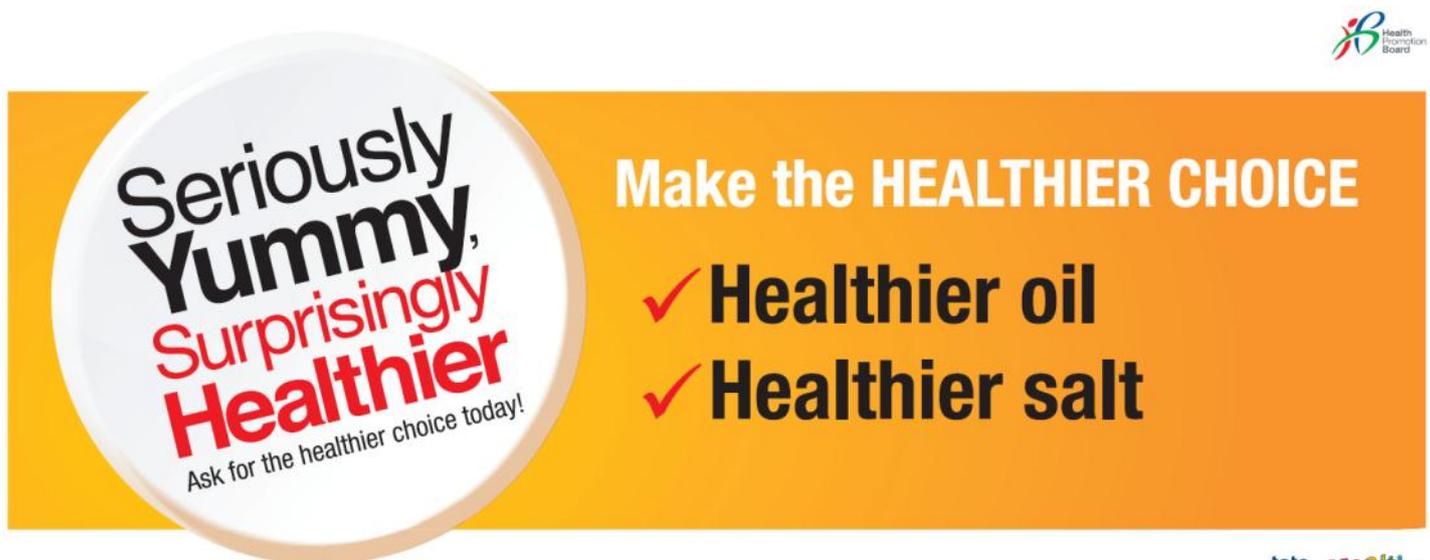
Hawkers were also provided with an incentive to use the healthier oil through a certification scheme that uses labels (Figure 2) to indicate the healthier profile of their products (HPB 2014). However, the cooking oil with lower saturated fat content typically cost about 20% more than palm oil (SG\$ 50 more per month), which hawkers felt was too high for them to remain profitable.

To address this price concern, HPB intervened to ensure that prices of the cooking oil with lower saturated fat content remained competitive with palm oil. The HPB brought together five manufacturers of cooking oils with lower saturated fats and other healthier versions of staple ingredients (brown rice, wholegrain noodles and vermicelli) to share logistic services. Sharing storage and delivery resources and setting up a single point of contact for hawkers to order ingredients directly from manufacturers helped to improve productivity and generate cost savings. These manufacturers were also able to tap into a non-health-related government funding programme operated by the Standards, Productivity and Innovation Board (SPRING Singapore). SPRING supports projects focused on improving productivity in the food service sector. Through these efforts, prices of cooking oil with lower saturated fat content were kept comparable to palm oil. In following up, HPB has engaged with 10% of all hawkers in Singapore, and 300 out of the 1000 stalls approached (30%) now purchase cooking oil with lower saturated fat content.

In continuing discussions, HPB also identified a further challenge. Despite regular oils costing 5–10% more than healthier oils, HPB found that a sizeable proportion of

**Figure 2. Official logo for hawkers meeting the “Healthier Hawker” status, Singapore.**

Source: Image courtesy of [Health Promotion Board](#) (Singapore).



hawkers continued to buy regular oils from traditional suppliers. This was due to their loyalty to their suppliers who did not stock the lower-fat oil. To increase the reach of the programme, HPB is now studying how to evolve the programme beyond direct marketing (from manufacturers to hawkers), to engage other suppliers and local markets.

## Discussion

These case studies confirm that upstream incentives and policies influence what people eat by affecting the content and choices of foods they have available. They likewise confirm that policy incoherence can exist between these incentives/policies and nutrition/health goals. Health Ministries in India and Singapore, and a whole host of other nations, are aiming to reduce the consumption of saturated and trans fats in order to promote population health. But at the same time, for economic reasons, other investments and policy changes aim to stimulate the production of these fats. These less healthy fats have thus become more affordable, available and acceptable for processors, manufacturers, street vendors/hawkers and consumers relative to healthier alternatives, at the same time as efforts are being made to reduce their consumption.

The case studies thereby provide a series of key insights into effective food systems solutions to nutrition and health. First, making upstream food supply incentives and policies coherent with dietary goals, whether by leverag-

ing existing policies or implementing new actions, has the potential to have positive impacts on health and nutrition. These impacts are potentially very significant, since they concern what entire populations consume rather than just target project populations. Upstream actions from across sectors can be used to reinforce downstream, consumer-oriented policies to improve diets and health. In Singapore, for example, supply chain actions increased the degree of coherence by aligning three sets of incentives to promote change among key actors: incentives for consumers (arising from the information provided in the certification scheme); incentives for hawkers (from the reduced cost of the healthier oils); and incentives for oil manufacturers (to produce the oil in the first place). At the very least, creating coherence can remove the (often not intentional) harm brought through inadequate engagement among sectors with different goals.

Second, if the effort is made to look for them, highly innovative food systems solutions can be found. In Singapore, for example, the intervention involved making changes to procurement logistics and accessing a non-health related funding source (SPRING) to help achieve the twin goals of improved productivity and improved health.

A third insight concerns the nature of engagement with food systems stakeholders, which inevitably includes the private sector given their primary role in food production, distribution and retail. Engagement with the private sector can (and indeed should) be set within the context of meeting standards designed to meet nutrition and health

goals. The public health sector has the responsibility of setting these goals, which regulations (e.g. the trans fats standard in India), incentives (e.g. the “healthy hawker” seal in Singapore) and fiscal measures (Shankar and Hawkes 2013) are designed to help achieve. These measures set the acceptable standard for the private sector to meet, whether it be an individual street hawker or a large transnational company. There is no reason why engagement has to supplant such standards. Indeed, they provide terms of engagement and a clear framework and level playing field within which the private sector can act.

Another insight is that food systems solutions can be found in long as well as short supply chains. In the past, most food systems actions to improve diet quality have been made in short food supply chains, such as home-stead food production systems, which target specific sub-populations (Ruel et al. 2013). Rarely have approaches considered the longer, more complex chains illustrated here. These long chains are characterized by a complex array of steps between production (and inputs to production) and consumption. This greater complexity is most evident for processed, manufactured foods with numerous ingredients. The greater length is most evident for widely traded commodities, like oil crops. But in practice, they apply to any chain in which there are a number of steps midstream which lead to transformations in the availability, affordability and acceptability of the food. Engaging with these chains is one way to scale up food systems solutions to larger populations.

There are, however, major challenges in designing effective food systems solutions, notably the trade-offs involved. For example, the production of fats has negative implications for health and the environment (Fitzherbert et al. 2008). Yet investments in palm and soybean oil production have generated economic development and helped to create wealth in a number of countries. It is inevitable that very different, sometimes contradictory, sectoral interests will remain. But the case studies show that research methods are available to identify where synergies exist or can be created between health and economic goals (Thow and Priyadarshi 2013). Practice-based engagement can do likewise. By working to ensure the whole supply chain is operating synergistically to achieve the desired goals, this approach represents a step forward from food systems actions which are limited to discrete parts of the supply chain (FAO 2013b).

## Moving forward

Food systems are one of the critical domains for effective policy action to promote higher quality diets and prevent noncommunicable diseases (NCDs). One way to initiate more effective engagement between the health and food sectors is to use food systems analysis to identify collaborative food systems solutions. Methods for such analysis from a nutrition and health perspective are being developed. Employing this approach would enable the health sector to gain a more nuanced understanding of the incentives and disincentives throughout the food system and to target appropriate actors for collaboration. In turn, a careful analytical approach is helpful for economic actors to understand how their actions may contradict efforts to improve health and how the various actions across the supply chain could become more coherent. For all stakeholders involved, this could help identify distinct policy areas where actions could provide solutions for nutrition and health, and for environmental and economic outcomes.

In order to create the incentives for such collaboration nutrition and health need to become development priorities. Current discussions around the global development agenda are thus critical, as is the need for clear government commitments to nutrition (Gillespie et al. 2013). Adequate inclusion of nutrition and health in the Post-2015 Development Agenda could provide an overarching framework for a more concerted effort to identify and implement food systems solutions for nutrition and health.

## References

- Agrawal A, Gupta R, Varma K, Mathur B (2008) High trans fatty acid content in common Indian fast foods. *Nutrition and Food Science* 38(6). pp. 564–9.
- Downs SM, Gupta V, Ghosh-Jerath S, Lock K, Thow AM, Singh A (2013) Reformulating partially hydrogenated vegetable oils to maximise health gains in India: is it feasible and will it meet consumer demand? *BMC public health* 13(1), p. 1139. ([Online](#))
- Downs SM, Thow AM, Ghosh-Jerath S, Leeder SR (2014) Aligning food-processing policies to promote healthier fat consumption in India. *Health promotion international*, 2014 Jan 7, Epub ahead of print.
- DVVOF (2013) *Edible oil scenario*. Directorate of *Vanaspatti*, Vegetable Oils and Fats, DVVOF/DFPD: New Delhi. ([Online](#))
- EHN (2011) *Diet, Physical Activity and Cardiovascular Disease Prevention In Europe*. European Health Network: Brussels.
- FAO (2013) FAOSTAT, Production database, palm oil production data

- 1990 and 2012. ([online](#))
- FAO (2013b) *The state of food and agriculture: food systems for better nutrition*. Food and Agriculture Organization of the United Nations: Rome. ([Online](#))
- Fitzherbert E, Struebig M, Morel A, Danielsen F, Bruhl C, Donald P, Phalan B (2008) How will oil palm expansion affect biodiversity? *Trends in Ecology & Evolution* 23(10), pp. 538–45.
- FSSAI (2010) *Regulation of trans fatty acids in partially hydrogenated vegetable oils*. Food Safety and Standards Authority of India: New Delhi. ([Online](#))
- Ghafoorunissa G (2008) Role of trans fatty acids in health and challenges to their reduction in Indian foods. *Asia Pacific Journal of Clinical Nutrition* 17, pp. 212–5.
- Gillespie S, Haddad L, Mannar V, Menon P, Nisbett N (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet*, 382(9891), pp. 552–569.
- Hawkes C (2009) Identifying innovative interventions to promote healthy eating using consumption-oriented food supply chain analysis. *Journal of Hunger and Environmental Nutrition* 4(3/4), pp.336–356. ([Online](#)).
- Hawkes C, Ruel M (2010) *Value Chains for Nutrition*. International Food Policy Research Institute: Washington DC. ([Online](#))
- Hawkes C, Friel S, Lobstein T, Lang T (2012) Linking agricultural policies with obesity and noncommunicable diseases: a new perspective for a globalizing world. *Food Policy* 37(3), pp. 343–353. ([Online](#)).
- HPB (2013) *National Nutrition Survey 2010*. Health Promotion Board: Singapore. ([Online](#))
- HPB (2014) *Healthier Hawker Programme*. Health Promotion Board: Singapore. ([Online](#))
- L'Abbe MR, Stender S, Skeaff M, Ghafoorunissa, Tavella M (2009) Approaches to removing trans fats from the food supply in industrialized and developing countries. *European Journal of Clinical Nutrition* 63, pp. S50–S67.
- Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, Davis A (2013). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, 380(9859), pp. 2224–2260.
- Mozaffarian D, Clarke R (2009) Quantitative effects on cardiovascular risk factors and coronary heart disease risk of replacing partially hydrogenated vegetable oils with other fats and oils. *European Journal of Clinical Nutrition* 63, pp. S22–S33.
- Pedersen JI, Norum KR, James PT, Brouwer IA, Katan MB, Clarke R, Elmadfa I, Kris-Etherton PM, Kromhout D, Margetts BM, Mensink RP, Rayner M, Uusitupa M (2012) Response to Hoenselaar from Pedersen et al. *British Journal of Nutrition* 107 (03), pp. 452–454.
- Reddy KS, Shah B, Varghese C, Ramadoss A (2005) Responding to the threat of chronic diseases in India. *The Lancet* 366(9498), pp.1744–1749.
- Reshma MV, Kiran C, Nisha P, SobanKumar DR, Sundaresan A, Jayamurthy P (2012) Trans fat content in labelled and unlabelled Indian bakery products including fried snacks. *International Food Research Journal* 19(4), pp. 1609–14.
- Ruel MT, Alderman H, Maternal and Child Nutrition Study Group (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet* 382(9891), pp. 536–51.
- Shankar B, Hawkes C (2013) India has a problem with palm oil. *BMJ* 347, pp. f6065.
- Snowdon W, Schultz J, Swinburn B (2008) Problem and solution trees: A practical approach for identifying potential interventions to improve population nutrition. *Health Promotion International* 23(4), pp.345–353.
- Snowdon W, Lawrence M, Schultz J, Vivili P, Swinburn B (2010) Evidence-informed process to identify policies that will promote a healthy food environment in the Pacific Islands. *Public Health Nutrition* 13(6), pp. 886–92.
- Tarrago-Trani MT, Phillips KM, Lemar LE, Holden JM (2006) New and Existing Oils and Fats Used in Products with Reduced Trans Fatty Acid Content. *Journal of the American Dietetic Association*. 106(6), pp. 867–80.
- Thow AM, Priyadarshi S (2013) Aid for Trade: an opportunity to increase fruit and vegetable supply. *Bulletin of the World Health Organization* 91(1), pp. 57–63.
- WCRF International/NCD Alliance (2013) *Food, Nutrition, Diet and Non-Communicable Diseases*. WCRF INT'L/NCD: London. ([Online](#))
- WCRF International (2014) *WCRF International Food Policy Framework for Healthy Diets: NOURISHING*. ([Online](#))
- World Bank/International Finance Corporation (2011) *The World Bank Group Framework and IFC Strategy for Engagement in the Palm Oil Sector*. World Bank/IFC: Washington DC. ([Online](#)).
- WHO (2013) *Follow-up to the Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases*. Sixty-Sixth World Health Assembly A66/A/CONF./1 Rev.1 Agenda item 13 25 May 2013.

### Harmonised Training Package (HTP): Resource Material for Training on Nutrition in Emergencies

This is a comprehensive documentation of the latest technical aspects of Nutrition in Emergencies (NiE). Its several modules pull together the latest technical policy and guidance for practitioners in the field.

The HTP is an initiative of the [IASC Global Nutrition Cluster](#) (GNC), and is available for **download** on the [UNSCN website](#).

For more information, visit: [http://www.unscn.org/en/gnc\\_hrp/](http://www.unscn.org/en/gnc_hrp/)

# A practical approach to facilitate food system change and link nutrition and agriculture: lessons from the Southern Africa Food Lab experience

Milla McLachlan<sup>1</sup>

<sup>1</sup> Stellenbosch University, South Africa. Email: [millam@sun.ac.za](mailto:millam@sun.ac.za)

*Author statement: I was Director of the Southern Africa Food Lab from its inception until December 2013.*

## Introduction

During the food price crisis of 2008, interviews with government officials, consumers and food business leaders in South Africa revealed a general sense of frustration with the lack of leadership on, and fragmentation of responses to, food and nutrition insecurity. It became clear that action did not match the scale and complexity of the problem (Hamann et al. 2011) and that new approaches were needed. Starting with exploratory conversations and a research synthesis workshop, a group of concerned actors created an initiative, now known as the [Southern Africa Food Lab](#) (SAFL), to spark innovation for change in the food system. The SAFL has grown into a multistakeholder network recognized for its path-breaking dialogue processes and is actively engaged in supporting multistakeholder groups working on solutions to intractable issues in the food system, including food and nutrition insecurity. This paper recounts the Lab's initial efforts to support transformative change through social innovation. It considers how lessons from this experience might be useful for leaders and organizations working to ensure that food and nutrition security (FNS) receives focused attention in restructuring agriculture and food systems.

The renewed global interest in reweaving the connections between agriculture and nutrition emerges in the context of rising concerns about the sustainability of the global agriculture and food systems and the recognition that thoroughgoing change is needed to create more just, equitable and sustainable agriculture and food systems. From a nutrition perspective, actors in the agriculture and food systems face a daunting challenge: they must meet the changing dietary aspirations and preferences of a growing and urbanizing global population, while slowing

down and reversing the obesity epidemic and ensuring equitable access to safe and nutritious food, particularly for vulnerable groups. And this must happen in ways that protect and restore the environment. This multiple challenge of meeting nutrition needs and aspirations and regenerating environmental services, while maintaining the system's economic viability, requires new ways of thinking, organizing and acting (Pereira and Ruysenaar 2012).

The paper provides a rationale for seeking transformative change in the food systems and highlights key elements of the change theory that informs the design of the Lab. The paper outlines how the Lab has applied the approach and ends with a consideration of lessons learnt and their relevance to nutrition-sensitive agriculture.

## Food and nutrition security is a wicked problem

The food and nutrition security situation in South Africa can rightly be considered as a wicked problem (Rittel and Webber 1973). It involves many role players with different, often opposing, perspectives that need to be taken into consideration in framing the problem and seeking solutions. This social complexity is evident, for example, with regard to the role of biotechnology to achieve higher nutrient intakes. Secondly, wicked problems seldom have single silver-bullet solutions, and proposed solutions can have unforeseen consequences. This dynamic complexity is demonstrated in cases where the impact of decisions to reduce funding to agriculture and nutrition research and extension is felt decades later when farmer support services collapse. Thirdly, food and nutrition security is characterized by generative complexity, as the conditions, as well as players, policies and related challenges, are chang-

ing as the problem is being addressed. Even the best planning-based models and surveillance systems are not geared to respond to such complexity, and appropriate policy responses are not obvious. New approaches are needed.

## The Southern African Food Lab (SAFL): an initiative to stimulate transformative change in the food system

The origins of the SAFL are in a multistakeholder workshop held in Johannesburg in February 2009, at which there was broad agreement among government officials, researchers, nongovernmental organizations (NGOs) and business leaders present on the need for better collaboration within and between sectors on FNS matters. This workshop led to a year-long process, funded by the German Agency for Technical Cooperation (GTZ) and facilitated by Reos Partners.<sup>1</sup> This narrative focuses in particular on the initial year-long process implemented during 2010, and based on Theory U and the U process described in the next section (Scharmer 2007, Senge et al. 2004). The initiative has continued in adapted form since then, and lessons from all the experiences so far are incorporated here. The SAFL is currently housed under the [Food Security Initiative at Stellenbosch University](#) and operates with a small part-time secretariat. The Steering Group consists of persons recruited from academia, civil society, the private sector and government and parastatal organizations, based on their expertise and commitment to systemic change. The initial objectives of the Lab were to:

- Convene a group of committed, influential and engaged leaders across sectors addressing food and nutrition insecurity;
- Conduct a collective inquiry into the complexity of food and nutrition insecurity from a whole-systems perspective, building on existing research;
- Using creative facilitation techniques, identify a set of particular, action-oriented innovations that encourage sustainable FNS in Southern Africa;
- Develop dedicated working groups to test, apply and institutionalize these innovations on a broader scale (Southern Africa Food Lab 2009).

## Theory U and the U Process

This section provides a brief description of the Theory U and the U Process approach adopted in the SAFL. This approach has been used to address a wide range of social issues, notably in establishing the [Sustainable Food Lab](#), which aims to mainstream sustainable approaches in the global food system, and the Bhavishya Alliance which addressed malnutrition in [Maharashtra State in India](#) (see also Hassan 2013). The hypothesis of Theory U is that sustainable transformative change requires shifts in individual perceptions, perspectives and intentions; shifts in collective perceptions and intentions; and individual and joint action on intentions. Applied to food and nutrition, it means that leaders from different parts of the food system (including producers, processors, retailers, consumers, government agencies, policy-makers, public, civil society and private sector service providers) need to understand and experience the issues in new ways and rigorously question their own roles in the system. They need to link the deeper understandings which emerge from these processes to the wisdom that exists where the problem is encountered, in order to jointly experiment with new ways of doing. The U Process provides a systematic approach for doing so (Scharmer 2007).

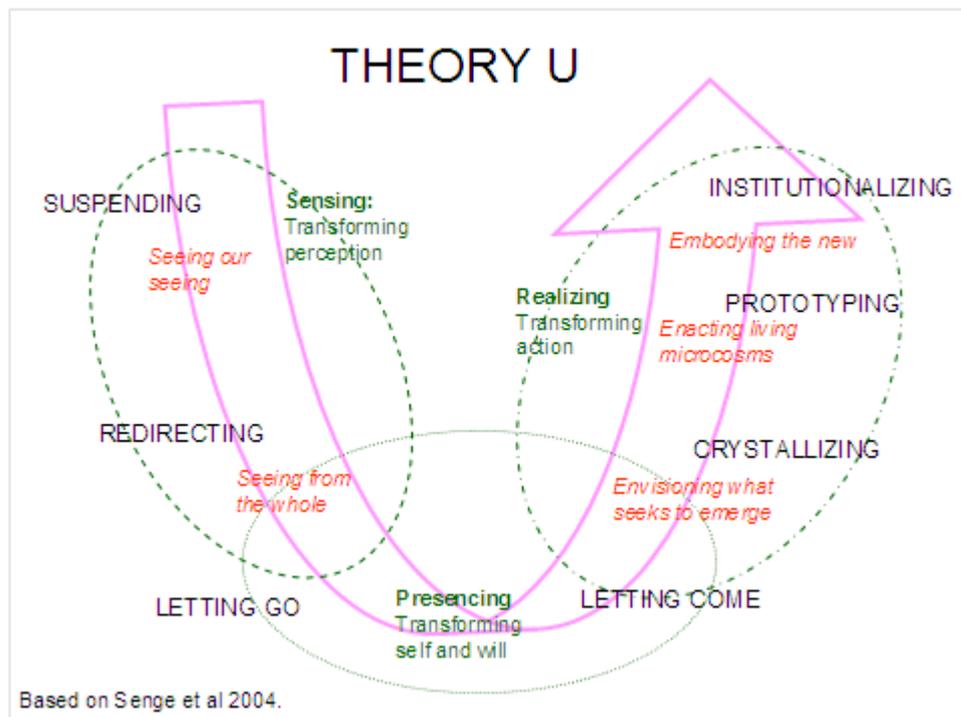
### The U Process model

The U Process consists of three phases (sensing, presencing and realizing) and takes a group of stakeholders, representing a microcosm of the system under consideration, through a process that involves the development of seven specific capacities: suspending, redirecting, letting go, letting come, crystallizing, prototyping and institutionalizing (see Figure 1).

**Phase 1. Sensing the food system.** The sensing process involved several steps. A background report was prepared based on scientific research on FNS, and in-depth dialogue interviews were conducted with 21 senior representatives from different parts of the food system, including farmer organizations, consumer bodies, policy-makers, food processing, packaging and retail firms and NGOs. The initial research revealed a gap in our collective understanding of how different actors, especially consumers (particularly low-income consumers) and farmers (particularly smallholder farmers and farm workers), ex-

<sup>1</sup> [Reos Partners](#) brought their specialized experience in the U process to bear in all phases of the U: in design and implementation of dialogue interviews and preparation of the synthesis report and learning journeys, innovation and team workshops.

**Figure 1. A schematic representation of Theory U.**  
 Source: Senge P, Scharmer CO, Jaworski J, Flowers BS (2004)



perience the food system.

To deepen understanding, learning journeys were undertaken to sites in Cape Town, Johannesburg and Limpopo province. Learning journeys are carefully designed and facilitated events, ranging in length from a few hours to several days, in which participants have the opportunity to observe unfamiliar parts of a system; to engage with a wide range of stakeholders and recognize different perspectives on the system; to suspend judgment and reflect on the limits and possibilities of their own perspectives; and, in conversation with others, to begin to identify opportunities for innovation. The journeys demonstrated the enormous range in people's engagement with and experience of the food system, the dignity and pride of entrepreneurs and farmers working in the system and the scope that existed for innovation.

**Phase 2. Presencing.** Phase two is called presencing because it involves becoming totally present to one's own role and place in the system and to an expanded sense of what change and innovation could be brought about through collective action. Meetings in Johannesburg and Cape Town provided opportunity to reflect on issues in the system and participants' roles in it. A wide range of

participatory techniques, including mapping, Open Space, World Café<sup>2</sup> and facilitated plenary conversations, as well as opportunities for individual reflection, were used to deepen the shared understanding of stuck issues<sup>3</sup> and the participants' individual and collective commitment to address these in new ways.

**Phase 3. Realizing.** In this phase, the intention is that teams move rapidly from identifying new possibilities (crystallizing) to translating their ideas for action into prototype projects that can be quickly implemented and tested. Prototypes, as the name implies, model what a new system could look like but on a smaller scale. These ventures point to a new way of doing things. Viable prototypes can then be scaled up and institutionalized, leading to the new reality. Rather than lengthy and detailed planning processes, prototyping involves learning by doing and immediately putting into practice the proposals formulated during the preceding phases. Applying the maxim "fail small, fail early and fail often", the process is one of active learning and knowledge generation.

Towards the end of 2010, innovation teams started prototyping solutions. The U-process assumes that those who analysed the problem and conceptualized solutions will

<sup>2</sup> For information on these and other dialogue approaches, see Bojer, Roelh, Knuth and Magner (2008).

<sup>3</sup> Stuck issues are urgent and important issues which technical or managerial interventions have failed to solve.

be directly engaged in the action phases. Thus these change leaders remain responsible for, and committed to, the prototyping and pilot testing and mainstreaming of the ventures selected for implementation. The term “innovation team” is used to highlight the importance of innovation in this process, not only in terms of generating technical content but also in the way that teams work. Projects included: investigation of how to use packaging opportunities to improve access to nutritious food for low-income households; mechanisms to empower poor people to sustainably access affordable, safe and nutritious food; and how to build on existing initiatives to empower smallholder farmers and other primary producers. A final question was whether a national conversation on food security could help to make food security issues more understandable to the broader public.

The networking during the process enabled effective communication between professional nutritionists and groups involved in food distribution activities. Together they were able to rapidly resolve questions regarding an appropriate basket of foods needed to meet consumers’ nutritional needs and local tastes. Other teams developed case studies on the multiple uses of packaging material by low-income consumers, and on innovation in farming systems. The team focusing on a national conversation on food security started collaborating with the Human Rights Commission to pursue its goals, a process that is evolving into a transformative scenarios process (TSP)<sup>4</sup> planned for late 2014. The team addressing support to smallholder farmers formed an alliance with a research institution, and revisited the sensing and presencing phases with a specific focus on understanding constraints related to market access and extension services. This spin-off project is now entering the prototyping phase.

The first Sensing – Presencing – Realising cycle of the U-process was thus completed by the end of 2010. It demonstrated to participants from various sectors (public, private and civil society) and specialist fields (e.g. agricultural production, processing, retail, logistics, nutrition), who are working at different levels (local, provincial, national and regional) that collaboration was possible. The process highlighted the complexity of challenges in the food system and presented a way to approach transformative change in that system. Because the same peo-

ple met together over a period of time, relationships of respect and trust began to form among people who had previously resisted engaging with each other. As stakeholders began to trust each other, difficult conversations on tough issues, such as how racial and gender inequalities are perpetuated in the South African system, and what to do about it, surfaced. Thus the process laid the groundwork for further collaborative work on the toughest challenges of the system.

### ***Personal and interpersonal change dynamics in the U Process***

The U-process recognizes that the quality of conversations among stakeholders plays a key role in determining outcomes. Conversations – talking and listening – can usefully be classified into four types. *Downloading*, or talking nice, involves saying what one ought to say, being polite, and listening largely for confirmation of one’s own views. Meetings often start and end with downloading, and no one’s views really change, and no decisions are taken. *Debating* is the first step toward more authentic interaction, when participants begin to say what they really think, and hear mostly what is different from their own perspective, each defending their own positions but at least expressing their views clearly. Most public forums concentrate on this mode of interaction. In *reflexive dialogue* participants begin to listen with empathy, reflect on their own contributions and emphasize how different perspectives relate to each other. In *generative dialogue*, the conversation becomes more explicitly about generating new perspectives, insights and inspiration, as participants share not just ideas but deeply held convictions and narratives. While the U-process enables a deepening of conversations from downloading to generative dialogue as participants move down the U, all four types of conversation can occur at every stage of the U process. Experience suggests that the ability to move to reflective and generative dialogue is essential for transformative change to happen (Kahane 2010). The approaches and techniques used in the SAFL have been shown to move conversations from debate to dialogue and to create an atmosphere of trust in which people who would not normally engage with each other could exchange views and be open to let solutions emerge. Participating in the Lab challenges par-

<sup>4</sup>A transformative scenarios process (TSP) provides a way to consider future possibilities around a complex issue. Scenarios are plausible stories that allow people with different perspectives and goals to have deep conversations about the future. The process involves developing the scenarios and collectively designing steps to realize desired outcomes (Kahane 2012).

ticipants to think differently and to question their own perspectives and assumptions, as well as their judgments of someone else's perspectives on the issues.

## Lessons from the SAFL experience

This section outlines key lessons from the SAFL experience that can be applied in efforts to ensure that health and nutrition become a central focus of agriculture and food systems.

- **Get the right people in the room.** The aim is to mirror the system one wants to influence by making sure that relevant stakeholder groups are represented. Participants need to have sufficient power to carry the message from the change initiative into their organization and must be personally committed to working for change. Three months were spent conducting in-depth interviews with leaders in different organizations across the entire food system, who were identified through an initial mapping of the system, and inquiring from interviewees about others they thought should be interviewed. The focus was on documenting their perspectives on factors that perpetuate food and nutrition insecurity and gauging their readiness to participate in the change process over several months. Key middle-level decision-makers in the corporate and NGO sectors were enrolled (several of whom are still actively involved in Food Lab activities). Whether it is best to include middle- or higher-level decision-makers, or both, is still a conundrum the SAFL is unravelling. Middle-level authorities tend to have deeper technical and operational knowledge, especially on a day-to-day basis, but may not have the authority needed to make and sustain significant change in the short term. They may, however, be well-positioned to shift internal organizational culture so that in the longer term significant change becomes possible. The lack of strong consumer organizations in the country has hampered our efforts to effectively represent consumer voices in the Lab. It was more difficult to identify and enlist the participation of the right leaders in government and farmer organizations, which may have been due to the broad scope of the initial effort. Through ongoing quiet diplomacy by Lab leaders, the representation of these groups has been strengthened in the course of the Lab's activities.
- **Focus on the ongoing process, rather than organizing single events.** The depth of the changes needed in the

food system (including achieving the integration of health and nutrition concerns) requires that we design change processes that create a variety of opportunities for stakeholders to meet and do things together. Different assumptions, work styles, reward and incentive systems, and goals and objectives operate in the public, corporate and non-profit sectors, and among different professions. Social innovations, such as the immersion and dialogue approaches used in the Food Lab, create opportunities to engage with each other around specific themes and to build greater understanding of each other's assumptions, frameworks and time scales. Only by engaging with each other in different settings can we break down the barriers and begin to understand and accept different perspectives. Our experience is that participants from these various backgrounds appreciate the way in which Lab activities are designed, with opportunities for personal reflection, open communication, attention to the meeting space and flexibility in the design of daily programmes. Learning journeys have been particularly effective because they give opportunity to experience realities on the ground with others who hold different perspectives.

- **Recognize when fundamental change is needed, and use appropriate strategies to achieve it.** When the change you are seeking involves scaling up what is working, or making activities more efficient or effective, standard project management approaches may be sufficient. Transformative change processes like those described here are needed for intractable problems where conventional approaches have not worked. They challenge the assumptions and procedures that gave us the systems that perpetuate food insecurity (and malnutrition). In such change processes, the initial focus must be on enlarging the vision of what is possible and building capacity to achieve it.
- **Balance dialogue and action.** In our experience, where there are many perspectives, polarized positions and uncertainty about what will work, investing time and resources in dialogue and joint learning activities, such as the learning journeys, is essential. At the same time, we must not lose sight of the need for action. In fact, structured experiments can emerge from, and contribute to, ongoing in-depth, shared understanding of a situation. Under such conditions, forging a creative collaboration with academics who use rigorous social science frameworks and research approaches and are prepared

to open their frameworks and approaches to scrutiny and engage openly with stakeholders, has proven to be effective.

- **Empower middle-level managers to be advocates for transformative change in their organizations.** While participants have valued the systemic, participative and emergent approaches in the SAFL, it has been challenging to make the case for such processes, particularly among busy senior officials and funders. It would seem that they view such processes as too time-consuming and lacking in immediate concrete benefits aligned with their immediate priorities. Where such conditions prevail, it is important to provide middle-level participants who are committed to the change process with tools to make the case for these approaches within their organizations.
- **Build relationships with funding agencies that value innovation and entrepreneurial approaches.** In the first years of the SAFL process, we struggled to align the U process approach, which requires flexibility and learning by doing, with the requirements of the models that currently drive most donor funding. Fitting into the accountability procedures and short time frames of these models can be a challenge for longer-term open-ended processes. By building partnerships with a few funders interested in alternative approaches (such as the [Ford Foundation](#), [Mellon Foundation](#) and [Southern Africa Trust](#)), the SAFL is now successfully establishing a firm resource base.

## Conclusion

This paper gives an account of the development of the Southern Africa Food Lab, a systemic change initiative developed in response to the intractable problem of persistent food insecurity in South and Southern Africa. Recognizing that our perspectives, relationships and strategies would need to change to shift the system towards greater equity and sustainability, we adopted a model emphasizing ongoing structured dialogue and reflection processes coupled with learning-by-doing projects.

While the SAFL also developed a number of concrete projects, as noted above, to date the major impact of the Lab has been to demonstrate that ongoing open dialogue and joint action is possible among groups and individuals who heretofore have regarded each other as opponents. Building trust and consolidating ways of working among

these very different actors take time, but through the SAFL these groups and individuals now share an understanding of and see themselves as jointly responsible for how the food system works and its impact on food and nutrition security. This thus provides a sustainable foundation for systemic change, which can now move forward more quickly. The Lab cultivates leadership abilities among a wide range of system stakeholders, enabling them to see themselves and their organizations in relation to others in the system, to clarify their own roles in bringing about the change and to begin to work collaboratively to establish prototypes of sustainable food systems. Shifting the agriculture and food systems to focus more explicitly on health and nutrition outcomes is likewise a complex challenge which will require similar approaches. The story of the SAFL's beginnings and the lessons from this experience can inform efforts to put nutrition in the centre of agriculture and food systems around the world.

*The author gratefully acknowledges ongoing conversations with and inputs on early drafts from Ralph Hamann, Vanessa Sayers, Scott Drimie, Candice Kelly and James Garrett. The questions and comments from anonymous reviewers strengthened the paper considerably. Interpretations and conclusions remain the author's responsibility.*

## References

- Bojer MM, Roelh H, Knuth M, Magner C (2008) *Mapping Dialogue: Essential Tools for Social Change*. Taos Institute: Chagrin Falls.
- Hamann R, Giamporcaro S, Johnston D, Yachkaschi S (2011) The role of business and cross-sector collaboration in addressing the "wicked problem" of food insecurity. *Development Southern Africa* 28(4): 579-94.
- Hassan Z (2013) *The Social Labs Revolution: A new approach to solving our most complex challenges*. Berrett-Koehler Publishers: San Francisco.
- Kahane A (2010) *Power and Love: Solving Tough Social and Organizational Problems*. Tafelberg: Cape Town.
- Kahane A (2012) *Transformative Scenario Planning: Working Together to Change the Future*. Berrett-Koehler: San Francisco.
- Pereira L, Ruyselaar S (2012) Moving from traditional to new adaptive governance: The changing face of food security responses in South Africa. *Food Security* 4, pp. 41-58.
- Rittel HWJ, Webber MM (1973) Dilemmas in a general theory of planning. *Policy Sciences* 4(2), pp. 155-69.
- Scharmer CO (2007) *Theory U. Leading from the Future as it Emerges*. Society for Organizational Learning: Cambridge.

Senge P, Scharmer CO, Jaworski J, Flowers BS (2004) *Presence. Human Purpose and the Field of the Future*. Society for Organizational Learning: Cambridge.

Southern Africa Food Lab (2009) Change Lab Proposal thematic outline. ([online](#))

## Second International Conference on Nutrition (ICN2)

The [Second International Conference on Nutrition \(ICN2\)](#), an inclusive inter-governmental meeting on nutrition jointly organized by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO), will be held at FAO Headquarters, in Rome, 19–21 November 2014. It will be a high-level ministerial conference which will propose a flexible policy framework to address today's major nutrition challenges and identify priorities for enhanced international cooperation on nutrition.

ICN2 will bring together senior national policymakers from agriculture and health with leaders of United Nations agencies and other intergovernmental organizations and civil society, including non-governmental organizations, researchers, the private sector and consumers.

The conference will review progress made towards improving nutrition since 1992, when the first ICN was held, and reflect on nutrition problems that remain, as well as on the new challenges and opportunities for improving nutrition presented by changes in the global economy and in food systems and by advances in science and technology, and identify policy options for improving nutrition.

The scope of the conference will be global in perspective, address all forms of malnutrition, recognizing the nutrition transition and its consequences; seek to improve nutrition throughout the life cycle, focusing on the poorest and most vulnerable households, and on women, infants and young children in deprived, vulnerable and emergency contexts.

A [Preparatory Technical Meeting](#) (PTM) for the Second International Conference on Nutrition (ICN2) was held at FAO headquarters, Rome, 13–15 November 2013. The two and a half day scientific and technical meeting was attended by country delegates from 61 countries, experts and resource persons, representatives from United Nations (including IFPRI, IFAD, UNESCO, UNICEF, World Bank, WFP, WTO) and UN coordinating bodies (UN System Standing Committee on Nutrition, High-Level Task Force on Food Security and Nutrition), international organizations and other intergovernmental organizations and representatives from civil society and the private sector.



Country representatives made recommendations for planning the way forward for the 2014 high-level event and agreed that a substantive outcome document is expected to be developed through a Member State-driven process which should be inclusive and participatory. As nutrition is, by nature, multi-sectoral, the outcome document should specify ways by which nutrition may be improved through the food system, including agriculture and trade, as well as health and social protection. ICN2 should build the political will and secure the financial commitment for implementation at country level.

A joint FAO/WHO Secretariat has prepared a zero draft of the outcome document for consideration by the intergovernmental processes. This outcome document was available for comments through an open e-consultation process on the [FAO](#) and [WHO](#) websites until 21 March 2014. A joint working group (JWG) of WHO and FAO Member State representatives shall ensure that the ICN2 outcome documents are further developed and agreed in an efficient and timely manner.

PTM background and summary papers as well as Power-Point presentations can be downloaded [here](#).



# Strengthening capacities for enhancing the nutrition sensitivity of agricultural policy and practice

Stuart Gillespie,<sup>1,2§</sup> Barrie Margetts<sup>3,4</sup>

<sup>1</sup> International Food Policy Research Institute (IFPRI)

<sup>2</sup> Transform Nutrition Research Program Consortium

<sup>3</sup> University of Southampton, United Kingdom

<sup>4</sup> World Public Health Nutrition Association (WPHNA)

§ Corresponding author. Email: [s.gillespie@cgiar.org](mailto:s.gillespie@cgiar.org)

*Author statement: The authors declared not having any conflict of interest.*

## Introduction

After many years of relative neglect, nutrition is finally generating major political and institutional momentum. The challenge of addressing malnutrition, and the imperative to do so, is finally being recognized more broadly within development circles. As this momentum has been building, so too has a consensus emerged among national and international stakeholders on the need to focus simultaneously on three levels of action: i) implementing and scaling up a core package of nutrition-specific interventions; ii) maximizing the nutrition sensitivity<sup>1</sup> of a wider group of developmental actions (including agriculture, social protection, water and sanitation, among others); and iii) cultivating, strengthening and sustaining enabling environments to support all nutrition-relevant actions.

Yet, while nutrition may be coming out of the shadows, there is a danger of the international community becoming carried away with rhetoric and pledges. Political momentum to address undernutrition is a major step forward, but for this momentum to become meaningful, it ultimately needs to be converted – through large-scale nutrition-relevant action – into enduring impacts on the ground (Gillespie et al. 2013). And there can be no sustained scale-up in action without a scale-up in relevant capacities to act, whether designing or implementing nutrition-specific interventions or maximizing the nutrition sensitivity of actions found in sectors such as agriculture.

To maximize the nutrition sensitivity of agriculture, a comprehensive, transdisciplinary approach to capacity development that encompasses training, research, policy formulation and programme design, implementation, monitoring and evaluation is essential.

The record on capacity strengthening for nutrition in general is not good. Poor quality nutrition service delivery often coincides in time and space with poor quality nutrition training programmes and academic curricula (Hampshire et al. 2004). Many capacity assessment studies are from high-burden contexts and they find training and curricula to be outdated, impractical and misaligned with local nutrition priorities (Khandelwal et al. 2012).

The notion of “scaling up nutrition” ultimately refers to scaling up nutritional impact, not simply expanding the coverage of a programme or project per se. Though there is virtually no research yet on this, there are likely to be significant synergies arising from co-locating or integrating nutrition-specific with nutrition-sensitive interventions. To maximize impact, it is likely to be necessary to press all buttons at once, which again will necessitate coherent and sustained attention to strengthen the various capacities required to support such action. This is especially important in the context of cross-sectoral work, such as that required in strengthening the nutrition sensitivity of agricultural policy and practice. Existing capacities, incentives and accountabilities in the agriculture sec-

<sup>1</sup> Nutrition-sensitive interventions, according to Ruel and Alderman (2013), address the underlying determinants of foetal and child nutrition and development (food security; adequate caregiving resources at the maternal, household and community levels; and access to health services and a safe and hygienic environment) and incorporate specific nutrition goals and actions. Nutrition-specific interventions directly target the immediate diet- or disease-related causes of malnutrition.

tor in high-burden countries are rarely (if ever) oriented toward achieving nutrition goals.<sup>2</sup>

As well as being a sine qua non for effective scale-up, capacity is an essential consideration with regard to the sustainability of programmes, and it is foundational for a focus on human rights and good governance (Gillespie 2001). Without the capacity to act, duty bearers cannot be held accountable. And without adequate capacity, there can be no active community participation. Ultimately, long-term performance and impact can only be achieved with a strong base of relevant capacity.

But it is also important at the outset to locate the role of capacity within the wider vision of what needs to change for agriculture to become more nutrition-sensitive. The recent [Lancet Series on Maternal and Child Nutrition](#) sheds some light on this. The third paper in the series (Ruel and Alderman 2013) reviews the evidence and identifies a potential that has yet to be unleashed, while the fourth paper (Gillespie et al. 2013) focuses on the political challenge and how to meet it. Following a detailed review of the nutrition-relevant policy literature in the latter, three core domains are identified as key to generating change: evidence, framing and narratives; politics and governance; and capacity and resources. Action is needed within all three domains to strengthen the nutrition sensitivity of agriculture, including: i) evidence from better evaluations on how agricultural interventions can be designed to improve nutrition; ii) improved horizontal coherence between agriculture and health sectors, especially on nutrition, and vertical coherence from national to community levels; and finally iii) strengthened capacities at different levels to support positive change and to sustain it, backed up with adequate financing.

In this short article, we seek to unpack this third ingredient – capacity – in the context of nutrition-sensitive agriculture. We start by assessing what is meant by capacity and the need to focus at different levels. Second, we raise some of the core challenges to be confronted in seeking to strengthen capacity for nutrition-sensitive agriculture. And we conclude by outlining a simple approach for developing a capacity-strengthening strategy, illustrated by a table highlighting relevant impact pathways.

## Assessing capacity

It is important that we start by clarifying what we mean by capacity. Many definitions have been used. Here are a few:

- “the ability to take action to achieve desired results” (Matta 2000);
- “the ability of individuals, organizations or societies to set and implement objectives” (Schacter 2000);
- “the ability to assess and analyse problems (malnutrition) and design, implement, monitor and evaluate appropriate actions” (Gillespie 2001); and
- “the power – of a system, organization, individual – to perform or produce” (UNDP 2000).

The essential element of all such definitions relates to the capacity to act, to perform certain tasks in order to achieve certain objectives. Capacity development is much more than workforce training, it is about creating systems and structures that work to achieve stated objectives. Capacity can usefully be considered to apply at three interdependent levels, each with key components (Gillespie 2001, Potter and Brough 2004, Shrimpton et al. 2013): individual (tools and skills), organizational (staff and infrastructure), and systemic (structures, systems and roles). Shrimpton et al. (2013) make a useful distinction between workforce and community within the individual level. Community capacity is a key prerequisite for sustainable nutrition-sensitive agriculture.

When considering these levels it is important to agree on i) the specific purpose/s of capacity development; ii) the gaps or weaknesses in existing capacities to achieve such a purpose; iii) how existing capacities will be strengthened or developed; and iv) what types of activities, tasks and functions will be undertaken to this end. Finally, it will be important to consider indicators and systems for monitoring and evaluating capacity as it is strengthened.

At an individual level, capacities range from the leadership/advocacy skills of nutrition champions to generate high-level political commitment to the capacity of front-line workers in remote villages to support mothers to feed and care for their young children. As well as skills, individuals need appropriate tools. But individual and or-

<sup>2</sup> Similarly, the health sector tends to undervalue the potential (for both nutrition and health improvement) of collaborations with the agriculture sector and food security policy and practice.

ganizational capacity development needs to go beyond the conventional nutrition toolbox to also encompass a set of skills and tools to work across disciplinary boundaries, to build and work through alliances and networks, to leverage other capacity and resources and to effectively communicate to different audiences (Gillespie et al. 2013). At the district and provincial level, for example, community-based nutrition workers will thus be expected to work with and support agricultural extension officers (and vice versa). How these local workforces cooperate will depend on institutional incentives and systems (organizational and systemic capacity), and the way their roles are defined and monitored will depend on the way such incentives are articulated.

At a systemic level, capacity also relates to the way in which institutions are configured and how they interact. One key question, for example, is whether intersectoral decision-making and policy forums even exist for agriculture and health and other sectors to come together to discuss nutrition. And if these forums exist, are they active and effective?

Thus, before developing strategies for strengthening such capacities for enhancing the nutrition sensitivity of the agricultural sector, gaps and weaknesses need to be assessed systematically. Capacity assessment tools have been developed for this purpose (Gillespie 2001, Potter and Brough 2004), and they can be adapted for use in different contexts.

## Confronting challenges in enhancing the nutrition sensitivity of agriculture

Developing capacity for cross-disciplinary integration of agriculture and food systems with nutrition and health outcomes (and vice versa) remains a major challenge at various levels, for several reasons. Government professionals may have a wealth of experience in their own field, but their capacity to engage with other disciplines remains limited. Agricultural professionals (policy analysts and policy-makers, programme designers and managers, frontline extension workers) generally do not give adequate attention to health and nutrition consequences of their interventions. Similarly, nutrition and health professionals often neglect agricultural issues, problems and solutions that can affect or enhance their programmes. The training and orientation in both sectors is almost always mono-disciplinary (e.g. Khandelwal et al. 2012), and

there are few (if any) incentives to assess, analyse and address malnutrition in a more intersectoral way.

Without a mandate or a set of incentives for enhancing nutrition sensitivity, there is thus little experience in doing so. In addition, there are few tools to help work across sectors, and few innovations or success stories on how to do so, particularly at a systems or policy level (even though some examples exist on a project and community level). Even where some multidisciplinary capacity exists, interaction, cross-disciplinary analysis and decision-making remains at a low level, due to the limited number of professionals with shared understandings. Single disciplinary training does not help in evaluating multiple outcomes of agricultural programmes.

But some progress has been made. There is now an emerging basic consensus on the core general skills required by professionals in both fields (nutrition and agriculture) to build a common language and enhance cross-disciplinary communication and working. These include capacity in research and analysis; strategic capacity (which includes leadership, advocacy and the ability to strengthen capacity in others); and intervention management or operational capacity. This in turn will require respective course content revisions and cross-faculty support at all levels, which will take time to translate into altered workforce practice (Hughes et al. 2011).

Two additional challenges keep cropping up in the literature. First, how to stimulate leadership or, as Garrett and Natalicchio (2011) term it, “lateral leadership”, that is, the ability to lead actors across sectors towards a common goal (in this case, improved nutrition). Leadership of course is a pivotal form of individual capacity, and it is potentially transformational. One innovative project, the *Agriculture-Nutrition Advantage* (2001-2004), led by the International Center for Research on Women and the International Food Policy Research Institute, sought to cultivate a network of leaders and advocates in five African countries who would promote stronger gender-sensitive linkages between agriculture and nutrition. All countries were found to have faced such challenges. But agricultural professionals working with nutritionists identified and advocated new win-win opportunities for collaboration (often at district level, to show what can be done practically), catalysing a high-level, cross-sectoral dialogue on joint priorities (Johnson-Welch et al. 2005).

The second frequently cited challenge is strengthening

mid-level strategic and operational capacity (Heikens et al. 2008, Pelletier et al. 2012, Gillespie et al. 2013). It is not enough to strengthen the capacity of policy-makers and decision-makers to act at national level, and to strengthen the capacity of frontline workers at the grass-roots, it is also important to strengthen mid-level actors (e.g. district-level programme managers). Past delivery failures need to be addressed by focusing on the missing middle, these actors and the complex web of incentives, rules and power relationships that link nutritionally vulnerable populations to service providers and different layers of government.

### Designing an appropriate capacity-strengthening strategy

It is useful at this point to consider the core questions we need to address in developing an appropriate strategy. First, do we know enough about what agriculture can and should do for nutrition? How much of a nutritional impact is achievable through agriculture, and how should we monitor its performance in this regard? A recent review suggests that the evidence base is very thin with regard to the nutritional impact of agricultural interventions, but as the authors have cautioned, an absence of evidence of impact is not the same as absence of impact (Ruel and Alderman 2013). We do not need any more systematic reviews: we need better evaluations.

We also need to be realistic about what can be measured. Can an agricultural programme or intervention only be deemed nutrition-sensitive if it has a demonstrable impact on anthropometric outcomes, for example? Or can we accept that positive impacts at the underlying level (household food security, maternal caring capacity and environmental health) are sufficient? If the impact of efforts to strengthen a health system does not require attributable change in child mortality indicators to be deemed successful, should we hold agriculture to a similar standard, when we know that a myriad other nutrition-relevant factors and processes come into play in the process between when crops grow in a field and a child grows in a household? These questions are crucial to address in defining a strategy to enhance the nutrition sensitivity of agriculture and in deciding the goals and approaches of linked processes of capacity strengthening.

Assuming the goals are clear, how are they to be achieved? What are the pathways and linkages between

agriculture and nutrition? The [TANDI Initiative](#) (Tackling the Agriculture–Nutrition Disconnect in India) has conceptualized six pathways between agriculture and nutrition outcomes, three of which relate to agriculture (as a source of food, as a source of income and as a determinant of food prices), and three of which relate to women’s engagement in agriculture (their agency and control over decisions, their ability to manage both agricultural labour and child care, and the effects of agricultural labour on their own health and nutritional status) (Gillespie, Harris and Kadiyala 2012).

Considering the types of decisions and actions (actual or potential) along these pathways is thus one approach to identifying the types of capacity required. The key question to posit at each decision point in these pathways is: is this decision/action pro-nutrition or not, and what is needed to shift the emphasis toward nutrition? Another approach is through assessing decision/action steps in value chains, to try and identify options for strengthening the nutrition sensitivity of these chains ([Hawkes et al. in this issue](#), Hawkes and Ruel 2012).

But capacity in and of itself is not enough for a decision to actually change. To strengthen nutrition-relevant capacity, it is ultimately crucial to understand (and where necessary, seek to change) political, institutional and individual incentives. To have an impact the system needs to support and motivate those working in it. They need to be held accountable for delivering and also be rewarded for doing so. Professionals need to be imbued with the confidence and passion to act and take responsibility. All actors from top to bottom need to see they are all part of the organization and part of action, across sectors, to address the problem. They need to feel valued and be supported to do their jobs properly with each layer understanding what the other does and what challenges they face and appreciating the fact that it will only be by their collective effort that things will get better and work properly.

Along with incentives to act, there needs to be an assessment of any trade-offs of change. This applies across the board, from smallholders choosing what they will grow next season to agricultural policy-makers deciding on policy instruments or indicators to measure success, for example. With regard to improving the nutrition sensitivity of agriculture, we simply do not know enough about such incentives and trade-offs. They are rarely made explicit. Many incentives are determined by organizations and

**Table 1. Key questions and activities to strengthen capacity for nutrition-sensitive agriculture at different levels.**

<b>Key questions (to address bottlenecks and challenges)</b>	<b>Inputs (activities undertaken)</b>	<b>Outputs (direct result of efforts)</b>	<b>Outcomes (change in behaviour)</b>
<b>INDIVIDUAL CAPACITY</b>			
Adequate tools, money, equipment? Are staff sufficiently knowledgeable, skilled and confident to perform properly? Do they need training, experience or motivation?	Nutrition-sensitive pre-service and refresher training, one-on-one collaboration, hands-on experience, leadership training, developing and applying the right tools.	Increased number of skilled analysts and policy-makers, mid-level managers and frontline workers who can generate and use knowledge to enhance the nutrition sensitivity of agriculture. Innovative tools and methods available and applied. More nutrition champions in the agriculture sector.	Higher quality research on priority knowledge gaps, better policy, more effective design and implementation of programmes. Role of agriculture in undernutrition reduction better identified and addressed by national stakeholders. Better, more equitable, cross-disciplinary/cross-sectoral partnerships.
<b>ORGANIZATIONAL CAPACITY</b>			
Enough staff with right skill-set? Manageable workload? Appropriate reporting, monitoring and supervisory systems? Clear lines of accountability? Effective incentives and sanctions? Adequate organizations for training, supply, administration, research?	Target research, teaching, training, policy, programme, NGOs, private sector. Revamp key job descriptions and course curricula. Incentivize collaboration, innovation, networking and partnerships to work across sectors. Ensure workload capacity, supervision, support facility capacity. Establish (regional) learning networks, communities of practice, exchange visits.	Well-targeted collaborative partnership with national organizations. Focused capacity strengthening of policy-makers, programme managers and implementers. Improved organizational ability to assess situations, to design, implement, monitor and evaluate impact of nutrition-sensitive agricultural interventions. Multidisciplinary research results, methods and metrics developed as learning resources; country-level case studies developed for use in training/learning programmes. Enhanced multidisciplinary interaction within target countries among the research, education and policy-making institutions.	More strategic research and evidence-driven priority setting. Nutrition-relevant organizations across sectoral divides better engaged in national policy-making systems. Increased public profile of nutrition in agricultural research. Effective use of research evidence for designing better interventions. Educational and training organizations incorporate cross-sectoral content in course and curricula. Agricultural professionals empowered and enabled to act to strengthen nutrition sensitivity (knowledge of “what” and “how” to do).
<b>SYSTEMIC CAPACITY</b>			
Are there intersectoral decision-making forums? Effective flows of information, money and managerial decisions? Community involvement? Sufficient links with NGOs? Have individuals and organizations been given the authority and responsibility to act?	Strengthen structural capacity (ensure cross-sectoral forums), systems capacity (flows of information, funds, decisions), role capacity (authority, responsibility).	Well-functioning formal/informal learning networks that use new tools, methods, research evidence and information. Strengthened evidence-driven capacity of policy-makers and strategy developers at national and regional level. Improved understanding of the policy process and players at national level.	Improved nutrition knowledge sharing within agricultural networks. Policy bodies learn from new innovations and research. New tools, methods, approaches at various levels used at different stages of national policy processes.

institutions, for example how individuals are rewarded or promoted in their jobs. In sum, the strengthening of core capacities needs to be allied with the development of appropriate incentives for change that take account of trade-offs.

Drawing upon work for the [A4NH](#) (Agriculture for Nutrition and Health) programme of the Consultative Group on International Agricultural Research (CGIAR), Table 1 provides examples of activities aimed at strengthening capacity for nutrition-sensitive agriculture at individual, organizational and systemic levels, along with the type of outputs, outcomes and impacts that may ensue.

## Conclusions

With nutrition presently on the crest of a political wave, and as financial pledges are made, this is the time when national and global resources need to be invested over the long term to support capacity development. More about investment than programme support, this will require funding cycles to extend well beyond the standard three to five years of current donor practice. It will take time to develop a proper functioning system and structure. If, for example, it is agreed that the current curricula for agricultural, nutrition and health students is not meeting the needs of the workforce, it will take ten years to revise the curriculum, retrain staff to deliver the curriculum, deliver the revised curriculum, have students graduate, have students employed, and then have these new employees implement their new skills and to reshape current work practices to be more aligned to what is required. Time is required to see how these changes will have an impact. All of this will need sustained political commitment, appropriate institutional incentives, resources, support and time. UN agencies, donors and governments all need to become aligned in their commitment to strengthen capacity for nutrition. Without skilled people with the right tools, working in the right places, doing the right things, policy statements and action plans will continue to be unfulfilled.

## References

Garrett J, Natalicchio M, ed. (2011) *Working multisectorally for nutrition: principles, practices and case studies*. International Food Policy Research Institute: Washington DC. ([online](#))

Gillespie SR (2001) *Strengthening capacity for nutrition*. IFPRI Discussion Paper No 106. International Food Policy Research Institute: Washington DC. ([online](#))

Gillespie S, Haddad L, Mannar V, Nisbett, Menon P (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet* 382, pp. 552–569. ([online](#))

Gillespie S, Harris J, Kadiyala S (2012) *The Agriculture-Nutrition Disconnect in India: What Do We Know?* IFPRI Discussion Paper 01187, International Food Policy Research Institute: Washington DC. ([online](#))

Hampshire RD, Aguayo VM, Harouna H, Roley JA, Tarini A, Baker S (2004) Delivery of nutrition services in health systems in sub-Saharan Africa: opportunities in Burkina Faso, Mozambique and Niger. *Public Health Nutrition*, 7, pp. 1047–1053. ([online](#))

Hawkes C, Ruel MT (2012) Value chains for nutrition. In: Fan S, Pandya-Lorch R, ed. *Reshaping agriculture for nutrition and health*. International Food Policy Research Institute: Washington, DC, pp. 73–81. ([online](#))

Heikens GT, Amadi BC, Manary M, Rollins N, Tomkins A (2008) Nutrition interventions need improved operational capacity. *The Lancet*, 371, pp. 3–4. ([online](#))

Hughes R, Shrimpton R, Recine E, Margetts B (2011) *A competency framework for global public health nutrition workforce development. A background paper*. World Public Health Nutrition Association. ([online](#))

Johnson-Welch C, MacQuarrie K, Bunch S (2005) *A Leadership Strategy for Reducing Hunger and Malnutrition in Africa: The Agriculture-Nutrition Advantage*. International Center for Research on Women: Washington DC. ([online](#))

Khandelwal S, Dayal R, Jha M, Zodpey S, Reddy KS (2012) Mapping of nutrition teaching and training initiatives in India: the need for public health nutrition. *Public Health Nutrition* 15, pp. 2020–2025. ([online](#))

Matta N (2000) *Building client capacity through results*. Seminar presentation at the World Bank, Washington, DC.

Pelletier D, Frongillo EA, Gervais S, Hoey L, Menon P, Ngo T, Stoltzfus RJ, Shamsir Ahmed AM, Ahmed T (2012) Nutrition agenda setting, policy formulation and implementation: lessons from the Mainstreaming Nutrition Initiative. *Health Policy and Planning* 27, pp.19–31. ([online](#))

Potter C, Brough R (2004) Systemic capacity building: a hierarchy of needs. *Health Policy and Planning* 19, pp. 336–345. ([online](#))

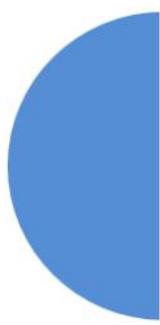
Ruel M, Alderman H (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet* 382, pp.536–551. ([online](#))

Schacter M (2000) *Capacity building: A new way of doing business for development assistance organizations*. Institute on Governance, Policy Brief No. 6. ([online](#))

Shrimpton R, Hughes R, Recine E, Mason JB, Sanders D, Marks GC, Margetts B (2013) Nutrition capacity development: a practice framework. *Public Health Nutrition* 17, pp. 682–688. ([online](#))

UNDP (2000) *Capacity assessment and development in a Systems and Strategic Management Context*. Technical Advisory Paper No. 3. Management Development and Governance Division, Bureau of Development Policy, United Nations Development Programme: New York.

# CASE STUDIES



---

## What are countries doing? What do they need?

---

### Mainstreaming nutrition in agriculture investment plans in sub-Saharan Africa: lessons learnt from the NEPAD CAADP Nutrition Capacity Development Initiative

Charlotte Dufour,<sup>1§</sup> Johanna Jelensperger,<sup>1</sup> Elvira Uccello,<sup>1</sup> with contributions from Kefilwe Moalosi,<sup>2</sup> Bibi Giyose,<sup>2</sup> Domitille Kauffmann<sup>1</sup> and Mohamed Ag Bendeche<sup>1</sup>

<sup>1</sup> Food and Agriculture Organization of the United Nations, Rome, Italy

<sup>2</sup> New Partnership for Africa's Development, Johannesburg, South Africa

§Corresponding author. Email: [charlotte.dufour@fao.org](mailto:charlotte.dufour@fao.org)

*Author statement: The authors declared not having any conflict of interest.*

#### Introduction

Agriculture has a key role to play in improving the quality of diets and fighting all forms of malnutrition in sub-Saharan Africa. Conversely, improving nutrition is a prerequisite for achieving the targets for agricultural productivity and production and socioeconomic development that African states have set.

However, agriculture is yet to fulfil this potential, especially since few agriculture programmes are actively designed to improve nutrition (Ruel et al. 2013). Furthermore, a common challenge associated with the implementation of multisectoral nutrition strategies is that if agriculture-related activities are not included in agricul-

ture sector investment plans, they will not be funded and implemented.

NEPAD's CAADP<sup>1</sup> Nutrition Capacity Development Initiative begun in 2011 and was designed to help governments integrate nutrition objectives and activities in their National Agriculture and Food Security Investment Plans (NAFSIPs). This effort represents one of the largest capacity development initiatives on agriculture programming for nutrition ever undertaken in terms of the numbers of countries and stakeholders involved and is one of the most significant contributions to the operationalization of the concept of nutrition-sensitive development as applied to the agriculture sector.

---

<sup>1</sup> NEPAD is the New Partnership for Africa's Development, a comprehensive programme of the African Union to accelerate socioeconomic development in Africa. CAADP is the Comprehensive Africa Agriculture Development Programme, NEPAD's initiative to promote agriculture-led socioeconomic growth.

The present article describes the rationale, objectives of the initiative and the process that was established to maximize its success. The authors, who were involved in the implementation of the initiative, describe here the lessons learnt from this process as well as the achievements and challenges that lie ahead for ensuring that nutrition is mainstreamed into agriculture investments and interventions.

## Objectives and rationale of the CAADP Nutrition Capacity Development Initiative

### Objectives

The overall purpose of the initiative is to enhance the contribution of the agricultural sector to multisectoral strategies to improve nutrition in sub-Saharan Africa. The specific goal is to assist countries in integrating nutrition in their CAADP process and ensure that nutrition interventions are planned, budgeted and implemented as part of their NAFSIPs.

The central feature of the CAADP Nutrition Capacity Development Initiative between 2011 and 2013 has been the organization of three subregional workshops (in west, east and central, and southern Africa). Efforts have also supported follow-up activities at regional and country levels. These efforts will constitute the major focus of the initiative in 2014 and beyond.

### What is CAADP and why is it a useful entry point for nutrition mainstreaming?

CAADP was established in 2003, under the impulse of the African Union (AU) and NEPAD. CAADP's goals are to increase public investment in agriculture to at least 10% of national budgets and to raise agricultural productivity by at least 6% by 2015.

It seeks to accelerate progress by actions in four focus areas, or pillars: (i) sustainable land and water management; (ii) improved market access for farmers and businesses through improved trade and infrastructure; (iii) improved food supply and hunger reduction; (iv) agricultural research to facilitate technology adoption. The

CAADP *Framework for African Food Security (FAFS)*, developed in 2009, sets out explicit food security and nutrition objectives to be included in the third pillar and advocates for nutrition considerations to be mainstreamed in all four CAADP pillars.

The CAADP process is guided by a number of milestones: (i) preparation and signature of a CAADP Compact, a joint commitment by stakeholders, including government, private sector, civil society and donors to agreed priorities; (ii) drafting and technical review of the NAFSIP; (iii) a business meeting, during which stakeholders endorse the NAFSIP and commit to funding; and (iv) implementation, including monitoring and evaluation and regular updating of the NAFSIP.

Mainstreaming nutrition in the CAADP process and NAFSIPs represents a unique opportunity to leverage resources allocated to agriculture in favour of national priorities for nutrition.

### Why was the CAADP Nutrition Capacity Development Initiative necessary?

In spite of CAADP's potential to address food and nutrition security, an unpublished technical review conducted by NEPAD with support of USAID in 2011 revealed that most NAFSIPs lacked explicit nutrition objectives and concrete actions to improve nutrition. In order to fill this gap, the AU and NEPAD, in close collaboration with Regional Economic Communities (RECs)<sup>2</sup> and supported by development partners, namely USAID, the World Bank and FAO, launched the CAADP Nutrition Capacity Development Initiative.

### Guiding principles

This Initiative was guided by the following principles:

- Position CAADP focal points<sup>3</sup> as leaders of the process at country level so as to strengthen ownership of nutrition in the agriculture sector.
- Maximize opportunities to deepen multisectoral dialogue. This entailed ensuring close alignment with the Scaling Up Nutrition (SUN) Movement, and collaboration with SUN focal points and REACH

<sup>2</sup> ECOWAS (Economic Community of West African States), COMESA (Common Market for East and Southern Africa), ECSA (East Central and Southern Africa Health Community), EAC (East African Community), IGAD (Inter-Governmental Authority for Development) and SADC (Southern African Development Community).

<sup>3</sup> CAADP focal points are senior government staff appointed by national governments to coordinate the CAADP process at country level. Their positions vary from one country to another, but many are Permanent Secretaries or Directors of Planning in ministries of agriculture.

(Renewed Efforts Against Child Hunger and Under-nutrition) facilitators were present.

- Maximize opportunities to strengthen partnerships between stakeholders. At the regional level, the process is guided by a steering committee led by NEPAD, technically supported by FAO and USAID, and composed of representatives from relevant RECs, UN agencies (WHO, UNICEF, WFP), nongovernmental organizations (NGOs), academics and donors. Cofunding of the initiative from a variety of agencies helps cement this partnership.<sup>4</sup> At country level, the preparation process and workshops provided an opportunity for stakeholders who do not usually gather in regular coordination mechanisms to exchange ideas and engage in joint planning.

## Preparation and implementation of the sub-regional capacity development workshops

### Workshop objectives

The three subregional workshops were organized between November 2011 and September 2013, each attended by around 200 participants from 14–18 countries.<sup>5</sup> Each workshop brought together country teams composed of six to ten professionals from sectors including agriculture, health, education, planning and finance, as well as representatives of coordination mechanisms (e.g. SUN focal points and REACH facilitators), the private sector, civil society, RECs, development partners (including donors and UN agencies) and NGOs.

The specific objectives of the workshops were to: (i) increase understanding of good practices and solutions for better integrating nutrition in the CAADP framework and processes; (ii) increase understanding of how to use existing tools, technical resources and programme experiences for mainstreaming nutrition in agriculture; (iii) strengthen country-level and regional networks contributing to the achievement of CAADP and food and nutrition security goals; and (iv) increase understanding of how policy and governance/management issues need to align for improved food and nutrition security programming, including multisectoral coordination and public-private partnerships.

### Pre-workshop preparation

The preparation phase of the workshop at country level was designed to increase the likelihood of follow-up after the workshop, by maximizing stakeholder engagement, building ownership of the issue and initiating dialogue between participants before the workshop.

Country participants synthesized information on nutrition problems and relevant policies in a nutrition country paper, used during the workshop as a reference document for country group work and as preparation for the Second International Conference on Nutrition (ICN2) to be held in late 2014. In the last workshop (southern Africa), country teams were also invited to submit case studies to be presented during the workshop. This proved to be a strong motivating factor, which fostered strong collaboration between participants before, during and after the event.

### The workshop design and outputs

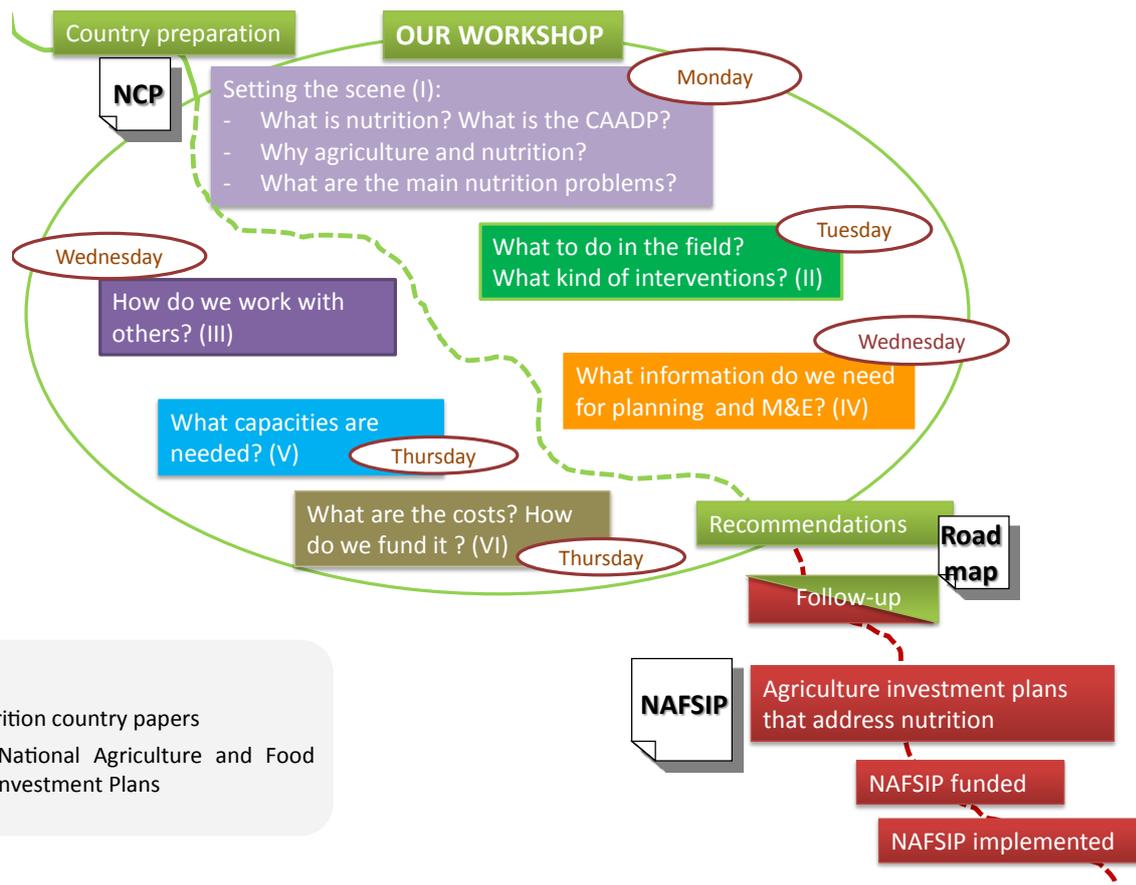
The agenda was designed through a consultative process with all steering committee members, many of whom have extensive experience of working on agriculture–nutrition linkages. The [Synthesis of Guiding Principles on Agriculture Programming Nutrition](#) (FAO 2013) was commissioned by FAO in part to inform the workshop content, and the [Key Recommendations for Improving Nutrition through Agriculture](#) ([Herforth and Dufour, this issue](#)) guided the preparation of the agenda. Facilitation methods were chosen to maximize sharing of experiences between countries through mixed country group work and to allow ample time for practical work in country teams. Figure 1 outlines this process and the agenda.

The main outputs of the workshops are roadmaps developed for better mainstreaming nutrition in NAFSIPs. Each team adapted the exercise to the stage of the CAADP process their country was currently in. Ideally countries were about to formulate their Investment Plan, as the recommendations could be directly integrated in the NAFSIP. For countries with a NAFSIP, teams provided recommendations that could either be incorporated in the implementation of the existing plan or be used in the next round of revisions. For countries without a Compact or NAFSIP, teams worked on the main agriculture sector strategy. In all cases, country teams were encouraged to

<sup>4</sup> NEPAD Multi-Donor Trust Fund; Bill and Melinda Gates Foundation; FAO support funded by the Federal Republic of Germany and the European Union; USAID; UNICEF; WFP; Harvest Plus; Australian International Food Security Center; World Bank.

<sup>5</sup> Dakar, November 2011; Dar-es-Salam, February 2013; Gaborone, September 2013.

**Figure 1. Workshop process and key themes (from Southern Africa workshop).**



use whichever document was the main reference for agriculture planning. Table 1 includes examples of recommendations made by country teams. Across all workshops, 50 countries participated and developed such roadmaps.

## Follow-up to the subregional workshops and impact

Follow-up is critical to ensure that the NAFSIP is actually revised or designed according to the roadmap, that the nutrition elements are budgeted and that the necessary support for implementation is mobilized. The responsibility for follow-up lies with the country teams, but regional partners (RECs, UN agencies and NGOs with a presence at the regional level) also pledged to increase their support.

A survey with CAADP focal points from west African countries (or their alternate when unavailable) was conducted late in 2012 to gather information about the uptake of recommendations. The turnover in CAADP focal points between 2011 and 2012 and difficulty in contacting participants limited the response rate to 11 countries out of a total of 17. All the responding countries reported having

organized meetings on agriculture–nutrition linkages. At the time of the survey, several countries were in the process of revising their national agriculture policy and integrating more nutrition elements (Benin, Burkina Faso, Guinea, Ghana, Mali, Mauritania, Senegal and Togo). Some countries had started implementing their actions (Burkina Faso and Ghana). Other countries, such as Benin and Togo, had started implementing some actions, albeit with some delay due to a lack of funding, capacity and coordination mechanisms. Seven countries had not started any action specified in the roadmaps, mainly due to political, institutional or funding constraints. The situation has continued to evolve since then. In some countries, the interest in the recommendations has dwindled, while in others (e.g. Niger), the growing momentum on nutrition provides a new window of opportunity for promoting greater agriculture–nutrition linkages. Future work should examine why these different levels of follow-up and momentum occurred.

A survey with participants from east, central and southern Africa will be conducted in the spring of 2014. But regular dialogue with country-level colleagues indicates that the workshops have contributed to greater action and com-

**Table 1. Examples of recommendations to integrate nutrition in CAADP investment plans.****Proposed revisions and additions to NAFSIP objectives**

- Reduce rural poverty, food insecurity and hunger
- Contribute to reduce all forms of malnutrition
- Increase availability, affordability and consumption of fresh, healthy and nutritious food
- Improve food utilization through balanced diets, improved water and food safety

**Proposed target populations that should be specified to maximize nutrition outcomes**

- Children below five years of age, school-age children
- Women of reproductive age, pregnant and lactating
- Rural and urban poor, small producers and landless labourers

**Proposed new actions to enhance nutritional impact of agriculture investments**

- Production intensification and diversification, home gardening with nutritious crops, intercropping, small animal breeding, aquaculture, livestock
- Improvement of post-harvest handling at community level
- Value addition throughout the value chain to improve nutrient content
- Empower women through labour-saving technology
- Integrate nutrition education in production programmes, extension services and schools
- Strengthen/establish national school feeding programmes including home-grown school feeding, school gardens and teachers training on nutrition

**Proposed indicators for monitoring nutritional impact and outcomes of agriculture investments**

- Prevalence of stunting, wasting, underweight, energy deficiency, micronutrient deficiencies, overweight and obesity
- Food consumption index, food consumption frequency (meal/day), dietary diversity score
- Percentage of household income spent on food
- Crop diversity

**Proposed improvements to food and nutrition security information systems**

- Conduct food consumption surveys to establish a baseline for monitoring and evaluation (M&E) of agriculture programmes
- Increase convergence between agriculture and nutrition (health) indicators and M&E frameworks

**Proposed improvements to coordination mechanisms**

- Involve ministries in charge of agriculture, health, education, labour and social security, gender and children, natural resources, economic planning, finance, trade and infrastructure, environment, and community development, along with relevant governmental agencies
- Involve private sector, producers' organizations, consumers' organizations, workers' representatives, civil society, municipalities and traditional rulers, development partners, NGOs, academia (food research institutes, universities), school boards and parents' associations, women's associations, media

**Recommendations for capacity development**

- Recruit nutritionists in ministerial structures
- Strengthen nutrition curricula in formal education
- Provide basic training on nutrition and gender for units in charge of planning and implementation, for extension workers, farmer field schools, mother support groups and schools

**Box 1. Ethiopia**

The roadmap spells out recommendations to strengthen nutrition in the Agriculture Sector Policy and Investment Framework (PIF), including: establishing a link between the CAADP focal point and the National Nutrition Technical Committee; including an explicit nutrition objective and impact indicators; identifying priority areas of implementation and target groups using a life-cycle approach; providing nutrition education for extension workers and in farming training centres; and nominating focal persons in charge of nutrition at the central and district levels.

The workshop enabled the technical nutrition team to improve the agriculture component of the national nutrition policy. Although no official changes can be made to the PIF until 2015, nutrition recommendations will be implemented through ongoing programmes.

**Box 2. Sierra Leone**

In order to strengthen the nutritional impact of the Smallholder Commercialisation Program (SCP), the country team recommended the inclusion of nutrition indicators in information systems and the identification of priority products for creating “nutritious value chains”. By 2013, nutrition indicators had been integrated in the revised version of the plan: food-based dietary guidelines are being developed to inform planning and nutrition education; work is underway to include a food and nutrition security model in Farmer Field Schools (FFS); and agriculture activities are targeted to mother-to-mother support groups. The Ministry of Agriculture, Forestry and Food Security recruited a nutrition officer to support this work.

mitment on nutrition-related matters in the agriculture sector in several countries, including Cameroun, Ethiopia, Gabon, Malawi, Namibia, Rwanda, Tanzania, Uganda and Zambia. Boxes 1 and 2 illustrate how the workshop has contributed to strengthening agriculture–nutrition linkages in Ethiopia and Sierra Leone.

## **Lessons learnt, challenges and opportunities arising from the initiative**

### **Challenges faced during the subregional workshops**

Ensuring the quality of the technical content and inclusiveness of the process, while coping with the logistical and administrative challenges of gathering over 200 participants from up to 18 different countries, was no small task. By far the greatest challenge was ensuring an optimal selection of participants, in terms of diversity of sectors and stakeholders and level of influence over agriculture policy. In order to maximize ownership of the process by agriculture stakeholders, invitations were sent through CAADP focal points, who were supported by other partners in identifying participants. While in most countries the process was successful, some agriculture ministries were not represented at a sufficiently high level of decision-making. The selection process was sometimes

perceived as sensitive, for example, if officials responsible for nutrition coordination might feel by-passed. In general, the process tended to be easier to facilitate in countries participating in the SUN Movement and where REACH facilitators were present because existing coordination mechanisms could be used to communicate about the process.

During the workshop, the main challenge was ensuring the technical quality of the roadmaps, given the novelty of the topic and process for most participants. This was also related to the difficulty of covering in four and a half days all potentially relevant topics (e.g. land tenure) given the variety of agroecological and socioeconomic contexts in the subregion. Technical advisors were assigned to country teams to support country group work but were advised not to interfere excessively in the discussions to ensure participants had ownership of the results. The depth of the discussions and the quality of the nutrition country papers and country roadmaps tended to be higher in countries where there was already ongoing dialogue on multisectoral nutrition coordination.

The greatest challenges lie in follow-up. The momentum for collaboration generated through the workshop dwindles when participants return to divided institutional structures and parallel coordination mechanisms, which

hinder the implementation of recommendations and lead to lost opportunities. One country team, for example, would have been in an ideal situation for influence as the country was just initiating the CAADP process. But the CAADP process was then initiated with a different set of individuals who were unaware of this Initiative and did not use the roadmap. There are also significant capacity gaps (see below), and while funds are being mobilized through various channels to address them, it takes time to do so, resulting in a loss of momentum and institutional memory, especially with changes in staff and government authorities. The follow-up has so far tended to be most effective in SUN countries, especially where there are both REACH facilitators and FAO Representations with good capacities in nutrition.

### **Achievements and opportunities**

Despite the challenges, the workshops can be considered a success. Country delegates appreciated the practical content of the workshop, the opportunity to learn from each other, and the initiation or strengthening of a dialogue between professionals and sectors which previously rarely, if ever, interacted. Though the focus was on nutrition, the fact the workshop was structured around the programme cycle also provided an opportunity to strengthen general planning capacities.

The CAADP Nutrition Capacity Development Initiative, so far, has contributed to demystifying nutrition among agriculture professionals and decision-makers, who traditionally consider nutrition to be under the health sector. It also contributed to increased ownership and commitment to food-based approaches for tackling malnutrition among professionals from various sectors.

In countries which are members of the SUN Movement, the Initiative was instrumental in enhancing the participation of the agriculture sector in multisectoral planning efforts for nutrition. For countries who are not yet part of the SUN Movement, the process helped raise awareness of the importance of nutrition and of multisectoral approaches for all concerned.

### **Commitment, knowledge and capacity gaps for implementing recommendations**

A review of the country roadmaps and interviews with several participants have revealed efforts are required in the following areas if nutrition is to be genuinely ad-

ressed in CAADP Investment Plans. Firstly, advocacy and sensitization efforts need to be continued, to ensure that a critical mass of decision-makers genuinely own the nutrition agenda and prioritize it in government planning. Providing evidence of the positive impact of food-based approaches is key for increasing political support. However, this requires information systems at country level be reinforced (namely including food consumption indicators in food security surveys and integrating analyses of agricultural and health data) so as to clarify the relationship between agriculture programmes and changes in nutritional status.

Secondly, institutional, technical and financial capacity gaps must be tackled. Countries demand more operational guidance in specific areas such as food consumption indicators, nutrition education for extension workers and farmers, and food composition data to guide the choice of crops. In terms of planning, governments also need assistance in assessing the costs involved in integrating nutrition in agriculture, including the opportunity costs of prioritizing nutrition over other concerns as well as the potential returns of investing in nutrition. This is key to helping governments reconcile competing nutrition and economic objectives. Addressing these capacity gaps will require well-targeted, focused and coordinated technical assistance at country and regional levels, as well as an effective alignment of investments in nutrition, agriculture and rural development. The fact that the Initiative was more effective in SUN and REACH countries, where coordination mechanisms tend to be tighter and the political momentum for nutrition is stronger, demonstrates the importance of pursuing efforts to institutionalize and sustain multisectoral dialogue at country level.

Thirdly, the disconnect between the central level and the grassroots level must be addressed if policies are to be translated into practice. On the one hand, achievements in terms of strategy development and coordination at the central level do not always filter down to the field level. On the other, challenges faced by workers at the grassroots level do not filter up to the political level, nor do successful initiatives which could be scaled up. Investments in capacity development at district and community levels, operational research and information management are essential to assisting governments in bridging policy formulation and programme implementation.

## Conclusion: building on opportunities to scale up nutrition in agriculture

Was the investment in this initiative worth it so far? It is too early to tell. The subregional workshops represent a first, catalytic step in a broader process for strengthening agriculture–nutrition linkages. But genuine impact at country level will depend on the level of commitment to and investments in the implementation of the roadmaps.

While the challenges for effectively making agriculture investments work for nutrition remain immense, never has there been such an opportune time to pursue these efforts. The number of countries committing to putting nutrition at the top of their agenda is growing exponentially. Agriculture is increasingly recognized as essential for sustainable improvements in nutrition. Funding from domestic budgets and donors is increasingly being made available to strengthen agriculture–nutrition linkages. Several projects designed to support the implementation of roadmaps for integrating nutrition in agriculture are in the pipeline, and new investment programmes in agriculture will better be able to include nutrition.

The CAADP Nutrition Capacity Development Initiative has

made an important contribution to this increasing commitment for nutrition at regional, subregional and country levels. It has helped open the door for nutrition in agriculture, while also raising awareness and consolidating commitment to nutrition in other sectors and galvanizing dialogue across sectors. The engagement of the AU and RECs has been essential for the success of the Initiative so far and helped consolidate ownership of nutrition within these institutions. The AU Renewed Partnership for Ending Hunger and Malnutrition in Africa and the AU Year of Agriculture provide political platforms where the dialogue on agriculture and nutrition can be deepened so that the existing commitment already demonstrated by a broad range of partners can be transformed into action on the ground.

### References

FAO (2013) *Synthesis of Guiding Principles on Agriculture Programming for Nutrition*. Food and Agriculture Organization of the United Nations: Rome.

Ruel M, Alderman H (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382(9891), pp. 536–551.

## UNSCN Nutrition and Climate Change eGroup (NutCC)

Climate Change has been a very important topic of discussion of the UNSCN Working Group on Household Food Security. These discussions resulted in a publication, in 2009, of the [UNSCN Statement on the Implications of Climate Change on Nutrition](#). This was then followed by the [SCN News 38 on Climate Change - Food and Nutrition Security Implications](#), a peer reviewed publication which examined climate change and nutrition across a range of different sectors, using an underlying multisectoral perspective.

The [Nutrition and Climate Change eGroup](#) is an ad hoc online discussion forum, created with the aim of bringing a nutrition lens into climate change issues and increasing the participation of interested sectors to discuss how this can be done and what the priorities are. The eGroup also intends to identify opportunities for the nutrition agenda and weaknesses that hinder the participation of nutrition in such debates.

The eGroup has had a number of concrete results. For the sixteenth session of the Conference of Parties (COP 16), in 2010, a [Climate Change and Nutrition Security Policy Brief](#) was published to raise awareness among UN Framework Convention on Climate Change (UNFCCC) stakeholders on the crucial role of nutrition. For COP17, in 2011, a side-event organized by the UNSCN, WFP, the Public Health Institute (PHI) and ACF took place and a [background paper](#) was published.



For more information about the results of the eGroup discussions and UNSCN's work on climate change, click [here](#).

You can also **join the online discussion forum**, by clicking [here](#).

# The Toronto Food Policy Council and the Toronto Food Strategy: focusing on food systems and health at the city-region level

Catherine L. Mah,<sup>1§</sup> Lauren Baker,<sup>2</sup> Brian Cook,<sup>3</sup> Barbara Emanuel<sup>4</sup>

<sup>1</sup> MD, PhD, Scientist, Centre for Addiction and Mental Health, and Assistant Professor, Dalla Lana School of Public Health, University of Toronto, Canada

<sup>2</sup> PhD, Coordinator, Toronto Food Policy Council, Toronto Public Health, City of Toronto, Canada

<sup>3</sup> PhD, Research Consultant, Toronto Food Strategy, Toronto Public Health, City of Toronto, Canada

<sup>4</sup> MES, Manager, Toronto Food Strategy, Toronto Public Health, City of Toronto, Canada

§ Corresponding author. Email: [catherine.mah@utoronto.ca](mailto:catherine.mah@utoronto.ca)

*Author statement: The authors declared not having any conflict of interest.*

## Introduction

The following case study shares the experience of Toronto, Canada, as an example of a nutrition-sensitive food systems approach. City-regions have been key sites for innovative thinking on how agriculture and food systems influence, and could better promote, people's health and well-being. From a governance standpoint, it is particularly interesting to note the variety of city-region approaches worldwide, including the foundational structures and range and scope of actions. A recent survey of city-region food policy initiatives across Canada articulated how all adopt a food-system lens, yet only some of these initiatives include an explicit focus on nutrition (MacRae and Donohue 2013). Initiatives are just as likely to take on local economic development, social equity, community cohesion or human ecosystem impacts as outcomes of interest.

We focus here on the [Toronto Food Policy Council](#) (TFPC), which recently celebrated its 20th anniversary, and the Toronto Food Strategy, the urban food strategy launched in 2010. Three lessons are important from the Toronto experience: (i) the catalytic role of public health within municipal government; (ii) the strategic leveraging of existing structures and social relationships to move a health-focused agenda forward, using a food-system lens and a broad definition of health and well-being; and (iii) the centrality of participatory mechanisms.

## The Toronto context

The City of Toronto is the largest municipality in Canada, home to 2.5 million people in the city and 5.5 million in the Greater Toronto Area. Toronto is one of the most multicultural cities in the world, with over half of Toronto's population born outside of the city. Its diverse population with a high proportion of newcomers, along with an increasing concentration of poverty in the city's outer suburbs, presents a range of nutritional risks and concerns about health equity (Hulchanski 2010). Approximately 12% of households in the Toronto census metropolitan area were food insecure in 2011–2012 (Tarasuk, Mitchell and Dachner 2014).

In its favour, Toronto holds numerous food assets. It has been widely considered a food policy leader among global city-regions (Dowding-Smith 2013). The municipality is surrounded by a protected greenbelt region that contains some of the highest quality agricultural land in the country. Toronto is also home to the [Ontario Food Terminal](#), a provincially funded wholesale fruit and vegetable market that is North America's second largest food distribution hub.

Toronto is an excellent example of the potentially divergent imperatives that large municipalities and city-regions face in contemporary food systems: a tangible burden of population health issues alongside relatively limited formal legislative authority. City-regions bear the proximal consequences of key nutritional and health risks related

to the food system, including an unequal distribution of wealth, and ecosystem shifts that are leading to and accompanying transformations in consumption patterns. However, the formal authority of municipalities to handle these issues is often regarded as a downstream one, particularly within the Canadian federal governing structure, where higher levels of government and the private sector are viewed as more legitimately responsible for food, defined as those upstream dimensions of agricultural production, food distribution and retail. The case of Toronto illustrates how a more integrated view of food systems can be achieved by reversing the assumptions within existing food governance and articulating food as the instrument, rather than the object, of policy (Mah and Thang 2013). This means recognizing the ability of and capacity for municipalities to act to shape key elements of the food system.

### TFPC and the Toronto Food Strategy

The [TFPC](#) was established in 1991 by the Toronto City Council as a citizen subcommittee to the municipal Board of Health. Its purpose is to identify important food system issues and bring them to the municipal policy arena and in so doing establish a platform for diverse actors to deliberate, including community members, industry, politicians and the municipal public service. The TFPC is composed of up to 30 members at a time, including city councillors and citizen volunteers from diverse personal and professional backgrounds. It is staffed by a coordinator, who is a full-time employee of the municipal health department. Early efforts of the TFPC were rooted in health promotion movements and action on food security, which led to successes such as the City Council's adoption of the 2001 Toronto Food Charter. The Charter articulated food security as a municipal priority, a model that has since been used in other city-regions as a vision statement for food system development (Blay-Palmer 2009). The TFPC also supports the activities of the [Toronto Youth Food Policy Council](#), the world's first youth advisory group of its kind.

The development of the Toronto Food Strategy was spearheaded by the municipal public health department in 2008 and endorsed by the Board of Health and City Manager in 2010. The implementation of the Food Strategy is now the responsibility of a small team within the Healthy Communities programme area of the health department. This has positioned it well to navigate the broader public service and city politics. It plays the dual

role of working within government to align policies and programmes through a food lens, alongside supporting neighbourhoods and communities in operationalizing their food priorities. The Food Strategy team does far more than implement a report or a set of recommendations. Rather, it uses a multifaceted approach to frame issues, broker intersectoral relationships and leverage a wide range of resources towards achieving a health-focused food system (Toronto Public Health 2010). The TFPC is now also the citizen reference group for the Toronto Food Strategy.

Examples of recent initiatives led by the TFPC and Toronto Food Strategy team include work on urban agriculture and healthy food retail. In 2012, the TFPC cosponsored an international Urban Agriculture Summit and launched *GrowTO: An Urban Agriculture Action Plan for the City of Toronto*, which was endorsed by the City Council. The Toronto Food Strategy team has led collaborative mapping of food access across Toronto. In 2012, with partners from academia, the [United Way](#) (a national non-profit community development organization with local chapters across Canada) and [FoodShare Toronto](#) (a local non-profit community food security agency), the team launched the [Mobile Good Food Market](#), a mobile produce vending social enterprise in eight underserved neighbourhoods across the city. The Food Strategy team has also initiated development of other types of healthy food retail interventions that will be piloted in upcoming years, modelled on the concept of healthy corner stores.

Outside the city-region, the TFPC and Toronto Food Strategy have played an important role in convening dialogues across jurisdictions, such as supporting development and implementation of a regional agri-food strategy, a provincial Local Food Act, and working with academic partners to develop a proposal for an international municipal food policy learning and research network that would align lessons from cases in Africa, the Americas, Asia and Europe.

The TFPC and Food Strategy as paired initiatives are illustrations of an effective food governance model at the city-region level where food does not, in fact, need to be at the top of everyone's action agenda all of the time. Food initiatives are ways for a variety of city departments to take advantage of unique opportunities to articulate their own agendas (that is, the idea of food being the vehicle, and not necessarily the object, of policy change). The two initiatives also represent an evolution in city-region food

policy over time, as municipal government actors, including the health department, have adapted to emerging food and nutrition priorities.

## Lessons learnt

One of the key lessons learnt from the Toronto experience is the value of leveraging the important role of public health within local government to catalyse intersectoral initiatives. The TFPC and Toronto Food Strategy are situated within a relatively secure institutional foundation, including dedicated human resources of health department employees. The potential of the public health role is also about the framing of the future for food systems: promotion of population health to achieve societal gains continues to be a powerful rationale for policy action, particularly in a fiscally restrained and constrained public sector environment.

This links to the second key lesson, which is how the TFPC and the Toronto Food Strategy team have been able to work from modest staffing arrangements, a relatively narrow core mandate and very small core operating budgets to influence a wide range of policies and programmes and leverage substantial external resources. Toronto has been successful by navigating existing structures and dynamic social relationships, not reinventing them for each initiative. Rather, it has been more important to point out where food already fits, to render food visible and to ask how diverse policy aims can be achieved through the vehicle of food.

That said, it is worth mentioning that the success of Toronto's food policy actors in this regard also holds a paradox. As food becomes more embedded in a range of policy agendas, food initiatives are regularly at risk of being displaced as priorities. Moreover, the political environment at the municipal level has been tempestuous, so mayoral support under the current administration has been absent, a factor that has contributed to resource availability and stability in other jurisdictions. The TFPC and Food Strategy thus have a firm anchor in the health institutional setting, but only modest budget lines, and

the pursuit of initiative-specific research and evaluation resourcing remains an ongoing challenge.

Finally, the third and also linked lesson has been the centrality of participatory mechanisms to these efforts. Diverse actors, including citizens, are not only asked to engage in but are deemed legitimate and essential actors and agents of change (Baker 2004), including determining policy directions and implementing and evaluating policy. It is the participatory approach that enables other gains, such as in terms of framing and leveraging of resources already identified. Participatory approaches are thus central to the model of urban food governance that the Toronto Food Strategy and TFPC epitomize.

## References

- Baker LE (2004) Tending cultural landscapes and food citizenship in Toronto's community gardens. *Geographical Review* 94 (3), pp. 305–325.
- Blay-Palmer A (2009) The Canadian pioneer: The genesis of urban food policy in Toronto. *International Planning Studies* 14(4), pp. 401–416.
- Dowding-Smith E (2013) *Resilient Urban Food Systems: Opportunities, Challenges, and Solutions: Outcomes of the Resilient Urban Food Systems Forum*. ICLEI: Bonn.
- Hulchanski D (2010) *The Three Cities Within Toronto: Income Polarization Among Toronto's Neighbourhoods, 1970–2005*. Cities Centre, University of Toronto: Toronto. ([online](#))
- MacRae R, Donohue K (2013) *Municipal Food Policy Entrepreneurs: A Preliminary Analysis of How Canadian Cities and Regional Districts are Involved in Food System Change*. Toronto Food Policy Council, Vancouver Food Policy Council, and the Canadian Agri-food Policy Institute: Toronto.
- Mah CL, Thang H (2013) Cultivating food connections: The Toronto Food Strategy and municipal deliberation on food. *International Planning Studies* 18(1), pp. 96–110.
- Tarasuk V, Mitchell A, Dachner N (2014) *Household Food Insecurity in Canada, 2012*. PROOF: Toronto. ([online](#))
- Toronto Public Health (2010) *Cultivating Food Connections: Toward a Healthy and Sustainable Food System for Toronto* (Feb 2010). Toronto Public Health: Toronto. ([online](#))



### Stay informed!

Sign up to receive monthly updates from the Scaling Up Nutrition (SUN) Movement at <http://scalingupnutrition.org/>

# Brazil's Food Purchase Programme: linking farmer and consumer to promote change in food and agriculture systems and the right to adequate food

Arnoldo Campos,<sup>1</sup> Denise Kroeff,<sup>1</sup> Michele Lessa,<sup>1</sup> Janine Coutinho<sup>1§</sup> and Sabrina Ionata Granheim<sup>2</sup>

<sup>1</sup> Ministry of Social Development and Fight against Hunger, Brasília, Brazil

<sup>2</sup> Independent Consultant, Oslo, Norway

§Corresponding author. Email: [janine.coutinho@mds.gov.br](mailto:janine.coutinho@mds.gov.br)

*Author statement: The authors declared not having any conflict of interest.*

## Introduction

In the last three decades, Brazil has made important progress in promoting food and nutrition security by increasing access to income and food, reducing child and maternal mortality, and fighting extreme poverty. The right to adequate food was affirmed as a constitutional right in 2010, and public investment on food and nutrition security programmes in various sectors has increased steadily in the past ten years (CONSEA 2010).

Nevertheless, historical challenges to the fulfillment of the right to food in the country persist, with continuing food insecurity among indigenous peoples, traditional communities and other socioeconomically vulnerable groups. New nutrition challenges have also emerged, including increased overweight, obesity and noncommunicable diseases (NCDs), increased consumption of foods rich in salt, fat and sugar and of sweetened beverages and ready-to-eat meals, and decreased consumption of traditional food items such as rice, beans, fruits and vegetables.

The effects of this dietary transition and the current double burden of malnutrition call for strengthened action to promote food production models – in this case, family farming – that support adequate and diversified food, while considering regional and cultural aspects and pro-

moting social justice and equity. The programme presented in this paper takes a more comprehensive systems approach and considers how to shape production to produce more nutritious foods and how to link that production with consumption.

## Linking farmer and consumer

The Food Purchase Programme (known as *Programa de Aquisição de Alimentos* – PAA), an important part of the National Food and Nutrition Security Policy, aims at promoting food and nutrition security (FNS) and social inclusion in rural areas through the strengthening of small-scale family farming.<sup>1</sup> This ensures that small-scale farmers can obtain fair prices for their produce, all year around, while contributing to improved nutrition.

The Programme is an institutional market strategy that operates through five different modalities. This article looks at only two of them: the Institutional Purchase and the Purchase with Simultaneous Donation.<sup>2</sup> The Institutional Purchase modality allows states, municipalities and federal facilities (hospitals, military headquarters, prisons, university restaurants and day care centers) to purchase food from small-scale farmers through a public call, without a competitive bidding process, thereby increasing income for producers, improving access to adequate and nutritious foods for the population and strengthening the

<sup>1</sup> As defined by Law 12.512 of 2011, family farmers are those who depend on rural activity as their main livelihood, manage their own farm with family members, own a limited amount of land (variable in different municipalities, but never above 110 hectares) and use predominantly the labour of family members for income generation (Brazil 2011).

<sup>2</sup> Originally called *Compra Institucional* and *Compra com Doação Simultânea*, respectively.

local economy. As this model allows those institutions to gain access to a large variety of healthy and local products, it encourages the replacement of processed foods rich in salt, sugar and fat – that were previously easier to purchase through bidding – with healthier options.

The second modality is the Purchase with Simultaneous Donation. This modality aims to purchase products from small-scale family farmers and donate them to the social assistance network (day care centers, schools, retirement homes and other non-profit institutions) and to the public FNS facilities (community restaurants, community kitchens and food banks).

In this modality, there are two types of programme beneficiaries: the suppliers and the consumers. The supplier beneficiaries are family farmers, foresters, fish farmers, fishermen, indigenous community members and other traditional communities (such as the *quilombola* communities) who benefit as individuals or through cooperatives or other recognized arrangements. PAA buys products from these suppliers without bidding, thus eliminating many layers of bureaucracy that would otherwise have prevented them from accessing the market due to, for example, their lack of knowledge of the system, low literacy level and distance from urban centers.

PAA facilitates access to a large variety of food products for public institutions (hospitals, prisons, public FNS facilities, etc.) and the social assistance network (public and non-profit), hence promoting dietary diversity. Currently,

approximately 3000 different items are included in the list of purchases through the PAA programme in the entire country. Each region has a specific list of available foods, based on what local family farmers can produce. The regional products vary from traditional local rice and beans to fruits and vegetables and include dairy products and meat.

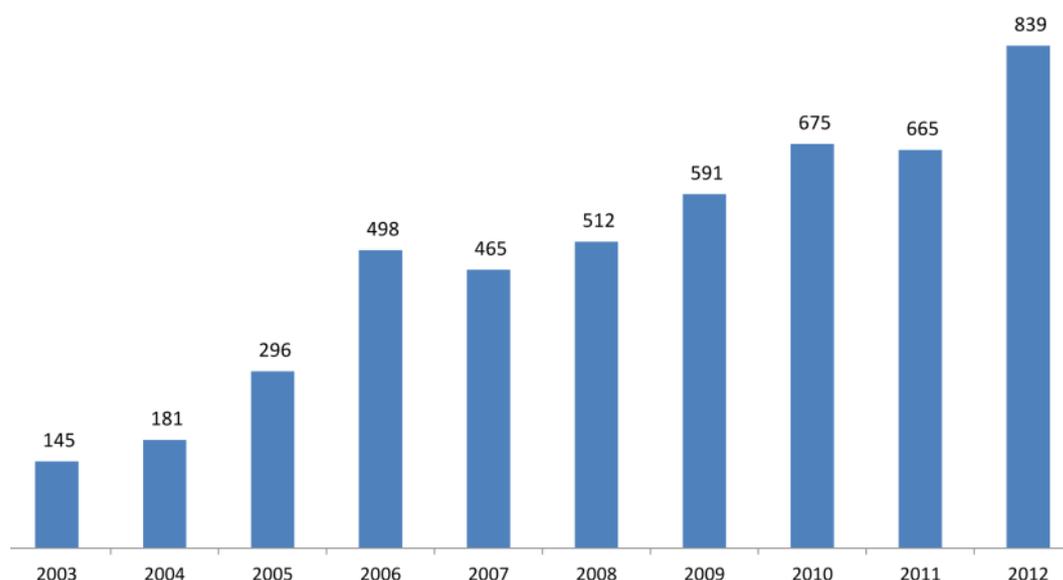
In the last ten years, the PAA programme has seen a sustained rise in the number of participating small-scale family farmers, an increase of resources invested and an increase in the volume of food purchased. Since the implementation of the programme in 2003, investment has risen from 145 million Brazilian Reais per year (approximately US\$ 100 million at current exchange rates) to 839 million Brazilian Reais in 2012 (approximately US\$ 365 million at current exchange rates)<sup>3</sup> (Figure 1). The amount of food produced through family farming has increased from 8 to 529 thousand tons per year (Figure 2). In 2012, 70% of the all the foods consumed in the country were produced through family farming (MDA 2012).

### PAA promotes multisectoral and multistakeholder collaboration

The programme involves different line ministries and stakeholders both for its policy formulation and for its implementation. Its multisectoral coordinating mechanisms are established by law (Law 10.696 of 2003 and Decree 7.775 of 2012) (Brazil 2003, 2012). The PAA pro-

**Figure 1. PAA Programme Purchase Costs (in current R\$ million).**

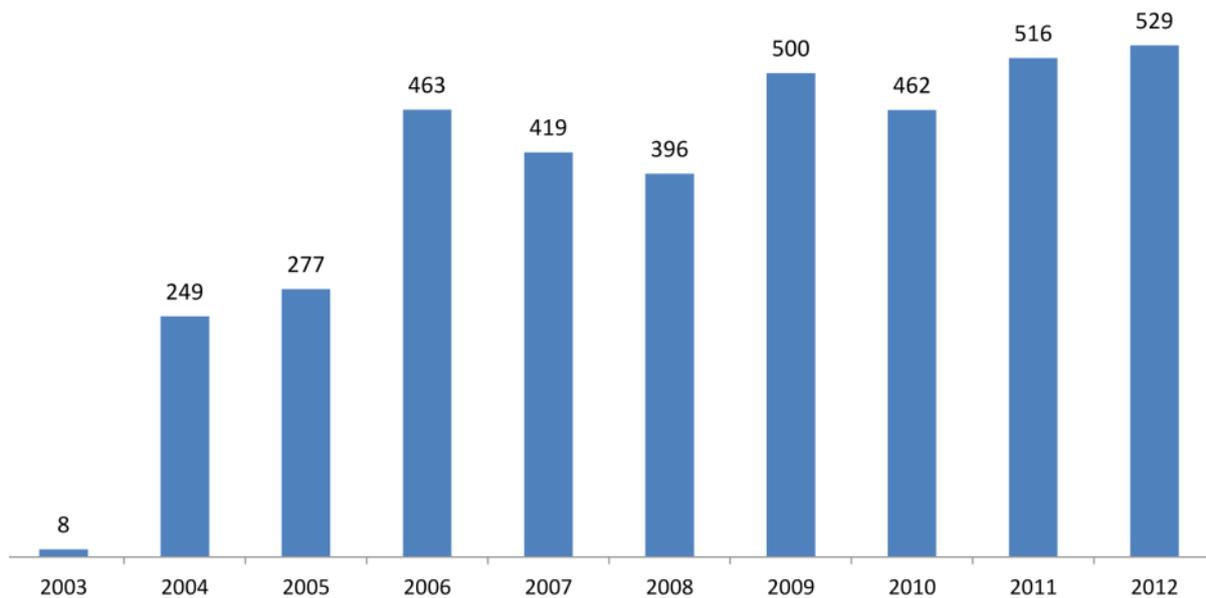
Source: PAADATA, Ministry of Social Development and Ministry of Agrarian Development (Brazil 2013).



<sup>3</sup> Figures in current terms.

**Figure 2. PAA Programme Purchase Quantities (in thousand tons).**

Source: PAADATA, Ministry of Social Development and Ministry of Agrarian Development (Brazil 2013).



gramme has a Steering Group, which is composed of the Ministries of Social Development (chair); Agrarian Development; Agriculture, Livestock and Supply; Planning, Budget and Management; Finance; and Education. This Steering Group discusses the guidelines and rules of the programme in general, including criteria for prioritizing target groups and improvements in the operationalization at all levels.

The PAA programme also has broad civil society participation, for instance, through the Food and Nutrition Security Councils (*Conselhos de Segurança Alimentar e Nutricional* – CONSEA) at national, state and municipal levels. Currently, all states have a Food and Nutrition Security Council but all municipalities do not. In the absence of an FNS Council, other social participation mechanisms must be in place, such as Sustainable Rural Development Councils or Social Services Councils (according to Decree 7.775 of 2012) (Brazil 2012). These are responsible for defining priorities and monitoring the implementation of PAA at regional and local levels.

There is good collaboration of the PAA programme with the National School Meal Programme (*Programa Nacional de Alimentação Escolar* – PNAE). According to Law 11.947 of 2009 (Brazil 2009), at least 30% of the school meal budget must be used for the purchase of local products from family farmers. This promotes market expansion for family farmers, better access to nutritious foods for children and increased availability of traditional and local foods in school menus. This helps to replace processed

foods that previously constituted the majority of school food purchases (in 2006, 41% of the weekly school menus in the country did not contain one single portion of fruit and 16% did not offer vegetables of any kind) (Peixinho 2013).

## Results and lessons learnt

The programme celebrated its tenth anniversary in 2013 and has been recognized for promoting systemic change through the alignment of food production, distribution and consumption and the joint engagement of multiple sectors such as agriculture, health, education and social assistance. It also has a strong interface with equity and social protection programmes and policies and contributes to the promotion and realization of the right to food (Carvalho and Rocha 2013).

Programme monitoring data from 2012 indicated that 19 681 social assistance institutions received food from the PAA. The foods produced are predominantly fresh fruits and vegetables: in 2012, 32% and 24% of the foods purchased for subsequent donation were fresh vegetables and fruits, respectively. The 2161 participating institutions and the more than 121 000 small-scale farmers participating in PAA have sold healthy and fresh food benefiting approximately 16 million people (CONAB 2012).

A recent evaluation conducted at the municipal level (Hespanhol 2013) indicated that smallholders are interested in and engaged with the programme, yet programme coverage needs to be increased. Farmers also

reported that the programme gives them a sense of giving back to the community to which they belong, and so they feel that their work is relevant and recognized by the community. This evaluation also indicated that the programme contributes to increased product diversification, to increased food production for local consumption and to promotion of local and traditional foods (see example of the city of Viçosa, Box 1).

Looking downstream in the food value chains, managers of beneficiary institutions indicated that the engagement with the programme is valuable, as it has contributed to lowering the institutions' expenditure on food products (see Box 1) while facilitating the purchase of fresh foods and increasing the dietary diversity of meals served (Hespanhol 2013).

## Current challenges and perspectives

One of the biggest challenges of the programme is to increase its coverage and to strengthen its monitoring and evaluation system. A study by Saraiva et al. (2013) on the purchase of school meals through PAA indicated that one year after the start of mandatory 30% purchases from family farmers for school meals (in 2010) only 47% of municipalities were able to fulfil the requirements. On average, they purchased only 23% of products from family farmers. Even though the amounts purchased have risen since then, there is a need to continue to support family farmers in order to respond adequately to the demand created by the school meal programme. With regard to organic food production, no national data are available, but a study by Silva and Sousa (2013) conducted in the

state of Santa Catarina indicated that in 2010 only 18% of its municipalities purchased organic foods from family farmers. This is an indication that efforts to stimulate organic food production also need to continue.

As the Brazilian food environment is rapidly changing, there is a need to further discuss, closely monitor and re-evaluate food production systems. Issues such as how to better adapt to different regional realities and to climate change, how to participate in new markets and how to encourage innovation in supply chains so that they promote the right to food and food sovereignty and reduce the layers of intermediaries from producer to consumer need to stay on the PAA agenda. In light of these concerns the initial focus of the PAA programme on increasing food production is now shifting to ensure that the foods produced effectively contribute to healthier diets for the population. An important challenge currently being addressed by PAA is to improve the dietary quality of the menus in the institutions, adapting them to the nutritional needs of specific groups (for example, the elderly, children and persons with disabilities, patients with different health conditions and at different stages of the life cycle). Despite the increasing variety of food items purchased through the programme, there is still a need to educate and support both smallholder farmers and consumers: PAA can effectively contribute to re-shaping the food system so that what is produced responds in a sustainable way to consumer demands, following the national dietary guidelines. Nutrition education is a key strategy to overcome this challenge.

The experience with PAA shows that it is possible to engage stakeholders from different sectors to promote

### Box 1. Good practice example on PAA Institutional Purchase: the experience of the city of Viçosa

Viçosa is a municipality with approximately 25 000 inhabitants, situated in the state of Alagoas, in the northeast of Brazil. In 2013, the city was the first to implement the new PAA modality of institutional purchases, allowing public institutions (such as hospitals and health care centers) to buy directly from local family farmers without a formal bidding process. In practice, this means that the City Council is partly supplying local social services by using part of its budget for purchases through PAA. Food purchased through PAA is delivered to, for example, the Municipal Guard and the Municipal Hospital, as well as to projects of the Center of Reference for Social Assistance and the Programme for Eradication of Child Labour.

Thanks to the PAA food purchases, a 30% reduction in budget expenditure on food was noted in 2013 compared to previous years. The PAA facilitated increased access to a healthier diet for the consumers with 30 different fresh and local products even while respecting cultural traditions. The list of foods purchased in Viçosa includes yam, a staple food frequently consumed in the region, which is now included in the menus of hospitals, schools and nurseries. Specifically for the Municipal Hospital, there are over 20 fresh food items delivered weekly through PAA, and the hospital's menu now includes local fruits and vegetables, such as guava, papaya, passion fruit, watermelon, kale, cabbage, tomato, cassava and squash.

better and fairer food systems, to facilitate the interaction between local producers and consumers and shorten the supply chain, and ultimately to ensure that the right to food is fulfilled for all.

## References

- Brazil (2003) Law 10.696, of 2 July 2003. (online) [http://www.planalto.gov.br/ccivil\\_03/leis/2003/l10.696.htm](http://www.planalto.gov.br/ccivil_03/leis/2003/l10.696.htm)
- Brazil (2009) Law 11.947, of 16 June 2009. (online) [http://www.planalto.gov.br/ccivil\\_03/\\_ato2007-2010/2009/lei/l11947.htm](http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/lei/l11947.htm)
- Brazil (2011) Law 12.512, of 14 October 2011. (online) [http://www.planalto.gov.br/ccivil\\_03/\\_ato2011-2014/2011/Lei/L12512.htm](http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2011/Lei/L12512.htm)
- Brazil (2012) Decree 7.775, of 4 July 2012. (online) <http://www2.camara.leg.br/legin/fed/decret/2012/decreto-7775-4-julho-2012-613520-normaatualizada-pe.html>
- Brazil (2013) *PAAData*. Ministério do Desenvolvimento Social e Combate à Fome, Ministério do Desenvolvimento Agrário: Brasília. (online) [http://aplicacoes.mds.gov.br/sagi/paa/visi\\_paa\\_geral/pg\\_principal.php?url=abertura](http://aplicacoes.mds.gov.br/sagi/paa/visi_paa_geral/pg_principal.php?url=abertura)
- Carvalho LRT and Rocha DG (2013) The Food Purchase Program: the bioethics' lens on food security. *Revista Bioética*, 21(2), pp.278–290.
- CONAB (2012) *CPR-Doação 2012*. Companhia Nacional de Abastecimento, Diretoria de Política Agrícola e Informacoes, Superintendencia de Suporte a Agricultura Familiar, Gerencia de Acompanhamento e Controle das Acoes da Agricultura Familiar: Brasília.
- CONSEA (2010) *A Segurança Alimentar e Nutricional e o Direito Humano à Alimentação Adequada no Brasil*. Indicadores e Monitoramento da Constituição de 1988 aos dias atuais. Conselho Nacional de Segurança Alimentar e Nutricional: Brasília.
- Hespanhol RAM (2013) Programa de Aquisição de Alimentos (Brazil): limits and potentialities of food safety policies for family agriculture. *Sociedade & Natureza*, 25 (3), pp. 469–483.
- MDA (2012) *Plano Safra 2012 – 2013*. Ministério do Desenvolvimento Agrário: Brasília. (online) [http://portal.mda.gov.br/plano-safra/arquivos/view/Cartilha\\_Plano\\_Safra.pdf](http://portal.mda.gov.br/plano-safra/arquivos/view/Cartilha_Plano_Safra.pdf)
- Peixinho AML (2013) The trajectory of the Brazilian School Nutrition Program between 2003 and 2010: report of the national manager. *Ciência e Saúde Coletiva*, 18(4) pp. 909–916 .
- Saraiva EB et al. (2013) Panorama of purchasing food products from family farmers for the Brazilian School Nutrition Program. *Ciência & Saúde Coletiva*, 18(4), pp. 927–935.
- Silva APF, Sousa AA (2013) Organic foods from family farms in the National School Food Program in the State of Santa Catarina, Brazil. *Revista de Nutrição*, 26(6), pp. 701–714.

## UNSCN Nutrition and Noncommunicable Diseases eGroup (NutNCD)

Noncommunicable diseases (NCDs) and nutrition are closely linked; underweight, overweight and obesity are having a direct impact on the global rise in NCDs. While undernutrition kills in early life, it can also lead to increased risk of NCDs and death later in life.

The Nutrition and NCDs eGroup is a [virtual space](#) dedicated to sharing ideas, knowledge and experience on how to make nutrition considerations more central to NCD action on the ground. Of special concern is the double burden of malnutrition in low- and middle-income countries. We hope this e-discussion forum can contribute to building programming and policy development capacities of various groups of stakeholders in these countries and globally.

The objectives of the Nutrition & NCDs discussion are:

- to raise awareness on the importance of nutrition for combating noncommunicable diseases (NCDs);
- to call for action to scale up nutrition and jointly tackle undernutrition and obesity and diet-related chronic diseases in low- and middle-income countries; and
- to contribute to building programming and policy development capacities of various groups of stakeholders globally.



The NutNCD eGroup presents you the opportunity to engage in online discussions, share knowledge and experiences by participating in active ongoing dialogues in the global fight against NCDs.

To join the NutNCD eGroup, click [here](#).

# Nutrition in agriculture: a short history of the role of the UNSCN in advocacy, research and convening power

**Richard Longhurst**

Research Associate, Institute of Development Studies, University of Sussex, Brighton, United Kingdom  
Email: [r.longhurst@ids.ac.uk](mailto:r.longhurst@ids.ac.uk)

*Author statement: The author declared not having any conflict of interest.*

## Introduction

The current interest in the role of agriculture in improving nutrition at the levels of the family and preschool child is welcome and exciting. In addition to the substantial research and programming interest, the [International Conference on Nutrition \(ICN2\)](#) is a very strong commitment by the international community to find solutions to improving child and family nutrition through agriculture and food systems.

By its nature, the United Nations System Standing Committee on Nutrition (UNSCN) space has supported issues which require a long gestation. Importantly, it has provided a forum for different disciplines to address the multi-sectoral nature of nutrition operations and no less so in addressing nutrition in agriculture. As a coordinating body of UN agencies that have differing mandates, the UNSCN has played a key role in keeping this important interaction between nutrition and agriculture as part of the international discussion. This paper takes a historical perspective in highlighting this role and argues that the UNSCN can and should continue to play such a role now and in the future.

Solving problems of under- and overnutrition requires long-term commitment independent of short-term political and financing approaches. The UNSCN and its Secretariat have a long-term role in advancing nutrition in agriculture through convening its member agencies and adding value to the operations of individual agencies. However, it has often been only as effective as its member agencies allow it to be, and its own mandate of harmonising

activities has not functioned fully.

Nevertheless, the UNSCN has been effective at being an incubator for new ideas, which are then spun off into large institutions, and also in supporting “slow burners”, by sticking with issues that are clearly important but appear to get little attention elsewhere (Longhurst 2010). It also covers the gaps in those multisectoral nutrition issues that require a long timeframe for resolution in terms of modus operandi, and which may move in and out of the limelight generated by the mandates of other agencies. Nutrition-sensitive agriculture is a good example. The future role of the UNSCN should continue as a convening point for nutrition issues that cover the mandates of several member agencies and draw on research developments from the broader nutrition world. The evolving interest in food systems goes well beyond the mandate of any one of the UNSCN’s members.

## Nutrition-sensitive agriculture

Across the board, the attention paid to nutrition-in-agriculture in individual agencies has waxed and waned, but the UNSCN, through its annual meetings and publications, has ensured that good practices are recorded (see for example Gillespie and Mason 1991 and earlier publications such as Holmboe-Ottesen et al. 1989 and Jennings et al. 1990), and the issue has an agency-neutral forum where it can be debated and follow-up action taken.<sup>1</sup>

In the early 1970s, international nutrition hit a peak in terms of attention, as shown by the MIT Conference on Nutrition and National Development in September 1971

---

<sup>1</sup> But before the UNSCN and the UN itself, this topic was on the policy agenda. The UN’s predecessor, the League of Nations, and the predecessor of the FAO/WHO Joint Expert Committee on Nutrition, the Mixed Committee on the Relation of Nutrition to Health, Agriculture and Economic Policy reported over 75 years ago (League of Nations 1937) about the need to take a multisectoral approach (the reason for the “Mixed Committee”), highlighting access to food as a major issue, including insufficient purchasing power and the imperfect distribution of resources.

(Berg, Scrimshaw and Call 1973), the interest of the World Bank in investing in nutrition projects in 1972–73, and with the World Bank also joining FAO, WHO and UNICEF on the UN coordinating agency of the day, the Protein Advisory group (PAG). The World Food Conference which followed in 1974 kept hunger and nutrition on the international agenda.

In its early years, the UNSCN did most to push the nutrition–in–agriculture agenda by supporting research. Within four years of formation, at its 7th Session in Rome (in March 1981), the UNSCN hosted a Symposium on Introducing Nutrition into Agricultural and Rural Development Projects. This Symposium included seven papers, four of which were published in the *UNU Food and Nutrition Bulletin* (Pinstrup-Andersen 1981 and 1982).<sup>2</sup> The UNSCN formed a special Working Group on Nutrition in Agriculture and Rural Development, with active support from the United States Agency for International Development (USAID). The programme of the working group was the preparation of relevant bibliographies, development of guidelines on data needs for assessing nutritional impact, development of a training curriculum and compilation of experience on food consumption effects of agricultural projects, among other things.

In terms of UNSCN output, there was follow-up by Paul Lunven of FAO at the UNSCN 8th Session in Bangkok in February 1982 (Lunven 1982) on the nutritional consequences of agricultural and rural development projects. At this time, FAO was engaged in developing methodologies for integrating nutrition into agricultural and rural development projects, backed up with case studies (FAO 1982, 1984, Longhurst 1983, Longhurst, 1986).

In 1985, Moise Mensah, Assistant President of the International Fund for Agricultural Development (IFAD), was appointed Chair of the UNSCN. Prior to that, his influence gave support to the UNSCN's convening power with the workshop held in Castel Gandolfo (Italy) in February 1983 (IFAD 1983). This workshop was the culmination of the reviews and field studies carried out by UNSCN members. The workshop was convened to clarify the concepts and methodologies concerned with the nutritional effects of agricultural and rural development projects.

At this time cooperation was close between the Rome-based agriculture agencies (FAO, IFAD and WFP), and the project funders (African Development Bank, Asian Development Bank, USAID and the World Bank) on nutrition. A reading of the documents of this era shows that many of the issues and modalities raised now about the role of nutrition in agriculture were well appreciated at that time (see the summary of the proceedings of the Caste Gandolfo meeting, Muscat 1983). These included: (i) the focus on food production among selective target groups; (ii) the need for a “do no harm” approach, whereby deleterious effects on the very poorest and therefore nutritionally most vulnerable should be considered (this aspect had a high profile); (iii) taking women's time allocation and control over resources into better account; (iv) the problems of accurately measuring energy and protein intake; (v) whether to offset negative impacts of projects with nutritional add-ons (e.g. garden plots); and (vi) data needs for assessment of nutritional impact.

When there are important research findings to promote, the UNSCN's convening power to support agencies to collaborate is at its strongest: through its annual meetings, research findings were discussed by the widest possible range of stakeholders from the nutrition community (NGOS, donors, academics). It is similarly the case with advocacy, and the UNSCN's publication outlets, especially *SCN News*, are widely read across the community. The respondents to an evaluation of the SCN (Longhurst 2007) and the *SCN History* (Longhurst 2010) stated that UNSCN annual meetings and its publications were the most useful to them, especially emphasized by those respondents working in countries with small travel budgets and other severe limits on resources.

Interest was high then among the UN agencies and some donors, but it was hard to sell nutrition to investment funding agencies involved in agriculture, such as development banks. There was usually one highly committed focal point, who tried to convince colleagues in the funding agencies that their projects should take nutrition into account, but it was always an uphill struggle for them. Nutrition–in–agriculture advocates in the normative and advisory agencies had to work with a barrier of matching mandates. There were several reasons: a matter of incen-

<sup>2</sup> Browsing the issues of the *UNU Food and Nutrition Bulletin*, from its inception in 1978 until 1990, shows that the number of articles on agriculture and nutrition in this journal were substantial in the first half of this period and then tailed off towards the end of the 1980s. Admittedly, while not a very strong indicator, it does show how the interest in the topic for researchers and practitioners waned at this time. Also significant in this rapid review (and from other evidence as well) is the rise of IFPRI as a research organization in this area.

tives at both personal and institutional levels, trying to make a clear case in terms of how nutrition will be incorporated and how it might modify project design in the funding agency. At a time when quantitative project appraisal techniques (such as cost-benefit and rate of return analysis) were being developed and taken seriously, rolling nutrition outputs into the analysis was not feasible. Nutritionists could have also better appreciated funding agency approaches, among other things with a more supportive approach to the likely nutritional impact of cash crops (for a discussion of the issues, see UNSCN 1989).

At the time of the first International Conference on Nutrition (ICN) in 1992, the UNSCN's role was controversial as it was excluded (together with UNICEF) from any role in planning the conference (Longhurst 2010). But behind the scenes it still took on many significant tasks, including providing key data sources, the UNSCN state-of-the-art reviews and authorship of a theme paper. Nutrition was incorporated into food security rather than food systems, which would have required greater interagency collaboration (FAO/WHO, 1992a and 1992c). Some good work was done at the ICN on incorporating nutrition objectives into development policy (FAO/WHO 1992b). The difficulty of integrating issues of under- and overnutrition were apparent, and this was an area that might have been resolved within the UNSCN forum. But this is speculation.

FAO placed a strong emphasis in its own work on food safety and consumer protection, therefore momentum was lost with the UNSCN and its members to go forward on nutrition-in-agriculture work. In addition, through the 1990s the importance of agriculture was de-emphasized by major development agencies, and the role of nutrition was also given low priority within agencies.

In 2000, the UNSCN convened work on nutrition and agriculture through another research window. This was to coincide with the role of biotechnology and its links with nutrition. Genetic modification was a reality, and a controversial one in some countries. It was proposed that plant breeding, especially to increase the micronutrient density of staple grains, provided opportunities to alleviate undernutrition. Therefore, the SCN News 20 published in July 2000 had the theme of *Nutrition in Agriculture* (UNSCN 2000). This issue addressed the interrelationship among GMO (genetically modified organisms), nutrition and agriculture and brought together a variety of viewpoints on GM technology and food production and storage, perspectives on international agricultural research

(Haddad 2000), and GM crop concerns and safety mechanisms. Interwoven into these articles are the broad issues of right to food, inequities of the world food system and the multifunctional nature of world trade (Longhurst 2010).

## Up to the current day

The extent of current high levels of activity in nutrition-sensitive agriculture and food systems are well-documented elsewhere, and global interest in food and nutrition by the World Bank, the Scaling Up Nutrition (SUN) Movement, many national governments and several key donors has revived over the last five years. In particular SUN is the major manifestation of the revived interest in nutrition, being a movement that supports countries and its national leaders to prioritize and improve nutrition. The [SUN Movement strategy paper](#) highlights a twin-track approach with nutrition-specific and nutrition-sensitive interventions.

There is far greater understanding of the complexity of the linkages between agricultural outcomes and impact on child nutrition (e.g. World Bank 2007, Masset, Haddad, Cornelius and Isaza-Catro 2011, Herforth, Jones and Pinstrup-Andersen 2012, Haddad 2013, FAO 2013a). This has also been addressed in the recent *Lancet Series* (Pinstrup-Andersen 2013, Ruel et al. 2013). The complex linkages give an indication of the difficulty nutrition-in-agriculture advocates and researchers had in being accepted 20 years before, and one reason why UNSCN supported work could not be sustained. More attention has to be given to women's empowerment (but see Holmboe-Ottesen et al. 1989 for an early review). There is now much stronger momentum and donor funding than in the past, after many years of nutrition being off the development radar.

There is also a developing consensus as to how the outcomes of under- and overnutrition can be better integrated (Hawkes and Ruel 2006) and on the potential for involving the private sector through the concept of value chains (Hawkes and Ruel 2011). There is considerable work going on to better illuminate the links between health and agriculture within a developing global food and nutrition security framework (FAO 2013b), also building on earlier work (Lipton and deKadt 1988). One response of the UNSCN to the situation of greater complexity than was previously appreciated was its hosting of the [Meeting of the Minds on Nutrition Impact of Food Sys-](#)

[tems](#) (UNSCN 2013) in March 2013, as a preparatory session for ICN2. This provided a neutral space where professionals from many different disciplines (nutrition, agriculture, food, health, trade, economics, environment and sanitation) could debate.

FAO is now embracing nutrition-sensitive agriculture more strongly across its organization than it has in the past. In terms of written output, Chapter Four in the [UN-SCN 6th Report on the World Nutrition Situation](#) (2010) was on Sustainable Food and Nutrition Security and written by a team from FAO. *The State of Food and Agriculture for 2013* (FAO 2013b) makes the case that good nutrition begins with food and agriculture. More attention is being paid to what is in effect the title of this SCN News: *Changing food systems for better nutrition*. As food systems around the world are diverse and changing rapidly, they have become more industrial, commercial and global, advancing processes of productivity growth, economic development and social transformation.

The UNSCN is a member of the Advisory Group on the Committee on World Food Security (CFS) to ensure that nutrition is considered in all deliberations of the committee. The UNSCN is expected to act as a strong advocate and a connector to ensure food security and nutrition constituencies collaborate and move forward jointly. It is cofacilitator, with REACH (Renewed Efforts against Child Hunger and Undernutrition),<sup>3</sup> of the UN Scaling Up Nutrition Network. Being a force at other global meetings may compensate for the lack of the UNSCN annual meetings that were discontinued a few years ago.

## Summing up about the role of the UNSCN

The UNSCN is well-suited to take on an ABC role: advocate, broker and catalyst in the work on nutrition-in-agriculture. These multiple roles are essential and illustrate that the UNSCN can do what individual agencies cannot do, which is work across a range of organizations and institutional mandates. This is a vital capability for promoting action on the topic of nutrition in agriculture and food systems.

Fulfilling these roles has been hard work over the last 30 years because of the complexities of how agriculture influences nutrition and health and because of the structure of mandates of institutions dealing with the issue.

Yet it has managed to make a difference, particularly in keeping the flag flying for nutrition and agriculture, even when others were not interested. Some of the earlier work that the UNSCN convened provided a very strong foundation for what is happening today, when intensive attention has been turned to how agriculture and food systems can contribute to better nutrition outcomes. Of course, at the same time, as the UNSCN is the sum of its parts, its success depends on the UN agencies working together, and at times this could have been more effective. It has also required some of the bilateral donors to get more enthused about agriculture, and attention to this has been uneven. Some of the recent literature (Gillespie et al. 2013) has focused on this need to clarify institutional complexities, to monitor data as an advocacy tool and to realign incentives. The UNSCN could be involved as a convening force, as the issue of nutrition-in-agriculture requires a wide range of actors.

Some of the ambitious research that is showing the linkages between agriculture and health has been beyond the reach of sponsorship by the UNSCN, as its weak funding situation over the last ten years has reduced its effectiveness. However, good research properly integrated into sensible policy advice is something that endures, to be reached for when the political opportunities arise, and can be a useful advocacy tool. Reaching consensus is messy and hard work, but as the only normative, consensus-seeking body in nutrition, the UNSCN is a structure able to take on these roles.

## References

Berg A, Scrimshaw N, Call D (eds) (1973) *Nutrition, National Development and Planning*. MIT Press: Cambridge.

FAO (1982) *Integrating Nutrition into Agricultural and Rural Development Projects: A Manual*. Nutrition in Agriculture No 1. Food and Agriculture Organization of the United Nations: Rome.

FAO (1984) *Integrating Nutrition into Agricultural and Rural Development Projects: Six Case Studies*. Nutrition in Agriculture No 2. Food and Agriculture Organization of the United Nations: Rome.

FAO and WHO (1992a) *Improving household food security*. International Conference on Nutrition Theme Paper no 1. PREPCOM/ICN/92/INF/6: Geneva.

FAO and WHO (1992b) *Incorporation of nutrition objectives into development policies and programmes*. International Conference on Nutrition Theme Paper no 8. PREPCOM/ICN/92/INF/13: Geneva.

FAO and WHO (1992c) *Nutrition and Development – a global assess-*

<sup>3</sup> [REACH](#) is supported by FAO, UNICEF, WFP and WHO, with IFAD in an advisory role.

- ment. International Conference on Nutrition: Rome.
- FAO (2013a) *Synthesis of Guiding Principles on Agriculture Programming for Nutrition*. Food and Agriculture Organization of the United Nations: Rome.
- FAO (2013b) *The State of Food and Agriculture: Food Systems for Better Nutrition*. Food and Agriculture Organization of the United Nations: Rome.
- Gillespie S, Mason J (1991) *Nutrition Relevant Actions: Some experiences from the Eighties and lessons for the Nineties*. Nutrition Policy Discussion Paper No 10. SCN: Geneva.
- Gillespie S, Haddad L, Mannar V, Menon P, Nisbett N (2013) The politics of reducing malnutrition: building commitment and accelerating progress. *The Lancet*, 382(9892), pp 552–569.
- Haddad L (2000) Improving Human Nutrition through Agriculture: The Role of International Agricultural Research. *SCN News*, 20, pp. 12–16.
- Haddad L (2013) From Nutrition Plus to Nutrition Driven: How to realise the elusive potential of agriculture for nutrition? *Food and Nutrition Bulletin*, 34, 1, pp. 39–44
- Hawkes C, Ruel M (eds) (2006) *Understanding the Links between Agriculture and Health*. IFPRI 2020 Focus 13. IFPRI: Washington, DC.
- Hawkes C, M Ruel (2011) *Value Chains for Nutrition*. 2020 Conference 4. IFPRI: Washington, DC.
- Herforth A, Jones A, Pinstrup-Andersen P (2012) *Prioritizing Nutrition in Agriculture and Rural Development*. HNP Discussion Paper, World Bank: Washington., DC
- Holmboe-Ottesen G, Mascarenhas O, Wandel M (1989) *Women's Role in Food Chain Activities and the Implications for Nutrition*. SCN Nutrition Policy Discussion No .4. SCN: Geneva.
- IFAD (1983) *Nutritional Impact of Agricultural Projects*. Papers and Proceedings of a Workshop held by the UN Inter-Agency Sub-Committee on Nutrition. IFAD: Rome.
- Jennings J, Gillespie S, Mason J, Lofti M, Scialfa T (1990) *Managing Successful Nutrition programmes*. SCN State of the Art Paper No. 8. SCN: Geneva.
- League of Nations (1937) *Mixed Committee on the Problem of Nutrition*. Final Report on the Relation of Nutrition to Health, Agriculture and Economic Policy. League of Nations: Geneva.
- Lipton M, deKadt E (1988) *Agriculture-Health Linkages*. World Health Organization: Geneva.
- Longhurst R (1983) *Integrating Nutrition into Agricultural and Rural Development Projects: An application of the FAO Methodology*. International Fund for Agricultural Development: Rome. pp. 73–89.
- Longhurst R (1986) Agricultural Strategies, Food and Nutrition: Issues and Opportunities. *Nutrition and Health* 4 (2), pp. 83–94.
- Longhurst R (2007) *Evaluation of the Performance of the SCN, 2004-2007*. United Nations System Standing Committee on Nutrition: Geneva.
- Longhurst R (2010) *Global Leadership for Nutrition: The UN Standing Committee on Nutrition (SCN) and its Contributions*. IDS Discussion Paper No 39. IDS: Brighton, UK.
- Lunven P (1982) The nutritional consequences of agricultural and rural development projects. *Food and Nutrition Bulletin* (4) 3, pp. 17–22.
- Masset E, Haddad L, Cornelius A, Isaza-Castro J (2011) *A Systematic Review of agricultural interventions that aim to improve nutritional status of children*. University of London: London.
- Muscat R (1983) Introduction. In *IFAD Nutritional Impact of Agricultural Projects*. Proceedings of a Workshop held by the UN Inter-Agency Sub-Committee on Nutrition. IFAD: Rome.
- Pinstrup-Andersen P (1981) *Nutritional Consequences of Agricultural Projects: Conceptual Relationships and Assessment Approaches*. World Bank Staff Working Paper no 456. World Bank: Washington, DC.
- Pinstrup-Andersen P (1982) Introducing nutritional considerations into agriculture and rural development. *Food and Nutrition Bulletin* (4) 2, pp. 33–41.
- Pinstrup-Andersen P (2013) Nutrition-sensitive food systems: from rhetoric to action. *The Lancet*, June 6, pp. 9–10.
- Ruel MT, Alderman H, the Maternal and Child Nutrition Study Group (2013) Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382:9891, pp. 536–551.
- UNSCN (1989) *Does Cash Copping Affect Nutrition?* SCN News 3. SCN: Geneva
- UNSCN (2000) *Nutrition and Agriculture* SCN News 20. SCN: Geneva.
- UNSCN (2010) *Progress in Nutrition: 6th report on the world nutrition situation*. SCN: Geneva.
- UNSCN (2013) *Meeting of the Minds on Nutrition Impact of Food Systems*. SCN: Geneva.
- World Bank (2007) *From agriculture to nutrition: pathways, synergies and outcomes*. World Bank: Washington, DC.

### Are you interested in nutrition and sustainability?

The UNSCN organized the seminar *Nutrition and Sustainability: A long-term vision for effective strategies* on 12 November 2013, at FAO headquarters in Rome, Italy, prior to the Preparatory Technical Meeting for the [Second International Conference on Nutrition \(ICN2\)](#).

The [summary report](#) of the seminar and [speaker presentations](#) are available online, and you can also watch online the recording of the seminar in [English](#), [French](#), [Spanish](#) and [Portuguese](#).

## Voices from the field: Ghana

Thahira Shireen Mustafa<sup>1</sup> and Lina Mahy<sup>1§</sup>

<sup>1</sup> United Nations System Standing Committee on Nutrition Secretariat, Geneva, Switzerland

§ Corresponding author. Email: [mahyl@who.int](mailto:mahyl@who.int)



Interview with **Paulina Addy**, Deputy Director, Ministry of Agriculture, Women in Agriculture and Development

Email: [addypolly@yahoo.com](mailto:addypolly@yahoo.com)

*UNSCN: Do you think that in Ghana agriculture is contributing to improve nutrition for all, especially infants and young children, adolescents and women?*

**Addy:** Yes, it certainly is contributing very much to nutrition. I strongly believe that sound and optimal nutrition hinges on good food supply. Agriculture is to promote food supply to the public, and so the Ministry of Food and Agriculture is heading in that direction and promoting nutrition. Our food and agriculture policy is currently being reviewed to enhance nutrition. Nutrition is a growing path, and we are addressing nutrition under food security, as well as emergency preparedness. To tackle undernutrition, we basically promote production and consumption of nutritious food for the population; and in collaboration with research, we promote biofortified foods as well. We also link with other departments, ministries and agencies for advocacy and collaboration. In collaboration with the Department of Nutrition of the Ghana Health Services, we developed the National Nutrition Policy, which will soon take effect. And together with the Food and Drugs Authority of the Ministry of Health we also contributed to the National Food Safety Policy. We believe that we can have foods in abundance, but it is not just the quantity that matters but the quality is very important as well. And this is reflected in our Public Health Act of 2012.

*UNSCN: What are the factors that have enabled this contribution of agriculture to nutrition in Ghana, and through which pathways?*

**Addy:** We adopt a multisectoral approach. We were recently part of the nutrition component of the Comprehensive Africa Agriculture Development Programme (CAADP) meeting in Dakar, and we had to come up with an in-country work plan. We have various directorates within the agriculture sector, such as crops, livestock, fisheries, statistics and others. Although fisheries are no longer a part of the Ministry of Agriculture, we do not exclude them because they contribute to the protein component. And, of course, the Irrigation Development Authority is also a part of the Ministry. We need water to grow basic things like fruits and vegetables. We collaborate with the Canadian International Development Agency (formerly CIDA, now DFATD), FAO, WFP and I can go on naming partners. We are trying to strengthen nutrition linkages within agriculture and we recently conducted a study entitled *Strengthening Nutrition–Agriculture Linkages: a case of the Ministry of Food and Agriculture in Ghana*. The draft report is available, but we are still framing it further and we will soon have a stakeholder meeting to validate the results.

*UNSCN: Can you please illustrate the agriculture–nutrition linkages, with examples?*

**Addy:** Our *Statistics Unit Report* does not pick some of the nutrition indicators, but things are changing now and we had a pilot for data collection on dietary diversity. People select their own foods from what is available and that is one of the key indicators for agriculture. It shows what

**“Agriculture is to promote food supply to the public; the Ministry is heading in that direction and promoting nutrition”**

people are eating, and we can use that as a proxy for determining nutritional status or to assess reasons as to why there is a particular problem in an area.

***“Statistics on nutrient-dense, locally produced foods can help us focus on them”***

***UNSCN: Do you think agriculture is contributing in a negative manner or causing damage to nutrition?***

**Addy:** Our advertisements and publicity have not helped us to any extent. So many things are being promoted on television which are not nutritionally superior to some of the local foods we have. From an agricultural point of view, I cannot foresee anything in a negative way for now. However, I think that our data collection can help us focus on some of our nutrient-dense, locally produced foods, and then pick statistics on the production of these. In every country, the major food commodities are tracked before others are added on. So, in our annual facts and figures, you would not see the production of green leafy vegetables and other similar products, for example. I think we need to revise that.

***UNSCN: There is a lot of discussion now at the global and country level about nutrition-sensitive agriculture and food systems. Are you familiar with the term? Is it used often in Ghana by those who are working on nutrition, food and agriculture?***

**Addy:** Yes, absolutely, and we try to educate our colleagues. Although there are key activities undertaken in other Directorates to address some nutrition issues, it is not apparent to some of our colleagues that they are working to support nutrition. For instance, when we brought on board the Irrigation Development Authority, they did not see their role in nutrition, but when we explained to them that providing all-year-round water favours irrigation of vegetables and early maturing fruits such as melons, they could see it. These interactions helped them understand their part and built their interest in the food-based approaches to nutrition. Unlike curative interventions in the health sector, we in agriculture promote *food* to also promote health and prevent diseases, malnutrition and food insecurity.

***UNSCN: What kind of opportunities do you see to help agriculture and food systems work more effectively to improve nutrition, in other words, to become more nutrition sensitive?***

**Addy:** I went out to the field a couple of weeks ago and we were very happy with some of the activities undertaken in the near arid areas of the country, where they are producing bananas and even palm oil. The Ministry has provided women with fencing material for dry-season gardening, to keep the cattle away and to prevent the destruction of crops. I was really happy that men are now tending to some of the issues that we brought up. From the research point of view, I would say that the introduction of orange-fleshed sweet potato (OFSP) has helped, and we have done some work to promote its consumption. But we want to use our local systems for the production of OFSP. As dietary patterns are very dynamic, we need to innovate. With more demand for convenience foods, we are looking at equipment that could help us do similar things, also meeting the preferences of the population.

***UNSCN: What are the obstacles that prevent agriculture from leading to positive nutrition outcomes in Ghana? Can you please give a concrete example?***

**Addy:** It is all about awareness and capacity. In the Ministry of Agriculture, the new employees come with a basic educational degree in agriculture, and they may not have nutrition in mind. But we need to fill this gap with nutrition awareness. We keep talking about the entire length of the value chain, from production, processing, marketing and consumption; nutrition is at the consumption level. So, within the agriculture sector or in the Ministry of Agriculture we need to have nutritionists who will have the passion to promote nutrition-sensitive agriculture.

We have been knocking on the doors of our Human Resources Department to provide us with more nutrition-

***“When we brought on board the Irrigation Development Authority, they did not see their role in nutrition, but when we explained to them that providing all-year-round water favours irrigation of vegetables and early maturing fruits such as melons, they could see it”***

ists. Last year, we were joined by two professionals with a background in nutrition. Overall, the nutritionists in the Ministry are very few. FAO had contributed to a study that assessed the nutritional capacity within the Ministry, and the results were very revealing and gave a clear perspective about the reality on the ground. We do not have the people at all. We definitely need to enrich and engage more people in this direction.

**UNSCN:** *What is the impact of developing agriculture on women?*

**Addy:** We do have this issue in hand. We realized that modernizing agriculture with the use of tractors may favour men but leave women behind. So we try to advocate for benefits for women, by setting limits on the proportion of land to be ploughed for men and women, for example. For irrigation, we have a minimum of 30% of land allocation for women. We have observed that women are more concentrated along the processing parts of the value chain. We try to provide them with the equipment that can help them in the process, like nutcrackers, for example.

**UNSCN:** *What are the challenges that need to be addressed for changing food systems?*

**Addy:** I think there needs to be a lot of sensitization. I say that because we have a lot of indigenous foods with high nutritional value that have sustained [us] for generations. We have very little evidence on their potential. We need to invest in research to analyse these locally produced foods and strengthen our knowledge about their nutritional value, so as to promote them accordingly.

**UNSCN:** *From your perspective, what are the nutrition-sensitive efforts and actions in Ghana that have been encouraging?*

**Addy:** I would say that there has been a lot of dialogue and information sharing. We used to work in our small corners, but the interactions and networking have been very beneficial. We are a National Nutrition Platform, now being coordinated by the National Development Planning Commission. Also, being a part of the Scaling Up Nutrition (SUN) Movement has helped us to a large extent. The SUN Country Network teleconferences help us learn from one another.

***“It is all about awareness and capacity. Nutritionists in the Ministry are very few”***

**UNSCN:** *As the Deputy Director of the Ministry, what kind of support would you require to effectively contribute to ensure that agriculture and food systems are nutrition sensitive in Ghana?*

**Addy:** I will request for support in the area of capacity in programming and tracking interventions in nutrition. Study tours to countries that have made progress will also be helpful. Finally, with the decentralization in place, we no longer have control of our staff at the district level. We are now required to provide the district authorities with guidelines to qualify district-level nutritionists. We do not have the qualification guidelines, and we are having a lot of dialogue in this regard. If we do not find a solution, we will lose valuable human resources, and this will also affect our policy outcomes negatively.

**UNSCN:** *From whom do you expect support for lacking resources?*

**Addy:** We always look in-house first, and we look at what our budgetary allocations can cover, what we will be able to do and then seek external assistance. We have had the support of FAO, REACH and other supporting partners in the past and look forward to having more collaboration in the future.

\*\*\*

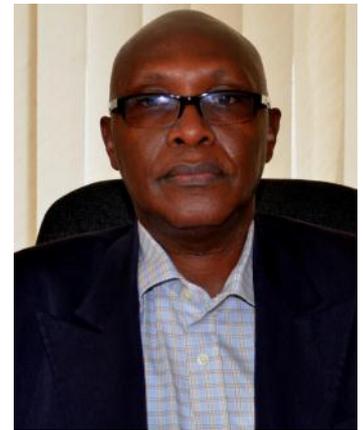
*We extend our thanks to Paulina Addy for taking the time to share her thoughts and opinions with our readers. We also thank Victoria Wise, the REACH facilitator in Ghana, for her coordinating efforts, and Joyce Njoro, Senior Programme Officer at the REACH Secretariat, for facilitating this interview.*

# Voices from the field: Rwanda

Lina Mahy<sup>1§</sup> and Thahira Shireen Mustafa<sup>1</sup>

<sup>1</sup> United Nations System Standing Committee on Nutrition Secretariat, Geneva, Switzerland

§ Corresponding author. Email: [mahyl@who.int](mailto:mahyl@who.int)



Interview with **Raphael Rurangwa**, Director General of Strategic Planning and Programs Coordination, Ministry of Agriculture and Animal Resources

Email: [rrurangwa@minagri.gov.rw](mailto:rrurangwa@minagri.gov.rw)

**UNSCN:** *Do you think that in Rwanda agriculture is contributing to improve nutrition for all, especially infants and young children, adolescents and women? And if you think it does, can you explain how it is contributing? If you think it is not, then why is it not contributing?*

**Rurangwa:** I definitely opt for yes. Agriculture is contributing to improve nutrition for all. How, that is where I am going to be more specific. Through our policy development, we are trying to improve the food security status of all Rwandans. And we are focusing also on the most food insecure households. This can be seen through the different activities that are implemented in the country to support food production systems and make sure that these are reaching even the poorest households.

**UNSCN:** *There is a focus on the very poor families. Do you have any concrete examples of food production systems and which foods are being promoted?*

**Rurangwa:** Yes. We are focussing on very specific groups of people that are food and nutrition insecure. We have national programmes called *One Cow* and *One Cup of Milk Per Child*, which are targeting vulnerable families and also school children having one litre of milk per week. The programmes are having a good impact, as malnutrition levels in school children is reducing. Those are two examples that are showing how the country is committed to nutrition. We have also been developing a kitchen garden system for every household, to supplement nutrition of fami-

lies with food produced from their own garden.

**UNSCN:** *For the One Cup of Milk Per Child programme, school children are targeted. And you mention that malnutrition of school children is reducing, so you must be measuring it with some indicators. I am curious to know: is the Ministry of Agriculture implementing this on its own, or do you liaise with the Ministries of Education and Health? How does that work in Rwanda?*

**Rurangwa:** This is not a ministry programme. It is a country programme. Actually, it is programme that is working through several ministries. The key ministries that are involved in reducing malnutrition are: the Ministry of Local Government (MINALOC), the Ministry of Education (MINEDUC), the Ministry of Health (MINISANTE), the Ministry of Agriculture (MINAGRI), of course, and the Ministry of Gender (MIGEPROF). And all these are connected under the Prime Minister's Office. Actually, malnutrition is not something that can be related to one ministry. Only a national-level policy can address the reduction of malnutrition.

**UNSCN:** *This actually leads me to my next question. There is a lot of discussion now at the global and country levels about nutrition-sensitive agriculture and food systems. Are you familiar with the term? Is it used often in your country by those who are working on nutrition, food and agriculture?*

**“Malnutrition is not something that can be related to one ministry; it is a national level policy that can address the reduction of malnutrition”**

**Rurangwa:** Yes, I am familiar with the terminology. But, of course, I am looking at this with the perspective of someone who is working in the Ministry of Agriculture in developing the different interventions to make agriculture more nutrition sensitive.

**UNSCN:** *With that in mind, what are the challenges you see in Rwanda to have the current agriculture and food systems contribute to improving nutrition? What are the challenges you see in Rwanda to increase the nutrition sensitivity of agriculture?*

**Rurangwa:** We need to teach our families and even ourselves how to have good nutrition from the food that is available in Rwanda. For that we need capacity building at all levels, so that the population knows what is a good diet. I think we also need to define and to provide what you can call a ration, a good ration for the children, pregnant and lactating women, as well as other adults, male and female. For this, we need an institutional setup that can support the Ministry of Agriculture to develop such actions. We have already started by developing a Nutrition Action Plan and in our Five-year Strategic Plan. We are trying to include a strong nutrition chapter so that we opt for not only developing food systems but food systems that include the nutrition aspect.

And the next point will be: how are we going to track this? We have been working with other developing partners, including WFP, to have a baseline survey in food security status and nutritional status, what we call the CFSVA (Comprehensive Food Security and Vulnerability Analysis and Nutrition Survey). This analysis was conducted in 2012. From that we have already started developing a monitoring and evaluation system, to track the level of nutrition for the people that were undernourished at that time. So, every two, three, five years we know the status and see how we are developing and reducing malnutrition. I can assure you that, for Rwanda, there is already a high-level commitment to reduce malnutrition, because it is unacceptable to have the levels of stunting that we currently have. It is unacceptable that children are underweight and stunted in Rwanda, and we are trying as a

country to reduce that status very quickly.

**UNSCN:** *Rwanda is also going to organize a high-level national conference on food security soon, am I correct?*

**Rurangwa:** Yes. You are correct. That is actually on 18–20 February 2014, the National Food and Nutrition Summit.

**UNSCN:** *So do you think that the Nutrition Summit will help you in your daily work to make agriculture more nutrition-sensitive?*

**Rurangwa:** Of course. It is one way of raising awareness for people to understand what is the underlying cause of undernutrition in the country and how agriculture can make its own contribution to reduce malnutrition. The Summit will bring experts from everywhere, and we will also interact with our national experts. This will lead the country to review good practices for malnutrition reduction, including in the agriculture sector.

**UNSCN:** *As the Director General of the Ministry of Agriculture, in your daily work, what kind of support would help you in ensuring that agriculture and food systems lead to good nutrition outcomes that we want for all?*

**Rurangwa:** I will respond from my personal beliefs. I think that we can bring the capacity that is currently lacking for a lot of interventions in agriculture, especially from our sector and district agronomists, and create a sense that we need not only production but also *good quality* production and knowledge on how to make good use of that production. I think that having this in mind will help our rural area to reduce the levels of malnutrition. For example, where are we going to focus our interventions? Do we increase production, or do we also increase the quality of the production, the reduction of the losses and also the sustainability of our systems to support not only the food production but also the quality of the consumption of our population?

\*\*\*

*We extend our thanks to Raphael Rurangwa for taking the time to share his thoughts and opinions with our readers. We also thank Franklina Mantilla, the REACH facilitator in Rwanda for her coordinating efforts and Joyce Njoro, Senior Programme Officer, REACH Secretariat for facilitating this interview.*

***“We have been developing a kitchen garden system for every household, to supplement nutrition of families with food produced from their own garden”***

# SPEAKERS' CORNER



---

## What if food is considered a common good?

### *The essential narrative for the food and nutrition transition*

Jose Luis Vivero Pol, PhD research fellow at the Centre of Philosophy of Law, Université Catholique de Louvain  
Email: [Jose-luis.viveropol@uclouvain.be](mailto:Jose-luis.viveropol@uclouvain.be)

This article presents the rationale developed by the author in the working paper *Food as a commons: reframing the narrative of the global food system*, available [online](#), which provides full references.

*Author statement: The author declared not having any conflict of interest.*

---

### **The privatization of a basic human need**

Adequate and nutritious food, fresh air and drinkable water are the three essentials our human body requires to function. They are limited but renewable resources. Wild food is considered a common good, but cultivated food is amply regarded as a private one. Water is being rebranded from a free-access common good to a fee-restricted private good, a first step towards a full privatization process, following a very similar path to that of food. Air is still considered a global common good, and it has barely been enclosed although its commodification has already started using creative accounting based on the economic valuation of environmental processes.

The commodification of food is a human-induced process that deals more with the proprietary rights of natural resources than with the intrinsic nature of the good. The standard economic definition of public goods is anchored on non-rivalry and non-excludability. Standard examples of public goods include fresh air, water, knowledge, national defence, universal public health and peace, but never food. Public goods can be governed by both public and private property schemes (as we can see in the health and education domains), and the features of goods are rather static. In political terms, however, excludability and rivalry are social constructs that can be modified by social

arrangements. Goods often become private or public as a result of deliberate policy choices or technical progress. Proprietary rights are a set of social and legal norms whose nature and specificities are determined by each society. Public and private goods are defined by entitlements, regulations and sanctions that allow certain activities and proscribe others for specific groups or people.

Food is a de facto impure public good, better termed as common good, governed by public institutions in many aspects (food safety regulations, nutrition, seed markets, fertilizer subsidies), provided by collective actions in thousands of customary and post-industrial collective arrangements (cooking recipes, farmers' seed exchanges, consumer-producers associations, cooperatives or community-supported agriculture), but largely distributed by market rules. Many societies have considered, and still consider, food as a common good, as well as forests, fisheries, land and water.

The commodification and related privatization of food is rather complete nowadays. As such, the enclosure mechanisms, through legislation, excessive pricing or patents, play a role in limiting access to food for millions of people. Human beings can eat food as long as they have money to buy it or means to produce it. This commoditization moulded the dominant industrial food system that feeds a great share of the world population.

## The unsustainable industrial food system

The industrial and highly mechanized food system has achieved remarkable outputs during the second half of the 20th century by increasing food production and facilitating food access to millions of urban and rural dwellers. Tripling global crop production, increasing yields and lowering food prices have benefitted most consumers in the world. Productivity gains, however, have been uneven across regions and limited to some cereal crops (rice, maize and wheat). The world produces enough calories to feed a global population of 12 billion, and yet we waste one third of that food simply because of its low price in the market and our failure to appreciate its non-economic values. This industrial food system is also heavily subsidized and amply favoured by tax exemptions. Food is not simply a private good in an unfettered market. The non-conventional, alternative or agroecological systems are not equally subsidized, though.

The commodification of the industrial food system also brought many undesirable consequences. Just to name a few, one can remind oneself that 70% of hungry people are themselves food producers or agricultural labourers. Agriculture makes poor use of other common goods such as water, long-term storage diminishes the nutritious properties of some foods, and production of empty and cheap calories renders obesity a growing global pandemic. Food production is often highly energy inefficient, with long supply chains contributing to climate change. Soil degradation is the norm in monoculture systems, with added loss of biodiversity, which otherwise could contribute to the reduction of production risk, help to preserve culture and encourage diverse diets. We eat badly and produce food in a rather unsustainable manner, and with this dominant "no money, no food" rationality, hunger still prevails in a world of abundance. Moreover, in the last decade this commodification seems to have gone too far as food can be speculated with, diverted from human consumption to biofuel production and used as a justification for unethical land grabbing.

Although largely left to the market, society at large nevertheless agrees that all people should have the means to secure enough and adequate food. For many years, we were told that loosely regulated market forces could lead the national and international food systems to eradicate hunger and achieve food and nutrition security, as long as the world's average wealth increased. "*The food market*

*knows best*" was the new mantra. However, reality has proven otherwise: unregulated markets do not distribute food adequately, as distribution is closely tied to purchasing power. Moreover, despite the common reliance on industry self-regulation and public-private partnerships (PPPs) to improve public health and nutrition, there is no evidence to support their effectiveness in achieving this goal or in guaranteeing food safety. Transnational food corporations are among the major drivers of obesity due to their promotion of increased consumption of ultra-processed food and drinks. The only mechanism that seems able to prevent the harm caused by the growing domination of these industries and their influence on diets is public intervention in the market. So far, PPPs seem simply to benefit private actors as platforms to weaken the state's regulatory power and insert profit-driven lobbying in public policy-making.

A food system anchored in the consideration of food as a commodity to be distributed according to the market rules of supply and demand will never achieve food and nutrition security for all. The private sector is not interested in people who do not have the money to pay for their services or goods, whether videogames or staple food. Moreover, markets, governed by private, individual self-interest, will not provide an adequate quantity of public goods with enormous although non-monetized benefits to human beings, as the beneficial externalities cannot be captured by those private markets.

As comparative cases, one could analyse other public goods such as health and education. Both have been considered as public responsibilities since the Industrial Revolution and therefore protected by state regulations, subsidies and legal entitlements. And yet, it is widely accepted that private schools, universities and hospitals also have a role to play in providing those entitlements to society. Unlike the corporate food sector, the main goal of the private education and health sectors is not maximizing profit but delivering good quality education and health and thus contributing to the public good. On the contrary, food as a commodity is traded where the profit can be maximized, however important it may be for human survival, disregarding the nutritional and social consequences of producing food unsustainably and distributing food unfairly.

The highly-needed narrative to steer a transition towards fairer and more sustainable food systems should be more

about valuing the multiple dimensions of food (other than its artificially low price in the market) than boosting sustainable intensification of food production or scaling up technology-based patented silver-bullets in form of genetically modified organisms (GMOs), nanotechnology or mechanized monocropping agriculture.

## Limitations of the state–market duopoly for a fairer food governance

For centuries, the state and the local ruling powers exerted a notable influence on food-producing systems, either by controlling means of production (land, water, seeds, workforce), taxing food production or enacting regulating frameworks. Food was regularly traded in the market as well as harvested or hunted for free in nature. Later on, during the 19th and 20th centuries, food evolved from a common local resource to a private transnational commodity, becoming an industry and a market of mass consumption. The industrial food system seeks to accumulate underpriced food resources and maximizes the profit of food enterprises instead of maximizing the nutrition and health benefits of food to all.

The process was not parallel in all countries (e.g. the communist period of the former Soviet Union and its allies or the varied penetration of market-led paradigms in customary native societies of developing countries), but it became the dominant industrial system that fully controls international food trade, feeds a great share of the global population and has given rise to the corporate control of life-supporting industries, from land and water grabbing to agricultural fuel-based inputs. Meanwhile, although the state has shrunk drastically, especially after the structural adjustment programmes and the rise of the [Washington Consensus](#) of the 1980s and 1990s, it remains an important force in global and national food governance via food and agricultural subsidies, food safety regulations, health and nutrition coverage and agricultural research and extension. And even as there has been a rise in insistence on letting the market rule and on the importance of free prices, the state, responding to political and sometimes social imperatives, continues to insert price wedges – taxes or subsidies – into the market.

However, this state–market duopoly in food governance (production, distribution and safety) has not been able to achieve a fair or sustainable food system in which small farmers can earn a living out of their land plots, every-

body can eat adequately three times per day, means of production are not depleted, fish stocks are not overfished, arable lands are taken care of or water is adequately used.

Rather, the absolute commodification spurred by corporations and states has detached food from its multiple dimensions just to retain its tradeable features (durability, external beauty, standardization). The nutritional properties of food and food's importance as a good meant to nourish people have also perished on the way. The consideration of food as a pure commodity, which we must remember is a social construct, is radically opposed to its consideration as a human right that should be guaranteed to all (an aspect that still resonates in numerous countries) or as a common good that should be available to every human being to guarantee survival.

## What needs to change: shifting mindsets and exploring a commons-based food and nutrition transition

With millions of people needlessly dying prematurely each year from hunger and obesity, nobody can dispute the need for a change. A re-commonification of food is an essential paradigm shift in light of the global fight against hunger and malnutrition. However, almost none of the most relevant analyses produced in the last decades on the fault lines of the global food system and the existence of hunger have ever questioned the nature of food as a private good. There is a common understanding that the main problem nowadays is the lack of food access, and market rules and the purchasing power are the main forces to match food demand and supply.

Interestingly, this insistence on understanding food as a private good overlooks several food dimensions and means of food production that are still clearly understood as common goods (see Box 1). Moreover, there is a growing consensus that health should be considered a public good, and, hence, good nutrition should have a similar consideration. While nutritious foods and healthy diets could be rival and exclusive, their insufficiency can create significant consequences for public health through increased social and economic costs of malnutrition and diet-related illnesses. Therefore, we propose here that food and nutrition security should be understood as a global public good, as it is neither rival nor excludable in theory, and all individuals living in a food-secure society

benefit from that condition even if they do not contribute or pay anything for its provision.

## The tricentric approach to the re-commonification of food

The solutions to the failing industrial food system will not arrive as a market-driven silver-bullet panacea nor as a centralized state-led scheme but will require experimentation at multiple levels (personal, local, national, international) and diverse approaches to governance (market-led, state-led and collective-action-led). We need to reclaim a new narrative to undertake this re-commonification of food, increasing the proportion of goods and services consumed outside the regulated formal market, either acquired in the public sphere or in the self-regulated sphere. Numerous examples of food sharing, food gleaning, food swap schemes, fair trade, producers–consumers associations, community-supported agriculture, urban orchards or the myriad of diverse alternative food networks (e.g. [food trusts in the United States](#) and [food swaps in Australia](#)) are proving by doing that there is a growing movement that is producing, trading and valuing food outside the traditional market–state rules and regulations. These alternative food movements are building a new polycentric governance of the food system from the grassroots, as Elinor Ostrom nicely depicted for other common-pool resources. And these self-regulated institutional arrangements based on collective actions should also be given due consideration, appropriate legal entitlements, adequate funding and political support, just as the industrial food system has enjoyed for decades.

Food could be produced, distributed and consumed by three-pronged institutional arrangements composed of: i) civic collective actions for food (or Alternative Food Networks) undertaken initially at local level; ii) governments whose main goal is to maximize the well-being of their citizens and provide an enabling framework for them to enjoy food and nutrition security; and iii) a private sector that can prosper from the resources it owns or rents under state regulations and incentives. There is a need to re-accommodate this mounting force of citizens' actions to reclaim food as a common good. Food can and should be shared within a polycentric governance structure, given for free, guaranteed by the state, cultivated by many and also traded in the market. The transition towards a sus-

### Box 1. Food-related dimensions widely accepted as common goods

- a. Traditional agricultural knowledge accumulated after thousands of years of practices
- b. Modern science-based agricultural knowledge produced by national institutions
- c. Cuisines, recipes and national gastronomy
- d. Edible plants and animals produced by nature (fish stocks, wild fruits and animals)
- e. Genetic resources for food and agriculture
- f. Food safety considerations (e.g. Codex Alimentarius)
- g. Nutrition (including hunger and obesity imbalances as public bads)
- h. Food price stability in global and national markets

tainable food system should revalue the non-monetary dimensions of food, and hence the global and local food production and distribution systems should not be exclusively governed by supply–demand market rules. Purchasing power cannot exclusively determine our access to such an essential good.

Civic collective actions for food are built upon the socioecological practices of civic engagement, community and the celebration of local food. They are key units for the transition towards a more nutrition-sensitive, sustainable and fairer food and agriculture system capable of feeding us all by 2050 and beyond. Their foundations are the multiple consideration of food as: i) a basic human need to be available to all; ii) a fundamental human right to be guaranteed to every citizen of every country; iii) a cultural pillar either as producers or consumers; iv) a marketable product subject to fair trade and sustainable production; and v) a global common good to be enjoyed by humankind. Both customary and post-industrial collective actions for food share this multidimensional consideration of food that diverges from the unidimensional approach of food as a commodity by the mainstream industrial food system.

## What this means for the food system: legal and political implications of treating food as a common good

If food is considered a common good, the legal, economic and political implications would be huge, entailing consequences far beyond the hungry and the countries harbouring hungry people. To date, advocating for antihunger and antiobesity measures has very much depended on demonstrating the economic and political losses that hunger and obesity imposes on human societies and economies by increasing health expenditures, deterring innovation and productivity or triggering social unrest and political turmoil. Conversely, alternative non-economic arguments and strategies to fight hunger and obesity have been largely neglected, with examples ranging from ethical imperatives, public health considerations, social cohesion or human rights approaches to name just a few. Considering food as a common good would provide the adequate rationale to support these non-economic arguments.

Food should be kept out of trade agreements dealing with pure private goods, and there would be a need to establish a particular international legal and governance system for production, distribution and access to food at global level. That could pave the way for more binding legal frameworks, cosmopolitan global policies or fraternal ethics for the whole human race.

[Universal food coverage schemes](#) or [food security floors](#) could be created, whereby the state should guarantee a minimum amount of food for all (for example, one loaf of bread, ten *tortillas* or two *injer*s), paralleling the social protection floors that are being implemented in many high-income countries. That could also be done by equalizing the minimum salary to the national food basket. Moreover, there would be legal and ethical grounds to ban financial speculation on food, as this speculation does not benefit either the producers or the consumers of such an essential resource. And food would be prioritized for human consumption, limiting the non-consumption uses such as biofuels or livestock feed.

Innovation in agricultural and nutrition research and locally-adapted technologies would highly benefit from this consideration, fostering crowdsourcing innovations and creative commons licensing systems to improve the nutrition-sensitive food system. Millions of people innovating

have far more capacity to find adaptive and appropriate solutions than a few thousand scientists. The copyrighted agricultural sector, with its excessive patents on life and its biopiracy, is deterring the scaling up of food and nutrition security innovations. The freedom to copy actually promotes creativity and innovation rather than deter it, as can be seen in the fashion industry, cooking and gastronomy or the free software domain.

## The food commons transition

The re-commonification of food will take several decades so the transition phase should witness the coexistence of a dual consideration of food: as a common good, whereby a minimum amount should be available and accessible to every human being; and as a private good subject to trade. In any case, self-governing collective actions cannot do the transition by themselves, as food provision and food and nutrition security involve greater levels of public sector involvement and market-driven distributions. Hence, there should be enabling spaces for local governments, private entrepreneurs and self-organized communities to coexist, with the state taking a leading role at the initial stage of the transition period, not only as a regulatory mechanism but also as a funding and operational instrument to achieve socially desired collective goods (that is, the food and nutrition security of the population).

Finding the adequate equilibrium between this trisentric institutional setup will be one of the major challenges humankind will have to address in the 21st century, as long as the population grows and Earth's carrying capacity seems to be surpassed by human greed for resources, as Ghandi once mentioned.

Finally, in accordance with the common nature of food, I would welcome comments to further elaborate this rationale and its practical implications, ideally produced in a commons manner. A fairer and more sustainable nutrition-sensitive food and agriculture system is possible, but we need to reconsider the food narrative to guide that transition. I do not expect to see this change completed during my lifetime, but I hope our children may.

---

## A conversation with Jose Luis Vivero Pol about “*What if food is considered a common good?*”

C. Peter Timmer, Cabot Professor of Development Studies, Emeritus, Harvard University, USA  
Email: [ptimmer63@gmail.com](mailto:ptimmer63@gmail.com)

*Author statement: The author declared not having any conflict of interest.*

---

By design, the viewpoint I have been asked to discuss is a polemic, a controversy with sharply divergent perspectives. Polemics as discourse can be constructive when they reflect the large issues at stake, rather than point by point arguments that rapidly lose the reader's interest. Accordingly, I want to take on Jose Luis' proposal in the same broad and sweeping terms that he presents. My starting point in responding is my new book *Food Security and Scarcity: Why Ending Hunger Is So Hard* (Timmer 2014). My primary point is that returning food to its role as a “common good”, its dominant role before the widespread emergence of markets and trade at the end of the Middle Ages, is the wrong direction if we want to end hunger. At the same time, I totally agree that unfettered markets and “free trade” will never solve that problem. My argument is that we will need effective public policy, designed and implemented at the country level, if we are to have any hope of ending hunger. Treating food as a human right or as a common good makes effective food policy analysis, design and implementation almost impossible. We will end up with levels of hunger, and low life expectancies, that were prevalent in the Middle Ages.

My book draws on well over three decades of thinking about food security and why it has been so hard to achieve. Even in the wake of the world food crisis in the mid-1970s, it was obvious that the problem was not the total amount of food produced but whether poor households had access to that food (Falcon and Timmer 1974). Nevertheless, societies that had rapid increases in domestic food production also had dramatic gains in food security (Timmer, Falcon and Pearson 1983). This role of domestic food production in achieving domestic food security has been stressed recently by Peter Warr (2014) in his [Presidential Address to the Australian Agricultural and Resource Economics Society](#) (AARES)<sup>1</sup>.

In some fundamental sense, this is the food security dilemma. More food does not guarantee greater food security, but increases in local food production clearly help. The dilemma is resolved by figuring out who makes up the food insecure population. It is largely rural households, engaged in agriculture but without enough land to produce enough food for their families. Efforts to raise their productivity (even if not directly in food production or the rural economy) have a dramatic impact on food security.

I have been trying to understand the food security dilemma for some time. Inevitably, given my experience, I have an Asian bias and a focus on the world rice economy. That is not all bad: Asia still has most of the world's poor and food insecure households, and rice has increasingly become the foodstuff of the poor. The lessons on how Asia has coped with these problems are well worth understanding for the light they shine on similar problems in other regions.

Part of my response to Jose Luis is that history matters. Voices in the wilderness were arguing decades ago that the development profession had misjudged the critical role of agriculture in economic development, and its contribution to enhancing food security and speeding poverty reduction (Timmer 1992). Even three decades ago, [Food Policy Analysis](#) pointed out the sharp disparity in alternative ways to value food: its value in use (for nutrition) often diverged sharply from its value in exchange (in markets) (Timmer, Falcon and Pearson 1983). The task of food policy was to bring these two values closer together.

It is sad that it has taken a world food crisis (or more than one) to bring these fairly obvious facts back to the policy agenda, but they are back. Heads of State now worry about food security. They seek guidance on how to

---

<sup>1</sup> Warr emphasizes that strategies for food self-sufficiency that rely on trade protection and high prices to achieve greater food production do not improve food security. Enhanced agricultural productivity is the link between food production and reduced food insecurity.

achieve it, and there is a cacophony of voices with the “answer”. One of the most knowledgeable and influential voices, that of Gordon Conway, has offered a clear guidebook to ending hunger (Conway 2012). But it is badly flawed because it fails to understand the critical role of markets in decision-making about food production and consumption. Jose Luis makes the same mistake. My message is that markets, for all of their problems and failures, will be at the core of solving the problem of hunger.

In all of the successful escapes from hunger over the past two centuries – from the OECD countries to the wealthier countries in East and Southeast Asia – markets have done the heavy lifting. Their role in generating signals of resource scarcity and inducing producers and consumers to make decisions that are consonant with those signals has never been carried out successfully by government planners. At the same time, none of the escapes from hunger were driven entirely by market forces. Governments have had to intervene in myriad ways, from stabilizing the economic environment to providing critical public goods such as transportation and communications networks, agricultural research and development, and access to quality health and educational facilities. There is scope for more or less government involvement, depending on institutional capacity, but no involvement has never been the right answer. Too much involvement has been a common mistake. It is a tricky balance that requires constant analysis, experimentation and learning.

Ending hunger requires that each society finds the right mix of market forces and government interventions to drive a process of economic growth that reaches the poor and ensures that food supplies are readily, and reliably, available and accessible to even the poorest households. Here I agree with Jose Luis that we need to create more space for local initiatives and experimentation. Good food policy can help do that. Still, finding the right mix has been a major challenge, and it seems to be getting more difficult as the global economy becomes more integrated and less stable.

A major task of my book is to explain these challenges, but then also to explain how to cope with them. Since coping will be largely a country-specific task, given the heterogeneity of poverty and hunger, the solution will depend on equally country-specific analytical capacities and governance. Countries that want to end hunger can do so, but the decision to do so will require significant

interventions into the functioning of their food economies and a political will to empower and enable their smallholder farm households. Most of these households need to buy food during much of the year, they are “net deficit” households in the food security jargon. Raising their crop productivity may not be nearly as important as raising their access to productive employment in nearby rural non-farm enterprises or even in the nearest city. They are vulnerable to spikes in food prices even though they produce some of their own food. Jose Luis and I share a deep concern for these problems.

In a narrow sense, then, my book is a reminder that most poor people live on farms, usually quite small. One way to lift them out of poverty and provide sustainable food security is to help them achieve higher yields, gain reliable access to water and to markets that are close enough to allow them to use modern seeds, fertilizer and to get decent prices for their surplus output. Good schools, nearby health clinics and local financial markets also raise rural living standards, but just raising secure crops and feeding their children is a first priority for these families. Perhaps, as Jose Luis suggests, more community-based action can help with these endeavours.

At the same time, not all small farmers can achieve food security on their own small plots. For many of these, escaping poverty will require leaving agriculture, even moving to a city. This process, writ large, is termed *the structural transformation*. It occurs as agriculture becomes a smaller share of the economy and the workforce. And it provides a powerful pathway out of poverty. Indeed, if history is any guide, no escape from hunger and poverty has been sustainable without a successful structural transformation. It is no surprise, then, that I am at least as concerned about structural transformation (successful and unsuccessful) as I am about higher productivity for smallholder farmers. In the end, food security is determined by how much food households consume, not by how much they produce. Without a successful structural transformation, most farmers produce less food than their families need to consume. A retreat further into self-sufficiency, or into the food commons, will not help these households; they need market opportunities for their entrepreneurial skills and labour to escape from poverty and hunger.

My broader argument to both the development profession and policy-makers is that solving the food problem is

a key step and a powerful catalyst to solving the problem of poverty and finding the path to higher incomes. No country has been able to sustain rapid economic growth until its citizens and investors were confident that food was reliably available in the main urban markets. Rural poverty has always been a later concern. Rural productivity and economic growth provide the ingredients to food security. The two are intimately linked in a market economy.

These links mean that government policies to reduce poverty and hunger (in other words, to improve food security) are complicated and require an economy-wide perspective on how rural and urban markets are connected. Labour-market connections are most important for understanding real wages, labour productivity and living standards, but input and output markets are also critical. Eventually, integrated financial markets are needed to sustain rapid growth in labour productivity.

That is why ending hunger is so hard. It takes sustained economic growth that systematically includes the poor, along with public actions to stabilize the food economy in

which poor households live and die. Still, ending hunger is not impossible. History shows that billions have escaped the scourge of hunger. Those historical lessons inform the way out of hunger for the remaining billion still trapped without enough food to eat day in and day out.

## References

Conway G (2012) *One Billion Hungry: Can We Feed the World?* Cornell University Press: New York.

Falcon WP, Timmer PC (1974) Food: War on Hunger or New Cold War? *The Stanford Magazine* (Fall/Winter) 64, pp. 4–9.

Timmer CP (1992) Agriculture and Economic Development Revisited. In: Teng P and Penning de Vries F (eds) *Special issue of Agricultural Systems*, 40, pp. 21–58. Elsevier Science Publishers: England.

Timmer CP (2014) *Food Security and Scarcity: Why Ending Hunger is so Hard*. University of Pennsylvania Press: Philadelphia.

Timmer CP, Falcon WP, Pearson SR (1983) *Food Policy Analysis*. Johns Hopkins University Press: Baltimore. ([online](#))

Warr P (2014) *Food Insecurity and its Determinants*. Presidential Address, Australian Agricultural and Resource Economics Society, Port Macquarie, NSW, 5 February. ([online](#))

## UN System Network for Scaling Up Nutrition

The [UN System Network for Scaling Up Nutrition](#) is one of the five<sup>1</sup> networks of the [Scaling Up Nutrition \(SUN\) Movement](#), established for UN interagency guidance at global and country level, and to support SUN countries in response to their requests to improve nutrition.

The strength of the UN Network within SUN is the significant engagement, expertise and experience of the UN agencies at country level, which serves as a foundation for the Network to build upon. The UN Network aims primarily to support countries in scaling up nutrition by providing technical and programming assistance and governance support to governments, SUN Country Focal Points and other stakeholders. Optimal joint UN action can provide effective support for evidence-based policy formulation and scaling up of nutrition-specific and nutrition-sensitive interventions at local, regional or global levels.

On 8 June 2013 the Principals of five UN Agencies with a mandate in nutrition (FAO, IFAD, UNICEF, WFP and WHO) met in London during the [Nutrition for Growth](#) high-level event. This was a significant step forward for the UN Nutrition family, as the Principals signed an official letter endorsing the UN System Network for Scaling Up Nutrition and its Work Plan. The letter indicated that there is good progress in strengthening the inter-agency coordination and furthering the support to SUN countries and that UN Agencies commit to continue to assist nutrition efforts at country level and simultaneously increase and enhance UN global collaboration and coordination.



The formal launch of the UN System Network for Scaling Up Nutrition took place in Nairobi (Kenya) on 29 August during the [first face-to-face UN Network meeting](#) (27–29 August 2013). This meeting was organized by the UN Network co-facilitators (UNSCN and REACH) and funded by the German Government. More than 130 participants from 18 African countries attended the meeting.

For more information, visit the [UNSCN website](#).

<sup>1</sup>SUN country Network, SUN donor Network, SUN civil society organizations Network, SUN business Network, SUN UN system Network.

## Lancet's micro-focused recommendations for reducing malnutrition are too narrow for the real world complexity of food and nutrition outcomes

Uma Lele, PhD, Former Senior Advisor, The World Bank

Emails: [uma@umalele.org](mailto:uma@umalele.org), [umalele1@gmail.com](mailto:umalele1@gmail.com)

*Author statement: The author declared not having any conflict of interest.*

### The food and nutrition challenge

A [set of articles in The Lancet](#) in 2013 has had unusual influence in putting nutrition on top of the food security agenda. Although the articles describe a comprehensive set of factors that determine nutritional outcomes, their solutions are nutrition-specific, largely emanating from the health sector. These solutions have received the most attention. This is unfortunate.

Nutritional outcomes are profoundly influenced by food production systems, food and agriculture policies and the food and beverage industry. Nutritional outcomes occur through numerous location-specific pathways of production and distribution, which depend on the stages of economic development. They are determined by patterns of agricultural and overall economic growth, with the distribution of benefits varying by socioeconomic class, economic sector and gender. As an example, the majority of the world's poor live in rural areas, make a living from agriculture and yet tend to be undernourished.

Even a cursory look at these processes highlights some of these pathways, along with many puzzles, some of which are discussed below. Their exploration requires going beyond methodologically sophisticated randomized control trials. The latter provide apparent precision to results and comfort to journals such as The Lancet, but do not explain the reasons underlying nutritional outcomes. An outcome orientation calls for eclectic approaches to research, which are interdisciplinary, intersectoral and multilevel. But first comes the need to clarify concepts.

### Distinguishing between hunger and undernutrition

The terms hunger and undernutrition are often used, at times interchangeably, which can cause confusion. Hunger means empty stomachs, an absence of calories (te

Lintelo et al. 2013). Undernutrition means absence of critical nutrients, including energy. Undernutrition can be a consequence of hunger but can also exist in its absence, due to a lack of critical nutrients in the diet and a weakened immune system, which can make a person susceptible to infectious diseases and lower nutrient absorption. In addition, energy requirements are not uniform across body types. They also, for instance, vary by gender, level of physical activity and climate. There is also a lack of consensus on standards and norms. FAO uses a Minimum Dietary Energy Requirement (MDER) (FAO 2013b), but FAO's member countries may use others, as discussed below in the case of India (FAO 2013c).

### Broad-based agricultural productivity growth is necessary for reducing poverty and ensuring food and nutrition security

Nutrition advocates note that undernutrition in the first 1000 days of a child's life (from conception until the age of two) can have lifelong and largely irreversible impacts. Undernutrition at that age impairs a child's physical and mental development, increases the risk of chronic diseases and premature death in adulthood and negatively affects the lifelong ability to learn, be economically productive, earn income and sustain livelihoods. In short, undernutrition perpetuates poverty.

But of course, the reverse is equally true. Poverty leads to hunger and undernutrition. In the past, its elimination has been assumed to automatically reduce hunger and undernutrition. And while there is indeed an association, the relationship is complex.

Since the 1990s, reduction in poverty and hunger has been fastest where economic growth has been accompanied by rapid growth of agricultural productivity involving smallholder producers. For example, agricultural total

factor productivity grew about 90% and 50% in East and South-East Asia, respectively, between 1990 and the late 2000s, but by only around 25% in South Asia (Fuglie and Rada 2013). The number of undernourished declined by about 40% in East Asia and 53% in South-East Asia, whereas in South Asia the numbers hardly budged (FAO 2013). Undernutrition among children under five years of age also remains highest in South Asia and is even higher than in Sub-Saharan Africa (World Bank 2014). East and South-East Asian countries also made a push for women's education earlier than most South-Asian countries, with the exception of Sri Lanka and the Indian state of Kerala (World Bank 2014b).

### **But agricultural productivity growth is not sufficient: the Indian enigma**

India illustrates the contribution of agriculture to nutrition, as well as some of the puzzles requiring investigation.

**a. Decline in calories and increase in expenditure.** More than three quarters of the Indian population lives in households with per capita caloric consumption below the requirements (2100 kcal/day in urban areas and 2400 kcal/day in rural areas by Indian standards) (Deaton and Dreze 2009). Oddly, Deaton and Dreze note a decline in average caloric intake during the last 25 years across the distribution of real per capita expenditure, despite increases in real income and an absence of long-term increases in the relative price of food. As a hypothesis, they posit that caloric requirements may have declined due to lower levels of physical activity or improvements in the health environment. If correct, they say, this does not imply there are no caloric deficits in the Indian population. Nothing could be further from the truth, as these deficits are reflected in some of the worst anthropometric indicators in the world. Yet, they say, this trend remains confusing, and there is an urgent need for better monitoring and understanding of the situation.

**b. Changes in the composition of production affect diet quality, biodiversity and human and environmental health.** Confirming these findings, Swamy (2012) states that *“there is a clear decline in cereal and protein consumption, particularly of coarse cereals, which are more protein-rich than rice or wheat and are the major source*

*of protein in the Indian diet. Similarly per capita availability of pulses, also a major source of protein in the Indian diet, has declined by more than 70% in 50 years. Although consumption of other foods has increased, including particularly fats, overall protein consumption in India still remains low”*.

We begin to understand the complexity of connections between nutrition and agriculture by noting that pulses and other nutritious “minor crops” that provide protein are grown by some of the poorest farmers in India. Because of stagnant production, India imports large quantities of pulses that are actually native to India. Aware of this pulse deficit, the Indian Council of Agricultural Research (ICAR) has released over 200 varieties of pulses and launched various production campaigns, but adoption has been limited (Swamy 2012). Empirical farm-level analysis of obstacles to increasing pulse production is needed. One hypothesis is that scientists are rewarded for the number of varieties they release, rather than the number farmers adopt. This incentive system clearly needs to be better understood and changed.

The accompanying intensification of agricultural production in India has lowered food prices and helped to reduce hunger. It has been promoted through a variety of price supports and subsidies to crops, as well as to water and power. These supports have largely gone to rice and wheat, thus hampering the diversification of production and diets. The attention on a few crops has also led to fewer crop rotations and environmental damage, including soil degradation and deterioration in water tables and quality. The loss of biodiversity is a huge unintended consequence of development. There is large potential to use this biodiversity for the purposes of advancing nutrition, and we must take steps to preserve it and use it.<sup>1</sup>

Intensification has also been accompanied by increased pesticide use and increased agricultural chemical residues in food and water. There is a growing concern about adverse impacts of pesticides on human health, especially farm workers, and talk of “cancer trains from the Punjab”. The potential adverse impacts of genetically modified organisms (GMOs) on human and environmental health are widely debated (with a growing resistance to GMOs), but in the face of a strong industry lobby there has been silence on the impacts of pesticides on human health.

<sup>1</sup> Globally only three staple crops contribute 60% of all calories consumed, 120 species are used for 90% of all calories consumed whereas 7000 species have been used in agriculture throughout history (Fowler 2006).

**c. Policies, investments, and programs leave women, children and socially excluded people behind.** Government policies have helped to build up stocks to stabilize supplies and prices. And while storage policies have increased efficiency in some parts of the food system and for some groups, they have left others behind, particularly the poor, women and marginalized populations. Chand and Jumrani (2013) note that India presents high levels of hunger even as its public granaries are overflowing. Part of the stock even rots, needing proper storage and maintenance. The National Rural Employment Scheme intends to counter some of these inefficiencies by creating employment among the poor, but we need to better understand the impacts of these safety nets on food and nutrition.

The particular vulnerability of women and girls, especially among the most socioeconomically disadvantaged, must not be forgotten. Poor households contain a large share of female-headed households. They tend to have limited access to production services and also to food, education and health in most of South Asia. Thus even if agricultural productivity increases, social indicators for women remain low in states such as Punjab and Gujarat. FAO estimates that focusing on women farmers will increase agricultural productivity and incomes by 20% to 30% (FAO 2011).

Marginal, socially excluded populations are even more vulnerable. Disproportionately high child mortality rates occur among *Adivasis* and other tribal populations that constitute well over 80 million of the 213 million undernourished in India (Das, Kapoor and Nikitin 2010).

**d. Poor sanitary conditions affect nutrient absorption and nutritional status.** Waterborne diseases are common in areas where sanitation is poor, and adversely affect the capacity of the human body to utilize food. We should then be sure to address the issues of poor, unequal access to services, such as water and sanitation, in order to enhance the link between agriculture, food and nutrition.

### **Cheap food can be an asset as well as a liability**

Scale economies in farming have replaced labour with machinery and computers, reducing the share of labour in agriculture and bringing real food prices down in countries like Argentina, Brazil and the United States of America. At the same time, corporate agriculture exists side by

side with millions of hungry. Poor adults and children in urban areas increasingly become beneficiaries of cheap agricultural prices and safety net programmes (for example cash transfers or vouchers), rather than direct contributors to agricultural or economic growth. Even in these countries the benefits to diets and nutrition remain unequal. While the poor lack access to a balanced diet, neighbourhood farmers' markets are mushrooming for upscale neighbourhoods, countering the effects of industrial agriculture and highly processed foods.

Despite the importance of productivity and affordable food, cheap food can be a liability, leading to increases in obesity and incidence of noncommunicable diseases. Easy access to sugary drinks, low-cost calorie-dense foods with added fats, sugar and salt, and a rising proportion of food obtained away from home have steadily increased per capita caloric consumption (Unnevehr 2013). Among OECD countries, the USA has the highest rate of adult and childhood obesity, with the highest rates among the poor (Sassi 2010). Annual health costs associated with obesity amount to between US\$ 147 billion to US\$ 210 billion worldwide (Finkelstein et al. 2012, Cawley and Meyerhoefer 2012). According to the World Health Organization, the globally overweight population had increased to 1.5 billion by 2010. Globally, being obese and overweight is linked to more deaths than being underweight (WHO 2013). In short, nutritional challenges from riches are as devastating as those from poverty and are explained by the industrialization of agriculture and the growth of the cheap processed food industry.

### **Lessons of experience**

We must make a greater effort to understand development of agriculture and its contribution to food and nutrition as societies modernize. The broad outlines are clear. Properly managed, a modernizing broad-based agriculture and the improved livelihoods it creates will have a largely positive effect on food and nutrition. This broader view of the determinants of nutrition, taking policies, investments and their impact on agriculture and food systems into account, goes beyond the microfocus of more project-based interventions recommended in *The Lancet*. It seeks to provide sustainable support for all the actions in what is, at bottom, the foundation of good nutrition: a healthy food and agriculture system that supports an economically fair, equitable and nutritious food system.

## References

- Cawley J and Meyerhoefer C (2012) The Medical Care Costs of Obesity: An Instrumental Variables Approach. *Journal of Health Economics*, 31 (1), pp.219–230.
- Chand R, Jumrani J (2013) Food security and undernourishment in India: Assessment of alternative norms and the income effect. *Indian Journal of Agricultural Economics*, 68, pp. 39-53.
- Das M B, Kapoor S, Nikitin D (2010) *A closer look at child mortality among Adivasis in India*. Policy Research Working Paper. South Asian Region. Human Development Department. World Bank: Washington, DC.
- Deaton A, Dreze J (2009) Food and nutrition in India: facts and interpretations. *Economic and Political Weekly*, 44, pp. 42-65.
- FAO (2011) *The State of Food and Agriculture 2010-11: Women in Agriculture Closing the Gender Gap for Development*. Food and Agriculture Organization of the United Nations: Rome.
- FAO (2013) *The State of Food Insecurity in the World 2013: The Multiple Dimensions of Food Security*. Food and Agriculture Organization of the United Nations: Rome.
- FAO (2013b) *Revision of the methodology for the estimation of the prevalence of undernourishment*. RAF/AFCAS/13-9c. African Commission on Agricultural Statistics (AFCAS) – 23. Food and Agriculture Organization of the United Nations: Rome.
- FAO (2013c) *Food security methodology* (website). Food and Agriculture Organization of the United Nations: Rome. ([online](#))
- Finkelstein EA, Khavjou OA, Thompson H, Trogdon JG, Pan L, Sherry Band Dietz W (2012) Obesity and Severe Obesity Forecasts through 2030. *American Journal of Preventive Medicine*, 42(6), pp.563–570.
- Fowler C (2006) *Conserving Farming's Future – The Global Crop Diversity Trust*. *Highlights* April. The ATSE Crawford Fund: Victoria.
- Fuglie K and Rada N (2013) *Agricultural total factor productivity growth indices for regions, 1961-2010*. United States Department of Agriculture: Washington, DC. ([online](#))
- Sassi F (2010) *Obesity and the Economics of Prevention: Fit not Fat*. Organization for Economic Co-operation and Development (OECD): Paris.
- Swamy G (2012) Will Indians stop eating pulses? *Journal of Social and Economic Development*, 14, pp. 238-248.
- te Lintelo DJH, Haddad L, Lakshman R, Gatellier K (2013) *The HANCI donor index 2012: measuring donors' political commitment to reduce hunger and undernutrition in developing countries*. Evidence Report 26: Reducing hunger and undernutrition. Institute of Development Studies: Brighton.
- Unnevehr LJ (2013) Food and health: can economics contribute to improved outcomes? *American Journal of Agricultural Economics*, 95, pp. 220-227.
- World Bank (2014) *DataBank: Data on Malnutrition Prevalence, Weight for Age (% of children under 5), Regions*. ([online](#))
- World Bank (2014b) *DataBank. World Development Indicators (WDI)*. ([online](#))
- WHO (2013) *Obesity and Overweight. Fact Sheet no. 311*. World Health Organization: Geneva. ([online](#))

## The Global Forum on Food Security and Nutrition (FSN Forum)

The FSN Forum is a worldwide community of experts and practitioners on Food Security and Nutrition facilitated by FAO since 2007. FSN Forum members engage in online discussions, share knowledge and take part in policy dialogue. The broad range of views gathered influences the global debate on key issues affecting food security and nutrition.

The FSN Forum collaborates with [major global food security and nutrition initiatives](#) and also facilitates online [networks targeted at specific geographic areas](#). The FSN Forum hosts different kinds of online discussions. Discussions can be raised by fellow members or can be initiated by the FSN Forum team. Online discussions can also be part of global and regional initiatives. They can explore food security and nutrition topics from a practitioners point of view, can provide input to policy formulation processes and can be used to validate technical work.



FSN Forum's discussions are public, open to all members and last for three to four weeks. Regular email digests are sent to all members to keep them informed on current and upcoming activities. For each online discussion, the FSN Forum Team prepares the consolidated proceedings and a comprehensive summary of the main issues emerged. All information can be found on the discussion pages.

Visit the [FSN Forum website](#) and join the network!

# OBITUARIES

## Nevin S. Scrimshaw

20 January 1918 – 8 February 2013



PhD, MD, MPH

Founder, International Nutrition Foundation

Winner of the World Food Prize 1991

Photo: The World Food Prize Foundation

Over the past months, as I reflected on Nevin's many contributions to the world, including to the UNSCN as a focal point for UN and civil society action against malnutrition in all its forms, I considered his contribution to global capacity development for nutrition action as his main accomplishment. First, I must declare a "conflict of interest", since he was my mentor and advisor while training at the Massachusetts Institute of Technology (MIT) under his supervision, and then throughout my career as I faced key decisions on what to do, where to do and for what purpose.

My first encounter was in his office at MIT building 56, in 1974. A fellow House Staff at Children's Hospital, K. Tonisirin, told me "you must go and see Nevin at MIT before

you return to Chile". So I was following his recommendation. I waited for some time in his office, talked with Ginny, his secretary at the time, until he finished his week's agenda. He met with me, asking about my motivations, what had brought me to the United States of America and what my future plans were. After a 15-minute conversation, he asked me to send him a letter stating why I wanted to come to MIT, and this is what I wrote in that letter nearly 40 years ago:

*"In accordance with our conversation last Friday, September 20, 1974, I am writing this letter to present you with some idea about my plans and hopes for the future. I am presently involved in evaluating different methods of nutrition for young malnourished infants during their critical days and observing the impact on growth and development. During these last three years of fascinating clinical work, I have acquired the skills to serve adequately the health needs of children. At this stage, I am looking forward to broadening my spectrum and encompassing aspects that pertain to health as a public issue relating it to population studies, nutrition, food and international health; I am deeply motivated to spend some time at MIT in the Department of Nutrition and Food Science. My plans are to return to Chile and work with these tools to help mold a society that responds to the demands of the people. The challenge to serve in a developing nation can be crowned with great satisfaction or deep frustration. Part of this outcome is determined by the motivation that guides you and the rest by the adequacy of your tools. Hopefully, I will participate in the health and nutrition planning and the delivery of care*

*to children. If not Chile, because of its present political reality does not prove to be suited for this mission of service, I will commit my efforts to another developing country in Latin America. Sincerely yours, RU."*

Working with Nevin during the past 40 years was exciting, every step of the way, every minute of the journey. Of course, we had some ups and downs, but mostly ups. I worked with him in establishing the United Nations University Food and Nutrition Programme; then as chair of the Advisory Group in Nutrition of the UNSCN (1998–2002), providing guidance to policy development; and later as President of the International Union of Nutritional Sciences (IUNS) 2005–2009, developing and strengthening the linkages that lead knowledge to effective nutrition action. Over the past decade, Nevin established the International Nutrition Foundation (former INF, now the NS-INF) to implement the Ellison Medical Foundation Grant for nutrition capacity building in developing countries.

His mentoring was indeed a privilege, it influenced me in taking up the challenge of strengthening the international framework for technical and scientific collaboration, such as the UNSCN and its advisory council, and the IUNS as president. Hopefully the collaboration between the NS-

INF and IUNS will continue to bear fruit in terms of helping to develop the next generations of nutrition scientists with a passion to make this a better world for all.

Over the past year, we were able to support close to 250 young scientists from developing countries to acquire advanced training in support of nutrition action, or to travel to meetings like the 20th International Congress of Nutrition in Granada, Spain, in September 2013. In the coming months, we will initiate a long-term, sustainable project that will highlight and honour Nevin's work and legacy. We also want to ensure that we have a vehicle in place for those who wish to honour Nevin's memory for years to come by providing financial support to keep his legacy alive.

We invite you to visit the Nevin Scrimshaw International Nutrition Foundation at [www.inffoundation.org](http://www.inffoundation.org).

A tribute from

**Ricardo Uauy**

*President, International Nutrition Foundation*

*Professor, London School of Hygiene and*

*Tropical Medicine*

## David J. P. Barker

29 June 1938 – 27 August 2013



*MD, PhD, FRS*

*Author of the "Barker hypothesis" or "foetal programming hypothesis"*

*Photo: The Barker Foundation*

Not many people change the way we look at the world. David Barker did. It is now almost taken for granted in international circles that we must adopt a life-course approach if we are to understand the causes of, and thus also prevent, the major public health problems that affect the world today. When David Barker recruited me to come and work for him in 1985, the Medical Research Council (MRC) research unit I joined was called the Environmental Epidemiology Unit. Today it is called the MRC Lifecourse Epidemiology Unit. In 1985, the dominant view in epidemiology was that your behaviour as an adult and the environment in which you lived were the key influences on your health. What David Barker showed was that the circumstances in which you were conceived and how you grew in utero and early life had a profound and long-lasting influence on how you responded to the environment in which you subsequently found yourself. This does not deny the importance of the current environ-

ment, but acknowledges the important interaction between early and later influences. In the last public lecture I heard David give, in June 2013, he passionately described that what we wanted to ensure was that every child was built like a Rolls Royce. Being proudly British, what David meant was that we want all children to be the absolutely best they could be. As he said, a Rolls Royce never breaks down, wherever you drive it and under whatever conditions. In other words, if you ensure that a child is born to a mother that has been well-looked after before and during pregnancy, that child will be more likely to be a Rolls Royce, and much more likely to cope with whatever challenges life subsequently presents. David recognized a very long time ago that the ultimate outcome of his ideas was that we needed to intervene to nourish and support young women.

Although it might not have been David's "thing", he was very supportive of efforts to improve the health and well-being of adolescents and young women. One of the last studies we were working on together was the study lead by Caroline Fall and Ramesh Potdar in the slums of Mumbai. This study showed that improving the quality of the diet of young women before they became pregnant has an important influence on the body composition of their offspring. It also reduces their risk of gestational diabetes.

Others have written about David's childhood and the factors that influenced his approach to life. Being in the company of David was always a pleasure, he was a great storyteller and host. I particularly looked forward to travelling to Mumbai for meetings, knowing that I would be able to share his company. He worked hard at everything he did, even at being a host. David paid attention to detail and was meticulous; reading his papers and books is such a pleasure, as he wrote so clearly and precisely, and in what seemed like an effortless way. But we know he thought a great deal about what he wrote, because it mattered to him.

David helped shape the lives of so many people. For me, he certainly changed my life for the better, and I valued his gentle guidance and merciless rib-taking, a very English way (and as an Australian, also a very Australian way) of being rude to people he liked (and about others he did not). His last words to me were to mock my ignorance of

the Renaissance while he was praising the excellence of a presentation of his successor at the MRC, Cyrus Cooper.

I agreed to write this short piece for the SCN News about David Barker, despite so many excellent reviews of his life and work that have already been published, because I believe that those of us passionate about public health and nutrition, and engaged in international work (which is all of us), have a responsibility to do all we can to improve the lot of those less fortunate than ourselves, and to take David's lead and focus our efforts on ensuring that every child that is born has had the best possible start in life by having had a healthy mother.

We pay far too little attention to the nutrition and health of adolescent girls and boys. They are a difficult group to reach, particularly in low-income countries where they are almost always working, rather than at school as they are in rich countries. It is easier to wait until a woman becomes pregnant and then give her a few supplements, even though we know this has limited impact. To improve the health and nutrition of the whole population of young people requires changes to the structure and organization of society, to ensure that families are food secure, have access to clean water and sanitation, have access to education and care, and the means of providing for themselves. Improvement will not be achieved simply by telling young people what to do. We have to build an environment in which the forces that shape both supply and demand are driven by public health, not profit. That we have a right to expect governments, business and the international community to do all they can to promote and protect the well-being of young people. Not just because of the work of David Barker, but because it is right.

A tribute from

**Barrie Margetts**

*Professor of Public Health Nutrition,  
University of Southampton*

*President, World Public Health Nutrition Association*

For more information about David's life and work, visit:

[www.thebarkertheory.org](http://www.thebarkertheory.org)

## Abbas Kesseba

18 December 1937 – 14 April 2013



*Former IFAD representative to the UNSCN and  
Chair of the UNSCN Working Group on agriculture and  
nutrition*

Dr. Kesseba was committed to nutrition as a priority in addressing the needs of children and women in developing countries. His efforts to translate nutrition and agricultural research into programmes and projects was an inspiration to many. For those of us who see nutrition now much better recognized on the global development agenda, with governments and communities, we can thank Dr Kesseba for what he did to make it happen.

He is a man who has left very big nutrition footprints. Among other things, he chaired the UNSCN's working group trying to better link agriculture and nutrition, a subject now in fashion that he was in the forefront pushing for, decades ago.

As for me, I had the great good fortune of seeing him in action while serving as the US Executive Director to the International Fund for Agricultural Development and an Alternate US Representative to FAO from 1987–1991, and subsequently as the head of USAID global nutrition programmes from 1991–1994.

His contribution remains important in international nutrition work, and will continue to do so for years to come.

A tribute from

**Richard Seifman**

*Independent Consultant*

*currently with the World Bank and  
IntraHealth International, and a serving member of the  
Technical Review Panel of the Global Fund in the fight  
against AIDS, TB, and Malaria*

### A UNSCN tribute to food and nutrition workers in the field

On 17 January 2014, we lost one more of our brave nutrition field workers.

Ms. Basra Hassan was a Nutrition Specialist for UNICEF in Afghanistan. She died in a tragic terrorist attack on a restaurant in Kabul. She was a valuable and dedicated colleague, committed to improving nutrition in one of the world's most vulnerable countries.

The UNSCN pays tribute to Basra Hassan and acknowledges the immensely valuable and important work that the thousands of food and nutrition workers – like Basra – do, often under very difficult conditions, facing indescribable challenges and danger.

Food and nutrition security (FNS) field workers deserve our respect and support. They have different profiles, histories and experiences. Whether being a community volunteer working in an isolated community, a government district officer, a right to food activist, a researcher or a humanitarian aid worker, man or woman, they all have in common the engagement and commitment for a cause they believe in: advancing FNS so that all can enjoy the right to adequate food and nutrition.

Thousands of FNS field workers give their best, every day, well beyond normal working hours, often sacrificing their own family time to devote it to their work. These warriors are true heroes, as they do not demand to be in the limelight nor do they expect to win the Nobel Peace Prize. But their substantial and consistent contributions are the bricks to build a better, kinder, safer and healthier world. We salute you all!

# PROGRAMME NEWS



---

## Keeping the science current and advocating effective policy for noncommunicable disease prevention

### *World Cancer Research Fund International (WCRF)*

---

World Cancer Research Fund International ([WCRF International](#)) leads and unifies a network of charities with a global reach dedicated to the prevention and control of cancer through diet, physical activity and body weight.

The WCRF network of charities fund ground-breaking new [research](#) on the relationship of nutrition, diet, physical activity and body weight to cancer risk. WCRF International also collates and interprets the accumulated scientific evidence from across the world.

Our 2007 [Second Expert Report](#) is the largest ever report on how nutrition, diet, physical activity and body fatness affect cancer risk. On the basis of over 7000 scientific studies reviewed for the report, WCRF International produced [10 Recommendations for Cancer Prevention](#).

The evidence is now being kept current through our [Continuous Update Project](#), to ensure our Recommendations are informed by the latest available evidence. Since 2010, we have published four updated reports for different cancer sites, with the aim of updating all 17 cancer sites from our original report by 2015.

Recent evidence confirms that following our Recommendations has significant beneficial effects for cancer prevention as well as prevention of several other noncommunicable diseases (NCDs).

Building on our science, we advocate for the wider implementation of effective [policies](#) to help people follow our Recommendations. In our policy activities we are concerned with NCDs more broadly, given the shared risk factors and the greater potential for change through working in collaboration.

We would like to see governments everywhere develop, implement and evaluate evidence-informed policies to help individuals and populations adopt and maintain healthy eating and

drinking behaviours, have a healthy weight and take enough physical activity.

Building on our 2009 report [Policy and Action for Cancer Prevention](#), we support and encourage national and international policy-makers to make comprehensive changes to the environment in which we eat, drink and live by:

- Championing and contributing to the development and implementation of the World Health Organization's global policy architecture for NCDs, in order to achieve the global target of reducing premature deaths from NCDs by 25% by 2025.
- Updating, interpreting and communicating the evidence in a way that encourages governments to adopt and implement effective policy actions.
- Engaging with civil society and the research community concerned with cancer and other NCDs, food, nutrition, obesity, physical inactivity and alcohol consumption.

WCRF International recently published the first in a series of Policy and Public Affairs Working Papers, called [Law and Obesity Prevention: Addressing some key questions for the public health community](#).

We also launched a food policy package for healthy diets and the prevention of obesity and diet-related NCDs, the [WCRF International NOURISHING Framework](#). These are just a couple of examples of how our work contributes to achieving our policy goals.

For further information, please visit our [website](#) or contact Corinna Hawkes, Head of Policy & Public Affairs at [c.hawkes@wcrf.org](mailto:c.hawkes@wcrf.org).

## Impact evaluation of an Enhanced Homestead Food Production programme in Nepal

### *Helen Keller International (HKI)*

Recent systematic reviews attribute the lack of impact of agricultural interventions on nutritional status to weak research designs. From 2009–2012, Helen Keller International (HKI) implemented and evaluated an Enhanced Homestead Food Production (E-HFP) programme in the Baitadi District, located in Nepal's far western region, with funding from the United States Agency for International Development (USAID). In total, 41 Village Development Committees (VDCs) were randomly allocated to receive (n=20 VDCs) or not receive (n=21 VDCs) the E-HFP programme. Cross-sectional surveys at baseline in 2009 (n=2106 households) and at endline in 2012 (n=2614 households) were conducted among households with children 12–48 months of age to assess reach and adoption of E-HFP interventions and nutritional status among women and children. The E-HFP interventions included:

- establishing model farms in six of nine wards in each treatment VDC;
- training female model farmers in home-gardening and poultry-raising, and female community health volunteers (FCHV) in essential nutrition actions (ENAs); and
- creating and training mother's groups to replicate E-HFP methods and promote essential nutrition actions.

Relative to controls, the treatment group had significantly (i) higher increases in the proportion of households adopting home-gardening, poultry-raising or both; (ii) higher food production volume and diversity; and (iii) lower prevalence of household food insecurity. The proportion of children under six months of age who were exclusively breastfed and the propor-

tion of 12–23 months old children consuming a minimally adequate diet was significantly higher in the treatment group when compared to children in the control group. Adjusted analyses showed that non-pregnant women in the treatment group also had 39% lower odds of underweight (OR=0.61; 95% CI: 0.46–0.82) and, among all women, a 38% lower odds of anaemia (OR 0.62; 95% CI: 0.48–0.82) relative to controls. Similarly, treatment group children had a 24% lower odds of anaemia (OR=0.76; 95% 0.59–0.98) relative to controls. No differences were detected between groups regarding stunting, wasting or underweight prevalence.

The programme also catalysed intersectoral planning by representatives of the departments of health, agriculture, livestock, and women's development, coordinated by local government officials. Food Security and Nutrition Groups were created at the local level with participants from across government sectors and civil society groups, to develop priorities for nutrition-sensitive investments based on lessons learnt through the programme. Proposals developed were approved for government funding. Selected beneficiaries were nominated by the local government to continue to serve their communities as E-HFP resource persons. These successes are now being replicated across 25 the 75 districts in Nepal, with additional funding from USAID.

For more information, contact Jennifer N. Nielsen.  
Email: [jnielsen@hki.org](mailto:jnielsen@hki.org)

## Technical meeting on nutrition: Oxford, United Kingdom, October 2014

### *Emergency Nutrition Network (ENN)*

The ENN will host a three-day meeting in Oxford, United Kingdom, on 7–9 October 2014. The aim of the meeting is to facilitate a technical learning and networking space on nutrition-specific and nutrition-sensitive programming in emergencies and high-burden contexts, to inform better practice, research priorities and advocacy.

The meeting will engage a broad audience (up to 200 participants) that includes NGOs, UN agencies, Scaling Up Nutrition (SUN) Movement partners, the Global Nutrition Cluster (GNC), academia, bilateral and multilateral donors, the private sector and government representatives. A wide range of existing

online and social media tools will be used to capture and rapidly share the meeting discussions and outcomes.

For more information, contact Emily Mates.

Email: [emily@enonline.net](mailto:emily@enonline.net).



## Leveraging Agriculture for Nutrition in South Asia (LANSA)

### MS Swaminathan Research Foundation in India and partners

This is a new research initiative launched in 2013 to investigate how to make agriculture more nutrition-sensitive. Leveraging Agriculture for Nutrition in South Asia (LANSA) examines how agriculture- and food-related interventions can be better designed to improve nutrition, with a particular focus on mothers, young children and adolescent girls in South Asia. Funded by the Government of the United Kingdom, the programme will run for six years (2013–2018). The Consortium is led by the [MS Swaminathan Research Foundation in India](#). Other partners include: [BRAC](#) (formerly Bangladesh Rural Advancement Committee), [Collective for Social Science Research](#), [Institute of Development Studies](#), [International Food Policy Research Institute](#) and the [Leverhulme Centre for Integrative Research on Agriculture and Health](#).

The programme has three broad research themes:

#### 1) Enabling environments for nutrition

Through systematic reviews, interviews with key stakeholders, political economy analyses and the identification of agricultural innovation systems that have the potential to positively impact on nutrition in. This research theme focuses on answering the questions: what are the barriers and facilitators to nutrition-sensitive agricultural development in the region? Where, to what extent and how can the major disconnects between agriculture and nutrition in South Asia be bridged through non-agricultural interventions?

#### 2) Agri-food value chains

A study is under way to help understand how policies and strategies influence the poverty and nutrition impacts of agri-food value chains, assessing the impact of farm credit on agricultural productivity, poverty reduction and nutritional outcomes in India. New value-chain-based interventions aimed at making (acceptable) nutritious foods accessible to the poor and the development of a new framework to guide case study analysis are also under way, to help identify what public and private actions are needed to strengthen the impacts of agri-food value chains on nutrition. The framework will focus on the functioning of value chains in terms of impacts on availability, affordability, acceptability and use of nutritious foods.



Photo: Akram Ali/CARE Bangladesh

#### 3) Nutrition-sensitive agriculture

This theme investigates the strength of the evidence that agricultural interventions can be pro-nutrition, examining interventions that have potential to make significant impacts on improving nutrition. Research includes feasibility studies and evaluations of:

- a specially designed intervention, *Farming Systems for Nutrition*, in India;
- integrating nutrition messages into digital technologies that promote improved agricultural practices in India;
- an agriculture for nutrition promoter model, where “promoters” provide farming families with information on agricultural technologies and production practices that support improved nutrition outcomes; and
- the impact on food security, diet quality and nutrition outcomes, of granting agricultural land to women in landless households in Pakistan.

For more information, and to have access to the studies, visit [www.lansasouthasia.org](http://www.lansasouthasia.org).

Follow us on Twitter [@LANSAresearch](https://twitter.com/LANSAresearch).



## Transform Nutrition

### *International Food Policy Research Institute (IFPRI) and partners*

Transform Nutrition is a consortium of [international research partners](#), led by the International Food Policy Research Institute (IFPRI) and funded by the United Kingdom Department for International Development (DFID). Using research-based evidence, we aim to inspire effective action to address undernutrition. We know what works in terms of direct nutrition interventions, but scaling up is not happening fast enough or not at all. We know there are large resource flows in sectors such as agriculture, social protection and health systems, but their potential to improve nutrition is rarely exploited. Finally, wider societal norms do not support nutrition as well as they could: better nutrition is in everyone's interests, but is nobody's responsibility.

The Transform Nutrition Research Programme Consortium aims to unlock these puzzles and transform thinking and action on nutrition. We are strengthening the content and use of nutrition-relevant evidence to accelerate undernutrition reduction through this decade in the two highest burden regions of South Asia and sub-Saharan Africa, with a special focus on four high-burden countries (Bangladesh, Ethiopia, India and Kenya). We are focusing on the 1000-day period from pre-pregnancy to 24 months of age, the so-called window of opportunity, where interventions are most effective at reducing undernutrition. Our research is structured around three core pillars relating to nutrition-specific and nutrition-sensitive interventions, and an enabling environment for nutrition. These pillars are aligned with the three levels of the undernutrition problem (at immediate, underlying and basic causal levels).

Our work on nutrition-sensitive agriculture and food systems is focused on the fact that we know that direct interventions are necessary, but not sufficient to reduce maternal and child malnutrition. Recent estimates (Bhutta et al. 2013) suggest that



Photo: Ayesha Vellani/Save the Children



scaled-up nutrition-specific interventions will only avert one fifth of the child stunting burden. Broader-based interventions capable of addressing the underlying drivers of undernutrition are needed (including agriculture, social protection and women's empowerment). Here the knowledge gap relates to how best to unleash their potential by maximizing their nutrition sensitivity.

We are currently undertaking the following initiatives under the nutrition-sensitive interventions research pillar:

- Examining the impact of social protection interventions on nutrition outcomes, and the synergies between social protection and direct nutrition interventions in Ethiopia.
- Qualitative work on the synergistic effects of social protection and direct nutrition interventions in Bangladesh.
- A project in Ethiopia to examine the joint impacts of agricultural interventions and direct nutrition interventions in high potential areas of the country.
- Examining the joint impacts of agricultural and other livelihood interventions in both rural and urban localities in Bangladesh.

An evidence paper on women's empowerment and nutrition has been completed.

Preliminary work has begun on analysis of nutrition and women's empowerment using data from Demographic and Health Surveys, and an analysis using cross-country data of gender inequalities and undernutrition.

News, studies and publications are available now at [www.transformnutrition.org](http://www.transformnutrition.org), where you can also sign up to the quarterly e-newsletter.

## The Mama SASHA proof-of-concept project: integrating health and agriculture to maximize the nutritional impact of orange-fleshed sweet potato

*International Potato Center (CIP) and partners\**

Everyone talks about how agriculture can be leveraged to tackle chronic undernutrition and micronutrient deficiencies among young children and their mothers, but how to actually do it in an effective way is what the Mama SASHA proof-of-concept project is seeking to learn in western Kenya. The project has integrated health care services into actions that promote the production and consumption of orange-fleshed sweet potato (OFSP), with the aim of improving the health of mothers and children under two years of age. Thus, the actions go beyond the local project setting and affect health, food and agriculture systems more broadly.

In Mama SASHA, government nurses are trained to provide key nutrition messages to pregnant women when they come for antenatal care (ANC). To entice pregnant women to come earlier and more often to ANC services, they receive vouchers that they can redeem at local OFSP vine multipliers for 200 free cuttings. Women are also encouraged to join pregnant women's clubs that meet monthly, to reinforce key nutrition messages and to meet with community health workers and learn more on how to prepare nutritious meals and take better care of themselves during pregnancy.

Easy-to-grow OFSP is a very rich, bioavailable source of provitamin A, which is lacking in white-fleshed varieties commonly grown in Kenya. Small roots of OFSP can meet the daily vitamin A needs of a young child. From March 2011 through August 2013, 7796 pairs of vouchers were issued to 5432 pregnant women, and 55% were redeemed for vines (some women only redeemed once, even if they got vouchers multiple times). Operational research conducted during multiple phases of the project revealed the satisfaction of mothers and recognition of enhanced maternal and child health, as well as perceptions of healthier and more energetic children. Frontline health workers noted greater worker satisfaction, improved quality of health services and community engagement and felt that the health and nutrition benefits to pregnant women and their infants outweighed the operational requirements of integrating OFSP with ANC services. A financial analysis of the Mama SASHA project indicates that the cost per beneficiary is similar to other multipronged, community-based health and nutrition pro-



*A Mama SASHA participant and her family eating a meal with orange-fleshed sweet potato. Photo credit: Rael Odengo, Path.*

grammes that strengthen access to health services.

As Mama SASHA enters its final year, an impact assessment is being undertaken to evaluate the benefits and costs of this kind of multisectoral intervention on maternal and child health outcomes. Data from a cross-sectional household survey of over 1900 mother-child pairs and a smaller cohort study of 500 participating women will assess whether there have been significant changes in (i) health and nutrition knowledge; (ii) consumption of OFSP and other nutrient-rich foods; and (iii) antenatal and postnatal health care service utilization. Data on maternal and child health outcomes include mother and child vitamin A status and age-appropriate nutritional indicators, such as anthropometry and body mass index (BMI). Mama SASHA's comprehensive and rigorous evaluation strategy will contribute with much needed evidence around the effectiveness, acceptability, feasibility and costs of scaling up integrated agriculture, health and nutrition programmes.

For more information, contact Frederick Grant or Carol Levin.

Emails: [f.grant@cgiar.org](mailto:f.grant@cgiar.org) and [clevin@uw.edu](mailto:clevin@uw.edu).

*\*Mama SASHA Partners include the International Potato Center (CIP); PATH; AIDS, Population and Health Integrated Assistance (APHIAplus); University of Toronto; Emory University and University of Washington.*

---

## Updates from the World Health Organization

### *Department of Nutrition for Health and Development*

---

#### WHO support to countries in scaling-up nutrition action

WHO is supporting the scaling-up of nutrition actions in a number of countries, such as Ghana, Guinea, Madagascar and Namibia, through applying five steps for evidence-informed policy planning adapted from the [EVIPNet methodology](#). This includes an initial context mapping and the identification of priority actions using the Landscape Analysis ([see 18 country assessment summaries](#)), as well as costing the identified nutrition

actions using the [UN OneHealth Tool](#). The OneHealth costing tool includes the effective direct nutrition interventions that can be delivered through the health system (for example, iron and folic acid supplementation, breastfeeding promotion, among others), as well as other effective health interventions with an impact on nutrition (such as deworming, delayed cord clamping and pregnancy spacing).

---

#### Maternal and Child Nutrition journal supplement

A Maternal and Child Nutrition journal supplement on the [WHO-led Healthy Growth Project](#) was published in September 2013. The articles are open access from the journal. They can also be accessed through the [WHO website](#), where video summaries of each article are presented by their authors.

On 14 October 2013, the Department of Nutrition for Health and Development at WHO hosted a webcast colloquium on [Childhood stunting: challenges and opportunities](#). Perspectives from government, civil society, UN agencies and donors have been compiled to support country efforts in setting and implementing stunting reduction agendas as they work towards the

World Health Assembly targets for 2025. The discussion covered questions of vertical convergence among global and national goals, high-level political commitment, subnational capacity and commitment to implementation and engaging communities and households in stunting reduction efforts. Provocative discussions addressed questions such as: what is transdisciplinarity, and why is it critical for the stunting reduction agenda? When is multisectoral action required and when is it not? Video materials and summary documentation are available online on the [WHO Nutrition page](#).

---

#### Global Nutrition Policy Review: What does it take to scale up nutrition action?

The [Global Nutrition Policy Review](#), published in June 2013, provides the analyses of the information compiled from 123 countries based on a survey undertaken by WHO during 2009-2010. It reviewed what nutrition topics or areas of work the existing policies cover, how they are being implemented, what the implementation coverage is, who the stakeholders are, what coordination mechanism exists and how monitoring and evaluation activities are being implemented. Selected case studies and results from the in-depth [Landscape Analysis country assessments conducted in 18 countries](#) are also included.

Much progress has been made since the 1992 International Conference on Nutrition (ICN) in the design and implementation of national nutrition policies and plans of action. Most countries had policies and programmes that are addressing key nutrition issues, such as undernutrition, infant and young child feeding, vitamin and mineral malnutrition, and obesity and diet-related noncommunicable diseases. Nevertheless, the Review identified a number of gaps in the design, content and implementation of these policies and programmes.

## Updating of the dietary goals for the prevention of obesity and NCDs

The WHO Nutrition Guidance Expert Advisory Group ([NUGAG](#)) Subgroup on Diet and Health established in 2010 has been updating the dietary goals for the prevention of obesity and non-communicable diseases (NCDs). Updating of the WHO guidelines on sugars and fatty acids (in particular saturated fatty acids and trans-fatty acids), following the recent update on the sodium and potassium guidelines, is an important element of WHO's efforts in implementing the NCD agenda. The Organization is increasing its attention on NCDs in order to contribute to the implementation of the [Political Declaration of the UN High-level Meeting on NCD](#) held in New York in September 2011, as well as the implementation of the [NCD Action Plan for 2013–2020](#) adopted by the 66th World Health Assembly held in May 2013.

During 2013, two meetings of the NUGAG Subgroup on Diet

and Health took place, one in Hangzhou, China, in March 2013. At that meeting, the NUGAG Subgroup on Diet and Health finalized the [draft recommendations on dietary sugars](#), as well as total fat intake in relation to weight gain. It also reviewed the interim outcomes of systematic reviews on saturated fatty acids (SFA) and trans-fatty acids (TFA) in relation to the priority outcomes including all-cause mortality, coronary heart disease, cardiovascular disease, stroke, blood lipids and diabetes in both adults and children. The second meeting was hosted by the WHO Regional Office for Europe (EURO) in Copenhagen, Denmark (21 to 24 October 2013). The main objectives of this meeting were to review the updated systematic reviews and assess the available evidence on SFA and TFA and update the recommendations including the issues related to replacement of SFA and TFA as public health measures related to diet, nutrition and health.

---

## Nutrient Profiling

WHO organized a [session on nutrient profiling](#) at the IUNS 20th International Congress of Nutrition held in Granada, Spain, in September 2013. The aim of the session was to discuss how nutrient profiling can be used, is used and should be used to develop or adapt models for four applications considered in the development of the WHO guiding principle and framework manual. These are: i) marketing food and non-alcoholic beverages to children; ii) developing front-of-pack labelling; iii) regu-

lating health and nutrition claims; and 4) determining school food procurement. Norway and South Africa shared their experiences in developing their models, and the discussion focused on the development of a regional or global model as well as the possible use of a single model for multiple applications in a global context. Currently, the European Region of WHO is exploring the possibility of developing a regional model for marketing food and non-alcoholic beverages to children.

---

## eLENA and GINA

The WHO [e-Library of Evidence for Nutrition Actions](#) (eLENA) currently contains 75 interventions related to maternal, infant and young child nutrition, obesity and diet-related NCDs, with plans to add 40 more interventions over the next two years. Further planned enhancements include strengthening the links between eLENA and the [WHO Global Database on the Implementation of Nutrition Action \(GINA\)](#), which was launched in November 2012, and developing an eLENA mobile phone appli-

cation. Currently, GINA contains more than 1300 policies and 2400 actions from 183 countries, and recent updates include national legislation related to the [International Code of Marketing of Breast-milk Substitutes](#), country information from the ILO database on maternity protection and information on large-scale programmes from the [Global Alliance for Improved Nutrition \(GAIN\)](#).

## A new global effort to effectively reduce obesity and diet-related noncommunicable diseases

### INFORMAS

Food environments are the collective physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence people's food and beverage choices and nutritional status. The healthiness of food environments is a major driver of population diet and health. No country to date is comprehensively monitoring its food environments and policies, and lack of data decreases the likelihood of actions being taken.

In order to increase accountability of both governments and the private sector for their actions on food environments, INFORMAS (International Network for Food and Obesity/Noncommunicable Diseases Research, Monitoring and Action Support) has recently been founded to comprehensively and regularly monitor food environments and policies in countries of varying size and income globally.

Governments and private sector companies will be ranked according to their actions on food environments and benchmarked against best practice. Identification of those countries/companies which have the healthiest food policies and practices, and using them as international benchmarks against which national progress can be assessed, should support reductions in global obesity and noncommunicable diseases (NCDs).

The INFORMAS framework includes two process modules,

which monitor the actions of the public and private sectors, seven impact modules that monitor the key characteristics of food environments, and three outcome modules that monitor dietary quality, risk factors and NCD morbidity and mortality. A module on food production and waste will be added at a later stage. In order for countries to start, firstly the *Government Healthy Food Environment Policy Index* (Food-EPI) will be implemented to form a coalition of NGOs and public health experts and to collect evidence on the extent of government policy implementation.

INFORMAS data will enable benchmarking of food environments between countries and over time, will allow a deeper understanding of how food policies and environments affect obesity and NCDs and allow evaluation of the impacts of new food policies on food environments and obesity and NCD risk factors. INFORMAS aims to identify equity and sustainability indicators as well, which should help to come to more integrated food policies meeting the challenges of chronic disease, climate change, loss of biodiversity, resource efficiency and food security.

For more information, contact Stefanie Vandevijvere at [s.vandevijvere@auckland.ac.nz](mailto:s.vandevijvere@auckland.ac.nz).

## New professional certification scheme for Public Health Nutritionists

### World Public Health Nutrition Association (WPHNA)

Capacity building has been a major preoccupation of the World Public Health Nutrition Association (WPHNA) since its inception in 2006. A strong collaborative process took place to empower public health nutrition as a profession, including two workshops in the Porto 2010 and Rio 2012 congresses, and published [papers on competency standards](#) and [capacity development](#).

In 2013, WPHNA launched its [Certification Scheme](#). This is a practitioner certification system, with the primary objective of professional recognition. Successful applicants will be able to use the title *Certified Public Health Nutritionist* and the post-nominal letters "cPHN".

This certification system is designed to enable international recognition for public health nutritionists. It helps define what public health nutritionists can do and should elevate a broader understanding of the value of public health nutritionists as a special part of the public health workforce worldwide.

Certification applications should be submitted by individual

practitioners who believe they have completed necessary university level qualifications (or equivalent experience), and have experience of practicing public health nutrition in the workplace or post-training settings. Certification applications and review incur a fee of €100 per year for applicants from high-income countries, and €60 per year for applicants from low- and middle-income countries. Applicants can decide to apply yearly, or to apply once for the period of five years.

For more information visit [www.wphna.org](http://www.wphna.org) or send an email to [secretariat@wphna.org](mailto:secretariat@wphna.org). To apply, click [here](#).

**WORLD  
PUBLIC HEALTH  
NUTRITION  
ASSOCIATION**

## Research programme on Agriculture for Nutrition and Health (A4NH)

### CGIAR Global Partnership

Despite progress towards increasing incomes and feeding people, agriculture can still do more to directly improve the nutrition and health of poor farmers and consumers. The CGIAR Research Programme on Agriculture for Nutrition and Health (A4NH), led by the International Food Policy Research Institute (IFPRI), is designed to fill the gap between agricultural development and its unfulfilled health and nutritional benefits. Through broad partnerships, A4NH conducts research on nutrition-sensitive agriculture and healthy food systems.

When [HarvestPlus](#) became part of A4NH in 2012, it brought a portfolio of micronutrient rich crops, such as vitamin A cassava (Nigeria), orange-fleshed sweet potato (Mozambique and Uganda) and high-iron beans (Democratic Republic of the Congo and Rwanda). Since joining A4NH, HarvestPlus has released new crops, including high-zinc rice (Bangladesh) and wheat (India), high-iron pearl millet (India) and vitamin A maize (Nigeria and Zambia). Beginning in 2014, the HarvestPlus team will focus on scaling up delivery to reach hundreds of thousands of farming households.

Through its evaluation portfolio, A4NH assesses the nutritional impact of various models of integrated programmes. These include homestead food production programmes in several countries from sub-Saharan Africa with Helen Keller International (HKI), and in Zambia with Concern Worldwide, as well as evaluations of social protection programmes, including the mul-

ticountry [Evaluating Vouchers and Cash-Based Transfers](#) study, in partnership with the World Food Programme, among others.

To address agriculture-associated diseases, a cross-center group of A4NH scientists and partners recently collaborated with the 2020 Vision Program of IFPRI to launch a series of [19 policy briefs](#) on managing aflatoxin risks. The briefs identify effective market models for creating incentives and reducing public health risk, describes technologies for the identification, reduction and mitigation of aflatoxins, and show how policy can enable faster progress in aflatoxin control.

A4NH has also been working on capacity building efforts to help partners plan and measure agriculture–nutrition programmes and engage in agriculture–nutrition research. From 6–7 December 2013, A4NH hosted a Gender Nutrition Methods Workshop in Nairobi, for scientists in nutrition, gender, monitoring and evaluation, and agricultural economics from within CGIAR and its partners. The workshop aimed at increasing knowledge about how gender influences agriculture’s impact on nutrition, and which methods and tools can be used to integrate gender into research on agriculture–nutrition linkages.

For more information, visit [www.a4nh.cgiar.org](http://www.a4nh.cgiar.org) or contact Charlotte Block, A4NH Senior Program Manager, at [c.block@cgiar.org](mailto:c.block@cgiar.org).

## An independent initiative to support a food and nutrition secure future

### Community for Zero Hunger

There are more than 842 million people who are hungry and malnourished around the world. As we look toward 2050, we will have a third more mouths to feed, which will further strain systems, the environment and communities. Building sustainable, specific and multisectoral responses to ending hunger and creating a food and nutrition secure world are urgent. In June 2012, the United Nations put out a bold call to action to end hunger and malnutrition in our lifetime: the [Zero Hunger Challenge](#). In response to this call to action, which also encourages active participation from all sectors, the Community for Zero Hunger was unveiled in 2013.

Working with a diverse group of experts and advised by an esteemed group of global leaders, the Community for Zero Hunger team will conduct an assessment to identify context-specific needs and gaps in the fight against hunger and malnutrition from the perspectives of in-country and in-community practitioners. This effort is then followed by a scoping of

knowledge and solutions to identify capabilities, experiences and other offerings that could help fill those gaps in a context-appropriate manner.

The initiative brings together individuals and organizations unified around the common goals of ending hunger and malnutrition. By identifying innovative, efficient, sustainable and specific solutions, the Community for Zero Hunger supports the need for an integrated, global response to the UN Zero Hunger Challenge. Its outputs will be shared via an open access platform and dissemination and convening efforts to connect practitioners to solutions that can make a lasting impact as we construct a hunger- and malnutrition-free world.

For more information, visit the [Community for Zero Hunger online](#) or contact us at [info@zerohungercommunity.org](mailto:info@zerohungercommunity.org).

You can also follow us on Twitter: [@ZHCommunity](#).

## New research shows improvements in vitamin A intake and micronutrient status from consumption of biofortified crops

### HarvestPlus

HarvestPlus plays a leading role in global efforts to develop and test the bioavailability, efficacy and effectiveness of micronutrient-rich staple food crops. Using conventional breeding methods to biofortify staple crops commonly consumed by malnourished rural populations, HarvestPlus ensures that consumption of these crops will have a measurable nutrition impact when prepared and consumed according to the habitual practices and consumption patterns of target populations.

Recent findings from research supported by HarvestPlus have brought new and important information to the attention of researchers focused on vitamin A, iron and zinc. It has been known that in predominantly cassava-consuming populations, such as those in southern Nigeria, children four to six years of age consume more than 200 g cassava per day, and women more than 400 g per day. In some areas, such as rural Akwa Ibom, the population also consumes red palm oil (with yellow *gari* and other common dishes) that is also fortified with vitamin A, decreasing the prevalence of vitamin A deficiency (VAD) among women.

However, children still exhibit moderate to high prevalence of VAD despite supplementation and red palm oil consumption. Researchers collaborating with HarvestPlus have found that in provitamin A-rich-cassava, beta-carotene is highly available but subject to degradation over the course of six months. Fresh *gari*, for instance, retains about 40% of its original provitamin A content, but this can degrade over six months to retain only 6%. This new data in retention of provitamin A from cassava

through storage, processing and cooking may prompt a re-evaluation of the target levels for provitamin A in cassava.

In addition, findings from our studies with iron- and zinc-biofortified pearl millet is challenging old doctrines and providing evidence that a plant-based diet can provide 70–100% of the daily iron requirement for women and children, as much as an animal-based diet can. New studies in iron-deficient Indian children and marginally-iron-deficient Beninese women showed adequately improved absorption of iron and zinc from iron- and zinc-biofortified pearl millet in children ( $p < 0.001$  for iron,  $p < 0.05$  for zinc) and of iron from the iron-biofortified pearl millet in women compared to the control group.

Finally, the cycle of evidence has successfully been closed for orange sweet potato (OSP), now that it has shown to be effective in increasing vitamin A intake in the target populations. OSP rich in beta-carotene has previously been shown to improve the vitamin A (VA) status of infants and young children in controlled efficacy trials.

Two effectiveness trials in rural Ugandan and rural Mozambican women and children showed a positive association between increased beta-carotene-rich OSP intake and increased VA intake. Rural Ugandan children also showed an improvement in VA status.

For more information, contact [harvestplus@cgiar.org](mailto:harvestplus@cgiar.org).

## Field Exchange: special issue on programming in response to the Syria crisis

### Emergency Nutrition Network (ENN)

The ENN is producing a special bumper issue of *Field Exchange*, on programming in response to the Syria crisis. This is due out in September 2014. Given the scale and unique nature of this crisis, the focus of the special issue is likely to be as much on nutrition-sensitive programming as it is on nutrition-specific programming.

There has already been widespread engagement by agencies involved in the response, and an ENN team will also be visiting the region (Jordan, Lebanon and Turkey) in March/April to conduct interviews with agency staff and obtain a better contextual understanding of the crisis and response.

As is usual for *Field Exchange*, the special issue will focus on programming detail and lesson learning. In addition, two an-

thropologists and an assistant from the ENN will conduct work among refugees and host populations in Jordan to collect the perceptions of affected populations on programming.

To find out more about this special issue and to discuss possible contributions, please contact Marie McGrath at [marie@ennonline.net](mailto:marie@ennonline.net).



## Germany publishes call for proposals in nutrition-sensitive agriculture

### Federal Ministry of Food and Agriculture (BMEL), Germany

The German Federal Ministry of Food and Agriculture (BMEL) has launched a new funding instrument. BMEL seeks to strengthen the contribution of Germany's agricultural research to the development of an efficient agricultural sector in partner countries by fostering long-term partnerships between agricultural research institutions in Germany and in developing countries, especially in Africa.

This new funding instrument has the following general objectives: i) to develop improved and sustainable approaches for food security; ii) to explore improvements along the whole agricultural value chain; iii) to involve relevant partners according to the research topic and the needs in the target country (i.e. not only research institutes but also development, governmental and nongovernmental organizations where appropriate); and iv) to integrate approaches and findings from research projects into regional development processes through, for example, cooperation with regional networks and research fora. Besides research, tasks in the area of capacity development and information and knowledge management will also be supported.

The specific topic of the current call for proposals is *Nutrition – Diversified Agriculture for Balanced Nutrition in Sub-Saharan Africa*. Research projects will be funded that deal with nutrition

-sensitive food production in the respective target region. In particular, the contribution of a diversified agriculture to combat undernutrition should be analysed and appropriate approaches presented. The focus will be on projects which analyse the importance of fruits and vegetables, especially indigenous (also neglected) crops and other plant products to improve the nutritional status of the local population. In addition, it is important to raise awareness of local and national stakeholders on the subject of nutrition (actors from research, development and policy), as these actors are usually mainly involved in the field of primary agricultural production.

Specific research areas are, among others: i) contributions of diverse and nutrition-sensitive agriculture to combat undernutrition; ii) avoidance of losses along the value chain, especially in qualitative (nutrition physiological) respects; and iii) consumption opportunities and consumer behaviour in the target region in terms of a balanced diet.

On behalf of BMEL, the Federal Office for Agriculture and Food (BLE), as funding agency technically manages all forthcoming research projects and further calls for proposals.

For more information, visit the [BLE website](#).

## Coordinated research on nutrition-sensitive agriculture: results and plans

### International Atomic Energy Agency (IAEA)

The IAEA is currently concluding a coordinated research project called *Food fortification and biofortification to improve micronutrient status during early life*, with cosponsorship from HarvestPlus. The project involved ten international investigations using stable isotopes, including investigations of the bioavailability of vitamin A, iron and zinc from biofortified crops. Early published results from these studies showed that the phytic acid content of beans substantially inhibited iron absorption in women in Rwanda, limiting the benefit of increasing iron without decreasing phytic acid content (*J Nutr* 2012; 142, pp. 492–7). In Bangladesh, the total amount of zinc absorbed by children did not differ between a zinc-biofortified rice and control because of differences in absorptive efficiency (*J Nutr* 2013; 143, pp. 519–525). In India, iron and zinc from biofortified pearl millet were well absorbed in amounts that meet requirements in young children (*AJCN* 2013; 143, pp. 1489–93).

As a continuation, the IAEA is starting a new five-year coordinated research project on the use of nuclear techniques to as-

sess the role of nutrition-sensitive agriculture and food systems in improving diet, health and nutritional status of vulnerable populations. This research project will generate important information on the role of structural outcome measures, such as body composition, in understanding the links between agriculture and nutrition and in strengthening the evidence in support of nutrition-sensitive agriculture policies and practices. Studies accepted thus far from Bangladesh, Cuba, Haiti, Myanmar, Peru, Senegal and Tanzania will evaluate different nutrition-sensitive agriculture interventions, such as household- or community-level gardens with nutritious crops, diversification of crops or dairy promotion in combination with nutrition education.

For more information: Najat Mokhtar ([N.Mokhtar@iaea.org](mailto:N.Mokhtar@iaea.org)) or Cornelia Loechl ([C.Loechl@iaea.org](mailto:C.Loechl@iaea.org)), Nutritional and Health-related Environmental Studies Section, IAEA.

## Poverty, Health and Nutrition Division

### International Food Policy Research Institute (IFPRI)

The Poverty, Health and Nutrition Division (PHND) of the International Food Policy Research Institute ([IFPRI](#)) works on building an evidence base on the linkages between agriculture and nutrition outcomes, focusing on understanding the multiple pathways and leverage points for improving nutrition through agriculture.

Through the *Tackling the Agriculture Nutrition Disconnect in India* ([TANDI](#)) project, PHND has developed a conceptual framework and identified key pathways by which agriculture can lead to improved nutrition, namely through increases in household income, access to diverse diets, changes in food prices, and through women's empowerment, time, and health and nutritional status. Using existing data from India, TANDI aims to better understand and address the failure of sustained economic and agricultural growth to reduce child undernutrition in India. This analytical work has now been extended to several countries in sub-Saharan Africa.

PHND's policy research contributes to knowledge on enabling environments to improve nutrition and maximizing the nutrition-sensitivity of agriculture policy. Specifically, PHND has begun research on policy platforms for three large projects: *Transform Nutrition*, aiming to strengthen the evidence base on nutrition-sensitive development through a lens of governance, inclusion and fragility; *Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition* ([POSHAN](#)), aiming to build evidence on effective actions for decision-making on nutrition in India; and *Leveraging Agriculture for Nutrition in South Asia* ([LANSAs](#)), aiming to understand how agriculture policy in South Asia can enhance its impacts on nutrition outcomes. PHND's research on agriculture and nutrition also includes a

large portfolio of evaluation research with programme partners, such as Helen Keller International (HKI) in countries of sub-Saharan Africa (CHANGE project) and Concern Worldwide in Zambia. This research aims to generate solid evidence through rigorous experimental evaluation research on the impact of complex homestead food production programmes integrating agriculture, nutrition, and health on maternal and child nutrition. This body of research also uses programme theory and impact pathway analysis to document how these impacts are achieved and which aspects of programme design, targeting or implementation can be strengthened to maximize impact and cost-effectiveness.

PHND also works on innovative approaches to enhance the nutrition-sensitivity of food value chains and evaluate impacts on nutrition outcomes. In northern Senegal, PHND is partnering with a local dairy firm to assess the impact on child anaemia of using a fortified cereal and yogurt-based complementary food as an incentive to milk production during the dry season in pastoral communities. PHND is also collaborating with the Partnership for Child Development (PCD) to evaluate the impact of homegrown school feeding programmes linked to smallholder farmer agriculture and community development in Ghana and Mali.

The division's policy- and programme-relevant research on nutrition-sensitive agriculture and value chains will contribute to a growing body of evidence on how agriculture can be leveraged to accelerate progress in improving maternal and child nutrition in low- and middle-income countries.

For more information, contact Kimberly Keeton.  
Email: [k.keeton@cgiar.org](mailto:k.keeton@cgiar.org).

## Nutrition Exchange

### Emergency Nutrition Network (ENN)

*Nutrition Exchange* is an ENN publication that contains short, easy-to-read articles on nutrition programme experiences and learning from countries with a high burden of malnutrition and those that are prone to crisis. It also summarises research and provides information on guidance, tools and upcoming trainings in nutrition and related sectors.

*Nutrition Exchange* is for all those people who are working to reduce levels of malnutrition at the national, district and community level. This includes government, civil society, international and national agency staff working in nutrition, including agriculture, health, education, water and sanitation and the

social protection sectors.

We welcome contributions from national authors for our 2015 publication! [Register here](#) to receive hard or soft copies of the annual publication. Please contact us for more details, or to submit contributions: [Valerie@enonline.net](mailto:Valerie@enonline.net) or [Carmel@enonline.net](mailto:Carmel@enonline.net).



## Leverhulme Centre for Integrative Research on Agriculture and Health

### LCIRAH

The Leverhulme Centre for Integrative Research on Agriculture and Health (LCIRAH) was established in January 2011 in London, under a five-year £3.5 million grant from The Leverhulme Trust, to build a new intersectoral and interdisciplinary platform for integrating research in agriculture and health, with a focus on international development goals. The Centre brings together researchers and their partners from the London School of Hygiene & Tropical Medicine (LSHTM), School of Oriental and African Studies (SOAS) and Royal Veterinary College (RVC) at the University of London to develop research approaches and methodologies that integrate agricultural and health research. The research programme involves anthropologists, economists, agricultural researchers, public health professionals and nutritionists working together on LCIRAH's overarching research question: *how do we achieve sustainable food and agriculture systems which promote health and well-being for all people?*

LCIRAH organises its research under six themes: agriculture, poverty, and health; agriculture, diet and noncommunicable diseases in development; emerging foodborne and zoonotic diseases; value-chain approaches in agri-health research; innovative metrics for agriculture and health research and evalua-

tion; and impact of environment and climate change on agriculture, health and nutrition.

In the three years since its launch, LCIRAH has developed a rich and diverse portfolio of projects and collaborations. An example is LCIRAH's participation as one of six partners in [LANSA](#). Ten LCIRAH PhD students are pursuing doctoral research in topics ranging from women's empowerment in agriculture and child nutritional status in Nepal to the epidemiology, ecology and socioeconomics of zoonotic disease emergence in Kenya. In addition to research, LCIRAH contributes to the community at the interface of agriculture, nutrition and health by facilitating the diffusion of knowledge in this area by organizing an annual international conference in London around a specific agri-health theme; and by integrating knowledge on the interconnections between agriculture, nutrition and health into curricula and teaching materials for its constituent colleges, as well as the external community.

LCIRAH would welcome new collaborations with people and organizations with similar interests and operates a membership scheme open to all interested parties.

For more information: [lcirah@lids.bloomsbury.ac.uk](mailto:lcirah@lids.bloomsbury.ac.uk).

## Joint programmes for food security and nutrition

### Millennium Development Goals Achievement Fund (MDG-F)

The joint programmes in the Children, Food Security and Nutrition thematic area of the Millennium Development Goals Achievement Fund (MDG-F) came to a close in June 2013. All programme documentation, including midterm and final evaluations, and knowledge products from this programming experience are available at [www.mdgfund.org](http://www.mdgfund.org).

The MDG-F was established in 2007 with an agreement between the Government of Spain and UNDP on behalf of the UN system with the aim of accelerating progress towards the achievement of the Millennium Development Goals. The MDG-F supported 130 joint programmes in 50 countries and eight different thematic areas and gathered valuable knowledge on how countries can advance their development goals through joint efforts. The Children, Food Security and Nutrition thematic area was the largest of the MDG-F and received over US\$ 135 million to support 24 joint programmes. It brought together the collaboration of several UN agencies (such as UNICEF, FAO, WFP, PAHO/WHO, UNDP, ILO, UNIDO, UNESCO, UNFPA, UNODC and IOM). The multisectoral programmes varied in complexity and scope, responding to the situational needs and

the underlying determinants of undernutrition in both food secure and food insecure contexts. The *MDG-F Knowledge Management Initiative* was tasked with supporting the knowledge generation, capture, exchange and sharing from the programmes. These included the commissioning of cross-cutting research papers, case studies and the development of a new tool to measure political commitment for nutrition, workshops to develop knowledge management capacity of joint programmes, peer-to-peer learning through knowledge exchange visits and a community of practice, and dissemination of the materials through the MDG-F document library (which will be launched in September 2014) and through the MDG-F wiki ([www.wiki.mdgfund.net](http://www.wiki.mdgfund.net)).

The scope and innovation of the MDG-F joint programmes have provided several opportunities to generate knowledge and share lessons learnt. It is hoped that these resources and lessons, which are publicly available, will support the next generation of multisectoral nutrition programmes in the post-2015 era. For more information, email [nutrition@unicef.org](mailto:nutrition@unicef.org) or visit the MDG-F website [www.mdgfund.org](http://www.mdgfund.org).

## Improving nutrition outcomes through food security and livelihood programmes in Myanmar

*Save the Children International (SCI), Action Contre la Faim (ACF) and Helen Keller International (HKI)*



*LIFT project staff participate in a LEARN nutrition training . Photo credits: LEARN project*

Save the Children International (SCI), in collaboration with Action Contre la Faim (ACF) and Helen Keller International (HKI) is implementing a three-year project called *Leveraging Essential Nutrition Actions to Reduce Malnutrition (LEARN)*, funded by the multidonor [Livelihoods and Food Security Trust Fund \(LIFT\)](#), to strengthen and develop more nutrition-sensitive food security and livelihood interventions in Myanmar. This project was developed in response to the growing awareness, globally and in Myanmar, that increasing food availability and food access alone are insufficient measures to prevent malnutrition.

In Myanmar, the nationwide prevalence of stunting (low height-for-age) is 35.1% and wasting (low weight-for-height) is 7.9%, according to the Multi-Indicator Cluster Survey 2009–2010. Through their field experience, the LEARN consortium members have found that the high rates of malnutrition are the consequence of chronic food and livelihood insecurity, underinvestment in rural development, poor health and public infrastructure, inadequate care practices and extreme weather events. These factors are further compounded in border areas by conflict and complex issues surrounding minority ethnic groups. There is limited production of non-cereal crops such as legumes, vegetables, fruits and animal food sources, which combined with some harmful cultural food avoidance practices, has led to inadequate dietary diversity and greater cereal-based consumption patterns.

The Government of Myanmar has recently demonstrated its

commitment to nutrition by signing onto the [Scaling Up Nutrition \(SUN\) Movement](#) in May 2013 and by moving towards finalization of a revised National Plan of Action for Food and Nutrition. The LEARN project will contribute to this new focus on nutrition to sensitize partners on the importance of designing food security and livelihood (FSL) interventions with nutrition in mind.

The goal of the LEARN project is to increase the capacity of LIFT Implementing Partners (IPs), which implement projects throughout the country, to deliver a more comprehensive approach to food security that includes all three food security pillars: availability, access and utilization. More specifically, the LEARN project will:

- i) increase the capacity of LIFT IPs to deliver nutrition-sensitive activities in their target communities;
- ii) integrate nutrition into current and forthcoming LIFT-funded FSL programmes; and
- iii) identify core nutrition indicators that can be integrated into existing FSL information systems with appropriate processes for analysis and action.

In addition, LEARN will develop Myanmar-specific IEC and guidance materials relevant for nutrition-sensitive FSL, contribute to the very limited in-country evidence base by exploring ways to facilitate operational research and participate in various fora to advocate for the importance of nutrition-sensitive interventions. The LEARN project will continue until the end of 2015.

Contact: [Leslie.Koo@savethechildren.org](mailto:Leslie.Koo@savethechildren.org)

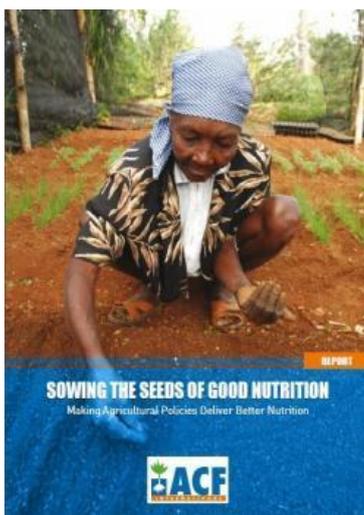
For more information: <http://www.lift-fund.org/nutrition-learn>



# PUBLICATIONS

## Sowing the Seeds of Good Nutrition

*Action Against Hunger (ACF)*



A new Action Against Hunger (ACF) report assesses the degree to which the global agenda on nutrition and agriculture, which aims at adjusting agriculture policies, programmes and practices to produce better nutrition outcomes, has translated into reality at country level so far. It includes three case studies which analyse the agricultural policy frameworks of three countries (Burkina Faso, Kenya and Peru), all of which have recently committed to better aligning their agriculture policies with commitments to reduce undernutrition. The report calls for countries, donors and international organizations to do more to prioritize nutrition-sensitive agriculture, do it better and start doing it now to enable agricultural policies to deliver better nutrition outcomes.

The report and country case studies are available online in [English](#) and [French](#).

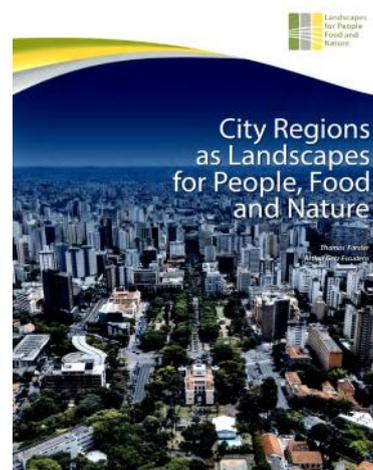
Contact: Etienne du Vachat. Email: [eduvachat@actioncontrelafaim.org](mailto:eduvachat@actioncontrelafaim.org)

## City Regions as Landscapes for People, Food and Nature

*Thomas Forster and Arthur Getz Escudero*

This report highlights important linkages between cities, peri-urban areas and rural areas. Challenges like poverty, climate change and growing demand for resources are issues faced across the urban–rural continuum, and they all relate to food. With food and agriculture linking the ecosystems, economies and public health of communities (rural and urban), we must plan for food systems on a city-region scale in order to meet the 21st century challenges and reduce the risk they pose to food and nutrition security. As cities grow, future food supplies must continue to come largely from rural areas. To ensure this relationship remains intact and beneficial for both rural and urban environments alike, the report calls for inclusive participation between stakeholders across a wide range of disciplines and across all sectors at the subnational, national and international level.

The report is available for download [online](#).



## A state of the art review of agriculture-nutrition linkages: An AgriDiet Position Paper

*Jessica Meeker and Lawrence Haddad*



### A state of the art review of agriculture-nutrition linkages

An AgriDiet Position Paper

Jessica Meeker and Lawrence Haddad  
August 2013



This paper explores the latest evidence on the relationships between agriculture and nutrition in food insecure regions. First, it summarizes the levels and consequences of undernutrition. Second, it reviews some contextual factors that might affect the relationship between agriculture and nutrition. Third, it reviews the state-of-the-art knowledge on the links between agriculture and nutrition, drawing on recent reviews and studies. Fourth, it reviews the key research questions that need to be addressed and suggests some methods for answering them. Finally, the paper concludes with some implications for the [AgriDiet project](#).

The paper is available for download [online](#).

## Nutritional Deficiencies as Driver for Agriculture Value Chain Development: Lessons from the Field

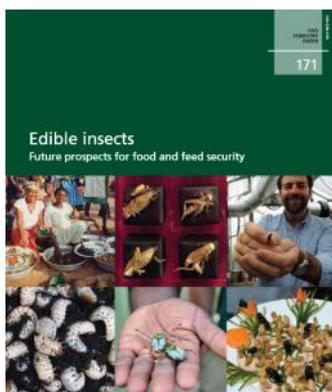
*Paul Sommers*

This paper presents actual field experiences showing that using nutrition as the driver for the agriculture value chains results in lasting change. The policy implications of this approach are also discussed. Nexus points are identified and mutually enforcing messages are designed jointly. Field activities are no longer implemented in isolation and at cross purposes. These are examples of the issues covered in the publication.

The paper has been [published by FAO](#) as an expert paper for the Second International Conference on Nutrition (ICN2) and is available for download in two versions: the [full paper](#) and [two-page summary](#) of conclusions and recommendations.

## Edible insects: Future prospects for food and feed security

*Food and Agriculture Organization of the United Nations (FAO)*



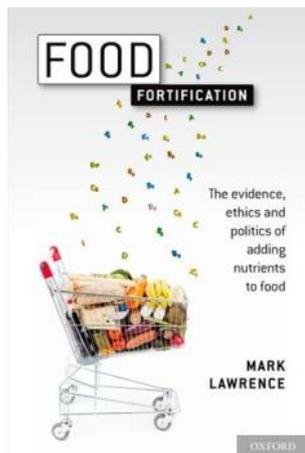
This publication draws on a wide range of scientific research on the contribution that insects make to ecosystems, diets, food security and livelihoods in both developed and developing countries. It helps to raise the profile of insects as sources of food and feed in national and international food agencies and to attract the attention of farmers, the media, the public at large and decision-makers in governments, multilateral and bilateral donor agencies, investment firms, research centres, aid agencies and the food and feed industries. It is meant to raise awareness of the many valuable roles that insects play in sustaining nature and human life and will also serve to document the contribution insects already make to diversifying diets and improving food and nutrition security.



The publication is available for download [online](#).

## Food fortification: The evidence, ethics, and politics of adding nutrients to food

Mark Lawrence



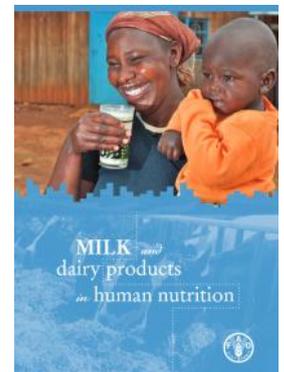
This book critically analyses mandatory food fortification as a technology for protecting and promoting public health. Increasing numbers of foods fortified with novel amounts and combinations of nutrients are being introduced into the food supplies of countries around the world to raise populations' nutrient intakes. It is a technology that is becoming more widely used to tackle a variety of public health problems such as micronutrient malnutrition. Food fortification policies and programmes are controversial. This book presents a synthesis of the findings from research investigations into three topical case studies of mandatory food fortification: universal salt iodization to help prevent iodine deficiency disorders; mandatory flour fortification with folic acid to help prevent neural tube defects; and mandatory milk fortification with vitamin D to help prevent vitamin D deficiency.

Publisher: [Oxford University Press](http://www.oxfordup.com)

## Milk and dairy products in human nutrition

Food and Agriculture Organization of the United Nations (FAO)

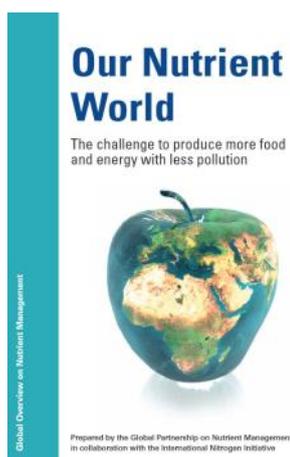
Milk and dairy products are a vital source of nutrition for many people. They also present livelihood opportunities for farm families, processors and other stakeholders in dairy value chains. This publication is unique in drawing together information on nutrition and dairy-industry development, providing a rich source of useful material on the role of dairy products in human nutrition and the way that investment in dairy-industry development has changed. It includes the threads of the two stories, on nutrition and on dairy-industry development, by considering key trends that emerge from the information presented and highlighting the issues that arise from them.



More information at the [FAO website](http://www.fao.org). The publication is available for download [online](#).

## Our Nutrient World: The challenge to produce more food and energy with less pollution

Global Partnership on Nutrient Management and International Nitrogen Initiative



This report draws attention to the multiple benefits and threats of human nutrient use. It highlights how nitrogen and phosphorus fertilizers are estimated to feed half the human population alive today and how they will remain critical in the future, especially given increasing population and potential bioenergy needs. Yet high nutrient use has created a web of pollution affecting the environment and human health, while insufficient access to nutrients has led to soil degradation, causing food insecurity and exacerbating loss of natural ecosystems. The report shows how these problems cross all global change challenges, threatening water, air and soil quality, climate balance, stratospheric ozone and biodiversity.

The publication is available for download [online](#).

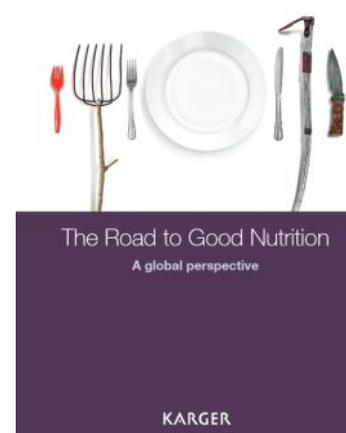
## The Road to Good Nutrition: A global perspective

*Edited by Manfred Eggersdorfer et al.*

This book tackles the wide-ranging issues related to nutrition and serves a broad audience. From stunting to food insecurity, from hidden hunger to obesity, the book puts the topic of nutrition security on the agenda of policy-makers, academics, private sector organizations and civil society, as well as of organizations dedicated to the nutrition space. It will also be of value to the educated lay reader who is generally well informed in matters of health, nutrition and sustainability.

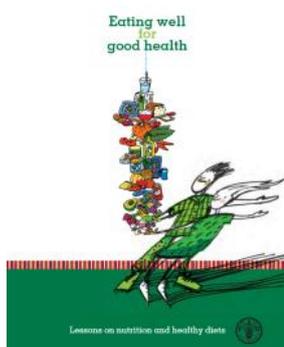
Published by the Swiss-based scientific publisher Karger, the book explains that malnutrition is a phenomenon with many aspects, not all of them immediately apparent.

The paper is available for download [online](#).



## Eating well for good health: Lessons on nutrition and healthy diets

*Food and Agriculture Organization of the United Nations (FAO)*



This publication is a learning module designed to explore basic concepts of good nutrition, health and healthy diets. The lessons are meant for anyone who wants to learn how to improve their diets and eating habits. They can be used both inside and outside the classroom by students, teachers, youth or community groups and by individuals who want to learn on their own. The activities and their accompanying materials, which include fact sheets, work sheets, exercises, quizzes and community investigations, help learners test and reinforce their understanding of the basic concepts of each lesson and apply their acquired knowledge to their daily lives.

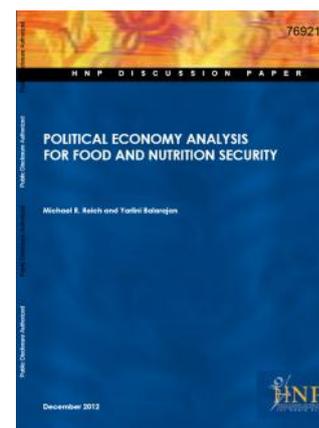
The learning module is available [online](#).

## Political economy analysis for food and nutrition security

*Michael R Reich and Yarlani Balarajan, for The World Bank*

This World Bank Discussion Paper has the overall goal of promoting the use of political economy analysis (PEA) in advancing more effective food and nutrition policies. It presents a tool to evaluate the level of political commitment for food and nutrition security and opportunities for change, and can be used to monitor change in political commitment over time.

The paper reviews the field of applied political economy for the sector and offers practical guidance on how to conduct analysis to better navigate the policy reform process and proposes a method for conducting an in-depth PEA, based on four stages of the policy cycle: agenda-setting, policy design, policy adoption and implementation. An illustrative case study of India's Integrated Child Development Services (ICDS) scheme is also presented.

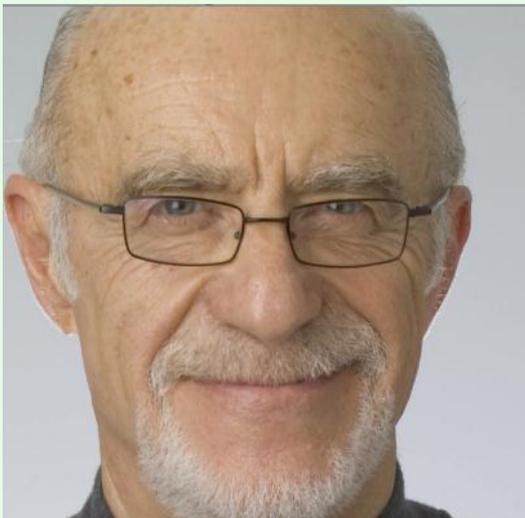


The publication is available for download [online](#).

# INTERVIEW

## Visionary at the conception: An interview with Alan Berg, international nutrition pioneer

James Levinson<sup>1</sup>



Alan Berg, who recently celebrated his 82nd birthday, is internationally acknowledged as the person most responsible for placing nutrition on the international development agenda and for having it solidly ensconced in the programmes of the United States Government and the World Bank. His seminal 1973 book *The Nutrition Factor*, written while a Senior Fellow at the Brookings Institution, was nominated for the National Book Award. Berg worked during the Kennedy and Johnson years at The White House where he cochaired a White House Task Force on Nutrition, was active in expanding the scope of the US government's *Food for Peace* programme, served in India where he developed and headed the US government's first large-scale international operational nutrition programme, and served from 1973 to 1995 as the senior nutrition officer of the World Bank, where he was called "the conscience of the Bank on hunger issues". In 2008, Berg was honoured as one of the first recipients of the United Nations Achievement Award for Lifelong Service to Nutrition, being introduced then as "a global giant in nutrition history".

**Jim:** So, Alan, you must be delighted to see the new burst of energy surrounding international nutrition these days, with the blossoming of the Scaling Up Nutrition (SUN) Movement, the activities of the UN Ending Child Hunger and Undernutrition Partnership (REACH), the inclusion of nutrition on the G8 agenda, and the SecureNutrition initiative being undertaken by your friends at the World Bank. Your prescriptions of 40 years ago are remarkably similar to what now are being universally endorsed.

**Alan:** Yes, but this could have and should have happened much earlier, had we done a more effective job of disseminating the nutrition gospel. My deficiencies are not limited to iron and vitamin A.

**Jim:** It's no surprise, however, that this new energy in international nutrition is being accompanied by a renewed interest in its origins. How do you feel about being so central to this history?

<sup>1</sup> Interviewer James (Jim) Levinson, who worked with Berg in India, has directed international nutrition centres at MIT and at Tufts University, and headed the Office of Nutrition at USAID in Washington.

**Alan:** You're too kind, but you should know that this kind of question makes me very uneasy. First you should realize that there was a lot of pure luck involved, being at the right place at the right time. Second, as you well know, many others played pivotal roles over the years at all levels and in many important ways.

**Jim:** *Yes, but thank you for agreeing to this interview. It will be of great value to a generation of young nutrition professionals who didn't have the good fortune to be alive when you were doing all this. This generation knows a good deal about the research findings that underlie our present understandings of malnutrition and about the generation of evidence supporting many of the nutrition-specific evidence-based programmes. What they are unlikely to know much about is how major programmes emerged from this science, or about the challenges involved in getting the international development community to take on the malnutrition challenge. This, to my mind, is the Alan Berg story. Could you begin by telling us a bit about your White House years? How did you end up there?*

**Alan:** Coming from a pretty provincial Ohio background, I was fortunate to land an Air Force assignment in Washington, one which opened up a new world to me. I was exposed all at once to new ideas and pressing needs and opportunities stemming from those needs – and, of course, interesting people. My wife Elinor worked in the office of the then young Senator Hubert Humphrey and, a few years later, for Eleanor Roosevelt in her latter years at the American Association for the United Nations.

It was during this time, working at the Pentagon, that I was first exposed to US foreign assistance. This was the *Military Assistance Program*, or MAP as it was called, in the Office of the Secretary of Defense. I had the opportunity there to coauthor my first little book, *MAP for Security*, published by the University of South Carolina Press. The coauthor, Colonel John Holcombe, later became Commissioner of a new Labor Department bureau. Then, after completion of my military service, Elinor and I, in a year of international travel, were able to observe firsthand some of the serious issues we face in the world. Quite quickly I was hooked on getting into some kind of international work.

So in 1959, I decided to leave a cushy job with a New York commercial firm (a company, however, that provided me

my initial experience in food marketing issues) and apply for a government job related to foreign affairs. I was accepted into the Foreign Service, but then, just before my reporting date, I was offered a more senior position in the Department of Labor by the same Colonel Holcombe. After two years as Director of Information for the Bureau and, for a while, Acting Director of Technical Assistance, I was able to transfer laterally to the newly created Agency for International Development, the US foreign assistance organization. AID, as it was then called, was created by Congress through the 1961 Foreign Assistance Act at the urging of President Kennedy.

**Jim:** *What was your position in AID and how long did you stay with the Agency at that time?*

**Alan:** I served as Deputy Executive Secretary until 1963.

**Jim:** *It seems part of that job was disseminating information on US international assistance and US food aid during those years. What were the publications you founded?*

**Alan:** We launched a monthly magazine, the *AID Digest*, that included articles by many of the leading thinkers in the field: John Kenneth Galbraith, Barbara Ward, Max Millikan, Eugene Rostow. The magazine won several awards. You'll be amused to know the covers were so good some were hung at The Corcoran Gallery of Art for a while, and the magazine became something of a *cause celebre*. But a *cause celebre* for the wrong reasons. Congressman Otto Passman of Louisiana, whose committee had oversight responsibilities for the AID budget, raged about what he assumed to be its high cost and wasteful taxpayer expenditure. In fact, although the magazine looked very polished, its cost was negligible; all the articles and most of the art were contributed at no charge. But since the Administration at the time had bigger budgetary fish to fry with Passman, it yielded on this one, and the *AID Digest* was laid to rest. In its place we published the bi-weekly *FRONT LINES*, actually costing more, which continues to be published over 50 years later. The substantive part of the *AID Digest*, meanwhile, was picked up by the Society for International Development's *International Development Review*, now called *Development*.

**Jim:** *And then, in 1963 you had an opportunity to work at The White House.*

**Alan:** Yes, President Kennedy had appointed George McGovern to establish the Office of Food for Peace in The White House. A food aid programme had been around since 1954 as Public Law, or PL-480, largely a means of using US food surpluses in ways that would have benefits both to the United States and to food-needy countries. By renaming the programme and placing its inter-agency locus in The White House, President Kennedy gave it greater visibility and importance. For obvious reasons, he wanted this US largesse known to and appreciated by the recipients. So when a staff position there opened up, the fact I had a little background in food marketing and information didn't hurt.

**Jim:** *Am I right that you served first as Assistant to the Director, Food for Peace, and then as Deputy Director? That must have been a fairly senior position for a government official still in his early thirties.*

**Alan:** The Deputy Director position carried with it the rank of Deputy Assistant Secretary of State. Believe me, I took a lot of static for that from family and friends.

**Jim:** *And it was in this position that you drafted the nutrition portion of the notable speech Henry Kissinger gave to the lofty World Food Conference in Rome?*

**Alan:** No, that came some years later, in 1974, and that was written along with Martin Forman of AID. The Kissinger address was the first time that nutrition was identified on a prominent world stage by the US government as an important component of international development. Many promises were made. Not much of consequence came of it at the time.

**Jim:** *Could we say that it was the White House period that kindled your lifelong interest in, and commitment to, nutrition?*

**Alan:** I think that's right. A lot of my concern arose from seeing serious malnutrition first-hand in Asia and Africa. But if I had to pin down a single epiphany, it was hearing a paper being presented at a meeting of the National Academy of Sciences in 1964. There, a youngish Mexican pediatrician, Joaquín Cravioto, introduced the notion of a relationship between malnutrition and mental development. I was stunned. For years we had acknowledged the effects of malnutrition on physical development – that the average six-year-old in poor countries had the stature of, say,

a four-year-old here – but we all assumed that, eventually, given enough food and educational opportunity, a child had every reason to be as bright, imaginative and productive as other children of his age. Now it was being suggested that these kids might be cognitively impaired. And we were talking about as many as two thirds of the children in many developing countries. How could we talk about national development without worrying about this?

Upon my return to the office that night I knocked out a little piece for *The New Republic*, describing the meeting and the shocking presentation I had heard. As it was for 24 December issue, I called it “*For the Child Who Has Nothing*”. Not much of what I wrote for internal discussion during those White House years got much attention from higher-ups, but this small piece resonated. Within weeks, a White House Interagency Nutrition Task Force was set up to explore what if anything the US Government could do to help address malnutrition, and I was asked to cochair it. This turned out to be an extraordinary learning opportunity for me and, frankly, we also produced a pretty good report.

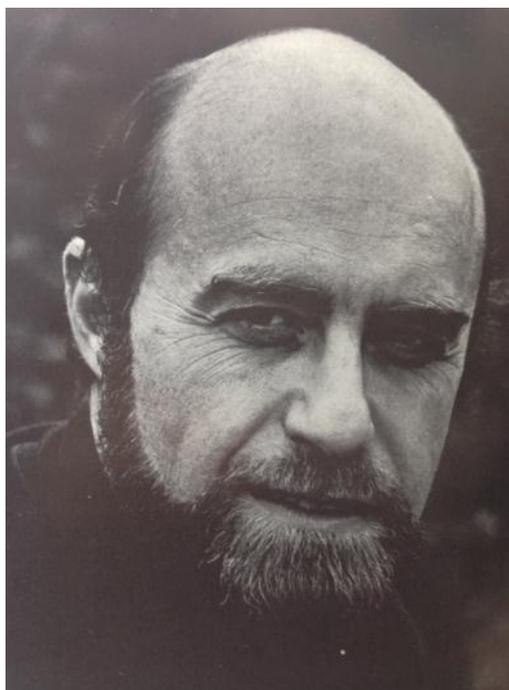
**Jim:** *What was its bottom line?*

**Alan:** After examining mounds of research and the modest operational experience to date, most of it carried out by nongovernmental organizations (NGOs), and after interviewing many with opinions on the subject, we were forced to conclude that we didn't know enough, that we weren't yet able to write a prescription for US government action. We did, however, recommend that a country or two be selected and that, working together with national counterparts, we investigate a number of potentially effective approaches highlighted in the report.

**Jim:** *And this led to your being invited to India?*

**Alan:** In 1966, Ambassador to India Chester Bowles told me that he was much impressed with our White House Nutrition Task Force report and asked if I'd be willing to go out to India and put some of these ideas into practice. I was honored, of course, and intrigued with the idea. And it presented the opportunity to plan and implement AID's first nutrition programme.

**Jim:** *I had the privilege, as a young neophyte, to work with you on many of those India adventures. Looking back, what do you see as the highlights of those years?*



Alan Berg, 1972. Photo credits: Lars E. Janson.

**Alan:** Not long after I moved to India, the state of Bihar was devastated by famine, the first of that magnitude in the subcontinent since the famous Bengal famine of 1943. Projections anticipated fatalities in the millions: over three million persons had died in the Bengal famine. I was asked to take on responsibility for managing the US food distribution and related relief efforts. This required moving more than 20 million tons of food into the drought-affected areas: seven trains a day, 50 cars per train, moving 550 miles from the nearest port into the neediest districts every day for nearly two years. It was one of the largest relief operations ever undertaken. One particularly valuable element of this humanitarian relief was the establishment of what may have been the world's first Early Warning System, largely designed by colleague Lu Rudel. The system tracked key indicators by location within the state: death rates, disease prevalence, food stocks and prices, food looting, water levels, and, painful to remember, the number of babies that had been sold. The result of all the relief work, and of the unprecedented inter-agency cooperation the famine elicited, was the prevention of the disastrous starvation and mortality which had been predicted.

In retrospect, one of the key accomplishments of that effort was the evolution of the disaster relief into some long-term nutrition interventions. Senior government officials, newly exposed to the long-term consequences of malnutrition during our field trips in the state, were eager

to transform emergency feeding programmes into more permanent means of reducing chronic malnutrition. Our subsequent efforts to help launch national and regional nutrition programmes found unusually fertile ground in no small part because of those lengthy discussions we had with food and health ministers in hotel rooms and while driving with them through remote parts of Bihar during the mid-1960s. Some of these quick combustion friendships with top policy-making officials (the kind many of us working in international development dream about) made it much easier to generate sustainable governmental commitment and action on the nutrition front.

**Jim:** *That work earned you the William A. Jump Award as the Outstanding Young (under age 37) Public Servant in the US Government. Your analysis of what you lived through, Famine Contained: Notes and Lessons from the Bihar Experience, was widely published and republished. What else stands out in your mind from the India experience?*

**Alan:** Other initiatives had to do with food fortification. You'll remember that in the mid-1960s, the international nutrition community was still very much focused on protein, both quantity and quality, and so some of our initial efforts addressed protein deficiencies while others focused on micronutrients. We commissioned research on the efficacy of lysine fortification, and actually introduced, nationally, lysine-fortified- and micronutrient-fortified "Modern Bread", which we thought at the time was about as nutrient-rich as bread could get.

More important for the longer term was our introduction of micronutrients to flour mill products, especially *atta* used in the making of *chapattis*, and our work with salt. You'll remember our very deliberate assessment of food products, spices and condiments, looking to see which of them, while processed relatively centrally, reached everybody. In other words, which food products, if fortified, could improve nutritional status without requiring dietary change?

**Jim:** *How about the tea adventure?*

**Alan:** Yes, one possibility was tea. Our studies showed that nearly everyone, including nearly 90% of young children, drinks tea. And the lowest-priced tea (that purchased by the very poor) was not tea leaf but tea powder – in short, the dregs left after the leaf was packaged.

From a nutrition perspective, since this powder would be much easier to fortify than the larger leaves, what better way to target those most likely to be seriously iron-deficient? Iron deficiency anaemia is the most prevalent micronutrient deficiency in India, and in most other developing countries. And severe anaemia is more prevalent in India than in Bangladesh. Our interest in tea grew partly out of the discouraging experiences we had at the time trying to fortify rice. Because most rice in India is cooked in large quantities of water, which is then discarded, any fortificants would disappear also (a problem happily circumvented more recently with NutriRice and similar formulations). But, of course, in the case of tea, it's the residue itself that is consumed. So we went, you'll recall, to the tea research center in Assam to get our ingenious tea idea off and running. But not running for long. In fact not at all. It took almost no time to learn from the lab tests that adding iron turned the tea black as coal. So much for iron-fortified tea.

**Jim:** *The clear fortification winner, then, was salt.*

**Alan:** Right. Salt already was beginning to be iodized in India. But we wondered if we might be able to add other micronutrients? We proceeded with this very systematically, nutrient by nutrient, and process by process. At one point we actually considered adding nutrients to salt while still in the marine salt pans. Eventually, the choice was iron. You'll recall the piece the two of us wrote in the late 1960s for the *Journal of Food Technology* entitled, *With a Grain of Fortified Salt*. The concept was later included in *The Nutrition Factor*. Although the process has been a painfully lengthy one, we're finally seeing double-fortified salt, with iron in addition to iodine, being used on a large scale in India as well as in places like Argentina and Bangladesh.

**Jim:** *Not the least a result for your continuing consciousness raising efforts over the decades. Forty-five years is a long time not to give up on something. I remember well one of the Indian salt consultants with whom we originally worked back then, M.M. Gurunath. From time to time, he'd take us to his home in what is now Chennai, and we'd meet his family, including his son who was a student at the time. The son was Venkatesh Mannar, who became President of the Micronutrient Initiative (MI), and who traces his interest in nutrition to those early conversations we all had together. I know after your retirement from the*

*World Bank you did a lot of work for MI. How about infant and young child feeding?*

**Alan:** We made a promising start in that area as well, encouraging the production (initially during the famine) of India's first low-cost processed complementary food, which we called *Bal Ahar*, "children's food" in Hindi. *Bal Ahar* was distributed by NGOs, among them CARE and Catholic Relief Services, with accompanying counseling to mothers.

**Jim:** *Any reservations about those years, things you wished you'd done differently?*

**Alan:** In retrospect, we probably gave too much attention to the private sector food industry. We were quite proud about facilitating the launch of a Protein Foods Association of India, made up of CEOs of the major food and pharmaceutical companies, and no doubt it generated lots of useful publicity which had positive effects on decision-making in the country. But the private sector itself has done less directly to address malnutrition in India than many of us originally had hoped. In fact, one of my principal disappointments during my half century of concern with malnutrition has been the lack of major involvement by industry, not just in India, but globally. As someone who started with a business background I expected more. God knows I tried, going back to *Harnessing Industry for Better Nutrition*, a prescriptive piece I did for the *Harvard Business Review* in the early 1970s.

As you well know, harnessing the energy of the private sector for nutrition purposes has been a mantra of the development community for decades, with renewed interest as we speak. Yet, despite the numerous conferences, the multiple committees, and some bits-and-pieces of food industry projects (these coupled with more than a modest amount of self-publicity), it hasn't added up to much. Although both business and development leaders continue to say the right words, it is useful to know the history, that for all the nurturing of industry over the years, there has been little of real consequence, little that has actually made a difference. Perhaps I was naïve in seeking wish fulfillment about this. But at some point, when we come right down to it – and I am down to it – the nutrition community may want to make a judgment concerning corporate values and objectives, and recognize that a consequential contribution to nutrition by the private sector just may not be in the cards.

**Jim:** Surely a valuable perspective, Alan. The India years were also an opportunity for you to do more gospel preaching about nutrition. Your piece summarizing your philosophy about the role of malnutrition on national development that appeared in *Foreign Affairs* (I remember seeing it in that issue with articles by Arthur Schlesinger, Jr., George Kennan, even Richard Nixon) is a classic and continues to be required reading for many students of nutrition.

**Alan:** Luckily the 1967 *Foreign Affairs* article, *Malnutrition and National Development*, provided a hook on which to hang my theories, and it received a good deal of attention from the international development community. In that article I tried to pull together what was known, including new data we were generating in India, to draw the association between malnutrition and child mortality, to document the effects of malnutrition on the cognitive as well as physical development of the survivors, and, in sum to suggest that the aggregate negative effects of malnutrition on productivity and general economic growth might be highly significant.

**Jim:** It seems that the article and your India work more generally also captured the attention of *The Brookings Institution*.

**Alan:** Brookings invited me to be a Senior Fellow and I also was tapped as a Belding Scholar of the Foundation for Child Development. My primary undertaking was the *The Nutrition Factor: Its Role in National Development*, a book that tried to make the case that malnutrition was not just a medical or welfare issue but indeed a national development issue, expanding on the ideas presented in the *Foreign Affairs* article. It also attempted to introduce a systematic planning framework for nutrition programmes, injecting techniques being used in economics and in other development sectors but largely absent in the work of the nutrition community.

**Jim:** In the book you also addressed the associated issues of population control, agriculture and education. You must be gratified to see what has emerged from these roots.

**Alan:** Yes, these connections were all quite new at the time and generated considerable debate, not all of it positive. Many population control advocates were resentful of suggestions that health extension staff spend time on nu-

trition and public health when – these advocates believed – they should be pushing condoms and intrauterine devices. Some agriculture planners complained that we were getting in the way, an argument they simultaneously were leveling at the environmental community. “Why don’t you leave us alone and just let us grow the food?”. And educators insisted that they were too busy teaching to spend time on school health and nutrition.

**Jim:** And yet, over time, these perceptions have changed, in some cases radically. I suppose there aren’t many today who would argue that reduced infant and child mortality resulting from improved health and nutrition does not have positive effects on reduced population growth rates. You presciently laid out the relationship in your then-controversial *Trouble with Triage* article in *The New York Times Magazine* in 1975. And many educators are enthusiastically endorsing school health and nutrition, and pre-school nutrition, arguing that investments in education will have much higher returns when children are better nourished and have increased active learning capacity.

**Alan:** But one of the greatest of these challenges was agriculture.

**Jim:** I’m glad you raised that Alan. The theme of the *SCN News* issue in which this interview will be published is the agriculture–nutrition connection. I’m sure, Alan, that you must be highly gratified to see such efforts as *Feed the Future*, *SecureNutrition*, and the *Ag2Nut Community of Practice* taking hold, all focused on what we now refer to as nutrition-sensitive agriculture.

**Alan:** Pleased, of course, but not fair to say gratified. Of all my efforts in nutrition, this area was clearly my biggest frustration and biggest non-success. Efforts were made to inveigle agriculture colleagues in all sorts of ways, pitches at their staff meetings, special seminars, the provision of guidelines, even technical services on their missions at no cost to them. In the mid-1980s, two like-minded colleagues joined me in organizing an international conference in Ethiopia on agriculture and nutrition which, in terms of subject matter (the proceedings published by IFPRI), covered ground quite similar to that being pursued by the present day initiatives you mention. But, despite all of these efforts, we were not able to penetrate significantly the agricultural mindset that a) malnutrition was not part of their business or, if it was, b) the increases in food production and income resulting from agriculture

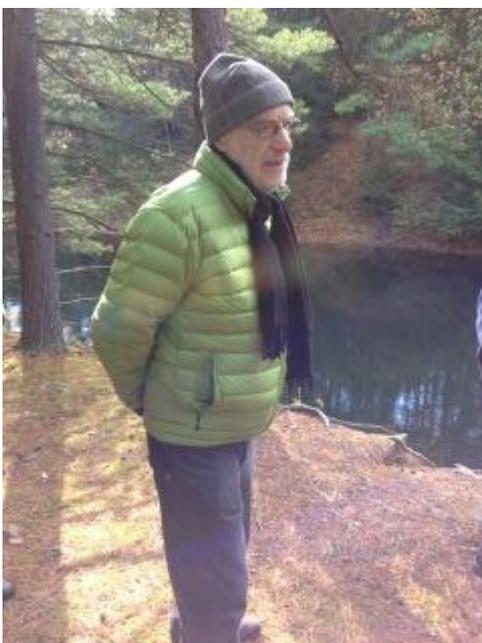
projects would be a sufficient solution for malnutrition.

**Jim:** *So what do you think has changed? Why is it that at least a critical mass of agriculturalists are now committed to improving food security and reducing malnutrition through agriculture?*

**Alan:** You're right in implying that a critical mass is, well, critical. There's more energy around this topic by more partners than I've ever witnessed. And clearly it is a different flavour of interest than those early years. But unfortunately some of the same problems are still around. Most agriculture investments are still wholly focused on increasing production and (usually large) farmer incomes. Challenged as they are in meeting those objectives, agricultural planners and managers are sometimes resentful of efforts by others to burden them with the environment, nutrition and the like. To them, nutrition is still largely perceived to be someone else's problem.

**Jim:** *Well stated...sadly. And yet groups like our Ag2Nut Community of Practice, now with over 900 members worldwide, have been working systematically to get food security and nutrition objectives explicitly incorporated into agriculture projects, and then finding ways to monitor and evaluate project progress in meeting these objectives without overburdening the very agricultural planners and managers you mention.*

**Alan:** Of course it is also important, in the process, to make sure these agriculture projects, especially the large



*More time these days for reflection.*

capital-intensive or export-oriented ones, don't end up doing harm, that is, actually exacerbating malnutrition or food insecurity. We've had much evidence of that in the past. I'm glad to see that, in the newer initiatives you mention, the harm issue is receiving attention.

**Jim:** *It must also be satisfying for you to see the underlying determinants of malnutrition being seriously addressed along with its symptoms. This has long been part of the Berg gospel.*

**Alan:** Nutrition went through a period of "nutrition isolationism", focusing almost solely on interventions the nutrition community could do, without involvement of other sectors. I'm hopeful that era is now over for good. Obviously malnutrition is so multicausal and, in turn, has negative consequences for so many sectors, that multisectoral nutrition makes eminent sense. In that regard, let me also put in a plug for the convergence approach: placing an array of multisectoral nutrition interventions in the same particularly vulnerable areas of countries to achieve synergistic benefits.

**Jim:** *And given that this interview is for the SCN News, I recall that you were one of the founding parents of the SCN.*

**Alan:** I was, along with a handful of others, and spent a goodly amount of time and energy on this. But the true force behind the founding of the SCN was E.J.R. (Dick) Heyward, a Tasmanian who was Deputy Executive Director, and, for nearly half a century, the intellectual and moral force behind UNICEF. Going back to the mid-1950s, the primary international entity addressing nutrition matters was the Protein Advisory Group (PAG), fostered by FAO, WHO and UNICEF. This was made up of about a dozen of the most eminent people in the field, among them Fred Sai, Nevin Scrimshaw, Sol Chafkin, M.S. Swaminathan, Bo Vahlquist, Joaquín Cravioto, Fernando Monckeberg and Asok Mitra. But, by definition, the PAG was only advisory, with all the limitations that implies. By the 1970s, with a number of new entities entering the field and the related unfolding of what Shawn Baker in his recent Forman Lecture called *The Golden Age of Nutrition*, the situation was crying out for an institutional focal point where collective judgements could be reached and formal decisions made. Under Dick Heyward's adroit and dexterous leadership (essential given the differences among the many parties), the PAG was officially transformed in 1977

into the SCN, led by the then ten-or-so nutrition-related member UN institutions.

The SCN then became the vital center of international nutrition. (After Dick Heyward's three-term chairmanship, subsequent strong leadership was provided by other highly capable individuals including John Evans, Richard Jolly and, of course, Abraham Horwitz). In those days, the SCN stood for the Sub-Committee on Nutrition, now of course for the Standing Committee. And the Protein Advisory Group, or the Protein-Calorie Advisory Group as it was later called, was morphed into the AGN, the Advisory Group on Nutrition. Some years later, bilateral assistance agencies became formally affiliated with the SCN and, much later, NGOs. If this was the Golden Age of Nutrition, the SCN was the Royal Court.

**Jim:** *Alan, I believe you were the first to quantify how unacceptably long it would take, even with optimistic projections of agriculture and income growth, to reduce malnutrition significantly in the absence of more explicit nutrition interventions, a theme actively pursued years later in the Bank's Repositioning Nutrition.*

**Alan:** That case was first laid out in *Malnutrition: A Policy View*, our book published as part of the World Bank's Basic Needs series in the early 1980s. Paul Isenman, whose work has more recently been instrumental in the creation of the Scaling Up Nutrition (SUN) Movement, was of considerable help on this.

**Jim:** *And speaking of World Bank books, I don't think there are many around that capture the political realities and bureaucratic constraints as well as your Malnutrition: What Can Be Done? That book, published by Johns Hopkins Press, speaks with remarkable candor and with lots of insights about your World Bank experience in nutrition.*

**Alan:** Not exactly a best-seller. This book was an attempt to elicit the lessons from the initial sizable World Bank-assisted nutrition operations. It seems that some younger nutrition professionals, even in the major Scaling Up Nutrition Movement, are not fully aware of these earlier scaling up experiences, with lessons to offer, both good and bad.

**Jim:** *In preparing for this interview I dug up some of the reviews which followed publication of the dozen-or-so editions of The Nutrition Factor. My favorite was by Lester*

*Brown, a MacArthur genius award recipient, who wrote, "From time to time one comes across a book which makes a difference. It affects our behavior, the way in which we think about certain things. Silent Spring by Rachel Carson forced us to reexamine our relationship with the environment ... Unsafe at Any Speed by Ralph Nader launched the consumerism movement. The Nutrition Factor by Alan Berg may belong in this category".*

**Alan:** Clearly, a wild exaggeration.

**Jim:** *But a not uncommon sentiment. This is a book that belongs, if not in every home, then certainly in every oval office. Just recently, some 40 years after publication, the widely-admired Per Pinstrup-Andersen in a new book, wrote that "The Nutrition Factor argued successfully for using nutritional goals to guide economic policy". In fact, re-reading The Nutrition Factor, probably for the fifth time, I'm struck once again by your active encouragement of more systematic thinking in nutrition policy and planning, and by how prescient your recommendations have proven to be: from multisectoral approaches, to the importance of improved infant feeding practices, to well focused operations research, to the need for a nutrition "home" in national governments.*

**Alan:** All good guesses. At the time I thought those notions had as much chance of affecting the future as those little messages in fortune cookies.

**Jim:** *Pretty well informed guesses, most of us would argue. You also were among the first in our nutrition community to recognize and promote the importance of multi-sectoral nutrition approaches, going beyond nutrition-specific approaches (e.g. micronutrient and food supplementation), an idea which has been newly embraced by the broader development community as well as nutrition advocates. And, you maintained your convictions on the subject even when the approach fell out of favor resulting in some public criticism of your tenaciousness. I remember Multisectoral nutrition planning: a post-mortem, published in Food Policy, and your classic rejoinder which you titled Nutrition Planning is Alive and Well, Thank You, one that I've used in my graduate international nutrition teaching. Those years also introduced you to university teaching, some of which we did together. Would you like to say a word about that?*

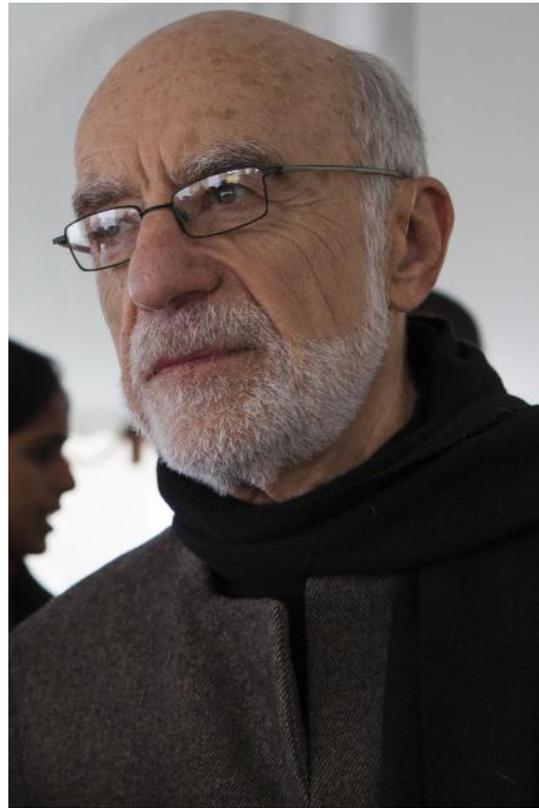
**Alan:** I was invited by the late Nevin Scrimshaw to serve

as Visiting Professor of Nutrition Policy and Planning at MIT where you were teaching, and did that from 1972 to 1976. During that time I also had the opportunity to organize an international conference at MIT, together with Nevin and David Call, resulting in *Nutrition, National Development and Planning*, published by MIT Press. I'm still actively in touch with some of our students from those years, a number of whom have gone on to important careers and major contributions in the field. An eager lot.

**Jim:** *And I can't tell you how many people I've come across over the years who attribute to your teaching and to your writing their decision to enter the field of international nutrition. Additionally, it seems that once these young people did get involved, your support to them was invariably considerable. Just recently I was reading the autobiography of Liberia's President Ellen Sirleaf-Johnson who credits you for her success in shepherding her first big project, the Brazil Nutrition Project, through the Board at the World Bank. But those MIT years also raised in your mind some serious concerns about academic priorities, if I remember correctly.*

**Alan:** Yes, that's right. My time at MIT allowed me to look more broadly at the nutrition teaching and nutrition research taking place there and at other universities. I have to admit that seeing these came as something of a shock after working in developing countries and experiencing the actual challenges faced in seeking to reduce malnutrition. I don't, of course, take issue at all with the importance of basic research, we always need to know more about nutrition metabolism under different human conditions. What I found myself objecting to was the imbalance: the massive attention being given to the "what" questions, compared to the minimal attention addressing the "how" questions. Very few of the research findings emerging from the universities at that time addressed the actual problems we faced in the field, that is, how best to overcome the real world obstacles of getting nutrients to deprived populations in these countries, and particularly to the most vulnerable women and young children.

**Jim:** *I remember your labeling this, in a landmark Martin Forman Memorial Lecture, as nutrition malpractice, and making a plea for the training of nutrition programmers who would be better equipped to address the primary challenges actually faced in developing countries. I find it interesting that while the term nutrition programmer nev-*



*er caught on, universities are now turning out professionals with many of the skills you recommended, and no longer graduates with skills limited to nutritional biochemistry and mammalian physiology.*

**Alan:** Heartening to know.

**Jim:** *I also recall the Nutrition Panel that you chaired at the National Academy of Sciences and its 1975 World Food and Nutrition Study; also the Bellagio Conference on Nutrition you organized with the Rockefeller Foundation at that time. It must have been gratifying to witness the sea change which had, by this time, taken place within the nutrition community itself, now that it found itself approaching center stage on the international development agenda.*

**Alan:** No. During most of those gatherings at the time we were fighting like cats and dogs.

**Jim:** *Yes, the survey of the nutrition community that I carried out in 1997, and the one we did together with Denish Moorthy ten years later, found near unanimity that the most negative feature of international nutrition has been in-fighting within our own community.*

**Alan:** Yes, but apparently there are positive signs that this is beginning to change. It's been particularly satisfying to

see development partners working together cooperatively on multisectoral nutrition undertakings in countries as diverse as Afghanistan, Cape Verde, Pakistan and Peru.

*Jim: I should insert here that in the 1997 survey I carried out you were most often cited as the role model for young persons entering the field of international nutrition.*

*OK, on to the World Bank. Robert McNamara, who was President of the World Bank and also a board member at Brookings, personally knew of your project there and asked you come to the Bank. Is that right?*

**Alan:** The way I structured the Brookings work was to send each draft chapter of *The Nutrition Factor* as it emerged to a group of five or six in the then-nascent nutrition community in Washington and afterwards organized a long luncheon with these folks, along with an invited expert on the chapter topic, to discuss it. Margaret Mead came down from New York to help us think through the behavioral change chapter, and George McGovern helped with the chapter on food distribution. For the chapter on policy, I invited Robert McNamara. He read the draft thoroughly and made several valuable suggestions. Subsequently, at dinners of Board members and Senior Fellows that Brookings organized several times a year, McNamara regularly asked about my work and wanted to keep abreast of our thinking.

*Jim: So he invited you to get nutrition started at the World Bank and you served as its senior nutrition officer from 1973 to 1995, and, during that time, established nutrition as a permanent fixture in the Bank's development programmes. But as those of us who followed Bank nutrition developments closely were well aware, your contributions went well beyond that. In 1986, when Ismail Serageldin addressed Heads of State and others at the Bank's 1986 Hunger Conference, he cited you as "the conscience of the Bank on hunger issues". And he went on to credit your "strong personal commitment and motivation" for the 25 fold increase in Bank nutrition operations in the preceding six years. You were relentless, as I recall, in convincing divisions throughout the Bank that nutrition needed to be part of their programmes. One colleague spoke of being "Berglarized" of a healthy chunk of his budget without realizing what had happened. What did Bank expenditures on nutrition look like over the years you were in charge? I imagine they started from zero.*

**Alan:** That's right. During my years there, the size of nutrition operations generated by the Bank totaled US\$ 2.1 billion.

*Jim: Which, I know, was much larger than the nutrition contributions of all other foreign assistance agencies combined. And, it seems, you were able to continue your advocacy work as well.*

**Alan:** One problem facing those of us working in nutrition, we discovered, was the absence of a ready means of accessing new information both from the programmatic and the research side. Of course, on the latter, one could always go to the journals, but few active project managers have the chance to do that. And so, for a dozen years, we put out a little bi-monthly newsletter of findings called *New & Noteworthy in Nutrition* that tried to cut through the hokum in an unvarnished way that avoided both biomedical argot and policy wonkishness. We wrote up innovative ideas and experiences in nutrition operations we learned about, synthesized new relevant research findings, provided nuggets from conferences and other news of the international nutrition community. The newsletter had a sizable international distribution and, after I left the Bank, was continued for some time by IFPRI.

*Jim: You also were one of the first to appreciate the potential of social marketing and initiated some of the first sizable behavioral change communications efforts in nutrition. Recognizing this, the Society of Nutrition Education honored you as one of the Voices who Changed Nutrition.*

**Alan:** Again, this was largely a matter of happenstance. Early on, I met Richard Manoff, a successful New York advertising executive, who wanted to utilize his skills to reduce deprivation in poorer countries. We lured him to India in the 1960s to work on several of our AID nutrition projects, forays that led to an active involvement in nutrition for the rest of his life. His inventive work and his name live on with The Manoff Group in Washington.

*Jim: Give us an example of an early behavioral change activity that made a difference?*

**Alan:** A classic example emerged from the Bank's first Indonesia nutrition project where we found that, although all infants in some parts of the country were being breastfed, most were underweight in early infancy. Marcia Griffiths, an anthropologist and nutritionist from The

Manoff Group, and actively involved in that project, discovered, remarkably, that the mothers were only feeding from one breast. There was a general belief in these areas that “good milk” was available only in the left breast. Additionally, women’s garments in these areas were designed in a way that made feeding from the right breast awkward, but permitted women to continue working while feeding from the left. So an intensive behavioral change campaign was launched including colorful posters for individual huts (not requiring literacy) encouraging mothers to make check marks each time they fed from both breasts. Multiple check marks were rewarded with small gifts. Habits changed rapidly, as did infant growth.

**Jim:** *And what was your involvement with growth monitoring?*

**Alan:** When I got into nutrition the conventional growth chart was very difficult to use. The charts were too small, and the lines were so close together that precise marking was difficult, rendering the results of limited value. Once again working with Marcia Griffiths, a leading authority on growth monitoring, we devised and published what we called The Bubble Chart, using bubbles to clearly delineate even very small weight increases or decreases. The chart much improved accuracy and was adopted widely in India and other countries. Although the bubble chart per se is no longer being used, it has had an influence on growth chart design in the years since.

**Jim:** *Your early work in multisectoral nutrition, on behavioural change communication, on growth charts and on the double fortification of salt clearly have had profound effects on the directions and effectiveness of present-day nutrition programmes. Any other innovations from the early years about which you’re particularly proud?*

**Alan:** One notion during my travels in rural areas of The Republic of the Gambia relates to the high prevalence of low birthweight in that country and, of course, many other countries, with serious implications both for child survival and growth and for maternal health. In the course of interviews in Gambia with pregnant women, I was suddenly struck by the fact that many of these women had low-birthweight babies because they wanted small babies. They consciously restricted their pregnancy food intake with the belief that this would result in an easier delivery. After pursuing this issue in a number of countries, Susan Brems and I wrote a World Bank Technical

Note, titled *Eating Down During Pregnancy: Nutrition, Obstetric and Cultural Considerations in the Third World*, which may have been the first piece of its type. As no effort was made to market this piece, it attracted little attention at the time, albeit, I understand, this issue is now being addressed in behavioral change efforts designed to improve pregnancy outcomes.

**Jim:** *I’m sure you’ve had to make a lot of hard decisions over the years. What was your toughest call?*

**Alan:** Probably Albania. With its break from the former Soviet Union in the late 1980s, and the tumult surrounding the creation of a new republic in 1991, the government immediately declared a food crisis, claiming serious malnutrition and the threat of starvation, and requesting substantial international food aid. I was sent by the Bank to assess the situation, which I did, examining food price trends, availability, access and production prospects, and of course nutritional well-being. I could, however, find no compelling justification for the huge levels of food aid being requested. Obviously this was a difficult decision. Lives, after all, might be at stake. But based on what I saw and heard and read, I had to conclude that Albania did not merit massive quantities of food aid.

Predictably this conclusion was greeted badly by some UN agencies and by the NGOs beginning to work in the country. However, in a tight year for food aid worldwide, and especially serious shortages in much needier countries like Bangladesh, Mozambique and Somalia, large food shipments to Albania would likely have resulted in more serious consequences elsewhere.

Of course, I was nervous about my decision and made it a point to check regularly on relevant indicators emerging from Albania. Fortunately, and despite the protests, there was not even a blip in infant and child mortality data for that period.

**Jim:** *What would you say was your biggest country-level disappointment?*

**Alan:** Zimbabwe certainly ranks high. I was there shortly after independence, and the development community in the country did some valuable work in seeking to harness some of the energy of the independence movement into long-term efforts to address deprivation and, specifically, malnutrition. So much promise. The political constraints, however, proved intractable, this despite the efforts of

Julia Tagwireyi, the most committed and able nutrition champion a country could hope to have. Sadly, Zimbabwe has turned from a bread basket into a basket case.

My greatest disappointment, however, was Chile in the early 1970s. President Salvador Allende, as you recall, was in deep economic difficulties, and aid was certainly not forthcoming from the USA. At the World Bank, lending also was blocked because of a proviso that new loans couldn't be made to a country in arrears on interest payments on earlier projects. So Robert McNamara came up with the canny idea of putting together a quick technical assistance package of funds in several non-controversial sectors, including nutrition, and doing this in a way that, simultaneously would permit Chile to repay its back interest and be eligible for broader lending. I was quickly dispatched to Chile as part of the team responsible for putting together the package, with a timeline of a few weeks for a process normally taking well over a year. Working around the clock while demonstrations were increasing in the streets, we completed the necessary documentation to present for the Board's approval the following Friday. On Tuesday, three days before our scheduled presentation, Allende was killed. Interestingly, the date was 11 September.

**Jim:** *In retrospect, Alan, are there things you wish you had done differently in your work at the Bank?*

**Alan:** Probably the biggest mistake was allowing the evaluation of our nutrition programmes (evaluations of nutritional effectiveness) to be carried out after unfairly short time periods and then compared with efficacy studies carried out under highly controlled conditions. Today we know a great deal more about the operational constraints inhibiting even the best designed projects and the length of time necessary to overcome these constraints and assure use of nutrition services and supplements by those in greatest need.

Not to say there weren't some impressively positive evaluation findings from some of that large-scale operational work: the significant reduction in school drop-out and repeater rates resulting from pre-school feeding and psychosocial stimulation in Brazil, child growth improvements in Indonesia resulting from behavioral change efforts, and major reductions in malnutrition from a programme in the south Indian state of Tamil Nadu involving the identification of young children at particular risk, and

the provision to them of on-site supplementary food coupled with intensive behavioral change counseling.

**Jim:** *I hope the Bank and other institutions have adequate institutional memories to take full advantage of these scaling-up lessons. Your accomplishments during those years were remarkable in light of the resistance you faced in furthering nutrition in the Bank. Why such tough going?*

**Alan:** Two major challenges. One was that, in the early years, large portions of the Bank staff were not yet convinced that nutrition was relevant or at least not important to development, as they defined development. A second challenge was that in our country efforts in the 1970s and early 1980s, nutrition in many countries was still limited to biomedical work with few, if any, professionals actively involved in policy and programme planning, and no one thinking beyond health ministry activity. This often meant starting from scratch while seeking to avoid the not uncommon practice of "nutrition neo-colonialism", going into countries with preconceived project ideas and expecting governments to comply.

Additionally, we were vulnerable to sudden shifts in Bank priorities that could thwart our momentum. When, for example, the former Soviet Union was dismantled, the Bank was quick to respond and, while gearing up for support to the new republics, placed a freeze on hiring elsewhere in the Bank. Similarly, during the international oil crisis, our newly approved but not-yet-filled nutrition positions were commandeered to respond to that crisis. And with one Bank-wide reorganization, a new sector director transferred half a dozen nutrition positions for his new priority, health financing.

**Jim:** *In retrospect, are you glad that you stuck with the World Bank all those years, when clearly there were other opportunities? I know at one point you were offered and turned down the post of Asia Regional Director for UNICEF. You also were being considered for the position of President of CARE.*

**Alan:** I think that staying with the Bank was the right choice. Because of the magnitude of its resources, its access to finance ministries and planning commissions, and its further increased commitment to nutrition, the Bank had a central role to play in policy and programme development in many countries. And because of the breadth of its interests, cutting across disciplines and organization

charts, the Bank has often been better positioned than other international organizations to support multisectoral nutrition activity.

*Jim: Of all you've encountered in your work, what has been the hardest to swallow?*

**Alan:** The obliviousness among the more affluent in some of these countries to glaring poverty and nutritional need. Working in India at the time of the famine, I constantly was struck by the minimal concern expressed by the more advantaged. Even today, reading newspapers and magazines in India, one might get the impression that the country is only about information technology, politics, Bollywood and cricket, with the only reference to disease being avian flu, which might affect whether or not to have chicken for dinner. Of course, I exaggerate a bit, and clearly, this problem is not limited to India. (Perhaps the most flagrant example I experienced was in affluent neighborhoods of Buenos Aires.) And yet, sadly, in the so-called new India, the philanthropy which is practiced is much more likely to take the form of a family religious foundation for, say, the building of a temple. There just isn't the kind of social consciousness that we might have expected. Every time I run across this indifference, I find it tough to stomach.

*Jim: Before we move on to your recent experiences, let's talk just a bit about your early years. You mentioned that you grew up in Ohio in less than comfortable circumstances.*

**Alan:** Yes, this was during the depression. My father died when I was two years old at which time we crowded into the house of my grandfather, after whom I was named, a short hunchback cobbler from Lithuania who spoke no English. I now have his cobbler tools hanging in my office. Shortly before World War II, we were fortunate in being able to move into one of the US government's first public housing projects, for us a vast step up compared with that home in downtown Dayton where we had grown up without an indoor toilet or hot running water. From the age of ten, I regularly had after-school and weekend jobs like peddling newspapers on a downtown street corner, stocking foods at an across-town grocery store, and grinding watch crystals for a pawnshop. Weekend nights I wrote up high school sporting events for the *Dayton Daily News*, which then arranged a scholarship for me at Ohio State University. I also worked summers on the assembly

lines of two local General Motors plants, Delco Brake and Frigidaire. No question that this life experience gave perspective to my later work.

Another note on this if I may. Nearly all of my schoolmates were first-generation Americans (Hungarians, Lithuanians, Germans, Greeks and Poles) and, of course, also Depression Babies. Many were the first in their families to graduate high school. In most of the homes, English was not the primary language. So I grew up eating Hungarian cabbage rolls and German schnitzel dinners at the homes of friends, getting addicted to Lithuanian sweets, and dancing to polkas and Greek music at community functions. I was enamored of such cultural diversity and although I wasn't conscious of this at the time, it surely is not entirely a coincidence that I spent my life working with and in international cultures. To make clear, although we all were what one high school friend recently amusingly called "independently poor", we were quite oblivious to this since all those we saw on a daily basis were in the same boat. And, of course, we were poor only in the most literal sense of the word.

*Jim: You've clearly come a long way from The Projects to the projects in nutrition that have affected countless millions. After all the energy that you put into nutrition, over 50 years now, you surely deserve a bit of a rest, but I haven't noticed you cutting back all that much.*

**Alan:** I have cut back, but interesting opportunities pop up, including another stint in recent years back at Brookings, and more activity for the Bank, the most recent an opportunity to chip away at the frustration discussed earlier on the lack of adequate interaction of nutrition with agriculture.

*Jim: I'm sure you've been chided many times that yours is just a little short of God's work.*

**Alan:** But I worked longer hours.

*Jim: I can't let this opportunity escape without asking an obvious question that always has puzzled me. How is that someone with no real education, only a bachelor's degree in marketing, ended up being a scholar at the august Brookings Institution, teaching at MIT, writing a half dozen books including what may be the most important in the field, publishing in places like The New York Times and The New Republic and the Harvard Business Review and*

*dozens of articles in professional journals, chairing several international conferences and a committee at the National Academy of Sciences, working at The White House and the World Bank, in short being a global giant in your field, to say nothing of all you accomplished in your many operational field projects affecting millions?*

**Alan:** First, I luckily came of working age during a period when we all believed that anyone could do almost anything. Credentials were not the critical requirement they are today. And being one of only three or four members of my high school class who went on to graduate from college, I felt unusually privileged.

Second, as I knew so little about nutrition science, I was in no position to judge anything except in the broadest context. And in this innocence, I had no choice but to ask, let's just say, different kinds of big picture questions. Curiously, sometimes this turned out to be an asset.

Third, you and the SCN referred to me as a global giant in my field. Easy to do when there was no field there in which to be a giant. Not to say there weren't small nutrition programmes here and there, and not to say there weren't others who may have been thinking some of the same thoughts in those early years. But what, as you say, has now emerged as something of an accepted sub-discipline in nutrition wasn't around in those days. In fact, the work I had been struggling with (nutrition policy, planning and programming) was not even recognized by many in the international nutrition community as a legitimate province of the profession. To some I think I was seen as something of a nutrition outlaw.

And finally, I did pick up a little nutrition along the way. To the extent I know anything about nutrition, I guess you can say, I was self-educated. But not without lots of help from colleagues who over the years allowed me to pester them, often barrage them, with questions. While in India for instance, I had weekly Tuesday luncheon sessions with the great Dr. V. Ramalingaswami, then head of the All-India Institute of Medical Sciences, who would tutor me. One week he'd teach me about the basics of iron; the next, vitamin A.

**Jim:** *Clearly, in addition to everything else, you have been a splendid rocker of boats. And how fortunate we all are that someone like you floated into our field and raised all that ruckus. Few around have broken more new ground. Finally, many of us are interested to know how your nutrition work ended up winning a Grammy Award?*

**Alan:** Don't mistake me for Jay-Z. The Grammy Award was for a CD of nutrition education songs, called *Bon Appetit*, wonderfully sung by Cathy Fink and Marcy Marxer. My role, says the Grammy citation, was for "project conception and development". The recording was selected as the 2004 Best Children's Album of the Year. Needless to say, attending the Grammy Award ceremony for *Bon Appetit* was a hoot.

**Jim:** *I'm saving that CD for my grandchildren. Thanks a lot Alan.*

### SecureNutrition Knowledge Platform

[SecureNutrition](#) is one of six of the World Bank's Knowledge Platforms, all of which aim to contribute to the shift toward open development: open data, open knowledge and open solutions. SecureNutrition is working to bridge the operational knowledge gap between agriculture, food security, and nutrition by offering a space – both virtual and physical – to exchange experiences, to disseminate information, and ultimately to increase coordination, collaboration, and cogeneration of knowledge.

There is a growing and urgent need to bring the agriculture, food security and nutrition agendas closer together so that investments in one will have positive impacts on the others.



To learn more, get involved or sign up for the Secure Nutrition Newsletter, visit their website:

[www.securenutritionplatform.org](http://www.securenutritionplatform.org)

# BULLETIN BOARD

## ANNOUNCEMENTS

### New guidelines for treating severe acute child malnutrition 2013

The World Health Organization (WHO) has just released [new treatment guidelines for severe acute malnutrition](#) in children under five years of age. Almost 20 million children worldwide have severe acute malnutrition and are considered as the most vulnerable population. *"The guidelines are critical because many national health plans currently overlook children with severe acute malnutrition. This can be fatal. If these children don't get the right medical and nutritional care, very often they die"*, says Dr Francesco Branca, Director of WHO's Department of Nutrition for Health and Development.

### New Policy Brief: Food, Diet, Nutrition and Non-Communicable Diseases

The [World Cancer Research Fund International](#) (WCRF) and the NCD Alliance have launched their [new policy brief: Food, Diet, Nutrition and Non-Communicable Diseases \(NCDs\)](#). The brief sets out the key reasons why NCDs should be considered in policies to address global nutritional challenges. It summarizes the state-of-the-art science on the connections between nutrition and NCDs and provides recommendations for priority actions by international agencies, governments, donors and research funders, civil society and researchers.

### Training: Transforming Nutrition: Ideas, Policy and Outcomes, 14 – 18 July 2014, Institute of Development Studies, Brighton, UK

The Transforming Nutrition Summer School at the [Institute of Development Studies](#) (IDS) is hosting this professional short course for the third consecutive year. This [five-day course](#) is designed for both policy-makers and practitioners to participate with new ways of thinking about undernutrition and the required efforts to take action.

### The prevention of obesity and NCDs: challenges and opportunities for governments

[World Obesity](#) (former International Association for the Study of Obesity – IASO) has recently published a ten-point action plan for governments to tackle obesity. The [policy briefing](#) comes at a time when there is increasing need to tackle the rising levels of obesity and related noncommunicable diseases in virtually all countries of the world.

### Second joint UNDP/WHO letter on integrating NCDs into UNDAFs

A [second joint letter](#), duly signed by the Director-General of the [World Health Organization](#) (WHO), Margaret Chan and the Administrator for the [United Nations Development Programme](#) (UNDP), Helen Clark is addressed to UN Country Teams, UNDP Resident Representatives and Heads of WHO Country Offices reiterating the importance of mainstreaming noncommunicable diseases (NCDs) into national [UN Development Assistance Framework](#) (UNDAF) roll-out processes. This second letter is a follow-up to the [first letter](#) dispatched in March 2012.

## Meetings and Conferences

### Building Resilience for Food and Nutrition Security

15–17 May 2014

Addis Ababa, Ethiopia

[www.2020resilience.ifpri.info](http://www.2020resilience.ifpri.info)

EAT Food Forum

26–27 May 2014

Stockholm, Sweden

[www.eatforum.org](http://www.eatforum.org)

### Bridging Discovery and Delivery

2–6 June 2014

Addis Ababa, Ethiopia

[www.micronutrientforum.org](http://www.micronutrientforum.org)

### Building Healthy Global Food Systems: A New imperative for Public Health

8–9 September 2014

Oxford, United Kingdom

[www.oxford.wphna.org](http://www.oxford.wphna.org)

### III World Congress of Public Health Nutrition

9–12 November 2014

Las Palmas de Gran Canaria, Spain

[www.nutrition2014.org](http://www.nutrition2014.org)

### Second International Conference on Nutrition (ICN2)

19–21 November 2014

Rome, Italy

[Visit the website](#)

## Vacancies

Stay updated about the latest food and nutrition vacancies through the [UNSCN website](#)

## Follow us on [Twitter!](#)

## SCN Email Update

Receive news and updates by email! Ask us to add you to our contact list, at [scn@who.int](mailto:scn@who.int) or register [here](#)

# UNITED NATIONS SYSTEM

## STANDING COMMITTEE

### ON NUTRITION

The United Nations System Standing Committee on Nutrition (UNSCN) is the food and nutrition policy harmonization forum of the United Nations. Its vision is a world free from hunger and malnutrition, where there are no longer impediments to human development.

Created in 1977 as the ACC Subcommittee on Nutrition, at that time, the UNSCN was accountable to the Administrative Committee on Coordination of the UN (ACC). As a result of the UN Reform of the ACC (which was renamed as the Chief Executives Board CEB), the Subcommittee continued its functions as the United Nations System Standing Committee on Nutrition (UNSCN). **The mandate of the UNSCN** is to promote cooperation among UN agencies and partner organizations in support of community, national, regional, and international efforts to end malnutrition in all of its forms in this generation.

In this way, the Standing Committee on Nutrition of the UN System (UNSCN) is not another agency but it is a UN platform and an extended network where UN agencies come together to exchange information, harmonize and reconcile their strategies, policies and guidelines, agree common action and approaches and take joint initiative in global nutrition issues, while engaging with other key nutrition stakeholders. By leveraging the normative expertise and operational strengths of different UN agencies engaged in nutrition, it aims to ensure that the system-wide response is indeed greater than the sum of the individual efforts.

The UNSCN works towards providing consolidated expertise in nutrition to existing Member States entities such as the Committee on World Food Security (CFS), the World Health Assembly (WHA), among others. The UNSCN, together with the Ending Hunger and Undernutrition Partnership (REACH), is co-facilitating the UN System Network for Scaling Up Nutrition (SUN), one of the five networks of the Scaling Up Nutrition Movement and aims to ensure UN coordinated nutrition support at all levels.

The UNSCN is governed by a [Chair](#), currently **Ramiro Lopes da Silva** (Assistant Executive Director of WFP) who is the eleventh Chair of the UNSCN and who heads the UNSCN Executive Committee.

UNSCN is governed by an Executive Committee of senior executives from FAO, WHO, UNICEF and WFP and the UN Secretary-General Special Representative for Food Security and Nutrition since 2011.

The [UNSCN Secretariat](#) is hosted by WHO in Geneva and core funded by the UN agencies. As part of its advocacy and communication efforts, the UNSCN Secretariat produces and disseminates a series of knowledge products, reaching some 10 000 nutrition practitioners, programme managers and development workers around the world including this SCN News.

This edition of the SCN News was possible thanks to the sponsorship of the German and Flemish Governments.

## UNSCN

Chair: Ramiro Lopes da Silva  
c/o World Health Organization  
20 Avenue Appia, CH 1211 Geneva 27  
Switzerland  
Telephone: +41-22 791 04 56  
[scn@who.int](mailto:scn@who.int) [www.unscn.org](http://www.unscn.org)

With support from



Federal Ministry  
of Food  
and Agriculture

by decision of the  
German Bundestag

With the support of  
the Flemish government

